

TEST NUMBER - 296-04

TEST REPORT TO

FEDERAL COMMUNICATIONS COMMISSION CFR47 PART95

Low Power Licensed Radio communication Devices
Medical Telemetry II Service Transceiver
In the bands 1395-1400 and 1427-14232 MHz

for

Philips Medical Systems
Cardiac and Monitoring Systems
3000 Minuteman Drive
Andover, MA 01810
978-659-2800

of

Telemetry II Access Point Transceiver

Model M4842A

on

8/2/2004

Tested by

Andrew Mertinooke

Reviewed by

Clifton P Brick

Signed originals on-file
at Philips Medical Systems

Barry Wyszogrod

25 - Aug - 04

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TEST DESCRIPTION

1. TEST OBJECTIVE

To test the Telemetry II Access Point Transceiver Model M4842A to FCC Part 95 Rules and write a report.

2. E.U.T. DESCRIPTION

GENERAL

The Telemetry II Access Point transceiver is an RF link, normally mounted on a ceiling, that provides the connection between the Patient worn device transceiver and the monitoring station.

FREQUENCIES USED: 1395.9, 1397.5, 1399.1, 1427.9, 1429.5, 1431.1 MHz

MODULATION SCHEME: FSK with Root Raised Cosine Filtering

SERIAL NUMBERS: US42200094

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TEST RESULTS AND CONCLUSIONS

Rule Section	Requirement	Notes	Pass	Fail
95.1109(b)	Labeling	See Exhibits FCC Label Sample and Label Location.	1	
95.115(a)(2)	Field Strength Limits		X	
95.115(b)	Undesired Emissions Limits		X	
95.115(c)	Emission Type	Transmits Data and ECG Waveform	X	
95.115(e)	Frequency Stability	Data Provided By Philips Medical	1	
95.1125	RF Safety	Statement and Technical Basis	1	

Note 1.) Exhibits provided by Philips for approval submission.

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TEST RESULTS AND CONCLUSIONS

PRODUCT TESTED - Telemetry II Access Point Transceiver

MODEL NUMBER - M4842A

RADIATED TEST RESULTS

The test results show that the emissions radiated from this equipment are in compliance with FCC Rules Part 95.

OCCUPIED BANDWIDTH & OUTPUT POWER

The test results show that the occupied bandwidth and output power of this equipment are in compliance with FCC Rules Part 95 .

CONDUCTED TEST RESULTS

The test results show that the emissions conducted on the power from this equipment are in compliance with FCC Rules Part 95.

ANALYSIS AND CONCLUSIONS

Based upon the radiated and conducted measurements we find that this equipment is within the limits of the FCC Rules Part 95. All results are based on a test of one sample, and represent other production units, only in as much as a sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

NOTES (Special conditions unique to this test)

None.

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TEST PROCEDURES

1. TEST EQUIPMENT

- A. HP 8546A (9 kHz - 6.5 GHz) EMI Receiver w/ RF Filter Section, S/N 3704A00323 / 3650A00360. Calibration Date 1-16-2004, calibrated annually.
- B. HP 8593E (9 kHz - 26.5 GHz) Spectrum Analyzer, S/N 3829A03887. Calibration Date 11-21-2003, calibrated annually.
- B. Com-Power Biconilog Antenna, Model AC220, S/N 25509. Calibration Date 7-16-2004, calibrated annually.
- C. Electro-Metrics Double Ridged Guide Antenna, Model EM-6961, S/N 6337. Calibration Date: 7-30-2004, calibrated annually.
- D. HP 1 - 26.5 GHz Preamplifier, Model 08449B, S/N 3008A01323. Calibration Date: 8-3-2004, calibrated annually.
- E. EMCO LISN, Model EM 3825/2, S/N 9109-1860. Calibration Date: 3-10-2004, calibrated annually.

2. FREQUENCY RANGE TO BE SCANNED.

- A. Radiated Test from 30 MHz to 40 GHz (or the 10th harmonic of the highest frequency whichever is lower).
- B. Conducted Test from 150 kHz to 30 MHz.

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3. TEST PROCEDURES.

Radiated test procedure:

The EUT, associated cables and peripheral devices are placed on the supporting table and any support equipment is placed off the site. The EUT is turned on and any necessary operating or test software installed and allowed to warm up. The EUT is pre-scanned in our ferrite tile lined chamber where it is rotated 360 degrees and examined in both horizontal and vertical polarization, all emission frequencies are identified and recorded. The EUT is then moved to the OATS and the frequency band from 30 MHz to 40 GHz is scanned, all frequencies identified in the chamber are investigated, as well as harmonic frequencies of the EUT. When an emission is found the emission is maximized by varying the bundle position of the connecting cables, the antenna height, the antenna polarization (vertical and horizontal) and the table orientation (360 degrees). The maximum reading is recorded and the next signal is searched for.

Conducted test procedure:

The power line of the EUT is connected to the LISN (Line Impedance Stabilization Network). A measurement of the emissions are made from the power line for both phase and neutral on the analyzer in the frequency range from 150 kHz to 30 MHz. The maximum readings are recorded for each phase.

All measurements are made according to the procedures defined in: "ANSI C63.4-1992 Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz, American National Standard for (ISBN 1-55937-215-5).

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FCC Part 95.1115 Test Limits

1. Part 95.1115(a)(2) Field Strength Radiation Limits (Quasi-Peak):

Frequency MHz	Distance meters	Limit dBµV/m	Limit µV/m
1395-1400	3	117.4*	740000*
1427-1429.5	3	117.4*	740000*

*NOTE: Average Limits

2. FCC Part 95.1115(b) Out-of-band emissions Limits (Quasi-Peak):

Frequency MHz	Distance meters	Limit dBµV/m	Limit µV/m
Below 960	3	46	200
Above 960	3	54*	500*

3. RSS 210 Section 6.6a Conduction Limits:
FCC Part 15 Class B Conduction Limits:

Frequency MHz	Quasi-Peak Limit dBµV	Average Limit dBµV
0.150 - 0.500	66 to 56	56 to 46
0.500 - 5.0	56	46
5.0 - 30.0	60	50

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TEST FACILITY DESCRIPTION

Compliance Worldwide is located on 357 Main Street in Sandown, New Hampshire. The conducted and radiated test sites, located at C.W. are used for Federal Communications Commission (FCC) testing and Industry Canada Testing. A site description is on file with the FCC in Columbia, MD USA. Site information is also on file with Industry Canada, anyone wishing to review this Test Facility Description is referred to file number **IC 3023**. This is currently on file at Industry Canada, 1241 Clyde Avenue, Ottawa, ON K2C 1Y3.

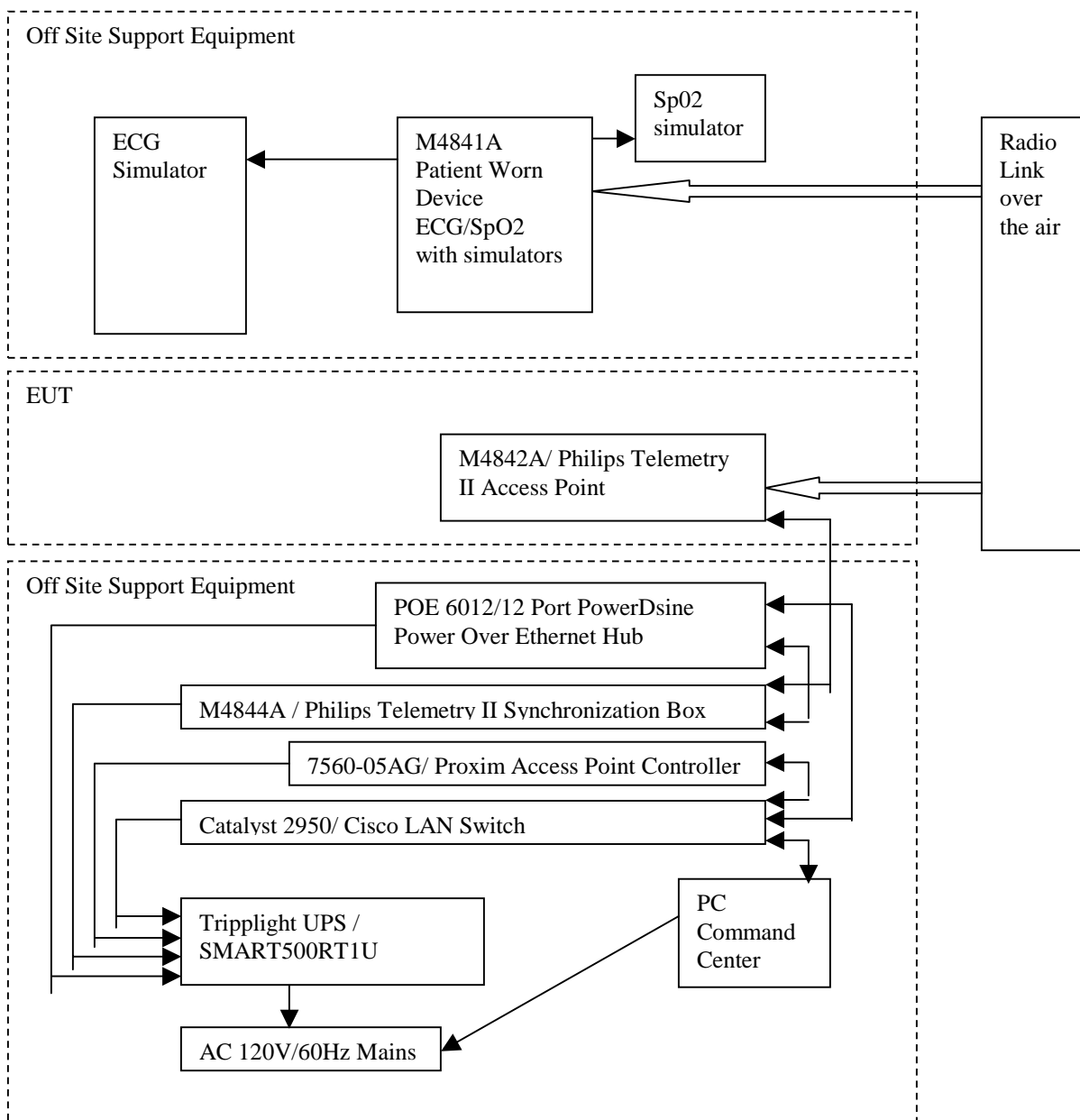
The radiated site is a 3/10 meter indoor site with an enclosure for the product and a basement for the personnel, support equipment and test equipment.

