



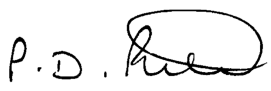
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Test Report for gS95, gS125, gS165, gS95-INV, gS125-INV & gS165-INV Marine Multifunction Displays

To 47 CFR Part 15 Subpart C and RSS 210

Model Number	E70124, E70125, E70126, E70183, E70184, E70185		
Product Description	gS95, gS125, gS165, gS95-INV, gS125-INV, gS165-INV Marine Multifunction Displays		
Report Number	TP/839/1056		
Report Author Mike Thompson EMC Engineer		Date	8 th July 2013
Technical Check Paul Pitt EMC Engineer		Date	9 th July 2013
Approval Andrew Little Compliance Manager		Date	9 th July 2013

Test Date Range	18 th June 2013 – 5 th July 2013
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Product Status	PASS
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The test data and results contained within this report relate only to the items tested.

1 47 CFR Part 15 and RSS-210 Test Summary

	CFR 47 Part 15	RSS-210	Section	Result
Hopping Sequence	15.247(a)		5.4	Pass
Peak Output Power	15.247(b)	A8.4(2)	5.3	Pass
Carrier Frequency Separation	15.247(a)	A8.1(b)	5.4	Pass
Frequency Band Edges	15.247(d)		5.8	Pass
20dB Bandwidth	15.247(a)(1)	A8.1(a)	5.7	Pass
Radiated Emissions	15.209(a)	RSS-GEN 7.5.2	5.11	Pass
Spurious Emissions	15.247(d)	A8.5	5.11	Pass
Number of Channels	15,247(a)(1)	A8.1(d)	5.4	Pass
Directional antenna with >6dBi	15.247(c)		5.2 Antenna<6dBi	N/A
Dwell Time	15.247(a)	A8.1(d)	5.4	Pass
6dB Bandwidth		A8.2(a)	5.9	Pass
Power Spectral Density		A8.2(b)	5.10	Pass

2 Attestations

This equipment has been tested in accordance with the standards identified in this report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in these reports.

All measuring instruments used to determine the status of the product's compliance to the identified standards are calibrated regularly in accordance with UKAS requirements.

A comprehensive system of traceable calibration in accordance with ISO9001 is maintained.

Name/Position	Signature	Date
Mike Thompson EMC Engineer		8 th July 2013

I attest that the necessary measurements were made, under my supervision at:

Raymarine UK Ltd, Marine House, Cartwright Drive, Fareham, PO15 5RJ.



Andy Little
Compliance Manager

Date: 9th July 2013

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3 Test Information

3.1 Test Facilities

Site 1	9m x 6m x 5.5m Semi Anechoic Chamber	FCC ID IC Certification	Reg 371673 Reg 4069B-2
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3.2 Overall Test Conditions

Work Area	Relative Humidity (%)	Air Pressure (mbar)	Ambient Temperature (°C)
Site 1-5	62	1005	18.9
Sites 6-10	63	1015	21.1

3.3 Test Methods

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C (Bluetooth and WIFI, 2.4GHz ISM band radiators) for the EUT FCC ID Certification and RSS-210 for the Industry Canada certification:

Number	Standard Number	Document Title
1	47 CFR Part 15 (10-01-09 Edition)	Radio Frequency Devices
2	RSS-210 Issue 8 December 2010	Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

3.3.1 Deviations from Test Methods

None

4 EUT Information

4.1 Test Rationale

Full compliance

4.2 Description of Equipment under Test (EUT)

Date of Receipt:	18 th June 2013
Client:	Tony Sharp
Brand Name:	Raymarine
Product Range:	gS Series
Country of Manufacture:	China
Operational voltage range:	10.8Vdc to 32Vdc

Unit 1

Model Name or Number:	gS95-INV
FCC ID	PJ5-WFBT6
IC ID	4069B-WFBT6
Unique Type Identification:	E70183
Serial Number:	0630002
CCT Diagram Number(s) & Issue:	CPU 1002023 Issue 3 Including ECN000534 I/O 1002033 Issue 3 Including ECN000535,42,47,49 and 54
PCB Assembly Number(s) & Issue:	CPU 1002020 Issue 3 Including ECN000534 I/O 1002030 Issue 3 Including ECN000535,42,47,49 and 54
Software Version:	Platform V7.18 Application V7.23
Modifications to Unit:	None

Unit 2

Model Name or Number:	gS125
FCC ID	PJ5-WFBT6
IC ID	4069B-WFBT6
Unique Type Identification:	E70125
Serial Number:	0630039

CCT Diagram Number(s) & Issue:	CPU 1002023 Issue 3 Including ECN000534 I/O 1002033 Issue 3 Including ECN000535,42,47,49 and 54
PCB Assembly Number(s) & Issue:	CPU 1002020 Issue 3 Including ECN000534 I/O 1002030 Issue 3 Including ECN000535,42,47,49 and 54
Software Version:	Platform V7.18 Application V7.23
Modifications to Unit:	None

