Test of Polycom Spectralink 8440 Wi-Fi handset with Bluetooth

To: FCC 47 CFR Part 15, SubPart E 15.407 & RSS-210 Annex 9

Test Report Serial No.: POLY06-U12 Rev A



TEST REPORT



Test of: Polycom Spectralink 8440 Wi-Fi handset with Bluetooth

To: FCC 47 CFR Part 15, SubPart E 15.407 & RSS-210 Annex 9

Test Report Serial No.: POLY06-U12 Rev A

Reference Test Report: POLY06-U18, POLY06-U7a, POLY06-U7b

This report supersedes: None

Applicant:		Polycom 4750 Willo Pleasantor USA	w Road n, CA 94588-2708
Product Function	on:	Wi-Fi hand	set with Bluetooth
Copy No:	pdf	Issue Date:	28th February 2011





Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 3 of 184

TABLE OF CONTENTS

1	ACC	CREDITATION, LISTINGS & RECOGNITION	5
	1.1	TESTING ACCREDITATION	5
	1.2	RECOGNITION	6
	1.3	PRODUCT CERTIFICATION	
2	DOC	CUMENT HISTORY	8
3	TES	T RESULT CERTIFICATE	9
4		ERENCES AND MEASUREMENT UNCERTAINTY	
-			
	4.1	Normative References Test and Uncertainty Procedures	
F	4.2		
5			
6	PRC	DOUCT DETAILS AND TEST CONFIGURATIONS	
	6.1	Test Program Scope	. 15
	6.2	EUT Details	
	6.3	External A.C. / D.C. Power Adaptor	
	6.4	Operational Power Range	
	6.5	Types of Modulation Supported	
	6.6	Antenna Details	
	6.7	Cabling and I/O Ports	
	6.8	EUT Configurations	
	6.9 6 10	Equipment Details	
		Test Configurations	
		Deviations from the Test Standard	
7		T RESULTS	
•	7.1	26 dB and 99 % Bandwidth	
	1.1	7.1.1 5150 MHz - 5250 MHz; 26 dB and 99 % Operational Bandwidth(s)	
		7.1.2 5250 MHz - 5350 MHz; 26 dB and 99 % Operational Bandwidth(s)	
		7.1.3 5470 MHz - 5725 MHz; 26 dB and 99 % Operational Bandwidth(s)	
	7.2	Transmit Output Power	
		7.2.1 5150 MHz - 5250 MHz; Peak Output Power	
		7.2.2 5250 MHz - 5350 MHz; Peak Output Power	
		7.2.3 5470 MHz - 5725 MHz; Peak Output Power	. 58
	7.3	Peak Excursion Ratio	
		7.3.1 5150 MHz - 5250 MHz; Peak Excursion Ratio	. 61
		7.3.2 5250 MHz - 5350 MHz; Peak Excursion Ratio	
		7.3.3 5470 MHz - 5725 MHz; Peak Excursion Ratio	
	7.4	Peak Power Spectral Density	
		7.4.1 5150 MHz - 5250 MHz; Peak Power Spectral Density	
		7.4.2 5250 MHz - 5350 MHz; Peak Power Spectral Density	
	7 -	7.4.3 5470 MHz - 5725 MHz; Peak Power Spectral Density	
	7.5 7.6	Frequency Stability	
	7.6 7.7	Maximum Permissible Exposure	
	7.7	Dynamic Frequency Selection (DFS) * 7.7.1 Test Procedure and Setup	
		7.7.1 Test Flocedule and Setup	113

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Title: Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
To: FCC 47 CFR Part 15.407 & RSS-210 A9
Serial #: POLY06-U12 Rev A
Issue Date: 28th February, 2011
Page: Page 4 of 184

			Page: Page 4 01 164	
		7.7.2	In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period	
		7.7.3	30 Minute Non-Occupancy Period	
	7.8	Radiat	ed Spurious Emissions	
		7.8.1	Transmitter Radiated Spurious Emissions	
		7.8.2	Band-Edge Measurements	
		7.8.3	Peak Emissions	
		7.8.4	Receiver Radiated Emissions	
	7.9	Condu	icted Disturbance at Mains Terminal (150 kHz – 30 MHz)	171
		7.9.1	Stand Alone Charger - Conducted Disturbance at Mains Termin – 30 MHz)	•
8	PHO	DTOGR	APHS	
-	8.1		icted RF Emissions - EUT	
	8.2		icted RF Emissions - Test Equipment	
	8.3		nic Frequency Selection Test Set-Up	
	8.4		nitter Radiated Spurious Emission below 1 GHz with Charger	
	8.5		nitter Radiated Spurious Emission above 1 GHz with Charger	
	8.6		ver Radiated Emissions below 1 GHz with Charger	
	8.7		ver Radiated Emissions above 1 GHz with Charger	
	8.8		ains Conducted Emissions with Charger	

1.	TEST EQUIPMENT DETAILS	18;	3
----	------------------------	-----	---



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 5 of 184

1 ACCREDITATION, LISTINGS & RECOGNITION

1.1 **TESTING ACCREDITATION**

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard EN ISO/IEC 17025. The company is accredited by the American Association for Laboratory Accreditation (A2LA) <u>www.a2la.org</u> test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; <u>http://www.a2la.org/scopepdf/2381-01.pdf</u>



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 6 of 184

1.2 <u>RECOGNITION</u>

MiCOM Labs, Inc has widely recognized Electrical testing capabilities. Our international recognition includes Conformity Assessment Body designation by APEC MRA** countries. Our test reports are widely accepted for global type approvals.

Country	Recognition Body	Status	Phase	Identification No.
USA	Federal Communications Commission (FCC)	тсв	-	Listing #: 102167
Canada	Industry Canada (IC)	FCB	APEC MRA 2	Listing #: 4143A
Japan	VCCI	-	-	No. 2959
Europe	European Commission	NB	EU MRA	NB 2280
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	
Hong Kong	Office of the Telecommunication Authority (OFTA)	САВ	APEC MRA 1	
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)	САВ	APEC MRA 1	US0159
Singapore	Infocomm Development Authority (IDA)	CAB	APEC MRA 1	030139
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)	CAB	APEC MRA 1	
Vietnam	Ministry of Communication (MIC)	CAB	APEC MRA 1	

**APEC MRA – Asia Pacific Economic Community Mutual Recognition Agreement.

Is a recognition agreement under which test lab is accredited to regulatory standards of the APEC member countries.

Phase I - recognition for product testing

Phase II – recognition for both product testing and certification

N/A – Not Applicable

**EU MRA – European Union Mutual Recognition Agreement. Is a recognition agreement under which test lab is accredited to regulatory standards of the EU member countries.

**NB - Notified Body



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 7 of 184

1.3 PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard EN ISO/IEC Guide 65. The company is accredited by the American Association for Laboratory Accreditation (A2LA) <u>www.a2la.org</u> test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; <u>http://www.a2la.org/scopepdf/2381-02.pdf</u>



TCB Identifier – US0159

Industry Canada – Certification Body

CAB Identifier - US0159

Europe – Notified Body

Notified Body Identifier - 2280

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 8 of 184

2 DOCUMENT HISTORY

	Document History					
Revision	Date	Comments				
Draft						
Rev A	28th February 2010	Initial release				

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 9 of 184

3 TEST RESULT CERTIFICATE

Applicant:	Polycom	Tested By:	MiCOM Labs, Inc.
	4750 Willow Road		440 Boulder Court
	Pleasanton		Suite 200
	California ,		Pleasanton
	94588-2708, USA		California, 94566, USA
Product:	Spectralink 8400 series Wi-Fi handsets with Bluetooth	Telephone:	+1 925 462 0304
Model No.:	Spectralink 8440	Fax:	+1 925 462 0306
S/No's:	600826511 (radiated)		
	600840963 (radiated)		
	600830461 (conducted)		
Date(s) Tested:	Dec 21st - Jan 19th, 2011	Website:	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC 47 CFR Part 15, SubPart E 15.407 & RSS-210 Annex 9	EQUIPMENT COMPLIES

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

- 1. This document reports conditions under which testing was conducted and the results of testing performed.
- 2. Details of test methods used have been recorded and kept on file by the laboratory.
- 3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:

Graeme Grieve Quality Manager MiCOM Labs, Inc.

ACCREDITED

TESTING CERTIFICATE #2381.01

Gordon Hurst President & CEO MiCOM Labs, Inc.

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 10 of 184

4 REFERENCES AND MEASUREMENT UNCERTAINTY

4.1 Normative References

Ref.	Publication	Year	Title
i.	FCC 47 CFR Part 15, SubPart C 15.247	2010	Title 47: Telecommunication PART 15—RADIO FREQUENCY DEVICES Subpart C—Intentional Radiators
ii.	FCC 47 CFR Part 15 SubPart E 15.407	2010	Title 47: Telecommunication PART 15—RADIO FREQUENCY DEVICES Subpart E—Unlicensed National Information Infrastructure Devices
iii.	RSS-210 Annex 9	2010	Radio Standards Specification 210, Issue 8, Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment,
iv.	RSS-GEN	2010	Radio Standards Specification-Gen, Issue 3, General Requirements and Information for the Certification of Radiocommunication Equipment,
v.	47 CFR Part 15, SubPart B	2010	47 CFR Part 15, SubPart B; Unintentional Radiators
vi.	ICES-003	2004	Spectrum Management and Telecommunications Policy Interference-Causing Equipment Standard Digital Apparatus; Issue 4
vii.	ANSI C63.4	2009	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
viii.	CISPR 22/ EN 55022	2008 2006+A1:2007	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
ix.	M 3003	Edition 1 Dec. 1997	Expression of Uncertainty and Confidence in Measurements
х.	LAB34	Edition 1 Aug 2002	The expression of uncertainty in EMC Testing
xi.	ETSI TR 100 028	2001	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
xii.	A2LA	9th June 2010	Reference to A2LA Accreditation Status – A2LA Advertising Policy

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 11 of 184

4.2 <u>Test and Uncertainty Procedures</u>

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 12 of 184

5 TEST SUMMARY

List of Measurements

The following table represents the list of measurements required under the FCC CFR47 Part 15.407 and Industry Canada RSS-210 and Industry Canada RSS-Gen.

Section(s)	Test Items	Description	Condition	Result	Test Report Section
FCC §15.407(a)(1)(2) RSS-210 §A9.2(2) RSS-Gen §4.4	26dB and 99% Emission BW	Emission bandwidth measurement	Conducted	Complies	7.1
FCC §15.407(a)(1)(2) RSS-210 §A9.2(2) RSS-Gen §4.6	Transmit Output Power	Power Measurement	Conducted	Complies	7.2
FCC §15.407(a)(6)	Peak Excursion Ratio	<13dB in any 1MHz bandwidth	Conducted	Complies	7.3
FCC §15.407(a)(1)(2) RSS-210 §A9.2(1)(2)	Peak Power Spectral Density	PPSD	Conducted	Complies	7.4
FCC §15.407(g) RSS-Gen §7.2.6	Frequency Stability	Limits: contained within band of operation at all times.	Applicant declaration	Complies	7.5
FCC §1.1310 RSS-Gen §5.6	Maximum Permissible Exposure	Exposure to radio frequency energy levels, Maximum Permissible Exposure (MPE)	Calculated	Complies	7.6



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 13 of 184

List of Measurements (continued)

The following table represents the list of measurements required under the FCC CFR47 Part 15.407 and Industry Canada RSS-210 and Industry Canada RSS-Gen.

Section(s)	Test Items	Description	Condition	Result	Test Report Section
FCC §15.407(b)(2) FCC §15.205(a) FCC §15.209(a) RSS-210 §A9.3(2) RSS-Gen §4.7 RSS-Gen §4.8 RSS-Gen §6	Radiated Emissions		Radiated		7.8
K22-0611 30	Transmitter Radiated Spurious Emissions	Emissions above 1 GHz		Complies	7.8.1
	Radiated Band Edge	Band-edge results		Complies	7.8.2
	Padiated Peak Emissions	Peak Emissions results		Complies	7.8.3
	Receiver Radiated Spurious Emissions	Rx Emissions		Complies	7.8.4
	Radiated Spurious Emissions - Digital	Emissions below 1 GHz (30M- 1 GHz)		Complies	N/A
FCC §15.407(b)(6) FCC §15.207(a) RSS-Gen §7.2.4	AC Wireline Conducted Emissions 150 kHz– 30 MHz	Conducted Emissions	Conducted	Complies	7.9



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 14 of 184

List of Measurements (continued)

Dynamic Frequency Selection (DFS)

The following table represents the list of measurements required under the FCC CFR47 Part 15.407(h)(2) and FCC Memorandum Opinion and Order FCC 06-96 (Compliance Measurement procedures for Unlicensed National Information Infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection).

Industry Canada RSS-210 §A9.3

Section	Test Items	Description	Condition	Result	Test Report Section
7.8.3	In-Service Monitoring	In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non- Occupancy Period	Conducted	Complies	7.7

Tests performed on Client Device without Radar Detection

Note 1: Test results reported in this document relate only to the items tested

Note 2: The required tests demonstrated compliance as per client declaration of test configuration, monitoring methodology and associated pass/fail criteria

Note 3: Section 6.11 Equipment Modifications highlights the equipment modifications that were required to bring the product into compliance with the above test matrix

Note 4: Complete Radiated Emissions – Digital Apparatus & AC Mains test results are presented in MiCOM Labs test report POLY06-U18.

Note 5: Radio's included within the Spectralink 8400 Series wireless handsets are declared identical by the manufacturer. EUT's were tested for RF output power. Unit and model (Model: 8440 S/N: 600830461) with highest output power was utilized for testing.



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 15 of 184

6 PRODUCT DETAILS AND TEST CONFIGURATIONS

6.1 <u>Test Program Scope</u>

The scope of the test program was to test the WiFi transmitter (802.11a/n) utilized in the Polycom Spectralink 8440 Wi-Fi handset with Bluetooth for compliance against FCC 47 CFR Part 15, SubPart E 15.407 & RSS-210 Annex 9.

Two Spectralink 8400 Series handsets (models 8440 and 8450) were tested during this test program. These products share the same RF circuitry. Conducted RF testing was performed only on the 8440 model. RF Conducted Emission results of 8440 model are presented in this report.

Applicant: Polycom Product: Spectralink 8440 Wi-Fi handset Front



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 16 of 184

Applicant: Polycom Product: Spectralink 8440 Wi-Fi handset Back



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 17 of 184

Applicant: Polycom **Product:** AC-DC Adapter/ Charger Model SA106B-05 for Spectralink 8400 series handsets



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 18 of 184

6.2 EUT Details

Detail	Description
Purpose:	Test of the Polycom Spectralink 8440 Wi-Fi
	handset with Bluetooth for compliance against
	FCC 47 CFR Part 15, SubPart E 15.407 & RSS-
Applicant:	210 Annex 9 Polycom
Applicant.	4750 Willow Road
	Pleasanton, CA 94588-2708
	USA
Manufacturer:	Same as Applicant
Test Laboratory:	MiCOM Labs, Inc.
	440 Boulder Court, Suite 200
	Pleasanton, California 94566 USA
Test report reference number:	POLY06-U12
Date EUT received:	11/11/2010
Dates of test (from - to):	12/21/2010 – 1/19/2011
No of Units Tested:	S/N: 600826511 (radiated)
	S/N: 600840963 (radiated)
	S/N: 600830461 (conducted)
Product Name:	Spectralink 8400 series Wi-Fi handset
Manufacturers Trade Name:	Polycom Spectralink 8400 series Wi-Fi handsets
Model No.:	Spectralink 8440 handset with Bluetooth
Equipment Primary Function:	Wi-Fi handset with Bluetooth
Equipment Secondary Function(s):	N/A
Type of Technology:	802.11 a/b/g/n and Bluetooth
Installation type:	Portable
Construction/Location for Use:	Indoor/Outdoor
Software/Firmware Release:	BootROM Mink Phoenix E6 FCC Test 14.
Rated Input Voltage and Current DC:	Nominal: 3.8V; Battery: 3.5V - 4.2V,
	Charger (USB or Base) supply: 5V +/- 10%
Operating Temperature Range °C:	Min: 0 °C Max: 40 °C
Equipment Dimensions:	5.75" x 2.125" x 0.9"
Weight:	8 oz
Long Term Frequency Stability:	20 p.p.m.
Transmit/Receive Operation:	Full Duplex
Output Power Type	Fixed

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 19 of 184

6.3 External A.C. / D.C. Power Adaptor

Model	Description
SA106B-05	GCI Technologies switching adaptor:
	Input: 100 - 240V AC; 50-60 Hz; 0.25 Amp
	Output: 5V DC; 1 Amp

6.4 Operational Power Range

Fundamental Frequency	Conducted RF Emissions	Max Test Utility	Utility Setting Used During	Measured Output Power	TX SPR: Utility Setting Used During	Band Edge: Utility Setting Used During	Compliant Test Utility	Compliant Output Power
(MHz)	Limit (dBm)	Setting	Test	(dBm)	Test	Test	Setting	(dBm)
	Preliminary		Conducte	ed RF	Radiated	RF		
802.11a	Conditions		Emission	IS	Emissions	6	Final Result	s
5180	15.46	24	14	14.69	24	14	14	14.69
5200	15.46	24	14	14.63	24		14	14.63
5240	15.46	24	14	14.72	24		14	14.72

802.11n HT-20	Preliminary Conditions		Conducted RF Emissions		Radiated RF Emissions		Final Results	
5180	15.46	24	24 14 14.81		24	14	14	14.81
5200	15.46	24 14		14.91	24		14	14.91
5240	15.46	24	14	14.75	24		14	14.75

802.11a	Preliminary Conditions		Conducted RF Emissions		Radiated RF Emissions		Final Results	
5260	22.46 24		16	15.38	24		16	15.38
5280	22.46 24		16	15.51	24		16	15.51
5320	22.46	24	16	15.39	24	16	16	15.39

802.11n HT-20	Preliminary Conditions		Conducted RF Emissions		Radiated RF Emissions		Final Results	
ПI-20	Conditions			15			Fillal Result	.5
5260	22.46 24		16	15.27	24		16	15.27
5280	22.46 24		16	15.17	24		16	15.17
5320	22.46	24	16	15.36	24	16	16	15.36

802.11a	Preliminary Conducted RF Conditions Emissions			Radiated Emissions		Final Results		
5500	22.46	24	16	16.04	24	16	16	16.04
5600	22.46 24		16	16.03	24		16	16.03
5700	22.46 24		16	16.42	24		16	16.42

802.11n HT-20	Preliminary Conditions		Conducted RF Emissions		Radiated RF Emissions		Final Results	
5500	22.46	24	16	15.93	24	16	16	15.93
5600	22.46 24		16	15.90	24		16	15.90
5700	22.46	24	16	16.30	24		16	16.30

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 20 of 184

6.5 Types of Modulation Supported

Modulation / Mode	BW 1
802.11a	OFDM
802.11n HT-20	OFDM

6.6 Antenna Details

The following is a description of the EUT antennas.

Antenna Type	Manufacturer	Model	Gain	Frequency Range
Plated antenna on PCB	Polycom	N/A	2.50 dBi	2400 - 2483.5 MHz
			5.51 dBi	5150 - 5850 MHz

6.7 Cabling and I/O Ports

The following is a description of the cable and input/ output ports available on the EUT.

Type of I/O Ports	Description	Screened (Y/N)	Length	Qty	Tested (Y/N)
Battery terminal	Battery connections for removable battery	N	N/A	1	Ν
1/8th" Stereo connector	Connection to hands free headset	Y	< 3 meters	1	Y
AC-DC Adapter/ Charger	Power connector - mini USB for charging using AC-DC Adapter/ Charger (model: SA106B-05)	Y	< 3 meters	1	Y
Charging terminals	Charging terminal for charging EUT with docking options	N	N/A	1	Y

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 21 of 184

6.8 EUT Configurations

Frequency bands:

Test Mode	Start Freq. (MHz)	Stop Freq. (MHz)	Rated Output Power (Watts)	Frequency Tolerence (p.p.m.)	20dB BW (MHz)	Emission Designator
802.11a	5180	5240	0.030	20	16.633	16M7D1D
802.11n HT-20	5180	5240	0.031	20	17.735	17M8D1D
802.11a	5260	5320	0.036	20	16.633	16M7D1D
802.11n HT-20	5260	5320	0.035	20	17.735	17M8D1D
802.11a	5500	5700	0.044	20	16.733	16M8D1D
802.11n HT-20	5500	5700	0.043	20	17.936	18M0D1D

Channel plan and spacing:

Band (GHz)	Mode	Freq Band (MHz)	Freq Range (MHz)	Low Ch	Mid Ch	High Ch	# Ch	Ch Spacing (MHz)
5.2	802.11a	5180-5240	5150-5250	5180	5200	5240	4	20
5.2	802.11n HT-20	5180-5240	5150-5250	5180	5200	5240	4	20
5.3	802.11a	5260-5320	5250-5350	5260	5280	5320	4	20
5.3	802.11n HT-20	5260-5320	5250-5350	5260	5280	5320	4	20
5.7	802.11a	5500-5700	5470-5725	5500	5580/5600	5700	11	20
5.7	802.11n HT-20	5500-5700	5470-5725	5500	5580/5600	5700	11	20

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 22 of 184

6.9 Equipment Details

The following is a description of supporting equipment used during the test program.

Equipment	Equipment Description	Manufacturer	Model No.	Serial No (s).	Tested
	Alpha		ESB-		
Battery	SAMPLE	Polycom	RS657+002	AC10103200B7	Ν
	Alpha	Polycom	ESB-		
Battery	SAMPLE	- y	RS657+002	AC1010320232	Y
	Alpha	Polycom	ESB-		
Battery	SAMPLE		RS657+002	AC101032008E	Y
	Alpha	Polycom	ESB-		
Battery	SAMPLE		RS658+002	AD101032019C	N
Charging Dook	Alpha	Delveem	ESB-	AlphaD201741022	N
Charging Dock	SAMPLE	Polycom	DCA39+001 HK-U-	AlphaB391741033	N
AC-DC	I.T.E. Power		120A050-		
Adapter	Supply	HON-KWANG	CP	N/A	Ν
AC-DC			0.		
Adapter/	Switching	GCi			
Charger	Adapter	technologies	SA106B-05	N/A	Y
	10uF @ U8				
	Pin4 to				
	Ground Dock				
One alver Dealv	PCB Revision	Dalvaara			NI
Speaker Dock	X4	Polycom	N/A HK-AX-	N/A	N
AC-DC	I.T.E. Power		120A200-		
Adapter	Supply	HON-KWANG	CP	N/A	Ν
	Encore		P/N: 29951-		
Headset	Headset	Plantronics	12	0E0723 K7	Y
Charging	Alpha		ESB-DCA		
Station	SAMPLE	Polycom	40+001	AlphaB400241032	Ν
Power Splitter/					
Combiner	ZAPD-4	Mini-Circuits	15542	0 9729	Y
			AIR-		
A Deint	Aironet	0	AP1242AG-		V
Access Point	802.11 a/ b/ g	Cisco	A-K9	FTX0940B04J	Y
Switching AC Adapter for	Switching		PSA18U-		
Access Point	Adapter	PHIHONG	480C	N/A	Y
	Personal			1005HAB-	1
Computer	Computer	Eee	1005HAB	BLU001X	Y
AC-DC			ADP-40PH		
Adapter for PC	Power Supply	ASUS	AB	N/A	Y

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 23 of 184

6.10 Test Configurations

Operational Mode(s)	Data Rate Tested	Duty Cycle (Conducted Emissions)	Duty Cycle (Radiated Emissions)
а	6 MBit/s	100%	10%
n HT-20	6.5 MCS	100%	10%

6.11 Equipment Modifications

The following modifications were required to complete testing of the UUT:

1. Conducted Emissions – unit with 100% duty cycle was provided by the customer in order to complete the testing

6.12 Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 24 of 184

7 TEST RESULTS

7.1 26 dB and 99 % Bandwidth

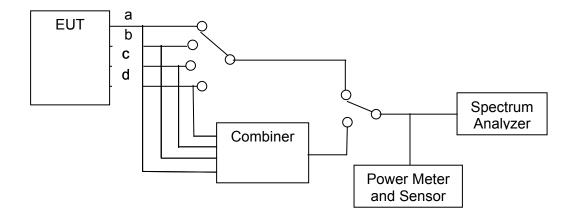
FCC, Part 15 Subpart E §15.407(a)(1)(2) Industry Canada RSS-210 § A9.2(2) Industry Canada RSS-Gen §4.4

Test Procedure

The bandwidth at 26 dB and 99 % is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

Testing was restricted to a single port.

Test Configuration



Measurement set up for 26 dB and 99 % bandwidth test

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 25 of 184

Specification

Limits

FCC, Part 15 §15.407 (a)(1), (a)(2) and Industry Canada RSS-210 § A9.2(2)

(a)(1) For the band 5.15-5.25 GHz the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or +4 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed +4 dBm in any 1 megahertz band.

(a)(2) For the 5.25-5.35 GHz band the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or +11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed +11 dBm in any 1 megahertz band.

