THE CLARK NO COMMENCE

FCC CFR47 PART 15 SUBPART E CERTIFICATION

TEST REPORT

FOR

D-LINK SYSTEMS, INC.

802.11 a/b BAND PCI ADAPTER

MODEL NUMBER: PC22, DWL-AB520, WPC-D11

BRAND NAME: D-LINK

FCC ID: KA22002080002-1

REPORT NUMBER: 02U1466-1

ISSUE DATE: AUGUST 19, 2002

Prepared for

D-LINK CORPORATION NO. 8, LI-SHING ROAD VII, SCIENCE-BASED INDUSTRIAL PARK HSINCHU, TAIWAN R.O.C.

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1. TEST RESULT CERTIFICATION

COMPANY NAME:	D-LINK CORPORATION NO.8, LI-SHING ROAD VII SCIENCE-BASED INDUSTRIAL PARK HSINCHU, TAIWAN R.O.C.
EUT DESCRIPTION:	802.11 a/b BAND PCI ADAPTER
MODEL NUMBER:	PC22, DWL-AB520, WPC-D11
BRAND NAME:	D-LINK

DATE TESTED: AUGUST 12 – 16, 2002

TYPE OF EQUIPMENT	INTENTIONAL RADIATOR
EQUIPMENT TYPE	(5.15 – 5.35) & (5.725 – 5.825) GHz TRANSCEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992, TIA/EIA 603
PROCEDURE	CERTIFICATION
FCC RULE	CFR 47 PART 15.E

Compliance Certification Services, Inc. tested the above equipment for compliance with the requirements set forth in CFR 47, PART 15, Subpart E. The equipment in the configuration described in this report, shows the measured emission levels emanating from the equipment do not exceed the specified limit.

Note: This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

Approved & Released For CCS By:

- Ch

STEVE CHENG EMC ENGINEERING MANAGER COMPLIANCE CERTIFICATION SERVICES

Tested By:

FRANK IBRAHIM EMC ENGINEER COMPLIANCE CERTIFICATION SERVICES

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2. EUT DESCRIPTION

The D-Link WLAN 802.11a/b PCI adaptor is based on the AR5001 three-chip set which implements IEEE 802.11a, IEEE 802.11b/g and intended for desktop applications. It operates in the 5.15-5.35 GHz, 5.725 - 5.825GHz, and 2.40-2.4835GHz bands with a maximum Tx output power of 17.3 dBm in 802.11a (UNII), band. The product uses one internal antenna with gain of 3.25dBi and one external antenna with gain of 4dBi for diversity operation.

3. TEST METHODOLOGY

Conducted and radiated testing were performed according to the procedures documented on chapter 13 of ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, and 15.407.

4. FACILITIES AND ACCREDITATION

4.1. FACILITIES AND EQUIPMENT

The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

Receiving equipment (i.e., receiver, analyzer, quasi-peak adapter, pre-selector) and LISNs conform to CISPR specifications for "Radio Interference Measuring Apparatus and Measurement Methods," Publication 16.

4.2. LABORATORY ACCREDITATIONS AND LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200065-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government. In addition, the test facilities are listed with Federal Communications Commission (reference no: 31040/SIT (1300B3) and 31040/SIT (1300F2)).

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4.3. TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	NVLAP*	FCC Part 15, CISPR 22, AS/NZS 3548,IEC	
		61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC	
		61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC	200065-0
		61000-4-11, CNS 13438	2000000
USA	FCC	3/10 meter Open Area Test Sites to perform	
		FCC Part 15/18 measurements	FC,
			1300
Japan	VCCI	CISPR 22 Two OATS and one conducted Site	
-			VCCI
			R-1014, R-619, C-640
Norway	NEMKO	EN50081-1, EN50081-2, EN50082-1,	
		EN50082-2, IEC61000-6-1, IEC61000-6-2,	(N)
		EN50083-2, EN50091-2, EN50130-4,	ELA 117
		EN55011, EN55013, EN55014-1, EN55104,	
		EN55015, EN61547, EN55022, EN55024,	
		EN61000-3-2, EN61000-3-3, EN60945,	
		EN61326-1	
Norway	NEMKO	EN60601-1-2 and IEC 60601-1-2, the	$\mathbf{\hat{M}}$
		Collateral Standards for Electro-Medical	$ (\mathbf{N}) $
		Products. MDD, 93/42/EEC, AIMD	ELA-171
		90/385/EEC	
Taiwan	BSMI	CNS 13438	
			SL2-IN-E-1012
Canada	Industry	RSS210 Low Power Transmitter and Receiver	Canada
	Canada		IC2324 A,B,C, and F

* No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government.

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5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

5.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Radiated Emission		
30MHz – 200 MHz	+/- 3.3dB	
200MHz – 1000MHz	+4.5/-2.9dB	
1000MHz – 2000MHz	+4.6/-2.2dB	
Power Line Conducted Emission		
150kHz – 30MHz	+/-2.9	

Any results falling within the above values are deemed to be marginal.

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5.3. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENTS LIST					
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date	
Spectrum Analyzer	НР	8564E	3943A01643	7/22/03	
Horn Antenna	EMCO	3115	6717	1/31/03	
Pre-amplifier,35.5 dB (1 - 26.5GHz)	HP	8449B	3008A00369	6/30/03	
Horn Antenna,(18 - 26GHz)	Antenna Research Associate	MWH 1826/B	1013	7/26/03	
Microwave Amp(2-8GHz)	HP	11975A	2517A01067	8/23/02	
Harmonic Mixer(26.5 - 40GHz)	HP	11970A	3003A04190	9/22/02	
Horn Antenna	Diamond Antenna & Microwave	1149	002	9/22/02	
Spectrum Analyzer	HP	8563E	Not Available	3/18/04	
EMI Test Receiver	Rohde & Schwarz	ESHS 20	827129/006	4/17/03	
LISN	Fischer 9k - 100MHz	FCC-LISN-50/250-25-2	114	4/23/03	
LISN	Solar Elec. Co.	8012-50-R-24-BNC	837990	4/25/03	
Line Filter	Lindgren 10k - 10GHz	LMF-3489	497	N.C.R.	
Spectrum Analyzer	HP 0.1K - 1.5GHz	8568B	2732A03661	5/16/03	
Spectrum Display	HP	85662A	2816A16696	5/16/03	
Quasi Peak Adapter	HP9K - 1GHz	85650A	2811A01155	5/16/03	
Pre-Amplifier,25 dB	HP0.1 - 1300MHz	8447D (P5)	2944A06550	8/10/03	
Antenna, Bicon	Eaton30 - 200MHz	94455-1	1214	3/30/03	
Antenna, LP	EMCO200 - 2000MHz	3146	9107-3163	3/30/03	
Environmental Chamber	Thermotron	SE-600-10-10	29800	4/26/03	

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6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

TEST PERIPHERALS						
Device Type	Device Type Manufacturer Model Number Serial Number FCC ID					
PC	Enlight Corp	Kudos	Not Available	DoC		
Monitor	Zenith	ZCM-1750-DT	3P5-60500786A0	DBL1785GM		
PS/2 Mouse	Logitech	M-CAA43	LZE02855315	DoC		
Keyboard	Acer	6511-TA	3882A039	DoC		
MODEM	ACEEX	1414	9013538	IFAXDM1414		
Printer	HP	2225C	2541841679	DoC		

I/O CABLES

TEST I / O CABLES								
Cable	I/O	# of I/O	Connector	Type of	Cable	Data		
No	Port	Port	Туре	Cable	Length	Traffic	Bundled	Remark
1	AC	4	US 115V	Un-shielded	2m	No	No	EUT power cable bundled only for LC test
2	Parallel	1	DB25	Shielded	2m	Yes	Yes	N/A
3	Serial	1	DB9	Shielded	1m	Yes	Yes	N/A
4	Video	1	DB15	Shielded	2m	Yes	Yes	One Torroid on Each End
5	KB	1	PS/2	Un-shielded	2m	Yes	No	N/A
6	Mouse	1	PS/2	Un-shielded	2m	Yes	No	N/A

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SETUP DIAGRAM FOR DIGITAL DEVICE TESTS



SETUP DIAGRAM FOR TRANSMITTER TESTS



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7. APPLICABLE RULES AND BRIEF TEST RESULT

§15.403- EMISSION BANDWIDTH

(c) <u>Emission bandwidth</u>. For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

§15.407(a)- POWER LIMIT

(1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or $4 \text{dBm} + 10 \log \text{B}$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

(2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW (24dBm) or $11 \text{dBm} + 10 \log \text{B}$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

(3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1 W (30 Bm) or $17 \text{ dBm} + 10 \log \text{ B}$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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§15.407(a)- PEAK POWER SPECTRAL DENSITY

(1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed **4 dBm** in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed **11 dBm** in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1 W or 17 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed **17 dBm** in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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§15.407(a)- PEAK EXCURSION

(6) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

§15.407(b)- UNDESIRABLE EMISSION – BAND EDGE

(1 & 2) For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27dBm / MHz.

(6) The provisions of 15.205 apply to intention radiators operating under this section (-21dBm (for peak) and -41dBm (for average) EIRP in restricted band).

Note: The restricted band limits in (6) are more stringent than the band edge limits in (1&2), given a resolution bandwidth of 1MHz, therefore in this report, test results at 5.15 and 5.35 GHz are compared to the 15.205 / 15.209 restricted limits.

(3) For transmitters operating in the 5.725-5.825 GHz band: all emissions within frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17dBm / MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm / MHz.

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<u>§15.407(g)- FREQUENCY STABILITY</u>

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

§15.207- CONDUCTED LIMITS

(a) For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed 250 microvolts. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

1001711(115.207					
FREQUENCY RANGE	FIELD STRENGTH	FIELD STRENGTH			
	(Microvolts)	(dBuV)/QP			
450kHz-30MHz	250	48			

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<u>§15.407(b)- UNDESIRABLE EMISSION LIMITS</u>

(1 & 2) For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm / MHz.

(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(6) The provisions of §15.205 apply to intentional radiators operating under this section.

§15.407(c)- TRANSMISSION IN CASE OF ABSENCE OF INFORMATION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

<u>§15.407(d)- ANTENNA TYPE</u>

Any U-NII device that operates in the 5.15-5.25 GHz band shall use a transmitting antenna that is an integral part of the device.

§15.407(f)- RADIO FREQUENCY EXPOSURE

U-NII devices are subject to the radio frequency radiation exposure requirements specified in §1.1307(b), §2.1091 and §2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a "general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

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§15.205- RESTRICTED BANDS OF OPERATIONS

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

 1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. 2 Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

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§15.209- RADIATED EMISSION LIMITS; GENERAL REQUIREMENTS

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

(b) In the emission table above, the tighter limit applies at the band edges.

MEASURING DISTANCE OF 3 METER				
FREQUENCY RANGE	FIELD STRENGTH			
(MHz)	(Microvolts/m)	(dBuV/m)		
30-88	100	40		
88-216	150	43.5		
216-960	200	46		
Above 960	500	54		

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8. TEST SETUP, PROCEDURE AND RESULT

8.1. TYPE OF ANTENNA

RESULTS

No non-compliance noted:

The antenna is integral to the device.

8.2. EMISSION BANDWIDTH

Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	⊠ Peak	☐ 300 kHz	☐ 300 kHz
	□ Average	⊠ 1 MHz	⊠ 1 MHz

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to approximately 1% of the emission bandwidth. The 26 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 26 dB.

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RESULT:

Operating in the 5.15 – 5.35 GHz Band (Normal Mode) – Antenna A port				
Channel	Frequency (MHz)	BW 26dBc (MHz)		
Low	5180	28.08		
Middle	5260	33.00		
High	5320	32.08		
Operating in the 5.15 – 5.35 GHz Band (Normal Mode) – Antenna B port				
Channel	Frequency (MHz)	BW 26dBc (MHz)		
Low	5180	30.25		
Middle	5260	31.75		
High	5320	33.00		
Operating in the 5.15 -	- 5.35 GHz Band (Turbo Mode) - Anter	nna A port		
Channel	Frequency (MHz)	BW 26dBc (MHz)		
Low	5210	59.30		
Middle	5250	61.00		
High	5290	65.70		
Operating in the 5.15 -	- 5.35 GHz Band (Turbo Mode) - Anter	nna B port		
Channel	Frequency (MHz)	BW 26dBc (MHz)		
Low	5210	61.20		
Middle	5250	64.20		
High	5290	58.80		
Operating in the 5.725	- 5.825 GHz Band (Normal Mode) - A	ntenna A port		
Channel	Frequency (MHz)	BW 26dBc (MHz)		
Low	5745	31.92		
Middle	5785	30.00		
High	5805	31.58		
Operating in the 5.725 – 5.825 GHz Band (Normal Mode) – Antenna B port				
Channel	Frequency (MHz)	BW 26dBc (MHz)		
Low	5745	33.33		
Middle	5785	33.67		
High	5805	33.58		

Operating in the 5.725 – 5.825 GHz Band (Turbo Mode) – Antenna A port			
Channel	Frequency (MHz)	BW 26dBc (MHz)	
Low	5760	63.20	
Middle	N/A	N/A	
High	5800	59.80	
Operating in the 5.725	- 5.825 GHz Band (Turbo Mode) - A	Antenna B port	
Channel	Frequency (MHz)	BW 26dBc (MHz)	
Low	5760	61.30	
Middle	N/A	N/A	
High	5800	65.70	

Please refer to Exhibit (TestPlot-BW.DOC) for detailed plots.

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8.3. PEAK POWER

TEST SETUP



Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	🔀 Peak	🖾 1 MHz	$\bigotimes 300 \text{ kHz}$ $\bigotimes 1 \text{ MHz}$ $\text{VBW} = \text{EBW} / (2\P*30)$

TEST PROCEDURE

The EUT is configured on a test bench as shown above in a continuously transmitting mode. For each channel measured, the channel power is measured over the specified bandwidth that was measured in the previous section.

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RESULT:

(Antenna A port)

Operating in the 5.15 – 5.35 GHz Band (Normal Mode)			
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5180	13.0	17.0
Middle	5260	17.0	24.0
High	5320	13.1	24.0
Operating in the 5.15 – 5	.35 GHz Band (Turbo M	lode)	
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5210	15.6	17.0
Middle	5250	16.7	17.0
High	5290	15.9	24.0
Operating in the 5.725 –	5.825 GHz Band (Norma	al Mode)	
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5745	16.7	30.0
Middle	5785	17.1	30.0
High	5805	17.1	30.0
Operating in the 5.725 –	5.825 GHz Band (Turbo	Mode)	
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5760	16.4	30.0
Middle	N/A	N/A	N/A
High	5800	16.9	30.0

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(Antenna D port)			
Operating in the 5.15 – 5.35 GHz Band (Normal Mode)			
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5180	12.5	17.0
Middle	5260	15.8	24.0
High	5320	13.3	24.0
Operating in the 5.15 – 5	.35 GHz Band (Turbo M	lode)	
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5210	16.0	17.0
Middle	5250	15.7	17.0
High	5290	15.6	24.0
Operating in the 5.725 –	5.825 GHz Band (Norma	al Mode)	
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5745	15.9	30.0
Middle	5785	16.1	30.0
High	5805	17.2	30.0
Operating in the 5.725 –	5.825 GHz Band (Turbo	Mode)	
Channel	Frequency (MHz)	Channel Power	Limit
		Measured (dBm)	(dBm)
Low	5760	15.8	30.0
Middle	N/A	N/A	N/A
High	5800	17.3	30.0

(Antenna B port)

Please refer to Ehibit (TestPlot_PeakPower.DOC) for detailed plots.

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8.4. PEAK POWER SPECTRAL DENSITY

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	Peak Peak	1 MHz	1 MHz

Detector Function Setting of Test Receiver

TEST SETUP



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer, the maximum level in a 1 MHz bandwidth was measured with the spectrum analyzer using RBW = 1 MHz and VBW = 1 MHz. The PPSD is the highest level found across the emission in any 1 MHz band, after sweep of video averaging.

	(Antenn	a A port)	
Operating in the 5.15 –	5.35 GHz Band (Normal	Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5180	-3.17	4
Middle	5260	0.83	11
High	5320	-2.67	11
Operating in the 5.15 –	5.35 GHz Band (Turbo M	lode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5210	-5.50	4
Middle	5250	-4.67	4
High	5290	-5.67	11

RESULT:

Using RBW=VBW=3KHz, and set sweep time = span / 3KHz method.

Operating in the 5.725 – 5.825 GHz Band (Normal Mode)			
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5745	0.67	17
Middle	5785	0.33	17
High	5805	-0.67	17
Operating in the 5.725 –	5.825 GHz Band (Turbo	Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5760	-4.50	17
Middle	N/A	N/A	17
High	5800	-4.33	17

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Operating in the 5.15 – 5.35 GHz Band (Normal Mode)				
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)	
Low	5180	-4.17	4	
Middle	5260	-2.00	11	
High	5320	-1.67	11	
Operating in the 5.15 – 5.35 GHz Band (Turbo Mode)				
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)	
Low	5210	-5.50	4	
Middle	5250	-5.33	4	
High	5290	-5.67	11	

(Antenna B port)

Using RBW=VBW=3KHz, and set sweep time = span / 3KHz method.

Operating in the 5.725 – 5.825 GHz Band (Normal Mode)					
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)		
Low	5745	-1.67	17		
Middle	5785	-2.00	17		
High	5805	-0.50	17		
Operating in the 5.725 –	Operating in the 5.725 – 5.825 GHz Band (Turbo Mode)				
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)		
Low	5760	-6.17	17		
Middle	N/A	N/A	17		
High	5800	-5.67	17		

Please refer to Exhibit (TestPlot-PPSD.DOC) for detailed plots.

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8.5. PEAK EXCURSION (PEAK – AVERAGE RATIO)

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	⊠ Peak	⊠ 1 MHz	⊠ 1 MHz
	⊠ Average	⊠ 1 MHz	⊠ 30 KHz

Detector Function Setting of Test Receiver

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer through an attenuator. The spectrum analyzer is set to 1 MHz RESOLUTION BW and 1MHz VIDEO BW. Trace A is set to Max Hold, then to View. The VIDEO BW is readjusted to 30 kHz, and the signal under this measurement condition is captured in Trace B.

The difference between the traces is investigated. The marker is placed at the frequency which shows the largest difference. The amplitude delta between the traces at this frequency is the peak excursion.

RESULT:

No non-compliance noted.

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Operating in the 5.15 – 5	.35 GHz Band (Normal N	Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5180	8.00	13
Middle	5260	7.67	13
High	5320	7.84	13
Operating in the 5.15 – 5	.35 GHz Band (Turbo M	ode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5210	6.84	13
Middle	5250	7.50	13
High	5290	6.84	13
	EDAE CITE D 1 (NI		
Operating in the 5.725 –	5.825 GHz Band (Norma	l Mode)	
Channel	5.825 GHz Band (Norma <i>Frequency (MHz)</i>	l Mode) <i>Results (dBm)</i>	Limit (dBm)
Channel Low	5.825 GHz Band (Norma Frequency (MHz) 5745	l Mode) <u>Results (dBm)</u> 7.33	Limit (dBm) 13
Operating in the 5.725 – Channel Low Middle	5.825 GHz Band (Norma <i>Frequency (MHz)</i> 5745 5785	Mode) <i>Results (dBm)</i> 7.33 8.33	<i>Limit (dBm)</i> 13 13
Channel Low Middle High	5.825 GHz Band (Norma Frequency (MHz) 5745 5785 5805	Mode) <u>Results (dBm)</u> 7.33 8.33 7.67	Limit (dBm) 13 13 13 13
Operating in the 5.725 – <i>Channel</i> <i>Low</i> <i>Middle</i> <i>High</i> Operating in the 5.725 –	5.825 GHz Band (Norma <i>Frequency (MHz)</i> 5745 5785 5805 5.825 GHz Band (Turbo	Mode) <i>Results (dBm)</i> 7.33 8.33 7.67 Mode)	Limit (dBm) 13 13 13 13
Operating in the 5.725 – <i>Channel</i> <i>Low</i> <i>Middle</i> <i>High</i> Operating in the 5.725 – <i>Channel</i>	5.825 GHz Band (Norma <i>Frequency (MHz)</i> 5745 5785 5805 5.825 GHz Band (Turbo <i>Frequency (MHz)</i>	Mode) <u>Results (dBm)</u> 7.33 8.33 7.67 Mode) <u>Results (dBm)</u>	Limit (dBm) 13 13 13 13 Limit (dBm)
Operating in the 5.725 – <i>Channel</i> <i>Low</i> <i>Middle</i> <i>High</i> Operating in the 5.725 – <i>Channel</i> <i>Low</i>	5.825 GHz Band (Norma <i>Frequency (MHz)</i> 5745 5785 5805 5.825 GHz Band (Turbo <i>Frequency (MHz)</i> 5760	Mode) <u>Results (dBm)</u> 7.33 8.33 7.67 Mode) <u>Results (dBm)</u> 7.50	Limit (dBm) 13 13 13 13 Limit (dBm) 13
Operating in the 5.725 – Channel Low Middle High Operating in the 5.725 – Channel Low Middle	5.825 GHz Band (Norma <i>Frequency (MHz)</i> 5745 5785 5805 5.825 GHz Band (Turbo <i>Frequency (MHz)</i> 5760 <i>N/A</i>	I Mode) <u>Results (dBm)</u> 7.33 8.33 7.67 Mode) <u>Results (dBm)</u> 7.50 N/A	Limit (dBm) 13 13 13 13 Limit (dBm) 13 13 13

(Antenna A port)

(Antenna B port)

Operating in the 5.15 – 5	.35 GHz Band (Normal M	(Iode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5180	7.67	13
Middle	5260	7.33	13
High	5320	7.84	13
Operating in the 5.15 – 5	.35 GHz Band (Turbo M	ode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5210	8.00	13
Middle	5250	7.50	13
High	5290	7.83	13
Operating in the 5.725 –	5.825 GHz Band (Norma	l Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5745	8.34	13
Middle	5785	7.83	13
High	5805	7.33	13
Operating in the 5.725 –	5.825 GHz Band (Turbo	Mode)	
Channel	Frequency (MHz)	Results (dBm)	Limit (dBm)
Low	5760	7.50	13
Middle	N/A	N/A	13
High	5800	7.33	13

Please refer to Exhibit (TestPlot-PeakExcur.DOC) for detailed plots.

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8.6. UNDESIRABLE EMISSION - BAND EDGE & RESTRICTED BANDS (15.205)

RESULTS:

8.6.1 BandEdge Emissions:

	8	(Antenn	a A2)		
Operating i	in the 5.15 – 5.	.35 GHz Band (Normal Mo	ode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5150	-42.37		-27	-15.37
High	5350	-42.03		-27	-15.03
Operating i	in the 5.15 – 5.	.35 GHz Band (Turbo Mod	le)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5150	-42.70		-27	-15.70
High	5350	-43.20		-27	-16.20
Operating i	in the 5.725 – :	5.825 GHz Band (Normal 1	Mode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5725	-27.77		-17	-10.77
High	5825	-26.77		-17	-9 .77
Operating i	in the 5.725 – :	5.825 GHz Band (Turbo M	lode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5725	-29.93		-17	-12.93
High	5825	-24.27		-17	-7.27

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Operating	in the 5.15 – 5	.35 GHz Band (Normal M	lode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	_
				EIRP	
Low	5150	-42.37		-27	-15.37
High	5350	-41.53		-27	-14.53
Operating	in the 5.15 – 5	.35 GHz Band (Turbo Mo	de)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	0 ()
0				EIRP	
Low	5150	-42.53		-27	-15.53
High	5350	-41.60		-27	-14.60
Operating	in the 5.725 –	5.825 GHz Band (Normal	Mode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	_
				EIRP	
Low	5725	-26.77		-17	-9.77
High	5825	-27.93		-17	-10.93
Operating	in the 5.725 –	5.825 GHz Band (Turbo N	Mode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	_
				EIRP	
Low	5725	-30.27		-17	-13.27
High	5825	-24.93		-17	-7.93

(Antenna A1)

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Operating	in the 5.15 – 5	.35 GHz Band (Normal M	lode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	U
_				EIRP	
Low	5150	-44.37		-27	-17.37
High	5350	-41.87		-27	-15.03
Operating	in the 5.15 – 5	.35 GHz Band (Turbo Mo	ode)		
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5150	-41.87		-27	-14.87
High	5350	-43.37		-27	-16.37
Operating	in the 5.725 –	5.825 GHz Band (Normal	Mode)	<u>.</u>	
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5725	-29.10		-17	-12.10
High	5825	-33.10		-17	-15.27
Operating	in the 5.725 –	5.825 GHz Band (Turbo N	Mode)	<u>.</u>	
Band	Frequency	AV Reading	Comments	15.407 Limit	Margin (dB)
Edge	(MHz)	(dBm)		(dBm)	
				EIRP	
Low	5725	-34.43		-17	-17.43
High	5825	-29.60		-17	-12.60

(Antenna B)

Notes:

- 1. EUT was tested for both vertical and horizontal polarizations, reported readings for band edges are for the worst polarization.
- 2. Band edge data in the low band (5.15 5.35) GHz are taken from restricted bands plots.
- 3. Average readings in dBm in these tables are the readings in dBuV on the Bandedge and Restricted bands plots subtracted by a factor of 95.2

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8.6.2 Restricted Bands Emissions:

			(/~		a 72)				
Operating i	in the 5.15 – 5	.35 GHz I	Band (Nor	mal Mo	ode)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205 Limit		Margin (dB)	
Band	(MHz)	(dBu	V/m)	Pol		(dBuV/m)			
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
4500-5150	5150, 5150	70.00	52.83	V		74	54	-4.00	-1.17
4500-5150	5150, 5150	67.17	51.50	H		74	54	-6.83	-2.50
Operating i	in the 5.15 – 5	.35 GHz I	Band (Tur	bo Mod	le)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	5 Limit	Margi	in (dB)
Band	(MHz)	(dBu	V/m)	Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
4500-5150	5150, 5150	65.67	52.50	V		74	54	-8.33	-1.50
4500-5150	5109, 5149	63.17	<i>49.83</i>	H		74	54	-10.83	-4.17
Operating i	in the 5.15 – 5	.35 GHz I	Band (Nor	rmal Mo	ode)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205 Limit		Margin (dB)	
Band	(MHz)	(dBu	V/m)	Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
5350-5460	5350, 5350	68.33	53.17	V		74	54	-5.67	-0.83
5350-5460	5351, 5350	65.33	51.50	H		74	54	-8.67	-2.50
Operating i	in the 5.15 – 5	.35 GHz I	Band (Tur	bo Mod	le)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	5 Limit	Margi	n (dB)
Band	(MHz)	(dBu	V/m)	Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
5350-5460	5350, 5408	64.67	52.00	V		74	54	-9.33	-2.00
5350-5460	5350, 5408	62.83	50.33	H		74	54	-11.17	-3.67

(Antenna A2)

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Operating i	in the 5.15 – 5	.35 GHz I	Band (Nor	rmal Mo	ode)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	Limit	Margin (dB)	
Band	(MHz)	(dBu	V/m)	Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
4500-5150	5150, 5148	68.50	52.83	V		74	54	-5.50	-1.17
4500-5150	5148, 5148	66.33 51.33		H		74	54	-7.67	-2.67
Operating i	in the 5.15 – 5	.35 GHz I	Band (Tur	bo Mod	le)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	Limit	Marg	in (dB)
Band	(MHz)	(dBuV/m)		Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
4500-5150	5150, 5150	65.00	52.17	V		74	54	-9.00	-1.83
4500-5150	5146, 5150	65.67	52.67	H		74	54	-8.33	-1.33
Operating i	in the 5.15 – 5	.35 GHz I	Band (Nor	mal Mo	ode)				·
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	Limit	Margin (dB)	
Band	(MHz)	(dBu	V/m)	Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
5350-5460	5352, 5352	65.33	52.33	V		74	54	-8.67	-1.67
5350-5460	5351, 5352	68.00	53.67	H		74	54	-6.00	-0.33
Operating i	in the 5.15 – 5	.35 GHz I	Band (Tur	bo Mod	le)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	i Limit	Marg	in (dB)
Band	(MHz)	(dBu	V/m)	Pol		(dBu	V/m)		
(MHz)	PK, AV	Peak	Ave			Peak	Ave	Peak	Ave
5350-5460	5358, 5386	65.43	53.60	V		74	54	-8.57	-0.40
5350-5460	5355, 5386	65.43	53.60	H		74	54	-8.57	-0.40

(Antenna A1)

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Operating i	in the 5.15 – 5	.35 GHz I	Band (Nor	rmal Mo	ode)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	5 Limit	Margin (dB)	
Band	(MHz)	(dBu	V/m)	Pol		(dBu	<i>V/m</i>)		
(MHz)	PK, AV	Peak	Ave					Peak	Ave
4500-5150	5148, 5148	64.00	50.83	V		74	54	-10.00	-3.17
4500-5150	5066, 5000	62.83	49.50	H		74	54	-11.17	-4.50
Operating i	in the 5.15 – 5	.35 GHz I	Band (Tur	bo Mod	le)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	5 Limit	Margin	a (dB)
Band	(MHz)	(dBuV/m)		Pol		(dBu	<i>V/m</i>)		
(MHz)	PK, AV	Peak	Ave						Peak
4500-5150	5147, 5150	66.33	53.33	V		74	54	-7.67	-0.67
4500-5150	5150, 5149	64.17	50.83	H		74	54	-9.83	-3.17
Operating i	in the 5.15 – 5	.35 GHz I	Band (Nor	mal Mo	ode)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	5 Limit	Margin	ı (dB)
Band	(\overline{MHz})	(dBu	V/m)	Pol		(dBu	<i>V/m</i>)		
(MHz)	PK, AV	Peak	Ave						Peak
5350-5460	5351, 5350	68.33	53.33	V		74	54	-5.67	-0.67
5350-5460	5362, 5350	62.83	<i>49.83</i>	H		74	54	-11.17	-4.17
Operating i	in the 5.15 – 5	.35 GHz I	Band (Tur	bo Mod	le)				
Restricted	Frequency	Rea	ding	Ant	Comments	15.205	5 Limit	Margin	1 (dB)
Band	(MHz)	(dBu	V/m)	Pol		(dBu	<i>V/m</i>)		
(MHz)	PK, AV	Peak	Ave						Peak
5350-5460	5351, 5350	65.00	51.83	V		74	54	-9.00	-2.17
5350-5460	5402, 5350	62.83	50.00	H		74	54	-11.17	-4.00

(Antenna B)

Please refer to Exhibit (**TestPlot-BE.DOC**) for detailed band edges plots.