Unit 3

Model Name or Number:	gS165
FCC ID	PJ5-WFBT6
IC ID	4069B-WFBT6
Unique Type Identification:	E70126
Serial Number:	0630029
CCT Diagram Number(s) & Issue:	CPU 1002023 Issue 3 Including ECN000534 I/O 1002033 Issue 3 Including ECN000535,42,47,49 and 54
PCB Assembly Number(s) & Issue:	CPU 1002020 Issue 3 Including ECN000534 I/O 1002030 Issue 3 Including ECN000535,42,47,49 and 54
Software Version:	Platform V7.18 Application V7.23
Modifications to Unit:	None

4.3 Additional information

The gS95, gS125 & gS165 all share a common WiFi/BT module & antenna therefore conducted RF measurements & radiated emissions above 3GHz were only carried out on the gS125.

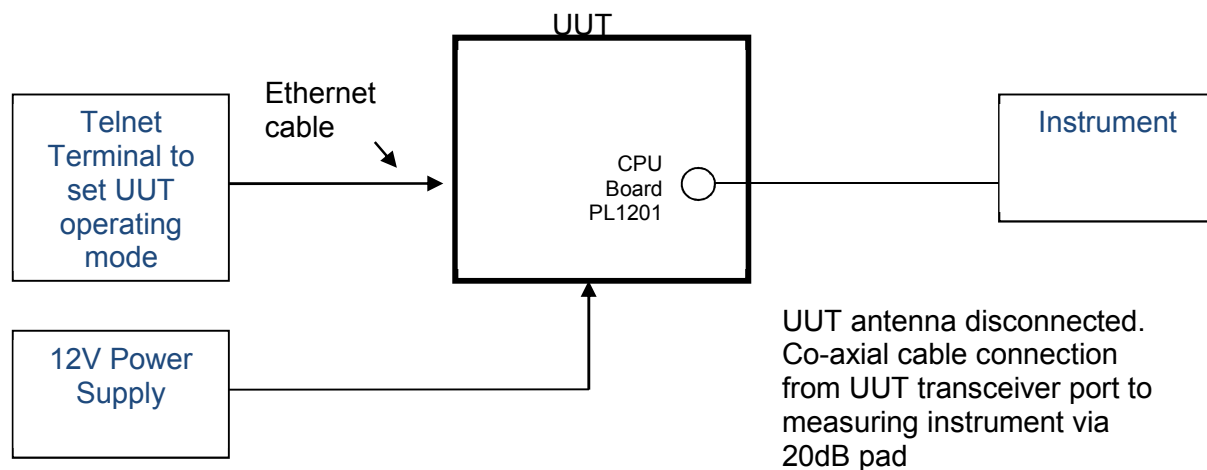
The gS95-INV, gS125-INV & gS165-INV are identical to the gS95, gS125 & gS165 apart from the lcd display is rotated through 180 degrees.

4.4 Description of Auxiliary Equipment

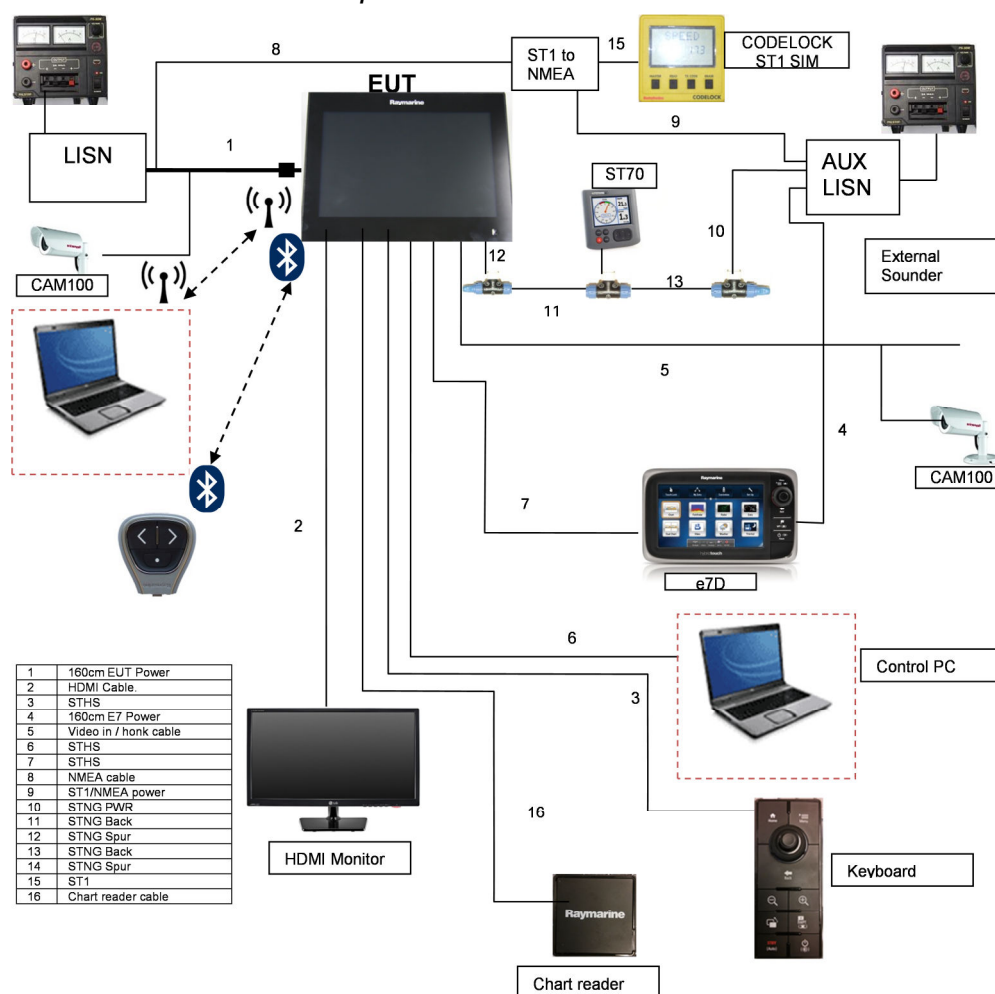
Product Type	Part Number	Serial Number
ST1 Simulator	Codelock	EMC170306d
CAM100	E03006	EMC111004
ST1 to NMEA Converter	E85001	EMC111004a
ST70	E22105	1270965
Compaq Laptop	NC6220	RM0048
RCU-3	E62351	
Card Reader	A80218	0530036
RMK-9 Aux Keyboard	A80217	0530008
LG Monitor	IPS237LY	208NDHBL057