The conducted site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical metal wall required by EN 55022.

Both sites are designed to test products or systems 1.5 meter x 1.0 meter, floor standing or table top.

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**TEST SET UP
AND
PERIPHERAL CONNECTION INFORMATION**



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PLEASE NOTE - EUT (equipment under test) is Telemetry II Access Point Transceiver.

The cables directly connected to this equipment are listed below.

Connection Descriptions

1. LAN Cable Category 5 UTP
(description)
EUT
(from device)
M4844A Telemetry II Synchronization box
(to device)
CABLE LENGTH 2m (S) SHIELDED or (U) UNSHIELDED U

2. N/A
(description)

(from device)

(to device)
CABLE LENGTH (S) SHIELDED or (U) UNSHIELDED

3. N/A
(description)

(from device)

(to device)
CABLE LENGTH (S) SHIELDED or (U) UNSHIELDED

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**TEST SET UP
AND
PERIPHERAL CONNECTION INFORMATION**

Equipment included in EUT:

Mfgr	Model / Part #	HW Rev.	SW Rev.	Serial # (if available)	Description
Philips	M4842A/ 453563495091	PP2	A34.5 .3	US42200094	Philips Telemetry II Access Point

Support Equipment Located off site:

Mfgr	Model / Part #	HW Rev.	SW Rev.	Serial # (if available)	Description
Philips	M4844A/ 453563495101	PP1	N/A	US34300015	Philips Telemetry II Synchronization Box
Power-D-sine	PD-6012/AC	NA	NA	M030268045103 92	Power-over-Ethernet hub
Cisco	WS-C2950C-24	NA	NA	FHKD65221KG	10/100 Base-T hub
Proxim	756005AG	NA	NA	756005AG- 24600010	Philips Telemetry II Access Point Controller
Tripplite	SMART550RT1 U	N/A	N/A	9249ALCSM472 600005	Uninterruptible Power Supply
Philips	M3150B	N/A	N/A	US10308052	Philips Information Center (PIC) (HP PC)
HP	D8907	N/A	N/A	KR22722975	Display for PIC system
Bio-Tek	Lionheart 2	N/A	N/A	158998	Multi-parameter patient simulator Recall #125005
DNI Nevada	Oxitest 7	N/A	N/A	DOS03010611	SpO2 simulator Recall #125346
Philips	862439 M4840- 83003	N/A	N/A	US110027	Philips Telemetry II Patient Worn Device

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DETERMINATION OF AVERAGE FACTOR

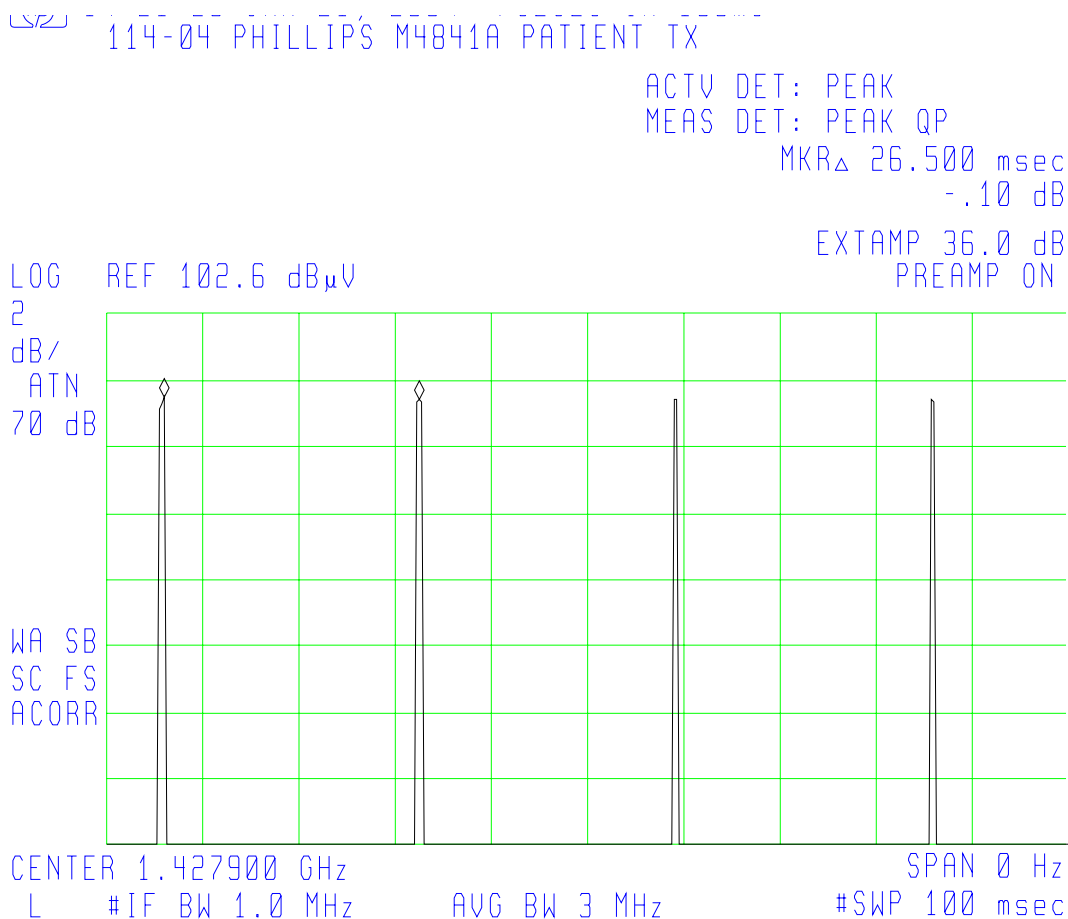
Total Duration of 1 cycle: 100ms
Total On-Time in 1 cycle: $4 * 425 \mu\text{s} = 1.7 \text{ms}$
On-Time divided by cycle: $1.7 \text{ms} / 100 \text{ms} = 0.017$
Average Factor: $20 * \log(0.017) = -35.4 \text{dB}$
FCC maximum allowed average factor is -20dB.

See the next pages for supporting data.

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DETERMINATION OF AVERAGE FACTOR

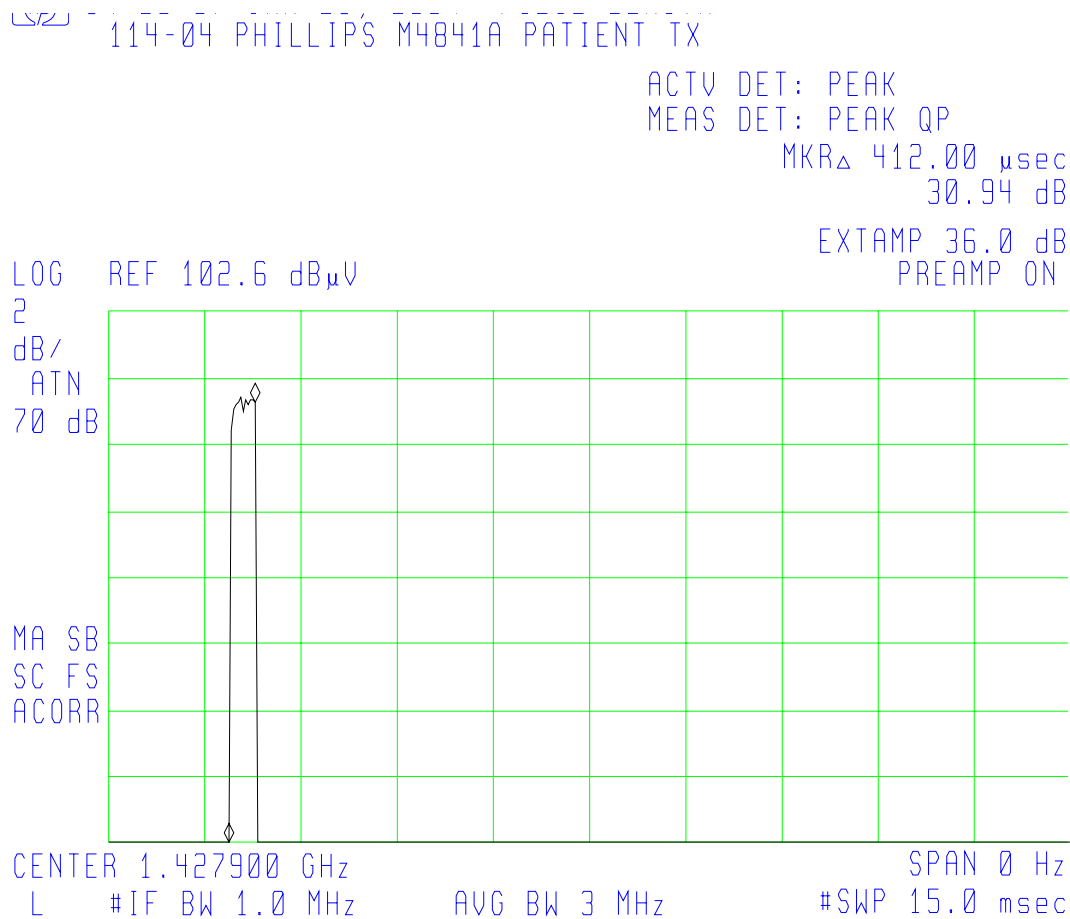
Plot showing 4 transmissions in 100 ms window.