Please refer to Exhibit (TestPlot-RestrBands.DOC) for detailed restricted bands plots.

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8.7. UNDESIRABLE EMISSIONS – RADIATED MEASUREMENTS

TEST SETUP

For measurements of the EUT as a digital device, the EUT and all other support equipment were placed on a wooden table 80 cm above the ground plane. For measurements of the EUT as a transmitter, the EUT and the laptop were placed on the wooden table. The antenna to EUT distance is 3 meters for measurements below 1 GHz and 1 meter for measurements above 1 GHz. The EUT is configured in accordance with Section 8 of ANSI C63.4/1992.

The EUT is set to transmit in a continuous mode.

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Below 1000	Peak	⊠100 kHz	∑ 100 kHz
	Q.P.	□ 1 MHz	□ 10 Hz
Above 1000	⊠ Peak	1 MHz	∑ 1 MHz
	□ Average	1 MHz	□ 10 Hz

Detector Function Setting of Test Receiver

TEST SETUP



Radiated Emission Measurement 30 to 1000MHz.

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Radiated Emission Above 1000MHz

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TEST PROCEDURE

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The frequency span is set small enough to easily differentiate between broadcast stations, intermittent ambient signals and EUT emissions. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the suspected signal. Measurements were made with the antenna polarized in both the vertical and the horizontal positions.

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SAMPLE CALCULATIONS

Given

 $E = \sqrt{(30 * P * G)} / d$

where

E = Field Strength in Volts / meter

P = Power in watts

G = Numeric antenna gain

d = distance in meters

Rearranging terms yields:

 $P * G = (d * E) ^ 2 / 30$

Converting to the logarithmic form and changing to units of mW and uV/m, using:

P(mW) = P(W) / 1000 andE(uV/m) = E(V/m) / 1000000

yields

$$10 \log (P * G) = 10 \log (d^2) + 10 \log (E^2) - 10 \log (30) - 10 \log (10^9)$$

= 20 log (d) + 20 log (E) - 104.77

In this logarithmic form

10 log (P * G) is PG in dBm and 20 log (E) is E in dBuV/m

Since EIRP = P * G, then at a specification distance of 3 meters, the EIRP in terms of field strength is:

EIRP (dBm) = P * G (dBm) = E (dBuV/m) - 95.2

TEST RESULTS

No non-compliance noted:

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08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Test Eng Project # Compan EUT Des EUT M/ Test Tar	gr: #: scrip.: N: rget:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
<u>Equipmo</u> <u>Peak Me</u>	ent for 1 HP8564 HP 844 EMCO Cable: easurem 1 MHz	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0 ents: Resolution Ba	ndwidth	feet		<u>Equipm</u> <u>Average</u>	ent for 22 HP8564E A HP 11975A HP 11970A Cable: IF C Measurer 1MHz Ress	- 58 Gl Analyze A Ampli Extern Only (32 ments: olution 1	Hz: r fier (LO) al mixer/ante 1 MHz) Bandwidth	enna					
6 40 GH	IMHZ	video Balldwid	um				TOHZ VIGE		vidui						
5.18 GHz	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
f GHz	Dist feet	Mode, Internal Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
5.18 GHz 6 6 6 5.180	Dist feet 3.3	Mode, Internal Read Pk dBuV 71.9	Antenna A1 Read Avg. dBuV 58.9	AF dB/m 34.6	CL dB 6.0	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 103.0	Avg dBuV/m 90.0	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V
5.18 GHz GHz 5.180 10.360	Normal Dist feet 3.3 3.3	Mode, Internal Read Pk dBuV 71.9 53.0	Antenna A1 Read Avg. dBuV 58.9 40.8	AF dB/m 34.6 39.5	CL dB 6.0 11.8	Amp dB 0.0 -34.7	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 103.0 61.1	Avg dBuV/m 90.0 48.9	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2	Pk Mar dB	Avg Mar dB -19.3	Notes V V
5.18 GHz 6 5.180 10.360 15.540	Normal Dist feet 3.3 3.3 3.3	Mode, Internal Read Pk dBuV 71.9 53.0 44.7	Antenna A1 Read Avg. dBuV 58.9 40.8 34.2	AF dB/m 34.6 39.5 38.9	CL dB 6.0 11.8 15.2	Amp dB 0.0 -34.7 -33.9	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 103.0 61.1 56.4	Avg dBuV/m 90.0 48.9 45.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB	Avg Mar dB -19.3 -8.1	Notes V V V, Noise Floor
5.18 GHz 6 6 6 7 5.180 10.360 15.540 26.000 26.000	Normal Dist feet 3.3 3.3 3.3 3.3	Mode, Internal Read Pk dBuV 71.9 53.0 44.7 30.5 53.5	Antenna A1 Read Avg. dBuV 58.9 40.8 34.2 22.3 107	AF dB/m 34.6 39.5 38.9 32.9	CL dB 6.0 11.8 15.2 23.6	Amp dB 0.0 -34.7 -33.9 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0	Peak dBuV/m 103.0 61.1 56.4 43.4	Avg dBuV/m 90.0 48.9 45.9 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -17.6 -30.6	Avg Mar dB -19.3 -8.1 -18.8	V V V, Noise Floor V, Noise Floor
5.18 GHz 5.180 10.360 15.540 26.000 5.180	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Internal Read Pk dBuV 71.9 53.0 44.7 30.5 71.7 71.7	Antenna A1 Read Avg. dBuV 58.9 40.8 34.2 22.3 62.9 77	AF dB/m 34.6 39.5 38.9 32.9 34.6	CL dB 6.0 11.8 15.2 23.6 6.0	Amp dB 0.0 -34.7 -33.9 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 0.0	Peak dBuV/m 103.0 61.1 56.4 43.4 102.8	Avg dBuV/m 90.0 48.9 45.9 35.2 94.0 94.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -17.6 -30.6	Avg Mar dB -19.3 -8.1 -18.8	Notes V V, Noise Floor V, Noise Floor H
5.18 GHz f GHz 5.180 10.360 15.540 26.000 5.180 10.360 10.360	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Internal Read Pk dBuV 71.9 53.0 44.7 30.5 71.7 50.8 47	Antenna A1 Read Avg. dBuV 58.9 40.8 34.2 22.3 62.9 38.7 24.5	AF dB/m 34.6 39.5 38.9 32.9 34.6 39.5 20.0	CL dB 6.0 11.8 15.2 23.6 6.0 11.8	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 -34.7	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 0.0 1.0	Peak dBuV/m 103.0 61.1 56.4 43.4 102.8 58.9 58.9	Avg dBuV/m 90.0 48.9 45.9 35.2 94.0 46.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2	Pk Mar dB -17.6 -30.6	Avg Mar dB -19.3 -8.1 -18.8 -21.4	Notes V V, Noise Floor V, Noise Floor H H
5.18 GHz f GHz 5.180 10.360 15.540 26.000 5.180 10.360 15.540 26.000	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Internal Read Pk dBuV 71.9 53.0 44.7 30.5 71.7 50.8 45.0 30.5	Antenna A1 Read Avg. dBuV 58.9 40.8 34.2 22.3 62.9 38.7 34.5 22.3	AF dB/m 34.6 39.5 38.9 32.9 34.6 39.5 38.9 32.9	CL dB 6.0 11.8 15.2 23.6 6.0 11.8 15.2 23.6	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 -34.7 -33.9 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0	Peak dBuV/m 103.0 61.1 56.4 43.4 102.8 58.9 56.7 43.4	Avg dBuV/m 90.0 48.9 45.9 35.2 94.0 46.8 46.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0	Pk Mar dB -17.6 -30.6 -17.3 -30.6	Avg Mar dB -19.3 -8.1 -18.8 -21.4 -7.8 -18.8	Notes V V, Noise Floor V, Noise Floor H H H, Noise Floor H, Noise Floor

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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Complia	FCC ance Ce	Measurem	ent Services, Mo	organ H	ill Op	en Field	Site								
Test Eng Project # Compan EUT Des EUT M/1	gr: f: y: scrip.: N:	n thication (Frank Ibrahim 02U1644-1 W-Link Systen 802.11 a/b/g D PC22	ns vual Band	PCI Ad	lapter	Sile								
Test Tar	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0	FCC 15.407	feet		<u>Equipm</u>	ent for 22 HP8564E / HP 11975/ HP 11970F Cable: IF C	- 58 Gl Analyzer A Ampli X Extern Only (32	Hz: fier (LO) al mixer/ante 1 MHz)	enna					
Peak Me	asurem 1 MHz 1 MHz ' Normal	<u>ents:</u> Resolution Bar Video Bandwid	ndwidth lth Antenna A I			<u>Average</u>	e Measurer 1MHz Res 10Hz Vide	<u>nents:</u> olution I o Bandv	3andwidth vidth						
	i vorman.	wioue, miternai	Antonna AT												
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
f GHz 5.260	Dist feet	Read Pk dBuV 79.0	Read Avg. dBuV 69.8	AF dB/m 34.8	CL dB 6.0	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 110.3	Avg dBuV/m 101.1	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
f GHz 5.260 10.520	Dist feet 3.3 3.3	Read Pk dBuV 79.0 49.0	Read Avg. dBuV 69.8 37.3	AF dB/m 34.8 39.2	CL dB 6.0 11.9	Amp dB 0.0 -34.4	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 110.3 57.2	Avg dBuV/m 101.1 45.5	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2	Pk Mar dB	Avg Mar dB -22.7	Notes V V
f GHz 5.260 10.520 15.780	Dist feet 3.3 3.3 3.3	Read Pk dBuV 79.0 49.0 45.5	Read Avg. dBuV 69.8 37.3 34.2	AF dB/m 34.8 39.2 38.8	CL dB 6.0 11.9 15.4	Amp dB 0.0 -34.4 -34.0	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 110.3 57.2 57.2	Avg dBuV/m 101.1 45.5 45.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB	Avg Mar dB -22.7 -8.1	Notes V V V, Noise Floor
f GHz 5.260 10.520 15.780 26.000	Dist feet 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 79.0 49.0 45.5 30.5	Read Avg. dBuV 69.8 37.3 34.2 22.3	AF dB/m 34.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0	Peak dBuV/m 110.3 57.2 57.2 43.4	Avg dBuV/m 101.1 45.5 45.9 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -16.8 -30.6	Avg Mar dB -22.7 -8.1 -18.8	Notes V V, Noise Floor V, Noise Floor
f GHz 5.260 10.520 15.780 26.000 5.260	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 79.0 49.0 45.5 30.5 78.3	Read Avg. dBuV 69.8 37.3 34.2 22.3 69.7	AF dB/m 34.8 39.2 38.8 32.9 34.8	CL dB 6.0 11.9 15.4 23.6 6.0	Amp dB 0.0 -34.4 -34.0 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 0.0	Peak dBuV/m 110.3 57.2 57.2 43.4 109.6	Avg dBuV/m 101.1 45.5 45.9 35.2 100.7	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -16.8 -30.6	Avg Mar dB -22.7 -8.1 -18.8	Notes V V, Noise Floor V, Noise Floor H
f GHz 5.260 10.520 15.780 26.000 5.260 10.520	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 79.0 49.0 45.5 30.5 78.3 45.2	Read Avg. dBuV 69.8 37.3 34.2 22.3 69.7 35.3 21.2	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 28.8	CL dB 6.0 11.9 15.4 23.6 6.0 11.9	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 0.0 1.0 0.0 1.0	Peak dBuV/m 110.3 57.2 57.2 43.4 109.6 53.3 57.2	Avg dBuV/m 101.1 45.5 45.9 35.2 100.7 43.5 45.0	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 68.2	Pk Mar dB -16.8 -30.6	Avg Mar dB -22.7 -8.1 -18.8 -24.7	V V V, Noise Floor V, Noise Floor H H
f GHz 5.260 10.520 15.780 26.000 5.260 10.520 15.780 26.000	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Read Pk dBuV 79.0 49.0 45.5 30.5 78.3 45.2 45.5 30.5	Read Avg. dBuV 69.8 37.3 34.2 22.3 69.7 35.3 34.2 22.3	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0 1.0 1.0 1.0	Peak dBuV/m 110.3 57.2 57.2 43.4 109.6 53.3 57.2 43.4	Avg dBuV/m 101.1 45.5 45.9 35.2 100.7 43.5 45.9 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0	Pk Mar dB -16.8 -30.6 -16.8 -30.6	Avg Mar dB -22.7 -8.1 -18.8 -24.7 -8.1 -18.8	V V V, Noise Floor V, Noise Floor H H H, Noise Floor H, Noise Floor

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Complia	FCC ance Ce	Measuremertification S	ent Services, Mo	organ H	ill Op	en Field	Site								
Test Eng Project # Compan EUT Des EUT M/ Test Tar	gr: #: scrip.: N: rget:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g I PC22 FCC 15.407	n ms Dual Band PCI	Adapter											
Equipm Bask M	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E . HP 11975/ HP 11970I Cable: IF (- 58 G Analyze A Ampli K Exterr Only (32	Hz: r fier (LO) aal mixer/ante 1 MHz)	enna					
Peak Me	1 MHz 1 MHz 1 MHz '	ents: Resolution Bar Video Bandwid	ndwidth lth			Average	1MHz Res 10Hz Vide	olution o Bandy	Bandwidth width						
f GHz	Dist	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
	3.3	72.8	64.7	34.8	6.0	0.0	-9.5	0.0	104.1	96.0					V
5.320				20.2	11.9	-34.3	-9.5	1.0	52.3	41.3	74.0	54.0	-21.7	-12.7	V, Noise Floor
5.320 10.640	3.3	44.0	33.0	39.2										0.4	
5.320 10.640 15.960	3.3 3.3	44.0 43.8	33.0 33.6	39.2	15.6	-34.0	-9.5	1.0	55.6	45.4	74.0	54.0	-18.4	-8.6	V, Noise Floor
5.320 10.640 15.960 26.000	3.3 3.3 3.3	44.0 43.8 30.5	33.0 33.6 22.3	39.2 38.7 32.9	15.6 23.6	-34.0 -35.1	-9.5 -9.5	1.0 1.0	55.6 43.4	45.4 35.2	74.0 74.0	54.0 54.0	-18.4 -30.6	-8.6 -18.8	V, Noise Floor V, Noise Floor
5.320 10.640 15.960 26.000 5.320	3.3 3.3 3.3 3.3	44.0 43.8 30.5 71.5	33.0 33.6 22.3 62.7	39.2 38.7 32.9 34.8	15.6 23.6 6.0	-34.0 -35.1 0.0	-9.5 -9.5 -9.5	1.0 1.0 0.0	55.6 43.4 109.5	45.4 35.2 99.8	74.0	54.0	-18.4 -30.6	-8.6 -18.8	V, Noise Floor V, Noise Floor H
5.320 10.640 15.960 26.000 5.320 10.640	3.3 3.3 3.3 3.3 3.3 3.3	44.0 43.8 30.5 71.5 44.0	33.0 33.6 22.3 62.7 33.0	39.2 38.7 32.9 34.8 39.2	15.6 23.6 6.0 11.9	-34.0 -35.1 0.0 -34.3	-9.5 -9.5 -9.5 -9.5	1.0 1.0 0.0 1.0	55.6 43.4 109.5 52.3	45.4 35.2 99.8 41.3	74.0 74.0 74.0	54.0 54.0 54.0	-18.4 -30.6 -21.7	-8.6 -18.8 -12.7	V, Noise Floor V, Noise Floor H H, Noise Floor
5.320 10.640 15.960 26.000 5.320 10.640 15.960 26.000	3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	44.0 43.8 30.5 71.5 44.0 43.8 30.5	33.0 33.6 22.3 62.7 33.0 33.6 22.3	39.2 38.7 32.9 34.8 39.2 38.7 32.9	15.6 23.6 6.0 11.9 15.6 23.6	-34.0 -35.1 0.0 -34.3 -34.0 -35.1	-9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	1.0 1.0 0.0 1.0 1.0	55.6 43.4 109.5 52.3 55.6 43.4	45.4 35.2 99.8 41.3 45.4 35.2	74.0 74.0 74.0 74.0 74.0 74.0	54.0 54.0 54.0 54.0 54.0	-18.4 -30.6 -21.7 -18.4 -30.6	-8.6 -18.8 -12.7 -8.6 -18.8	V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H, Noise Floor

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08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

EUT De EUT M/ Test Tai	;: y: scrip.: N: get:	Frank Ibrahir 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
<u>Equipm</u>	ent for 1 HP8564 HP 8449 EMCO Cable:	-22 GHz: E Analyzer DB Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E A HP 11975A HP 11970F Cable: IF 0	- 58 Gl Analyzer A Ampli K Extern Only (32	Hz: fier (LO) al mixer/ante 1 MHz)	enna					
<u>Peak Me</u> 5.745 GH	asureme 1 MHz 1 1 MHz V z, Normal	ents: Resolution Ba /ideo Bandwid Mode, Intern	ndwidth dth al Antenna A1			<u>Average</u>	Measure 1MHz Res 10Hz Vide	<u>ments:</u> olution l o Bandv	3andwidth vidth						
	1														
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
f GHz 5.745	Dist feet 3.3	Read Pk dBuV 73.0	Read Avg. dBuV 63.8	AF dB/m 35.3	CL dB 8.5	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 107.3	Avg dBuV/m 98.1	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V
f GHz 5.745 11.490	Dist feet 3.3 3.3	Read Pk dBuV 73.0 42.8	Read Avg. dBuV 63.8 28.3	AF dB/m 35.3 39.7	CL dB 8.5 12.3	Amp dB 0.0 -33.9	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 107.3 52.5	Avg dBuV/m 98.1 38.0	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m	Pk Mar dB -21.5	Avg Mar dB -16.0	Notes V V, Noise Floor
f GHz 5.745 11.490 17.235	Dist feet 3.3 3.3 3.3	Read Pk dBuV 73.0 42.8 45.8	Read Avg. dBuV 63.8 28.3 28.5	AF dB/m 35.3 39.7 44.0	CL dB 8.5 12.3 16.6	Amp dB 0.0 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 107.3 52.5 65.1	Avg dBuV/m 98.1 38.0 47.8	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -21.5	Avg Mar dB -16.0 -20.4	V V, Noise Floor V, Noise Floor
f GHz 5.745 11.490 17.235 26.000	Dist feet 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 73.0 42.8 45.8 30.5	Read Avg. dBuV 63.8 28.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9	CL dB 8.5 12.3 16.6 23.6	Amp dB 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0	Peak dBuV/m 107.3 52.5 65.1 43.4	Avg dBuV/m 98.1 38.0 47.8 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -21.5 -30.6	Avg Mar dB -16.0 -20.4 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor
f GHz 5.745 11.490 17.235 26.000 5.745	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 73.0 42.8 45.8 30.5 78.2	Read Avg. dBuV 63.8 28.3 28.5 22.3 68.8	AF dB/m 35.3 39.7 44.0 32.9 35.3	CL dB 8.5 12.3 16.6 23.6 8.5	Amp dB 0.0 -33.9 -32.8 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 0.0	Peak dBuV/m 107.3 52.5 65.1 43.4 112.5	Avg dBuV/m 98.1 38.0 47.8 35.2 103.1	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -21.5 -30.6	Avg Mar dB -16.0 -20.4 -18.8	Notes V V, Noise Floor V, Noise Floor V, Noise Floor H
f GHz 5.745 11.490 17.235 26.000 5.745 11.490	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 73.0 42.8 45.8 30.5 78.2 42.8	Read Avg. dBuV 63.8 28.3 28.5 22.3 68.8 28.3	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 39.7	CL dB 8.5 12.3 16.6 23.6 8.5 12.3	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 0.0 1.0	Peak dBuV/m 107.3 52.5 65.1 43.4 112.5 52.5 52.5	Avg dBuV/m 98.1 38.0 47.8 35.2 103.1 38.0 38.0	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0	Pk Mar dB -21.5 -30.6 -21.5	Avg Mar dB -16.0 -20.4 -18.8 -16.0	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor
f GHz 5.745 11.490 17.235 26.000 5.745 11.490 17.235 26.000	Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Read Pk dBuV 73.0 42.8 45.8 30.5 78.2 42.8 45.8 30.5	Read Avg. dBuV 63.8 28.3 22.3 68.8 28.3 28.5	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.3 16.6 23.6 8.5 12.3 16.6 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 107.3 52.5 65.1 43.4 112.5 52.5 65.1 43.4	Avg dBuV/m 98.1 38.0 47.8 35.2 103.1 38.0 47.8 35.2	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2 54.0 68.2 54.0	Pk Mar dB -21.5 -30.6 -21.5 -30.6	Avg Mar dB -16.0 -20.4 -18.8 -16.0 -20.4 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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est En	r:		Frank Ibrahim												
roject	f:		02U1644-1												
Compar	y:		W-Link Systen	15											
UT De	crip.:		802.11 a/b/g D	ual Band	PCI Ad	apter									
UT M/	N:		PC22												
Test Tai	get:		FCC 15.407												
Quipm	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	4E Analyzer					HP8564E /	Analyzei	r						
	HP 844	9B Amplifier					HP 11975A	Ampli	fier (LO)						
	EMCO	3115 Antenna					HP 11970F	C Extern	al mixer/ante	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
eak M	asurem	ents:				Average	Measure	nents:							
	1 MHz	Resolution Ba	ndwidth				1MHz Res	olution 1	Bandwidth						
	1MHz '	Video Bandwie	ith				10Hz Vide	o Bandv	vidth						
785 GH	z. Norma	l Mode. Intern	al Antenna A1												
.785 GH f	z, Norma Dist	Mode, Interr	al Antenna A1 Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
.785 GH f GHz	z, Norma Dist feet	l Mode, Interr Read Pk dBuV	al Antenna A1 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
.785 GH f GHz 5.785	z, Norma Dist feet 3.3	Read Pk dBuV 73.7	al Antenna A1 Read Avg. dBuV 64.5	AF dB/m 35.3	CL dB 8.5	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 108.0	Avg dBuV/m 98.8	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V
785 GH f GHz 5.785 11.570	z, Norma Dist feet 3.3 3.3	Mode, Intern Read Pk dBuV 73.7 44.0	Antenna A1 Read Avg. dBuV 64.5 28.3	AF dB/m 35.3 39.7	CL dB 8.5 12.4	Amp dB 0.0 -33.9	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 108.0 53.7	Avg dBuV/m 98.8 38.0	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0	Pk Mar dB -20.3	Avg Mar dB -16.0	Notes V V, Noise Floor
.785 GH f <u>6Hz</u> <u>5.785</u> <u>11.570</u> <u>17.355</u>	z, Norma Dist feet 3.3 3.3 3.3	Mode, Interr Read Pk dBuV 73.7 44.0 43.7	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5	AF dB/m 35.3 39.7 44.0	CL dB 8.5 12.4 16.7	Amp dB 0.0 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 108.0 53.7 63.1	Avg dBuV/m 98.8 38.0 47.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -20.3	Avg Mar dB -16.0 -20.3	Notes V V, Noise Floor V, Noise Floor
.785 GH f GHz 5.785 11.570 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.0	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.2	AF dB/m 35.3 39.7 44.0 32.9 25 2	CL dB 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0	Peak dBuV/m 108.0 53.7 63.1 43.4	Avg dBuV/m 98.8 38.0 47.9 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -20.3 -30.6	Avg Mar dB -16.0 -20.3 -18.8	Notes V V, Noise Floor V, Noise Floor V, Noise Floor
.785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	I Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.2	AF dB/m 35.3 39.7 44.0 32.9 35.3 20.7	CL dB 8.5 12.4 16.7 23.6 8.5	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 23.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 0.0	Peak dBuV/m 108.0 53.7 63.1 43.4 1113.1 53.7	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 28.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0	Pk Mar dB -20.3 -30.6	Avg Mar dB -16.0 -20.3 -18.8 -16.0	Notes V V, Noise Floor V, Noise Floor H H Noise Floor H
.785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570 17.355	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.3 28.5 22.3 70.3 28.5	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 0.0 1.0 1.0	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2	Pk Mar dB -20.3 -30.6 -20.3	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3	Notes V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H
.785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	I Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7 30.5	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1 43.4	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2 54.0 68.2 54.0	Pk Mar dB -20.3 -30.6 -20.3 -30.6	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor
785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	I Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7 30.5	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1 43.4	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2 54.0 68.2 54.0	Pk Mar dB -20.3 -30.6 -20.3 -30.6	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor
785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	I Mode, Intern Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7 30.5	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.5 22.3 ent Frequency	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1 Amp	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 5.0	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1 43.4	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9 35.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 54.0 68.2 54.0 Avg Lim	Pk Mar dB -20.3 -30.6 -20.3 -30.6 Average F	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8 Field Strengg	V V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor
.785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	l Mode, Intern Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 30.5 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 78.8 44.0 43.7 70.5 78.8 44.0 43.7 70.5 78.8 44.0 43.7 70.5 78.8 44.0 43.7 70.5	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.5 22.3 28.5 22.3 ent Frequency Antenna	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1 Amp D Corr	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 5ain Correce	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1 43.4 tto 3 meter	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 54.0 68.2 54.0 Avg Lim Pk Lim	Pk Mar dB -20.3 -30.6 -20.3 -30.6 Average F Peak Field	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8 Field Strength L	V V, Noise Floo V, Noise Floo V, Noise Floo H H, Noise Floo H, Noise Floo
.785 GH f GHz 5.785 11.570 17.355 26.000 5.785 11.570 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 5.3 f Dist Read	I Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7 30.5 Reaurement Distance to Analyzer R	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.5 22.3 28.5 22.3 ent Frequency o Antenna ceading	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1 -35.1 Amp D Corr Avg	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 5.0 6.0 1.0 1.0 1.0 1.0 1.0 5.0 Field S	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1 43.4 ct to 3 mete Ctrength @	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9 35.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -20.3 -30.6 -20.3 -30.6 Average F Peak Field Margin vs	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8 Tield Strength L Strength L Strength L	V V, Noise Floor V, Noise Floor V, Noise Floor H, Limit imit
.785 GH f GHz 5.785 11.570 17.355 26.000 17.355 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 5 Dist Read AF	I Mode, Interr Read Pk dBuV 73.7 44.0 43.7 30.5 78.8 44.0 43.7 30.5 Measurement Distance to Analyzer R Antenna Fa	al Antenna A1 Read Avg. dBuV 64.5 28.3 28.5 22.3 70.3 28.5 22.3 28.5 22.3 28.5 22.3 ent Frequency 0 Antenna teading actor	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1 Amp D Corr Avg Peak	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 5.0 1.0 1.0 5.0 5.0 1.0 1.0 5.0	Peak dBuV/m 108.0 53.7 63.1 43.4 113.1 53.7 63.1 43.4 43.4 53.7 63.1 43.4 43.4 43.4 43.4 53.7 63.1 63.1 43.4 5.7 63.1	Avg dBuV/m 98.8 38.0 47.9 35.2 104.6 38.0 47.9 35.2 35.2 35.2 3 m ngth	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -20.3 -30.6 -20.3 -30.6 -20.3 -30.6 Average F Peak Field Margin vs Margin vs	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8 'ield Strengt L Strengt L Strengt L Strengt L Strengt L Strengt L	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H, Noise Floor th Limit imit t