4.5 Test Configurations

4.5.1 Maximum Power, EIRP Spectral Density and Frequency Range tests



4.5.2 Radiated Emissions Setup



Note: LISN's were not used during this test.

4.5.3 Photos



4.6 Operating Modes

4.6.1 Peak Output Power and Frequency Range

The tests performed with the UUT in each of three operating modes:

- Continuously transmitting 802.11b 11Mbps DSSS CCK @ 20dBm nominal
- Continuously transmitting 802.11g 54Mbps OFDM @ 14.5dBm nominal
- Continuously transmitting 1Mbps Bluetooth GFSK, fixed frequency @ 9.5dBm nominal

5 Test Results

5.1 Transmit Duty Cycle, “x”

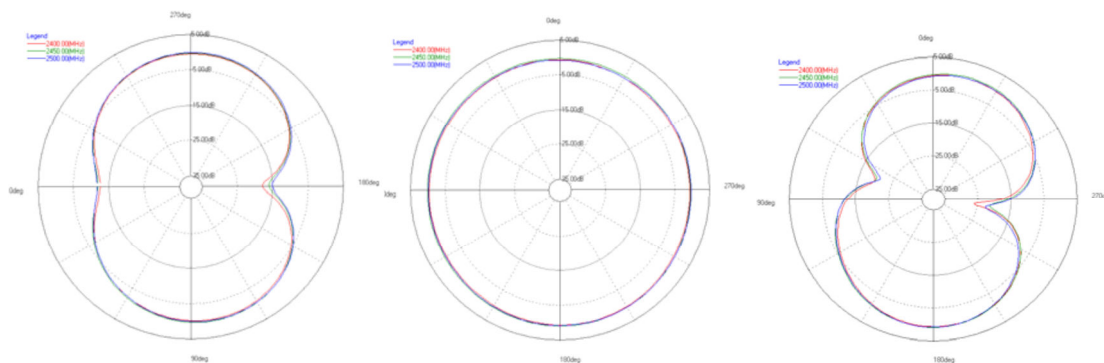
Transmit duty cycle (symbol “x”) is required for the calculations relating average power (measured) to EIRP for Maximum Transmit Power, Maximum EIRP Spectral Density and Frequency Range tests.

UUT Operating Mode	Period (ms)	Transmit On (ms)	Transmit Duty Cycle, x
11Mbps 802.11b DSSS CCK 20dBm nominal	3.0000	1.0000	0.3333
54Mbps 802.11g OFDM 14.5dBm nominal	2.2000	0.2200	0.1000
1Mbps Bluetooth GFSK 9.5dBm nominal	1.0000	1.0000	1.0000

5.2 UUT Antenna Gain, “G”

Antenna gain (symbol “G”) is required for the calculations relating average power (measured) to EIRP for Maximum Transmit Power, Maximum EIRP Spectral Density and Frequency Range tests.

UUT Max Antenna Gain (dBi)
+0.8



5.3 Peak Output Power

Conducted measurements as specified in 15.247(b)(1).