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DETERMINATION OF AVERAGE FACTOR

Plot showing the length of individual transmission at 412uS.



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RADIATED TEST RESULTS

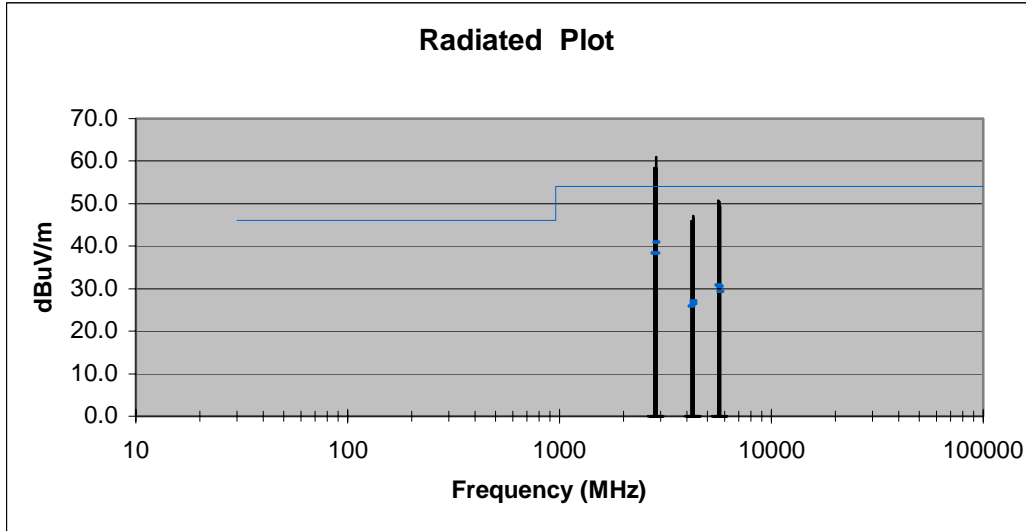
Frequency Range: 30 MHz - 14.5 GHz.
Measurement Distance: 3.0 Meters.
Bandwidth: 120 kHz, Per ANSI C63.4-1992.*
Detector Functions: Peak, Quasi Peak
Table Height: 0.8 meters
Antenna Height Variation: 1 - 4 Meters.
Horizontal and Vertical Polarization Measurements Taken.

*Measurement Bandwidth is 1 MHz above 960 MHz.

PLEASE SEE NEXT PAGE FOR RADIATED TEST DATA

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Radiated Data Log Plot



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Radiated Tabular Data

Frequency MHz	Peak Amp dBuV/m	Polarization H/V	Avg Amp dBuV/m	Limit dBuV/m	QP Margin dB
2791.2	58.4	V	38.4	54.0	-15.6
4197.3	45.9	V	35.9	54.0	-18.1
5582.5	50.8	V	30.8	54.0	-23.2
2855.1	61.0	V	41.0	54.0	-13.0
4283.7	47.1	V	27.1	54.0	-26.9
5710.9	50.5	V	30.5	54.0	-23.5
2862.7	58.4	V	38.4	54.0	-15.6
4293.3	46.5	V	26.5	54.0	-27.5
5724.4	49.4	V	29.4	54.0	-24.6

No other harmonics found within 20 dB of the limit

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RADIATED OUTPUT POWER & OCCUPIED BANDWIDTH TEST RESULTS

Frequency Range: 1395-1400 and 1427-1429.5 MHz.
Measurement Distance: 3.0 Meters.
Bandwidth: As Noted, Per ANSI C63.4-1992.
Detector Functions: Peak
Table Height: 0.8 meters
Antenna Height Variation: 1 - 4 Meters.
Horizontal and Vertical Polarization Measurements Taken, Worst Case Reported.

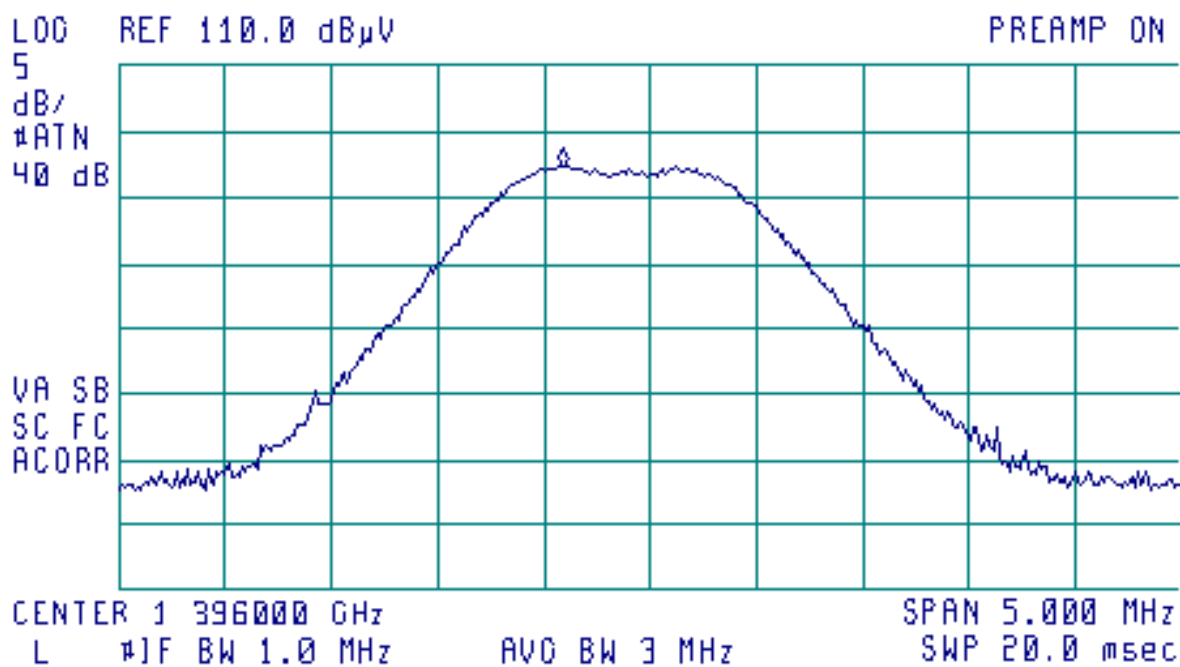
PLEASE SEE NEXT PAGE(S) FOR OCCUPIED BANDWIDTH RADIATED TEST DATA

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Channel 0 Output Power Plot

12:15:09 02 AUG 2004 CHANNEL 0 FS
296-04 PHILIPS AP REDES

FREQ 1.396 GHz
PEAK 102.8 dBμV
QP NOT SELECTED
AVG NOT SELECTED



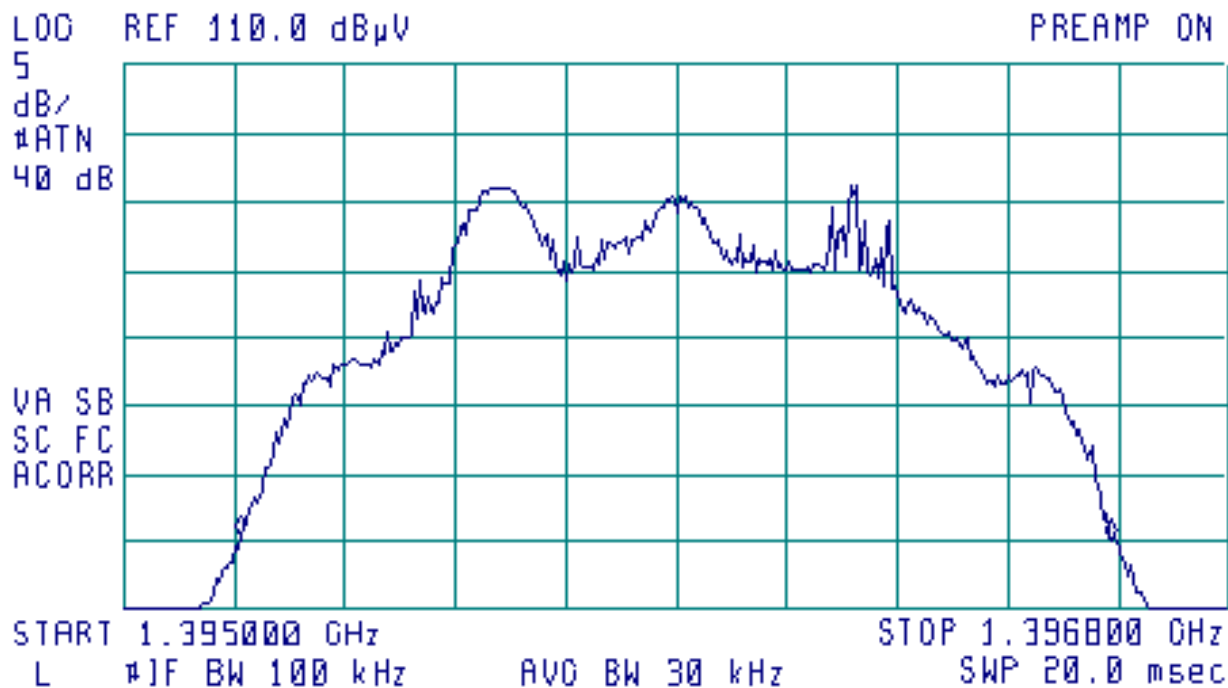
Freq (MHz)	Polarization (H/V)	Peak Amp (dBuV/m)	Avg Amp (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)
1396.0	V	102.8	82.8	117.4	-34.6