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Complia	FCC ince Ce	Measurem rtification S	ent Services, Mo	organ H	ill Op	en Field	Site								
Fest Eng Project # Compan EUT Des EUT M/I Fest Tar	r: 5: y: scrip.: N: get:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
Equipme	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: IE Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E . HP 11975, HP 11970I Cable: IF 0	<u>- 58 G</u> Analyze A Ampli K Extern Only (32	Hz: r ifier (LO) nal mixer/ante 21 MHz)	enna					
Peak Me	asurem 1 MHz 1 MHz '	<u>ents:</u> Resolution Bar Video Bandwic	ndwidth lth			<u>Average</u>	e Measure 1MHz Res 10Hz Vide	ments: olution o Band	Bandwidth width						
5 905 CU	Norma	Mode Intern	al Antonno Al												
.805 GH: f GHz	Dist feet	Mode, Intern Read Pk dBuV	al Antenna A1 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
.805 GH: f GHz 5.805	Dist feet	Mode, Intern Read Pk dBuV 71.5	al Antenna A1 Read Avg. dBuV 63.2	AF dB/m 35.3	CL dB 8.5	Amp dB 0.0	D Corr dB	HPF	Peak dBuV/m 105.8	Avg dBuV/m 97.5	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
805 GH: f GHz 5.805 11.610	Dist feet 3.3 3.3	Mode, Intern Read Pk dBuV 71.5 43.8	al Antenna A1 Read Avg. dBuV 63.2 28.3	AF dB/m 35.3 39.7	CL dB 8.5 12.4	Amp dB 0.0 -33.9	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 105.8 53.5	Avg dBuV/m 97.5 38.0	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V V, Noise Floor
.805 GHz f GHz 5.805 11.610 17.415	z, Norma Dist feet 3.3 3.3 3.3	Mode, Intern Read Pk dBuV 71.5 43.8 43.0 43.0	al Antenna A1 Read Avg. dBuV 63.2 28.3 28.5	AF dB/m 35.3 39.7 44.0	CL dB 8.5 12.4 16.7	Amp dB 0.0 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 105.8 53.5 62.4	Avg dBuV/m 97.5 38.0 47.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -20.5	Avg Mar dB -16.0 -20.3	Notes V V, Noise Floor V, Noise Floor
.805 GHz f GHz 5.805 11.610 17.415 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Interm Read Pk dBuV 71.5 43.8 43.0 30.5	al Antenna A1 Read Avg. dBuV 63.2 28.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0	Peak dBuV/m 105.8 53.5 62.4 43.4	Avg dBuV/m 97.5 38.0 47.9 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -20.5 -30.6	Avg Mar dB -16.0 -20.3 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor
.805 GHz GHz 5.805 11.610 17.415 26.000 5.805	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Interm Read Pk dBuV 71.5 43.8 43.0 30.5 78.3	al Antenna A1 Read Avg. dBuV 63.2 28.3 28.5 22.3 69.2	AF dB/m 35.3 39.7 44.0 32.9 35.3	CL dB 8.5 12.4 16.7 23.6 8.5	Amp dB 0.0 -33.9 -32.8 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 0.0	Peak dBuV/m 105.8 53.5 62.4 43.4 112.6	Avg dBuV/m 97.5 38.0 47.9 35.2 103.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -20.5 -30.6	Avg Mar dB -16.0 -20.3 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H
6.805 GHz GHz 5.805 11.610 17.415 26.000 5.805 11.610 17.415 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Interm Read Pk dBuV 71.5 43.8 43.0 30.5 78.3 43.8 43.8	al Antenna A1 Read Avg. dBuV 63.2 28.3 28.5 22.3 69.2 28.3 28.3 28.5	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0	CL dB 8.5 12.4 16.7 23.6 8.5 12.4	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.6	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 0.0 1.0 0.0	Peak dBuV/m 105.8 53.5 62.4 43.4 112.6 53.5	Avg dBuV/m 97.5 38.0 47.9 35.2 103.5 38.0	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0	Pk Mar dB -20.5 -30.6 -20.5	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -16.0	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor
5.805 GH f GHz 5.805 11.610 17.415 26.000 5.805 11.610 17.415 26.000	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Interm Read Pk dBuV 71.5 43.8 43.0 30.5 78.3 43.8 43.0 30.5	al Antenna A1 Read Avg. dBuV 63.2 28.3 28.5 22.3 69.2 28.3 28.5 22.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.4 16.7 23.6 8.5 12.4 16.7 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 105.8 53.5 62.4 43.4 112.6 53.5 62.4 43.4	Avg dBuV/m 97.5 38.0 47.9 35.2 103.5 38.0 47.9 35.2	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 54.0 68.2 54.0	Pk Mar dB -20.5 -30.6 -20.5	Avg Mar dB -16.0 -20.3 -18.8 -16.0 -20.3 -18.8	V V. Noise Floor V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor H. Noise Floor

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08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Test Eng Project # Compan EUT Des EUT M/ Test Tar	gr: #: scrip.: N: get:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
<u>Equipmo</u>	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E A HP 11975A HP 11970K Cable: IF C	- 58 Gl Analyze A Ampli A Extern Only (32	Hz: r fier (LO) al mixer/anto 1 MHz)	enna					
<u>Peak Me</u>	1 MHz 1 MHz 1 MHz V	e <u>nts:</u> Resolution Ba /ideo Bandwid	ndwidth lth			<u>Average</u>	Measurer 1MHz Reso 10Hz Video	nents: olution l o Bandy	Bandwidth vidth						
5.21 GHz.	Turbo M	ode, Internal	Antenna A1												
5.21 GHz, f	Turbo M	ode, Internal A	Antenna A1 Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
5.21 GHz, f GHz	Turbo M Dist feet	ode, Internal A Read Pk dBuV	Antenna A1 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
5.21 GHz, f GHz 5.210	Turbo M Dist feet 3.3	ode, Internal A Read Pk dBuV 69.7	Antenna A1 Read Avg. dBuV 62.3	AF dB/m 34.6	CL dB 6.0	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 100.8	Avg dBuV/m 93.4	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V
5.21 GHz, f GHz 5.210 10.420	Turbo M Dist feet 3.3 3.3	Read Pk dBuV 69.7 41.7	Antenna A1 Read Avg. dBuV 62.3 29.7	AF dB/m 34.6 39.5	CL dB 6.0 11.8	Amp dB 0.0 -34.7	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 100.8 49.8	Avg dBuV/m 93.4 37.8	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2	Pk Mar dB	Avg Mar dB -30.4	Notes V V
5.21 GHz, f GHz 5.210 10.420 15.630	Turbo M Dist feet 3.3 3.3 3.3	ode, Internal Read Pk dBuV 69.7 41.7 40.0	Antenna A1 Read Avg. dBuV 62.3 29.7 28.8	AF dB/m 34.6 39.5 38.8	CL dB 6.0 11.8 15.3	Amp dB 0.0 -34.7 -33.9	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 100.8 49.8 51.7	Avg dBuV/m 93.4 37.8 40.6	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB -22.3	Avg Mar dB -30.4 -13.4	Notes V V V, Noise Floor
5.21 GHz, f GHz 5.210 10.420 15.630 26.000	Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 69.7 41.7 40.0 30.5	Antenna A1 Read Avg. dBuV 62.3 29.7 28.8 22.3	AF dB/m 34.6 39.5 38.8 32.9	CL dB 6.0 11.8 15.3 23.6	Amp dB 0.0 -34.7 -33.9 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0	Peak dBuV/m 100.8 49.8 51.7 43.4	Avg dBuV/m 93.4 37.8 40.6 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -22.3 -30.6	Avg Mar dB -30.4 -13.4 -18.8	Notes V V, Noise Floor V, Noise Floor
5.21 GHz, f GHz 5.210 10.420 15.630 26.000 5.210	Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 69.7 41.7 40.0 30.5 70.7	Antenna A1 Read Avg. dBuV 62.3 29.7 28.8 22.3 61.8	AF dB/m 34.6 39.5 38.8 32.9 34.6	CL dB 6.0 11.8 15.3 23.6 6.0	Amp dB 0.0 -34.7 -33.9 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 0.0	Peak dBuV/m 100.8 49.8 51.7 43.4 101.8	Avg dBuV/m 93.4 37.8 40.6 35.2 92.9	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -22.3 -30.6	Avg Mar dB -30.4 -13.4 -18.8	V V V, Noise Floor V, Noise Floor H
5.21 GHz, f GHz 5.210 10.420 15.630 26.000 5.210 10.420 10.420	Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	ode, Internal A Read Pk dBuV 69.7 41.7 40.0 30.5 70.7 41.3 40.0	Antenna A1 Read Avg. dBuV 62.3 29.7 28.8 22.3 61.8 30.0 20.0	AF dB/m 34.6 39.5 38.8 32.9 34.6 39.5 39.5	CL dB 6.0 11.8 15.3 23.6 6.0 11.8	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 -34.7 -34.7	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0 1.0 1.0 0.0 1.0 1.0 1.0	Peak dBuV/m 100.8 49.8 51.7 43.4 101.8 49.4	Avg dBuV/m 93.4 37.8 40.6 35.2 92.9 38.1	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2	Pk Mar dB -22.3 -30.6	Avg Mar dB -30.4 -13.4 -18.8 -30.1	V V V, Noise Floor H H, Noise Floor
5.21 GHz, f GHz 5.210 10.420 15.630 26.000 5.210 10.420 15.630 26.000	Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	ode, Internal A Read Pk dBuV 69.7 41.7 40.0 30.5 70.7 41.3 40.0 30.5	Antenna A1 Read Avg. dBuV 62.3 29.7 28.8 22.3 61.8 30.0 28.8 22.3	AF dB/m 34.6 39.5 38.8 32.9 34.6 39.5 38.8 32.9	CL dB 6.0 11.8 15.3 23.6 6.0 11.8 15.3 23.6	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 -34.7 -33.9 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 100.8 49.8 51.7 43.4 101.8 49.4 51.7 43.4	Avg dBuV/m 93.4 37.8 40.6 35.2 92.9 38.1 40.6 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0	Pk Mar dB -22.3 -30.6 -22.3 -30.6	Avg Mar dB -30.4 -13.4 -18.8 -30.1 -13.4 -18.8	Notes V V, Noise Floor H H, Noise Floor H, Noise Floor H, Noise Floor

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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08/12/02	FCC	Measurem	ent Formioon Mo			n Field	C:40								
Compile	ance Ce	runcation	Services, Mo	rgan H	шОре	en Field	Site								
Test Eng	gr:		Frank Ibrahim												
Project #	#:		02U1644-1												
Compan EUT D-	y:		W-Link System	1S	DOI A 1										
EUT Des	scrip.: м.		802.11 a/b/g D	uai Band	PCI Ad	apter									
EUI M/. Test Tar	aet:		FCC 15 407												
100 101	gen		100 15:107												
Equipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 G	Hz:						
	HP8564	E Analyzer					HP8564E	Analyze	r						
	HP 844	9B Amplifier					HP 11975/	A Ampli	ifier (LO)						
	Cable:	20.0		feet			Cable: IF (nlv (32	ai mixer/ante 21 MHz)	Sung					
		20.0						-, (5-	,						
Peak Me	easurem	ents:				Average	Measure	ments:							
	1 MHz	Resolution Ba	ndwidth				1MHz Res	olution	Bandwidth						
	1MHz V	√ideo Bandwio	lth				10Hz Vide	o Bandy	width						
5.25 GHz	, Turbo M	lode, Internal A	Antenna A1												
5.25 GHz. f	, Turbo M Dist	ode, Internal / Read Pk	Antenna A1 Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
5.25 GHz f GHz	, Turbo M Dist feet	lode, Internal A Read Pk dBuV	Antenna A1 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
5.25 GHz f GHz 5.250	, Turbo M Dist feet 3.3	Read Pk dBuV 72.3	Antenna A1 Read Avg. dBuV 62.5	AF dB/m 34.8	CL dB 6.0	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 103.6	Avg dBuV/m 93.8	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V
5.25 GHz f GHz 5.250 10.500	, Turbo M Dist feet 3.3 3.3	Read Pk dBuV 72.3 40.3	Antenna A1 Read Avg. dBuV 62.5 28.2	AF dB/m 34.8 39.2	CL dB 6.0 11.9	Amp dB 0.0 -34.4	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 103.6 48.5	Avg dBuV/m 93.8 36.3	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V V, Noise Floor
5.25 GHz f GHz 5.250 10.500 15.750 26.000	, Turbo M Dist feet 3.3 3.3 3.3 3.3	Read Pk dBuV 72.3 40.3 20.5	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 20.2	AF dB/m 34.8 39.2 38.8	CL dB 6.0 11.9 15.4	Amp dB 0.0 -34.4 -34.0 25.1	D Corr dB -9.5 -9.5 -9.5	0.0 1.0 1.0	Peak dBuV/m 103.6 48.5 51.9	Avg dBuV/m 93.8 36.3 40.5	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB	Avg Mar dB -31.9 -13.5	V V, Noise Floor V, Noise Floor
5.25 GHz f GHz 5.250 10.500 15.750 26.000 5.250	, Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 72.3 40.3 40.2 30.5 71.3	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7	AF dB/m 34.8 39.2 38.8 32.9 34.8	CL dB 6.0 11.9 15.4 23.6 6.0	Amp dB 0.0 -34.4 -34.0 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -22.1 -30.6	Avg Mar dB -31.9 -13.5 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H
5.25 GHz f GHz 5.250 10.500 15.750 26.000 5.250 10.500	, Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Read Pk dBuV 72.3 40.3 40.2 30.5 71.3 42.0	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2	CL dB 6.0 11.9 15.4 23.6 6.0 11.9	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 0.0 1.0	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2	Pk Mar dB -22.1 -30.6	Avg Mar dB -31.9 -13.5 -18.8 -30.0	V V, Noise Floor V, Noise Floor V, Noise Floor H H
5.25 GHz f GHz 5.250 10.500 15.750 26.000 5.250 10.500 15.750	, Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Read Pk dBuV 72.3 40.3 40.2 30.5 71.3 42.0 40.2	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0	Pk Mar dB -22.1 -30.6 -22.1	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5	V V, Noise Floor V, Noise Floor V, Noise Floor H H H, Noise Floor
5.25 GHz f GHz 5.250 10.500 15.750 26.000 5.250 10.500 15.750 26.000	Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Action Action<	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	 HPF 0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0 1.0 	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 68.2 54.0 54.0	Pk Mar dB -22.1 -30.6 -22.1 -30.6	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H H H, Noise Floor H, Noise Floor
5.25 GHz f GHz 5.250 10.500 15.750 26.000 15.750 26.000	, Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Acceleration Acceleration Read Pk dBuV 72.3 40.3 40.2 30.5 71.3 42.0 40.2 30.5	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0	Pk Mar dB -22.1 -30.6 -22.1 -30.6	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5 -18.8	Notes V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor
5.25 GHz f GHz 5.250 10.500 15.750 26.000 15.750 26.000 15.750 26.000	Turbo M Dist feet 3.3	Read Pk dBuV 72.3 40.3 40.2 30.5 71.3 42.0 40.2 30.5	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3 ent Frequency	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1 Amp	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 1.0 1.0 5ain	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 Avg Lim	Pk Mar dB -22.1 -30.6 -22.1 -30.6 Average I	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5 -18.8 Field Streng	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H, Noise Floor th Limit
5.25 GHz f GHz 5.250 10.500 15.750 26.000 15.750 26.000	Turbo M Dist feet 3.3 5 Dist	Read Pk dBuV 72.3 40.3 30.5 71.3 42.0 40.2 30.5 71.3 42.0 40.2 30.5 71.3 42.0 40.2 30.5 Measurement Distance to	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3 ent Frequency Antenna	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -35.1 0.0 -35.1 -34.4 -34.0 -35.1 Amp D Corr	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 5ain Correc	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4 ct to 3 meter	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 54.0 Avg Lim Pk Lim	Pk Mar dB -22.1 -30.6 -22.1 -30.6 Average H Peak Field	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5 -18.8 Field Strength L	V V, Noise Floor V, Noise Floor V, Noise Floor H
5.25 GHz f GHz 5.250 10.500 15.750 26.000 15.750 26.000	Turbo M Dist feet 3.3	Note Internal A Read Pk dBuV 72.3 40.3 40.2 30.5 71.3 42.0 40.2 30.5 State State Distance to Analyzer R	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3 ent Frequency Antenna teading	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1 Amp D Corr Avg	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average	0.0 1.0 1.0 1.0 1.0 1.0 5.0 1.0 1.0 1.0 1.0 1.0 1.0 5.0 Field S	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4 ct to 3 mete Strength @	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5 35.2 92.0 38.2 40.5 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -22.1 -30.6 -22.1 -30.6 Average I Peak Field Margin vs	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5 -18.8 Field Streng d Strength L s. Average L	Notes V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor h, Noise Floor h, Noise Floor h Limit imit
5.25 GHz f GHz 5.250 10.500 15.750 26.000 15.750 26.000	Turbo M Dist feet 3.3 J.S. f Dist Read AF	A constraint of the second sec	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3 ent Frequency Antenna leading actor	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1 -35.1 Amp D Corr Avg Peak	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	Imps 0.0 1.0 1.0 1.0 1.0 1.0 5.0 1.0 5.0 5.0 5.1 1.0 1.0 1.0 5.0 5.0 5.1 5.2 5.3 5.4 5.5	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4 science 6 6 7 7 6 7 6 7 6 7 7 7 8 7 8 7 8 7 8 8 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Avg dBuV/m 93.8 36.3 40.5 35.2 92.0 38.2 40.5 35.2 40.5 35.2 2 8 7 8 3 m ngth	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -22.1 -30.6 -22.1 -30.6 Average I Peak Field Margin vs Margin vs	Avg Mar dB -31.9 -13.5 -18.8 -30.0 -13.5 -18.8 Field Strength L s. Average L s. Peak Limi	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H. H, Noise Floor H. H, Noise Floor H H, Noise Floor th Limit imit t
5.25 GHz f GHz 5.250 10.500 15.750 26.000 5.250 10.500 15.750 26.000	Turbo M Dist feet 3.3 ft Dist Read AF CL	tode, Internal A Read Pk dBuV 72.3 40.3 40.2 30.5 71.3 42.0 40.2 30.5 71.3 42.0 40.2 30.5 8 8 42.0 40.2 30.5 8 8 42.0 40.2 40.2 30.5 7 1.3 42.0 40.2 40.2 40.2 40.2 40.2 40.2 40.2	Antenna A1 Read Avg. dBuV 62.5 28.2 28.8 22.3 60.7 30.0 28.8 22.3 ent Frequency Antenna teading tetor	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1 Amp D Corr Avg Peak HPF	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 5.0 1.0 1.0 1.0 1.0 1.0 1.0 5.0 5.0 1.0 1.0 1.0 1.0 1.0 5.0 1.0	Peak dBuV/m 103.6 48.5 51.9 43.4 102.6 50.2 51.9 43.4 to 30.2 51.9 43.4 to 3 mete Strength @ k Field Stre r	Avg dBuV/m 93.8 36.3 40.5 33.2 92.0 38.2 40.5 35.2 2 87.3 3 m .ngth	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -22.1 -30.6 -22.1 -30.6 Average I Peak Field Margin vs Margin vs	Avg Mar dB 	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor th

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Complia	FCC ance Ce	Measuremertification S	ent Services, Mo	organ H	ill Op	en Field	Site								
Test Eng	gr:	Frank Ibrahin	n												
Project #	#:	02U1644-1													
Compan	y:	W-Link Syste	ems												
EUT Des	scrip.:	802.11 a/b/g l	Dual Band PCI	Adapter											
EUT M/	N:	PC22													
Fest Tar	get:	FCC 15.407													
Equipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 G	Hz:						
	HP8564	E Analyzer					HP8564E	Analyze	r						
	HP 844	9B Amplifier					HP 11975.	A Ampli	fier (LO)						
	EMCO	3115 Antenna		c .			HP 11970	K Extern	al mixer/ante	enna					
	Cable:	20.0		reet			Cable: IF (лиу (32	1 MHZ)						
Peak Me	osurem	onte				Average	Measure	ments							
Cak Mit	1 MHz	Resolution Bar	ndwidth			Average	1MHz Res	olution	Bandwidth						
			ht.				10Hz Vide	o Bandy	width						
	1MHz V	video Bandwic	101												
	1MHz V	video Bandwic	101												
.29 GHz,	1MHz V , Turbo M	lode, Internal A	Antenna A1												
.29 GHz, f	1 MHz V , Turbo M	Iode, Internal A	Antenna A1 Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
.29 GHz, f GHz	1MHz V , Turbo M Dist feet	Iode, Internal A Read Pk dBuV	Antenna A1 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
29 GHz, f GHz 5.290	1MHz Turbo M Dist feet 3.3	Iode, Internal A Read Pk dBuV 71.5	Antenna A1 Read Avg. dBuV 61.0	AF dB/m 34.8	CL dB 6.0	Amp dB 0.0	D Corr dB -9.5	HPF 0.0	Peak dBuV/m 102.8	Avg dBuV/m 92.3	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
.29 GHz, f GHz 5.290 10.580	1MHz V , Turbo M Dist feet 3.3 3.3	Iode, Internal A Read Pk dBuV 71.5 40.3	Antenna A1 Read Avg. <u>dBuV</u> 61.0 28.0	AF dB/m 34.8 39.2	CL dB 6.0 11.9	Amp dB 0.0 -34.3	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 102.8 48.6	Avg dBuV/m 92.3 36.3	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB -31.9	Notes V V, Noise Floor
.29 GHz, f GHz 5.290 10.580 15.870	1MHz , Turbo M Dist feet 3.3 3.3 3.3	Iode, Internal A Read Pk dBuV 71.5 40.3 39.2	Antenna A1 Read Avg. <u>dBuV</u> 61.0 28.0 28.5	AF dB/m 34.8 39.2 38.7	CL dB 6.0 11.9 15.5	Amp dB 0.0 -34.3 -34.0	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 102.8 48.6 50.9	Avg dBuV/m 92.3 36.3 40.2	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB	Avg Mar dB -31.9 -13.8	Notes V V, Noise Floor V, Noise Floor
.29 GHz, f GHz 5.290 10.580 15.870 26.000	1MHz v , Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3	Iode, Internal A Read Pk dBuV 71.5 40.3 39.2 30.5	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3	AF dB/m 34.8 39.2 38.7 32.9	CL dB 6.0 11.9 15.5 23.6	Amp dB 0.0 -34.3 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0	Peak dBuV/m 102.8 48.6 50.9 43.4	Avg dBuV/m 92.3 36.3 40.2 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -23.1 -30.6	Avg Mar dB -31.9 -13.8 -18.8	Notes V V, Noise Floor V, Noise Floor V, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290	1MHz v , Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Addition Addition Index, Internal A Read Pk Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 69.8	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8	AF dB/m 34.8 39.2 38.7 32.9 34.8	CL dB 6.0 11.9 15.5 23.6 6.0	Amp dB 0.0 -34.3 -34.0 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -23.1 -30.6	Avg Mar dB -31.9 -13.8 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290 10.580	IMHz Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Acceleration Acceleration Iode, Internal A Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 40.3	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2	CL dB 6.0 11.9 15.5 23.6 6.0 11.9	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 36.3	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2	Pk Mar dB -23.1 -30.6	Avg Mar dB -31.9 -13.8 -18.8 -31.9	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290 10.580 15.870	IMHz Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	lode, Internal A Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7	CL dB 6.0 11.9 15.5 23.6 6.0 11.9 15.5	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3 -34.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.10 1.10 1.10 1.10 1.10	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 36.3 40.2	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0	Pk Mar dB -23.1 -30.6 -23.1	Avg Mar dB -31.9 -13.8 -18.8 -31.9 -31.9 -13.8	V V, Noise Floor V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290 10.580 15.870 26.000	IMHz Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2 30.5	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5 22.3 59.8 28.0 28.5 22.3	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7 32.9	CL dB 6.0 11.9 15.5 23.6 6.0 11.9 15.5 23.6	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9 43.4	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 36.3 40.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0	Pk Mar dB -23.1 -30.6 -23.1 -30.6	Avg Mar dB -31.9 -13.8 -18.8 -31.9 -13.8 -18.8	V V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290 10.580 15.870 26.000	IMHz Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Ideo Bandwic Ideo Internal A Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2 30.5 Measuremet	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5 22.3 59.8 28.0 28.5 22.3 ent Frequency	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7 39.2 38.7 32.9	CL dB 6.0 11.9 15.5 23.6 6.0 11.9 15.5 23.6	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3 -34.0 -35.1 Amp	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 1.0 1.0 3.0 1.0 1.0 3.0 1.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9 43.4	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 36.3 40.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 54.0 54.0 54.0 54.0	Pk Mar dB -23.1 -30.6 -23.1 -30.6 Average I	Avg Mar dB -31.9 -13.8 -18.8 -31.9 -13.8 -18.8 Field Strengt	V V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290 10.580 15.870 26.000	IMHz Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 5.3 3.3 5.3 3.3 5.3 3.3 5.5 5.5	lode, Internal A Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2 30.5 Measuremet Distance to	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5 22.3 s9.8 28.5 22.3 ent Frequency	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7 32.9 32.9	CL dB 6.0 11.9 15.5 23.6 6.0 11.9 15.5 23.6	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3 -34.0 -35.1 Amp D Corr	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 0.0 1.0 3.0 1.0 0.0 1.0 1.0 1.0 3.0 1.0 1.0 1.0 1.0 3.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9 43.4	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 36.3 40.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 Avg Lim Pk Lim	Pk Mar dB -23.1 -30.6 -23.1 -30.6 Average I Peak Field	Avg Mar dB -31.9 -13.8 -18.8 -31.9 -13.8 -18.8 Field Strength I	V V, Noise Floor V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 5.290 10.580 15.870 26.000	IMHz Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 5.3 3.3 5.3 3.3 5.3 3.3 5.5 5.5 6 Dist Read 1000000000000000000000000000000000000	Ideo Bandwic Ideo Bandwic Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2 30.5 69.8 40.3 39.2 30.5 Measurement Distance to Analyzer R	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5 22.3 ent Frequency 0 Antenna eading	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7 32.9	CL dB 6.0 11.9 15.5 23.6 6.0 11.9 15.5 23.6	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3 -34.0 -35.1 Amp D Corr Δyσ	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 5.0 1.0 1.0 5.0 1.0 1.0 1.0 5.0 1.0 1.0 1.0 1.0 5.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9 43.4 t to 3 mete Strength @	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 36.3 40.2 35.2 91.1 36.3 40.2 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -23.1 -30.6 -23.1 -30.6 Average I Peak Fiel Margin yz	Avg Mar dB -31.9 -13.8 -18.8 -18.8 -18.8 Field Strength L & Average I	V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H, Noise Floor th Limit imit
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 15.870 26.000	1MHz V , Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Meao Bandwic lode, Internal A Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2 30.5 Measurement Distance to Antanya Fa	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5 22.3 ent Frequency Antenna teating	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7 32.9	CL dB 11.9 15.5 23.6 6.0 11.9 15.5 23.6 23.6	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.3 -34.0 -35.1 Amp D Corr Avg Peak	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 3.0 1.0 5.0 1.0 1.0 1.0 1.0 5.0 1.0 1.0 1.0 1.0 3.0 1.0 3.0 1.0 3.0 5.0 1.0 3.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9 43.4 101.1 48.6 50.9 43.4 t to 3 mett strength @ c Field Stre	Avg dBuV/m 92.3 36.3 40.2 91.1 36.3 40.2 35.2 2 878 3 m poth	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -23.1 -30.6	Avg Mar dB -31.9 -13.8 -18.8 -31.9 -13.8 -18.8 Field Strength L S. Average L S. Peak L imi	V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor
5.29 GHz, f GHz 5.290 10.580 15.870 26.000 15.870 26.000	1MHz V , Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	lode, Internal / Read Pk dBuV 71.5 40.3 39.2 30.5 69.8 40.3 39.2 30.5 Measureme Distance to Analyzer R Antenna Fe Cohen Lers	Antenna A1 Read Avg. dBuV 61.0 28.0 28.5 22.3 59.8 28.0 28.5 22.3 ent Frequency Antenna ceading actor	AF dB/m 34.8 39.2 38.7 32.9 34.8 39.2 38.7 32.9	CL dB 6.0 11.9 15.5 23.6 6.0 11.9 15.5 23.6	Amp dB 0.0 -34.3 -34.0 -35.1 0.0 -34.0 -35.1 Amp D Corr Avg Peak HDE	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 Preamp 0 Distance Average Calculate	HPF 0.0 1.0 1.0 1.0 1.0 3.0 1.0 5.0 1.0 5.0 1.0 1.0 5.0 1.0 5.0 5.0 6.0	Peak dBuV/m 102.8 48.6 50.9 43.4 101.1 48.6 50.9 43.4 tt to 3 mete Strength @ K Field Stre	Avg dBuV/m 92.3 36.3 40.2 35.2 91.1 35.2 91.1 35.2 35.2 3 m angth	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 74.0 84.0 84.0 84.0 84.0 84.0 84.0 84.0 8	Pk Mar dB -23.1 -30.6 -30.6 Average I Peak Field Margin vs Margin vs	Avg Mar dB -31.9 -13.8 -18.8 -31.9 -13.8 -18.8 Field Strengt d Strength L s. Average L s. Peak Limi	V V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor H. Noise Floor H. Noise Floor th Limit imit imit

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08/12/02 FCC Measurement

Compl	liance Ce	ertification	Services,	Morgan Hil	ll Open Field Sit	e

feet

Test Engr:	Frank Ibrahim
Project #:	02U1644-1
Company:	W-Link Systems
EUT Descrip.:	802.11 a/b/g Dual Band PCI Adapter
EUT M/N:	PC22
Test Target:	FCC 15.407

Equipment for 1-22 GHz: HP8564E Analyzer HP 8449B Amplifier

EMCO 3115 Antenna Cable: 20.0 Cable:

Equipment for 22 - 58 GHz:

HP8564E Analyzer HP 11975A Amplifier (LO) HP 11970K External mixer/antenna Cable: IF Only (321 MHz)

Peak Measurements: 1 MHz Resolution Bandwidth 1 MHz Video Bandwidth

Average Measurements: 1MHz Resolution Bandwidth 10Hz Video Bandwidth

5.76 GHz,	Turbo M	lode,	Internal A	Anter	nna A1
-		_		_	

f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
5.760	3.3	66.8	56.5	35.3	8.5	0.0	-9.5	0.0	101.1	90.8					v
11.520	3.3	39.0	28.3	39.7	12.4	-33.9	-9.5	1.0	48.7	38.0	74.0	54.0	-25.3	-16.0	V, Noise Floor
17.280	3.3	38.2	28.5	44.0	16.6	-32.8	-9.5	1.0	57.5	47.8		68.2		-20.4	V, Noise Floor
26.000	3.3	30.5	22.3	32.9	23.6	-35.1	-9.5	1.0	43.4	35.2	74.0	54.0	-30.6	-18.8	V, Noise Floor
5.760	3.3	71.2	61.5	35.3	8.5	0.0	-9.5	0.0	105.5	95.8					Н
11.520	3.3	39.0	28.3	39.7	12.4	-33.9	-9.5	1.0	48.7	38.0	74.0	54.0	-25.3	-16.0	H, Noise Floor
17.280	3.3	38.2	28.5	44.0	16.6	-32.8	-9.5	1.0	57.5	47.8		68.2		-20.4	H, Noise Floor
26.000	3.3	30.5	22.3	32.9	23.6	-35.1	-9.5	1.0	43.4	35.2	74.0	54.0	-30.6	-18.8	H, Noise Floor
	f	Measureme	ent Frequency	v		Amp	Preamp (Gain				Avg Lim	Average F	ield Strengt	th Limit
	Dist	Distance to	Antenna			D Corr	Distance	Correc	t to 3 mete	ers		Pk Lim	Peak Field	Strength L	imit
	Read	Analyzer R	Peading			Δνσ	Average	Field S	trength @	3 m		Avg Mar	Margin vs	Average I	imit
	A T	7 maryzer 1	couding				A la la	1 10101	T. 110	5 111		ning initia	intergin vo	. nivelage L	
	AF	Antenna Fa	actor			Peak	Calculate	ed Peak	Field Stre	ngth		Pk Mar	Margin vs	. Peak Limi	t
	CL	Cable Loss				HPF	High Pas	s Filter							
							-								