5.3.1 Normal Test Conditions; 22°C, 12.0V

Operating Mode (Modulation)	Channel \ Frequency (No.\ MHz)	Power Measured A (dBm)	Tx Duty Cycle x	Peak Power (mW)	Limit max. (mW)	Pass/Fail
11Mbps 802.11b DSSS 20dBm nominal	1 \ 2412	10.4	0.3333	32.89	125	Pass
	7 \ 2442	10.2	0.3333	31.41	125	Pass
	13 \ 2472	9.3	0.3333	25.53	125	Pass
54Mbps 802.11g OFDM 14.5dBm nominal	1 \ 2412	-0.8	0.1000	8.61	125	Pass
	7 \ 2442	-1	0.1000	7.94	125	Pass
	13 \ 2472	-1.9	0.1000	6.45	125	Pass
1Mbps Bluetooth GFSK 9.5dBm nominal	1 \ 2402	6.92	1.0000	4.92	125	Pass
	48 \ 2480	6.78	1.0000	4.76	125	Pass
	79 \ 2479	5.61	1.0000	3.63	125	Pass

5.4 Frequency Hopping Requirements

UUT frequency hopping characteristics are as defined by the Bluetooth system specification

47 CFR 15.247(a)		Bluetooth	Pass / Fail
Technical Specification	Limit		
Dwell Time 15.247(a)	0.4s	0.38s Based on 79 Channels	Pass
Channel Separation 15.247(a)	Channels non-overlapping, 1MHz separation measured at 20dB below peak power	Complies with this requirement	Pass
Hopping Sequence 15.247(a)	Non-adaptive hopping uses 15 channels min.	79	Pass
	Adaptive hopping uses 90% min. of 2.4000 to 2.4835 band	N/A	
	Adaptive hopping uses 20 channels min.	N/A	
	Each channel occupied at least once during period $T = 4 \times \text{dwell time} \times \text{no. of channels}$	The Bluetooth channel hopping sequence is designed to visit each 1 MHz channel spacing frequency regularly and with roughly equal probability	

5.5 Frequency Range

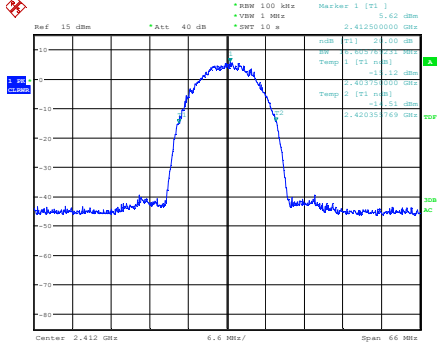
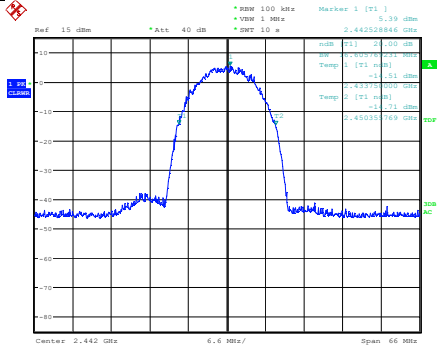
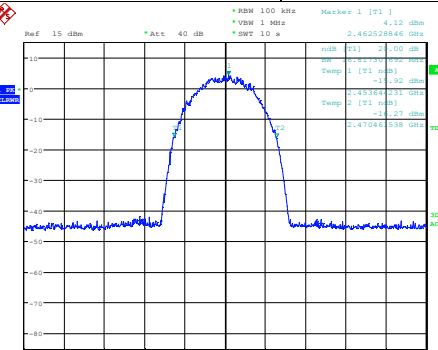
Conducted measurements as specified in EN 300 328 V1.7.1 (2006-10) clause 5.7.4.1 were used.

Operating Mode (Modulation)	Spectral Power Density Threshold relative to EIRP (dBm, RBW = 100kHz)	fL Ch1 \ 2.412GHz (GHz)	fL limit min. (GHz)	Pass if fL > fL limit?	fH Ch11 \ 2.472GHz (GHz)	fH limit max. (GHz)	Pass if fH < fH limit?	fH - fL (GHz)
11Mbps 802.11b DSSS 20dBm nominal	-30.0000	2.4026	2.4000	Pass	2.4715	2.4835	Pass	0.0689
54Mbps 802.11g OFDM 14.5dBm nominal	-30.0000	2.4013	2.4000	Pass	2.4724	2.4835	Pass	0.0711
Operating Mode (Modulation)	Spectral Power Density Threshold relative to EIRP (dBm, RBW = 100kHz)	fL BT Ch 1 2.402GHz	fL limit min. (GHz)	Pass if fL > fL limit?	fH BT Ch 79 2.479GHz	fH limit max. (GHz)	Pass if fH < fH limit?	fH - fL (GHz)
1Mbps Bluetooth GFSK 9.5dBm nominal	-30.0000	2.4013	2.4000	Pass	2.4808	2.4835	Pass	0.0795