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Channel 0 Occupied Bandwidth Plot

12:29:57 02 AUG 2004 CHANNEL 0 BW
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKR Δ 1.418 MHz
-.39 dB



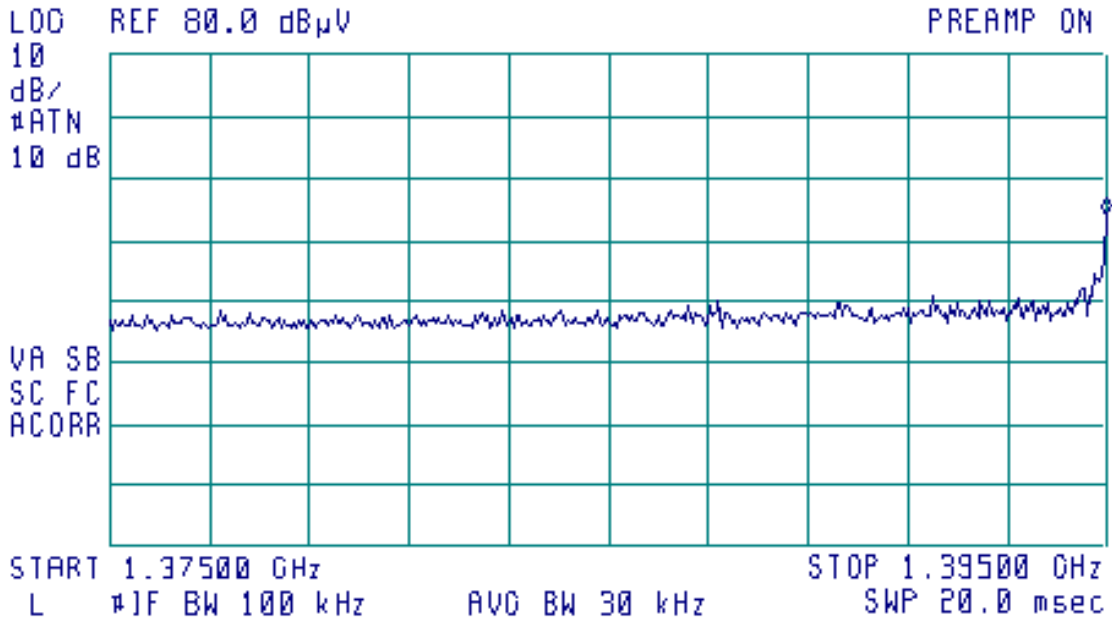
Freq (MHz)	26dB Bandwidth (MHz)
1395.9	1.418

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Channel 0 Occupied Bandwidth Lower Band Edge

 13:21:16 02 AUG 2004 CHANNEL 0 BAND EDGE
 296-04 PHILIPS AP REDES

ACTV DET: PEAK
 MEAS DET: PEAK
 MKR 1.39500 GHz
 53.91 dB μ V



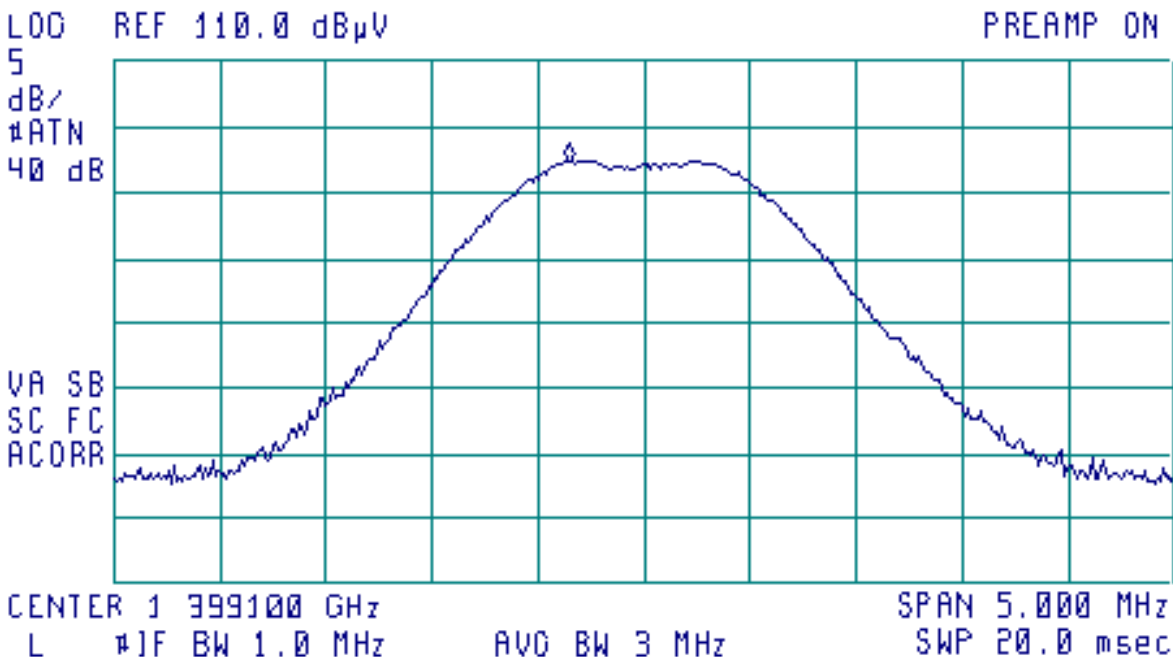
Plot shows lower band edge on right and 20 MHz window. A peak measurement of 53.91 dBuV/m or 34.91 dBuV/m Avg with a limit of 54 dBuV/m avg, data shows a margin of 20.09 average.

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Channel 2 Output Power Plot

 13:50:48 02 AUG 2004 CHANNEL 2 FIELD STRENGTH
 296-04 PHILIPS AP REDES

ACTV DET: PEAK
 MEAS DET: PEAK
 MKR 1.398750 GHz
 102.30 dB μ V



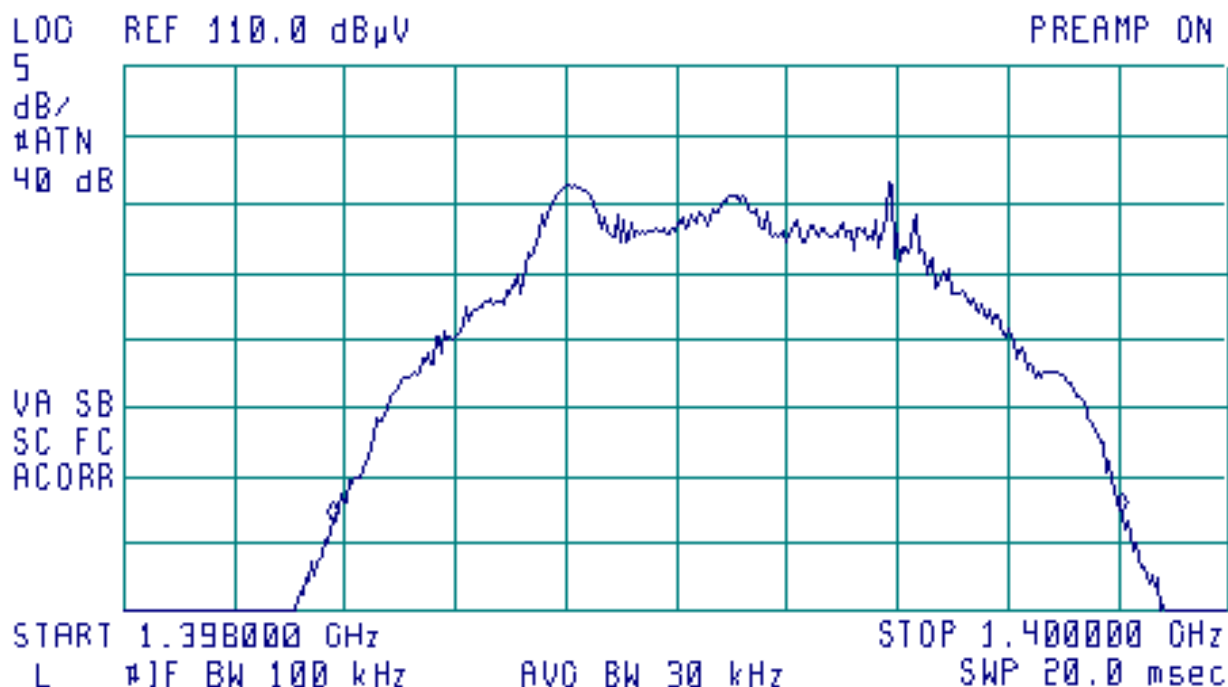
Freq (MHz)	Polarization (H/V)	Peak Amp (dBuV/m)	Avg Amp (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)
1399.1	H	102.3	82.3	117.4	-35.1

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Channel 2 Occupied Bandwidth Plot

13:59:43 02 AUG 2004 CHANNEL 2 BANDWIDTH
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKR Δ 1.425 MHz
.50 dB