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Compli	FCC ance Ce	Measuremertification S	ent Services, Mo	organ H	ill Op	en Field	Site								
Equipment for 1-22 GHz: Equipment for 22 - 58 GHz: HP8564E Analyzer HP8564E Analyzer HP8564E Analyzer HP8564E Analyzer HP8564E Analyzer HP8564E Analyzer HP8564E Analyzer HP1075A Ampifier (LO) HP1075A Ampifier (Test Eng Project = Compan EUT De EUT M/ Test Tar	gr: #: ny: scrip.: 'N: rget:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g I PC22 FCC 15.407	n ms Dual Band PCI	Adapter											
Peak Mark zersolution Bandwidth Average Measurements: IMPR zersolution Bandwidth IMPR zersolution Bandwidth S.80 IMPR zersolution Bandwidth IMPR zersolution Bandwidth IMPR zersolution Semdwidth BBRV/m dBuV/m	Equipm	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E . HP 11975, HP 11970 Cable: IF (- 58 G Analyze A Ampli K Exterr Only (32	Hz: r fier (LO) nal mixer/ante 1 MHz)	nna					
Sold Pictor Internal Autennal Alexandration Alexandration And Pictor CL Amp dB D Corr HPF dB Peak dBuV/m Avg dBuV/m Avg Lim dBuV/m Pk Mar dBuV/m Avg Mar dB Notes 5800 3.3 67.2 57.5 35.3 8.5 0.0 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 V, Noise Floor 11.600 3.3 40.2 28.3 39.7 12.4 -33.9 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 V, Noise Floor 17.400 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 +18.8 V, Noise Floor 5.800 3.3 73.7 62.8 35.3 8.5 0.0 -9.5 1.0 43.4 35.2 74.0 54.0 -24.1 -16.0 H, Noise Floor 11.600 3.3 39.8 28.2	Peak Me	easurem 1 MHz 1 MHz 1 MHz	ents: Resolution Bar Video Bandwid	ndwidth lth			<u>Average</u>	e Measure 1MHz Res 10Hz Vide	ments: olution o Bandy	Bandwidth width						
5.800 3.3 67.2 57.5 35.3 8.5 0.0 9.5 0.0 101.5 91.8 1 1 0.0 V. 11.600 3.3 40.2 28.3 39.7 12.4 -33.9 9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 V. Noise Floor 17.400 3.3 39.8 28.2 44.0 16.7 -32.8 -95.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 V. Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 V. Noise Floor 1.600 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 V. Noise Floor 1.600 3.3 30.5 22.3 32.9 23.6 -35.1	f GHz	Dist	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.600 3.3 40.2 28.3 39.7 12.4 -33.9 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 V, Noise Floor 17.400 3.3 39.8 28.2 44.0 16.7 -32.8 -9.5 1.0 59.9 38.0 74.0 54.0 -24.1 -16.0 V, Noise Floor 0.6000 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -24.1 -16.0 V, Noise Floor 5.800 3.3 73.7 62.8 35.3 8.5 0.0 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 H, Noise Floor 11.600 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 H, Noise Floor 11.000 3.3 30.5 22.3 32.9	5.800	3.3	67.2	57.5	35.3	8.5	0.0	-9.5	0.0	101.5	91.8					V
17.400 3.3 39.8 28.2 44.0 16.7 -32.8 -9.5 1.0 59.3 47.6 68.2 -20.6 V, Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 V, Noise Floor 5.800 3.3 17.7 62.8 35.3 8.5 0.0 -9.5 0.0 108.0 97.1 Image: Comparison of the comparison		3.3	40.2	28.3	39.7	12.4	-33.9	-9.5	1.0	49.9	38.0	74.0	54.0	-24.1	-16.0	V. Noise Floor
26.000 3.3 30.5 22.3 32.9 23.6 -3.51 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 V, Noise Floor 5.800 3.3 73.7 62.8 35.3 8.5 0.0 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 V, Noise Floor 11.600 3.3 73.7 62.8 35.3 8.5 0.0 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 H, Noise Floor 17.400 3.3 40.2 28.3 39.7 12.4 -33.9 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 H, Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 H, Noise Floor 26.000 3.3 30.5 22.3 32.9 <td< td=""><td>11.600</td><td></td><td></td><td></td><td></td><td>1/2</td><td>22.0</td><td>1</td><td>1.0</td><td></td><td></td><td></td><td>10.0</td><td></td><td>20.6</td><td></td></td<>	11.600					1/2	22.0	1	1.0				10.0		20.6	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	11.600 17.400	3.3	39.8	28.2	44.0	10.7	-32.0	-9.5	1.0	59.3	47.6		68.2		-20.0	V, Noise Floor
11.600 3.3 40.2 28.3 39.7 12.4 -3.39 -9.5 1.0 49.9 38.0 74.0 54.0 -24.1 -16.0 H, Noise Floor 17.400 3.3 39.8 28.2 44.0 16.7 -32.8 -9.5 1.0 59.3 47.6 68.2 -20.6 H, Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 -0.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 H, Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 H, Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 H, Noise Floor Distance to Antenna D Corr Distance Correct to 3 meters Pk Lim Peak Field Strength Limit Avg Mar	11.600 17.400 26.000	3.3	39.8 30.5	28.2 22.3	44.0 32.9	23.6	-32.8	-9.5	1.0	59.3 43.4	47.6 35.2	74.0	68.2 54.0	-30.6	-20.6	V, Noise Floor V, Noise Floor
17.400 3.3 39.8 28.2 44.0 16.7 -32.8 -9.5 1.0 59.3 47.6 68.2 -20.6 H, Noise Floor 26.000 3.3 30.5 22.3 32.9 23.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 H, Noise Floor f Measurement Frequency Amp Preamp Gain Arg Average Field Strength Limit Peak Field Strength Limit Dist Distance to Antenna D Corr Distance Correct to 3 meters Pk Lim Peak Field Strength Limit AF Analyzer Reading Avg Average Field Strength @ 3 m Avg Mar Margin vs. Average Limit AF Antenna Factor Peak Calculated Peak Field Strength Pk Mar Margin vs. Peak Limit	11.600 17.400 26.000 5.800	3.3 3.3 3.3	39.8 30.5 73.7	28.2 22.3 62.8	44.0 32.9 35.3	23.6 8.5	-32.8 -35.1 0.0	-9.5 -9.5 -9.5	1.0 1.0 0.0	59.3 43.4 108.0	47.6 35.2 97.1	74.0	68.2 54.0	-30.6	-20.6 -18.8	V, Noise Floor V, Noise Floor H
26.000 3.3 30.5 22.3 32.9 25.6 -35.1 -9.5 1.0 43.4 35.2 74.0 54.0 -30.6 -18.8 H, Noise Floor f Measurement Frequency Amp Preamp Gain Avg Lim Average Field Strength Limit Dist Distance to Antenna D Corr Distance Correct to 3 meters Pk Lim Peak Field Strength Limit AF Andayzer Reading Avg Average Field Strength @ 3 m Avg Mar Margin vs. Average Limit AF Antenna Factor Peak Calculated Peak Field Strength Pk Mar Margin vs. Peak Limit	11.600 17.400 26.000 5.800 11.600	3.3 3.3 3.3 3.3 3.3	39.8 30.5 73.7 40.2	28.2 22.3 62.8 28.3	44.0 32.9 35.3 39.7	23.6 8.5 12.4	-32.8 -35.1 0.0 -33.9	-9.5 -9.5 -9.5 -9.5	1.0 1.0 0.0 1.0	59.3 43.4 108.0 49.9	47.6 35.2 97.1 38.0	74.0	68.2 54.0 54.0	-30.6	-20.6 -18.8 -16.0	V, Noise Floor V, Noise Floor H H, Noise Floor
CL Cable Lease UDE Uick Dave Eilter	11.600 17.400 26.000 5.800 11.600 17.400 26.000	3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	39.8 30.5 73.7 40.2 39.8 30.5	28.2 22.3 62.8 28.3 28.2 22.3	44.0 32.9 35.3 39.7 44.0 32.9	16.7 23.6 8.5 12.4 16.7 23.6	-32.8 -35.1 0.0 -33.9 -32.8 -35.1	-9.5 -9.5 -9.5 -9.5 -9.5	1.0 1.0 0.0 1.0 1.0	59.3 43.4 108.0 49.9 59.3 43.4	47.6 35.2 97.1 38.0 47.6 35.2	74.0	68.2 54.0 54.0 68.2 54.0	-30.6	-20.6 -18.8 -16.0 -20.6	V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor

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Notes

V. Noise Floor

Н H, Noise Floor

08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

•			· · ·	0	•										
Fest Eng	r:	Frank Ibrahii	m												
Project #	f:	02U1644-1													
Compan	y:	W-Link Syste	ems												
EUT De	scrip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/	N:	PC22													
Test Tar	get:	FCC 15.407													
Equipmo Peak Me	ent for 1 HP856 HP 844 EMCO Cable: asurem 1 MHz 1 MHz	-22 GHz: HE Analyzer 9B Amplifier 3115 Antenna 20.0 ents: Resolution Ba Video Bandwie	ndwidth dth	feet		<u>Equipm</u>	ent for 22 HP8564E A HP 11975A HP 11970H Cable: IF C Measuren 1MHz Res 10Hz Vide	- 58 GI Analyze A Ampli K Extern Dnly (32 ments: olution I o Bandy	Hz: r fier (LO) aal mixer/ante 1 MHz) Bandwidth width	enna					
5.18 GHz	Normal	Mode, Interna	Antenna A2	AE	CI	A	DC	IIDE	Derle	4	DL L	A	DL M	Arres Marres	
I CIIa	Dist	dD.,V	Read Avg.	AF dD/m		Amp	DCorr	HPF	Peak dBuV/m	AVg dD:://m	PK LIM	AVg Lim	PK Mar	Avg Mar	
GIIZ	leet	uBuv	uBuv	uB/III	ub	ub	ub		uBu v/III	uBu v/III	uBu v/III	uBu v/III	ub	ub aaa	
10.300	3.5	43.8	30.2	39.5	11.8	-34./	-9.5	1.0	56.4	38.3	74.0	54.0	17.6	-29.9	V
10.360	3.3	43.8	30.0	39.5	11.8	-34.7	-9.5	1.0	51.9	38.1	74.0	68.2	-17.0	-30.1	•
15.540	3.3	45.0	34.5	38.9	15.2	-33.9	-9.5	1.0	56.7	46.2	74.0	54.0	-17.3	-7.8	H
	f Dist Read AF CL	Measurema Distance to Analyzer F Antenna Fa Cable Loss	ent Frequency o Antenna Reading actor	y		Amp D Corr Avg Peak HPF	Preamp O Distance Average Calculate High Pas	Gain Correc Field S ed Peak is Filter	ct to 3 mete Strength @ c Field Stre r	ers 3 m ength		Avg Lim Pk Lim Avg Mar Pk Mar	Average F Peak Field Margin vs Margin vs	Field Strength d Strength Li Average Li Peak Limit	h Limit mit imit

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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Fest Eng Project # Company EUT Des EUT M/N Fest Tarş	r: : y: crip.: N: get:		Frank Ibrahim 02U1644-1 W-Link System 802.11 a/b/g D PC22 FCC 15.407	ns ual Band	PCI Ad	apter									
<u>3quipme</u>	HP8564 HP 8449 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E / HP 11975/ HP 11970F Cable: IF C	- 58 G Analyze A Ampli K Exterr Only (32	Hz: r ifier (LO) nal mixer/ante 21 MHz)	nna					
<u>Peak Me</u> :	asurem 1 MHz 1 MHz V	ents: Resolution Bar √ideo Bandwic	ndwidth lth			<u>Average</u>	Measurer 1MHz Res 10Hz Vide	ments: olution o Bandy	Bandwidth width						
Peak Me: 5.26 GHz, 5 f GHz	asureme 1 MHz 1 1MHz V Normal 1 Dist feet	ents: Resolution Bai Video Bandwid Mode, Internal Read Pk dBuV	ndwidth hth Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	Measurer 1MHz Reso 10Hz Vide D Corr dB	ments: olution o Bandy HPF	Bandwidth width Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
Peak Me: .26 GHz, f GHz 10.520	asureme 1 MHz 1 1MHz V Normal 1 Dist feet 3.3	ents: Resolution Bau Video Bandwid Mode, Internal Read Pk dBuV 47.5	ndwidth hth Antenna A2 Read Avg. dBuV 33.5	AF dB/m 39.2	CL dB	Average Amp dB -34.4	Measurer 1MHz Reso 10Hz Vide D Corr dB -9.5	ments: olution o Bandy HPF 1.0	Bandwidth width Peak dBuV/m 55.7	Avg dBuV/m 41.7	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB -26.5	Notes
26 GHz, f GHz 10.520 15.780	asurem 1 MHz 1 1MHz V Normal 1 Dist feet 3.3 3.3	ents: Resolution Bandwid Video Bandwid Mode, Internal Read Pk dBuV 47.5 45.5	Antenna A2 Read Avg. dBuV 33.5 34.2	AF dB/m 39.2 38.8	CL dB 11.9 15.4	Average Amp dB -34.4 -34.0	Measurei 1MHz Ress 10Hz Vide D Corr dB -9.5 -9.5	ments: olution to Bandy HPF 1.0 1.0	Bandwidth width Peak dBuV/m 55.7 57.2	Avg dBuV/m 41.7 45.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB -16.8	Avg Mar dB -26.5 -8.1	Notes V V, Noise Floor
26 GHz, f GHz 10.520 15.780 10.520 15.780	asurem 1 MHz 1MHz 1MHz Normal Dist feet 3.3 3.3 3.3	ents: Resolution Bandwice Mode, Internal Read Pk dBuV 47.5 45.5 45.7 45.5	Antenna A2 Read Avg. dBuV 33.5 34.2 31.8 34.2	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9	Average Amp dB -34.4 -34.0 -34.4 -34.0	Measuret 1MHz Rest 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5	ments: olution to Bandy HPF 1.0 1.0 1.0 1.0	Bandwidth width Peak dBuV/m 55.7 57.2 53.8 57.2	Avg dBuV/m 41.7 45.9 40.0 45.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0	Pk Mar dB -16.8	Avg Mar dB -26.5 -8.1 -28.2 -8.1	Notes V V, Noise Floor H H Noise Floor

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Complia Fest Eng Project # Company EUT Des EUT M/I Test Tar;	nce Ce r: : y: crip.: N: get:	rtification S Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g I PC22 FCC 15.407	Services, Mo n ms Dual Band PCI	organ H Adapter	ill Ope	en Field	Site								
<u>Equipme</u> Peak Me	nt for 1 HP8564 HP 8449 EMCO Cable: asuremon 1 MHz 1	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0 ents: Resolution Bar	ndwidth	feet		<u>Equipm</u> <u>Average</u>	ent for 22 HP8564E / HP 11975/ HP 11970/ Cable: IF C Measurer 1MHz Res	- 58 Gl Analyzer A Ampli C Extern Only (32 ments: olution 1	Hz: r fier (LO) al mixer/ante 1 MHz) Bandwidth	enna					
	1MHz V	/ideo Bandwid	ith				10Hz Vide	o Bandv	vidth						
5.32 GHz, f GHz	1MHz V Normal 1 Dist feet	Video Bandwid Mode, Internal Read Pk dBuV	Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	10Hz Vide	o Bandv	vidth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
.32 GHz, f GHz 10.640	1MHz V Normal I Dist feet 3.3	Video Bandwid Mode, Internal Read Pk dBuV 44.0	Antenna A2 Read Avg. dBuV 33.0	AF dB/m 39.2	CL dB	Amp dB -34,3	10Hz Vide D Corr dB -9.5	o Bandv HPF 1.0	vidth Peak dBuV/m 51.6	Avg dBuV/m 37.8	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB -22.4	Avg Mar dB -16.2	Notes
32 GHz, f GHz 10.640 15.960	1MHz V Normal I Dist feet 3.3 3.3	/ideo Bandwid Mode, Internal Read Pk dBuV 44.0 43.8	Antenna A2 Read Avg. <u>dBuV</u> <u>33.0</u> <u>33.6</u>	AF dB/m 39.2 38.7	CL dB 11.9 15.6	Amp dB -34.3 -34.0	10Hz Vide D Corr dB -9.5 -9.5	o Bandv HPF 1.0 1.0	vidth Peak dBuV/m 51.6 55.6	Avg dBuV/m 37.8 45.4	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 54.0	Pk Mar dB -22.4 -18.4	Avg Mar dB -16.2 -8.6	Notes V V, Noise Floor
.32 GHz, f GHz 10.640 15.960 10.640 15.960	IMHz Normal I Dist feet 3.3 3.3 3.3 3.3	/ideo Bandwid Mode, Internal Read Pk dBuV 44.0 43.8 43.0 43.8	Antenna A2 Read Avg. dBuV 33.0 33.6 29.8 33.6	AF dB/m 39.2 38.7 39.2 28.7	CL dB 11.9 15.6 11.9	Amp dB -34.3 -34.0 -34.3 24.0	10Hz Vide D Corr dB -9.5 -9.5 -9.5 0.5	o Bandy HPF 1.0 1.0 1.0	Peak dBuV/m 51.6 55.6 51.3	Avg dBuV/m 37.8 45.4 38.1	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0	Pk Mar dB -22.4 -18.4 -22.7 18.4	Avg Mar dB -16.2 -8.6 -15.9 8.6	Notes V V, Noise Floor H H Noise Floor

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Notes

V, Noise Floor

Н H, Noise Floor

08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Test Fne															
LOU LIN	r:	Frank Ibrahir	n												
Project #	; ;	02U1644-1													
Compan	y:	W-Link Syste	ems												
EUT De	crip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/	N:	PC22													
Test Tar	get:	FCC 15.407													
Equipme Peak Me	ent for 1 HP8564 HP 844 EMCO Cable: asurem 1 MHz	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0 ents: Resolution Ba	ndwidth	feet		<u>Equipm</u> <u>Average</u>	ent for 22 HP8564E A HP 11975A HP 11970H Cable: IF C Measured 1MHz Res 10Hz Vide	- 58 Gl Analyze A Ampli K Extern Only (32 ments: olution l	Hz: r fier (LO) al mixer/ante 1 MHz) Bandwidth	enna					
5 745 CU	N	Mada Intern	-1 Antonno A 2				10112 1100	o banuv	width						
5.745 GH	z, Norma	Mode, Intern	al Antenna A2	AF	CI	4.000	D Com		Pook	Ava	Dk I im	Avalim	Dr Mon	Avg Mor	
5.745 GH f GHz	z, Norma Dist feet	Mode, Intern Read Pk dBuV	al Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	
5.745 GH f GHz 11.490	z, Norma Dist feet 3,3	Mode, Intern Read Pk dBuV 42.8	al Antenna A2 Read Avg. dBuV 28.3	AF dB/m 39.7	CL dB	Amp dB -33.9	D Corr dB -9.5	HPF	Peak dBuV/m	Avg dBuV/m 39.4	Pk Lim dBuV/m	Avg Lim dBuV/m 54.0	Pk Mar dB -22.3	Avg Mar dB	
5.745 GH f GHz 11.490 17.235	z, Norma Dist feet 3.3 3.3	Mode, Interna Read Pk dBuV 42.8 45.8	al Antenna A2 Read Avg. dBuV 28.3 28.5	AF dB/m 39.7 44.0	CL dB 12.3 16.6	Amp dB -33.9 -32.8	D Corr dB -9.5 -9.5	HPF 1.0 1.0	Peak dBuV/m 51.7 65.1	Avg dBuV/m 39.4 47.8	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -22.3	Avg Mar dB -14.6 -20.4	V
5.745 GH f GHz 11.490 17.235 11.490	z, Norma Dist feet 3.3 3.3 3.3	Mode, Interna Read Pk dBuV 42.8 45.8 42.0	al Antenna A2 Read Avg. <u>dBuV</u> 28.3 28.5 29.3	AF dB/m 39.7 44.0 39.7	CL dB 12.3 16.6 12.3	Amp dB -33.9 -32.8 -33.9	D Corr dB -9.5 -9.5 -9.5	HPF 1.0 1.0	Peak dBuV/m 51.7 65.1 51.7	Avg dBuV/m 39.4 47.8 39.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -22.3 -22.3	Avg Mar dB -14.6 -20.4 -15.0	V,
5.745 GH f GHz 11.490 17.235 11.490 17.235	z, Norma Dist feet 3.3 3.3 3.3 3.3 3.3	Mode, International I	al Antenna A2 Read Avg. <u>dBuV</u> 28.3 28.5 29.3 28.5 29.3 28.5	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0 1.0	Peak dBuV/m 51.7 65.1 51.7 65.1	Avg dBuV/m 39.4 47.8 39.0 47.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -22.3 -22.3	Avg Mar dB -14.6 -20.4 -15.0 -20.4	V. H.

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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Coat Eng			Encels Breaking												
rojoot f	r:		Prank Ibranim												
⁷ omnan			W-I ink System	ne											
EUT De	crip.:		802.11 a/b/g D	ual Band l	PCI Adapte	er									
EUT M/	N:		PC22												
fest Tar	get:		FCC 15.407												
quipm	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 G	Hz:						
	HP8564	E Analyzer					HP8564E	Analyze	r						
	HP 844	9B Amplifier					HP 11975/	A Ampli	ifier (LO)						
	EMCO Cable:	3115 Antenna 20.0		feet			Cable: IE (S Extern	nal mixer/ante	enna					
	cable.	20.0		icci			cable. If c	July (52	.1 10112.)						
eak Me	asurem	ents:				Average	Measure	ments:							
	1 MHz	Resolution Bar	adwidth				IN GIL D	1.1							
			id widdi				IMHZ Res	olution	Bandwidth						
	1MHz V	/ideo Bandwic	lth				10Hz Vide	o Bandy	Bandwidth width						
.785 GH	1MHz V z, Normal	/ideo Bandwic Mode, Intern	lth al Antenna A2				10Hz Vide	olution to Bandy	Bandwidth width						
.785 GH	1MHz V z, Normal Dist	Video Bandwid Mode, Intern Read Pk	al Antenna A2 Read Avg.	AF	CL	Amp	10Hz Vide	Bandv	Bandwidth width Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
785 GH f GHz	1MHz V z, Normal Dist feet	Video Bandwid Mode, Intern Read Pk dBuV	al Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	10Hz Vide	Bandy	Bandwidth width Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
785 GH f GHz 11.570	1MHz V z, Normal Dist feet 3.3	Video Bandwid Mode, Intern Read Pk dBuV 43.0	al Antenna A2 Read Avg. dBuV 28.3	AF dB/m 39.7	CL dB 12.3	Amp dB -33.9	D Corr dB -9.5	HPF 1.0	Bandwidth width Peak dBuV/m 51.7	Avg dBuV/m 37.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0	Pk Mar dB -22.3	Avg Mar dB -16.1	Notes V
785 GH f 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 2.2	Video Bandwid Mode, Intern Read Pk dBuV 43.0 43.7	al Antenna A2 Read Avg. <u>dBuV</u> 28.3 28.5 20.0	AF dB/m 39.7 44.0	CL dB 12.3 16.6	Amp dB -33.9 -32.8 22.0	D Corr dB -9.5 -9.5	HPF 1.0 1.0	Bandwidth width Peak dBuV/m 51.7 63.0	Avg dBuV/m 37.9 47.8 28.6	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -22.3	Avg Mar dB -16.1 -20.4	Notes V V, Noise Floor
785 GH f GHz 11.570 17.355 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3	Video Bandwic Mode, Intern Read Pk dBuV 43.0 43.7 42.0 43.7	Read Avg. dBuV 28.3 28.5 29.0 28.5	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8	D Corr dB -9.5 <th< th=""><th>HPF 1.0 1.0 1.0 1.0 1.0</th><th>Bandwidth width Peak dBuV/m 51.7 63.0 51.6 63.0</th><th>Avg dBuV/m 37.9 47.8 38.6 47.8</th><th>Pk Lim dBuV/m 74.0 74.0</th><th>Avg Lim dBuV/m 54.0 68.2 54.0 68.2</th><th>Pk Mar dB -22.3 -22.4</th><th>Avg Mar dB -16.1 -20.4 -15.4 -20.4</th><th>V V, Noise Floor H, Noise Floor</th></th<>	HPF 1.0 1.0 1.0 1.0 1.0	Bandwidth width Peak dBuV/m 51.7 63.0 51.6 63.0	Avg dBuV/m 37.9 47.8 38.6 47.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -22.3 -22.4	Avg Mar dB -16.1 -20.4 -15.4 -20.4	V V, Noise Floor H, Noise Floor
785 GH f GHz 11.570 17.355 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 3.3 3.3	Video Bandwic Mode, Intern Read Pk dBuV 43.0 43.7 42.0 43.7	al Antenna A2 Read Avg. dBuV 28.3 28.5 29.0 28.5	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0 1.0	Bandwidth width Peak dBuV/m 51.7 63.0 51.6 63.0	Avg dBuV/m 37.9 47.8 38.6 47.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -22.3 -22.4	Avg Mar dB -16.1 -20.4 -15.4 -20.4	V V, Noise Floor H H, Noise Floor
785 GH f GHz 11.570 17.355 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 3.3 3.3 5.3 f	Video Bandwice Mode, Intern Read Pk dBuV 43.0 43.7 42.0 43.7 43.7	al Antenna A2 Read Avg. dBuV 28.3 28.5 29.0 28.5 ent Frequence	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp (HPF 1.0 1.0 1.0 1.0 3.0 1.0 1.0 1.0	Bandwidth width Peak dBuV/m 51.7 63.0 51.6 63.0	Avg dBuV/m 37.9 47.8 38.6 47.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim	Pk Mar dB -22.3 -22.4 Average F	Avg Mar dB -16.1 -20.4 -15.4 -20.4 ?ield Strengt	V V, Noise Floor H H, Noise Floor h Limit
785 GH f GHz 11.570 17.355 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 3.3 5.3 f Dist	Video Bandwice Mode, Intern Read Pk dBuV 43.0 43.7 42.0 43.7 Measureme Distance to	al Antenna A2 Read Avg. dBuV 28.3 28.5 29.0 28.5 ent Frequency Antenna	AF dB/m 39.7 44.0 39.7 44.0 y	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr	D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance	HPF 1.0 1.0 1.0 1.0 3.0 1.0 Correct	Bandwidth width Peak dBuV/m 51.7 63.0 51.6 63.0 ct to 3 meter	Avg dBuV/m 37.9 47.8 38.6 47.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 54.0 68.2 Avg Lim Pk Lim	Pk Mar dB -22.3 -22.4 Average F Peak Field	Avg Mar dB -16.1 -20.4 -15.4 -20.4 ?ield Strengt 1 Strength L	Notes V. Noise Floor H H, Noise Floor h Limit imit
785 GH f GHz 11.570 17.355 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 3.3 5.3 f Dist Read	Video Bandwice Mode, Intern Read Pk dBuV 43.0 43.7 42.0 43.7 42.0 43.7 42.0 43.7 42.0 43.7	al Antenna A2 Read Avg. dBuV 28.3 28.5 29.0 28.5 ent Frequency Antenna eading	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg	D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp O Distance Average	HPF 1.0 1.0 1.0 1.0 1.0 1.0 Sain Correct Field S	Bandwidth Peak dBuV/m 51.7 63.0 51.6 63.0 ct to 3 mete Strength @	Avg dBuV/m 37.9 47.8 38.6 47.8 ers 3 m	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar	Pk Mar dB -22.3 -22.4 Average H Peak Field Margin vs	Avg Mar dB -16.1 -20.4 -15.4 -20.4 Field Strength L Strength L S. Average L	Notes V. Noise Floor H H. Noise Floor h Limit imit
785 GH f GHz 11.570 17.355 11.570 17.355	1MHz V z, Normal Dist feet 3.3 3.3 3.3 5.3 J.3 J.3 J.3 J.3 J.3 J.3 J.3 J.3 J.3 J	Video Bandwice Mode, Intern Read Pk dBuV 43.0 43.7 42.0 43.7 42.0 43.7 Measurement Distance to Analyzer R Antenna Fa	Antenna A2 Read Avg. dBuV 28.3 28.5 29.0 28.5 29.0 28.5 ent Frequency Antenna ceading actor	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.3 16.6 12.3 16.6	Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg Peak	D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp O Distance Average Calculate	HPF 1.0 1.0 1.0 1.0 1.0 1.0 Correct Field S ed Peal	Bandwidth width Peak dBuV/m 51.7 63.0 51.6 63.0 ct to 3 mete Strength @ k Field Stree	Avg dBuV/m 37.9 47.8 38.6 47.8 3 m ength	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -22.3 -22.4 Average F Peak Field Margin vs Margin vs	Avg Mar dB -16.1 -20.4 -15.4 -20.4 Field Strength Strength L Strength L Strength L Strength L Strength L	Notes V V, Noise Floor H H, Noise Floor h Limit imit imit t