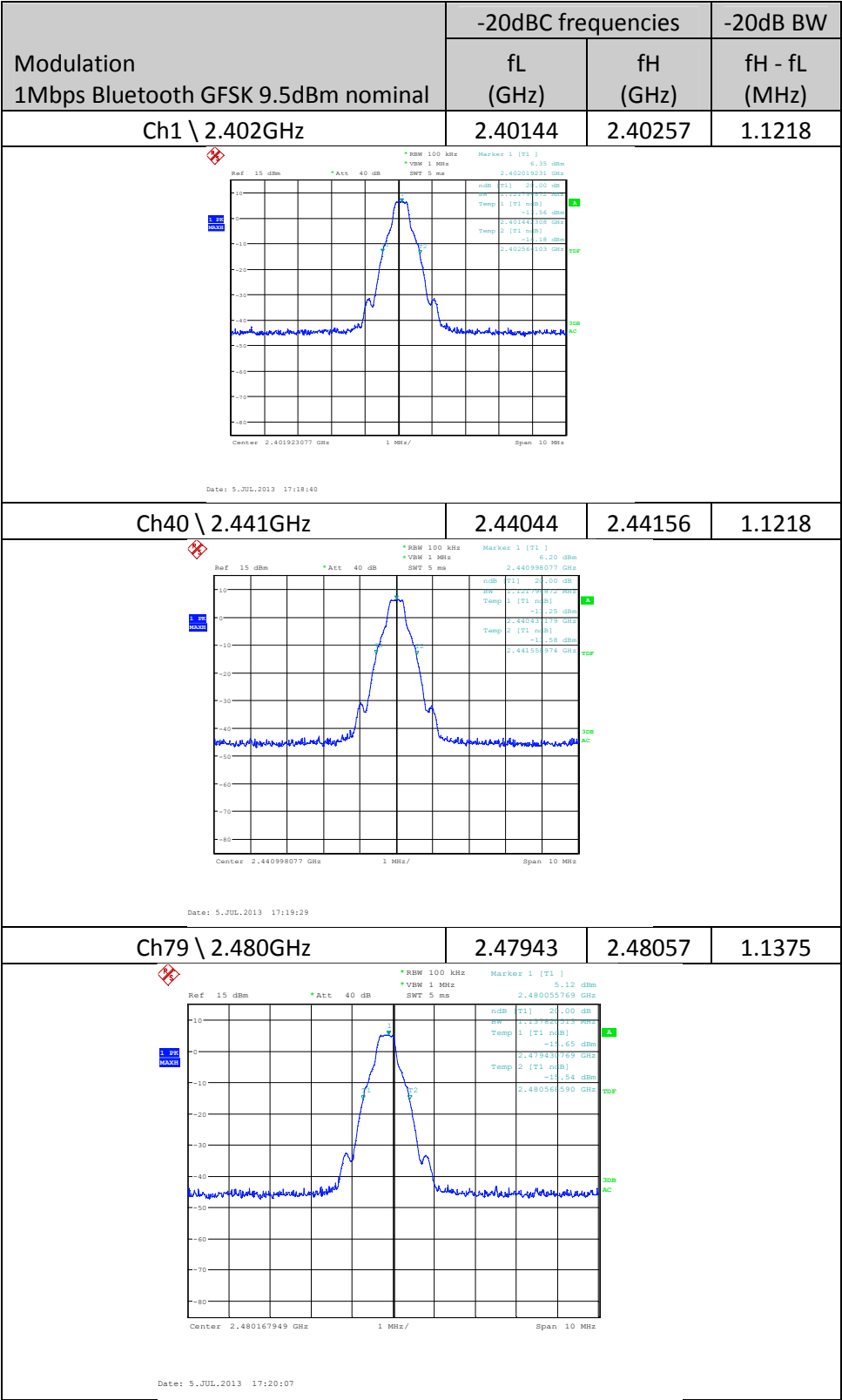
5.6 Medium Access Protocol

		UUT
Technical Specification	Requirement	
Medium Access Protocol	A medium access protocol shall be implemented by the equipment	The UUT implements medium access protocols defined by Bluetooth and IEEE 802.11 b/g specifications

5.7 20dB Channel Bandwidth

Modulation 11Mbps 802.11b DSSS 20dBm nominal	-20dBC frequencies		-20dB BW
	fL (GHz)	fH (GHz)	fH - fL (MHz)
Ch1 \ 2.412GHz	2.40375	2.42035	16.60
 Ch1 \ 2.412GHz Date: 5.JUL.2013 16:40:12			
Ch7 \ 2.442GHz	2.43375	2.45036	16.61
 Ch7 \ 2.442GHz Date: 5.JUL.2013 16:42:02			
Ch11 \ 2.462GHz	2.4536	2.47046	16.86
 Ch11 \ 2.462GHz Date: 5.JUL.2013 16:45:32			

Template: F1177
Issue: 23 Sep 2010



5.8 Frequency Band Edges

Modulation	-20dBc frequencies	
	fL (GHz)	fH (GHz)
11Mbps 802.11b DSSS 20dBm nominal		
Lower Band Edge Ch1 \ 2.412GHz	2.40375	
Upper Band Edge Ch11 \ 2.462GHz		2.47046
54Mbps 802.11g OFDM 14.5dBm nominal		
Lower Band Edge Ch1 \ 2.412GHz	2.40343	
Upper Band Edge Ch11 \ 2.462GHz		2.470673
1Mbps Bluetooth GFSK 9.5dBm nominal		
Lower Band Edge Ch1 \ 2.402GHz	2.40143	
Upper Band Edge Ch79 \ 2.480GHz		2.48057