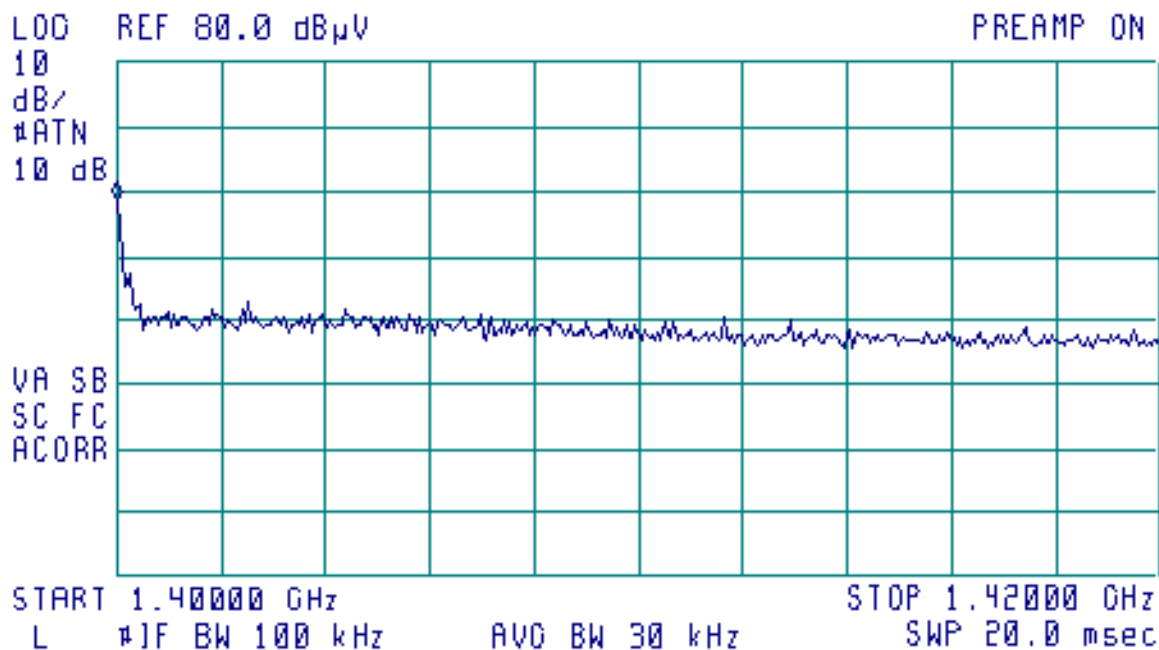
Freq (MHz)	26dB Bandwidth (MHz)
1399.1	1.425

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Channel 2 Occupied Bandwidth Upper Band Edge

14:07:45 02 AUG 2004 CHANNEL 2 BAND EDGE
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKR 1.40000 GHz
58.40 dB μ V



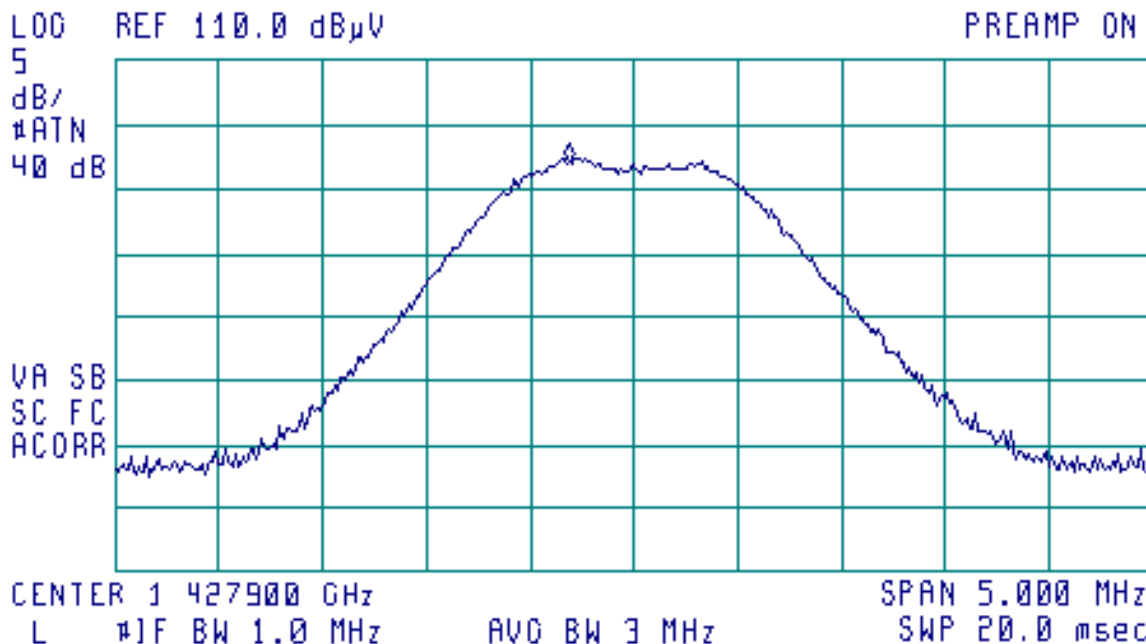
Plot shows upper band edge on left and 20 MHz window. A peak measurement of 58.4 dB μ V/m peak or 38.4 dB μ V/m Avg, with a limit of 54 dB μ V/m avg, data shows a margin of 15.6dB Avg.

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Channel 3 Output Power Plot

14:29:45 02 AUG 2004 CHANNEL 3 FIELD STRENGTH
296-04 PHILIPS AP REDES

FREQ 1.428 GHz
PEAK 102.7 dBμV
QP NOT SELECTED
AVG NOT SELECTED



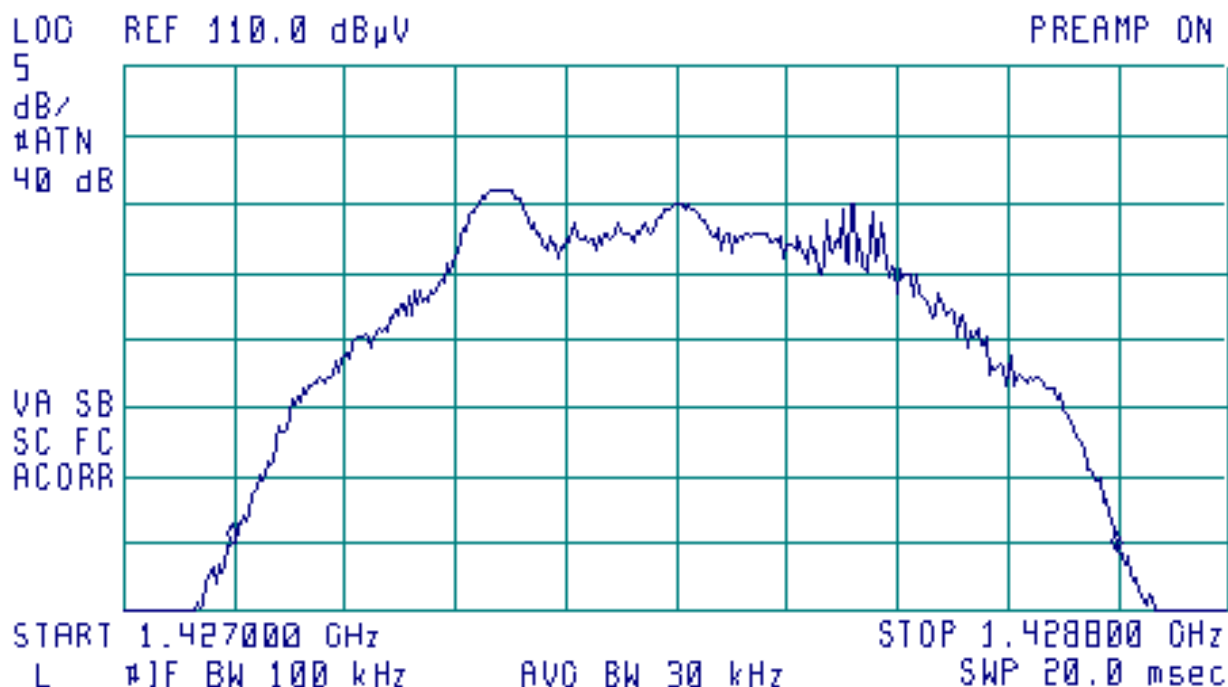
Freq (MHz)	Polarization (H/V)	Peak Amp (dBuV/m)	Avg Amp (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)
1427.9	H	102.7	82.7	117.4	-34.7

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Channel 3 Occupied Bandwidth Plot

 14:37:11 02 AUG 2004 CHANNEL 3 BANDWIDTH
 296-04 PHILIPS AP REDES

ACTV DET: PEAK
 MEAS DET: PEAK
 MKR Δ 1.440 MHz
 -0.52 dB



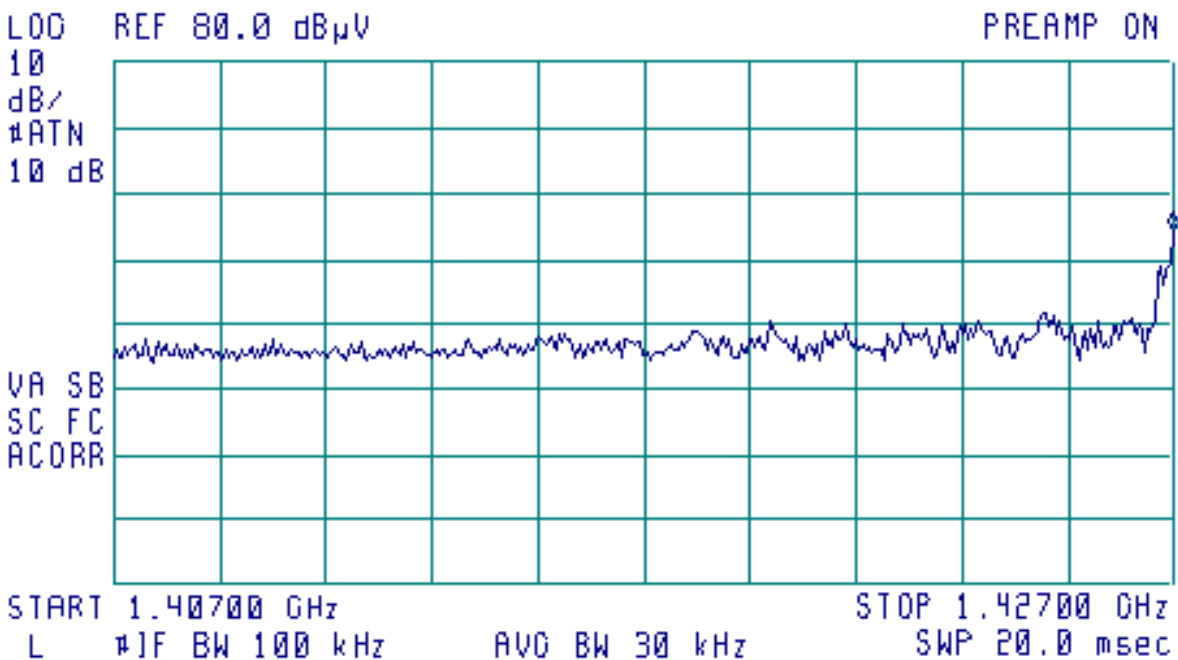
Freq (MHz)	26dB Bandwidth (MHz)
1427.9	1.440