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08/12/02	FCC	Measurem	ent				a.								
Complia	ance Ce	ertification 8	Services, Mo	rgan H	ill Ope	en Field	Site								
Test Eng	gr:	Frank Ibrahin	n												
Project #	#:	02U1644-1													
Compan	y:	W-Link Syste	ems												
EUT Des	scrip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/I	N:	PC22													
Test Tar	get:	FCC 15.407													
Eauipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E A	Analyzer	r						
	HP 844	9B Amplifier					HP 11975A	Ampli	fier (LO)						
	EMCO	3115 Antenna					HP 11970k	K Extern	al mixer/ant	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
Peak Me	asurem	ents:				Average	e Measurei	nents:							
Peak Me	asurem 1 MHz	<u>ents:</u> Resolution Ba	ndwidth			Average	e Measurer 1MHz Reso	nents: olution l	Bandwidth						
Peak Me	asurem 1 MHz 1 MHz V	<u>ents:</u> Resolution Ba Video Bandwic	ndwidth dth			<u>Average</u>	e Measurer 1MHz Reso 10Hz Video	nents: olution l o Bandy	Bandwidth width						
<u>Peak Me</u> 5 805 GH	asurem 1 MHz 1 MHz V 2. Normal	ents: Resolution Bai Video Bandwid	ndwidth 1th 1al Antenna A2			<u>Average</u>	e Measurer 1MHz Reso 10Hz Video	<u>ments:</u> olution I o Bandv	Bandwidth width						
Peak Me 5.805 GHz f	asurem 1 MHz 1 MHz z, Norma Dist	ents: Resolution Bar Video Bandwic I Mode, Intern Read Pk	ndwidth dth al Antenna A2 Read Avg.	AF	CL	<u>Average</u> Amp	e Measurer 1MHz Reso 10Hz Video D Corr	ments: olution l o Bandy HPF	Bandwidth vidth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
Peak Me .805 GHz f GHz	asurem 1 MHz 1 MHz z, Normal Dist feet	ents: Resolution Bai Video Bandwid I Mode, Intern Read Pk dBuV	ndwidth ith al Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	D Corr dB	ments: olution l o Bandv HPF	Bandwidth width Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
Peak Me .805 GHz f GHz 11.610	asurem 1 MHz 1 MHz z, Normal Dist feet 3.3	ents: Resolution Bau Video Bandwic I Mode, Interm Read Pk dBuV 43.5	ndwidth ath Read Avg. dBuV 30.7	AF dB/m 39.7	CL dB 12.4	Average Amp dB -33.9	e Measurer 1MHz Reso 10Hz Video D Corr dB -9.5	ments: olution 1 o Bandv HPF 1.0	Bandwidth width Peak dBuV/m 53.2	Avg dBuV/m 40.4	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0	Pk Mar dB -20.8	Avg Mar dB -13.6	Notes V
2eak Me 5.805 GHz 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	asurem 1 MHz 1 MHz z, Normal Dist feet 3.3 3.3	ents: Resolution Bai Video Bandwice Mode, Intern Read Pk dBuV 43.5 43.0	ndwidth tth aal Antenna A2 Read Avg. <u>dBuV</u> <u>30.7</u> 28.5	AF dB/m 39.7 44.0	CL dB 12.4 16.7	Average Amp dB -33.9 -32.8	e Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5	nents: olution l o Bandy HPF 1.0 1.0	Bandwidth width Beak dBuV/m 53.2 62.4	Avg dBuV/m 40.4 47.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -20.8	Avg Mar dB -13.6 -20.3	Notes V V, Noise Floor
Peak Me 5.805 GHz 6 6 6 6 7 11.610 17.415 11.610 17.415 11.610	asurem 1 MHz 1 MHz z, Normal Dist feet 3.3 3.3 3.3 3.3	ents: Resolution Bai Video Bandwic I Mode, Intern Read Pk dBuV 43.5 43.0 42.3	ndwidth tth al Antenna A2 Read Avg. dBuV 30.7 28.5 30.0 29.5	AF dB/m 39.7 44.0 39.7	CL dB 12.4 16.7 12.4	Average Amp dB -33.9 -32.8 -33.9	e Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5	nents: blution l o Bandy HPF 1.0 1.0 1.0	Bandwidth width BuV/m 53.2 62.4 52.0	Avg dBuV/m 40.4 47.9 39.7 47.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 (0.2	Pk Mar dB -20.8 -22.0	Avg Mar dB -13.6 -20.3 -14.3 -14.3	Notes V V, Noise Floor H
Peak Me 5.805 GHz 6 GHz 11.610 17.415 11.610 17.415	asurem 1 MHz 1 MHz z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3	ents: Resolution Bai Video Bandwic I Mode, Intern Read Pk dBuV 43.5 43.0 42.3 43.0	ndwidth ith al Antenna A2 Read Avg. dBuV 30.7 28.5 30.0 28.5	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4	Average Amp dB -33.9 -32.8 -33.9 -32.8	Measurer 1MHz Rese 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5	nents: olution l o Bandy HPF 1.0 1.0 1.0 1.0	Bandwidth width BuV/m 53.2 62.4 52.0 62.4	Avg dBuV/m 40.4 47.9 39.7 47.9	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -20.8 -22.0	Avg Mar dB -13.6 -20.3 -14.3 -20.3	V V, Noise Floor H, Noise Floor
Peak Me 5.805 GHz 6 11.610 17.415 11.610 17.415	Dist 1 MHz 1 MHz 1 MHz 1 MHz z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	ents: Resolution Ba Video Bandwice Mode, Intern Read Pk dBuV 43.5 43.0 42.3 43.0	ndwidth hth aal Antenna A2 Read Avg. <u>dBuV</u> 30.7 28.5 30.0 28.5 30.0 28.5	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp	Measurer 1MHz Rese 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	nents: olution I o Bandy HPF 1.0 1.0 1.0 1.0 2 ain	Bandwidth width Peak dBuV/m 53.2 62.4 52.0 62.4	Avg dBuV/m 40.4 47.9 39.7 47.9	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -20.8 -22.0	Avg Mar dB -13.6 -20.3 -14.3 -20.3	Notes V, Noise Floor H, Noise Floor th I imit
2.805 GHz 5.805 GHz 11.610 17.415 11.610 17.415	asurem 1 MHz 1 MHz z, Normal Dist feet 3.3 3.3 3.3 5 f Dist	ents: Resolution Bandwice Mode, Intern Read Pk dBuV 43.5 43.0 42.3 43.0 Measureme Distance to	ndwidth tth aal Antenna A2 Read Avg. <u>dBuV</u> 30.7 28.5 30.0 28.5 ent Frequency	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 -33.9 -32.8 Amp D Corr	Measurer IMHz Ress 10Hz Video D Corr dB -9.5	nents: olution I o Bandw HPF 1.0 1.0 1.0 1.0 5ain	Bandwidth width Peak dBuV/m 53.2 62.4 52.0 62.4 t to 3 metric	Avg dBuV/m 40.4 47.9 39.7 47.9	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim	Pk Mar dB -20.8 -22.0 Average H Peak Field	Avg Mar dB -13.6 -20.3 -14.3 -20.3 Field Strength I	Notes V V, Noise Floor H, Noise Floor th Limit init
2005 GHz 6.805 GHz 11.610 17.415 11.610 17.415	asurem 1 MHz 1 MHz V z, Normal Dist feet 3.3 3.3 3.3 f Dist feed Dist Read	ents: Resolution Bandwice Mode, Intern Read Pk dBuV 43.5 43.0 43.0 Measureme Distance to Analyzer R	ndwidth tth al Antenna A2 Read Avg. dBuV 30.7 28.5 30.0 28.5 ent Frequency o Antenna teading	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg	e Measurer 1MHz Rest 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average	nents: olution I o Bandw HPF 1.0 1.0 1.0 1.0 Correct Field S	Bandwidth width BuV/m 53.2 62.4 52.0 62.4 ct to 3 mete Strength @	Avg dBuV/m 40.4 47.9 39.7 47.9 47.9	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar	Pk Mar dB -20.8 -22.0 Average H Peak Field Margin vs	Avg Mar dB -13.6 -20.3 -14.3 -20.3 Field Strengt d Strengt L	V V. Noise Floor H H, Noise Floor th Limit imit imit
Peak Me 5.805 GHz f GHz 11.610 17.415 11.610 17.415	asurem 1 MHz 1 MHz z, Normal Dist feet 3.3 3.3 3.3 f Dist Read AF	ents: Resolution Bandwice Mode, Intern Read Pk dBuV 43.5 43.0 42.3 43.0 Measurement Distance to Analyzer R Antenna Fe	ndwidth th aal Antenna A2 Read Avg. dBuV 30.7 28.5 30.0 28.5 ent Frequency Antenna teading	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg Peak	Measurer 1MHz Ress 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average Calculate	HPF 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 Correct Field S d Peak	Bandwidth vidth Baudv/m 53.2 62.4 52.0 62.5 52.0 62.5 52.0 62.5 52.0 52.5 52.5 52.5 52.5 52.5 52.5 5	Avg dBuV/m 40.4 47.9 39.7 47.9 47.9 3 m 2 mgth	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -20.8 -22.0 Average F Peak Field Margin vs Margin vs	Avg Mar dB -13.6 -20.3 -14.3 -20.3 Field Strength L S. Average L S. Peak Limi	V V, Noise Floor H H, Noise Floor th Limit imit t
Peak Me 5.805 GHz 11.610 17.415 11.610 17.415	asurem 1 MHz 1 MHz 2, Normal Dist feet 3.3 3.3 3.3 f Dist Read AF CL	ents: Resolution Ba Video Bandwic Mode, Intern Read Pk dBuV 43.0 43.0 42.3 43.0 Measureme Distance to Analyzer R Antenna Fe Cable Loss	ndwidth th al Antenna A2 Read Avg. dBuV 30.7 28.5 30.0 28.5 ent Frequency Antenna teading actor	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg Peak HPF	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average Calculate High Pass	HPF 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 53.2 62.4 52.0 62.4 st to 3 mete Strength @ c Field Stre	Avg dBuV/m 40.4 47.9 39.7 47.9 ers 3 m ength	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB 20.8 22.0 Average I Peak Field Margin vs Margin vs	Avg Mar dB -13.6 -20.3 -14.3 -20.3 Field Strengt d Strength L s. Average L s. Peak Limi	Notes V. Noise Floor H. Noise Floor th Limit imit t

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Notes

V. Noise Floor Н

H, Noise Floor

08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Project # Compan EUT De EUT M/ Test Tar	gr: #: scrip.: N: rget:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
<u>Equipmo</u> <u>Peak Mo</u>	ent for 1 HP8564 HP 844 EMCO Cable: easurem	-22 GHz: IE Analyzer 9B Amplifier 3115 Antenna 20.0 ents: Resolution Ba	ndwidth	feet		<u>Equipm</u> <u>Average</u>	ent for 22 HP8564E / HP 11975/ HP 11970F Cable: IF C	- 58 Gl Analyzer A Ampli C Extern Only (32 ments:	Hz: r fier (LO) al mixer/ante 1 MHz) Bandwidth	nna					
5 21 CU-	1 MHz	Video Bandwic	lth				10Hz Vide	o Bandy	vidth						
f GHz	Dist feet	Read Pk dBuV	Read Avg.	AF		Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	
			ubu v	dB/m	uр	0.00	aB		dBuV/m	dBuV/m	aBuv/m	ubu v/m	dB	dB	
10.420	3.3	43.2	30.0	dB/m 39.5	UD 11.8	-34.7	-9.5	1.0	dBuV/m 51.3	dBuV/m 38.1	dBuv/m	68.2	dB	dB -30.1	
10.420 15.630	3.3 3.3	43.2 40.0	30.0 28.8	dB/m 39.5 38.8	11.8 15.3	-34.7 -33.9	-9.5 -9.5	1.0	dBuV/m 51.3 51.7	dBuV/m 38.1 40.6	dBUV/m 74.0	68.2 54.0	-22.3	-30.1 -13.4	v
10.420 15.630 10.420	3.3 3.3 3.3	43.2 40.0 43.7	30.0 28.8 30.5	dB/m 39.5 38.8 39.5	11.8 15.3 11.8	-34.7 -33.9 -34.7	-9.5 -9.5 -9.5	1.0 1.0 1.0	dBuV/m 51.3 51.7 51.8	dBuV/m 38.1 40.6 38.6	74.0	68.2 54.0 68.2	-22.3	dB -30.1 -13.4 -29.6	V.
10.420 15.630 10.420 15.630	3.3 3.3 3.3 3.3	43.2 40.0 43.7 40.0	30.0 28.8 30.5 28.8	dB/m 39.5 38.8 39.5 38.8	11.8 15.3 11.8 15.3	-34.7 -33.9 -34.7 -33.9	-9.5 -9.5 -9.5 -9.5	1.0 1.0 1.0 1.0	dBuV/m 51.3 51.7 51.8 51.7	dBuV/m 38.1 40.6 38.6 40.6	74.0 74.0	68.2 54.0 68.2 54.0	-22.3 -22.3	dB -30.1 -13.4 -29.6 -13.4	V

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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est Enc	r.		Frank Ibrahim												
roject /	;•• #:		02U1644-1												
Compan	v:		W-Link Systen	ns											
UT De	scrip.:		802.11 a/b/g D	ual Band	PCI Ad	apter									
UT M/	N:		PC22												
'est Tar	get:		FCC 15.407												
guipm	ent for 1	-22 GHz:				Equipm	ent for 22 -	- 58 GHz	z:						
	HP8564	4E Analyzer					HP8564E A	analyzer							
	HP 844	9B Amplifier					HP 11975A	Amplifie	er (LO)						
	EMCO	3115 Antenna		c .			HP 11970K	External	mixer/ante	nna					
	Cable:	20.0		ieet			Cable: IF O	miy (521 F	MHZ)						
eak Me	asurem	ents:				Average	Measuren	nents:							
eak Me	asurem 1 MHz	ents: Resolution Ba	ndwidth			Average	Measuren 1MHz Reso	nents: olution Bar	ndwidth						
<u>'eak Me</u>	asurem 1 MHz 1 MHz '	<u>ents:</u> Resolution Ba Video Bandwie	ndwidth dth			<u>Average</u>	Measuren 1MHz Reso 10Hz Video	nents: olution Bar o Bandwid	ndwidth dth						
<u>еак Ме</u> .25 GHz.	easurem 1 MHz 1 MHz ' , Turbo M	ents: Resolution Ba Video Bandwi fode, Internal	ndwidth dth Antenna A2			<u>Average</u>	Measuren 1MHz Reso 10Hz Video	nents: olution Bar o Bandwid	ndwidth dth						
<u>eak Mu</u> .25 GHz, f	asurem 1 MHz 1 MHz ' , Turbo M	ents: Resolution Ba Video Bandwi Iode, Internal Read Pk	ndwidth dth Antenna A2 Read Avg.	AF	CL	<u>Average</u> Amp	Measuren 1MHz Reso 10Hz Video	nents: olution Bar o Bandwid	ndwidth dth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
<u>eak M</u> 25 GHz, f GHz	asurem 1 MHz 1 MHz ' Turbo M Dist feet	ents: Resolution Ba Video Bandwi fode, Internal Read Pk dBuV	ndwidth dth Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	Measuren 1MHz Reso 10Hz Video D Corr dB	nents: olution Bar Bandwid HPF	ndwidth dth Peak 1BuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
25 GHz, f GHz 10.500	asurem 1 MHz 1 MHz Turbo M Dist feet 3.3	ents: Resolution Ba Video Bandwi Iode, Internal Read Pk dBuV 43.0	ndwidth dth Antenna A2 Read Avg. dBuV 29.7	AF dB/m 39.2	CL dB 11.9	Average Amp dB -34.4	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5	nents: olution Bar o Bandwid HPF d 1.0	Peak BuV/m 51.2	Avg dBuV/m 37.8	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2	Pk Mar dB	Avg Mar dB -30.4	Notes
25 GHz, f GHz 10.500 15.750	asurem 1 MHz 1 MHz 1 MHz Turbo M Dist feet 3.3 3.3	ents: Resolution Ba Video Bandwid Iode, Internal Read Pk dBuV 43.0 40.2	ndwidth dth Antenna A2 Read Avg. dBuV 29.7 28.8	AF dB/m 39.2 38.8	CL dB 11.9 15.4	Average Amp dB -34.4 -34.0	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5	nents: olution Bar bandwid HPF d 1.0 1.0	Peak BuV/m 51.2 51.9	Avg dBuV/m 37.8 40.5	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB -22.1	Avg Mar dB -30.4 -13.5	Notes V V, Noise Floor
eak Me .25 GHz. f GHz 10.500 15.750 10.500	asurem 1 MHz 1 MHz Turbo M Dist feet 3.3 3.3 3.3	ents: Resolution Ba Video Bandwid fode, Internal . Read Pk dBuV 43.0 40.2 44.2	ndwidth dth Antenna A2 Read Avg. dBuV 29.7 28.8 30.3	AF dB/m 39.2 38.8 39.2	CL dB 11.9 15.4 11.9	Average Amp dB -34.4 -34.0 -34.4	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5	hents: blution Bardwid blution Bardwid hereforefore herefore herefore	Peak BuV/m 51.2 51.9 52.4	Avg dBuV/m 37.8 40.5 38.5 38.5	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0 68.2	Pk Mar dB -22.1	Avg Mar dB -30.4 -13.5 -29.7	Notes V V, Noise Floor H
25 GHz f GHz 10.500 15.750 15.750	asurem 1 MHz 1 MHz 1 MHz Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3	ents: Resolution Ba Video Bandwie Iode, Internal . Read Pk dBuV 43.0 40.2 44.2 40.2	ndwidth dth Antenna A2 Read Avg. dBuV 29.7 28.8 30.3 28.8	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0	Measurem 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	HPF d 1.0 1.0 1.0 1.0	Peak BuV/m 51.2 51.9 52.4 51.9	Avg dBuV/m 37.8 40.5 38.5 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0	Pk Mar dB -22.1 -22.1	Avg Mar dB -30.4 -13.5 -29.7 -13.5	Notes V V, Noise Floor H H, Noise Floor
25 GHz 6 6 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	asurem 1 MHz 1MHz ' , Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 3.3	ents: Resolution Ba Video Bandwie Iode, Internal . Read Pk dBuV 43.0 40.2 44.2 40.2	ndwidth dth Antenna A2 Read Avg. dBuV 29.7 28.8 30.3 28.8 30.3 28.8	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 Amp	Measurem 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	hents: olution Bar blandwid HPF d 1.0 1.0 1.0 1.0 Coin	Peak 1BuV/m 51.2 51.9 52.4 51.9	Avg dBuV/m 37.8 40.5 38.5 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0	Pk Mar dB -22.1 -22.1	Avg Mar dB -30.4 -13.5 -29.7 -13.5	Notes V V, Noise Floor H H, Noise Floor
25 GHz f GHz 10.500 15.750 10.500 15.750	A surem 1 MHz 1 MHz , Turbo M Dist f Dist f Dist	ents: Resolution Ba Video Bandwie tode, Internal . Read Pk dBuV 43.0 40.2 44.2 40.2 Measurements Distance to	ndwidth dth Antenna A2 Read Avg. dBuV 29.7 28.8 30.3 28.8 ent Frequency	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.0 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 -34.0 -34.4 -34.0 -34.0 -34.0 -34.4 -34.0 -	Measuren 1MHz Resc 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp G Dictance	HPF d 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0	ndwidth tth Peak BuV/m 51.2 51.9 52.4 51.9 52.4 51.9 to 3 meter	Avg dBuV/m 37.8 40.5 38.5 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim	Pk Mar dB -22.1 -22.1 Average F	Avg Mar dB -30.4 -13.5 -29.7 -13.5 Vield Strength	Notes V V, Noise Floor H H, Noise Floor h Limit init
25 GHz f GHz 10.500 15.750 10.500	1 MHz 1 MHz 1 1 MHZ 1 MHZ 1 1 MHZ 1 MHZ 1 1 MHZ 1 1 MHZ 1 MHZ 1 1 MHZ 1 MHZ 1 1 MHZ 1 MHZ 1 1 MHZ 1 MH	ents: Resolution Ba Video Bandwie fode, Internal J Read Pk dBuV 43.0 40.2 44.2 40.2 Measuremu Distance to Applyance F	ndwidth tth Antenna A2 Read Avg. dBuV 29,7 28.8 30.3 28.8 ent Frequence o Antenna Reading	AF dB/m 39.2 38.8 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 Amp D Corr Aug	Measurem 1MHz Resc 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average	HPF d 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	ndwidth tth Peak BuV/m 51.2 51.9 52.4 51.9 to 3 metee congth @	Avg dBuV/m 37.8 40.5 38.5 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mor	Pk Mar dB -22.1 -22.1 Average F Peak Field	Avg Mar dB -30.4 -13.5 -29.7 -13.5 Field Strengt I Strength L Average I	V V, Noise Floor H H, Noise Floor h Limit imit
25 GHz f GHz 10.500 15.750 10.500 15.750	1 MHz 1 MHz 1 1 MHz 1 MHz 1 1 MHz 1 MHz 1 1 MHz 1 1 MHz 1 MHz 1 MHz 1 1 MHz 1	ents: Resolution Ba Video Bandwi fode, Internal . Read Pk dBuV 43.0 40.2 44.2 40.2 Measurement Distance to Analyzer F	ndwidth tth Antenna A2 Read Avg. dBuV 29.7 28.8 30.3 28.8 ent Frequency o Antenna ceading	AF dB/m 39.2 38.8 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 Amp D Corr Avg D corr	Measuren 1MHz Resc 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance 4 Average 1	nents: Jution Bandwid Bandwid HPF d 1.0 1.0 1.0 J.0 J.0 Correct t Field Stru LD v1 C	Peak 1BuV/m 51.2 51.9 52.4 51.9 to 3 meter to 3 meter 0 meter 1 0 me	Avg dBuV/m 37.8 40.5 38.5 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -22.1 -22.1 Average F Peak Field Margin vs	Avg Mar dB -30.4 -13.5 -29.7 -13.5 Field Strength L Strength L Average L Pack Lear	Notes V V, Noise Floor H H, Noise Floor h Limit imit
25 GHz 6 GHz 10.500 15.750 15.750	A surem 1 MHz 1 MHz	ents: Resolution Ba Video Bandwi fode, Internal / Read Pk dBuV 43.0 40.2 44.2 40.2 Measurem Distance to Analyzer F	ndwidth dth Antenna A2 Read Avg. dBuV 29.7 28.8 30.3 28.8 ent Frequency Antenna Reading actor	AF dB/m 39.2 38.8 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 Amp D Corr Avg Peak VDC	Measuren 1MHz Resc 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average I Calculate	nents: Jution Bandwid Bandwid HPF d 1.0 1.0 1.0 1.0 Correct t Field Strr d Peak F	Peak BuV/m 51.2 51.9 52.4 51.9 52.4 51.9 to 3 meter ength @ Field Stree	Avg dBuV/m 37.8 40.5 38.5 40.5 38.5 3 m ngth	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -22.1 -22.1 -22.1 Average F Peak Field Margin vs Margin vs	Avg Mar dB -30.4 -13.5 -29.7 -13.5 'ield Strengt I Strength L . Average L . Peak Limi	Notes V V, Noise Floor H H, Noise Floor h Limit imit imit

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8/12/02	FCC	Measurem	ent Services Mo	raan H	ill One	n Field	Site								
Joinpha	ance ee	i uncation c	sei vices, ivio	n gan 11	шор	in r ieiu	Site								
Fest Eng	gr:	Frank Ibrahin	n												
Project #	#:	02U1644-1													
Compan	iy:	W-Link Syste	ems												
CUT Des	scrip.:	802.11 a/b/g l	Dual Band PCI	Adapter											
SUT M/I	N:	PC22													
lest I ar	get:	FCC 15.407													
Equipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E	Analyze	r						
	HP 844	9B Amplifier					HP 11975/	A Ampli	fier (LO)						
	EMCO	3115 Antenna		_			HP 11970	K Extern	al mixer/ante	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
	osurem	ents:				Average	Measure	ments							
еяк ме		CIICO C													
eak Me	1 MHz	Resolution Bar	ndwidth				1MHz Res	olution 1	Bandwidth						
eak Me	1 MHz 1MHz V	Resolution Bar Video Bandwic	ndwidth lth				1MHz Res 10Hz Vide	olution l o Bandy	Bandwidth vidth						
20 CU-	1 MHz 1 MHz 1 MHz V	Resolution Bar Video Bandwid	ndwidth lth				1MHz Res 10Hz Vide	olution l o Bandy	Bandwidth vidth						
29 GHz,	1 MHz 1MHz V 1MHz V	Resolution Bar Video Bandwid Iode, Internal A	ndwidth dth Antenna A2	AF	CL	Amp	1MHz Res 10Hz Vide	olution I o Bandy	Bandwidth vidth Peak	Ava	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
29 GHz,	1 MHz 1MHz V , Turbo M Dist feet	Resolution Bar Video Bandwid Iode, Internal A Read Pk dBuV	ndwidth dth Antenna A2 Read Avg. dBuV	AF dB/m	CL dB	Amp dB	1MHz Res 10Hz Vide D Corr dB	olution I o Bandy HPF	Bandwidth vidth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
29 GHz, f GHz 10.580	1 MHz 1MHz V , Turbo M Dist feet	Resolution Bar Video Bandwid Iode, Internal A Read Pk dBuV 40.3	ndwidth hth Antenna A2 Read Avg. dBuV 28.0	AF dB/m 39.2	CL dB	Amp dB	1MHz Res 10Hz Vide D Corr dB -9.5	olution o Bandy HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
29 GHz, f GHz 10.580 15.870	1 MHz 1MHz V Turbo M Dist feet 3.3 3.3	Resolution Bar Video Bandwic Iode, Internal A Read Pk dBuV 40.3 39.2	ndwidth ith Antenna A2 Read Avg. dBuV 28.0 28.5	AF dB/m 39.2 38.7	CL dB 11.9 15.5	Amp dB -34.3 -34.0	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5	HPF 1.0 1.0	Peak dBuV/m 48.6 50.9	Avg dBuV/m 36.3 40.2	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB	Avg Mar dB -31.9 -13.8	Notes V, Noise Floor V, Noise Floor
.29 GHz, f GHz 10.580 15.870 10.580	1 MHz 1 MHz 1 MHz Dist feet 3.3 3.3 3.3	Resolution Bar Video Bandwid Iode, Internal A Read Pk dBuV 40.3 39.2 40.3	ndwidth dth Antenna A2 Read Avg. <u>dBuV</u> 28.0 28.5 28.0	AF dB/m 39.2 38.7 39.2	CL dB 11.9 15.5 11.9	Amp dB -34.3 -34.0 -34.3	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0	Bandwidth vidth Peak dBuV/m 48.6 50.9 48.6	Avg dBuV/m 36.3 40.2 36.3	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0 68.2	Pk Mar dB -23.1	Avg Mar dB -31.9 -13.8 -31.9	Notes V. Noise Floor V. Noise Floor H. Noise Floor
29 GHz, f GHz 10.580 15.870 10.580 15.870	1 MHz 1 MHz 1 MHz V , Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3	Resolution Bar Video Bandwick Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2	ndwidth tth Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 28.0 28.5	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0 1.0	Peak dBuV/m 48.6 50.9 48.6 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0	Pk Mar dB -23.1 -23.1	Avg Mar dB -31.9 -13.8 -31.9 -13.8	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor
.29 GHz, f GHz 10.580 15.870 10.580 15.870	Dist 6	Resolution Bar Video Bandwic Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2	ndwidth tth Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 28.0 28.5	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0 1.0	Peak dBuV/m 48.6 50.9 48.6 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0	Pk Mar dB -23.1 -23.1	Avg Mar dB -31.9 -13.8 -31.9 -13.8	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor
.29 GHz, f GHz 10.580 15.870 15.870	I MHz 1 MHz 1 MHz 1 MHz Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3 f Dist	Resolution Bar Video Bandwic Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2 Weasureme	Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 ent Frequency	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 -34.0 Amp	IMHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	Image: olution Image: olution 0 Bandy HPF 1.0 1.0 1.0 1.0 Gain	Peak dBuV/m 48.6 50.9 48.6 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim	Pk Mar dB -23.1 -23.1 Average H	Avg Mar dB -31.9 -13.8 -31.9 -13.8 Field Strengt	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h. Limit
.29 GHz, f GHz 10.580 15.870 10.580 15.870	Dist 6 3.3 3.3 3.3 3.3 3.3 3.3 f Dist	Resolution Ban Video Bandwic Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2 Measurement Distance to	Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 28.0 28.5 ent Frequency Antenna	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 -34.0 Amp D Corr	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance	HPF 1.0 1.0 1.0 1.0 Correct	Peak dBuV/m 48.6 50.9 48.6 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim	Pk Mar dB -23.1 -23.1 Average F Peak Field	Avg Mar dB -31.9 -13.8 -31.9 -13.8 Field Strength L Strength L	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h Limit init
.29 GHz, f GHz 10.580 15.870 15.870	1 MHz 1 MHz V , Turbo M Dist feet 3.3 3.3 3.3 f Dist Read	Resolution Bar Video Bandwic Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2 Measurement Distance to Analyzer R	ndwidth ith Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 28.0 28.5 28.5 28.0 28.5 28.5 28.0 28.5 28.5 28.5 28.5 28.5 28.5 28.5 28.5	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 D Corr Avg	1MHz Res 10Hz Vide -9.5 -9.5 -9.5 -9.5 Preamp O Distance Average	HPF 1.0 1.0 1.0 1.0 1.0 Correct Field S	Peak dBuV/m 48.6 50.9 48.6 50.9 50.9 ct to 3 mete Strength @	Avg dBuV/m 36.3 40.2 36.3 40.2 ers 3 m	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -23.1 -23.1 Average H Peak Field Margin vs	Avg Mar dB -31.9 -13.8 -31.9 -13.8 Field Strength L S. Average L	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h Limit imit
.29 GHz, f GHz 10.580 15.870 15.870	1 MHz 1 MHz V 1 MHZ V V 1 MHZ V V 1 MHZ V V 1 MHZ V V V V V V V V V V V V V V V V V V V	Resolution Ban Video Bandwid Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2 Measureme Distance to Analyzer R Antenna Fa	ndwidth ith Antenna A2 Read Avg. dBuV 28.0 28.5 28.5 28.0 28.5 28.5 28.0 28.5 28.0 28.5 28.0 28.5 28.0 28.5 28.0 28.5 28.0 28.5 28.0 28.5 28.5 28.0 28.5 28.0 28.5 28.5 28.0 28.5 28.0 28.5 28.5 28.5 28.0 28.5 28.5 28.5 28.5 28.5 28.5 28.5 28.5	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 Amp D Corr Avg Peak	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp O Distance Average Calculate	HPF 1.0 1.0 1.0 1.0 1.0 1.0 Correct Field S cd Peak	Peak dBuV/m 48.6 50.9 48.6 50.9 et to 3 mete Strength @ c Field Stree	Avg dBuV/m 36.3 40.2 36.3 40.2 ers 3 m ength	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -23.1 -23.1 Average I Peak Field Margin vs Margin vs	Avg Mar dB -31.9 -13.8 -31.9 -13.8 Field Strength L s. Average L s. Peak Limi	Notes V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor h Limit imit t
.29 GHz, f GHz 10.580 15.870 15.870	1 MHz 1MHz V Turbo M Dist 6et 3.3 3.3 3.3 f Dist Read AF CL	Resolution Bar Video Bandwic Iode, Internal A Read Pk dBuV 40.3 39.2 40.3 39.2 Measuremen Distance to Analyzer R Antenna Fa Cable Loss	ndwidth ith Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 28.0 28.5 ent Frequency o Antenna teading actor	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 D Corr Avg Peak HPF	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 Preamp C Distance Average Calculate High Pas	HPF 1.0 1.0 1.0 1.0 1.0 1.0 5 Correct Field S cd Peak s Filter	Peak dBuV/m 48.6 50.9 48.6 50.9 48.6 50.9 48.6 50.9 48.6 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2 8 5 3 m ength	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -23.1 -23.1 Average I Peak Field Margin vs Margin vs	Avg Mar dB -31.9 -13.8 -31.9 -13.8 Field Strength L s. Average L s. Peak Limi	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h Limit imit t
.29 GHz, f GHz 10.580 15.870 15.870	1 MHz 1 MHz 1 MHz V Turbo M Dist feet 3.3 3.3 3.3 f Dist Read AF CL	Resolution Ban Video Bandwić Iode, Internal / Read Pk dBUV 40.3 39.2 40.3 39.2 Measureme Distance to Analyzer R Antenna Fa Cable Loss	ndwidth hth Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 ent Frequency Antenna teading actor	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 D Corr Avg Peak HPF	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 Preamp C Distance Average Calculate High Pas	HPF 1.0 1.0 1.0 1.0 1.0 1.0 5 Correct Field S cd Peak s Filter	Peak dBuV/m 48.6 50.9 50.9 48.6 50.9 48.6 50.9 50.9 50.9 50.9 50.9 50.9 50.9 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2 2rs 3 m .ngth	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -23.1 -23.1 Average I Peak Field Margin vs Margin vs	Avg Mar dB -31.9 -13.8 -31.9 -31.9 -31.9 -31.9 -31.9 -31.9 -31.8 -31.9 -	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h Limit imit t
.29 GHz, f GHz 10.580 15.870 10.580	1 MHz 1 MHz 1 MHz M Dist feet 3.3 3.3 3.3 f Dist Read AF CL	Resolution Bandwic idoe, Internal / Read Pk dBuV 40.3 39.2 40.3 39.2 Measureme Distance to Analyzer R Antenna Fe Cable Loss	Antenna A2 Read Avg. dBuV 28.0 28.5 28.0 28.5 28.0 28.5 ent Frequency Antenna teading actor	AF dB/m 39.2 38.7 39.2 38.7 y	CL dB 11.9 15.5 11.9 15.5	Amp dB -34.3 -34.0 -34.3 -34.0 D Corr Avg Peak HPF	1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average Calculate High Pas	HPF 1.0 1.0 1.0 1.0 1.0 1.0 5 Correct Field S cd Peak s Filter	Peak dBuV/m 48.6 50.9 50.9 48.6 50.9 48.6 50.9 50.9 50.9 50.9 50.9 50.9 50.9 50.9	Avg dBuV/m 36.3 40.2 36.3 40.2 36.3 40.2 200 3 m .ngth	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -23.1 -23.1 Average I Peak Field Margin vs Margin vs	Avg Mar dB -31.9 -31.9 -13.8 "ield Strengt d Strength L s. Average L s. Peak Limi	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h Limit imit imit t