Industry Canada RSS-210 §A9.2(2)

For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the band 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Industry Canada RSS-Gen §4.4

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement uncertainty ±2.81 dB

Traceability

Method	Test Equipment Used
Measurements were made per work	0158, 0287, 0252, 0313, 0314, 0070, 0116, 0117
instruction WI-03 'Measurement of RF	
Spectrum Mask'	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 26 of 184

Measurement Results for 26 dB and 99 % Operational Bandwidth(s)

Radio Parameters Duty Cycle: 100% Output: Modulated Carrier Power: Maximum Compliant Power

7.1.1 5150 MHz - 5250 MHz; 26 dB and 99 % Operational Bandwidth(s)

TABLE OF RESULTS – 802.11a

Test Conditions:	15.247 (a)(2)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

26 dB Bandwidth

Test Frequency		26 dB Ba		Minimu Bandwid	ım 6dB Ith Limit	Margin	
		MI	łz	Banawic			
MHz	а	b	с	d	kHz MHz		MHz
5180	22.645000						-22.145000
5200	22.244000				500	0.5	-21.744000
5240	21.844000						-21.344000

99% Bandwidth

		99 % Ba	ndwidth			
Test Frequency		MF	łz			
MHz	а	b	с	d		
5180	16.633000					
5200	16.633000					
5240	16.633000					

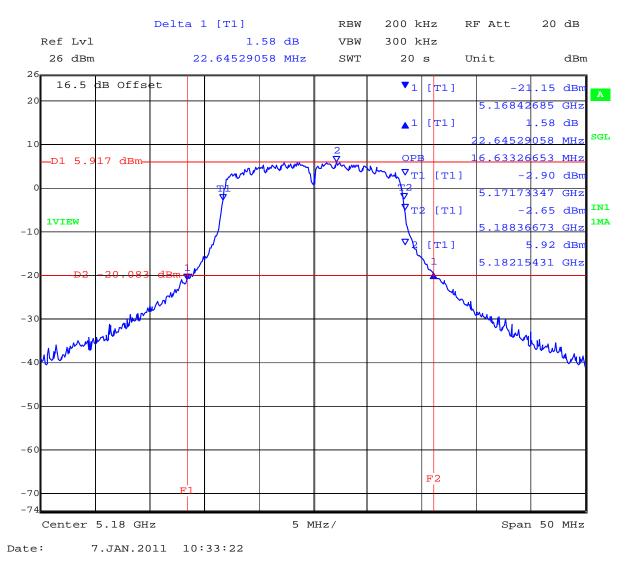
±2.81 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 27 of 184

26dB OBW 99% Ambient 5180MHz 4.20V 14.71dBm

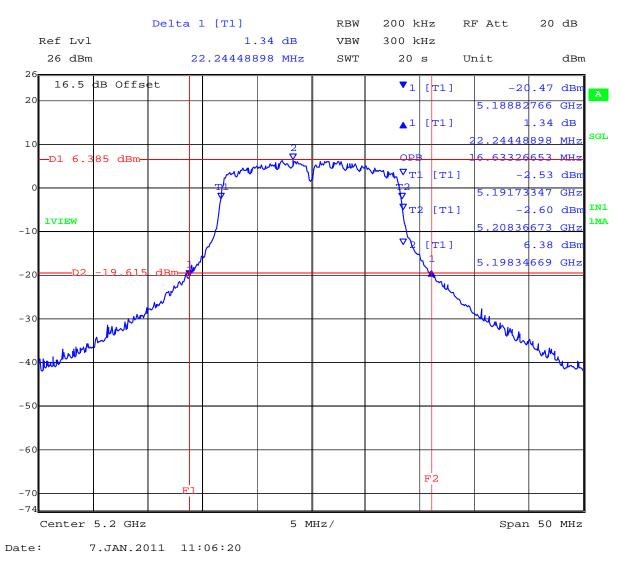


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 28 of 184

26dB OBW 99% Ambient 5200MHz 4.20V 14.55dBm

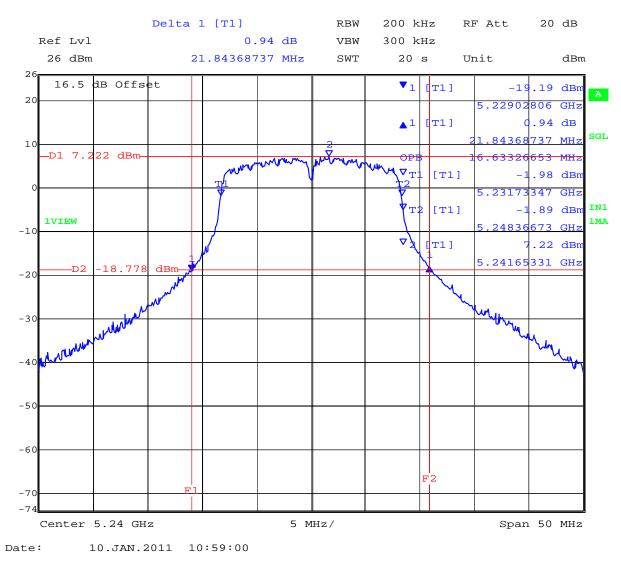


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 29 of 184

26dB OBW 99% Ambient 5240MHz 4.20V 15.36dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 30 of 184

TABLE OF RESULTS - 802.11 HT-20

Test Conditions:	15.247 (a)(2)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

26 dB Bandwidth

T / F.		26 dB Ba	andwidth	Minimu	um 6dB	Margin	
Test Frequency		М	Hz	Bandwid	dth Limit		
MHz	а	b	с	d	kHz MHz		MHz
5180	23.848000						-23.348000
5200	23.747000				500	0.5	-23.247000
5240	23.447000						-22.947000

99% Bandwidth

		99 % Ba	Indwidth			
Test Frequency		м	Hz			
MHz	а	b	с	d		
5180	17.735000					
5200	17.735000					
5240	17.735000					

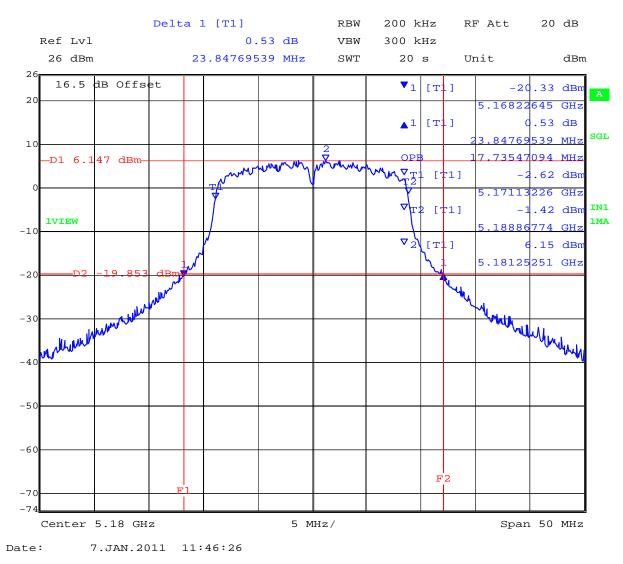
Measurement uncertainty:	±2.81 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 31 of 184

26dB OBW 99% Ambient 5180MHz 4.20V 14.66dBm

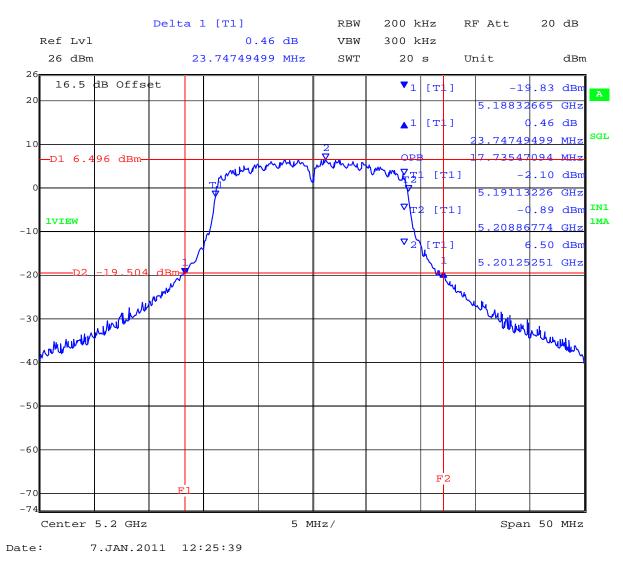


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 32 of 184

26dB OBW 99% Ambient 5200MHz 4.20V 14.95dBm

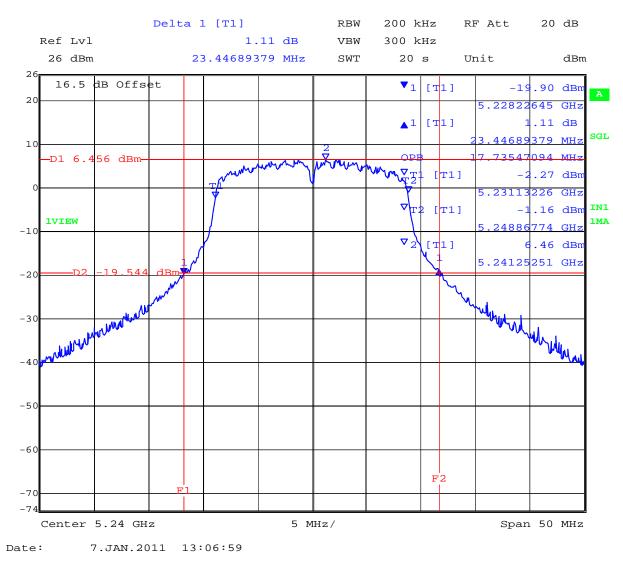


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 33 of 184

26dB OBW 99% Ambient 5240MHz 4.20V 14.77dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 34 of 184

7.1.2 5250 MHz - 5350 MHz; 26 dB and 99 % Operational Bandwidth(s)

TABLE OF RESULTS – 802.11a

Test Conditions:	15.247 (a)(2)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

26 dB Bandwidth

Test Frequency	26 dB Bandwidth MHz			Minimum 6dB			Margin	
				Bandwidth Einnt				
MHz	а	b	с	d	kHz	MHz	MHz	
5260	22.946000						-22.446000	
5280	22.946000				500	0.5	-22.446000	
5320	23.046000						-22.546000	

99% Bandwidth

	99 % Bandwidth MHz					
Test Frequency						
MHz	а	b	с	d		
5260	16.633000					
5280	16.633000					
5320	16.633000					

Measurement uncertainty:	±2.81 dB
-	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 35 of 184

26dB OBW 99% Ambient 5260MHz 4.20V 15.37dBm

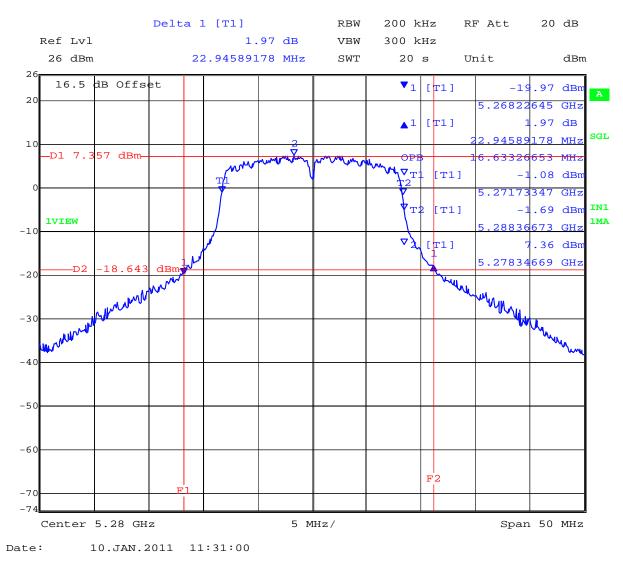


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 36 of 184

26dB OBW 99% Ambient 5280MHz 4.20V 15.99dBm

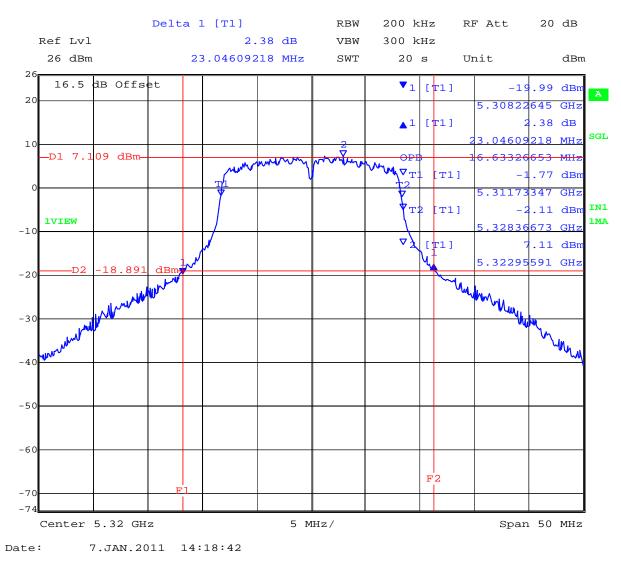


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 37 of 184

26dB OBW 99% Ambient 5320MHz 4.20V 15.43dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 38 of 184

TABLE OF RESULTS - 802.11 HT-20

Test Conditions:	15.247 (a)(2)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

26 dB Bandwidth

		26 dB Ba	andwidth	Minimu	ım 6dB	Manuin		
Test Frequency	MHz Bandwidth Limit Marg				Bandwidth Limit		Margin	
MHz	а	b	С	d	kHz MHz		MHz	
5260	24.649000						-24.149000	
5280	24.549000				500	0.5	-24.049000	
5320	24.148000						-23.648000	

99% Bandwidth

		99 % Ba	andwidth			
Test Frequency	MHz					
MHz	а	b	с	d		
5260	17.735000					
5280	17.735000					
5320	17.735000					

Measurement uncertainty:

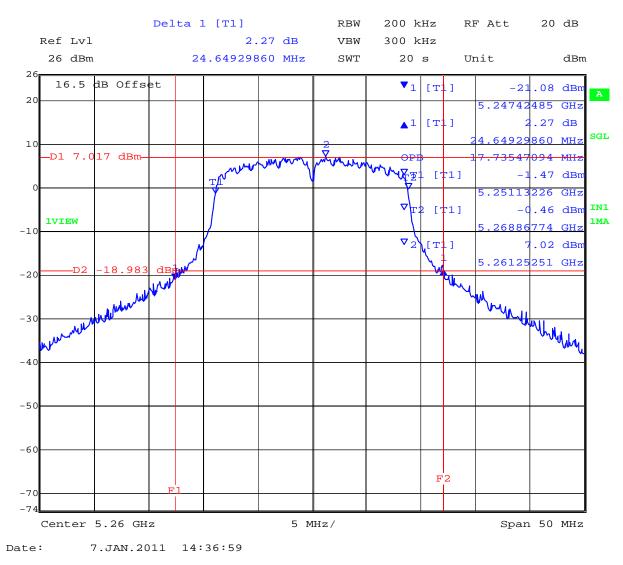
±2.81 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 39 of 184

26dB OBW 99% Ambient 5260MHz 4.20V 15.30dBm

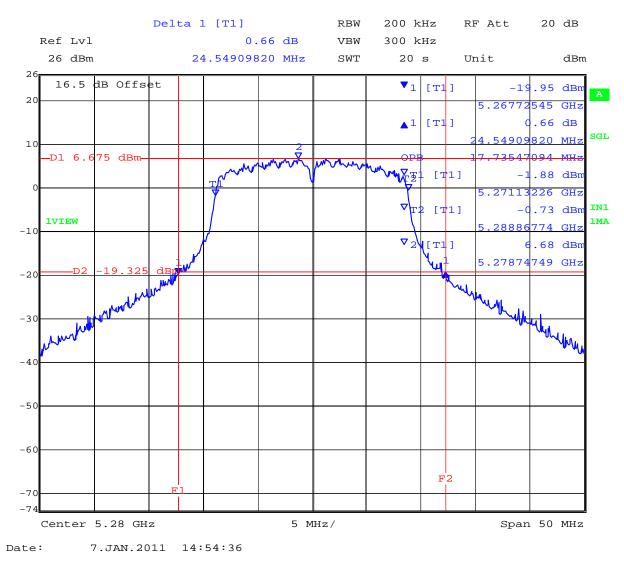


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 40 of 184

26dB OBW 99% Ambient 5280MHz 4.20V 15.21dBm

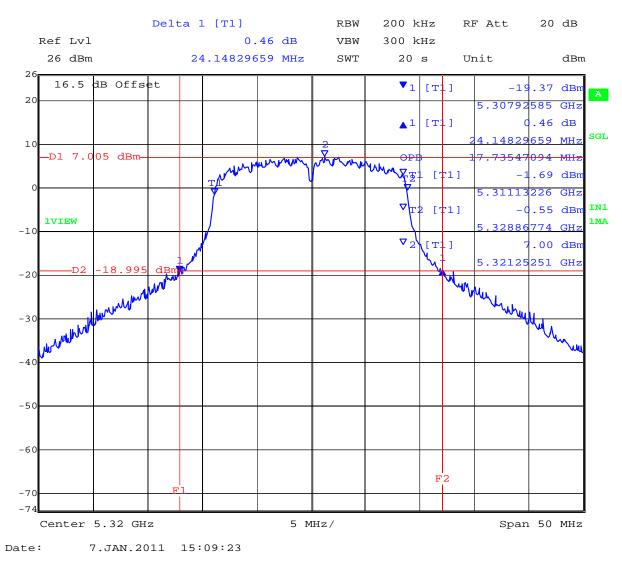


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 41 of 184

26dB OBW 99% Ambient 5320MHz 4.20V 15.26dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 42 of 184

7.1.3 5470 MHz - 5725 MHz; 26 dB and 99 % Operational Bandwidth(s)

TABLE OF RESULTS - 802.11a

Test Conditions:	15.247 (a)(2)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

26 dB Bandwidth

		26 dB Ba	andwidth	Minimu	um 6dB			
Test Frequency	MHz Bandwidth Limit					Margin		
MHz	а	b	с	d	kHz MHz		MHz	
5500	24.950000						-24.450000	
5580	25.651000				500	0.5	-25.151000	
5700	26.453000						-25.953000	

99% Bandwidth

		99 % Ba	ndwidth			
Test Frequency		м	Hz			
MHz	а	b	с	d		
5500	16.733000					
5580	16.733000					
5700	16.733000					

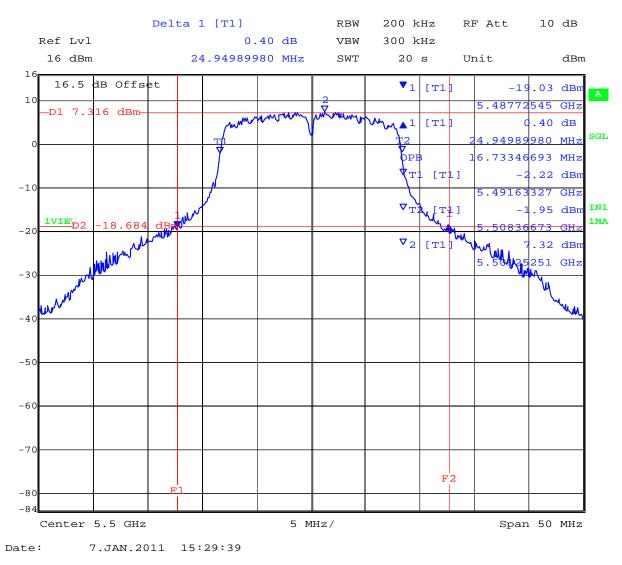
Measurement uncertainty:	±2.81 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 43 of 184

26dB OBW 99% Ambient 5500MHz 4.20V 16.04dBm

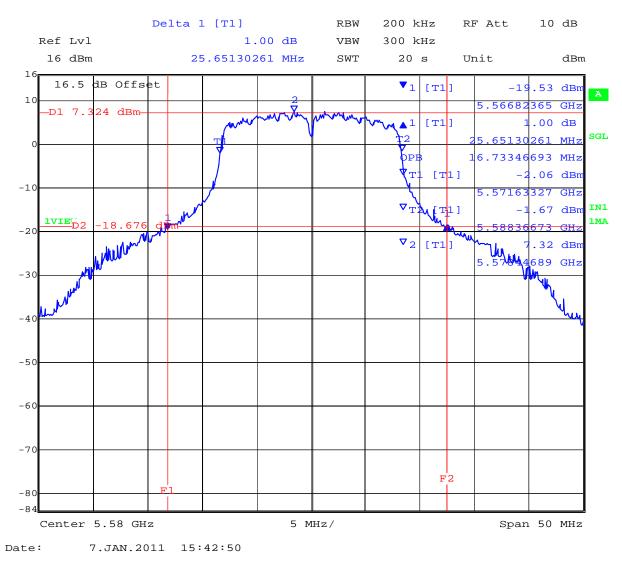


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 44 of 184

26dB OBW 99% Ambient 5580MHz 4.20V 16.02dBm

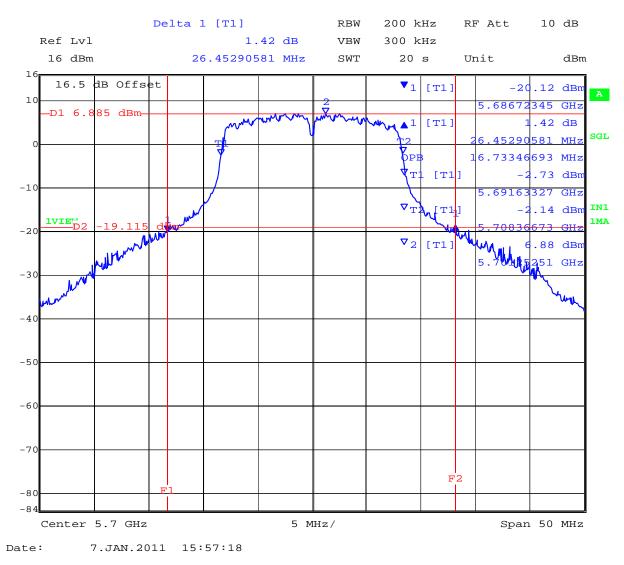


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 45 of 184

26dB OBW 99% Ambient 5700MHz 4.20V 16.47dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 46 of 184

TABLE OF RESULTS - 802.11 HT-20

Test Conditions:	15.247 (a)(2)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

26 dB Bandwidth

		26 dB Ba	andwidth	Minimu	um 6dB			
Test Frequency	MHz Bandwidth Li			Bandwidth Limit		Margin		
MHz	а	b	с	d	kHz MHz		MHz	
5500	25.451000						-24.951000	
5580	27.355000				500	0.5	-26.855000	
5700	25.752000						-25.252000	

99% Bandwidth

		99 % Ba	indwidth			
Test Frequency		м	Hz			
MHz	а	b	с	d		
5500	17.936000					
5580	17.936000					
5700	17.936000					

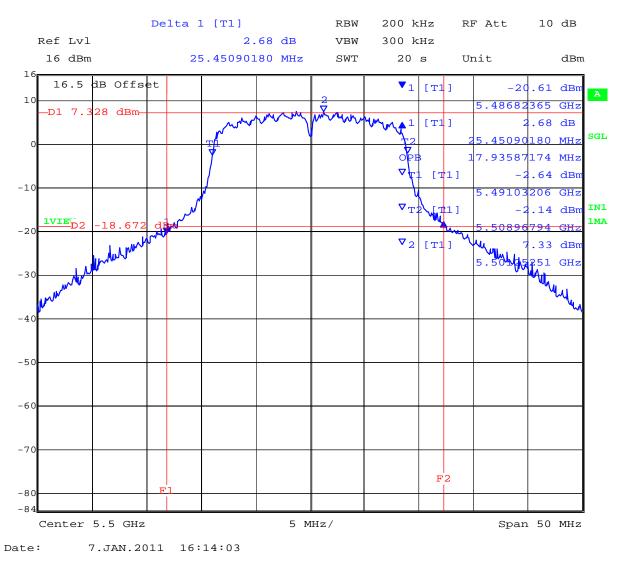
Measurement uncertainty:	±2.81 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 47 of 184

26dB OBW 99% Ambient 5500MHz 4.20V 15.96dBm

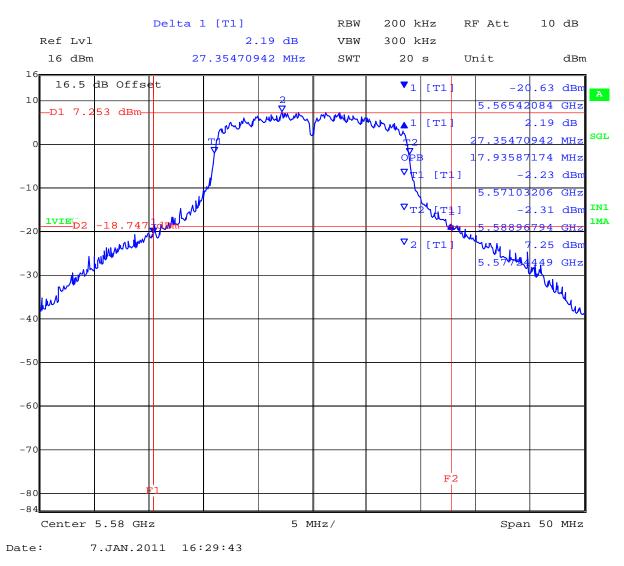


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 48 of 184

26dB OBW 99% Ambient 5580MHz 4.20V 15.92dBm

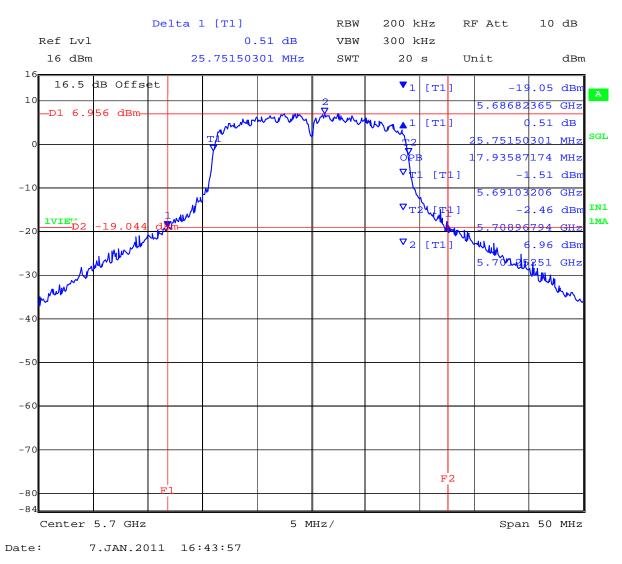


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 49 of 184

26dB OBW 99% Ambient 5700MHz 4.20V 16.27dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 50 of 184

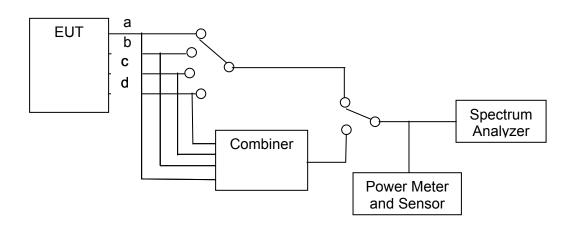
7.2 Transmit Output Power

FCC, Part 15 Subpart E §15.407(a)(1)(2) Industry Canada RSS-210 §9.2(2) RSS-Gen §4.4

Test Procedure

The transmitter terminal of EUT was connected to the input of an average power meter. Measurements were made while EUT was operating in a continuous transmission mode i.e. 100 % duty cycle at the appropriate center frequency. All cable losses and offsets were taken into consideration in the measured result.

Test Measurement Setup



Measurement setup for Transmitter Output Power

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 51 of 184

Specification

Limits

FCC, Part 15 §15.407 (a)(1), (a)(2) and Industry Canada RSS-210 § A9.2(2)

(a)(1) For the band 5.15-5.25 GHz the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or +4 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed +4 dBm in any 1 megahertz band.

(a)(2) For the 5.25-5.35 and 5470-5725 MHz GHz band the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or +11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed +11 dBm in any 1 megahertz band.

Industry Canada RSS-210 § A9.2(2)

For the band 5150-5250 MHz, the maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the band 5250-5350 MHz and 5470-5725 MHz, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Industry Canada RSS-Gen 4.4

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

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Antenna Gain - Maximum Permissible Peak Transmit Power

If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The maximum allowable peak power in the 5150 – 5250 MHz frequency band is +17 dBm.

The maximum allowable peak power in the 5250 - 5350 MHz, and 5470 - 5725 MHz frequency band is + 24 dBm.