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Channel 3 Occupied Bandwidth Lower Band Edge Plot

14:40:53 02 AUG 2004 CHANNEL 3 BAND EDGE
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKR 1.42700 GHz
54.26 dBμV



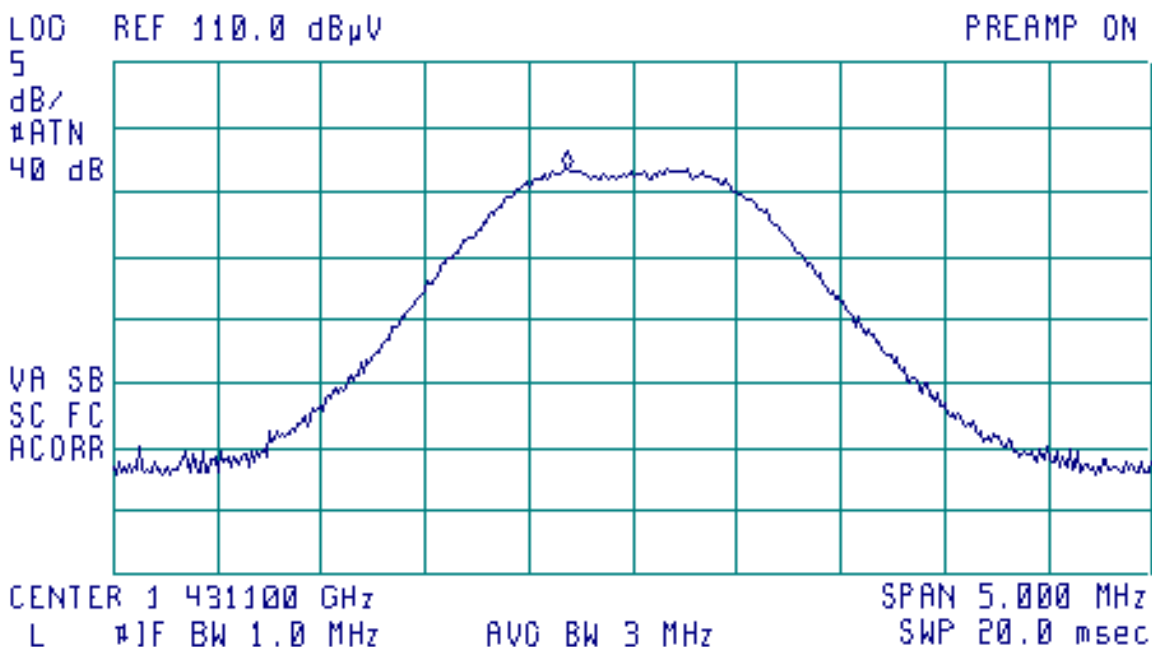
Plot shows lower band edge on right and 20 MHz window. A peak measurement of 54.26 dBuV/m or 34.26 dBuV/m Avg with a limit of 54 dBuV/m avg, data shows a margin of 19.74 dB.

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Channel 5 Output Power Plot

14:56:47 02 AUG 2004 CHANNEL 5 FIELD STRENGTH
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKR 1.430788 GHz
101.75 dBμV



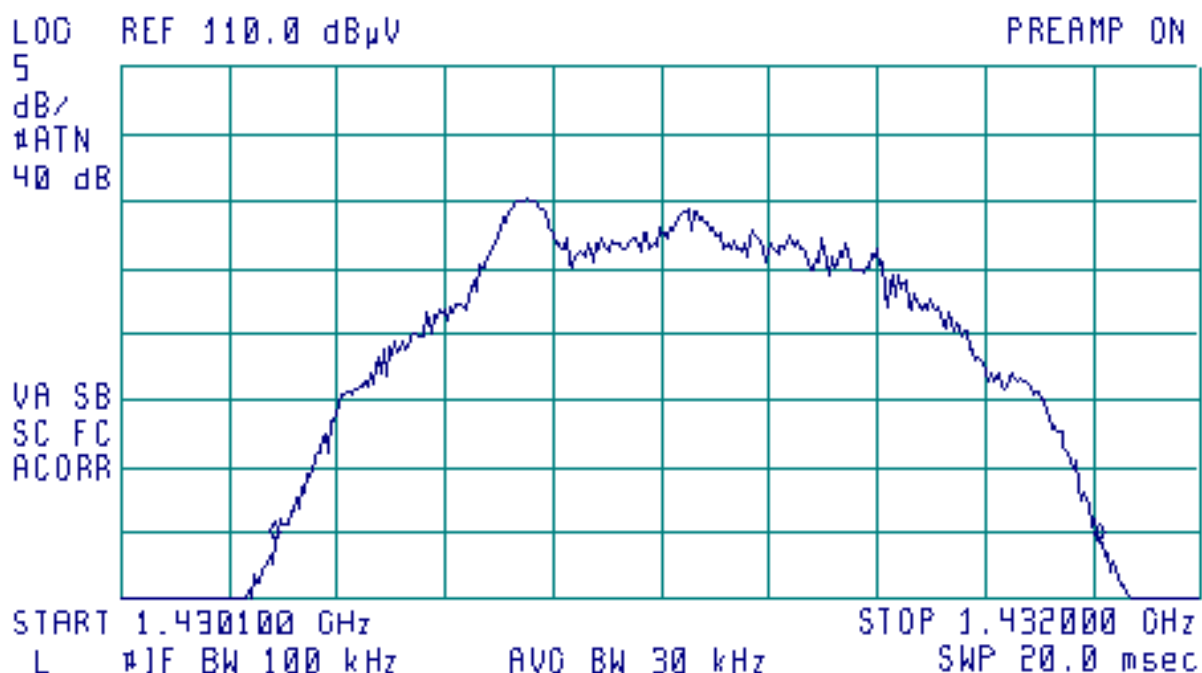
Freq (MHz)	Polarization (H/V)	Peak Amp (dBuV/m)	Avg Amp (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)
1431.1	H	101.8	81.8	117.4	-35.6

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Channel 5 Occupied Bandwidth Plot

15:04:41 02 AUG 2004 CHANNEL 5 BANDWIDTH
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKRΔ 1.449 MHz
-.06 dB



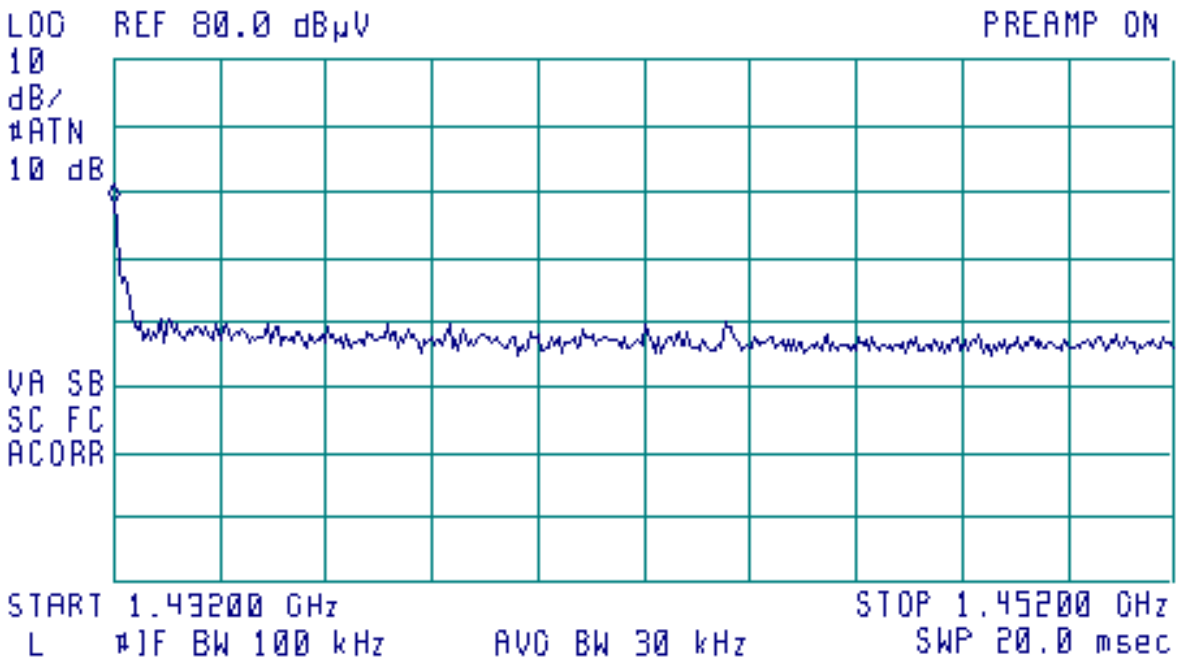
Freq (MHz)	26dB Bandwidth (MHz)
1431.1	1.449

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Channel 5 Occupied Bandwidth Upper Band Edge Plot

15:13:38 02 AUG 2004 CHANNEL 5 BAND EDGE
296-04 PHILIPS AP REDES

ACTV DET: PEAK
MEAS DET: PEAK
MKR 1.43200 GHz
58.23 dBμV



Plot shows upper band edge on left and 20 MHz window. A peak measurement of 58.23 dBuV/m peak or 38.23 dBuV/m Avg with a limit of 54 dBuV/m avg, data shows a margin of 15.8 dB.