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Notes

V, Noise Floor V, Noise Floor

H, Noise Floor H, Noise Floor

08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Test Eng	er:	Frank Ibrahir	m												
Project #	; ;;	02U1644-1													
Compan	v:	W-Link Syste	ems												
EUT De	scrip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/	N:	PC22													
Test Tar	get:	FCC 15.407													
	0														
Equipm	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E /	Analyze	r						
	HP 844	9B Amplifier					HP 11975A	A Ampli	fier (LO)						
	EMCO	3115 Antenna					HP 11970F	K Extern	al mixer/ante	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
Реак Ме	1 MIL	ents: Davalution Da				Average	1 MU - Day	ments:	D J: J.l.						
	1 MHz	Video Bandwie	dth				10Hz Vide	o Bandy	vidth						
	1101112	Video Baildwid	uu				TOTIZ VIGC	o Danus	widdii						
5.76 GHz	Turbo N	Iode, Internal	Antenna A2												
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	
GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
11 520	33	39.0	28.3	39.7	12.4	-33.9	-9.5	1.0	48.7	38.0	74.0	54.0	-25.3	-16.0	v
17.280	3.3	38.2	28.5	44.0	16.6	-32.8	-9.5	1.0	57.5	47.8	71.0	68.2	20.0	-20.4	v
11.520	3.3	39.0	28.3	39.7	12.4	-33.9	-9.5	1.0	48.7	38.0	74.0	54.0	-25.3	-16.0	H
17.280	3.3	38.2	28.5	44.0	16.6	-32.8	-9.5	1.0	57.5	47.8		68.2		-20.4	H.
	f	Measureme	ent Frequency	у		Amp	Preamp C	Gain				Avg Lim	Average F	ield Strengt	h Limit
	Dist	Distance to	o Antenna			D Corr	Distance	Correc	et to 3 mete	ers		Pk Lim	Peak Field	l Strength L	imit
	Read	Analyzer R	Reading			Avg	Average	Field S	Strength @	3 m		Avg Mar	Margin vs	. Average L	imit
	AF	Antenna Fa	actor			Peak	Calculate	d Peak	Field Stre	ngth		Pk Mar	Margin vs	. Peak Limi	t
	CL.	Cable Loss				HPF	High Pas	s Filter	r	0			3		
	22	Cubic 1055	,				₅ us	5 . me	•						

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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08/12/02	FCC	Measurem	ent												
Complia	nnce Ce	rtification S	Services, Mo	rgan H	ill Op	en Field	Site								
Test Eng	r:	Frank Ibrahin	n												
Proiect #		02U1644-1													
Compan	v:	W-Link Syste	ems												
EUT Des	crip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/I	N:	PC22		•											
Test Tar	get:	FCC 15.407													
Eauipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E A	Analyzer	r						
	HP 844	9B Amplifier					HP 11975A	Ampli	fier (LO)						
	EMCO	3115 Antenna					HP 11970k	C Extern	al mixer/ant	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
eak Me	asurem	ents:				Average	Measurer	nents:							
Peak Me	asurem 1 MHz	ents: Resolution Ba	ndwidth			Average	e Measurer 1MHz Reso	nents: plution l	Bandwidth						
Peak Me	asurem 1 MHz 1 MHz V	ents: Resolution Bar Video Bandwic	ndwidth lth			<u>Average</u>	e Measurer 1MHz Reso 10Hz Video	<u>nents:</u> olution l o Bandy	Bandwidth vidth						
Peak Me	asurem 1 MHz 1 MHz V 1 MHz V	<u>ents:</u> Resolution Bar √ideo Bandwid ode, Internal A	ndwidth dth ntenna A2			<u>Average</u>	e Measuren 1MHz Reso 10Hz Video	<u>nents:</u> olution l o Bandv	Bandwidth vidth						
Peak Me 5.8 GHz, 7 f	asurem 1 MHz 1 MHz 1 MHz V Furbo Mo Dist	ents: Resolution Bar Video Bandwic ode, Internal A Read Pk	ndwidth dth ntenna A2 Read Avg.	AF	CL	<u>Average</u> Amp	Measurer 1MHz Reso 10Hz Video	ments: olution l o Bandy HPF	Bandwidth vidth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
eak Me .8 GHz, 7 f GHz	asurem 1 MHz 1 MHz 1 MHz Turbo Mo Dist feet	ents: Resolution Bar Video Bandwid de, Internal A Read Pk dBuV	ndwidth tth ntenna A2 Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	D Corr dB	ments: olution l o Bandv HPF	Bandwidth vidth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
eak Me .8 GHz, 1 f GHz 11.600	asurem 1 MHz 1 MHz 1 MHz Turbo Mo Dist feet 3.3	ents: Resolution Bau Video Bandwic ode, Internal A Read Pk dBuV 40.2	ndwidth tth ntenna A2 Read Avg. dBuV 28.3	AF dB/m 39.7	CL dB 12.4	Average Amp dB -33.9	 Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 	ments: olution l o Bandv HPF 1.0	Bandwidth vidth Peak dBuV/m 49.9	Avg dBuV/m 38.0	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0	Pk Mar dB -24.1	Avg Mar dB -16.0	Notes V, Noise Floor
2eak Me .8 GHz, 7 f GHz 11.600 17.400	asurem 1 MHz 1 MHz 1 MHz Turbo Mo Dist feet 3.3 3.3	ents: Resolution Bai Video Bandwic ode, Internal A Read Pk dBuV 40.2 39.8	ndwidth tth ntenna A2 Read Avg. dBuV 28.3 28.2	AF dB/m 39.7 44.0	CL dB 12.4 16.7	Average Amp dB -33.9 -32.8	 Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 	nents: olution l o Bandy HPF 1.0 1.0	Bandwidth vidth Peak dBuV/m 49.9 59.3	Avg dBuV/m 38.0 47.6	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -24.1	Avg Mar dB -16.0 -20.6	Notes V, Noise Floor V, Noise Floor
Peak Me 8 GHz, 7 f GHz 11.600 17.400 11.600	asurem. 1 MHz 1 MHz 1 MHz Furbo Mc Dist feet 3.3 3.3 3.3	ents: Resolution Bai Video Bandwid ode, Internal A Read Pk dBuV 40.2 39.8 40.2	ndwidth tth ntenna A2 Read Avg. dBuV 28.3 28.2 28.3 28.2 28.3	AF dB/m 39.7 44.0 39.7	CL dB 12.4 16.7 12.4	Average Amp dB -33.9 -32.8 -33.9	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5	nents: plution I o Bandy HPF 1.0 1.0 1.0	Peak dBuV/m 49.9 59.3 49.9	Avg dBuV/m 38.0 47.6 38.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -24.1 -24.1	Avg Mar dB -16.0 -20.6 -16.0	Notes V, Noise Floor V, Noise Floor H, Noise Floor
Peak Me 5.8 GHz, 1 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1MHz Turbo Mo Dist feet 3.3 3.3 3.3 3.3 3.3	ents: Resolution Bai Video Bandwic ode, Internal A Read Pk dBuV 40.2 39.8 40.2 39.8	ndwidth ith ntenna A2 Read Avg. dBuV 28.3 28.2 28.3 28.2 28.3	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8	Measurer 1MHz Ress 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5	nents: olution l o Bandy HPF 1.0 1.0 1.0 1.0	Bandwidth vidth Peak dBuV/m 49.9 59.3 49.9 59.3	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -24.1 -24.1	Avg Mar dB -16.0 -20.6 -16.0 -20.6	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor
Peak Me 5.8 GHz, 1 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz V Furbo Mo Dist feet 3.3 3.3 3.3 3.3 5	ents: Resolution Bai Video Bandwic de, Internal A Read Pk dBuV 40.2 39.8 40.2 39.8	ndwidth ith ntenna A2 Read Avg. <u>dBuV</u> 28.3 28.2 28.3 28.2 28.3 28.2	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 -33.9 -32.8	Measurer 1MHz Ress 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	nents: olution l o Bandy HPF 1.0 1.0 1.0 1.0	Bandwidth vidth Peak dBuV/m 49.9 59.3 49.9 59.3	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -24.1 -24.1	Avg Mar dB -16.0 -20.6 -16.0 -20.6	Notes V. Noise Floor V. Noise Floor H. Noise Floor
Peak Me 5.8 GHz, 1 f GHz 11.600 17.400 17.400 17.400	asurem 1 MHz 1	ents: Resolution Bandwic ode, Internal A Read Pk dBuV 40.2 39.8 40.2 39.8 Measureme	ndwidth th ntenna A2 Read Avg. dBuV 28.3 28.3 28.3 28.3 28.2 ent Frequency	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Correct	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance	nents: olution I o Bandw HPF 1.0 1.0 1.0 1.0 5ain	Bandwidth vidth Peak dBuV/m 49.9 59.3 49.9 59.3 49.9 59.3	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim	Pk Mar dB -24.1 -24.1 Average I	Avg Mar dB -16.0 -20.6 -16.0 -20.6 Field Strength	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor th Limit
Peak Me 5.8 GHz, 1 f GHz 11.600 17.400 17.400	asurem 1 MHz 1 MHz 1 MHz 1 MHz 1 MHz 0 0 0 0 0 0 0 0 0 0 0 0 0	ents: Resolution Bai Video Bandwic ode, Internal A Read Pk dBuV 40.2 39.8 40.2 39.8 Measureme Distance to Acchement	ndwidth tth ntenna A2 Read Avg. dBuV 28.3 28.2 28.3 28.2 ent Frequency Antenna	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr	Measurer 1MHz Ress 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp C Distance	HPF 1.0 1.0 1.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	Peak dBuV/m 49.9 59.3 49.9 59.3 tt to 3 mett	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim	Pk Mar dB -24.1 -24.1 Average I Peak Field	Avg Mar dB -16.0 -20.6 -16.0 -20.6 Field Strength d Strength L	Notes V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor th Limit imit
2eak Me 5.8 GHz, 1 f GHz 11.600 17.400 17.400 17.400	asurem 1 MHz 1 MHz 1 MHz Turbo Mc Dist feet 3.3 3.3 3.3 1.3 1.3 1.3 1.3 1.3	ents: Resolution Baa Video Bandwic ode, Internal A Read Pk dBuV 40.2 39.8 40.2 39.8 40.2 39.8 Ustance to Analyzer R	ndwidth th ntenna A2 Read Avg. dBuV 28.3 28.2 28.3 28.2 28.2 28.2 28.2 28.2	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average	HPF 1.0 1.0 1.0 1.0 1.0 1.0 1.0 5 ain Correct Field S	Peak dBuV/m 49.9 59.3 49.9 59.3 tt to 3 mett Strength @	Avg dBuV/m 38.0 47.6 38.0 47.6 ers 3 m	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar	Pk Mar dB -24.1 -24.1 Average I Peak Fiel Margin v:	Avg Mar dB -16.0 -20.6 -16.0 -20.6 Field Strengt d Strength L s. Average L	Notes V. Noise Floor H. Noise Floor H. Noise Floor H. Noise Floor th Limit imit
Peak Me 5.8 GHz, 1 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz 1 MHz 1 MHz 1 MHz 6 1 MHz 6 1 MHz 6 1 MHz 6 1 MHz 1 MHz 1 MHz 6 1 MHz 1 MHz	ents: Resolution Bandwic de, Internal A Read Pk dBuV 40.2 39.8 Measureme Distance to Analyzer R Antenna Fa	ndwidth ith intenna A2 Read Avg. dBuV 28.3 28.2 28.3 28.2 ent Frequency Antenna leading actor	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg Peak	Preamp C Distance Average Calculate	HPF 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 49.9 59.3 49.9 59.3 tt to 3 mete Strength @ t Field Stree	Avg dBuV/m 38.0 47.6 38.0 47.6 ers 3 m ength	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -24.1 -24.1 -24.1 Average I Peak Field Margin vs Margin vs	Avg Mar dB -16.0 -20.6 -16.0 -20.6 Field Strength Strength L s. Average L s. Peak Limi	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor th Limit imit imit t

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Notes

V, Noise Floor

V, Noise Floor H H

H, Noise Floor H, Noise Floor

Average Field Strength Limit

Fest Eng Project # Compan EUT Des EUT M/I Fest Tar	gr: #: scrip.: N: sget:	Frank Ibrahir 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
Equipme	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E / HP 11975 HP 11970F Cable: IF C	- 58 G Analyze A Ampli K Exterr Only (32	Hz: r fier (LO) al mixer/anto 1 MHz)	enna					
Peak Me	asurem 1 MHz	e nts: Resolution Ba	ndwidth			Average	Measurer	ments:	Bandwidth						
.18 GHz,	1MHz V	/ideo Bandwio Mode, Externa	lth l Antenna B				10Hz Vide	o Bandy	vidth						
.18 GHz, f	1MHz V , Normal Dist	/ideo Bandwio Mode, Externa Read Pk	l Antenna B Read Avg.	AF	CL	Amp	10Hz Vide	o Bandy	vidth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	
.18 GHz, f GHz	1MHz V , Normal I Dist feet	/ideo Bandwid Mode, Externa Read Pk dBuV	ll Antenna B Read Avg. dBuV	AF dB/m	CL dB	Amp dB	10Hz Vide D Corr dB	o Bandy	vidth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	
.18 GHz, f GHz 5.180	1MHz V Normal Dist feet 3.3	Video Bandwid Mode, Externa Read Pk dBuV 74.5	Ith I Antenna B Read Avg. dBuV 65.1	AF dB/m 34.6	CL dB 6.0	Amp dB 0.0	10Hz Vide D Corr dB -9.5	o Bandy HPF 0.0	vidth Peak dBuV/m 105.6	Avg dBuV/m 96.2	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	
.18 GHz, f GHz 5.180 10.360	1MHz V Normal Dist feet 3.3 3.3	Video Bandwid Mode, Externa Read Pk dBuV 74.5 50.2	I Antenna B Read Avg. dBuV 65.1 38.7	AF dB/m 34.6 39.5	CL dB 6.0 11.8	Amp dB 0.0 -34.7	10Hz Vide D Corr dB -9.5 -9.5 -9.5	o Bandy HPF 0.0 1.0	vidth Peak dBuV/m 105.6 58.3	Avg dBuV/m 96.2 46.8	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	
.18 GHz f GHz 5.180 10.360 15.540	1MHz V Normal Dist feet 3.3 3.3 3.3	Video Bandwid Mode, Externa Read Pk dBuV 74.5 50.2 43.8	Antenna B Read Avg. dBuV 65.1 38.7 34.3	AF dB/m 34.6 39.5 38.9	CL dB 6.0 11.8 15.2	Amp dB 0.0 -34.7 -33.9	10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5	o Bandy HPF 0.0 1.0 1.0	vidth Peak dBuV/m 105.6 58.3 55.5	Avg dBuV/m 96.2 46.8 46.0	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB	Avg Mar dB -21.4 -8.0	
.18 GHz, f GHz 5.180 10.360 15.540 26.000	1MHz V Normal Dist feet 3.3 3.3 3.3 3.3 3.3	Video Bandwid Mode, Externa Read Pk dBuV 74.5 50.2 43.8 30.5	d Antenna B Read Avg. dBuV 65.1 38.7 34.3 22.3 60.6	AF dB/m 34.6 39.5 38.9 32.9	CL dB 6.0 11.8 15.2 23.6	Amp dB 0.0 -34.7 -33.9 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	0 Bandy HPF 0.0 1.0 1.0 1.0	vidth Peak dBuV/m 105.6 58.3 55.5 43.4 102.2	Avg dBuV/m 96.2 46.8 46.0 35.2 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -18.5 -30.6	Avg Mar dB -21.4 -8.0 -18.8	
.18 GHz, f GHz 5.180 10.360 15.540 26.000 5.180 10.360	1MHz V Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	7 video Bandwid Mode, Externa Read Pk dBuV 74.5 50.2 43.8 30.5 71.2 48.0	I Antenna B Read Avg. dBuV 65.1 38.7 34.3 22.3 60.6 38.0	AF dB/m 34.6 39.5 38.9 32.9 34.6 20.5	CL dB 6.0 11.8 15.2 23.6 6.0	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 34.7	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0 Bandy HPF 0.0 1.0 1.0 1.0 0.0	vidth Peak dBuV/m 105.6 58.3 55.5 43.4 102.3 56.1	Avg dBuV/m 96.2 46.8 46.0 35.2 91.7 46.1	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB -18.5 -30.6	Avg Mar dB -21.4 -8.0 -18.8	
.18 GHz, f GHz 5.180 10.360 15.540 26.000 5.180 10.360 15.540	1MHz V Normal 2 Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	/ideo Bandwie Mode, Externa Read Pk dBuV 74.5 50.2 43.8 30.5 71.2 48.0 44.5	Id Antenna B Read Avg. dBuV 65.1 38.7 34.3 22.3 60.6 38.0 34.3	AF dB/m 34.6 39.5 38.9 32.9 34.6 39.5 28.0	CL dB 11.8 15.2 23.6 6.0 11.8 15.2	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 -34.7 -33.0	10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0 Bandy HPF 0.0 1.0 1.0 1.0 0.0 1.0	vidth Peak dBuV/m 105.6 58.3 55.5 43.4 102.3 56.1 56.2	Avg dBuV/m 96.2 46.8 46.0 35.2 91.7 46.1 46.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0	Pk Mar dB -18.5 -30.6	Avg Mar dB -21.4 -8.0 -18.8 -22.1 -22.1	
.18 GHz, f GHz 5.180 10.360 15.540 26.000 5.180 10.360 15.540 26.000	1MHz V , Normal 1 Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	/ideo Bandwie Mode, Externa Read Pk dBuV 74.5 50.2 43.8 30.5 71.2 48.0 44.5 30.5	I Antenna B Read Avg. dBuV 65.1 38.7 34.3 22.3 60.6 38.0 34.3 22.3	AF dB/m 34.6 39.5 38.9 32.9 34.6 39.5 38.9 32.9	CL dB 11.8 15.2 23.6 6.0 11.8 15.2 23.6	Amp dB 0.0 -34.7 -33.9 -35.1 0.0 -34.7 -33.9 -35.1	10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0 Bandy HPF 0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	vidth Peak dBuV/m 105.6 58.3 55.5 43.4 102.3 56.1 56.2 43.4	Avg dBuV/m 96.2 46.8 46.0 35.2 91.7 46.1 46.0 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0	Pk Mar dB -18.5 -30.6 -17.8 -30.6	Avg Mar dB -21.4 -8.0 -18.8 -22.1 -8.0 -18.8	

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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fest Eng	r:		Frank Ibrahim												
Project #	<i>t</i> :		02U1644-1												
Compan	y:		W-Link System	ns											
EUT De	crip.:		802.11 a/b/g D	ual Band	PCI Ada	pter									
EUT M/	N:		PC22												
fest Tar	get:		FCC 15.407												
quipm	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E	Analyze	r						
	HP 844	9B Amplifier					HP 11975/	A Ampli	fier (LO)						
	EMCO	3115 Antenna		c .			HP 11970E	C Extern	al mixer/ant	enna					
	Cable:	20.0		reet			Cable: IF C	Jniy (32	1 MHZ)						
eak Me	asurem	ents:				Average	Measure	ments:							
	1 MHz	Resolution Ba	ndwidth				1MHz Res	olution	Bandwidth						
	1MH ₇ V	Chan Dan Just	1.1				10H. Vila	- Dande							
	1101112	rideo Balidwid	ith				TOFIZ VIDE	o Banuv	vidth						
26 CH-	Name	Ande Enterne	im				TOFIZ VIDE	o banuv	width						
.26 GHz.	Normal Dist	Mode, Externa	l Antenna B	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
.26 GHz. f GHz	Normal Dist feet	Mode, Externa Read Pk dBuV	I Antenna B Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
.26 GHz. f GHz 5.260	Normal Dist feet 3.3	Mode, Externa Read Pk dBuV 76.5	I Antenna B Read Avg. dBuV 66.8	AF dB/m 34.8	CL dB 6.0	Amp dB 0.0	D Corr dB -9.5	HPF	Peak dBuV/m 107.8	Avg dBuV/m 98.1	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V
26 GHz f GHz 5.260 10.520	Normal Dist feet 3.3 3.3	Mode, Externa Read Pk dBuV 76.5 48.5	I Antenna B Read Avg. dBuV 66.8 38.5	AF dB/m 34.8 39.2	CL dB 6.0 11.9	Amp dB 0.0 -34.4	D Corr dB -9.5 -9.5	0.0 1.0	Peak dBuV/m 107.8 56.7	Avg dBuV/m 98.1 46.7	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB 56.7	Avg Mar dB -21.5	Notes V V
26 GHz f GHz 5.260 10.520 15.780	Normal Dist feet 3.3 3.3 3.3	Mode, Externa Read Pk dBuV 76.5 48.5 45.8	I Antenna B Read Avg. dBuV 66.8 38.5 34.0	AF dB/m 34.8 39.2 38.8	CL dB 6.0 11.9 15.4	Amp dB 0.0 -34.4 -34.0	D Corr dB -9.5 -9.5 -9.5	0.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5	Avg dBuV/m 98.1 46.7 45.7	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB 56.7 -16.5	Avg Mar dB -21.5 -8.3	Notes V V V, Noise Floor
.26 GHz, f GHz 5.260 10.520 15.780 26.000 5.260	Normal Dist feet 3.3 3.3 3.3 3.3 3.3	Mode, Externa Read Pk dBuV 76.5 48.5 45.8 30.5 (0.5)	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 50.0	AF dB/m 34.8 39.2 38.8 32.9 24.8	CL dB 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5 43.4	Avg dBuV/m 98.1 46.7 45.7 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0	Pk Mar dB 56.7 -16.5 -30.6	Avg Mar dB -21.5 -8.3 -18.8	V V V, Noise Floor V, Noise Floor
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520	Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Externa Read Pk dBuV 76.5 48.5 45.8 30.5 68.5 49.2	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0	AF dB/m 34.8 39.2 38.8 32.9 34.8 20.2	CL dB 6.0 11.9 15.4 23.6 6.0	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 24.4	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 0.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4	Avg dBuV/m 98.1 46.7 45.7 35.2 90.1 45.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2	Pk Mar dB 56.7 -16.5 -30.6	Avg Mar dB -21.5 -8.3 -18.8 -23.0	Notes V V V, Noise Floor V, Noise Floor H
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520 10.520	Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Externa Read Pk dBuV 76.5 48.5 45.8 30.5 68.5 49.2 45.8	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4	Amp dB 0.0 -34.4 -35.1 0.0 -34.4 -34.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5	Avg dBuV/m 98.1 46.7 45.7 35.2 90.1 45.2 45.7	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0	Pk Mar dB 56.7 -16.5 -30.6	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -8.3	Notes V V, Noise Floor V, Noise Floor H H H Noise Floor
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520 15.780 26.000	Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Externa Read Pk dBuV 76.5 48.5 45.8 30.5 68.5 49.2 45.8 30.5	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0 22.3	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5 43.4	Avg dBuV/m 98.1 46.7 35.2 90.1 45.2 45.7 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0	Pk Mar dB 56.7 -16.5 -30.6 -16.5 -30.6	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -8.3 -18.8	Notes V V, Noise Floor V, Noise Floor H H H, Noise Floor H, Noise Floor
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520 15.780 26.000	Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Externa Read Pk dBuV 76.5 48.5 45.8 30.5 68.5 49.2 45.8 30.5	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0 22.3	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5 43.4	Avg dBuV/m 98.1 46.7 45.7 35.2 90.1 45.2 45.7 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0	Pk Mar dB 56.7 -16.5 -30.6 -16.5 -30.6	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -8.3 -18.8	Notes V V V, Noise Floor H H, Noise Floor H, Noise Floor
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520 15.780 26.000	Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 5.3 5.5 5.5	Mode, Externa Read Pk dBuV 76.5 48.5 45.8 30.5 68.5 49.2 45.8 30.5 Measurement	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0 22.3 sent Frequency	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -35.1 0.0 -35.1 -34.4 -34.0 -35.1 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5 43.4	Avg dBuV/m 98.1 46.7 35.2 90.1 45.2 45.7 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 Avg Lim	Pk Mar dB 56.7 -16.5 -30.6 -16.5 -30.6 Average H	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -8.3 -18.8 -18.8	V V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor H, Noise Floor
.26 GHz. f GHz 5.260 10.520 15.780 26.000 5.260 10.520 10	Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode External Read Pk dBuV 76.5 48.5 45.8 30.5 49.2 45.8 30.5 30.5	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0 22.3 ent Frequency Antenna	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1 Amp D Corr	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5 43.4 explored and explored an	Avg dBuV/m 98.1 46.7 35.2 90.1 45.2 45.7 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 54.0 74.0 8 Vg Lim Pk Lim	Pk Mar dB 56.7 -16.5 -30.6 -16.5 -30.6 Average F Peak Field	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -8.3 -18.8 Field Strength Literagth Literagth	V V V, Noise Floor V, Noise Floor H H, Noise Floor H, Noise Floor h Limit mit
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520 15.780 26.000	Normal Dist feet 3.3	Mode External Read Pk dBuV 76.5 48.5 48.5 45.8 30.5 68.5 49.2 45.8 30.5 Solution Distance to Analyzer R Construction	I Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0 22.3 ent Frequency Antenna teading	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 34.8 39.2 38.8 32.9 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -34.4 -34.0 -35.1 Amp D Corr Avg	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 5.00 1.0 1.0 1.0 5.00 1.0 1.0 5.00 1.0 1.0 5.00 1.0 5.00	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5 43.4 57.5 43.4 S7.5 43.4 S7.5 43.4 S7.5 43.4 S7.5 43.4	Avg dBuV/m 98.1 45.7 35.2 90.1 45.7 45.2 45.7 35.2 ers 3 m	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB 56.7 -16.5 -30.6 -16.5 -30.6 Average I Peak Field Margin vs	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -8.3 -18.8 Tield Strength Li Strength Li . Average Li	V V V V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor h Limit mit
.26 GHz f GHz 5.260 10.520 15.780 26.000 5.260 10.520 10.520 26.000	Normal Dist feet 3.3 J.Stread f Dist Read AF	Mode, Externa Read Pk dBuV 76.5 48.5 48.5 48.5 49.2 45.8 30.5 68.5 49.2 45.8 30.5 8.5 49.2 45.8 30.5 Measurement Distance to Distance to Distance to Distance to Analyzer R	Antenna B Read Avg. dBuV 66.8 38.5 34.0 22.3 58.8 37.0 34.0 22.3 ent Frequency Antenna ecading teading	AF dB/m 34.8 39.2 38.8 32.9 34.8 39.2 38.8 39.2 38.8 32.9	CL dB 6.0 11.9 15.4 23.6 6.0 11.9 15.4 23.6	Amp dB 0.0 -34.4 -34.0 -35.1 0.0 -35.1 -34.4 -34.0 -35.1 Amp D Corr Avg Peak	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0 1.0 5.0 1.0 1.0 5.0 1.0 1.0 1.0 5.0 1.0 1.0 1.0 5.0 1.0 1.0 1.0 1.0 5.0	Peak dBuV/m 107.8 56.7 57.5 43.4 99.8 57.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 43.4 57.5 67.6 57.7 57.5 43.4 57.5 57.5 57.5 57.5 57.5	Avg dBuV/m 98.1 46.7 45.7 35.2 90.1 45.2 45.7 35.2 2 ers 3 m ength	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 54.0 68.2 54.0 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB 56.7 -16.5 -30.6 -16.5 -30.6 Average I Peak Field Margin vs Margin vs	Avg Mar dB -21.5 -8.3 -18.8 -23.0 -3.3 -18.8 Vield Strengt Li S Streng	V V V, Noise Floor H H, Noise Floor H, Noise Floor h Limit mit imit