Maximum Transmit Power, FCC Limits

Frequency Range	Maximum 26 dB Bandwidth	4 + 10 Log (B)	Limit
(MHz)	(MHz)	(dBm)	(dBm)
5150 – 5250	23.848	17 77	17.00

Limit 5150 - 5250 MHz: Lesser of 50 mW (+17 dBm) or 4 + 10 Log (B) dBm

Limit 5250 – 5350 and 5470 – 5725: Lesser of 250 mW	(+24 dBm) or 11 + 10 Log (B) dBm
---	----------------------------------

Frequency Range	Maximum 26 dB Bandwidth	11 + 10 Log (B)	Limit
(MHz)	(MHz)	(dBm)	(dBm)
5250 - 5350	26.649	25.26	24.00
5470 - 5725	27.355	25.37	24.00

Maximum Transmit Power Industry Canada Limits

Limit 5150 – 5250 MHz: Lesser of 200 mW (+23 dBm) or 10 + 10 Log (B) dBm

Frequency Range	Maximum 99% Bandwidth 10 + 10 Log (B)		EIRP Limit
(MHz)	(MHz)	(dBm)	(dBm)
5150 – 5250	17.735	22.49	22.49

Limit 5250 – 5350 and 5470 – 5725: Lesser of 250 mW (+24 dBm) or 11 + 10 Log (B) dBm

Frequency Range (MHz)	Maximum 99% Bandwidth (MHz)	11 + 10 Log (B) (dBm)	EIRP Limit (dBm)
5250 - 5350	17.735	23.49	23.49
5470 - 5725	17.936	23.54	23.54

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Title:	Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
To:	FCC 47 CFR Part 15.407 & RSS-210 A9
Serial #:	POLY06-U12 Rev A
	28th February, 2011
Page:	Page 53 of 184

Laboratory Measurement Uncertainty for Power Measurements

|--|

Traceability	
Method	Test Equipment Used
Measurements were made per work instruction WI-01 'Measuring RF Output Power'	0158, 0287, 0252, 0313, 0314, 0070, 0116, 0117

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 54 of 184

Measurement Results for Transmit Output Power

Radio Parameters Duty Cycle: 100% Output: Modulated Carrier Power: Maximum Compliant Power

7.2.1 5150 MHz - 5250 MHz; Peak Output Power

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)(1)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power				• Total Pow	ver (dBm)	Limit	Margin
Frequency		RF Port ((dBm)					.
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5180	14.69				14.69		17.00	-2.31
5200	14.63				14.63		17.00	-2.37
5240	14.72				14.72		17.00	-2.28

Measurement uncertainty: ±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 55 of 184

TABLE OF RESULTS - 802.11n HT-20

Test Conditions:	15.407 (a)(1)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power				Total Pow	ver (dBm)	Limit	Margin
Frequency	RF Port (dBm)					Liint	margin	
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5180	14.81				14.81		17.00	-2.19
5200	14.91				14.91		17.00	-2.09
5240	14.75				14.75		17.00	-2.25

Measurement uncertainty:	±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 56 of 184

7.2.2 5250 MHz - 5350 MHz; Peak Output Power

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)(1)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power			– Total Power (dBm)		Limit	Margin	
Frequency	RF Port (dBm)							
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5260	15.38				15.38		24.00	-8.62
5280	15.51				15.51		24.00	-8.49
5320	15.39				15.39		24.00	-8.61

Measurement uncertainty:	±1.33 dB
Measurement uncertainty:	±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 57 of 184

TABLE OF RESULTS - 802.11n HT-20

Test Conditions:	15.407 (a)(1)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power				– Total Power (dBm)		Limit	Margin
Frequency	RF Port (dBm)			Linit			margin	
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5260	15.27				15.27		24.00	-8.73
5280	15.17				15.17		24.00	-8.83
5320	15.36				15.36		24.00	-8.64

Measurement uncertainty:	±1.33 dB
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 58 of 184

7.2.3 5470 MHz - 5725 MHz; Peak Output Power

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)(1)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power			– Total Power (dBm)		Limit	Margin	
Frequency	RF Port (dBm)							
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5500	16.04				16.04		24.00	-7.96
5580	16.03				16.03		24.00	-7.97
5700	16.42				16.42		24.00	-7.58

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 59 of 184

TABLE OF RESULTS - 802.11n HT-20

Test Conditions:	15.407 (a)(1)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (x):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power			– Total Power (dBm)		Limit	Margin	
Frequency	RF Port (dBm)						J. J	
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5500	15.93				15.93		24.00	-8.07
5580	15.90				15.90		24.00	-8.10
5700	16.30				16.30		24.00	-7.70

Measurement uncertainty: ±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 60 of 184

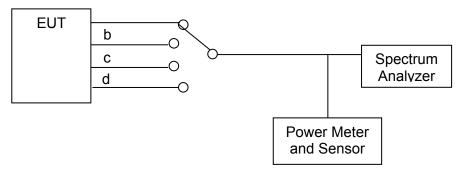
7.3 Peak Excursion Ratio

FCC, Part 15 Subpart E §15.407(a)(6)

Test Procedure

Normative Reference (xi) Section 2.1 Measurement Procedure DA 02-2138 "Measurement Procedure Updated for Peak Transmit Power in the UNII Bands" was implemented to determine the Peak Excursion Ratio. This is a conducted measurement using a spectrum analyzer. The Peak Excursion Ratio is the difference in amplitude (dB) between the two traces.

Test Measurement Set up



Measurement set up for Peak Excursion Ratio

Specification

Limits

§15.407 (a)(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 in this paragraph) shall not exceed 13dB across any 1MHz bandwidth or the emission bandwidth whichever is less

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement uncertainty	± 2.81dB
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Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of RF Spectrum Mask'	0158, 0287, 0252, 0313, 0314, 0070, 0116, 0117

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 61 of 184

Measurement Results for Peak Excursion Ratio

Radio Parameters Duty Cycle: 100% Output: Modulated Carrier Power: Maximum Compliant Power

7.3.1 5150 MHz - 5250 MHz; Peak Excursion Ratio

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	N/A Vdc				
Notes 1:					
Notes 2:					

Test	Trace Peak Power Markers		Δ Marker	Limit	Margin
Frequency	1	2	(Marker 1 – 2)		Margin
MHz	dBm	dBm	dB	dB	dB
5180	14.01	3.66	-10.35	13	-2.65
5200	14.34	3.56	-10.78	13	-2.22
5240	14.35	3.86	-10.49	13	-2.51

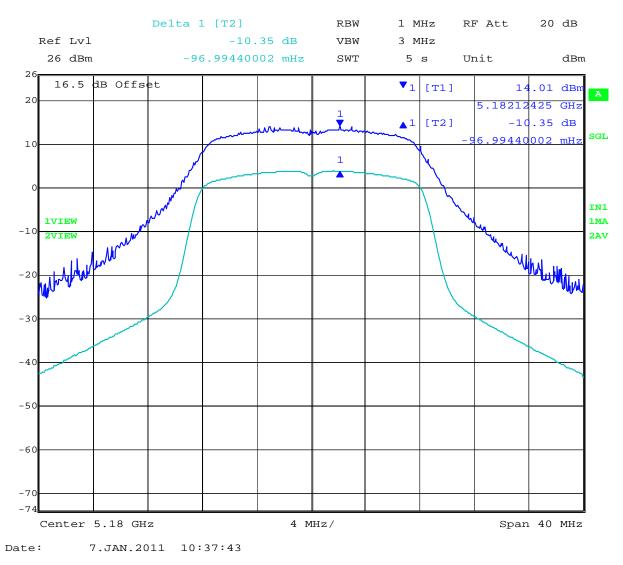
Measurement uncertainty:	±1.33 dB	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 62 of 184

Pk Excursion Ambient 5180MHz 4.20V 14.69dBm

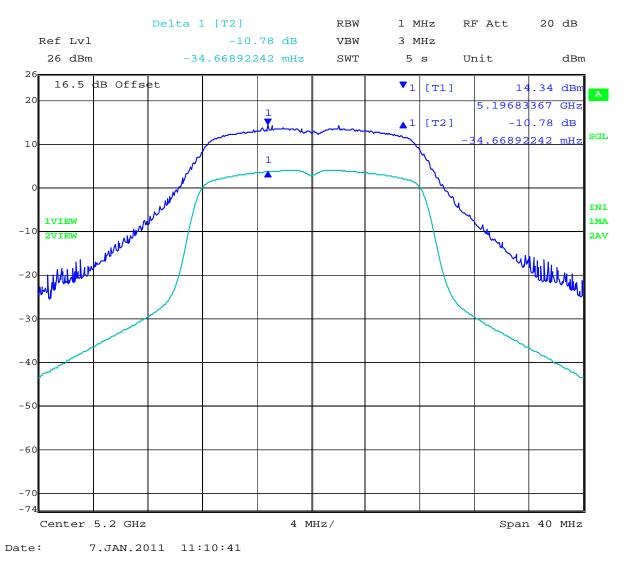


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 63 of 184

Pk Excursion Ambient 5200MHz 4.20V 14.62dBm

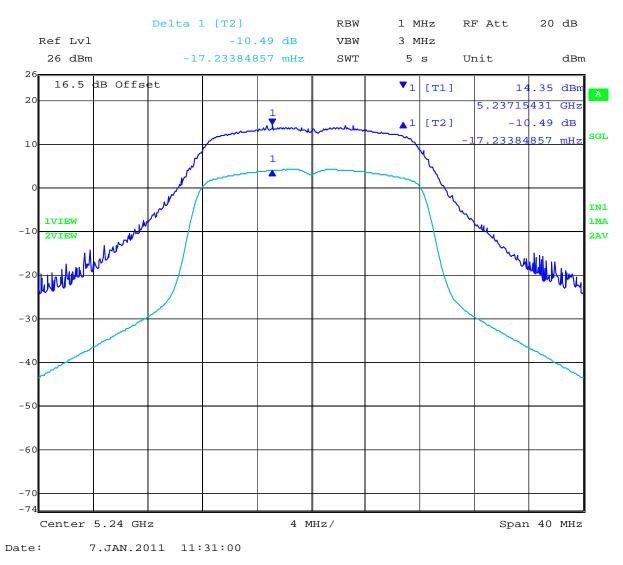


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 64 of 184

Pk Excursion Ambient 5240MHz 4.20V 14.72dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 65 of 184

TABLE OF RESULTS - 802.11HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	N/A Vdc				
Notes 1:					
Notes 2:					

Test	Trace Peak Pov	ver Markers	Δ Marker	Limit	Margin
Frequency	1	2	(Marker 1 – 2)	Linin	Wargin
MHz	dBm	dBm	dB	dB	dB
5180	14.00	3.62	-10.38	13	-2.62
5200	14.62	2.89	-11.73	13	-1.27
5240	13.75	3.76	-9.99	13	-3.01

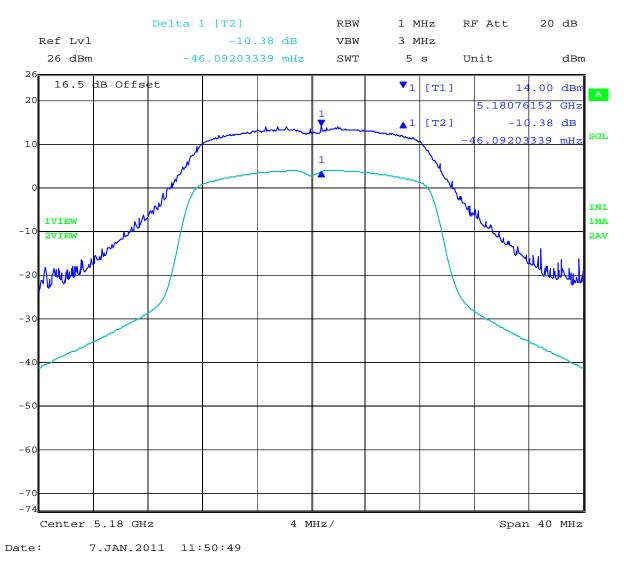
Measurement uncertainty:	±1.33 dB
,	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 66 of 184

Pk Excursion Ambient 5180MHz 4.20V 14.83dBm

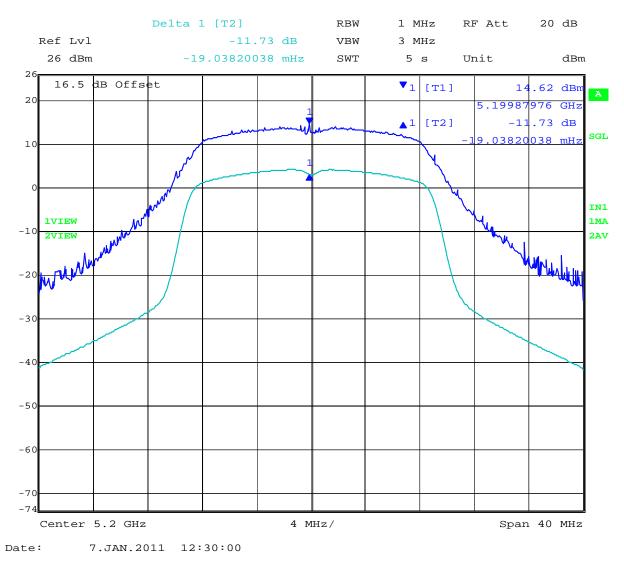


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 67 of 184

Pk Excursion Ambient 5200MHz 4.20V 14.91dBm

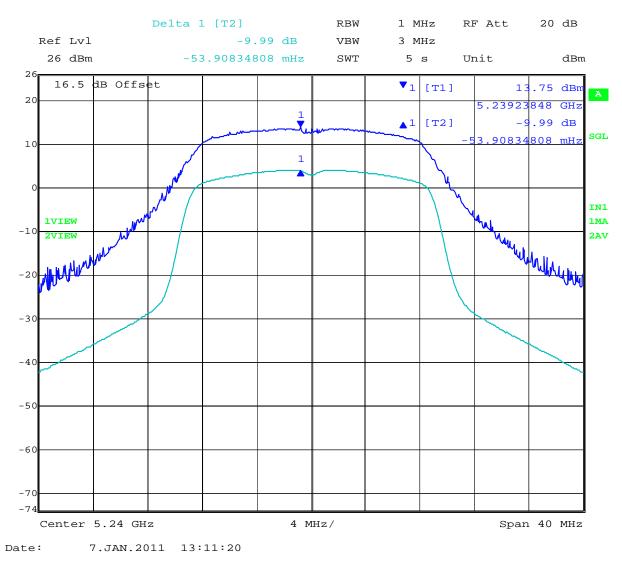


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 68 of 184

Pk Excursion Ambient 5240MHz 4.20V 14.75dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 69 of 184

7.3.2 5250 MHz - 5350 MHz; Peak Excursion Ratio

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	N/A Vdc				
Notes 1:					
Notes 2:					

Test	Trace Peak Pov	ver Markers	Δ Marker	Limit	Margin
Frequency	1	2	(Marker 1 – 2)		Wargin
MHz	dBm	dBm	dB	dB	dB
5260	15.22	4.44	-10.78	13	-2.22
5280	14.92	4.49	-10.43	13	-2.57
5320	15.24	4.41	-10.83	13	-2.17

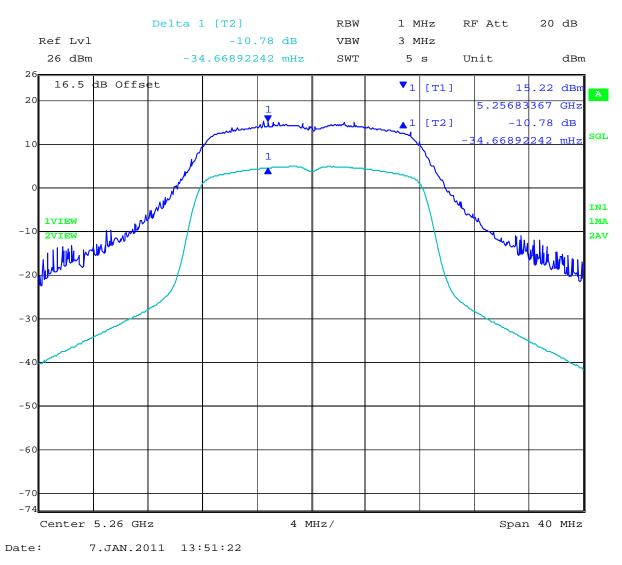
Measurement uncertainty:	±1.33 dB
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 70 of 184

Pk Excursion Ambient 5260MHz 4.20V 15.38dBm

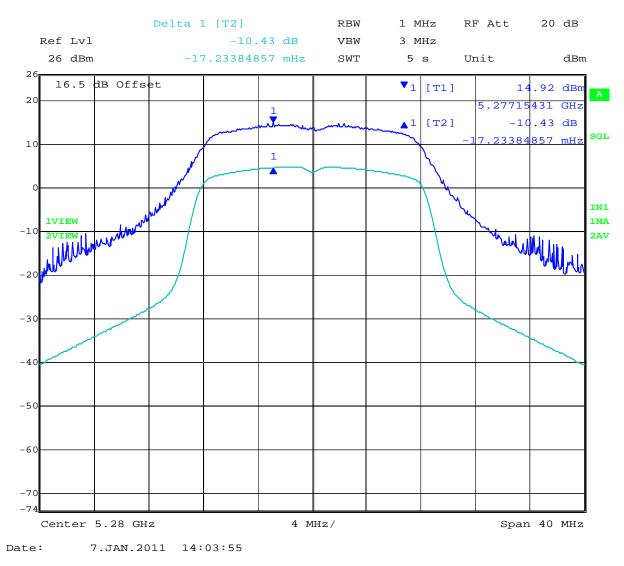


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 71 of 184

Pk Excursion Ambient 5280MHz 4.20V 15.50dBm

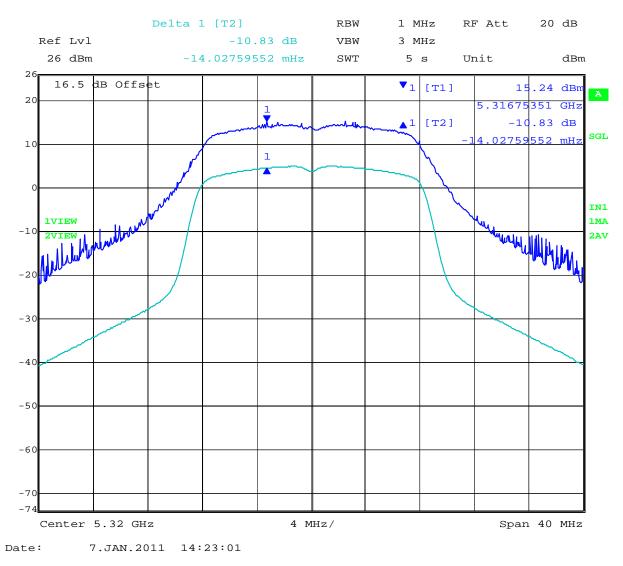


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 72 of 184

Pk Excursion Ambient 5320MHz 4.20V 15.37dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 73 of 184

TABLE OF RESULTS - 802.11HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	N/A Vdc				
Notes 1:					
Notes 2:					

Test	Trace Peak Pov	ver Markers	Δ Marker	Limit	Margin	
Frequency	1	2	(Marker 1 – 2)	Linn	Margin	
MHz	dBm	dBm	dB	dB	dB	
5260	14.41	4.15	-10.26	13	-2.74	
5280	14.77	2.90	-11.87	13	-1.13	
5320	14.78	3.36	-11.42	13	-1.58	

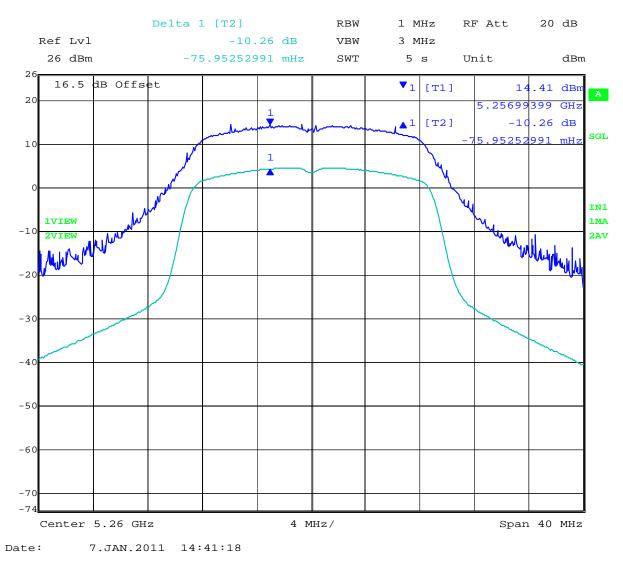
Measurement uncertainty:	±1.33 dB
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 74 of 184

Pk Excursion Ambient 5260MHz 4.20V 15.26dBm

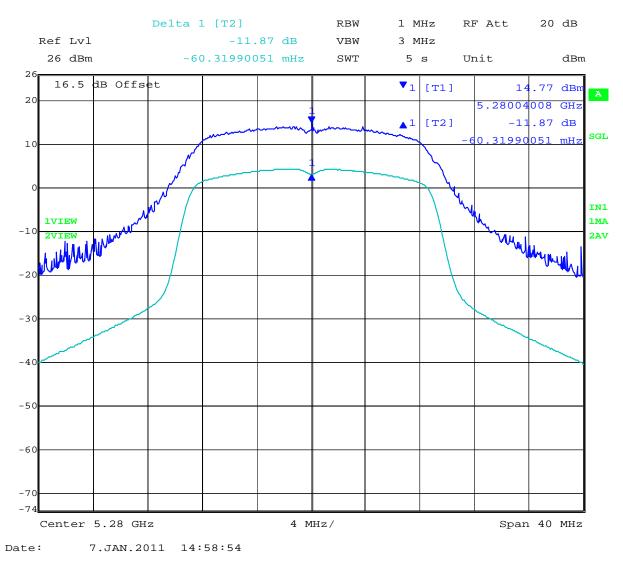


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 75 of 184

Pk Excursion Ambient 5280MHz 4.20V 15.15dBm

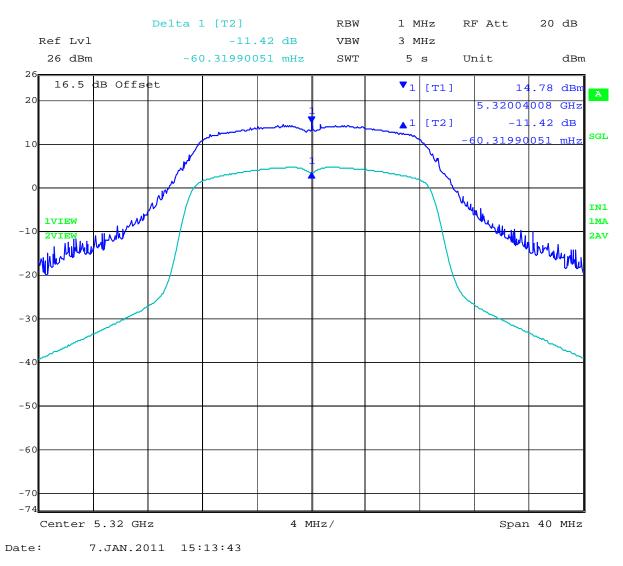


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 76 of 184

Pk Excursion Ambient 5320MHz 4.20V 15.34dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 77 of 184

7.3.3 5470 MHz - 5725 MHz; Peak Excursion Ratio

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	N/A Vdc				
Notes 1:					
Notes 2:					

Test	Trace Peak Pow	ver Markers	Δ Marker	Limit	Margin	
Frequency	1	2	(Marker 1 – 2)	Limit	Margin	
MHz	dBm	dBm	dB	dB	dB	
5500	15.05	4.62	-10.43	13	-2.57	
5580	14.85	4.81	-10.04	13	-2.96	
5700	14.92	4.60	-10.32	13	-2.68	

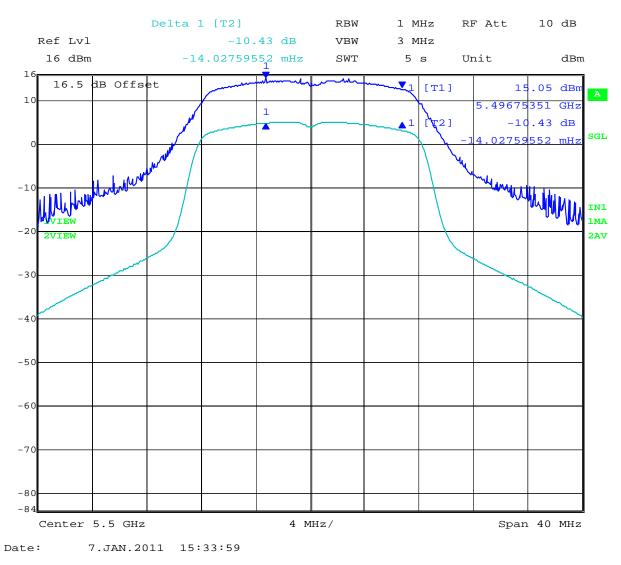
Measurement uncertainty:	±1.33 dB
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 78 of 184

Pk Excursion Ambient 5500MHz 4.20V 16.02dBm

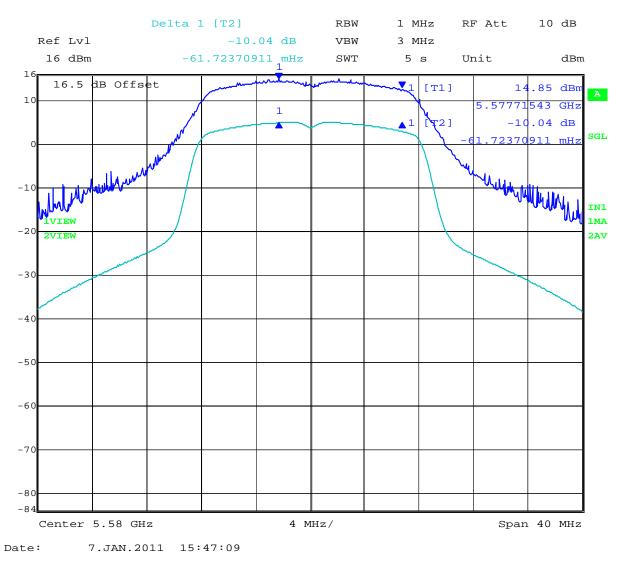


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 79 of 184

Pk Excursion Ambient 5580MHz 4.20V 16.02dBm

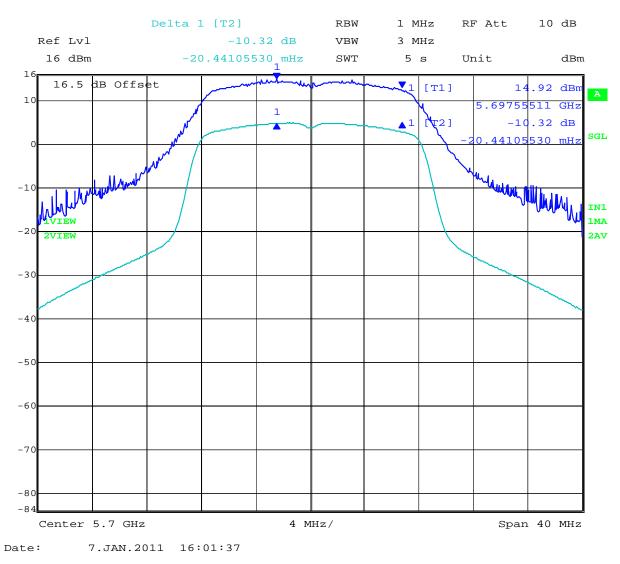


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 80 of 184

Pk Excursion Ambient 5700MHz 4.20V 16.43dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 81 of 184

TABLE OF RESULTS - 802.11HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	N/A Vdc				
Notes 1:					
Notes 2:					

Test	Trace Peak Po	wer Markers	Δ Marker	Limit	Margin
Frequency	1	2	(Marker 1 – 2)		margin
MHz	dBm	dBm	dB	dB	dB
5500	14.96	3.87	-11.09	13	-1.91
5580	14.38	4.00	-10.38	13	-2.62
5700	14.62	3.55	-11.07	13	-1.93

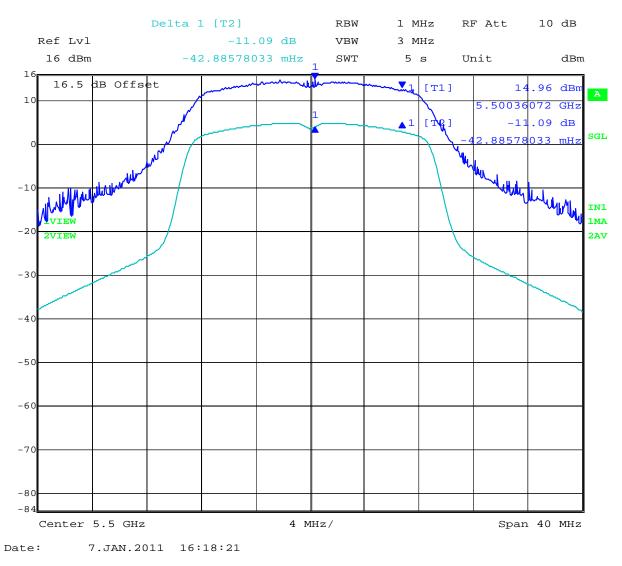
Measurement uncertainty:	±1.33 dB
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 82 of 184

Pk Excursion Ambient 5500MHz 4.20V 15.93dBm

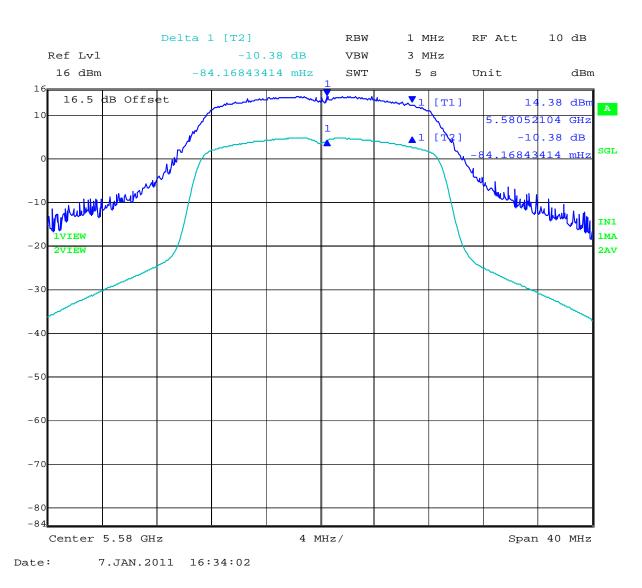


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 83 of 184

Pk Excursion Ambient 5580MHz 4.20V 15.90dBm

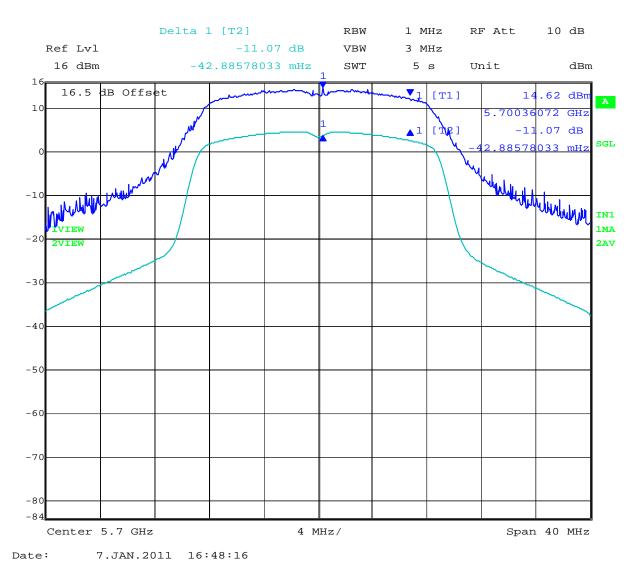


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 84 of 184

Pk Excursion Ambient 5700MHz 4.20V 16.29dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 85 of 184

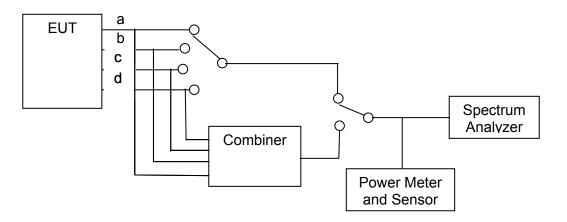
7.4 Peak Power Spectral Density

FCC, Part 15 Subpart C §15.407(a)(1)(2) Industry Canada RSS-210 §A9.2(1)(2)

Test Procedure

The transmitter output was connected to a spectrum analyzer and the peak power spectral density measured. Method 2 Sample Detection and power averaging, specified in FCC document DA 02-2138 (Normative Reference (ix) Section 2.1 "Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices") was used to determine the peak power spectral density of the emission. The Peak Power Spectral Density is the highest level found across the emission in a 1 MHz resolution bandwidth.