CONDUCTED TEST RESULTS

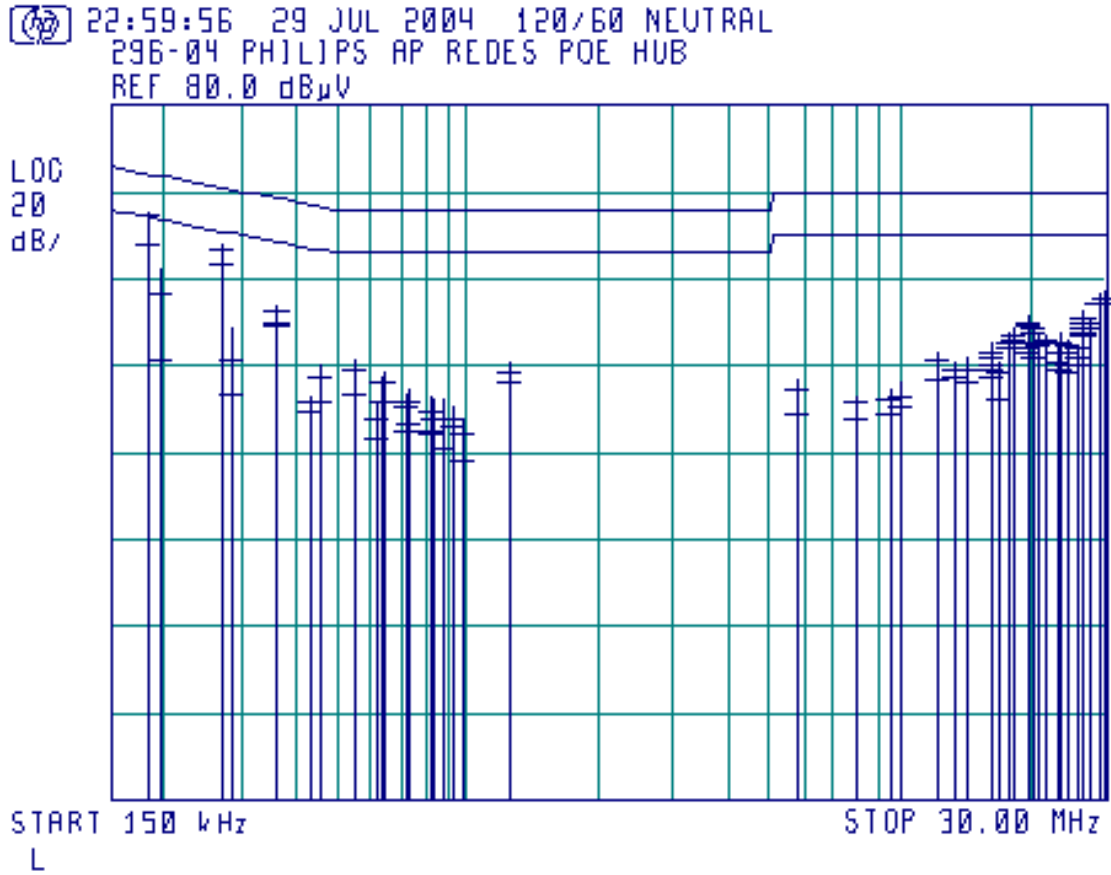
Frequency Range: 150 kHz to 30.0 MHz.
Bandwidth: 9 kHz per ANSI C63.4-1992.
Detector Functions: Peak, Quasi-Peak, Average
Table Height: 0.8 meters
Video Bandwidth: 30 kHz.

Phase and Neutral Measurements Taken.

PLEASE SEE NEXT PAGE FOR CONDUCTED TEST DATA

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Conducted 120V 60Hz Neutral Data Log Plot



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Conducted 120V 60Hz Neutral Tabular Data

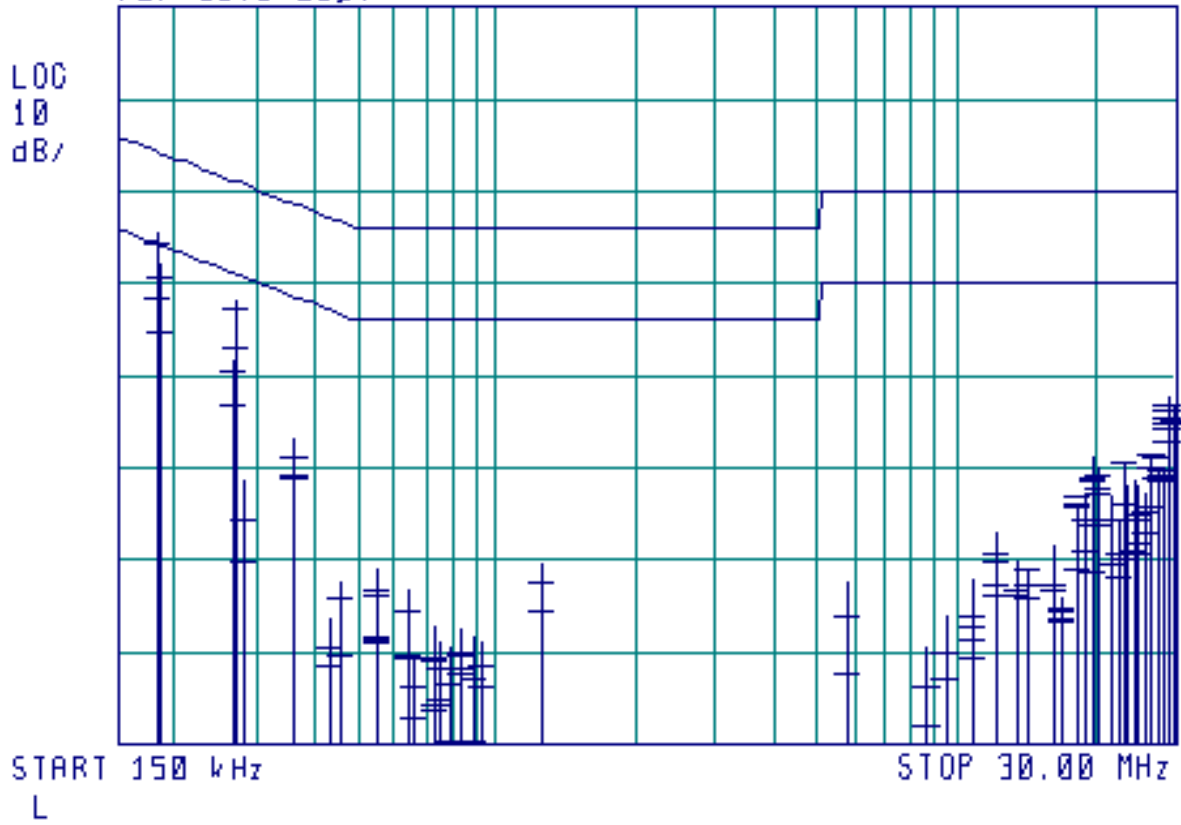
Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	Avg Amp (dBuV)	QP Limit (dBuV)	Avg Limit (dBuV)	QP Margin (dB)	Avg Margin (dB)
0.183465	55.27	54.35	48.44	64.37	54.37	-10.02	-5.93
0.196401	41.83	36.30	21.61	63.79	53.79	-27.49	-32.18
0.275260	48.42	47.38	43.45	61.02	51.02	-13.64	-7.57
0.289253	28.85	21.73	13.98	60.60	50.60	-38.87	-36.62
0.366324	34.43	33.11	29.72	58.64	48.64	-25.53	-18.92
0.367734	33.69	32.70	30.18	58.60	48.60	-25.90	-18.42
0.434036	13.63	11.61	10.08	57.23	47.23	-45.62	-37.15
0.460175	20.43	17.70	11.68	56.74	46.74	-39.04	-35.06
0.550029	21.79	19.49	13.98	56.00	46.00	-36.51	-32.02
0.550075	21.75	19.53	14.25	56.00	46.00	-36.47	-31.75
0.550425	21.58	19.63	14.24	56.00	46.00	-36.37	-31.76
0.618060	11.81	8.49	3.89	56.00	46.00	-47.51	-42.11
0.641645	18.11	16.44	11.52	56.00	46.00	-39.56	-34.48
0.642511	18.60	16.56	11.50	56.00	46.00	-39.44	-34.50
0.732159	14.10	11.15	5.72	56.00	46.00	-44.85	-40.28
0.732863	14.54	11.76	6.68	56.00	46.00	-44.24	-39.32
0.826346	13.03	10.18	5.62	56.00	46.00	-45.82	-40.38
0.827448	12.68	9.96	4.50	56.00	46.00	-46.04	-41.50
0.845063	12.37	10.20	8.21	56.00	46.00	-45.80	-37.79
0.891625	12.49	7.75	1.38	56.00	46.00	-48.25	-44.62
0.936185	10.99	8.49	6.38	56.00	46.00	-47.51	-39.62
0.980971	8.78	4.96	-1.67	56.00	46.00	-51.04	-47.67
1.258140	21.03	18.36	16.05	56.00	46.00	-37.64	-29.95
5.758541	17.32	14.81	9.26	60.00	50.00	-45.19	-40.74
7.923761	13.48	11.78	8.02	60.00	50.00	-48.22	-41.98
9.388388	14.72	12.49	9.03	60.00	50.00	-47.51	-40.97
9.939503	16.32	13.34	10.93	60.00	50.00	-46.66	-39.07
12.138224	23.20	21.50	16.85	60.00	50.00	-38.50	-33.15
13.359063	20.87	19.35	18.13	60.00	50.00	-40.65	-31.87
14.212439	22.55	19.49	16.67	60.00	50.00	-40.51	-33.33
16.165744	23.97	22.88	17.75	60.00	50.00	-37.12	-32.25
16.227758	25.92	23.32	19.16	60.00	50.00	-36.68	-30.84
16.227903	25.92	23.64	20.57	60.00	50.00	-36.36	-29.43
16.897813	21.35	19.10	12.09	60.00	50.00	-40.90	-37.91
17.692579	28.05	25.97	24.58	60.00	50.00	-34.03	-25.42
18.303311	29.15	27.34	25.49	60.00	50.00	-32.66	-24.51
18.303438	26.68	25.94	24.15	60.00	50.00	-34.06	-25.85
18.365781	27.78	26.35	23.98	60.00	50.00	-33.65	-26.02
19.709069	30.44	30.63	23.94	60.00	50.00	-29.37	-26.06
19.709349	31.65	29.46	23.68	60.00	50.00	-30.54	-26.32

Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	Avg Amp (dBuV)	QP Limit (dBuV)	Avg Limit (dBuV)	QP Margin (dB)	Avg Margin (dB)
20.319535	30.26	27.84	25.89	60.00	50.00	-32.16	-24.11
20.319751	30.33	29.19	22.98	60.00	50.00	-30.81	-27.02
20.806918	27.87	25.22	26.02	60.00	50.00	-34.78	-23.98
21.662088	26.95	26.32	25.71	60.00	50.00	-33.68	-24.29
23.068001	25.98	23.77	21.30	60.00	50.00	-36.23	-28.70
23.403964	27.53	26.06	19.47	60.00	50.00	-33.94	-30.53
23.404359	27.83	26.01	19.21	60.00	50.00	-33.99	-30.79
24.349808	24.35	23.58	18.70	60.00	50.00	-36.42	-31.30
24.350473	26.69	24.82	19.91	60.00	50.00	-35.18	-30.09
25.691920	24.27	24.06	23.84	60.00	50.00	-35.94	-26.16
25.693669	23.89	20.43	22.50	60.00	50.00	-39.57	-27.50
26.486743	31.42	28.07	28.90	60.00	50.00	-31.93	-21.10
26.486924	29.86	29.17	28.88	60.00	50.00	-30.83	-21.12
26.487138	31.07	27.91	27.22	60.00	50.00	-32.09	-22.78
26.608189	29.41	31.34	28.63	60.00	50.00	-28.66	-21.37
26.608190	32.84	30.88	28.57	60.00	50.00	-29.12	-21.43
26.608224	32.35	28.78	30.27	60.00	50.00	-31.22	-19.73
27.342248	31.53	30.64	29.01	60.00	50.00	-29.36	-20.99
28.684531	36.62	35.25	35.43	60.00	50.00	-24.75	-14.57
29.234126	37.04	36.26	35.28	60.00	50.00	-23.74	-14.72
29.235040	37.80	36.25	34.98	60.00	50.00	-23.75	-15.02

TEST NUMBER - 296-04

Conducted 120V 60Hz Phase Data Log Plot

22:44:04 29 JUL 2004 120/60 PHASE
296-04 PHILIPS AP REDES POE HUB
REF 80.0 dB μ V



TEST NUMBER - 296-04

Conducted 120V 60Hz Phase Tabular Data

Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	Avg Amp (dBuV)	QP Limit (dBuV)	Avg Limit (dBuV)	QP Margin (dB)	Avg Margin (dB)
0.183366	55.48	54.56	48.68	64.37	54.37	-9.81	-5.69
0.183676	55.47	54.54	48.65	64.36	54.36	-9.82	-5.71
0.187170	52.07	50.87	44.92	64.19	54.19	-13.32	-9.27
0.270853	41.91	40.88	36.95	61.16	51.16	-20.28	-14.21
0.274920	48.34	47.29	43.12	61.03	51.03	-13.74	-7.91
0.286456	28.62	24.34	20.10	60.68	50.68	-36.34	-30.58
0.366434	33.32	31.45	28.95	58.63	48.63	-27.18	-19.68
0.367726	33.21	31.54	29.28	58.60	48.60	-27.06	-19.32
0.436514	13.78	10.76	8.88	57.19	47.19	-46.43	-38.31
0.459826	17.95	16.11	10.08	56.75	46.75	-40.64	-36.67
0.548894	18.77	16.51	11.13	56.00	46.00	-39.49	-34.87
0.549913	19.35	16.83	11.92	56.00	46.00	-39.17	-34.08
0.551501	18.58	16.98	11.65	56.00	46.00	-39.02	-34.35
0.643160	17.15	14.67	10.08	56.00	46.00	-41.33	-35.92
0.643863	16.56	14.50	9.74	56.00	46.00	-41.50	-36.26
0.663688	9.98	6.44	2.78	56.00	46.00	-49.56	-43.22
0.733379	12.65	9.45	4.39	56.00	46.00	-46.55	-41.61
0.733591	13.10	9.34	4.28	56.00	46.00	-46.66	-41.72
0.755053	11.31	8.52	4.86	56.00	46.00	-47.48	-41.14
0.755950	11.08	8.30	4.42	56.00	46.00	-47.70	-41.58
0.801250	10.88	6.75	0.48	56.00	46.00	-49.25	-45.52
0.844634	12.56	9.92	7.96	56.00	46.00	-46.08	-38.04
0.845224	12.75	10.26	8.33	56.00	46.00	-45.74	-37.67
0.893380	11.78	7.24	0.75	56.00	46.00	-48.76	-45.25
0.936305	10.97	8.61	6.48	56.00	46.00	-47.39	-39.52
1.256523	19.55	17.90	14.57	56.00	46.00	-38.10	-31.43
5.823434	17.85	14.35	8.07	60.00	50.00	-45.65	-41.93
8.596601	10.60	6.55	2.15	60.00	50.00	-53.45	-47.85
9.388495	14.06	10.30	7.36	60.00	50.00	-49.70	-42.64
10.731499	18.29	13.19	11.60	60.00	50.00	-46.81	-38.40
10.733671	17.99	14.40	9.49	60.00	50.00	-45.60	-40.51
12.137585	23.13	20.71	16.48	60.00	50.00	-39.29	-33.52
12.138268	22.84	20.22	17.41	60.00	50.00	-39.78	-32.59
13.479074	20.22	16.51	17.09	60.00	50.00	-43.49	-32.91
14.152461	18.37	19.19	17.22	60.00	50.00	-40.81	-32.78
14.214460	19.21	17.34	16.12	60.00	50.00	-42.66	-33.88
16.168128	21.84	17.51	16.97	60.00	50.00	-42.49	-33.03
16.776815	15.52	13.62	13.66	60.00	50.00	-46.38	-36.34
16.900109	16.08	14.83	14.53	60.00	50.00	-45.17	-35.47
18.242993	23.69	26.51	25.92	60.00	50.00	-33.49	-24.08
18.243169	26.15	27.25	19.15	60.00	50.00	-32.75	-30.85

Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	Avg Amp (dBuV)	QP Limit (dBuV)	Avg Limit (dBuV)	QP Margin (dB)	Avg Margin (dB)
18.915336	27.44	24.79	21.28	60.00	50.00	-35.21	-28.72
19.707854	28.58	29.24	18.81	60.00	50.00	-30.76	-31.19
19.708725	31.55	28.68	24.19	60.00	50.00	-31.32	-25.81
20.257135	28.50	29.33	27.73	60.00	50.00	-30.67	-22.27
20.319076	29.81	27.62	23.94	60.00	50.00	-32.38	-26.06
20.380689	30.39	29.41	24.39	60.00	50.00	-30.59	-25.61
21.662320	27.19	24.46	19.56	60.00	50.00	-35.54	-30.44
22.579041	24.42	20.99	18.61	60.00	50.00	-39.01	-31.39
23.128490	30.46	30.51	26.36	60.00	50.00	-29.49	-23.64
23.401703	28.38	26.50	20.51	60.00	50.00	-33.50	-29.49
23.401759	28.07	26.33	20.68	60.00	50.00	-33.67	-29.32
24.348100	28.74	24.67	21.22	60.00	50.00	-35.33	-28.78
24.897684	22.44	24.37	20.99	60.00	50.00	-35.63	-29.01
24.898578	28.17	25.17	22.01	60.00	50.00	-34.83	-27.99
25.692725	27.67	23.08	25.69	60.00	50.00	-36.92	-24.31
26.548454	31.36	30.30	26.00	60.00	50.00	-29.70	-24.00
26.608004	31.70	31.65	26.03	60.00	50.00	-28.35	-23.97
27.341376	30.30	31.32	29.14	60.00	50.00	-28.68	-20.86
27.890836	30.37	28.83	29.12	60.00	50.00	-31.17	-20.88
27.952869	30.37	29.77	29.42	60.00	50.00	-30.23	-20.58
28.563818	35.62	34.36	33.00	60.00	50.00	-25.64	-17.00
28.684039	37.97	36.74	34.77	60.00	50.00	-23.26	-15.23
28.684226	36.81	35.89	36.43	60.00	50.00	-24.11	-13.57
29.233716	36.69	35.21	34.86	60.00	50.00	-24.79	-15.14

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NOTES AND COMMENTS

(Special conditions unique to this test)

None.