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08/12/02	FCC	Measurem	ent												
Complia	ance Ce	rtification S	Services, Mo	rgan H	ill Op	en Field	Site								
Test Eng	gr:	Frank Ibrahin	n												
Project #	; ;:	02U1644-1													
Compan	y:	W-Link Syste	ems												
EUT Des	scrip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/I	N:	PC22													
Test Tar	get:	FCC 15.407													
Equipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E A	Analyzer	r						
	HP 844	9B Amplifier					HP 11975A	Ampli	fier (LO)						
	EMCO	3115 Antenna		-			HP 11970k	K Extern	al mixer/ant	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
Peak Me	asurem	ents:				Average	Measurer	nents:							
Peak Me	asurem 1 MHz	ents: Resolution Ba	ndwidth			Average	Measurer 1MHz Reso	nents: olution l	Bandwidth						
Peak Me	asurem 1 MHz 1 MHz V	<u>ents:</u> Resolution Bar Video Bandwic	ndwidth lth			Average	Measurer 1MHz Reso 10Hz Video	nents: olution l o Bandv	Bandwidth width						
Peak Me 5.32 GHz,	asurem 1 MHz 1 MHz V , Normal 1	<u>ents:</u> Resolution Bar Video Bandwic Mode, Externa	ndwidth lth l Antenna B			<u>Average</u>	e Measurer 1MHz Reso 10Hz Video	nents: olution I o Bandv	Bandwidth width						
Peak Me 5.32 GHz, f	asurem 1 MHz 1 MHz Normal	ents: Resolution Bar Video Bandwic Mode, Externa Read Pk	ndwidth ith il Antenna B Read Avg.	AF	CL	<u>Average</u> Amp	Measurer 1MHz Reso 10Hz Video D Corr	nents: olution I o Bandv HPF	Bandwidth vidth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
Peak Me .32 GHz, f GHz	asurem 1 MHz 1 MHz Normal Dist feet	ents: Resolution Bar Video Bandwic Mode, Externa Read Pk dBuV	ndwidth dth d Antenna B Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	Measurer 1MHz Reso 10Hz Video D Corr dB	nents: olution l o Bandv HPF	Bandwidth vidth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
Peak Me .32 GHz, f GHz 10.640	asurem 1 MHz 1 MHz Normal Dist feet 3.3	ents: Resolution Bau Video Bandwid Mode, Externa Read Pk dBuV 42.3	ndwidth ith I Antenna B Read Avg. dBuV 29.8	AF dB/m 39.2	CL dB 11.9	Average Amp dB -34.3	 Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 	nents: olution I o Bandv HPF 1.0	Bandwidth width Peak dBuV/m 50.6	Avg dBuV/m 38.1	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0	Pk Mar dB -23.4	Avg Mar dB -15.9	Notes V
Peak Me 5.32 GHz, f GHz 10.640 15.960	asurem 1 MHz 1 MHz Normal Dist feet 3.3 3.3	ents: Resolution Ban Video Bandwid Mode, Externa Read Pk dBuV 42.3 43.8	ndwidth ith I Antenna B Read Avg. dBuV 29.8 33.6	AF dB/m 39.2 38.7	CL dB 11.9 15.6	Average Amp dB -34.3 -34.0	 Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 	nents: olution l o Bandy HPF 1.0 1.0	Bandwidth width Peak dBuV/m 50.6 55.6	Avg dBuV/m 38.1 45.4	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 54.0	Pk Mar dB -23.4 -18.4	Avg Mar dB -15.9 -8.6	Notes V V, Noise Floor
Peak Me 5.32 GHz, f GHz 10.640 15.960 10.640	1 MHz 1 MHz 1 MHz Normal Dist feet 3.3 3.3 3.3 3.3	ents: Resolution Bar Video Bandwic Mode, Externa Read Pk dBuV 42.3 43.8 42.7	ndwidth hth Il Antenna B Read Avg. dBuV 29.8 33.6 30.2 29.6	AF dB/m 39.2 38.7 39.2	CL dB 11.9 15.6 11.9	Average Amp dB -34.3 -34.0 -34.3 -34.0	Measurer 1MHz Rese 10Hz Video D Corr dB -9.5 -9.5 -9.5	nents: olution l o Bandy HPF 1.0 1.0 1.0	Bandwidth width Peak dBuV/m 50.6 55.6 51.0	Avg dBuV/m 38.1 45.4 38.5 38.5	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0	Pk Mar dB -23.4 -18.4 -23.0	Avg Mar dB -15.9 -8.6 -15.5	Notes V V, Noise Floor H
Peak Me 5.32 GHz, f GHz 10.640 15.960 10.640 15.960	Dist Feet 3.3 3.3 3.3 3.3 3.3 3.3	ents: Resolution Bandwic Video Bandwic Mode, Externa Read Pk dBuV 42.3 43.8 42.7 43.8	ndwidth tth I Antenna B Read Avg. dBuV 29.8 33.6 30.2 33.6	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.6 11.9 15.6	Average Amp dB -34.3 -34.0 -34.3 -34.0	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	nents: olution I o Bandw HPF 1.0 1.0 1.0 1.0	Bandwidth width Peak dBuV/m 50.6 55.6 51.0 55.6	Avg dBuV/m 38.1 45.4 38.5 45.4	Pk Lim dBuV/m 74.0 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0 54.0	Pk Mar dB -23.4 -18.4 -23.0 -18.4	Avg Mar dB -15.9 -8.6 -15.5 -8.6	Notes V V, Noise Floor H H, Noise Floor
Peak Me 5.32 GHz, f GHz 10.640 15.960 10.640 15.960	Dist 0	ents: Resolution Bandwic Video Bandwic Mode, Externa Read Pk dBuV 42.3 43.8 42.7 43.8	ndwidth dth d Antenna B Read Avg. dBuV 29.8 33.6 30.2 33.6 ant Erequence	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.6 11.9 15.6	Average dB -34.3 -34.0 -34.3 -34.0 -34.3 -34.0 Amp	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	ments: blution l o Bandv HPF 1.0 1.0 1.0 1.0 2 ain	Bandwidth width Peak dBuV/m 50.6 55.6 51.0 55.6	Avg dBuV/m 38.1 45.4 38.5 45.4	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0 54.0	Pk Mar dB -23.4 -18.4 -23.0 -18.4	Avg Mar dB -15.9 -8.6 -15.5 -8.6 Sield Streng	V V, Noise Floor H H, Noise Floor
Peak Me 5.32 GHz, f GHz 10.640 15.960 10.640 15.960	A surem 1 MHz 1 MHz Normal Dist feet 3.3 3.3 3.3 1.3 1.3 1.3 1.3 1.3	ents: Resolution Bandwid Mode, Externa Read Pk dBuV 42.3 43.8 42.7 43.8 42.7 43.8	ndwidth th al Antenna B Read Avg. dBuV 29.8 33.6 30.2 33.6 ent Frequency Antenna	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.6 11.9 15.6	Average Amp dB -34.3 -34.0 -34.3 -34.0 -34.3 -34.0 Amp D Corr	Measurer 1MHz Reso 10Hz Video 10Hz Video	HPF 1.0 1.0 1.0 1.0 1.0 Correct	Bandwidth width Peak dBuV/m 50.6 55.6 51.0 55.6 51.0 55.6 51.0 55.6	Avg dBuV/m 38.1 45.4 38.5 45.4	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0 54.0 54.0 Pk Lim	Pk Mar dB -23.4 -18.4 -23.0 -18.4 Average H Peak Field	Avg Mar dB -15.9 -8.6 -15.5 -8.6 Field Strength J	Notes V V, Noise Floor H, Noise Floor th Limit imit
Peak Me 5.32 GHz, f GHz 10.640 15.960 10.640 15.960	A surem 1 MHz 1 MHz 1 MHz Normal Dist f Dist f Dist Read	ents: Resolution Bandwid Mode, Externa Read Pk dBuV 42.3 43.8 42.7 43.8 Measureme Distance to Analyzer R	ndwidth ith al Antenna B Read Avg. dBuV 29.8 33.6 30.2 33.6 ent Frequency o Antenna teading	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.6 11.9 15.6	Average Amp dB -34.3 -34.0 -34.3 -34.0 -34.3 -34.0 Amp D Corr Avg	Measurer 1MHz Reso 10Hz Video D Corr dB -9.5	HPF 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Bandwidth vidth Peak dBuV/m 50.6 55.6 51.0 55.6 51.0 55.6 ct to 3 meter Strength @	Avg dBuV/m 38.1 45.4 38.5 45.4 ers 3 m	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -23.4 -18.4 -23.0 -18.4 Average F Peak Field Margin vs	Avg Mar dB -15.9 -8.6 -15.5 -8.6 Field Strength L S. Average L	V V, Noise Floor H H, Noise Floor th Limit .imit .imit
Peak Me 5.32 GHz, f GHz 10.640 15.960 10.640 15.960	Assurem 1 MHz 1 MHz	ents: Resolution Bandwic Video Bandwic Mode, Externa Read Pk dBuV 42.3 43.8 42.7 43.8 42.7 43.8 Measureme Distance to Analyzer R Antenna Fr	ndwidth th al Antenna B Read Avg. dBuV 29.8 33.6 30.2 33.6 a0.2 33.6 ent Frequency o Antenna teading actor	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.6 11.9 15.6	Average Amp dB -34.3 -34.0 -34.3 -34.0 -34.3 -34.0 D Corr Avg Peak	Measurer IMHz Ress I0Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average	HPF 1.0 1.0 1.0 1.0 1.0 1.0 5ain Correct Field S cd Peak	Bandwidth vidth Peak dBuV/m 50.6 55.6 51.0 55.6 55.6 tt to 3 mett Strength @ c Field Stre	Avg dBuV/m 38.1 45.4 38.5 45.4 45.4 ers 3 m	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0 Avg Lim Avg Lim Avg Mar Pk Mar	Pk Mar dB -23.4 -18.4 -23.0 -18.4 Average I Peak Field Margin vs Margin vs	Avg Mar dB -15.9 -8.6 -15.5 -8.6 Field Strength L Strength L S. Average L S. Peak Limi	V V, Noise Floor H H, Noise Floor th Limit .imit .imit ti
5.32 GHz, f GHz 10.640 15.960 10.640 15.960	Asuremon 1 MHz 1 MHz	ents: Resolution Bandwic Video Bandwic Mode, Externa Read Pk dBuV 42.3 43.8 42.7 43.8 Measureme Distance to Analyzer R Antenna Fa Cable Loss	ndwidth ith Read Avg. dBuV 29.8 33.6 30.2 33.6 ent Frequency Antenna teading actor	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.6 11.9 15.6	Average Amp dB -34.3 -34.0 -34.3 -34.0 -34.3 -34.0 Amp D Corr Avg Peak HPF	Preamp C D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average Calculate	HPF 1.0 1.0 1.0 1.0 1.0 1.0 1.0 5 Correct Field S cd Peaks s Filter	Peak dBuV/m 50.6 55.6 51.0 55.6 st to 3 mete Strength @ c Field Stree	Avg dBuV/m 38.1 45.4 38.5 45.4 sers 3 m ength	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 54.0 54.0 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -23.4 -18.4 -23.0 -18.4 Average I Peak Fiel Margin vs Margin vs	Avg Mar dB -15.9 -15.5 -8.6 -15.5 -8.6 Field Strengt d Strength L s. Average L s. Peak Limi	V V, Noise Floor H H, Noise Floor th Limit imit imit t

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08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Test En Project Compar EUT De EUT M Test Ta	gr: #: iy: scrip.: 'N: rget:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ems Dual Band PCI	Adapter											
<u>Equipm</u> <u>Peak M</u>	ent for 1 HP8564 HP 844 EMCO Cable: easurem 1 MHz 1MHz V	-22 GHz: E Analyzer DB Amplifier 3115 Antenna 20.0 ents: Resolution Ba	ndwidth dth	feet		<u>Equipm</u> <u>Average</u>	ent for 22 HP8564E . HP 11975, HP 11970I Cable: IF 0 Measure 1MHz Res 10Hz Vide	- 58 GI Analyzer A Ampli K Extern Only (32 ments: olution I o Bandy	Hz: r fier (LO) sal mixer/anto 1 MHz) Bandwidth vidth	enna					
2 2 4 2 CT															
5.745 GE	Iz, Norma	Mode, Extern	nal Antenna B	AF	CI	Amn	D Corr	HPF	Peak	Ava	Pk I im	Ava Lim	Pk Mar	Ava Mor	Notes
5.745 GF f GHz	Dist feet	Mode, Exterr Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
5.745 GF GHz 5.745	Dist feet	Mode, Extern Read Pk dBuV 74.2	Read Avg. dBuV 65.2	AF dB/m 35.3	CL dB 8.5	Amp dB 0.0	D Corr dB	HPF	Peak dBuV/m 108.5	Avg dBuV/m 99.5	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
5.745 GF f GHz 5.745 11.490	Dist feet 3.3 3.3	Mode, Extern Read Pk dBuV 74.2 42.8	Read Avg. dBuV 65.2 28.3	AF dB/m 35.3 39.7	CL dB 8.5 12.3	Amp dB 0.0 -33.9	D Corr dB -9.5 -9.5	HPF 0.0 1.0	Peak dBuV/m 108.5 52.5	Avg dBuV/m 99.5 38.0	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes V V. Noise Floor
5.745 GF GHz 5.745 11.490 17.235	Dist feet 3.3 3.3 3.3	Mode, Extern Read Pk dBuV 74.2 42.8 45.5	Read Avg. dBuV 65.2 28.3 28.5	AF dB/m 35.3 39.7 44.0	CL dB 8.5 12.3 16.6	Amp dB 0.0 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0	Peak dBuV/m 108.5 52.5 64.8	Avg dBuV/m 99.5 38.0 47.8	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -21.5	Avg Mar dB -16.0 -20.4	Notes V V, Noise Floor V, Noise Floor
5.745 GF GHz 5.745 11.490 17.235 26.000	Jack Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Extern Read Pk dBuV 74.2 42.8 45.5 30.5	al Antenna B Read Avg. dBuV 65.2 28.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9	CL dB 8.5 12.3 16.6 23.6	Amp dB 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 1.0	Peak dBuV/m 108.5 52.5 64.8 43.4	Avg dBuV/m 99.5 38.0 47.8 35.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -21.5 -30.6	Avg Mar dB -16.0 -20.4 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor
5.745 GF GHz 5.745 11.490 17.235 26.000 5.745	Z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Mode, Extern Read Pk dBuV 74.2 42.8 45.5 30.5 62.7	Antenna B Read Avg. dBuV 65.2 28.3 28.5 22.3 54.5	AF dB/m 35.3 39.7 44.0 32.9 35.3	CL dB 8.5 12.3 16.6 23.6 8.5	Amp dB 0.0 -33.9 -32.8 -35.1 0.0	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0	Peak dBuV/m 108.5 52.5 64.8 43.4 97.0	Avg dBuV/m 99.5 38.0 47.8 35.2 88.8	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -21.5 -30.6	Avg Mar dB -16.0 -20.4 -18.8	V V, Noise Floor V, Noise Floor V, Noise Floor H
5.745 GF f GHz 5.745 11.490 17.235 26.000 5.745 11.490	Z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Extern Read Pk dBuV 74.2 42.8 45.5 30.5 62.7 42.8	aal Antenna B Read Avg. dBuV 65.2 28.3 28.5 22.3 54.5 28.3	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7	CL dB 8.5 12.3 16.6 23.6 8.5 12.3	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0 1.0 1.0	Peak dBuV/m 108.5 52.5 64.8 43.4 97.0 52.5	Avg dBuV/m 99.5 38.0 47.8 35.2 88.8 38.0	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0	Pk Mar dB -21.5 -30.6 -21.5	Avg Mar dB -16.0 -20.4 -18.8 -16.0	Notes V V, Noise Floor V, Noise Floor H H, Noise Floor
5.745 GF GHz 5.745 11.490 17.235 26.000 5.745 11.490 17.235	Z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Extern Read Pk dBuV 74.2 42.8 45.5 30.5 62.7 42.8 45.5	aal Antenna B Read Avg. dBuV 65.2 28.3 28.5 22.3 54.5 28.3 28.3 28.5	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0	CL dB 8.5 12.3 16.6 23.6 8.5 12.3 16.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF 0.0 1.0 1.0 0.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 108.5 52.5 64.8 43.4 97.0 52.5 64.8	Avg dBuV/m 99.5 38.0 47.8 35.2 88.8 38.0 47.8	Pk Lim dBuV/m 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2	Pk Mar dB -21.5 -30.6 -21.5	Avg Mar dB -16.0 -20.4 -18.8 -16.0 -20.4	V V, Noise Floor V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor
5.745 GF f GHz 5.745 11.490 17.235 26.000 17.235 26.000	Z, Normal Dist feet 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.	Mode, Extern Read Pk dBuV 74.2 42.8 45.5 30.5 62.7 42.8 45.5 30.5 62.7 42.8 45.5 30.5	ad Antenna B Read Avg. dBuV 65.2 28.3 28.5 22.3 54.5 28.3 28.5 28.3 28.5 22.3	AF dB/m 35.3 39.7 44.0 32.9 35.3 39.7 44.0 32.9	CL dB 8.5 12.3 16.6 23.6 8.5 12.3 16.6 23.6	Amp dB 0.0 -33.9 -32.8 -35.1 0.0 -33.9 -32.8 -35.1	D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	0.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak dBuV/m 108.5 52.5 64.8 43.4 97.0 52.5 64.8 43.4	Avg dBuV/m 99.5 38.0 47.8 35.2 88.8 38.0 47.8 35.2	Pk Lim dBuV/m 74.0 74.0 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 54.0 68.2 54.0 68.2 54.0	Pk Mar dB -21.5 -30.6 -21.5 -30.6	Avg Mar dB -16.0 -20.4 -18.8 -16.0 -20.4 -18.8	Notes V V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor H, Noise Floor

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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Fest Eng Project ; Compar	pr: f: v:		Frank Ibrahim 02U1644-1 W-Link System	ns											
EUT De	scrip.:		802.11 a/b/g D	ual Band	PCI Ad	apter									
EUT M/	N:		PC22												
Fest Tar	get:		FCC 15.407												
Equipme	ent for 1 HP8564 HP 844 EMCO Cable:	<u>-22 GHz:</u> E Analyzer 9B Amplifier 3115 Antenna 20.0	, I	feet		<u>Equipm</u>	ent for 22 HP8564E . HP 11975, HP 11970I Cable: IF 0	- 58 G Analyze A Ampli K Exterr Only (32	Hz: r fier (LO) al mixer/ante 1 MHz)	enna					
2eak Me	asurem 1 MHz 1 MHz '	ents: Resolution Ba Video Bandwid	ndwidth dth			Average	e Measure 1MHz Res 10Hz Vide	ments: olution o Bandy	Bandwidth width						
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
5.785	3.3	77.5	68.2	35.3	8.5	0.0	-9.5	0.0	111.8	102.5					V
11.570	3.3	44.0	28.3	39.7	12.4	-33.9	-9.5	1.0	53.7	38.0	74.0	54.0	-20.3	-16.0	V, Noise Floor
17.355	3.3	43.7	28.5	44.0	16.7	-32.8	-9.5	1.0	63.1	47.9	71.0	68.2	20.4	-20.3	V, Noise Floor
	3.3	50.5	61.2	32.9	23.0	-35.1	-9.5	1.0	45.4	55.2 05.6	/4.0	54.0	-30.0	-18.8	V, Noise Floor
20.000	2.5	44.0	28.3	39.7	12.4	-33.9	-9.5	1.0	53.7	38.0	74.0	54.0	-20.3	-16.0	H Noise Floor
26.000 5.785 11.570	1 1 1	11.0	28.5	44.0	16.7	-32.8	-9.5	1.0	63.1	47.9	7 11.0	68.2	20.5	-20.3	H. Noise Floor
26.000 5.785 11.570 17.355	3.3	43.7				0.5.4	0.5	1.0	10.1				20 K	10.0	11 N
26.000 5.785 11.570 17.355 26.000	3.3 3.3	43.7 30.5	22.3	32.9	23.6	-35.1	-9.5	1.0	43.4	35.2	74.0	54.0	-30.6	-18.8	H, Noise Floor
26.000 5.785 11.570 17.355 26.000	5.5 3.3 3.3 f	43.7 30.5 Measureme	22.3 ent Frequency	32.9 y	23.6	Amp	Preamp (Jain	43.4	35.2	74.0	Avg Lim	-30.6 Average I	-18.8 Field Streng	th Limit
26.000 5.785 11.570 17.355 26.000	f Dist	43.7 30.5 Measureme Distance to	22.3 ent Frequency Antenna	32.9 y	23.6	Amp D Corr	Preamp (Distance	Gain Correct	43.4	35.2 ers	74.0	Avg Lim Pk Lim	-30.6 Average I Peak Field	-18.8 Field Streng d Strength L	H, Noise Floor th Limit imit
26.000 5.785 11.570 17.355 26.000	f Dist Read	43.7 30.5 Measureme Distance to Analyzer R	22.3 ent Frequency Antenna leading	32.9 y	23.6	Amp D Corr Avg	Preamp (Distance Average	Gain Correct Field S	43.4 ct to 3 mete Strength @	ass.2 ass ass ass	74.0	Avg Lim Pk Lim Avg Mar	-30.6 Average H Peak Field Margin vs	Field Streng d Strength L Average L	H, Noise Floor th Limit imit imit

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Complia	FCC ance Ce	Measurem	ent Services, Mo	rgan H	ill Op	en Field	Site								
Test Eng Project # Compan EUT Des EUT M/ Test Tar	gr: #: scrip.: N: rget:	Frank Ibrahim 02U1644-1 W-Link Syste 802.11 a/b/g PC22 FCC 15.407	n ms Dual Band PCI	Adapter											
Equipm	ent for 1 HP8564 HP 844 EMCO Cable:	-22 GHz: IE Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E HP 11975 HP 11970 Cable: IF 0	- 58 G Analyze A Ampli K Extern Only (32	Hz: er ifier (LO) nal mixer/ante 21 MHz)	enna					
Peak Me	easurem 1 MHz 1MHz	<u>ents:</u> Resolution Bai Video Bandwid	ndwidth lth			Average	e Measure 1MHz Res 10Hz Vide	ments: olution o Band [,]	Bandwidth width						
f GHz	z, Norma Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
5.805	33	74.0	66.0	35.3	85	0.0	-9.5	0.0	108.3	100.3					V
11.610	3.3	43.8	28.3	39.7	12.4	-33.9	-9.5	1.0	53.5	38.0	74.0	54.0	-20.5	-16.0	V. Noise Floor
17.415	3.3	43.0	28.5	44.0	16.7	-32.8	-9.5	1.0	62.4	47.9		68.2		-20.3	V, Noise Floor
26.000	3.3	30.5	22.3	32.9	23.6	-35.1	-9.5	1.0	43.4	35.2	74.0	54.0	-30.6	-18.8	V, Noise Floor
	3.3	66.0	57.5	35.3	8.5	0.0	-9.5	0.0	100.3	91.8					Н
5.805	33	43.8	28.3	39.7	12.4	-33.9	-9.5	1.0	53.5	38.0	74.0	54.0	-20.5	-16.0	H, Noise Floor
5.805	5.5	42.0	28.5	44.0	16.7	-32.8	-9.5	1.0	62.4	47.9		68.2		-20.3	H, Noise Floor
5.805 11.610 17.415 26.000	3.3	43.0	22.2	22.0	226	251	1 05	1 1 0	12.4	25.2	74.0	54.0	20.6	19.9	II Noise Floor

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Notes

V. Noise Floor Н

H, Noise Floor

08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

		Frank Ibrahir													
Project #	51. 4.	02U1644=1													
Compan	v:	W-Link Syste	ems												
EUT De	scrip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/	N:	PC22													
Fest Tar	get:	FCC 15.407													
Equipmo Peak Me	ent for 1 HP8564 HP 844 EMCO Cable: asurem 1 MHz 1 MHz	-22 GHz: BE Analyzer 9B Amplifier 3115 Antenna 20.0 ents: Resolution Ba Video Bandwid	ndwidth Ith Antenna B	feet		<u>Equipm</u> <u>Average</u>	ent for 22 HP8564E A HP 11975A HP 11976A Cable: IF C 2 Measure 1MHz Res 10Hz Vide	- 58 G Analyze A Ampli Extern Only (32 ments: olution 1 o Bandy	Hz: r fier (LO) tal mixer/ante 1 MHz) Bandwidth width	enna					
f	Dist	Read Pk	Read Avg	ΔF	CL	Amn	DCorr	HPF	Peak	Δνσ	Pk Lim	Avg Lim	Pk Mar	Avg Mar	
GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
10.420	3.3	43.7	30.3	39.5	11.8	-34.7	-9.5	1.0	51.8	38.4		68.2		-29.8	
15 620	33	40.0	20.0	38.8	15.2	00.0	0.5			10.6					
15.650	0.0		28.8	50.0	15.5	-33.9	-9.5	1.0	51.7	40.6	74.0	54.0	-22.3	-13.4	V,
10.420	3.3	43.3	28.8	39.5	11.8	-33.9 -34.7	-9.5	1.0 1.0	51.7 51.4	40.6	74.0	54.0 68.2	-22.3	-13.4 -27.6	V,
10.420 15.630	3.3	43.3 40.0	28.8 30.3 28.8	39.5 38.8	11.8 15.3	-33.9 -34.7 -33.9	-9.5 -9.5	1.0 1.0 1.0	51.7 51.4 51.7	40.6 40.6 40.6	74.0	54.0 68.2 54.0	-22.3	-13.4 -27.6 -13.4	V.