Test Measurement Setup



Measurement setup for Peak Power Spectral Density

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 86 of 184

Specification

FCC, Part 15 §15.407 (a)(1), (a)(2) 5150 – 5250 MHz

(a)(1) The peak power spectral density shall not exceed +4 dBm in any 1 megahertz band

5250 - 5350 MHz & 5470 - 5725 MHz

(a)(2) The peak power spectral density shall not exceed +11 dBm in any 1 megahertz band

Industry Canada RSS-210 § A9.2(1), A9.2(2) 5150 – 5250 MHz

§ A9.2(1) The e.i.r.p. spectral density shall not exceed +10 dBm in any 1 MHz band

5250 - 5350 MHz & 5470 - 5725 MHz

§ A9.2(2) The power spectral density shall not exceed +11 dBm in any 1 MHz band

Laboratory Measurement Uncertainty for Spectral Density

Measurement uncertainty	±1.33 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-01 'Measuring RF Output Power'	0158, 0287, 0252, 0313, 0314, 0070, 0116, 0117

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Measurement Results for Peak Power Spectral Density

Radio Parameters Duty Cycle: 100% Output: Modulated Carrier Power: Maximum Compliant Power

7.4.1 5150 MHz - 5250 MHz; Peak Power Spectral Density

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Ме	asured Pea	k Power		- Total Power (dBm)		Limit	Margin	
Frequency	RF Port (dBm)					Liint	Wargin		
MHz	а	b	С	d	Combined	Calculated	dBm	dB	
5180	3.46				3.46		4.00	-0.54	
5200	3.34				3.34		4.00	-0.66	
5240	3.40				3.40		4.00	-0.60	

Measurement uncertainty:

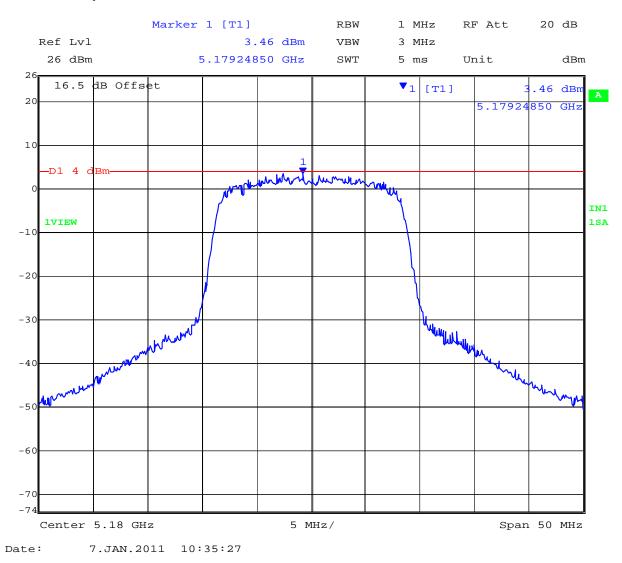
±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 88 of 184

Power Density Ambient 5180MHz 4.20V 14.69dBm

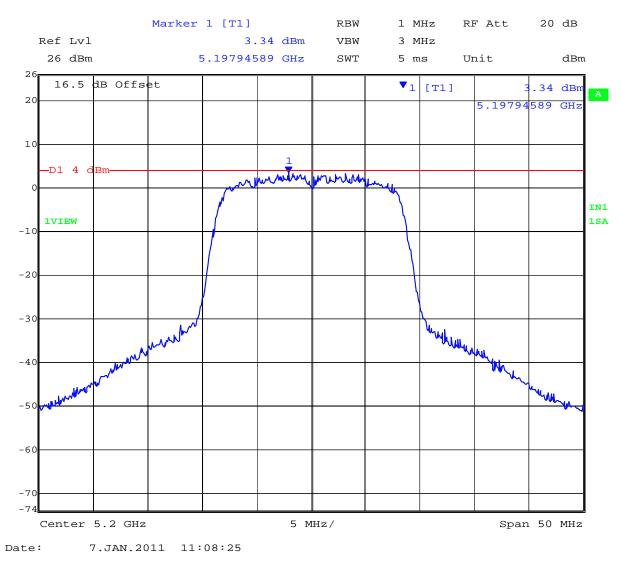


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 89 of 184

Power Density Ambient 5200MHz 4.20V 14.63dBm

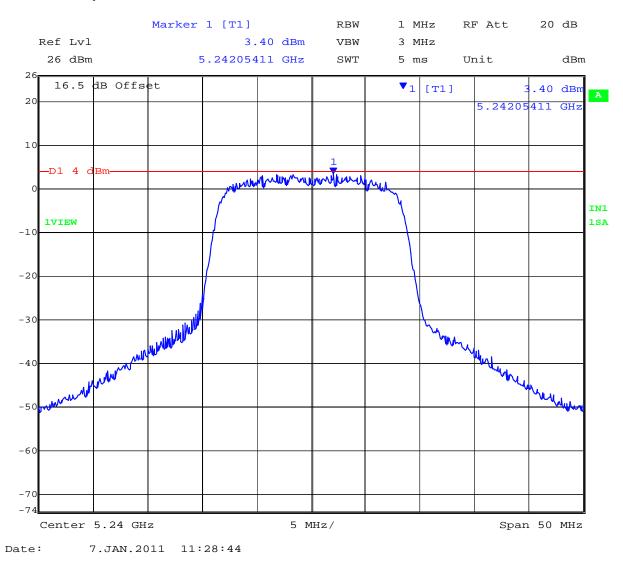


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 90 of 184

Power Density Ambient 5240MHz 4.20V 14.60dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 91 of 184

TABLE OF RESULTS - 802.11n HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test				Total Power (dBm)		Limit	Margin	
Frequency		RF Port (dBm)				Margin	
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5180	3.90				3.90		4.00	-0.10
5200	3.50				3.50		4.00	-0.50
5240	3.84				3.84		4.00	-0.16

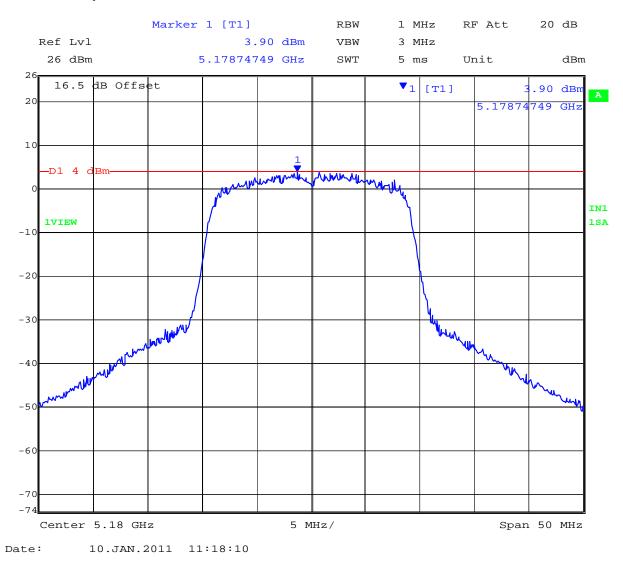
Measurement uncertainty:	±1.33 dB
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 92 of 184

Power Density Ambient 5180MHz 4.20V 15.08dBm

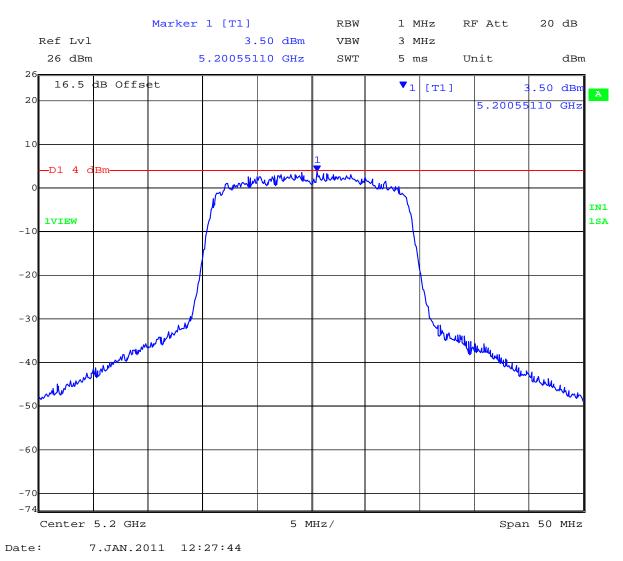


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 93 of 184

Power Density Ambient 5200MHz 4.20V 14.91dBm

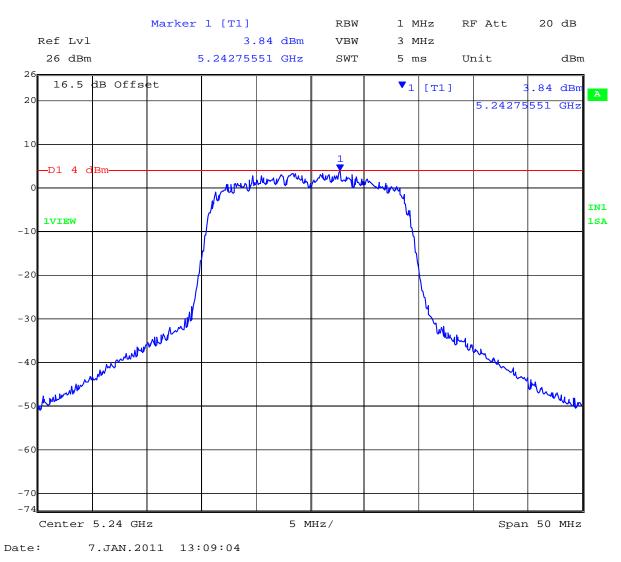


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 94 of 184

Power Density Ambient 5240MHz 4.20V 14.75dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 95 of 184

7.4.2 5250 MHz - 5350 MHz; Peak Power Spectral Density

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Total Power (dBm)		Limit	Margin				
Frequency							Margin	
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5260	4.29				4.29		11.00	-6.71
5280	3.86				3.86		11.00	-7.14
5320	4.75				4.75		11.00	-6.25

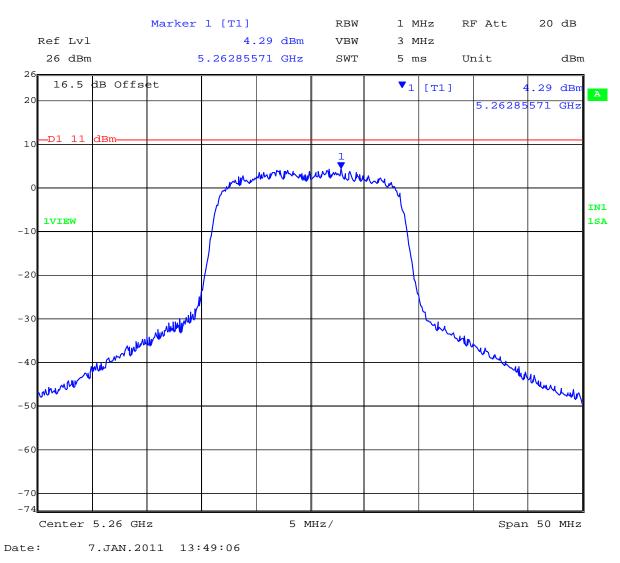
Measurement uncertainty:	±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 96 of 184

Power Density Ambient 5260MHz 4.20V 15.41dBm

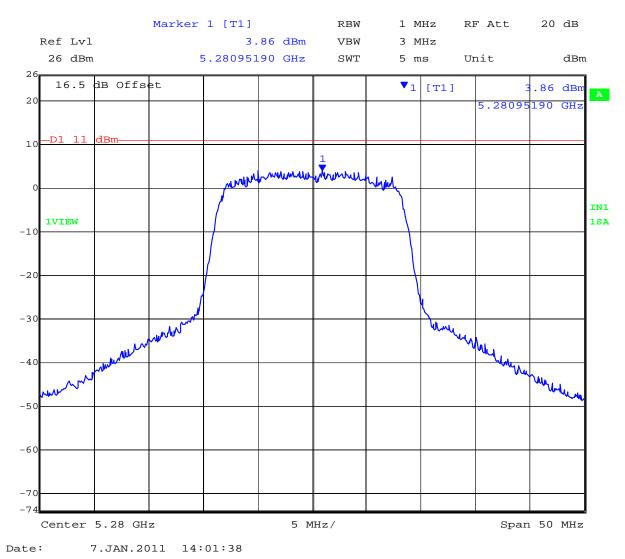


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 97 of 184

Power Density Ambient 5280MHz 4.20V 15.41dBm

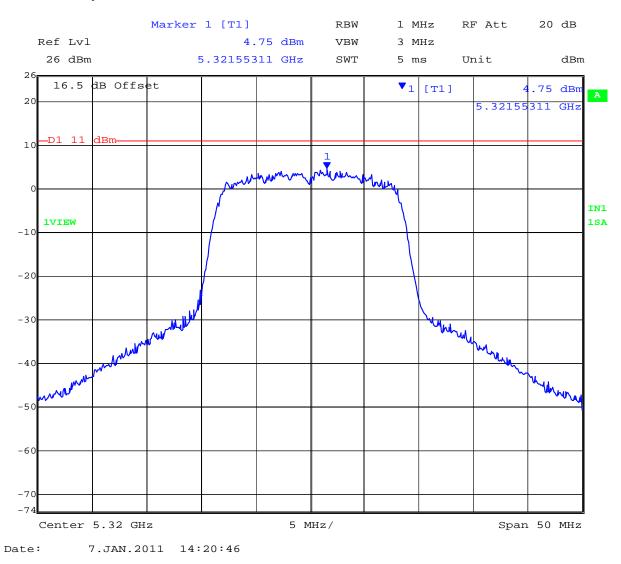


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 98 of 184

Power Density Ambient 5320MHz 4.20V 15.39dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 99 of 184

TABLE OF RESULTS - 802.11n HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Measured Peak Power		– Total Power (dBm)		Limit	Margin			
Frequency		RF Port (dBm)						Margin	
MHz	а	b	С	d	Combined	Calculated	dBm	dB	
5260	4.03				4.03		11.00	-6.97	
5280	4.20				4.20		11.00	-6.80	
5320	4.06				4.06		11.00	-6.94	

Measurement uncertainty:

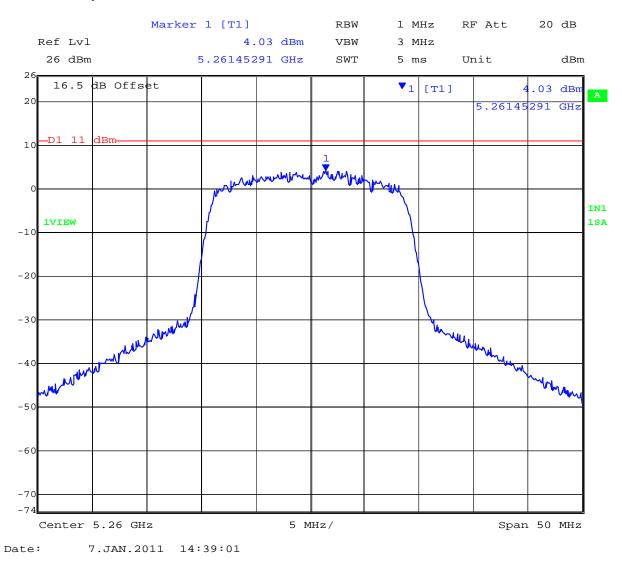
±1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 100 of 184

Power Density Ambient 5260MHz 4.20V 15.26dBm

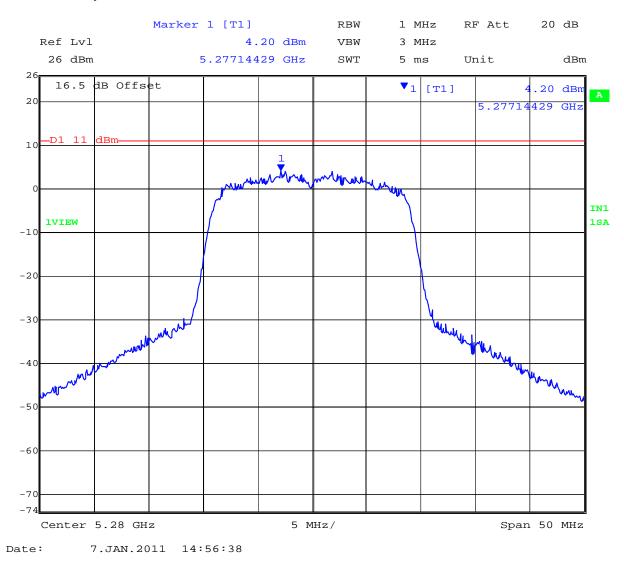


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 101 of 184

Power Density Ambient 5280MHz 4.20V 15.18dBm

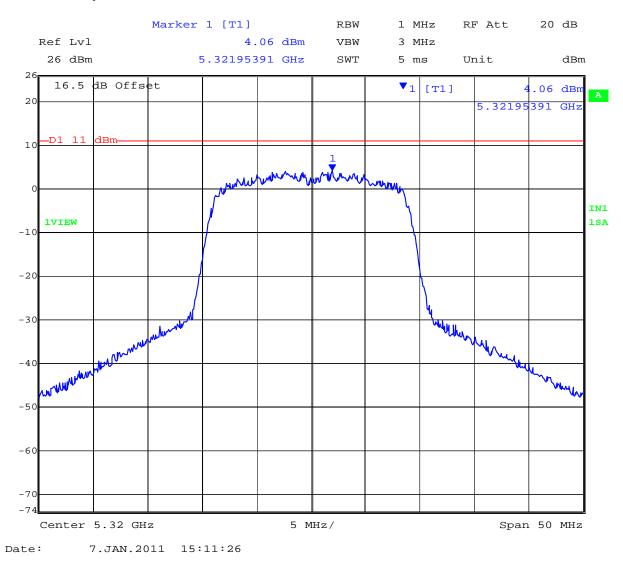


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 102 of 184

Power Density Ambient 5320MHz 4.20V 15.36dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 103 of 184

7.4.3 5470 MHz - 5725 MHz; Peak Power Spectral Density

TABLE OF RESULTS - 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test	Μ	easured Po	eak Power		Total Power (dBm)		Limit	Margin
Frequency	ncy RF Port (dBm)			Liint	Wargin			
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5500	4.73				4.73		11.00	-6.27
5580	4.48				4.48		11.00	-6.52
5700	3.99				3.99		11.00	-7.01

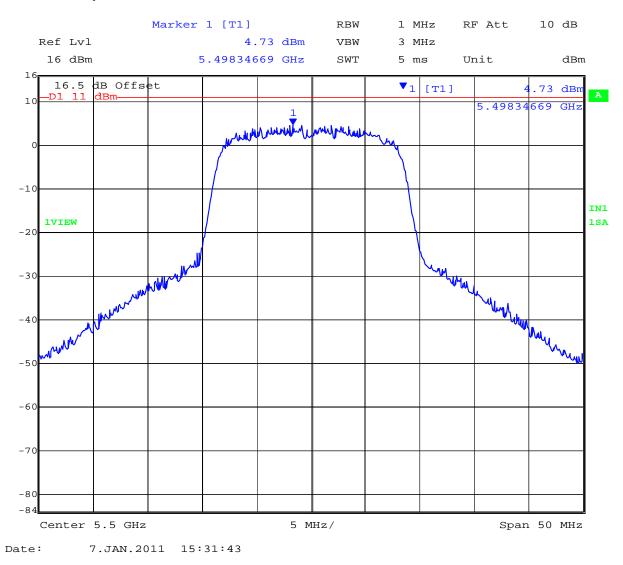
Measurement uncertainty:	±1.33 dB	
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 104 of 184

Power Density Ambient 5500MHz 4.20V 16.04dBm

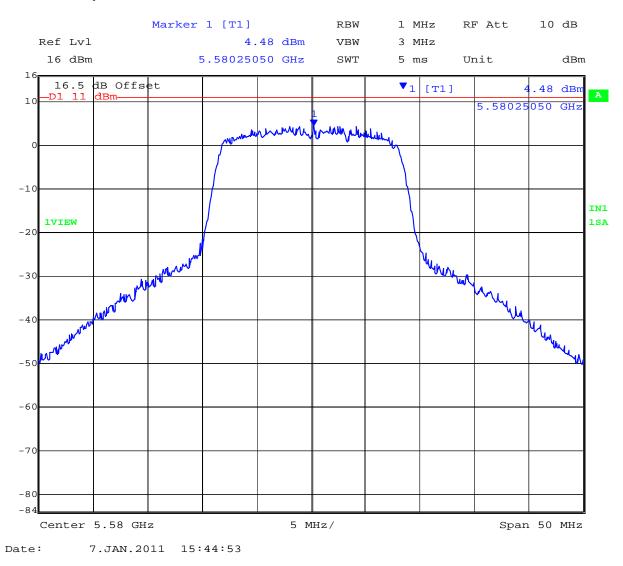


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 105 of 184

Power Density Ambient 5580MHz 4.20V 16.03dBm

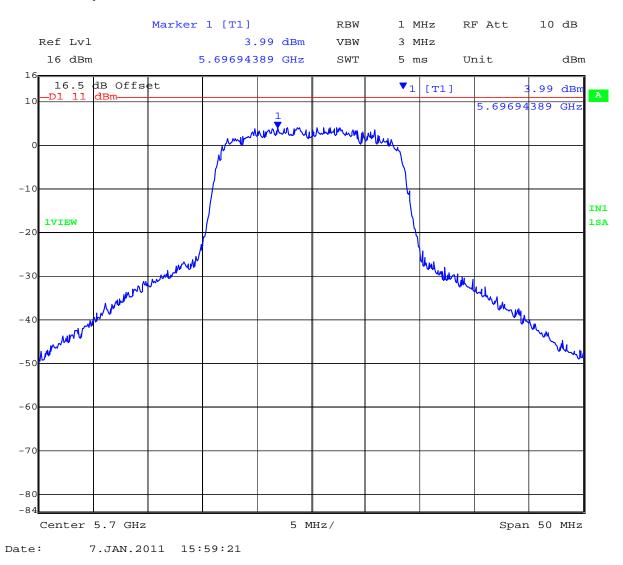


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 106 of 184

Power Density Ambient 5700MHz 4.20V 16.42dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 107 of 184

TABLE OF RESULTS - 802.11n HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51	dBi	
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

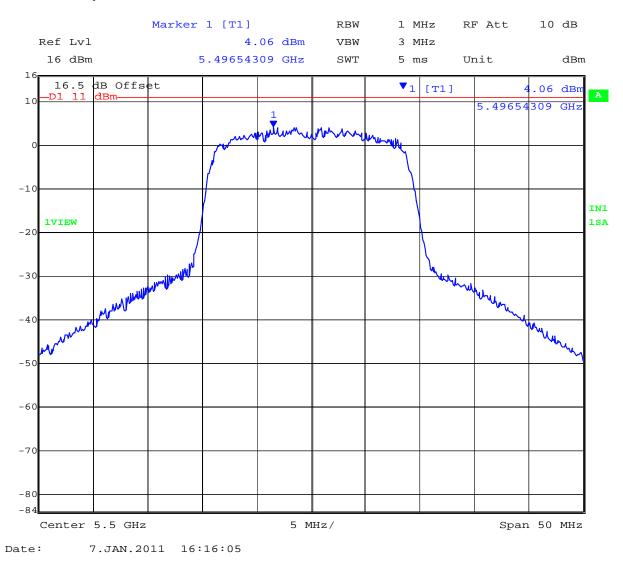
Test Frequency	Measured Peak Power			Total Power (dBm)		Limit	Margin	
		RF Port (dBm)			(
MHz	а	b	С	d	Combined	Calculated	dBm	dB
5500	4.06				4.06		11.00	-6.94
5580	4.40				4.40		11.00	-6.60
5700	4.08				4.08		11.00	-6.92

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 108 of 184

Power Density Ambient 5500MHz 4.20V 15.94dBm

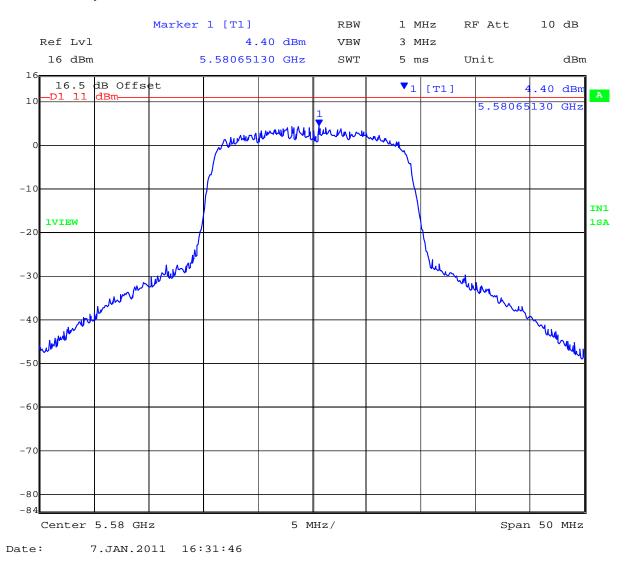


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 109 of 184

Power Density Ambient 5580MHz 4.20V 15.90dBm

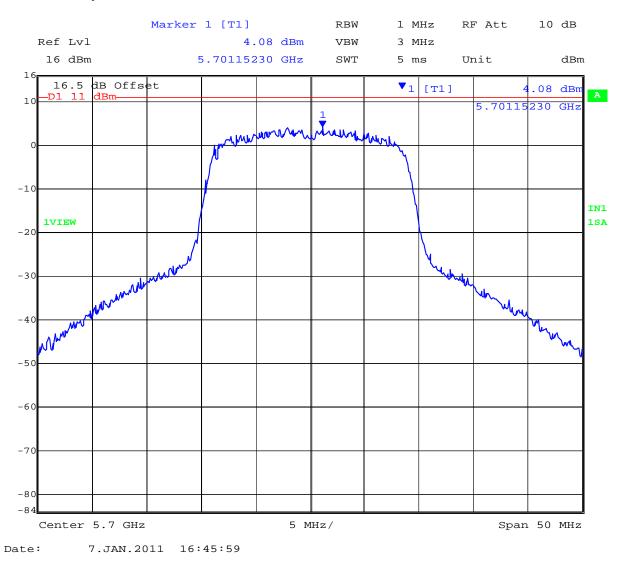


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 110 of 184

Power Density Ambient 5700MHz 4.20V 16.30dBm



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page:Page 111 of 184

7.5 Frequency Stability

FCC, Part 15 Subpart E §15.407(g) Industry Canada RSS-Gen §7.2.6

Test Procedure

The manufacturer of the equipment is responsible for ensuring that the frequency stability is such that emissions are always maintained within the band of operation under all conditions.