5.9 6dB Channel Bandwidth (RSS-210)

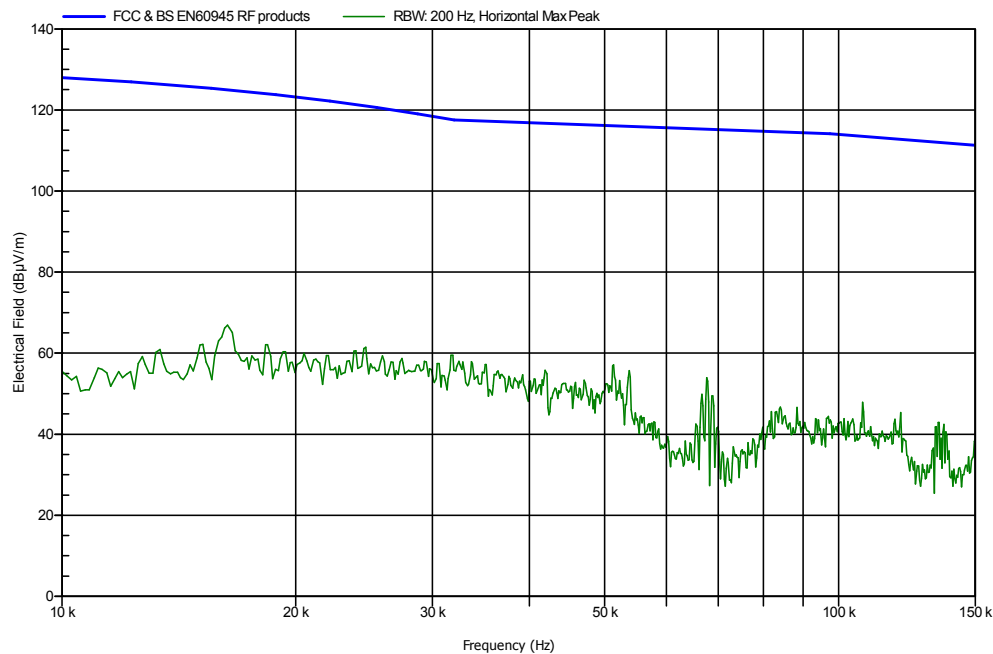
Modulation	-6dB BW (MHz)	Limit	
11Mbps 802.11b DSSS 20dBm nominal		>500kHz	
Ch1	9.625		Pass
Ch7	9.625		Pass
Ch11	9.731		Pass
54Mbps 802.11g OFDM 14.5dBm nominal			
Ch1	6.45		Pass
Ch7	6.452		Pass
Ch13	6.241		Pass

5.10 Power Spectral Density (RSS-210)

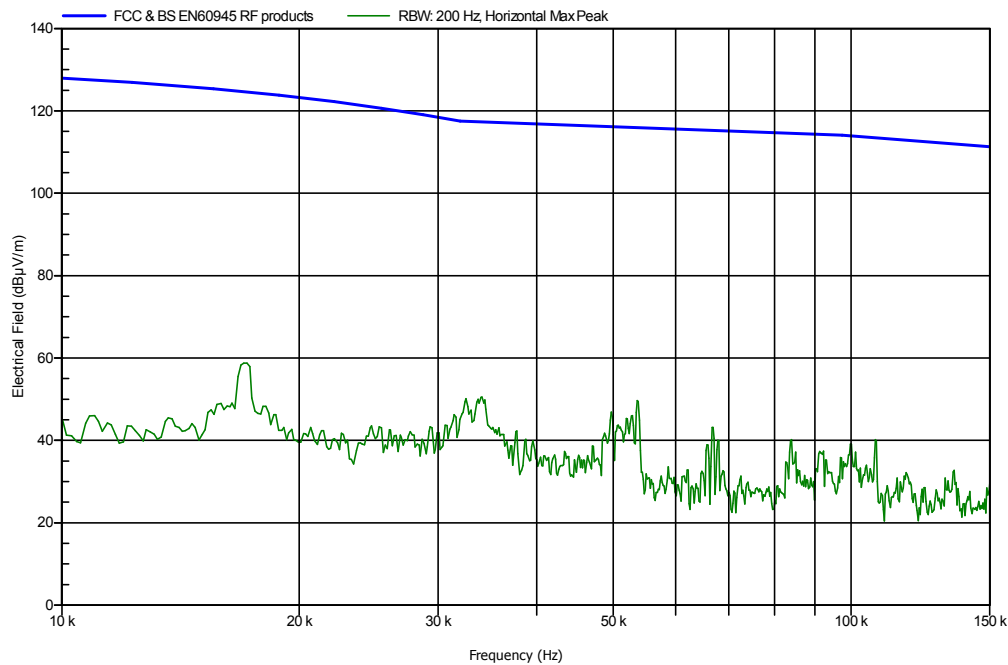
Modulation	PSD dBm	Limit dBm	
11Mbps 802.11b DSSS 20dBm nominal		<8dBm	
Ch1	-9.38		Pass
Ch7	-10.05		Pass
Ch11	-11.56		Pass
54Mbps 802.11g OFDM 14.5dBm nominal			
Ch1	-15.76		Pass
Ch7	-17.32		Pass
Ch11	-18.93		Pass