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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Cest Enc			Frank Ibrahim												
Project	4. 4.		0211644-1												
Compan	v.		W-Link System	15											
EUT De	scrin.:		802.11 a/b/g D	ual Band	PCI Ad	apter									
EUT M/	N:		PC22												
fest Tar	get:		FCC 15.407												
Zauipm	ent for 1	-22 GHz:				Equipm	ent for 22 -	- 58 GHz	::						
	HP8564	4E Analyzer					HP8564E A	nalyzer	-						
	HP 844	9B Amplifier					HP 11975A	Amplifier	r (LO)						
	EMCO	3115 Antenna					HP 11970K	External 1	mixer/ante	enna					
	Cable:	20.0		feet			Cable: IF O	nly (321 N	MHz)						
eak Me	easurem	ents:				Average	Measuren	nents:							
Peak Me	asurem 1 MHz	ents: Resolution Ba	ndwidth			Average	Measuren 1MHz Reso	nents: olution Bar	ndwidth						
Peak Mo	asurem 1 MHz 1 MHz	<u>ents:</u> Resolution Ba Video Bandwid	ndwidth dth			Average	Measuren 1MHz Reso 10Hz Video	nents: olution Bar Bandwidt	ndwidth lth						
.25 GHz	asurem 1 MHz 1MHz ' , Turbo M	<u>ents:</u> Resolution Ba Video Bandwid Iode, External	ndwidth dth Antenna B			<u>Average</u>	Measuren 1MHz Reso 10Hz Video	nents: Iution Ban Bandwid	ndwidth lth						
25 GHz	asurem 1 MHz 1MHz , Turbo M Dist	ents: Resolution Ba Video Bandwid Iode, External Read Pk	ndwidth dth Antenna B Read Avg.	AF	CL	Average Amp	Measuren 1MHz Reso 10Hz Video	nents: olution Ban Bandwidt	ndwidth lth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
Peak Mo 25 GHz f GHz	asurem 1 MHz 1 MHz , Turbo M Dist feet	ents: Resolution Ba Video Bandwid Iode, External Read Pk dBuV	ndwidth dth Antenna B Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	Measuren 1MHz Reso 10Hz Video D Corr dB	nents: olution Ban Bandwidt HPF	ndwidth lth Peak IBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
25 GHz f GHz 10.500	asurem 1 MHz 1 MHz , Turbo M Dist feet 3.3	ents: Resolution Ba Video Bandwid Iode, External Read Pk dBuV 43.8	ndwidth dth Read Avg. dBuV 30.3	AF dB/m 39.2	CL dB 11.9	Average Amp dB -34.4	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5	hents: olution Bard Bandwidt HPF d 1.0	ndwidth lth Peak IBuV/m 52.0	Avg dBuV/m 38.4	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2	Pk Mar dB	Avg Mar dB -29.8	Notes
25 GHz f GHz 10.500 15.750	asurem 1 MHz 1 MHz , Turbo M Dist feet 3.3 3.3	ents: Resolution Ba Video Bandwid Iode, External Read Pk dBuV 43.8 40.2	ndwidth dth Antenna B Read Avg. dBuV 30.3 28.8	AF dB/m 39.2 38.8	CL dB 11.9 15.4	Average Amp dB -34.4 -34.0	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5	hents: olution Bar Bandwidt HPF d 1.0 1.0	Peak BuV/m 52.0 51.9	Avg dBuV/m 38.4 40.5	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB -22.1	Avg Mar dB -29.8 -13.5	Notes V V, Noise Floor
25 GHz f GHz 10.500 15.750 10.500	asurem 1 MHz 1 MHz , Turbo M Dist feet 3.3 3.3 3.3 3.3	ents: Resolution Ba Video Bandwie Iode, External Read Pk dBuV 43.8 40.2 45.0	Antenna B Read Avg. dBuV 30.3 28.8 30.8 20.9	AF dB/m 39.2 38.8 39.2 28.8	CL dB 11.9 15.4 11.9	Average Amp dB -34.4 -34.0 -34.4 -34.0	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0 1.0 1.0	Peak BuV/m 52.0 51.9 53.2	Avg dBuV/m 38.4 40.5 38.9	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0 68.2	Pk Mar dB -22.1	Avg Mar dB -29.8 -13.5 -29.3 -29.3	Notes V V, Noise Floor H
25 GHz f GHz 10.500 15.750 10.500 15.750	Dist 1.3.3 3.3 3.3	ents: Resolution Ba Video Bandwid fode, External Read Pk dBuV 43.8 40.2 45.0 40.2	Antenna B Read Avg. dBuV 30.3 28.8 30.8 28.8	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	nents: olution Bandwidt blandwidt HPF d 1.0 1.0 1.0 1.0	Peak BuV/m 52.0 51.9 53.2 51.9	Avg dBuV/m 38.4 40.5 38.9 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 54.0	Pk Mar dB -22.1 -22.1	Avg Mar dB -29.8 -13.5 -29.3 -13.5	Notes V V, Noise Floor H H, Noise Floor
25 GHz f GHz 10.500 15.750 15.750	1 MHz 1 MHz Turbo N Dist feet 3.3 3.3 3.3 3.3 5.3 f	ents: Resolution Ba Video Bandwid tode, External Read Pk dBuV 43.8 40.2 45.0 40.2 Measurem	ndwidth Antenna B Read Avg. dBuV 30.3 28.8 30.8 28.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 29.8 20.8	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 Amp	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5 -9.5	HPF d 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak BuV/m 52.0 51.9 53.2 51.9	Avg dBuV/m 38.4 40.5 38.9 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim	Pk Mar dB -22.1 -22.1	Avg Mar dB -29.8 -13.5 -29.3 -13.5	Notes V V, Noise Floor H H, Noise Floor
2.25 GHz f GHz 10.500 15.750 10.500	A Surem 1 MHz 1 MHz , Turbo N Dist feet 3.3 3.3 3.3 5.3 1 MHz 1 MHZ	ents: Resolution Ba Video Bandwie fode, External Read Pk dBuV 4.3.8 4.0.2 4.5.0 4.0.2 Measureme Distance to	ndwidth dth Antenna B Read Avg. dBuV 30.3 28.8 30.8 28.8 28.8 ent Frequency	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 Amp D Corr	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp G Distance	HPF d 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak IBuV/m 52.0 51.9 53.2 51.9	Avg dBuV/m 38.4 40.5 38.9 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim	Pk Mar dB -22.1 -22.1 Average F Peak Field	Avg Mar dB -29.8 -13.5 -29.3 -13.5 'ield Strength I Strength I	Notes V V, Noise Floor H H, Noise Floor h Limit init
5.25 GHz f GHz 10.500 15.750 10.500 15.750	1 MHz 1 MHz 1 MHz , Turbo M Dist feet 3.3 3.3 3.3 3.3 1 3.3 f Dist Paad	ents: Resolution Ba Video Bandwid fode, External Read Pk dBuV 43.8 40.2 45.0 40.2 Measureme Distance to Analyzer R	ndwidth Antenna B Read Avg. dBuV 30.3 28.8 30.8 28.8 ent Frequency o Antenna Pagading	AF dB/m 39.2 38.8 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 Amp D Corr Δυσ	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp G Distance O	HPF d 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Peak BuV/m 52.0 51.9 53.2 51.9 53.2 51.9	Avg dBuV/m 38.4 40.5 38.9 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -22.1 -22.1 Average F Peak Field	Avg Mar dB -29.8 -13.5 -29.3 -13.5 Field Strength L Average L	V V, Noise Floor H, Noise Floor h Limit imit imit
5.25 GHz f GHz 10.500 15.750 10.500 15.750	1 MHz 1 MHz 1 MHz 7 Turbo M Dist feet 3.3 3.3 3.3 3.3 5.3 1 5 Dist Read A E	ents: Resolution Ba Video Bandwid fode, External Read Pk dBuV 43.8 40.2 45.0 40.2 Measurement Distance to Analyzer R Analyzer R	ndwidth Antenna B Read Avg. dBuV 30.3 28.8 30.8 28.8 ent Frequency Antenna Reading water	AF dB/m 39.2 38.8 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 Amp D Corr Avg Book	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp G Distance (Average F	nents: Jution Bar b Bandwidt HPF d 1.0 1.0 1.0 cain Correct to Field Street	ndwidth tth Peak [BuV/m 52.0 51.9 53.2 51.9 to 3 mete ength @	Avg dBuV/m 38.4 40.5 38.9 40.5 275 3 m	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 68.2 54.0 54.0 Avg Lim Pk Lim Avg Mar	Pk Mar dB -22.1 -22.1 Average F Peak Field Margin vs	Avg Mar dB -29.8 -13.5 -29.3 -13.5 -13.5 Field Strength L Strength L Strength L Market Limit	V V, Noise Floor H H, Noise Floor h Limit imit
5.25 GHz f GHz 10.500 15.750 10.500 15.750	1 MHz 1 MHz Turbo M Dist feet 3.3 3.3 3.3 f Dist Read AF	ents: Resolution Ba Video Bandwid Iode, External Read Pk dBuV 43.8 40.2 45.0 40.2 Measureme Distance to Analyzer R Antenna F,	ndwidth dth Read Avg. dBuV 30.3 28.8 30.8 28.8 ent Frequency Antenna Reading actor	AF dB/m 39.2 38.8 39.2 38.8	CL dB 11.9 15.4 11.9 15.4	Average Amp dB -34.4 -34.0 -34.4 -34.0 -34.4 -34.0 Amp D Corr Avg Peak UDE	Measuren 1MHz Reso 10Hz Video D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp G Distance G Average I Calculatee	nents: Jution Bar b Bandwidt HPF d 1.0 1.0 1.0 1.0 Sain Correct t Field Street d Peak F Elever	Peak BuV/m 52.0 51.9 53.2 51.9 to 3 mete ength @ Field Stre	Avg dBuV/m 38.4 40.5 38.9 40.5 38.9 40.5	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -22.1 -22.1 Average F Peak Field Margin vs Margin vs	Avg Mar dB -29.8 -13.5 -29.3 -13.5 -29.3 -13.5 -29.3 -13.5 -29.3 -13.5 -29.3 -13.5 -29.4 -13.5 -29.4 -13.5 -29.8 -29.8 -	Notes V V, Noise Floor H, Noise Floor h Limit imit imit t

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Fest Engr Project #: Company EUT Desc EUT M/N Fest Targ	r: : y: crip.: N: get:	Frank Ibrahin 02U1644-1 W-Link Syste 802.11 a/b/g I PC22 FCC 15.407	n ms Dual Band PCI	Adapter											
<u>Equipmer</u>	nt for 1 HP8564 HP 8449 EMCO Cable:	-22 GHz: E Analyzer 9B Amplifier 3115 Antenna 20.0		feet		<u>Equipm</u>	ent for 22 HP8564E . HP 11975, HP 11970 Cable: IF (- 58 Gl Analyzer A Ampli K Extern Only (32	Hz: fier (LO) al mixer/ante 1 MHz)	enna					
Peak Mea	asureme 1 MHz 1 1MHz V	ents: Resolution Bar /ideo Bandwid	ndwidth lth			<u>Average</u>	Measure 1MHz Res 10Hz Vide	ments: olution l o Bandy	3andwidth vidth						
29 GHz, GHz	asureme 1 MHz 1 1MHz V Turbo M Dist feet	ents: Resolution Bar /ideo Bandwid ode, External A Read Pk dBuV	ndwidth lth Antenna B Read Avg. dBuV	AF dB/m	CL dB	Average Amp dB	Measure 1MHz Res 10Hz Vide D Corr dB	ments: solution I so Bandy HPF	Bandwidth vidth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
29 GHz, 7 6 GHz 10.580	asureme 1 MHz 1 1MHz V Turbo M Dist feet 3.3	ents: Resolution Bar Video Bandwid ode, External A Read Pk dBuV 43.0	ndwidth lth Read Avg. dBuV 29.8	AF dB/m 39.2	CL dB	Average Amp dB -34.3	Measure 1MHz Res 10Hz Vide D Corr dB -9.5	ments: olution l to Bandy HPF 1.0	Bandwidth vidth Peak dBuV/m 51.3	Avg dBuV/m 38.1	Pk Lim dBuV/m	Avg Lim dBuV/m 68.2	Pk Mar dB	Avg Mar dB -30.1	Notes
29 GHz,	asuremo 1 MHz 1 1MHz V Turbo M Dist feet 3.3 3.3	ents: Resolution Bar Video Bandwid Tode, External Read Pk dBuV 43.0 39.2	Antenna B Read Avg. dBuV 29.8 28.5	AF dB/m 39.2 38.7	CL dB 11.9 15.5	Average Amp dB -34.3 -34.0	Measure 1MHz Res 10Hz Vide D Corr dB -9.5 -9.5	ments: olution I to Bandy HPF 1.0 1.0	Bandwidth vidth Peak dBuV/m 51.3 50.9	Avg dBuV/m 38.1 40.2	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 68.2 54.0	Pk Mar dB -23.1	Avg Mar dB -30.1 -13.8	Notes V V, Noise Floor
29 GHz, 7 f GHz 10.580 15.870 10.580 15.870	asuremo 1 MHz 1 1 MHz V Turbo M Dist feet 3.3 3.3 3.3 3.3 3.3	ents: Resolution Bar Video Bandwid ode, External A Read Pk dBuV 43.0 39.2 40.3 39.2	Antenna B Read Avg. dBuV 29.8 28.5 28.0 28.5	AF dB/m 39.2 38.7 39.2 38.7	CL dB 11.9 15.5 11.9 15.5	Average Amp dB -34.3 -34.0 -34.3 -34.0	Measure 1MHz Res 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5	ments: solution I so Bandy HPF 1.0 1.0 1.0 1.0	Bandwidth vidth Peak dBuV/m 51.3 50.9 48.6 50.9	Avg dBuV/m 38.1 40.2 36.3 40.2	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 68.2 54.0 68.2 54.0	Pk Mar dB -23.1	Avg Mar dB -30.1 -13.8 -31.9 -13.8	V V, Noise Floor H, Noise Floor H, Noise Floor

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Notes

V, Noise Floor V, Noise Floor

H, Noise Floor H, Noise Floor

08/12/02 FCC Measurement Compliance Certification Services, Morgan Hill Open Field Site

Test Eng	r:	Frank Ibrahir	n												
Project #	; ;	02U1644-1													
Compan	y:	W-Link Syste	ems												
EUT De	scrip.:	802.11 a/b/g	Dual Band PCI	Adapter											
EUT M/	N:	PC22													
Test Tai	get:	FCC 15.407													
Equipm	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GI	Hz:						
	HP8564	E Analyzer					HP8564E	Analyze	r						
	HP 844	9B Amplifier					HP 11975/	A Ampli	fier (LO)						
	EMCO	3115 Antenna					HP 11970F	K Extern	al mixer/ante	enna					
	Cable:	20.0		feet			Cable: IF C	Only (32	1 MHz)						
Dool: M		onto				Avenage	Moormo	montor							
reak IVI	1 MU-	Pasalution Pa	ndwidth			Average	1MUz Dor	alution 1	Dandwidth						
	1MHz V	Video Bandwie	dth				10Hz Vide	o Bandy	vidth						
		Fideo Building					Torn. Vide	o Dunu	, iuni						
5.76 GHz	Turbo M	lode, External	Antenna B												
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	HPF	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	
GHz	feet	dBuV	dBuV	dB/m	dB	dB	dB		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	
11.520	3.3	39.0	28.3	39.7	12.4	-33.9	-9.5	1.0	48.7	38.0	74.0	54.0	-25.3	-16.0	V,
17.280	3.3	38.2	28.5	44.0	16.6	-32.8	-9.5	1.0	57.5	47.8		68.2		-20.4	V,
11.520	3.3	39.0	28.3	39.7	12.4	-33.9	-9.5	1.0	48.7	38.0	74.0	54.0	-25.3	-16.0	H,
17.280	3.3	38.2	28.5	44.0	16.6	-32.8	-9.5	1.0	57.5	47.8		68.2		-20.4	H,
			-					~ .							
	t	Measureme	ent Frequency	y		Amp	Preamp (jain				Avg Lim	Average F	field Strengt	h Limit
	Dist	Distance to	o Antenna			D Corr	Distance	Correc	et to 3 mete	ers		Pk Lim	Peak Field	l Strength L	imit
	Read	Analyzer R	Reading			Avg	Average	Field S	Strength @	3 m		Avg Mar	Margin vs	. Average L	imit
	AF	Antenna Fa	actor			Peak	Calculate	ed Peak	Field Stre	ngth		Pk Mar	Margin vs	. Peak Limi	t
	CL	Cable Loss				HPF	High Pas	s Filter	r	-			2		
							0								

Note: No other signals found between 1 and 40 GHz, all signals are below system noise floor

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Fost Eng		Frank Ibrahi													
Project #	¦1∶ ±•	02111644-1													
Comnan	v.	W-Link Syste	eme												
EUT Des	scrin.	802 11 a/b/g	Dual Band PCI	Adapter											
EUT M/	N:	PC22	Duar Duar I Ci	ricupter											
Fest Tar	get:	FCC 15.407													
Equipme	ent for 1	-22 GHz:				Equipm	ent for 22	- 58 GH2	z:						
	HP8564	4E Analyzer					HP8564E /	Analyzer	_						
	HP 844	9B Amplifier					HP 11975A	Amplifie	er (LO)						
	EMCO	3115 Antenna					HP 11970F	External	l mixer/ante	nna					
	Cable:	20.0		feet			Cable: IF C	Dnly (321)	MHz)						
Peak Me	asurem	ents:				Average	e Measurei	nents:							
Peak Me	asurem 1 MHz	<u>ents:</u> Resolution Ba	ndwidth			Average	Measurer 1MHz Res	nents: olution Ba	andwidth						
eak Me	asurem 1 MHz 1 MHz '	<u>ents:</u> Resolution Ba Video Bandwi	ndwidth dth			<u>Average</u>	e Measurer 1MHz Res 10Hz Vide	<u>ments:</u> olution Ba o Bandwic	andwidth dth						
Peak Me 5.8 GHz, 7	asurem 1 MHz 1 MHz ' Turbo Mo	<u>ents:</u> Resolution Ba Video Bandwi ode, External A	ndwidth dth Antenna B			<u>Average</u>	e Measurer 1MHz Reso 10Hz Vide	<u>ments:</u> plution Ba o Bandwic	andwidth dth						
Peak Me	asurem 1 MHz 1 MHz ' Turbo Mo Dist	ents: Resolution Ba Video Bandwi ode, External A Read Pk	ndwidth dth Antenna B Read Avg.	AF	CL	<u>Average</u> Amp	e Measurer 1MHz Reso 10Hz Vide D Corr	<u>ments:</u> olution Ba o Bandwid	andwidth dth Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
eak Me .8 GHz, ⁷ f GHz	asurem 1 MHz 1MHz Turbo Mo Dist feet	ents: Resolution Ba Video Bandwi ode, External A Read Pk dBuV	ndwidth dth Antenna B Read Avg. dBuV	AF dB/m	CL dB	<u>Average</u> Amp dB	D Corr dB	nents: olution Ba o Bandwid HPF	andwidth dth Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
Peak Me 8 GHz, 7 f GHz 11.600	asurem 1 MHz 1 MHz Turbo Mo Dist feet 3.3	ents: Resolution Ba Video Bandwie ode, External A Read Pk dBuV 40.2	ndwidth dth Antenna B Read Avg. dBuV 28.3	AF dB/m 39.7	CL dB 12.4	Average Amp dB -33.9	 Measurer 1MHz Ress 10Hz Vide D Corr dB -9.5 	ments: olution Ba o Bandwid HPF (1.0	andwidth dth Peak dBuV/m 49.9	Avg dBuV/m 38.0	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0	Pk Mar dB -24.1	Avg Mar dB -16.0	Notes V, Noise Floor
Peak Me 8 GHz, 7 f GHz 11.600 17.400	asurem 1 MHz 1 MHz ' Turbo Mo Dist feet 3.3 3.3	ents: Resolution Ba Video Bandwie Dde, External A Read Pk dBuV 40.2 39.8	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2	AF dB/m 39.7 44.0	CL dB 12.4 16.7	Average Amp dB -33.9 -32.8	 Measurer 1MHz Rese 10Hz Vide D Corr dB -9.5 -9.5 	ments: o Bandwid HPF 1.0 1.0	Peak dBuV/m 49.9 59.3	Avg dBuV/m 38.0 47.6	Pk Lim dBuV/m 74.0	Avg Lim dBuV/m 54.0 68.2	Pk Mar dB -24.1	Avg Mar dB -16.0 -20.6	Notes V, Noise Floor V, Noise Floor
Peak Me .8 GHz, 7 f GHz 11.600 17.400 11.600	1 MHz 1 MHz 1 MHz Turbo Mo Dist feet 3.3 3.3 3.3	ents: Resolution Ba Video Bandwi ode, External A Read Pk dBuV 40.2 39.8 40.2	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3	AF dB/m 39.7 44.0 39.7	CL dB 12.4 16.7 12.4	Average Amp dB -33.9 -32.8 -33.9	Measurer 1MHz Reso 10Hz Vide D Corr dB -9.5 -9.5 -9.5	HPF 1.0 1.0 1.0 1.0	Peak dBuV/m 49.9 59.3 49.9	Avg dBuV/m 38.0 47.6 38.0	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0	Pk Mar dB -24.1 -24.1	Avg Mar dB -16.0 -20.6 -16.0	Notes V, Noise Floor V, Noise Floor H, Noise Floor
eak Me .8 GHz, 7 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz Turbo Mo Dist feet 3.3 3.3 3.3 3.3 3.3	ents: Resolution Ba Video Bandwi ode, External A Read Pk dBuV 40.2 39.8 40.2 39.8	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3 28.2	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8	Measurer 1MHz Ress 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	nents: olution Ba o Bandwic HPF (1.0 1.0 1.0 1.0 1.0	Peak BuV/m 49.9 59.3 49.9 59.3 49.9	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -24.1 -24.1	Avg Mar dB -16.0 -20.6 -16.0 -20.6	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor
Peak Me 5.8 GHz, 7 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz ' Turbo Mo Dist feet 3.3 3.3 3.3 3.3 5	ents: Resolution Ba Video Bandwi ode, External A Read Pk dBuV 40.2 39.8 40.2 39.8	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3 28.2 28.2 28.2 28.2	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 -32.8	Measurer 1MHz Ress 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5	nents: olution Ba o Bandwid HPF c 1.0 1.0 1.0 1.0 20in	Peak dBuV/m 49.9 59.3 49.9 59.3	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2	Pk Mar dB -24.1 -24.1	Avg Mar dB -16.0 -20.6 -16.0 -20.6 -20.6	Notes V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor
Peak Me 5.8 GHz, 7 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz Turbo Mo Dist feet 3.3 3.3 3.3 1.3 1.3 1.3 1.3 1.3	ents: Resolution Ba Video Bandwi ode, External A Read Pk dBuV 40.2 39.8 40.2 39.8 Measuremu Dictance to	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3 28.2 28.3 28.2 ent Frequenc;	AF dB/m 39.7 44.0 39.7 44.0 y	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D.Corr	Measurer 1MHz Rest 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 -9.5 Preamp (Distance	nents: o Bandwid HPF c 1.0 1.0 1.0 1.0 5 ain Correct	Peak dBuV/m 49.9 59.3 49.9 59.3 49.9 59.3	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim	Pk Mar dB -24.1 -24.1 Average F	Avg Mar dB -16.0 -20.6 -16.0 -20.6 Field Strengt	Notes V. Noise Floor V. Noise Floor H. Noise Floor h. Limit
Peak Me 5.8 GHz, 7 f <u>GHz</u> 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz Turbo Mc Dist feet 3.3 3.3 3.3 5 Dist Dist Paged	ents: Resolution Ba Video Bandwio de, External / Read Pk dBuV 40.2 39.8 40.2 39.8 Measuremu Distance to Applyance E	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3 28.2 28.3 28.2 ent Frequency o Antenna Develing	AF dB/m 39.7 44.0 39.7 44.0 y	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Aver	e Measurer 1MHz Ress 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance	nents: o Bandwice HPF c 1.0 1.0 1.0 Correct Eicld Str	Peak dth dth dth dth dth dth dth dth dth dth	Avg dBuV/m 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar	Pk Mar dB -24.1 -24.1 Average F Peak Field	Avg Mar dB -16.0 -20.6 -16.0 -20.6 -20.6 Tield Strength Li Strength Li	Notes V. Noise Floor H. Noise Floor H. Noise Floor h Limit init
Peak Me 5.8 GHz, 7 f GHz 11.600 17.400 17.400	asurem 1 MHz 1 MHz 1 MHz Turbo Mo Dist feet 3.3 3.3 3.3 1.3 1.3 1.3 1.3 1.3	ents: Resolution Ba Video Bandwio ode, External A Read Pk dBuV 40.2 39.8 40.2 39.8 Measureme Distance to Analyzer F	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3 28.2 ent Frequency o Antenna Reading	AF dB/m 39.7 44.0 39.7 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 Amp D Corr Avg Brack	Measurer IMHz Ress 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average Colordet	nents: olution Ba o Bandwice HPF c 1.0 1.0 1.0 Correct Field Str	Peak dth dth dth dBuV/m 49.9 59.3 49.9 59.3 to 3 meter rength @	Avg dBuV/m 38.0 47.6 38.0 47.6 38.0 47.6 3 m	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar Ph. Mar Ph. Mar	Pk Mar dB -24.1 -24.1 Average F Peak Field Margin vs Margin vs	Avg Mar dB -16.0 -20.6 -16.0 -20.6 Field Strengt 1 Strength Li 2. Average L Deck Limit	Notes V. Noise Floor V. Noise Floor H. Noise Floor H. Noise Floor h Limit imit
Peak Me 5.8 GHz, 7 f GHz 11.600 17.400 11.600 17.400	asurem 1 MHz 1 MHz 1 MHz Turbo Mo Dist feet 3.3 3.3 3.3 1.3 3.3 1.3 1.3 1.3	ents: Resolution Ba Video Bandwi ode, External / Read Pk dBuV 40.2 39.8 40.2 39.8 Measurem Distance to Analyzer F Antenna F:	ndwidth dth Antenna B Read Avg. dBuV 28.3 28.2 28.3 28.2 28.3 28.2 ent Frequency Antenna Reading actor	AF dB/m 39.7 44.0 39.7 44.0 44.0	CL dB 12.4 16.7 12.4 16.7	Average Amp dB -33.9 -32.8 -33.9 -32.8 -32.8 Amp D Corr Avg Peak VDF	e Measuree IMHz Ress 10Hz Vide D Corr dB -9.5 -9.5 -9.5 -9.5 Preamp C Distance Average Calculate	nents: o Bandwid HPF c 1.0 1.0 1.0 1.0 5 ain Correct Field Str d Peak F	Andwidth dth Peak dBuV/m 49.9 59.3 49.9 59.3 to 3 meter rength @ Field Stree	Avg dBuV/m 38.0 47.6 38.0 47.6 38.0 47.6	Pk Lim dBuV/m 74.0 74.0	Avg Lim dBuV/m 54.0 68.2 54.0 68.2 Avg Lim Pk Lim Avg Mar Pk Mar	Pk Mar dB -24.1 -24.1 -24.1 Average F Peak Field Margin vs Margin vs	Avg Mar dB -16.0 -20.6 -16.0 -20.6 'ield Strengt I Strength Li . Average L . Peak Limit	Notes V, Noise Floor V, Noise Floor H, Noise Floor H, Noise Floor h Limit imit

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DIGITAL DEVICE RADIATED EMISSIONS

	FC UL 561F MON PHONE: (4 EUT Test Con Mode oj	C, VCCI, C , CSA, TU TEREY RC 08) 463-08 Comp Descrip ofigura Type of f Opera	PLI ation CISPR, CE V, BSMI, E DAD, SAN B85 F DAD, SAN B85 F DAD; SAN DAD; SAN CISPR, CE V, BSMI, E DAD; SAN DAD; SAN DA	AUSTEL, DHHS, NVLL JOSE, CA AX: (408) 4 W-Link S Harmony EUT/PC/ FCC Cla Transmit	NZ AP 95037-9001 63-0888 Systems, Ir // Skyline // Skyline // Monitor/KI ss B ting, EMC	nc. 802.11 a/ B/Mouse/I test	Proja Repo Date& 1 Test 1 b Printer/M	ect #: ort #: Time: Engr: odem	02U1466 020814C 08/14/02 Mike Hec	-1 2 8:04 PM krotte	
Freq	Reading	AF	Closs	Pre-amp	l evel	Limit	Margin	Pol	 A7	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	FCC_B	(dB)	(H/V)	(Deg)	(Meter)	(P/Q/A)
76.00	58.50	6.80	1.05	27.42	38.94	40.00	-1.06	3mV	0.00	1.00	Р
72.66	57.00	6.24	1.03	27.42	36.84	40.00	-3.16	3mV	0.00	1.00	Р
70.66	57.20	5.90	1.01	27.43	36.69	40.00	-3.31	3mV	0.00	1.00	Р
288.00	50.20	14.05	2.49	26.64	40.09	46.00	-5.91	3mH	135.00	1.20	Р
300.00	46.90	14.66	2.58	26.64	37.50	46.00	-8.50	3mV	180.00	1.80	Р
300.00	45.80	14.66	2.58	26.64	36.40	46.00	-9.60	3mH	180.00	1.00	Р
6 Worst	Data										

Note: Changing the transmitter band, mode or channel does not affect these emissions.

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8.8. POWER LINE CONDUCTED EMISSION

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth		
450 KHz to 30 MHz	⊠ Peak □ CISPR Quasi Peak	9 KHz	9 KHz		

Detector Function Setting of Test Receiver

TEST PROCEDURE

1. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a continuous mode.

2. Line conducted data was recorded for both NEUTRAL and HOT lines.

<u>RESULT</u>

No non-compliance noted. See plot Line Conduction.

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CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading		Closs	Limit	EN_B	Margin		Remark	
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.47	39.30			0.00	56.77	46.77	-17.47	-7.47	L1
0.67	35.89			0.00	56.00	46.00	-20.11	-10.11	L1
24.01	34.40			0.00	60.00	50.00	-25.60	-15.60	L1
0.67	35.74			0.00	56.00	46.00	-20.26	-10.26	L2
0.70	37.22			0.00	56.00	46.00	-18.78	-8.78	L2
24.01	34.56			0.00	60.00	50.00	-25.44	-15.44	L2
6 Worst I	Data								

Fund = 5.26GHz, Antenna A activated.

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.47	39.30			0.00	48.00		-8.70		L1
0.70	36.40			0.00	48.00		-11.60		L1
24.01	34.50			0.00	48.00		-13.50		L1
0.67	35.74			0.00	48.00		-12.26		L2
0.70	37.22			0.00	48.00		-10.78		L2
24.01	34.56			0.00	48.00		-13.44		L2
6 Worst I	Data								

Fund = 5.26GHz, Antenna B activated.

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DATE: A	AUGUST 19, 2002
FCC ID:	KA22002080002-1



561F Monterey Road, San Jose, CA 95037 USA Tel: (408) 463-0885 Fax: (408) 463-0888



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9. Frequency Stability

Test Procedure: Place the EUT in an environmental chamber. Set the EUT to transmit a CW signal. Vary the temperature from -30 degrees Celsius to +50 degrees Celsius in 10 degree steps. At each temperature allow enough time for the EUT's temperature to stabilize and then take a measurement of the frequency. Adjust the EUT's supply voltage to 85% and measure the frequency. Repeat at 115% of the supply voltage.

Temp Cent Celsium	Voltage (VAC)	Freq (GHz), Fund=2.437	Freq (GHz), Fund=5.26	Freq (GHz), Fund=5.785
25	115	2.436996	5.259992	5.784991
0	132	2.437	5.259998	5.784998
0	126	2.436999	5.259998	5.784998
0	115	2.436999	5.259997	5.784997
0	105	2.436999	5.259997	5.784997
0	98	2.436999	5.259998	5.784998
55	132	2.437005	5.260011	5.785011
55	126	2.437005	5.26001	5.78501
55	115	2.437005	5.26001	5.785011
55	105	2.437005	5.260009	5.78501
55	98	2.437005	5.26001	5.785011
0	115	2.436999	5.259997	5.784997
10	115	2.436997	5.259994	5.784995
20	115	2.436996	5.25999	5.784992
30	115	2.436995	5.259989	5.784988
40	115	2.436994	5.259985	5.784984
50	115	2.436997	5.259992	5.784991
55	115	2.437005	5.26001	5.785011
Delta		-2kHz	-2kHz	-8kHz
		-0.82 ppm	-0.38 ppm	-1.38 ppm
		+9kHz	+19kHz	+20kHz
		3.69 ppm	3.6 ppm	3.46 ppm

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10. SETUP PHOTOS

TRANSMITTER RADIATED RF MEASUREMENT SETUP



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DIGITAL DEVICE RADIATED EMISSIONS MEASUREMENT SETUP



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FREQUENCY STABILITY SETUP



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TRANSMITTER CONDUCTED RF MEASUREMENT SETUP



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POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP



END OF REPORT

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