Manufacturer Declaration

The frequency stability of the reference oscillator sets the frequency stability of the RF transceiver signals. Therefore all of the RF signals should have ±20 ppm stability. This stability accounts for room temp tolerance of the crystal oscillator circuit, frequency variation across temperature, and crystal ageing.

 ± 20 ppm at 5.250 GHz translates to a maximum frequency shift of ± 105 KHz. As the edge of the channels is at least one MHz from either of the band edges, ± 105 KHz is more than sufficient to guarantee that the intentional emission will remain in the band over the entire operating range of the EUT.

Specification

Limits

FCC §15.407 (g)

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 user's manual.

Industry Canada RSS-Gen §7.2.6

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 112 of 184

7.6 Maximum Permissible Exposure

FCC §1.1310 Industry Canada RSS-Gen §5.6

Calculations for Maximum Permissible Exposure Levels

Power Density = Pd (mW/cm2) = EIRP/($4\pi d2$) EIRP = P * G P = Peak output power (mW) G = Antenna numeric gain (numeric) d = Separation distance (cm) Numeric Gain = 10 ^ (G (dBi)/10)

The Peak Power in mW is the highest transmitter power measured and summed across all transmitters. Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm2

Freq. Band	Antenna Gain	Peak Output Power	Antenna Gain	EIRP	Distance @ 1mW/cm2	Minimum Separation Distance
(MHz)	(dBi)	(dBm)	(numeric)	(mW)	Limit(cm)	(cm)
5150 - 5725	5.51	16.42	3.56	155.96	3.52	20

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification

Maximum Permissible Exposure Limits

FCC §1.1310

Limit = $1 \text{mW} / \text{cm}^2$ from 1.310 Table 1

RSS-Gen §5.6

Exposure of Humans to RF Fields: Category I and Category II equipment shall comply with the applicable requirements of RSS-102.

Laboratory Measurement Uncertainty for Power Measurements Measurement uncertainty +1.33 dB

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 113 of 184

7.7 Dynamic Frequency Selection (DFS)

7.7.1 Test Procedure and Setup

FCC, Part 15 Subpart C §15.407(h) FCC 06-96 Memorandum Opinion and Order Industry Canada RSS-210 §A9.3

7.7.1.1 Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)	
≥ 200 milliwatt	-64 dBm	
< 200 milliwatt	-62 dBm	
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna		

7.7.1.2 DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
	See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 80% of the 99% power bandwidth See Note 3.

Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

For the Short pulse radar Test Signals this instant is the end of the Burst.

For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.

For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate Channel changes (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 114 of 184

7.7.1.3 Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (R	adar Types 1-4)	80%	120		

A minimum of 30 unique waveforms are required for each of the short pulse radar types 2 through 4. For short pulse radar type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for short pulse radar types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per <i>Burst</i>	Number of <i>Bursts</i>	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000- 2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 115 of 184

Each waveform is defined as follows:

- 1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
- 2) There are a total of 8 to 20 *Bursts* in the 12 second period, with the number of *Bursts* being randomly chosen. This number is *Burst Count*.
- 3) Each *Burst* consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each *Burst* within the 12 second sequence may have a different number of pulses.
- 4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a *Burst* will have the same pulse width. Pulses in different *Bursts* may have different pulse widths.
- 5) Each pulse has a linear FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a *Burst* will have the same chirp width. Pulses in different *Bursts* may have different chirp widths. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
- 6) If more than one pulse is present in a *Burst*, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a *Burst*, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
- 7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to *Burst_Count*. Each interval is of length (12,000,000 / *Burst_Count*) microseconds. Each interval contains one *Burst*. The start time for the *Burst*, relative to the beginning of the interval, is between 1 and [(12,000,000 / *Burst_Count*) (Total *Burst* Length) + (One Random PRI Interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each *Burst* is chosen independently.

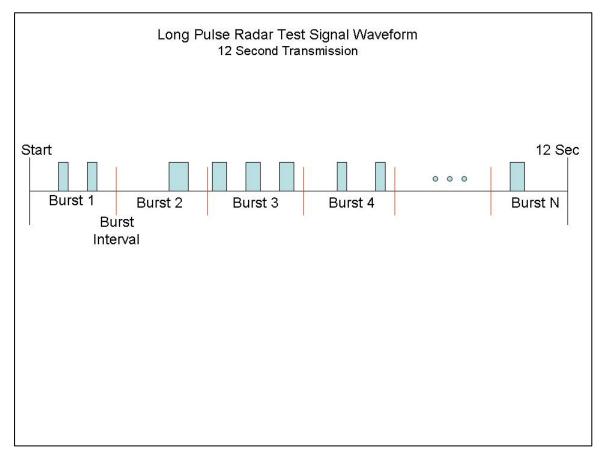


Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 116 of 184

A representative example of a Long Pulse radar test waveform:

- 1) The total test signal length is 12 seconds.
- 2) 8 Bursts are randomly generated for the Burst_Count.
- 3) Burst 1 has 2 randomly generated pulses.
- 4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
- 5) The PRI is randomly selected to be at 1213 microseconds.
- 6) Bursts 2 through 8 are generated using steps 3 5.
- 7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 3,000,000 microsecond range).

Graphical Representation of the Long Pulse Radar Test Waveform





7.7.1.4 Frequency Hopping Radar Test Waveform

Frequency Hopping Radar Test Waveform

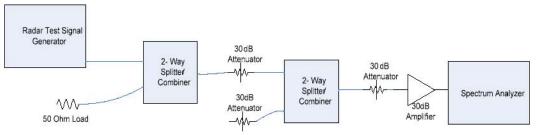
Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	.333	300	70%	30

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

7.7.1.5 Radar Waveform Calibration

The following equipment setup was used to calibrate the conducted Radar Waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) mode at the frequency of the Radar Waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz.

The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -61dBm (Ref Section 5.1). The 30dB amplifier gain was entered as amplitude offset on the spectrum analyzer.



Conducted Calibration Setup

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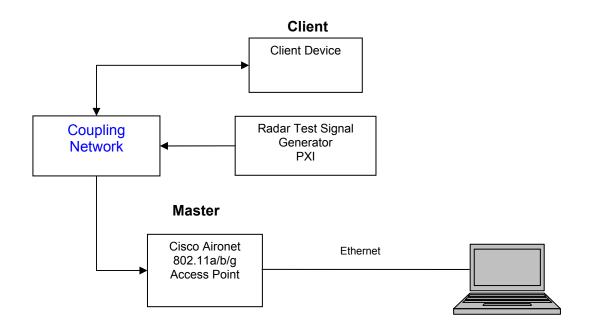
Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 118 of 184

7.7.1.6 Test Setup

Block Diagram(s) of Test Setup

Setup for Conducted Measurements where the EUT is the Client with injection of Radar Test:

Support Equipment Configuration



Measurement Uncertainty Time/Power

Measurement uncertainty	Time - 4%
	Power - 1.33dB

Traceability

Test	Eqι	lipm	ent	Used
------	-----	------	-----	------

0072, 0083, 0098, 0116, 0132, 0158, 0313, 0314, 0193, 0223, 0252, 0253, 0251, 0256, 0328, 0329

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 119 of 184

The EUT is a Client Device without radar detection.

Applicability of DFS Requirements Prior to Use of a Channel

(Ref Table 1 of FCC 06-96)

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Applicability of DFS requirements during normal operation

Requirement	Operational Mode			
	Master	Client Without Radar Detection	Client With Radar Detection	
DFS Detection Threshold	Yes	Not required	Yes	
Channel Closing Transmission Time	Yes	Yes	Yes	
Channel Move Time	Yes	Yes	Yes	
U-NII Detection Bandwidth	Yes	Not required	Yes	

(Ref Table 2 of FCC 06-96)



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 120 of 184

Declared minimum antenna gain 0 dBi.

Radar receive signal level = -62 dBm + minimum antenna gain + 1 dB = -61 dBm

Radar receive signal level = -61 dBm

Measurement Results - Dynamic Frequency Selection (DFS)

Radio parameters. Test methodology: Conducted Device Type: Client device without radar detection. Transmit Power: Maximum

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 121 of 184

pulse is transmitted

7.7.2 In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

FCC §15.407(h)(2)(iii)

The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold is generated on the Operating Channel of the U-NII device.

A U-NII device operating as a Client Device will associate with the EUT (Master). The requisite MPEG video file ("TestFile.mpg" available on the NTIA website at the following link http://ntiacsd.ntia.doc.gov/dfs/) is streamed from the master device (AP) to the client.

Channel Closing Transmission Time - Measurement

A Type 1 waveform was introduced to the EUT, from which a 12 second transmission record was digitally captured, collecting nearly 250M samples of data, which included in excess of 600 ms of pre-trigger data. This Type 1 waveform had an integral marker built into its construction, marking the start of the radar waveform play, which directly triggered the PXI digitizer's data capture via the PXI backplane trigger bus.

The test system was set-up to capture all transmission data for access point events above a threshold level of -50 dBm. The test equipment time stamps all captured events with respect to T0 (zero time indicating the start of the measurements sequence) starting the 612.1 ms pre-trigger period followed by the radar type 1 burst period.

Radar (Type 1) Pre-trigger period	=612.1 ms
Type 1 burst period	=25.7 ms
Channel Closing Transmission Time sta	rts immediately after the last radar
i.e. 637.8 ms after the start of the trace of	capture period.

	Title:	Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
MiC MLabs		FCC 47 CFR Part 15.407 & RSS-210 A9 POLY06-U12 Rev A
		28th February, 2011 Page 122 of 184

Therefore, pulses seen after this 637.8 ms boundary are identified and totaled to provide an aggregate total of transmissions in order to determine whether the EUT is compliant with the Channel Closing Transmission Time requirements as described in MO&O FCC 06-96. In this case, it was found that an aggregate total of 10.636 ms of transmission time accrued. This value is found at the right hand side at the foot of the following plot (10s Total).

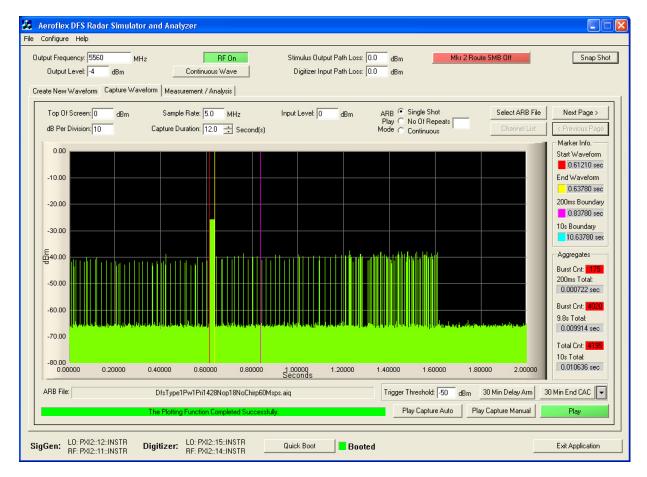
Channel Closing Transmission Time

= <u>10.636 mSecs (limit 260 mSecs)</u>

Channel Move Time

= <u>0.9822 Secs (limit 10 Secs)</u>

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar Captured by the Test System - Plot 1 of 6 (0-2 Seconds) Ch 112



From the plot above it can be seen that the transmission activity within the 200 mS window is 0.722 mS (see 200 mS Total). From the following plots which shows all additional activity within the remained of the 10 sec measurement window it can be determined that the aggregate transmission within this period is 9.914 mS. This is less than the 60 mS limit.



Title:	Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
To:	FCC 47 CFR Part 15.407 & RSS-210 A9
Serial #:	POLY06-U12 Rev A
Issue Date:	28th February, 2011
Page:	Page 123 of 184

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar Captured by the Test System - Plot 2 of 6 (2-4 Seconds) Ch 112

Aeroflex DFS Radar Simulator and Analyzer			
ile Configure Help			
Output Frequency: 5560 MHz RF On Stimulus Output Path Loss: 0.0 dBm Mkr 2 Route SMB Off Output Level: -4 dBm Continuous Wave Digitizer Input Path Loss: 0.0 dBm	Snap Shot		
Create New Waveform Capture Waveform Measurement / Analysis			
Top Of Screen: 0 dBm Sample Rate: 5.0 MHz Input Level: 0 dBm ARB Single Shot Select ARB File dB Per Division: 10 Capture Duration: 12.0 Second(s) Mode Continuous Channel List	Next Page > < Previous Page		
	Marker Info. Start Waveform 0.61210 sec		
-10.00	End Waveform 0.63780 sec		
-20.00	200ms Boundary 0.83780 sec		
-30.00	10s Boundary 10.63780 sec		
	Aggregates Burst Cnt: 175		
-50.00	200ms Total: 0.000722 sec		
	Burst Cnt: 4020 9.8s Total:		
	0.009914 sec		
-80.00 2.00000 2.20000 2.40000 2.60000 2.80000 3.00000 3.20000 3.40000 3.60000 3.80000 4.00000 Seconds	10s Total: 0.010636 sec		
ARB File: DfsType1Pw1Pi1428Nop18NoChirp60Msps.aiq Trigger Threshold: 50 dBm 30 Min Delay Arm 30	Min End CAC 💌		
The Plotting Function Completed Successfully. Play Capture Auto Play Capture Manual Play			
SigGen: L0: PX12:11::0NSTR Digitizer: L0: PX12:15::0NSTR Quick Boot Booted	Exit Application		

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Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
FCC 47 CFR Part 15.407 & RSS-210 A9
POLY06-U12 Rev A
28th February, 2011
Page 124 of 184

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar Captured by the Test System - Plot 3 of 6 (4-6 Seconds) Ch 112

Issue

Aeroflex DFS Radar Simulator and Analyzer	
ile Configure Help	
Output Frequency: 5560 MHz RF On Stimulus Output Path Loss: 0.0 dBm Mkr 2 Route SMB Off Output Level 4 dBm Continuous Wave Digitizer Input Path Loss: 0.0 dBm	Snap Shot
	Next Page > < Previous Page Marker Info.
	Start Waveform 0.61210 sec End Waveform 0.63780 sec
	200ms Boundary 0.83780 sec
-30.00	10s Boundary 10.63780 sec Aggregates
	Burst Cnt: 175 200ms Total: 0.000722 sec
	Burst Cnt: 4020 9.8s Total: 0.009914 sec
-80.00	Total Cnt: 4195 10s Total: 0.010636 sec
4.00000 4.20000 4.40000 4.60000 4.60000 5.00000 5.20000 5.40000 5.60000 5.60000 6.00000 ABB File: DfsType1Pw1Pii1428Nop18NoChirp60Msps.aig Trigger Threshold 50 dBm 30 Min Delay Am 30 Min Delay Am	Min End CAC
The Plotting Function Completed Successfully. Play Capture Auto Play Capture Manual Play Capture Auto Play Capture Manual Pla	Play
SigGen: L0: PXI2::12:INSTR Digitizer: L0: PXI2::15:INSTR Quick Boot Booted	Exit Application

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Title:	Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
To:	FCC 47 CFR Part 15.407 & RSS-210 A9
Serial #:	POLY06-U12 Rev A
Issue Date:	28th February, 2011
Page:	Page 125 of 184

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar Captured by the Test System - Plot 4 of 6 (6-8 Seconds) Ch 112

Aeroflex DFS Radar Simulator and Analyzer	
ile Configure Help	
Output Frequency: 5550 MHz RF On Stimulus Output Path Loss: 0.0 dBm Mkr 2 Route SMB Off Output Level: 4 dBm Continuous Wave Digitizer Input Path Loss: 0.0 dBm	Snap Shot
Top Of Screen: 0 dBm Sample Rate: 5.0 MHz Input Level: 0 dBm ARB Single Shot Select ARB File dB Per Division: 10 Capture Duration: 12.0 Second(s) Mode Continuous Channel List	Next Page >
-10.00	Start Waveform 0.61210 sec End Waveform 0.63780 sec
-20.00	200ms Boundary 0.83780 sec
-30.00	10s Boundary 10.63780 sec
-50.00	Burst Cnt: 175 200ms Total: 0.000722 sec
-60.00	Burst Cnt: 4020 9.8s Total: 0.009914 sec
-70.00 -80.00 6.00000 6.20000 6.40000 6.60000 6.80000 7.00000 7.20000 7.40000 7.60000 7.80000 8.00000	Total Cnt: 4195 10s Total: 0.010636 sec
	I Min End CAC 💌
The Plotting Function Completed Successfully. Play Capture Auto Play Capture Manual Play Capture Manual	Play
SigGen: L0: PX42:11::INSTR Digitizer: L0: PX42:11::INSTR Quick Boot RF: PX42::11::INSTR EF: PX42::14::INSTR Quick Boot	Exit Application

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 126 of 184

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar Captured by the Test System - Plot 5 of 6 (8-10 Seconds) Ch 112

Aeroflex DFS Radar Simulator and Analyzer	
Configure Help	
lutput Frequency: 5560 MHz RF On Stimulus Output Path Loss: 0.0 dBm Mkr 2 Route SMB Off	Snap Shot
Output Level: 4 dBm Continuous Wave Digitizer Input Path Loss: 0.0 dBm	
ireate New Waveform Capture Waveform Measurement / Analysis	
Top Of Screen: 0 dBm Sample Rate: 5.0 MHz Input Level: 0 dBm ARB Single Shot Select ARB File	e Next Page >
dB Per Division: 10 Capture Duration: 12.0 + Second(s) Play C No Of Repeats Channel List:	< Previous Page
0.00	Marker Info.
	Start Waveform 0.61210 sec
-10.00	End Waveform
	0.63780 sec
-20.00	200ms Boundary
	0.83780 sec 10s Boundary
-30.00	10.63780 sec
튶40.00	Aggregates
	Burst Cnt: 175
-50.00	200ms Total:
	0.000722 sec
-60.00	Burst Cnt: 4020
	9.8s Total: 0.009914 sec
-70.00	Total Cnt: 4195
-80.00	10s Total:
-0030 8.20000 8.20000 8.40000 8.60000 8.80000 9.00000 9.20000 9.40000 9.60000 9.80000 10.00000 Seconds	0.010636 sec
ARB File: DfsType1Pw1Pri1428Nop18NoChirp60Msps.aiq Trigger Threshold: 50 dBm 30 Min Delay Arm	30 Min End CAC 💌
The Plotting Function Completed Successfully. Play Capture Auto Play Capture Manual	Play
igGen: LD: PXI2::12:INSTR Digitizer: LD: PXI2::15::INSTR Quick Boot Boot	Exit Application

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Title:	Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
To:	FCC 47 CFR Part 15.407 & RSS-210 A9
Serial #:	POLY06-U12 Rev A
Issue Date:	28th February, 2011
Page:	Page 127 of 184

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar Captured by the Test System - Plot 6 of 6 (10-12 Seconds) Ch 112

Aeroflex DFS Radar Simulator and Analyzer	
Configure Help	
utput Frequency: 5560 MHz RF On Stimulus Output Path Loss: 0.0 dBm Mkr 2 Route SMB Off Output Level: 4 dBm Continuous Wave Digitizer Input Path Loss: 0.0 dBm eate New Waveform Capture Waveform Measurement / Analysis	Snap Shot
	Next Page >
Play C No Of Repeats	< Previous Page
	Marker Info. Start Waveform 0.61210 sec End Waveform 0.63780 sec 200ms Boundary 0.83780 sec 10s Boundary
-3000	10.63780 sec Aggregates Burst Cnt: 175
-50.00	200ms Total: 0.000722 sec
	Burst Cnt: 4020 9.8s Total: 0.009914 sec Total Cnt: 4195
-80.00 10.00000 10.20000 10.40000 10.60000 10.80000 11.00000 11.20000 11.40000 11.60000 11.80000 12.00000 Seconds	10s Total: 0.010636 sec
ARB File: DfsType1Pw1Pri1428Nop18NoChirp60Msps.aiq Trigger Threshold: 50 dBm 30 Min Delay Arm 30 M	Min End CAC 💌
The Auto Test Function Completed Successfully. Play Capture Auto Play Capture Auto	Play
gGen: L0: PXI2::12:INSTR Digitizer: L0: PXI2::15:INSTR Quick Boot Booted	Exit Application

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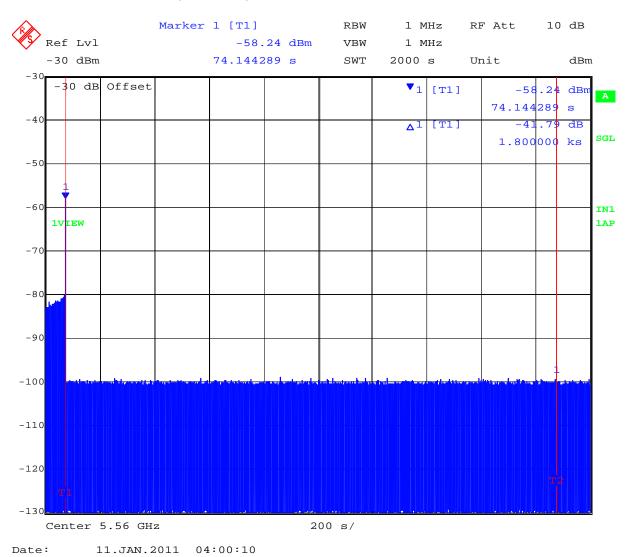


Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 128 of 184

7.7.3 30 Minute Non-Occupancy Period

The EUT is monitored for more than 30 minutes following the channel close/move time to verify no transmissions resume on this Channel.

30 Minute Non-Occupancy Period Type 1 Radar Ch 112 - 5,560 MHz



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page:Page 129 of 184

7.8 Radiated Spurious Emissions

Test Procedure

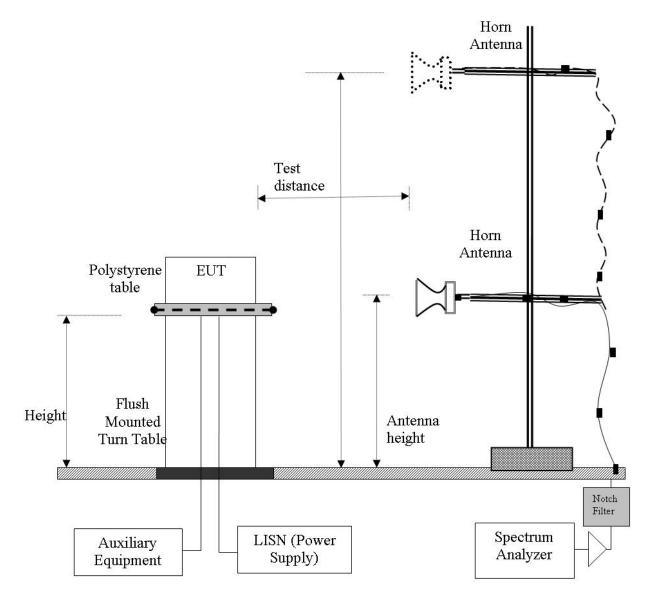
Testing was performed in a 3-meter anechoic chamber. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. Preliminary emissions were recorded with in Spectrum Analyzer mode, using a maximum peak detector while in peak hold mode.

Emissions nearest the limits were chosen for maximization and formal measurement using a CISPR Compliant receiver. Emissions above 1000 MHz are measured utilizing a CISPR compliant average detector with a tuned receiver, using a bandwidth of 1 MHz. Emissions from 30 MHz – 1000 MHz are measured utilizing a CISPR compliant quasi-peak detector with a tuned receiver, using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed.



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev ASue Date:28th February, 2011Page:Page 130 of 184

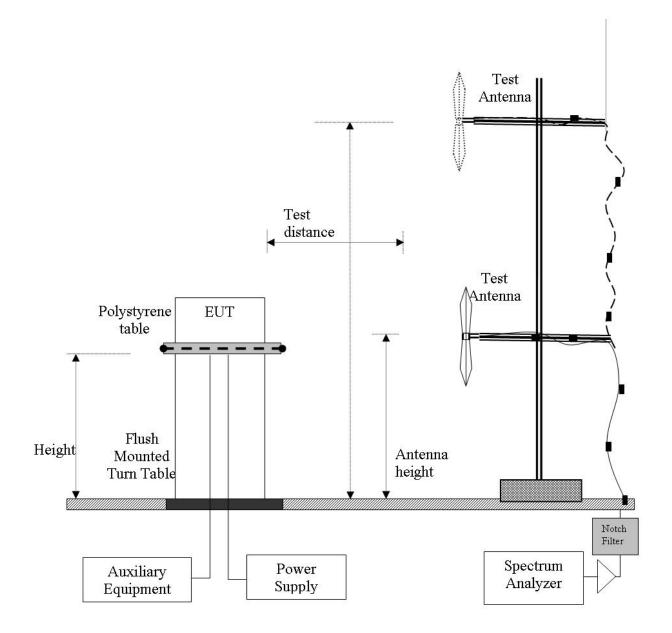




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	Title:	Polycom Spectralink 8440 Wi-Fi handset with Bluetooth
MiC MLabs		FCC 47 CFR Part 15.407 & RSS-210 A9 POLY06-U12 Rev A
		28th February, 2011 Page 131 of 184





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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 132 of 184

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

FS = R + AF + CORR - FO

FS = Field Strength R = Measured Spectrum analyzer Input Amplitude AF = Antenna Factor FO = Distance Falloff Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss AG = Amplifier Gain NFL = Notch Filter Loss or Waveguide Loss

Field Strength Calculation Example:

Given receiver input reading of 51.5 dB μ V; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

 $FS = 51.5 + 8.5 + 1.3 - 26.0 + 1 = 36.3 dB\mu V/m$

Conversion between dB μ V/m (or dB μ V) and μ V/m (or μ V) are done as:

Level (dB μ V/m) = 20 * Log (level (μ V/m))

40 dBμV/m = 100 μV/m 48 dBμV/m = 250 μV/m

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 133 of 184

Specification for FCC Part 15 Radiated Spurious Emissions

Limits

§15.407 (b)(2)

All emissions outside of the 5,150-5,350MHz band shall not exceed an EIRP of - 27dBm/MHz.