5.11 Transmitter Spurious Emissions

5.11.1 Radiated Emissions gS95 9kHz-150kHz

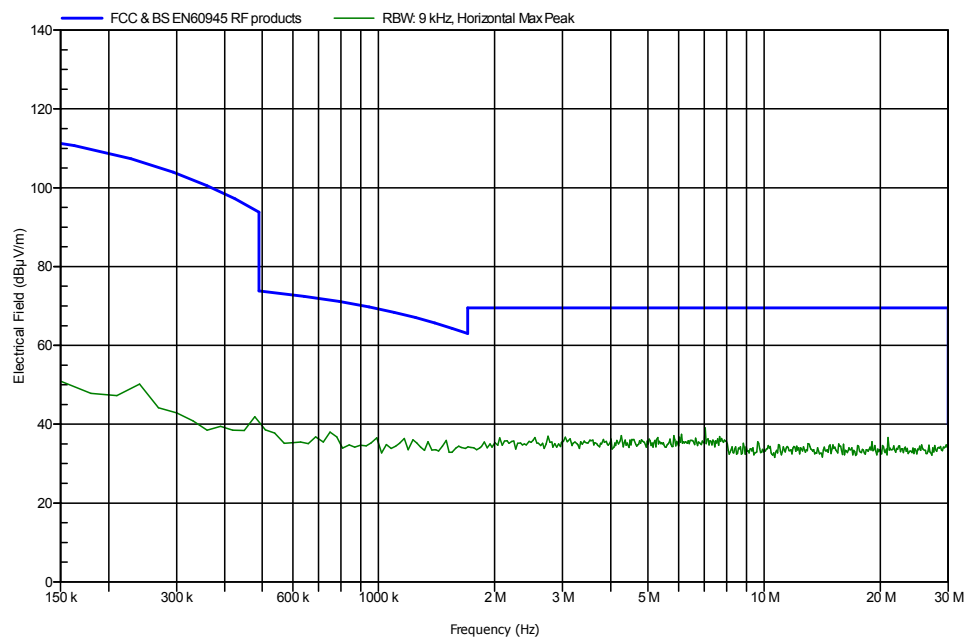


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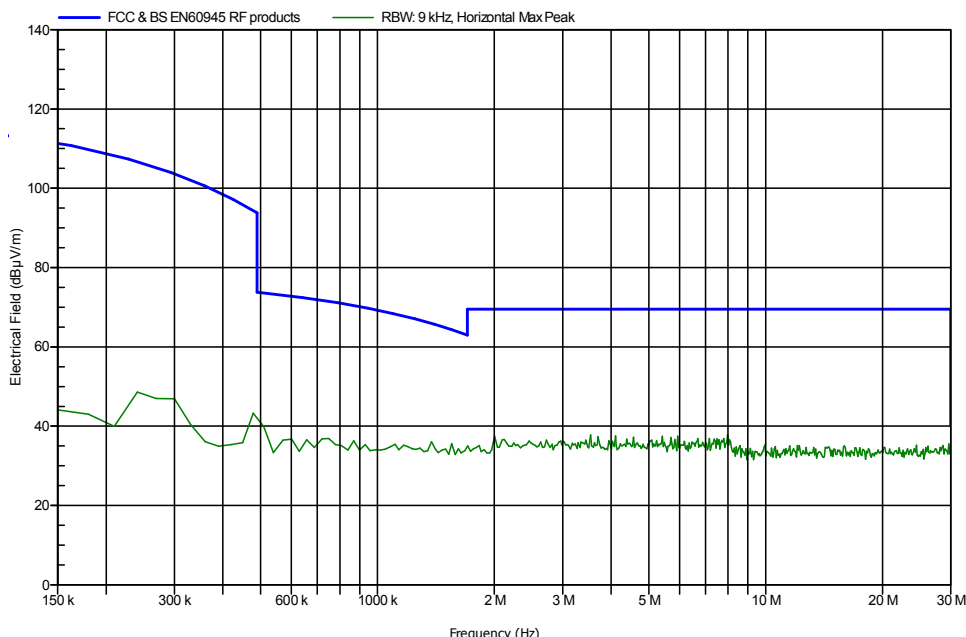