§15.205 (a)

Except as shown in paragraph (d) of 15.205 (a), only spurious emissions are permitted in any of the frequency bands listed.

§15.205 (a)

Except as shown in paragraphs (d) and (e) of this section, 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.

§15.209 (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.

RSS-210 §A9.3(2)

For transmitters operating in the 5250-5350 MHz band, all emissions outside the 5150-5350 MHz band shall not exceed -27 dBm/MHz e.i.r.p. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band shall not exceed out of band emission limit of 27 dBm/MHz e.i.r.p. in the 5150-5250 MHz band in order to operate indoor/outdoor, or alternatively shall comply with the spectral power density for operation within the 5150-5250 MHz band and shall be labeled "for indoor use only".

RSS-Gen §4.7

The search for unwanted emissions shall be from the lowest frequency internally generated or used in the device (local oscillator, intermediate of carrier frequency), or from 30 MHz, whichever is the lowest frequency, to the 5th harmonic of the highest frequency generated without exceeding 40 GHz.

RSS-Gen §6

Receiver Spurious Emission Standard

If a radiated measurement is made, all spurious emissions shall comply with the limits of the following Table. The resolution bandwidth of the spectrum analyzer shall be 100 kHz for spurious emission measurements below 1.0 GHz and 1.0 MHz for measurements above 1.0 GHz

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 134 of 184

§15.209 (a) Limit Matrix

Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 135 of 184

Specification for Industry Canada Receiver Spurious Emissions

RSS-Gen §4.8,

The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

RSS-Gen §6

The following receiver spurious emission limits shall be complied with; (a) If a radiated measurement is made, all spurious emissions shall comply with the limits of Table 1.

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement Uncertainty	+5.6/ -4.5 dB

Traceability:	
Method	Test Equipment Used
Work instruction WI-03	0287, 0193, 0342, 0158, 0303, 0304, 0134, 0310, 0312



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 136 of 184

7.8.1 Transmitter Radiated Spurious Emissions

All frequencies and modes were checked per section 15.407 for radio emissions below 1GHz.

Freq. Range Power Setting Antenna Test Notes 1 Test Notes 2	1000 - Maximu Integra Funda AC101 Mode:	18000 I um I mental a 032023	attenuated 2) , also c	by band-stop f	ilter. H		Rel.	mp (°C)	20							
Power Setting Antenna Test Notes 1 Test Notes 2	Maximu Integra Funda AC101 Mode:	ım I mental a 032023	attenuated 2) , also c		ilter. H			(0()	20							
Antenna Test Notes 1 Test Notes 2	Integra Funda AC101 Mode:	l mental a 032023	2) , also c		ilter. F		ress.	Hum.(%)	45							
Test Notes 1 Test Notes 2	Funda AC101 Mode:	mental a 032023	2) , also c		ilter. H			(m Bars)	1013							
Test Notes 2	AC101 Mode:	032023	2) , also c		ilter. F		Duty (Cycle (%)	10							
Micenalabs		WLAN	Test Notes 1 AC1010320232), also connected to charger (Model: SA106B-													
MiceMLabs				I=1, BT=0, BC=0	, DK=0)										
Formally mea	File	130.0 fiated En name: ki	230.0 3 nissions typrogram yp	Vasona by E	9 	المريمين 0 730	FCC 15	0.0 930.0 209 RE 30- 15e; dss %4	□ [12 □	úasi Lt ebug ormal Dist 3m Dist 3m	Ytz I					
	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments					
883.367 38.6	7.3	-7.3	38.5	Peak [Scan]	V	400	0	46.0	-7.5	Pass	AMB					
		7.0	37.9	Peak [Scan]	V	400	0	46.0	-8.2	Pass	TRNS					
826.993988 38.6	7.2	-7.9	07.0	i oun [ooun]	v	400	~		-15.9	Dese						
826.993988 38.6 180.003 42.7	7.2 4.7	-7.9 -19.7	27.6	Peak [Scan]	V	100	0	43.5	-15.9	Pass	DIG					
					-			43.5 43.5	-13.8	Pass Pass	-					
180.003 42.7	4.7	-19.7	27.6	Peak [Scan]	V	100	0				DIG					
180.003 42.7 107.752 44.2	4.7 4.2	-19.7 -18.8	27.6 29.7	Peak [Scan] Peak [Scan]	V V	100 100	0	43.5	-13.8	Pass	DIG					
180.00342.7107.75244.2206.90041.0	4.7 4.2 4.8	-19.7 -18.8 -19.5	27.6 29.7 26.3	Peak [Scan] Peak [Scan] Peak [Scan]	V V V	100 100 100	0 0 0	43.5 43.5	-13.8 -17.2	Pass Pass	DIG DIG DIG					
180.003 42.7 107.752 44.2 206.900 41.0 30.309 37.9	4.7 4.2 4.8 3.4	-19.7 -18.8 -19.5 -9.4	27.6 29.7 26.3 31.9	Peak [Scan] Peak [Scan] Peak [Scan] Peak [Scan]	V V V V	100 100 100 100	0 0 0 0	43.5 43.5 40	-13.8 -17.2 -8.1	Pass Pass Pass	DIG DIG DIG DIG					
180.003 42.7 107.752 44.2 206.900 41.0 30.309 37.9 893.086 34.0	4.7 4.2 4.8 3.4 7.3	-19.7 -18.8 -19.5 -9.4 -7.3	27.6 29.7 26.3 31.9 34.0	Peak [Scan] Peak [Scan] Peak [Scan] Peak [Scan] Peak [Scan]	V V V V	100 100 100 100 400	0 0 0 0 0	43.5 43.5 40 46	-13.8 -17.2 -8.1 -12.0	Pass Pass Pass Pass	DIG DIG DIG DIG AMB					
180.003 42.7 107.752 44.2 206.900 41.0 30.309 37.9 893.086 34.0 130.013 40.6	4.7 4.2 4.8 3.4 7.3 4.4	-19.7 -18.8 -19.5 -9.4 -7.3 -17.2	27.6 29.7 26.3 31.9 34.0 27.8	Peak [Scan] Peak [Scan] Peak [Scan] Peak [Scan] Peak [Scan] Peak [Scan]	V V V V V V	100 100 100 100 400 100	0 0 0 0 0 0	43.5 43.5 40 46 43.5	-13.8 -17.2 -8.1 -12.0 -15.8	Pass Pass Pass Pass Pass	DIG DIG DIG DIG AMB DIG					

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 137 of 184

Teet	Frog	5180 N	//⊔→					-	nginoor	EVF			
	Freq.								ingineer				
	ariant		a;6 Mb						emp (°C)	20.5			
Freq. F	<u> </u>			000 MHz					Hum.(%)	36			
Power Se	etting	24 in te	est utility	(maximur	n)		P	ress.	(m Bars)				
Ant	tenna	integra						Duty (Cycle (%)	10			
TestNo	otes 1				by band-stop fil onnected to cha			•	,	/ ith batter	ry (SN:		
TestNo	otes 2	Mode:	WLAN	Channel 36	3 Transmit; WLA	AN=1,	BT=0,	BC = 0,	DK=0				
Formally		File	0 Jiated En name: k	:\program\p	Vasona by E	t Jerr	plate: f	1000 FCC RE	E 1-18GHz	Au Spec] Horizor] Vertica eak Limit verage L ebug Dist 3m Dist 3m Dist 3m	ntz l t	
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5180.080	61.5	4.6	-9.5	56.6	Peak [Scan]	V		-			n/a	FUND	
16058.116	41.8	9.0	0.8	51.5	Peak [Scan]	Н	150	0	54.0	-2.5	Pass	noise floor	
6961.924	51.5	5.4	-5.5	51.4	Peak [Scan]	V	150	0	68.2	-16.8	Pass	NRB	
5503.802	50.8	4.6	-8.7	46.8	Peak [Scan]	Н	201	0	68.2	-21.5	Pass	NRB	
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205													

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 138 of 184

	_							_				
Test	Freq.	5200 N	(Hz					E	ngineer	EVF		
Va	ariant	802.11	a; 6 Mb	s				Те	emp (°C)	20.5		
Freq. R	ange	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36		
Power Se	tting	24 in te	est utility	(maximur	n)		P	ress.	(m Bars)	996		
Ant	enna	integra	I					Duty (Cycle (%)	10		
Test No	tes 1				by band-stop fil onnected to cha			•		<i>ith</i> batte	ry (SN:	
Test No	tes 2	Mode:	WLAN	Channel 40) Transmit; WLA	∖N= 1,	BT=0,	BC=0,	DK=0			
Micem	abs	dBu√/m 80.0 70.0 50.0 40.0 30.0 20.0 10.0 10.0 10000 File	· · · · · · · · · · · · · · · · · · ·	nissions program po	Vasona by E	t alite		100		PK PK	10 11:08 Horizor Vertica eak Limit werage L ebug Dist 3m Dist 3m Dist 3m cy: MHz	ft z t
Formally	meas	sured	emiss	sion pea	ks							
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
5201.563	63.4	4.6	-9.4	58.5	Peak [Scan]	Н					n/a	FUND
16841.683	41.9	8.6	1.8	52.2	Peak [Scan]	V	200	0	54.0	-1.8	Pass	noise floor
5525.079	50.4	4.6	-8.6	46.4	Peak [Scan]	Н	98	0	68.2	-21.8	Pass	NRB
Legend:	TX = T	ransmit	ter Emis	sions; DIG	6 = Digital Emissi	ons; F	UND =	Funda	amental; W	'B = Wide	band Er	nission
F	NRB =	Non-Re	estricted	d Band. Li	mit = 68.23 dBu	V/m; R	B = Re	stricte	d Band. L	imits per	15.205	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 139 of 184

T 4	F	5040 N	4 1 I							D/F		
Test	•	5240 N							ngineer	EVF		
	ariant		a; 6 Mb	-					emp (⁰C)	20.5		
Freq. R	ange		-	000 MHz				Rel.	Hum.(%)	36		
Power Se	etting	24 in te	est utility	(maximur	n)		Pi	ress.	(m Bars)	996		
Ant	enna	integra	I					Duty (Cycle (%)	10		
TestNo	tes 1				by band-stop fil onnected to cha			•	,	ith batter	ry (SN:	
TestNo	tes 2	Mode: \	WLAN	Channel 48	3 Transmit; WLA	∖N= 1,	BT=0,	BC = 0,	DK=0			
Formally			liated En name: k		Vasona by E	+	+	1000 TCC RE		PK P, PK P, Meas Aw Spec P Frequen 18000.0	10 11:23) Vertical eak Limit verage Limit verage Limit object Dist 3m Dist 3m cy: MHz vdata\Tx	ft 2 t
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5235.832	62.2	4.6	-9.6	57.2	Peak [Scan]	V					n/a	FUND
16228.457	42.0	8.9	1.1	52.0	Peak [Scan]	V	200	0	54.0	-2.0	Pass	noise floor
5566.038	51.1	4.7	-8.5	47.2	Peak [Scan]	H	98	0	68.2	-21.0	Pass	NRB
6963.701	49.6	5.4	-5.4	49.6	Peak [Scan]	V	98	0	68.2	-18.7	Pass	NRB
Legend:	TX = T	ransmit	ter Emis	sions; DIC	G = Digital Emissi	ons; F	UND =	Funda	mental; W	B = Wide	band En	nission
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 140 of 184

Test	Freq.	5180 N	/Hz					F	ngineer	EVF		
	ariant); 6.5 MCS					mp (°C)	20.5		
Freg.				8000 MHz					Hum.(%)	36		
Power S				/ (maximur	m)		D		(m Bars)	996		
	-	integra			11)				Cycle (%)			
All	lenna	Ŭ,		uttonuated	by band-stop fil	tor H					W (SNI)	
Test N	otes 1				onnected to cha			`	,		y (ON.	
Test N	otes 2	Mode:	WLAN	Channel 36	3 Transmit; WLA	∖N= 1,	BT=0,	BC=0,	DK=0			
Micem	abs	dBu \//m 80.0 60.0 80.0 40.0 30.0 20.0 10.0 10.0 Raa File	0	nissions \program\p	Vasona by E		Ĵ.,	1000 TCC RE CC Part		PK PK P PK P Meas Au Spec Au Frequen 18000.0	10 11:45) Vertica sak Limit verage L ebug Dist 3m Dist 3m Cy: MHz vdata\Tx	ıtı I İ
Formally Frequency	Raw	Cable	AF	Level	peaks Measurement	Pol	Hgt	Azt	Limit	Margin	Pass	Comments
MHz	dBuV	Loss	dB	dBuV/m	Туре		cm	Deg	dBuV/m	dB	/Fail	
5173.547	63.6	4.6	-9.6	58.6	Peak [Scan]	V					n/a	FUND
17250.501	41.5	8.6	1.6	51.8	Peak [Scan]	V	100	0	54.0	-2.3	Pass	noise floor
	51.1	5.4	-5.5	51.0	Peak [Scan]	Н	100	0	68.2	-17.2	Pass	NRB
6957.034		1	-8.7	47.6	Peak [Scan]	Н	98	0	68.2	-20.7	Pass	NRB
6957.034 5503.805	51.6	4.6	0.7									
	51.6 49.2	4.6 4.6	-9.6	44.2	Peak [Scan]	Н	98	0	68.2	-24.0	Pass	NRB
5503.805	49.2	4.6	-9.6		Peak [Scan] 6 = Digital Emissi			-				

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 141 of 184

Test Freg. 5200 MHz Engineer EVF														
Test Fred	. 5200 N	ΛHz					E	ngineer	EVF					
Varian	t 802.11	n HT-20); 6.5 MCS				Те	emp (°C)	20.5					
Freq. Rang	€ 1000 N	/Hz - 18	8000 MHz				Rel.	Hum.(%)	36					
Power Settin	g 24 in te	est utility	/ (maximur	n)		P	ress.	(m Bars)	996					
Antenn	a integra	ıl					Duty (Cycle (%)	10					
TestNotes	1			by band-stop fil onnected to cha			•	,	ith batte	ry (SN:				
Test Notes	2 Mode:	WLAN	Channel 40) Transmit; WLA	∖N= 1,	BT=0,	BC=0,	DK=0						
AC1010320232), also connected to charger (Model: SA106B-05) Test Notes 2 Mode: WLAN Channel 40 Transmit; WLAN=1, BT=0, BC=0, DK=0 Mode: WLAN Channel 40 Transmit; WLAN=1, BT=0, BC=0, DK=0														
Frequency Rav MHz dBu		AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments			
5201.162 61.9	9 4.6	-9.4	57.1	Peak [Scan]	V					n/a	FUND			
16739.479 41.	5 8.7	1.5	51.7	Peak [Scan]	Н	200	0	54.0	-2.4	Pass	noise floor			
5525.050 54.	4.6	-8.6	50.1	Peak [Scan]	H	100	0	68.2	-18.1	Pass	NRB			
5200.113 50.3	3 4.6	-9.4	45.6	Peak [Scan]	Н	98	0	68.2	-22.7	Pass	NRB			
Legend: TX =	Transmi	tter Emis	sions; DIC	G = Digital Emissi	ons; F	UND =	Funda	imental; W	B = Wide	band Er	nission			
NRE	= Non-R	estricted	d Band. Li	mit = 68.23 dBu	V/m; R	B = Re	stricte	d Band. L	imits per	15.205				

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 142 of 184

Ta a 4 Fm		5040 N						_				
Test Fr		5240 N		0 5 1400					ngineer			
Vari			-	; 6.5 MCS					mp (°C)	20.5		
Freq. Ran	nge	1000 N	⊩z - 18	000 MHz				Rel.	Hum.(%)	36		
Power Sett	ing	24 in te	st utility	(maximur	n)		P	ress.	(m Bars)	996		
Anter	nna	integra						Duty (Cycle (%)	10		
Test Note	S 1				by band-stop fil onnected to cha			•	,	/ ith batte	ry (SN:	
Test Note	s 2	Mode: \	WLAN (Channel 48	3 Transmit; WLA	∖N= 1,	BT=0,	BC = 0,	DK=0			
Formally m			name: k:		Vasona by E	t albe	+ 	1000		PK PK P PK P Meas Au Spec Frequen 18000.0	10 12:08) Horizor J Vertica eak Limit werage L big Dist 3m Dist 3m cy: MHz vdata\Tx	rtz I t
	aw BuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5242.325 6	1.8	4.6	-9.7	56.7	Peak [Scan]	V					n/a	FUND
17250.501 4	2.7	8.6	1.6	52.9	Peak [Scan]	V	150	0	54.0	-1.1	Pass	noise floor
6966.894 4	8.8	5.4	-5.3	48.8	Peak [Scan]	Н	150	0	68.2	-19.4	Pass	NRB
5568.324 5	0.4	4.7	-8.5	46.6	Peak [Scan]	Н	98	0	68.2	-21.7	Pass	NRB
Legend: T)	X = Tr	ransmit	ter Emis	sions; DIC	6 = Digital Emissi	ons; F	UND =	Funda	mental; W	B = Wide	band Er	nission
- N	RB =	Non-Re	stricted	Band. Li	mit = 68.23 dBu	V/m; R	B = Re	stricte	d Band. L	imits per	15.205	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page:Page 143 of 184

Test Freg. 5260 MHz Engineer EVF														
Test F	Freq.	5260 N	IHz					E	ngineer	EVF				
Va	riant	802.11	a;6 Mbs	S				Те	emp (⁰C)	20.5				
Freq. Ra	ange	1000 N	IHz - 18	000 MHz				Rel.	Hum.(%)	36				
Power Set	tting	24 in te	st utility	(maximur	n)		Pi	ress.	(m Bars)	996				
Ante	enna	integra						Duty (Cycle (%)	10				
TestNot	tes 1				by band-stop fi onnected to cha			•	,	v ith batte	ery (SN:			
TestNot	tes 2	Mode:	WLAN	Channel 5	2 Transmit; WL	AN=1,	BT=0,	BC=0,	DK=0					
Formally	Test Notes 2 Mode: WLAN Channel 52 Transmit; WLAN=1, BT=0, BC=0, DK=0 Miccine dBuV/m Vasona by EMiSoft 21 Dec 10 12:30 70.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 60.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0 70.0													
Frequency	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments		
5263.567	63.4	4.6	-9.6	58.4	Peak [Scan]	V					n/a	FUND		
16841.683	41.3	8.6	1.8	51.7	Peak [Scan]	V	100	0	54.0	-2.4	Pass	noise floor		
6949.098	49.5	5.4	-5.3	49.5	Peak [Scan]	Н	100	0	68.2	-18.7	Pass	NRB		
4931.241	49.8	4.6	-9.1	45.2	Peak [Scan]	Н	98	0	54	-8.8	Pass	RB		
5588.748	51.3	4.7	-8.6	47.4	Peak [Scan]	Н	98	0	68.2	-20.8	Pass	NRB		
Ŭ –					6 = Digital Emissi mit = 68.23 dBu\				-			nission		

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 144 of 184

Test	Freq.	5280 N	1Hz					E	ngineer	EVF		
	· · ·	802.11		s					mp (°C)	20.5		
Freq. I			,	000 MHz					Hum.(%)	36		
Power S	-			(maximur	m)		P		(m Bars)	996		
	•	integra	,	(.,				Cycle (%)			
		Ŭ		attenuated	by band-stop fi	ilter. ⊦		-	• • • •		rv (SN:	
TestNo	otes 1				onnected to cha			•	,		5 (
Test No	otes 2	Mode:	WLAN	Channel 5	6 Transmit; WL	AN=1,	BT=0,	BC=0,	DK=0			
Formally		File	o Jiated En name: k	:\program\p	Vasona by E	Terr	plate: f	1000 CC RE cc part	E 1-18GHz	PK P PK P Au Spec Au Frequen 18000.0	10 12:45) Horizon) Vertical eak Limit verage Limit verage Limit ebug Dist 3m Dist 3m Dist 3m cy: MHz vdata\Tx	ft 2 t
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5275.431	62.7	4.6	-9.8	57.6	Peak [Scan]	V					n/a	FUND
16773.547	41.2	8.6	1.7	51.6	Peak [Scan]	V	100	0	54.0	-2.5	Pass	noise floor
5609.909	50.2	4.7	-8.5	46.3	Peak [Scan]	Н	98	0	68.2	-21.9	Pass	NRB
4950.032	50.2	4.6	-9.2	45.6	Peak [Scan]	Н	98	0	54	-8.4	Pass	RB
6968.404	44.6	5.4	-5.3	44.7	Peak [Scan]	V	98	0	68.2	-23.5	Pass	NRB
	1	_										
Legend:	TX = 1	ransmit	ter Emis	sions; Die	6 = Digital Emissi	ons; ⊦	UND =	Funda	imental; W	B = Wide	band En	nission

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page:Page 145 of 184

Toet	Freq.	5320 N	147					F	ingineer	EVF				
	ariant	802.11							•	20.5				
			-,	-					emp (°C)					
Freq. F	-		-	000 MHz	``				Hum.(%)	36				
Power Se	J		,	(maximur	n)				(m Bars)	996				
An	tenna	integra							Cycle (%)	10				
TestNo	otes 1				by band-stop fi onnected to cha			•		v ith batte	ery (SN:			
TestNo	otes 2	Mode:	WLAN	Channel 6	4 Transmit; WL	AN=1,	BT=0,	BC=0,	DK=0					
MiCOM	abs	ABUV/m Vasona by EMiSoft 21 Dec 10 13:43 21 Dec 10 13:43 21 Dec 10 13:43 Pit Peak Limit Average Li Debug Meas Dist 3m 20 20 20 20 20 20 20 20 20 20												
Formally	/ mea	10.0 1000.0 Rac File	liated En name: k		olycom/poly06 - pl ks	Terr	plate:f fccic∖fo	1000 FCC RE		18000.0		8		
Frequency MHz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments		
5325.772	57.8	4.6	-9.6	52.9	Peak [Scan]	V					n/a	FUND		
17216.433	42.4	8.6	1.0	52.0	Peak [Scan]	V	200	0	54.0	-2.0	Pass	noise floor		
6964.509	50.3	5.4	-5.4	50.2	Peak [Scan]	Н	100	0	68.2	-18.0	Pass	NRB		
4987.511	48.4	4.6	-9.1	43.9	Peak [Scan]	Н	98	0	54	-10.1	Pass	RB		
5478.091	50.4	4.6	-9.0	46.1	Peak [Scan]	Н	98	0	68.2	-22.2	Pass	NRB		
5652.516	50.0	4.7	-8.4	46.3	Peak [Scan]	Н	98	0	68.2	-21.9	Pass	NRB		
Legend:				,	6 = Digital Emissi mit = 68.23 dBu [\]	,			,			nission		

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 146 of 184

Test	Freq.	5260 N	1Hz					E	ngineer	EVF			
v	ariant	802.11	n HT-20); 6.5 MCS				Те	emp (°C)	20.5			
Freq. I	Range	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36			
Power S	etting	24 in te	est utility	(maximur	m)		P	ress.	(m Bars)	996			
An	tenna	integra	I					Duty (Cycle (%)	10			
Test No	otes 1				by band-stop fil onnected to cha			•	,	ith batter	ry (SN:		
Test No	otes 2	Mode:	WLAN	Channel 52	2 Transmit; WLA	N=1,	BT=0,	BC=0,	DK=0				
MiCOM		dBu Vm Vasona by EMiSoft 21 Dec 10 14:03 22 Vertical 2 Verti											
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5264.208	61.9	4.6	-9.6	56.9	Peak [Scan]	V					n/a	FUND	
16296.593	42.0	8.9	0.7	51.6	Peak [Scan]	V	100	0	54.0	-2.5	Pass	noise flooi	
6964.529	48.7	5.4	-5.4	48.6	Peak [Scan]	Н	100	0	68.2	-19.6	Pass	NRB	
4931.153	49.7	4.6	-9.1	45.1	Peak [Scan]	Н	98	0	54	-8.9	Pass	RB	
	48.9	4.7	-8.6	45.0	Peak [Scan]	Н	98	0	68.2	-23.2	Pass	NRB	
5589.263	40.9												
5589.263 Legend:		r ansmit	ter Emis	sions; DIC	G = Digital Emissi	ons; F	UND =	Funda	mental; W	'B = Wide	band Er	nission	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 147 of 184

Test	Freq.	5280 N	IHz					E	ngineer	EVF		
v	ariant	802.11	n HT-20); 6.5 MCS				Те	emp (°C)	20.5		
Freq. I	Range	1000 N	IHz - 18	000 MHz				Rel.	Hum.(%)	36		
Power S	etting	24 in te	st utility	(maximur	n)		P	ress.	(m Bars)	996		
An	tenna	integra						Duty (Cycle (%)	10		
Test No	otes 1				by band-stop fil onnected to cha			•	,	ith batter	ry (SN:	
Test No	otes 2	Mode:	WLAN	Channel 56	6 Transmit; WLA	∖N= 1,	BT=0,	BC=0,	DK=0			
MiCeim	abs	dBu√/m 80.0 70.0 60.0 50.0 40.0 30.0	~~~~		Vasona by E	MiSot	ft		,	Pk P	10 14:19] Horizon] Vertical eak Limit verage Li ebug Dist 3m Dist 3m	rta I
Formally	y mea	10.0 1000.0 Rac File	liated En name: k		olycom'polyD6 - pl ks	Terr	nplante:f fccic∖fr	1000 FCC RE cc part		18000.0	cy:MHz //data/Tx	8
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5275.190	61.0	4.6	-9.8	55.8	Peak [Scan]	V					n/a	FUND
16228.457	41.1	8.9	1.1	51.1	Peak [Scan]	Н	100	0	54.0	-2.9	Pass	noise floor
2426.093	51.5	3.0	-11.1	43.4	Peak [Scan]	Н	98	0	68.2	-24.8	Pass	NRB
4949.926	50.6	4.6	-9.2	46.0	Peak [Scan]	Н	98	0	54	-8.1	Pass	RB
5610.034	49.4	4.7	-8.5	45.5	Peak [Scan]	Н	98	0	54	-8.5	Pass	NRB
6967.232	46.7	5.4	-5.3	46.8	Peak [Scan]	Н	98	0	68.2	-21.4	Pass	NRB
Legend:					6 = Digital Emissi mit = 68.23 dBu`	-						nission

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 148 of 184

Test	Freq.	5320 N	1Hz					E	ngineer	EVF			
v	ariant	802.11	n HT-20	; 6.5 MCS				Те	emp (°C)	20.5			
Freq. F	Range	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36			
Power S	etting	24 in te	est utility	(maximur	n)		Pi	ress.	(m Bars)	996			
An	tenna	integra	I					Duty C	Cycle (%)	10			
Test No	otes 1				by band-stop fil onnected to cha			•	,	ith batter	ry (SN:		
Test No	otes 2	Mode:	WLAN	Channel 64	1 Transmit; WLA	∖N= 1,	BT=0,	BC = 0,	DK=0				
MiCem	Image: With the second by EMISoft 21 Dec 10 14:44 Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by EMISoft Image: With the second by E												
Formally Frequency MHz	/ mea Raw dBuV	sured Cable	emiss AF dB	Level	ks Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
16807.615	41.0	8.6	1.6	51.3	Peak [Scan]	V	100	0	54.0	-2.7	Pass	noise floor	
5325.611	54.9	4.6	-9.6	49.9	Peak [Scan]	V					n/a	FUND	
4987.483	50.3	4.6	-9.1	45.8	Peak [Scan]	Н	98	0	54	-8.2	Pass	RB	
5440.939	52.0	4.6	-9.0	47.6	Peak [Scan]	н	98	0	54	-6.4	Pass	RB	
5482.543	51.6	4.6	-8.9	47.3	Peak [Scan]	Н	98	0	68.2	-20.9	Pass	NRB	
Legend:	TX = 1	ransmit	ter Emis	sions; DIC	6 = Digital Emissi	ons; F	UND =	Funda	imental; W	B = Wide	band En	nission	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 149 of 184

	_							_		D (5		
Test	· ·	5500 N							ngineer	EVF		
Va		802.11	,					Те	emp (°C)	20.5		
Freq. R	ange	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36		
Power Se	tting	24 in te	st utility	(maximur	n)		P	ress.	(m Bars)	996		
Ant	enna	integra	I					Duty (Cycle (%)	10		
Test No	tes 1				by band-stop fi onnected to cha			•	,	w ith batte	ery (SN:	
TestNo	tes 2	Mode:	WLAN	Channel 1	00 Transmit; W	LAN=1	I, BT=0), BC=0), DK=0			
Formally) liated En name: k		Vasona by E	+		1000 TCC RE	20.0	PK PK	10 15:03) Horizor) Vertica eak Limi werage L ebug Dist 3m Dist 3m cy: MHz vdata\Tx	ntz l t t
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5492.906	62.0	4.6	-8.8	57.8	Peak [Scan]	V					n/a	FUND
17284.569	40.6	8.6	1.6	50.8	Peak [Scan]	V	200	0	54.0	-3.2	Pass	noise floor
4990.098	47.8	4.6	-9.1	43.3	Peak [Scan]	Н	98	0	54	-10.7	Pass	RB
Ŭ L				,	6 = Digital Emissi	,						nission
	NKR =	Non-Re	estricted	a Band. Li	mit = 68.23 dBu\	v/m; R	в = Ке	stricte	a Band. L	limits per	15.205	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 150 of 184

Test Fre	q. 5600	MHz					E	ngineer	EVF			
Varia		1a;6 Mb					Те	emp (°C)	20.5			
Freq. Rang	ge 1000	MHz - 18	8000 MHz				Rel.	Hum.(%)	36			
Power Settin	ng 24 in t	est utility	/ (maximur	n)		P	ress.	(m Bars)	996			
Anten	na integr	al					Duty (Cycle (%)	10			
Test Notes	1			by band-stop f onnected to cha			•	,	w ith batte	ery (SN:		
Test Notes	2 Mode:	WLAN	Channel 12	20 Transmit; WL	AN=1	, BT=0	, BC=0	, DK=0				
Image: Addition of the second seco												
Frequency Ra MHz dB		AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5599.198 60	.7 4.7	-8.6	56.8	Peak [Scan]	V					n/a	FUND	
17693.387 41	.6 8.8	0.8	51.2	Peak [Scan]	Н	200	0	54.0	-2.9	Pass	noise floor	
6965.355 45	.8 5.4	-5.4	45.8	Peak [Scan]	V	98	0	68.2	-22.4	Pass	NRB	
5492.271 48	.0 4.6	-8.8	43.9	Peak [Scan]	H	98	0	68.2	-24.4	Pass	NRB	
Legend: TX	= Transm	itter Emis	sions; DIC	6 = Digital Emissi	ons; F	UND =	Funda	mental; W	/B = Wide	band Er	nission	
NR	B = Non-F	estricted	d Band. Li	mit = 68.23 dBu	V/m; R	B = Re	stricte	d Band. L	imits per	15.205		

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 151 of 184

	_							_						
Test	Freq.	5700 N	1Hz						ngineer	EVF				
Va	ariant	802.11	a;6 Mb	S				Те	mp (⁰C)	20.5				
Freq. F	Range	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36				
Power Se	etting	24 in te	est utility	' (maximur	n)		P	ress.	(m Bars)	996				
Ant	tenna	integra	I					Duty (Cycle (%)	10				
Test No	otes 1				by band-stop fi onnected to cha			•	,	w ith batte	ery (SN:			
TestNo	otes 2	Mode: \	WLAN	Channel 14	10 Transmit; WL	AN=1	, BT=0	, BC=0	, DK=0					
	Micrones dBuV/m Vasona by EMiSoft 21 Dec 10 15:20 70.9													
Formally	mea	sured	emiss	sion pea	ks									
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments		
5701.403	62.6	4.7	-8.1	59.3	Peak [Scan]	V					n/a	FUND		
16705.411	42.0	8.7	1.4	52.1	Peak [Scan]	V	100	0	54.0	-2.0	Pass	noise floor		
6966.384	45.9	5.4	-5.3	45.9	Peak [Scan]	Н	98	0	68.2	-22.3	Pass	NRB		
Legend:	TX = T	ransmit	ter Emis	sions; DIC	6 = Digital Emissi	ons; F	UND =	Funda	imental; W	/B = Wide	band En	nission		
	NRB =	Non-Re	estricted	d Band. Li	mit = 68.23 dBu	V/m; R	B = Re	stricte	d Band. L	imits per	15.205			

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 152 of 184

T 4	F	5500 N	AL 1					_				
		5500 N							ngineer			
); 6.5 MCS					emp (°C)	20.5		
Freq. I	Range	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36		
Power S	etting	24 in te	est utility	(maximur	n)		Pi	ress.	(m Bars)	996		
An	tenna	integra	I					Duty (Cycle (%)	10		
TestNo	otes 1				by band-stop fil onnected to cha			•	,	<i>ith batte</i>	ry (SN:	
Test No	otes 2	Mode:	WLAN	Channel 10	00 Transmit; WL	AN=1	, BT=0	, BC=0	, DK=0			
Micem	abs	dBu Vm 80.0 70.0 50.0 40.0 30.0 20.0 10.0 1000 Rac File		nissions	Vasona by E	+ cutallum	art rise	1000		PK P PK P Meas Au Spec Au Frequen 18000.0	10 15:31) Horizor (Vertica eak Limit verage L ebug Dist 3m Dist 3m Dist 3m (Vata \Tx	rt: I t
			-									
Formally	mea	isure	d em	ission	peaks							
Frequency M Hz	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5496.994	64.0	4.6	-8.7	59.8	Peak [Scan]	V					n/a	FUND
17284.569	41.4	8.6	1.6	51.6	Peak [Scan]	V	200	0	54.0	-2.4	Pass	noise floor
6958.185	45.6	5.4	-5.5	45.4	Peak [Scan]	Н	98	0	68.2	-22.8	Pass	NRB
	-											-
Legend:	TX = T	ransmit	ter Emis	sions; DIC	6 = Digital Emissi	ons; F	UND =	Funda	imental; W	'B = Wide	band Er	nission

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 153 of 184

Variant 802.11n HT-20; 6.5 MCS Temp (°C) 20.5 Freq. Range 1000 MHz - 18000 MHz Rel. Hum. (%) 36 Power Setting 24 in test utility (maximum) Press. (mBars) 996 Antenna integral Duty Cycle (%) 10 Test Notes 1 Fundamental attenuated by band-stop filter. Handset (Model: 8440) with battery (SN: AC1010320232), also connected to charger (Model: SA106B-05) Test Notes 2 Mode: WLAN Channel 120 Transmit; WLAN=1, BT=0, BC=0, DK=0 MiCeMulos dBuV/m Vasona by EMISoft 21 Dec 10 15:41 000 000 Press UmiSoft Frequency : MHz Reducted Emissions Filename: k:/program/polycom/poly06 - phoenix foc ic/too part 15e; dss/8440/data/sec/data/trx 8 Formally Reducted Emissions Filename: k:/program/polycom/poly06 - phoenix foc ic/too part 15e; dss/8440/data/sec/data/trx 8 Formally Raw Cable AF Level Measurement dBuV/m Pol Hgt Azt Limit Margin		-									D (C			
Freq. Range 1000 MHz Rel. Hum.(%) 36 Power Setting 24 in test utility (maximum) Press. (mBars) 996 Antenna integral Duty Cycle (%) 10 Test Notes 1 Fundamental attenuated by band-stop filter. Handset (Model: 8440) with battery (SN: AC1010320232), also connected to charger (Model: SA 1068-05) 21 Dec 10 15:41 Mic@MLabs dButv/m Vasona by EMISoft 21 Dec 10 15:41 Mic@MLabs dButv/m Vasona by EMISoft 21 Dec 10 15:41 Mic@MLabs dButv/m Vasona by EMISoft 21 Dec 10 15:41 Mic@MLabs dButv/m Vasona by EMISoft 21 Dec 10 15:41 Mic@MLabs dButv/m Vasona by EMISoft 21 Dec 10 15:41 Mic@MLabs dButv/m Vasona by EMISoft 21 Dec 10 15:41 Mage Company Frequency: MHz Mage Imitsions Spec Dist 3m Spec Dist 3m Spec Dist 3m Spec Dist 3m Spec Dist 3m Spec Dist 3m Mage Cable dEmissions Filename: k'program'polycom'poly06 - phoenix foc lot/foc part 15e; dss/8440/data/se/data/Tx 8 Formally measured emission peaks <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>ngineer</th><th></th><th></th><th></th></t<>										ngineer				
Power Setting 24 in test utility (maximum) Press. (m Bars) 996 Antenna integral Duty Cycle (%) 10 Test Notes 1 Fundamental attenuated by band-stop filter. Handset (Model: 8440) with battery (SN: Ac1010320232), also connected to charger (Model: SA 106B-05) 21 Test Notes 2 Mode: WLAN Channel 120 Transmit; WLAN=1, BT=0, BC=0, DK=0 21 Dec 10 16:41 Miccom Vasona by EMISoft 21 Dec 10 16:41 21 Dec 10 16:41 000 Vasona by EMISoft 21 Dec 10 16:41 21 Dec 10 16:41 000 Vasona by EMISoft 21 Dec 10 16:41 21 Dec 10 16:41 000 Max Sist 3m Spec Dist 3m <t< th=""><th>Va</th><th>ariant</th><th>802.11</th><th>n HT-20</th><th>); 6.5 MCS</th><th></th><th></th><th></th><th>Те</th><th>emp (°C)</th><th>20.5</th><th></th><th></th></t<>	Va	ariant	802.11	n HT-20); 6.5 MCS				Те	emp (°C)	20.5			
Antenna integral Duty Cycle (%) 10 Test Notes 1 Fundamental attenuated by band-stop filter. Handset (Model: 8440) with battery (SN: AC1010320232), also connected to charger (Model: SA106B-05) 21 Dec 10 15:41 Test Notes 2 Mode: WLAN Channel 120 Transmit; WLAN=1, BT=0, BC=0, DK=0 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mice Buv/m Vasona by EMISoft 21 Dec 10 15:41 Mass Display Buv/m Vasona by EMISoft Display Poil Boot 0 Emission B	Freq. R	ange	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36			
Fundamental attenuated by band-stop filter. Handset (Model: 8440) with battery (SN: AC1010320232) , also connected to charger (Model: SA106B-05) Test Notes 2 Mode: WLAN Channel 120 Transmit; WLAN=1, BT=0, BC=0, DK=0 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs dBu V/m Vasona by EMiSoft 21 Dec 10 15:41 MiceM abs Gaudit de Emissions Template: FCC RE 1:180Hz Frequency: MHz Eduated Emissions <th cols<="" th=""><th>Power Se</th><th>tting</th><th>24 in te</th><th>est utility</th><th>(maximur</th><th>n)</th><th></th><th>P</th><th>ress.</th><th>(m Bars)</th><th>996</th><th></th><th></th></th>	<th>Power Se</th> <th>tting</th> <th>24 in te</th> <th>est utility</th> <th>(maximur</th> <th>n)</th> <th></th> <th>P</th> <th>ress.</th> <th>(m Bars)</th> <th>996</th> <th></th> <th></th>	Power Se	tting	24 in te	est utility	(maximur	n)		P	ress.	(m Bars)	996		
Test Notes 1 AC1010320232), also connected to charger (Model: SA106B-05) Test Notes 2 Mode: WLAN Channel 120 Transmit; WLAN=1, BT=0, BC=0, DK=0 MiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 WiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 WiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 WiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 WiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 WiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 WiceM abs dBu V/m Vasona by EMISoft 21 Dec 10 15:41 Weater abs Wasona by EMISoft 21 Dec 10 15:41 Weater abs Dist 3m Passe Dist 3m Spee Dist 3m Spee Dist 3m Passe Dist 3m Badiated Emissions Template: FCC RE I:180Hz Frequency: MHz Badiated Emission peaks Template: Social dist dist dist dist dist dist dist dist	Ante	enna	integra	al					Duty (Cycle (%)	10			
Hitchin Vasona by EMiSoft 21 Dec 10 15:41 10.0	TestNo	tes 1							•	,	ith batte	ry (SN:		
Frequency MHz Raw dBuV Cable dB dB cos AF dB dB dB dB dBuV/m Level Measurement Measurement S599.198 New Measure S59.198 New Measure S59.198 Cable AF dB dB dB dB dB dB dB dB dB dB dB dB dB	Test Not	tes 2	Mode:	WLAN	Channel 1	20 Transmit; W	LAN=1	, BT=0), BC=0), DK=0				
Frequency MHz Raw dBuV Cable Loss AF dB Level dBuV/m Measurement Type Pol Hgt cm Agt Deg Limit dBuV/m Margin dB Pass /Fail Comment Comment 5599.198 58.9 4.7 -8.6 55.0 Peak [Scan] V n/a FUND 16739.479 41.2 8.7 1.5 51.4 Peak [Scan] H 200 0 54.0 -2.6 Pass noise floor 5471.872 48.5 4.6 -9.1 44.0 Peak [Scan] H 98 0 68.2 -24.2 Pass NRB	Wasterna by ElMisolit Wasterna by ElMisolit													
Frequency MHz Raw dBuV Cable Loss AF dB Level dBuV/m Measurement Type Pol Hgt cm Azt Deg Limit dBuV/m Margin dB Pass /Fail Comment Comment 5599.198 58.9 4.7 -8.6 55.0 Peak [Scan] V n/a FUND 16739.479 41.2 8.7 1.5 51.4 Peak [Scan] H 200 0 54.0 -2.6 Pass noise floor 5471.872 48.5 4.6 -9.1 44.0 Peak [Scan] H 98 0 68.2 -24.2 Pass NRB	Formally	mea	sured	emiss	sion pea	ks								
16739.479 41.2 8.7 1.5 51.4 Peak [Scan] H 200 0 54.0 -2.6 Pass noise flow 5471.872 48.5 4.6 -9.1 44.0 Peak [Scan] H 98 0 68.2 -24.2 Pass NRB	Frequency	Raw	Cable	Cable AF Level Measurement Pol Hgt Azt Limit Margin Pass Comments										
5471.872 48.5 4.6 -9.1 44.0 Peak [Scan] H 98 0 68.2 -24.2 Pass NRB	5599.198	58.9	4.7	-8.6	55.0	Peak [Scan]	V					n/a	FUND	
	16739.479	41.2	8.7	1.5	51.4	Peak [Scan]	Н	200	0	54.0	-2.6	Pass	noise floor	
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission	5471.872	48.5	4.6	-9.1	44.0	Peak [Scan]	Н	98	0	68.2	-24.2	Pass	NRB	
NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205													nission	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 154 of 184

	_		A 1					_					
Test	Freq.	5700 N	/IHZ					E	ngineer	EVF			
V	ariant	802.11	n HT-20); 6.5 MCS				Те	mp (°C)	20.5			
Freq. F	Range	1000 N	1Hz - 18	000 MHz				Rel.	Hum.(%)	36			
Power Se	etting	24 in te	est utility	' (maximur	n)		Pi	ress.	(m Bars)	996			
An	tenna	integra							Cycle (%)				
TestNo	otes 1				by band-stop fil onnected to cha					ith batte	ry (SN:		
TestNo	otes 2	Mode:	WLAN	Channel 1	40 Transmit; W	LAN=1	I, BT=0), BC=0), DK=0				
Buv/m Vasona by EMiSoft 21 Dec 10 15:52 Buv/m Vasona by EMiSoft 21 Dec 10 15:52 Frequency: 11 Horizonta Buv/m Vasona by EMiSoft 21 Dec 10 15:52 Buv/m Vasona by EMiSoft 21 Dec 10 15:52 Buv/m Pack Limit Peak Limit Buv/m Buv/m Peak Limit Buv/m Buv/m Peak Limit Buv/m Buv/m Peak Limit Buv/m Buv/m Buv/m Buv/m													
Formally	mea	sured	emiss	son pea	IKS								
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
5701.403	63.8	4.7	-8.1	60.4	Peak [Scan]	V					n/a	FUND	
17284.569	41.2	8.6	1.6	51.4	Peak [Scan]	V	100	0	54.0	-2.6	Pass	noise floor	
5774.269	48.5	4.8	-8.3	44.9	Peak [Scan]	Н	98	0	68.2	-23.3	Pass	NRB	
Legend:				,	6 = Digital Emissi	,						nission	
	NKR =	INON-RE	estricted	a Band. Li	mit = 68.23 dBu\	v/m; R	в = ке	stricte	а вала. L	inits per	15.205		

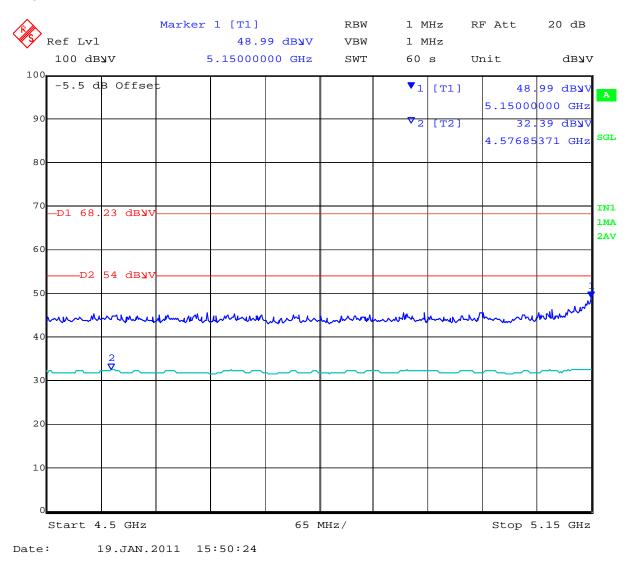
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 155 of 184

7.8.2 Band-Edge Measurements

8440 Band Edge Channel 36 - 5180 MHz 802.11a 4500-5150 MHz Pwr=14 Hor Hght=98 Ang=353

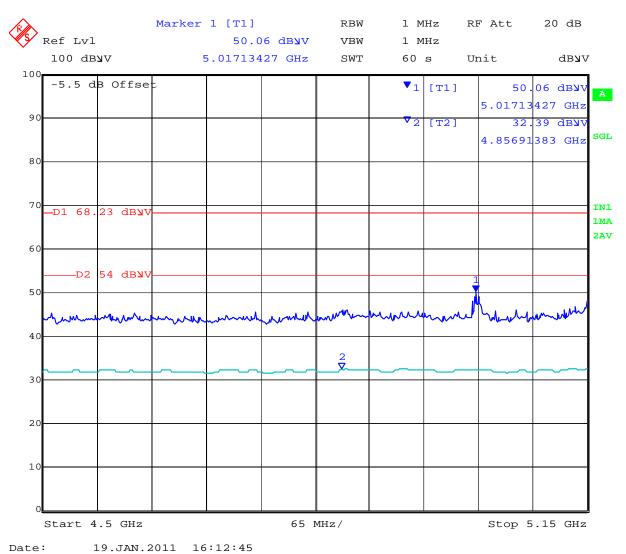


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 156 of 184

8440 Band Edge Channel 36 - 5180 MHz 802.11n HT-20 4500-5150 MHz Pwr=14 Hor Hght=102 Ang=346

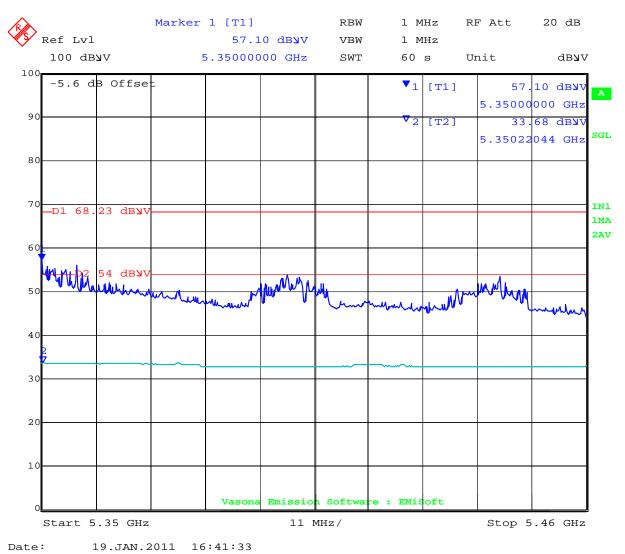


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 157 of 184

8440 Band Edge Channel 64 - 5320 MHz 802.11a 5350-5460 MHz Pwr=16 Hor Hght=100 Ang=193

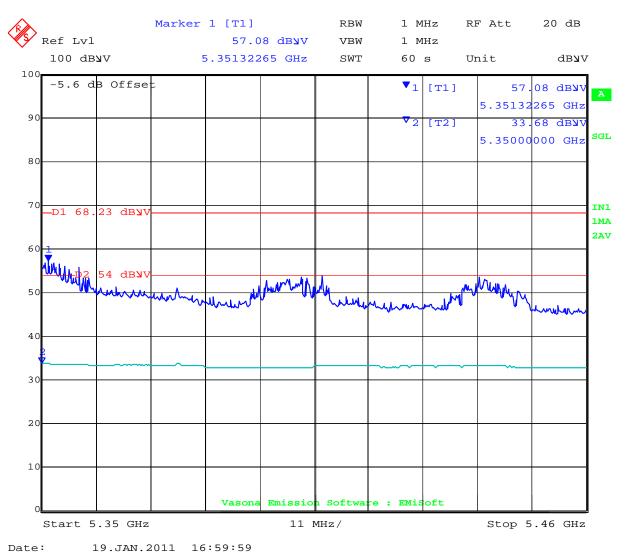


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 158 of 184

8440 Band Edge Channel 64 - 5320 MHz 802.11n HT-20 5350-5460 MHz Pwr=16 Hor Hght=98 Ang=188

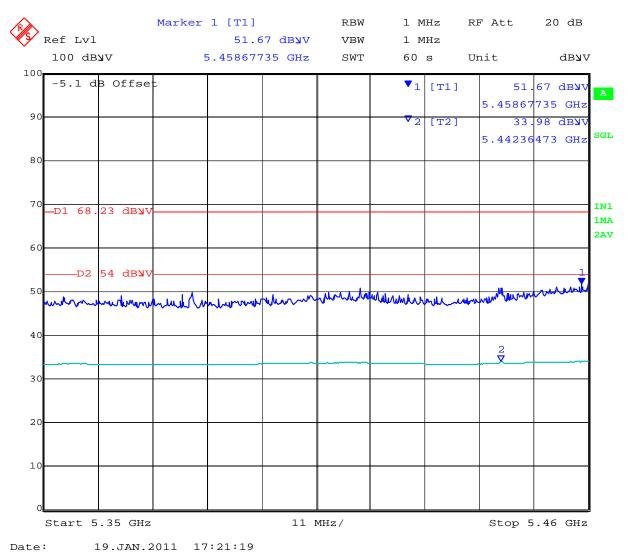


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 159 of 184

8440 Band Edge Channel 100 - 5500 MHz 802.11a 5350-5460 MHz Pwr=16 Hor Hght=98 Ang=188

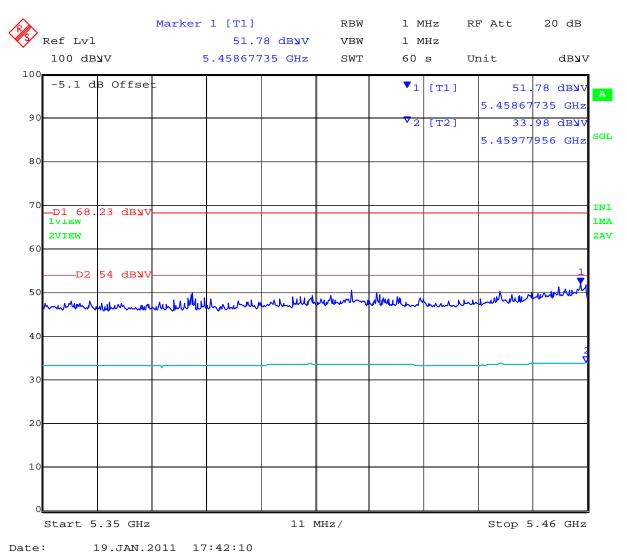


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 160 of 184

8440 Band Edge Channel 100 - 5500 MHz 802.11n HT-20 5350-5460 MHz Pwr=16 Hor Hght=98 Ang=188



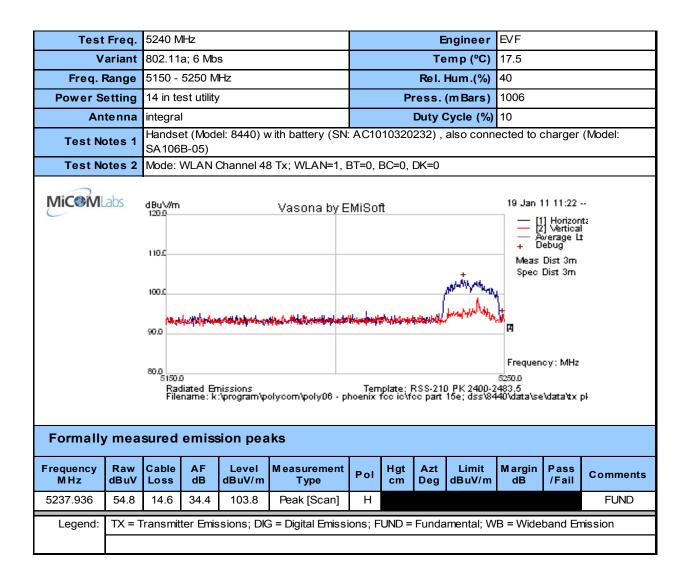
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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 161 of 184

7.8.3 Peak Emissions

Peak emissions are shown only for the highest levels observed for each mode in each band.



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 162 of 184

		-										
Test	Freq.	5200 N	1Hz					E	ngineer	EVF		
Va	ariant	802.11	n; HT-2	0; 6.5 MCS	6			Те	mp (°C)	18		
Freq. R	Range	5150 -	5250 M	Hz				Rel. I	Hum.(%)	39		
Power Se	etting	14 in te	est utility	'			P	ress.	(m Bars)	1006		
Ant	tenna	integra	I					Duty C	Cycle (%)	10		
TestNo	otes 1	Handse SA 106	`	el: 8440) v	v ith battery (S	N: AC10	10320	232) ,	also conn	ected to o	charger	(Model:
TestNo	tes 2	Mode: \	WLAN	Channel 40	Tx; WLAN=1	, BT=0, I	BC=0,	DK=0				
MiCOM	abs	dBu√/m 1200 11000 10000 5000 51500 8000 51500 Rac File	رون میں	nissions Sprogram \p	Vasona by	hanna an	olate: 1	Augustali RSS-210 co part) PK 2400-2		II 11:32 - I) Horiza Vertical Vertical Vertical Dist 3m Dist 3m Dist 3m	tz :
Formally	mea	sured	emiss	sion pea	iks	_						
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measuremen Type	t Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5202.305	54.9	14.6	34.4	103.9	Peak [Scan]	Н						FUND
Legend:	TX = T	ransmit	ter Emis	sions; DK	6 = Digital Emis	sions; F	UND =	Funda	imental; W	/B = Wide	band En	nission

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 163 of 184

Tost	Freq.	5280 N	IU-7					-	ngineer	EVF		
									•			
	ariant	802.11	,						mp (°C)	18		
Freq. F	Range	5250 -	5350 M	Hz				Rel.	Hum.(%)	39		
Power Se	etting	16 in te	st utility	/			P	ress.	(m Bars)	1006		
Ant	tenna	integra						Duty C	Cycle (%)	10		
TestNo	otes 1	Handse SA 106	`	el: 8440) v	vith battery (SN	E AC10	10320	232) ,	also conn	ected to o	charger	(Model:
TestNo	otes 2	Mode: \	NLAN (Channel 56	6 Tx; WLAN=1,	BT=0, I	3C=0,	DK=0				
Formally		90.0 80.0 5250.0 Rad File	liated En name: k	nissions \program\p	Vasona by E	Jak-mad	i alimatika	RSS-210 co part	0 PK 2400-2 15e; dss\84	Heas Spec	1 11:38 - Horizon Vertical werage Li ebug Dist 3m Dist 3m Dist 3m	t: t
Frequency M Hz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments
5282.224	55.9	14.6	34.5	105.0	Peak [Scan]	Н						FUND
Legend:	TX = T	ransmit	ter Emis	sions; DK	6 = Digital Emiss	ions; F	UND =	Funda	imental; W	/B = Wide	band En	nission

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 164 of 184

Test	Freq.	5320 N	IHz					E	ngineer	EVF		
Va	ariant	802.11	n; HT-2	0; 6.5 MCS	6			Те	emp (°C)	18		
Freq. R	Range	5250 -	5350 M	Hz				Rel.	Hum.(%)	39		
Power Se	etting	16 in te	st utility	1			P	ress.	(m Bars)	1006		
Ant	tenna	integra						Duty (Cycle (%)	10		
TestNo	otes 1	Hands	et (Mod	lel: 8440) v	with battery (SN	I: AC10	010320)232),	also conr	nected to	charge	(Model: SA10
TestNo	tes 2	Mode: \	/ode: WLAN Channel 64 Tx; WLAN=1, BT=0, BC=0, DK=0									
MiCOM	abs	dBu\//m 120.0 110.0 90.0 90.0 80.0 82.00 82.00 82.00 File	liated En	nissions Sprogram (pr	Vasona by E	prist, day of	wantifun Allendergel	RSS-210	0 PK 2400-2 15e; dss%4		I1 11:57] Horizor] Vertica werage L ebug Dist 3m Dist 3m Dist 3m cy: MHz Vdata'tx	ıtz I t
Formally	mea	sured	emiss	sion pea	ks							
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5318.657	55.6	14.6	14.6 34.5 104.7 Peak [Scan] H 100 0 54.0 50.7 Fail FUND									
Legend:	TX = T	ransmit	ter Emis	sions; DIC	G = Digital Emissi	ons; F	UND =	Funda	mental; W	/B = Wide	band Er	nission
-												

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 165 of 184

Test	Freq.	5700 N	1Hz					E	ngineer	EVF		
Va	ariant	802.11	a;6 Mb	S				Те	mp (°C)	18		
Freq. R	ange	5470 -	5725 M	Hz				Rel.	Hum.(%)	39		
Power Se	etting	16 in te	st utility	,			Pi	ress.	(m Bars)	1006		
Ant	tenna	integra	I					Duty (Cycle (%)	10		
TestNo	tes 1	Handse SA106	•	el: 8440) v	vith battery (SN:	AC10	10320	232),	also conn	ected to o	charger	(Model:
TestNo	tes 2	Mode: WLAN Channel 140 Tx; WLAN=1, BT=0, BC=0, DK=0										
Micom) liated En name: k		Vasona by E	hear and the state	(geprecettion	RSS-210 ce part		→ [] → A → D Meas Spec → A Frequen 5725.0	1 12:13 - Horizon Vertical verage L ebug Dist 3m Dist 3m Dist 3m	tz
Formally	mea	sured	emiss	son pea	ks	1						
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5702.014	58.0	14.7	35.0	107.7	Peak [Scan]	Н	100	0	54.0	53.7	Fail	FUND
Legend:	TX = T	X = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 166 of 184

Test	Frog	5700 N	11.1-7						ngineer	EVF		
	•								0			
	ariant); 6.5 MCS					emp (°C)	18		
Freq. R	Range	5470 -	5725 N	Hz				Rel.	Hum.(%)	39		
Power Se	etting	16 in te	est utility	/			Pi	ress.	(m Bars)	1006		
Ant	tenna	integra	l			Duty Cycle (%) 10						
TestNo	otes 1	Handse SA 106	`	el: 8440) v	vith battery (SN:	AC10	10320	232) ,	also conn	ected to o	charger	(Model:
TestNo	tes 2	Mode: WLAN Channel 140 Tx; WLAN=1, BT=0, BC=0, DK=0										
			name: k		Vasona by E	an air an an air an	chaftaurth	RSS-211		+ D Meas Spec] Horizon Vertical werage Li ebug Dist 3m Dist 3m Dist 3m	
Formally Frequency	Raw	Cable	AF	Level	Measurement	Pol	Hgt	Azt	Limit	Margin	Pass	Comments
MHz	dBuV	Loss	dB	dBuV/m	Туре		cm	Deg	dBuV/m	dB	/Fail	
5702.174	58.0	14.7	35.0	107.8	Peak [Scan]	Н	100	0	54.0	53.8	Fail	FUND
Legend:	TX = T	X = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission										

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 167 of 184

7.8.4 <u>Receiver Radiated Emissions</u>

Stand alone Charger (SA106B-05) - Measurement Results for Radiated Spurious Emissions – Receiver

Test	Freq.	N/A						E	ngineer	EVF			
v	ariant	Digital I	Emissio	าร				Те	emp (°C)	21			
Freq. I	Range	30 MHz	z - 1000	MHz				Rel. H	łum. (%)	34			
Power S	etting	Charge	er: 120V	'AC/ 60Hz			P	ress.	(m Bars)	1009			
An	tenna	Integra	al										
TestNo	otes 1				vith discharged lodel: SA106B-0		/ (SN:	AC101	1032008E)	, headse	t conne	ected, also	
TestNo	otes 2		reliminary testing performed. EUT tested in vertical position/ Mode: BT Channel 39 Receive; WLAN Channel 06 Receive; WLAN=1, BT=1, BC=0, DK=1										
MiC@M			130.0 diated En name: k	nissions :\program\p	Vasona by E	4,744,444	<u>л.,, ол</u> ,		ол заол 209 RE 30- 15 b; ices-0		10 13:36) Horizor) Vertica uasi Lt ebug Dist 3m Dist 3m cy: MHz sta vadiat	Ytz I	
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	M argin dB	Pass /Fail	Comments	
40.423	48.0	3.6	-17.1	34.5	Quasi Max	V	137	77	40	-5.5	Pass	DIG	
85.932	47.4	4.0	-23.7	27.8	Quasi Max	V	98	246	40	-12.3	Pass	DIG	
182.000	49.5	4.7	-19.6	34.5	Quasi Max	V	104	167	43.5	-9.0	Pass	DIG	
207.999	46.1	4.8	-19.6	31.3	Quasi Max	V	102	171	43.5	-12.2	Pass	DIG	
299.999	45.0	5.2	-16.9 33.4 Quasi Max H 120 51 46 -12.6 Pass DIG								DIG		
200.461	45.0	4.8	.8 -17.9 31.9 Quasi Max V 98 0 43.5 -11.6 Pass DIG										
Legend:		G = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency B = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band											

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 168 of 184

Test	Freq.	5200 N	Hz					E	ngineer	EVF			
V	ariant	Receiv	e in Tes	st Utility				Те	mp (°C)	22			
Freq. F	Range	1000 N	Hz - 18	8000 MHz				Rel. I	Hum.(%)	35			
Power Se	etting	Not Ap	olicable	in Receiv	e Mode		Pi	ress.	(m Bars)	993			
An	tenna	integra								-			
TestNo	otes 1				by band-stop f onnected to ch			•	,	v ith batte	ry (SN:		
Test No	otes 2	Mode: \	ode: WLAN Channel 40 Receive; WLAN=1, BT=0, BC=0, DK=0										
MiC@M	aus	dBu//m 800 700 600 800 400 300 200 100 1000 Rad File	liated En	nissions '\program\p	Vasona by F		<u>م</u> رمجيني nizte: f	1000 FCC RE	- 1-18GHz	PK P PK P Meas Au Spec	10 16:12 Horizor Vertica eak Limit werage L Dist 3m Dist 3m Dist 3m	nta 1 t t	
Formally	/ mea	sure	d em	ission	peaks								
Frequency M H z	Raw dBuV	Cable Loss	A F dB	Level dBuV/m	M easurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
No Receiver Emissions Within 6dB of limit.													
Legend:	RB = R	3 = Restricted Band; NRB = Non-Restricted Band; FUND = Fundamental Freq.											
-	BE = E	nission	in Resti	ricted Ban	d Nearest Tran	smissio	n Ban	d Edae	;	-			
				-	_	-		3-	•				

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 169 of 184

Test F	req.	5280 M	Hz					E	ngineer	EVF											
Vai	riant	Receive	e in Tes	t Utility				Те	mp (°C)	22											
Freq. Ra	ange	1000 M	Hz - 18	000 MHz				Rel.I	Hum.(%)	35											
Power Set	tting	Not App	olicable	in Receive	e Mode		P	ress.	(m Bars)	993											
Ante	enna	integral																			
TestNot	es 1				by band-stop fil onnected to cha			•	,	v ith batte	ry (SN:										
Test Not	es 2	Mode: \	/ode: WLAN Channel 56 Receive; WLAN=1, BT=0, BC=0, DK=0																		
MiCOMLa	bs	dBuV/m 80.0 70.0 50.0 40.0 30.0 20.0 10.0 10.0 Rad Filer			Vasona by E			1000 CCC RE cc part		PK PK	10 16:23 Horizor Vertical eak Limit werage Limit werage Limit lebug Dist 3m Dist 3m Dist 3m cy: MHz whata\Rx	rtz I t									
Formally	mea	sured	emiss	ion pea	ks																
	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments									
No Receiver En	nissior	ns Withir	n 6dB o	f limit.																	
Legend: F	RB = Restricted Band; NRB = Non-Restricted Band; FUND = Fundamental Freq.																				
Ľ L	3E = Fr	mission in Restricted Band Nearest Transmission Band Edge:																			
									,			Emission in Restricted Band Nearest Transmission Band Edge;									

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 170 of 184

								_					
Test Fi		5600 M							ngineer	EVF			
Var	iant	Receive	e in Tes	st Utility				Те	mp (°C)	22			
Freq. Ra	nge	1000 M	Hz - 18	000 MHz				Rel.I	-lum.(%)	35			
Power Set	ting	Not Ap	olicable	in Receive	e Mode		Pi	ress.	(m Bars)	993			
Ante	nna	integral								•			
Test Note	es 1				by band-stop fil onnected to cha			•	,	<i>ith batte</i>	ry (SN:		
Test Note	es 2	Mode: \	bde: WLAN Channel 120 Receive; WLAN=1, BT=0, BC=0, DK=0										
MiCOMLab	DS	dBuV/m 800 500 500 400 300 200 100 100 Rad File		nissions typogram/po	Vasona by E			1000		PK P PK P Meas Meas Frequen 18000.0	10 16:29] Horizon] Vertical eak Limit verage Li ebug Dist 3m Dist 3m Cy: MHz \data\Rx	tz :	
Formally r	neas	sured	emiss	sion pea	ks								
	Raw BuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments	
No Receiver Em	No Receiver Emissions Within 6dB of limit.												
Legend: R	end: RB = Restricted Band: NRB = Non-Restricted Band: FUND = Fundamental Freg.												
Ŭ –	E = Er	nission	in Restr	ricted Ban	d Nearest Trans	missio	n Ban	d Edae	:	•			
								: 5-					

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 171 of 184

7.9 Conducted Disturbance at Mains Terminal (150 kHz – 30 MHz)

Test Procedure

The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

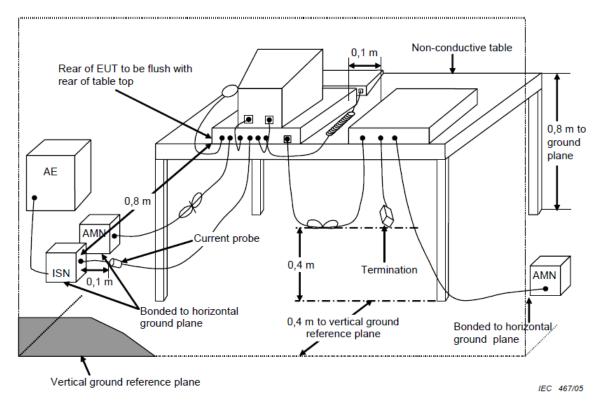
If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.



Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 172 of 184

Test Measurement Setup



Measurement setup for Conducted Disturbance at Mains Terminals

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011Page:Page 173 of 184

Specification for Conducted Disturbance at Mains Terminal

§15.407 (b)(6)

Any U-NII devices using an AC power line are required to comply also with the limits set forth in Section 15.207.

§15.207 (a)

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that 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 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu\Omega$ line impedance stabilization network (LISN), see §15.207 (a) matrix below. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

Limits

Frequency of Emission (MHz)	Conducted Limit (dBµV)						
	Quasi-peak	Average					
0.15-0.5	66 to 56*	56 to 46*					
0.5-5	56	46					
5-30	60	50					

* Decreases with the logarithm of the frequency

Traceability

Laboratory Measurement Uncertainty for Conducted Emissions

Measurement uncertainty	±2.64 dB

Traceability

Method	Test Equipment Used
Work instruction WI-EMC-01	0158, 0184, 0193, 0190, 0293, 0307

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 174 of 184

7.9.1 <u>Stand Alone Charger - Conducted Disturbance at Mains Terminal (150 kHz – 30 MHz)</u>

	t Freq.	N/A					Engineer	EVF			
V	ariant	AC Lin	e Emission	s			Temp (°C)	19.5			
Freq.	Range	0.150 I	MHz - 30 M	1Hz		Rel	. Hum. (%)	37			
Power S	etting	Charge	er: 120VAC	C/ 60Hz		Press	s. (m Bars)	1002			
An	itenna	Integra	I					•			
Test Notes 1 Handset (Model: 8440) with discharged battery (SN: AC101032008E) , headset connected, connected to charger (Model: SA106B-05) Test Notes 2 Mode: BT Channel 39 Receive: WI AN Channel 06 Receive: WI AN=1, BT=1, BC=0, DK=1											
Test Notes 2 Mode: BT Channel 39 Receive; WLAN Channel 06 Receive; WLAN=1, BT=1, BC=0, DK=1											
MiCem	Labs	dBu∨ 70.0 60.0 50.0 40.0 30.0	MAR		/asona by EMi	Soft			/ 10 09:5 [1] Live [2] Neutr Quasi Lt Average Debug Formal	al	
				ducted Emi ogram/polyc	1.0 ssions com'polyD6 - phoer	T nix fcc ic\fcc j	10.0 emplate: FCC part 15 b; ices	30.0	ency:MH ACMains dataVradi		
Formally	y mea	10.0 0.15 Pov File		ducted Emi ogram/polyc	ssions com\polyD6 - phoer			30.0		ate	
		10.0 0.15 Pou File	d emis	ducted Emi ogram/polyc sion pe	ssions com/polyD6 - phoen aks	nix fcc ic\fcc j	emplate: FCC bart 15 b; ices	30.0 15.1078 / -003\8440\	ACMains data vadi		
Frequency	Raw	10.0 0.15 Pou File	d emiss	ducted Emi ogram/polyc sion pe Level	ssions com'poly06 - phoe aks Measurement		emplate: FCC part 15 b; ices	30.0 15,1078 / 003\8440\ Margin	ACMains data vadi Pass	ate	
Frequency MHz 0.534 0.534	Raw dBuV 21.4 36.0	10.0 0.15 Pou File asure Cable Loss	d emiss Factors dB 0.1 0.1	ducted Emi ogram polyc sion pe dBuV 31.4 46.0	ssions com'poly06 - phoe aks Measurement Type	Line	Limit dBuV 46.0 56	30.0 15.1078 / 00338440 Margin dB -14.6 -10.0	ACMains data vadi Pass /Fail	ate	
Frequency MHz 0.534 0.534 0.553	Raw dBuV 21.4 36.0 22.5	10.0 0.15 Pow File asure Cable Loss 9.9	d emiss Factors dB 0.1 0.1 0.1	sion pe ducted Emi sion pe dBuV 31.4 46.0 32.5	ssions com'poly06 - phoer eaks Measurement Type Average	Line Neutral	Emplate: FCC bart 15 b; ices Limit dBuV 46.0	30.0 15.1078 / 00338440V Margin dB -14.6 -10.0 -13.5	Pass /Fail Pass	ate	
Frequency M Hz 0.534 0.534 0.553 0.553	Raw dBuV 21.4 36.0 22.5 35.9	Cable Loss 9.9	d emiss Factors dB 0.1 0.1 0.1 0.1	ducted Emi ogram/polyd sion pe dBuV 31.4 46.0 32.5 45.9	ssions com'poly06 - phoer eaks Measurement Type Average Quasi Peak	Line Neutral Neutral Neutral Neutral	Limit dBuV 46.0 56 46 56	30.0 15.1078 ± 00338440 Margin dB -14.6 -10.0 -13.5 -10.1	Pass /Fail Pass Pass	ate	
Frequency M Hz 0.534 0.534 0.553 0.553 0.553	Raw dBuV 21.4 36.0 22.5 35.9 25.7	10.0 0.15 File 3 S U F C 2 S U F C 2 S U F C 3 	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1	sion pe devel dBuV 31.4 46.0 32.5 45.9 35.7	Average Quasi Peak Average	Line Neutral Neutral Neutral Neutral Neutral	Limit dBuV 46.0 56 46 56 46.0	Margin dB -14.6 -10.0 -13.5 -10.1 -10.3	ACMains datavradi Pass /Fail Pass Pass Pass Pass Pass	ate	
Frequency MHz 0.534 0.553 0.553 0.614 0.614	Raw dBuV 21.4 36.0 22.5 35.9 25.7 39.7	10.0 0.15 File Sure 0.9 9.9 9.9 9.9 9.9 9.9 10.0 10.0	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	ducted Emi ogram polyce sion pe dBuV 31.4 46.0 32.5 45.9 35.7 49.8	Average Quasi Peak Quasi Peak	Line Neutral Neutral Neutral Neutral Neutral Neutral	Limit dBuV 46.0 56 46 56 46.0 56 46.0 56	Margin dB -14.6 -10.0 -13.5 -10.1 -10.3 -6.3	ACMains datavadi Pass Pass Pass Pass Pass Pass Pass	ate	
Frequency MHz 0.534 0.553 0.553 0.553 0.614 0.614 0.801	Raw dBuV 21.4 36.0 22.5 35.9 25.7 39.7 22.5	10.0 0.15 File SUICE 0.9 9.9 9.9 9.9 9.9 9.9 10.0 10.0 10.0	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	ducted Emi ogram polyd sion pe dBuV 31.4 46.0 32.5 45.9 35.7 49.8 32.5	Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak	Line Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Limit dBuV 46.0 56 46 56 46.0 56 46	Margin dB -14.6 -10.1 -10.3 -6.3 -13.5	Pass /Fail Pass Pass Pass Pass Pass Pass Pass Pas	ate	
Frequency MHz 0.534 0.553 0.553 0.614 0.801 0.801	Raw dBuV 21.4 36.0 22.5 35.9 25.7 39.7 22.5 33.3	10.0 0.15 File Cable Loss 9.9 9.9 9.9 9.9 10.0 10.0 10.0 10.0	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	ducted Emi ogram polyce sion pe dBuV 31.4 46.0 32.5 45.9 35.7 49.8 32.5 43.3	Average Quasi Peak Average Quasi Peak	Line Neutral Neutral Neutral Neutral Neutral Neutral	Limit dBuV 46.0 56 46 56 46.0 56 46.0 56 56 56 46.0 56 46.0	Margin dB -14.6 -10.0 -13.5 -10.1 -10.3 -6.3 -13.5 -12.7	ACMains datavadi Pass /Fail Pass Pass Pass Pass Pass Pass Pass Pas	ate	
Frequency M Hz 0.534 0.553 0.553 0.614 0.614 0.801 0.801 0.869	Raw dBuV 21.4 36.0 22.5 35.9 25.7 39.7 22.5 33.3 16.9	10.0 0.15 File Sure Cable Loss 9.9 9.9 9.9 9.9 9.9 10.0 10.0 10.0 10.0	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	ducted Emi ogram polyce sion pe dBuV 31.4 46.0 32.5 45.9 35.7 49.8 32.5 43.3 26.9	Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average	Line Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Limit dB uV 46.0 56 46 56 46 56 46 56 46 56 46.0	Margin dB -14.6 -10.0 -13.5 -10.1 -10.3 -6.3 -13.5 -12.7 -19.1	ACMains datavadi Pass Pass Pass Pass Pass Pass Pass Pas	ate	
Frequency M Hz 0.534 0.533 0.553 0.553 0.614 0.614 0.801 0.801 0.869 0.869	Raw dBuV 21.4 36.0 22.5 35.9 25.7 39.7 22.5 33.3 16.9 29.8	10.0 0.15 File SUTE 0.9 9.9 9.9 9.9 9.9 9.9 10.0 10.0 10.0	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	ducted Emi ogram polyd sion pe dBuV 31.4 46.0 32.5 45.9 35.7 49.8 32.5 43.3 26.9 39.8	Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak	Line Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Limit dBuV 46.0 56 46 56 46 56 46 56 46 56 46.0 56 46.0 56 46.0 56	Margin dB -14.6 -10.0 -13.5 -10.1 -10.3 -6.3 -13.5 -12.7 -19.1 -16.2	ACMains datavradi Pass /Fail Pass Pass Pass Pass Pass Pass Pass Pas	ate	
Frequency M Hz 0.534 0.553 0.553 0.614 0.614 0.801 0.801 0.869	Raw dBuV 21.4 36.0 22.5 35.9 25.7 39.7 22.5 33.3 16.9	10.0 0.15 File Sure Cable Loss 9.9 9.9 9.9 9.9 9.9 10.0 10.0 10.0 10.0	d emiss Factors dB 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	ducted Emi ogram polyce sion pe dBuV 31.4 46.0 32.5 45.9 35.7 49.8 32.5 43.3 26.9	Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average Quasi Peak Average	Line Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral Neutral	Limit dB uV 46.0 56 46 56 46 56 46 56 46 56 46.0	Margin dB -14.6 -10.0 -13.5 -10.1 -10.3 -6.3 -13.5 -12.7 -19.1	ACMains datavadi Pass Pass Pass Pass Pass Pass Pass Pas	ate	

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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 175 of 184

8 PHOTOGRAPHS

8.1 <u>Conducted RF Emissions - EUT</u>

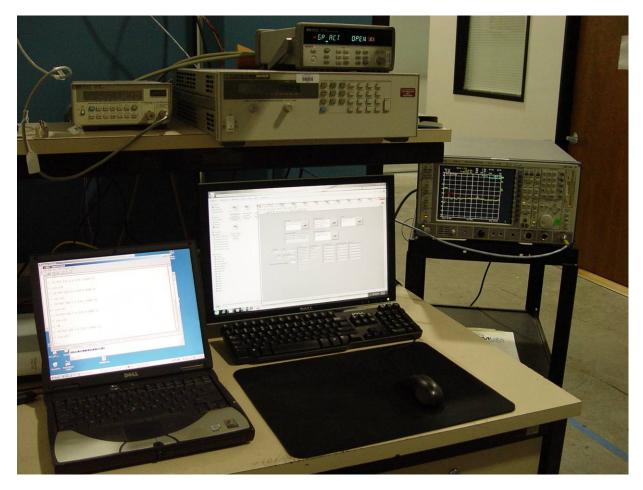


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 176 of 184

8.2 Conducted RF Emissions - Test Equipment



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 177 of 184

8.3 Dynamic Frequency Selection Test Set-Up

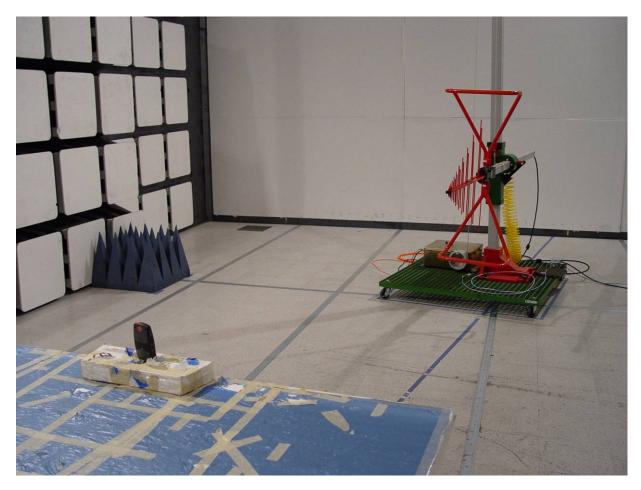


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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page 178 of 184

8.4 Transmitter Radiated Spurious Emission below 1 GHz with Charger



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Title:Polycom Spectralink 8440 Wi-Fi handset
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Page:Page 179 of 184

8.5 <u>Transmitter Radiated Spurious Emission above 1 GHz with Charger</u>



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Page:Page 180 of 184

8.6 <u>Receiver Radiated Emissions below 1 GHz with Charger</u>



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Title:Polycom Spectralink 8440 Wi-Fi handset
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Page:Page 181 of 184

8.7 Receiver Radiated Emissions above 1 GHz with Charger



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Page:Page 182 of 184

8.8 AC Mains Conducted Emissions with Charger



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Title:Polycom Spectralink 8440 Wi-Fi handset
with BluetoothTo:FCC 47 CFR Part 15.407 & RSS-210 A9Serial #:POLY06-U12 Rev AIssue Date:28th February, 2011
Page:Page:Page 183 of 184

1. TEST EQUIPMENT DETAILS

Asset #	Instrument	Manufacturer	Part #	Serial #
0134	Amplifier	Com Power	PA 122	181910
0158	Barometer /Thermometer	Control Co.	4196	E2846
0287	EMI Receiver	Rhode & Schwartz	ESIB 40	100201
0252	SMA Cable	Megaphase	Sucoflex 104	None
0310	2m SMA Cable	Micro-Coax	UFA210A-0-0787- 3G03G0	209089-001
0312	3m SMA Cable	Micro-Coax	UFA210A-1-1181- 3G0300	209092-001
0313	Coupler	Hewlett Packard	86205A	3140A01285
0314	30dB N-Type Attenuator	ARRA	N9444-30	1623
0070	Power Meter	Hewlett Packard	437B	3125U11552
0116	Power Sensor	Hewlett Packard	8485A	3318A19694
0117	Power Sensor	Hewlett Packard	8487D	3318A00371
0184	Pulse Limiter	Rhode & Schwartz	ESH3Z2	357.8810.52
0190	LISN	Rhode & Schwartz	ESH3Z5	836679/006
0293	BNC Cable	Megaphase	1689 1GVT4	15F50B001
0301	5.6 GHz Notch Filter	Micro-Tronics	RBC50704	001
0302	5.25 GHz Notch Filter	Micro-Tronics	BRC50703	002
0303	5.8 GHz Notch Filter	Micro-Tronics	BRC50705	003
0304	2.4GHzHz Notch Filter	Micro-Tronics		001
0307	BNC Cable	Megaphase	1689 1GVT4	15F50B002
0335	1-18GHz Horn Antenna	ETS- Lindgren	3117	00066580
0337	Amplifier	MiCOM Labs		
0338	Antenna	Sunol Sciences	JB-3	A052907

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440 Boulder Court, Suite 200 Pleasanton, CA 94566, USA Tel: 1.925.462.0304 Fax: 1.925.462.0306 www.micomlabs.com