Loop Side On

5.11.2 Radiated Emissions gS95 150kHz-30MHz

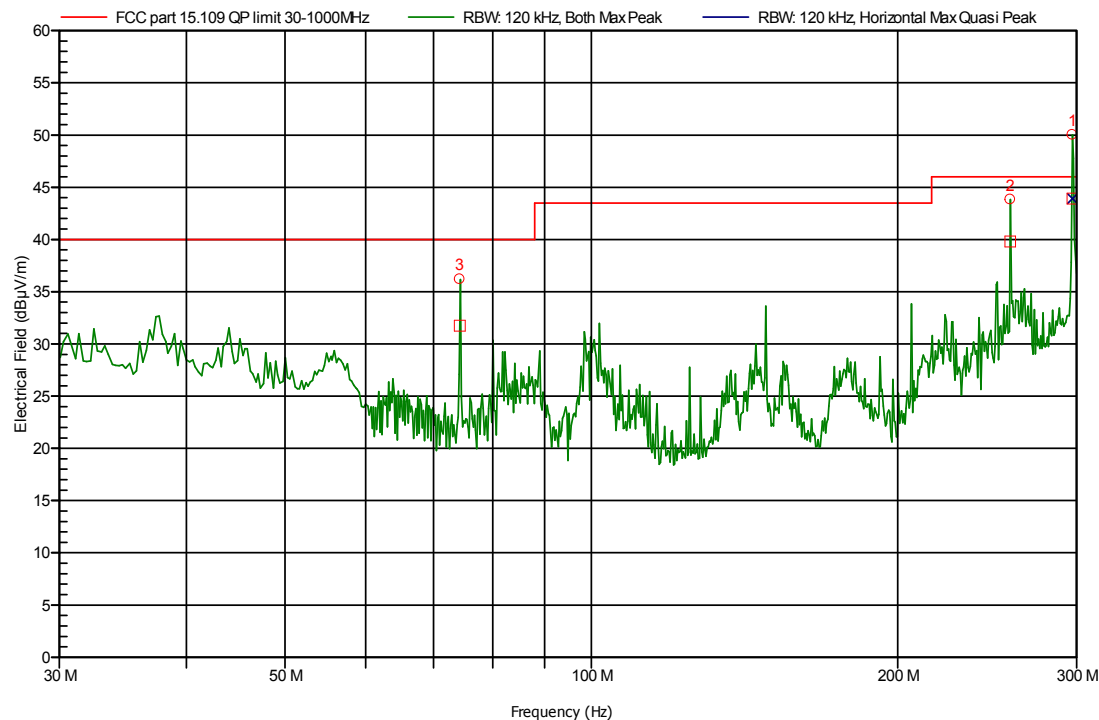


Loop Face On



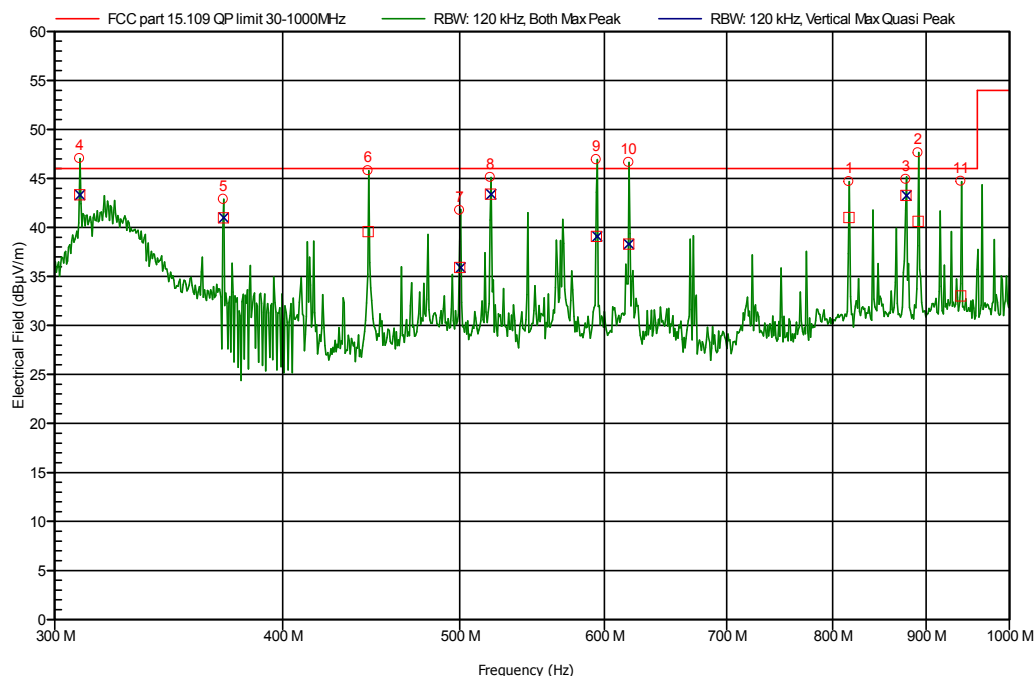
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5.11.3 Radiated Emissions gS95 30MHz – 300MHz



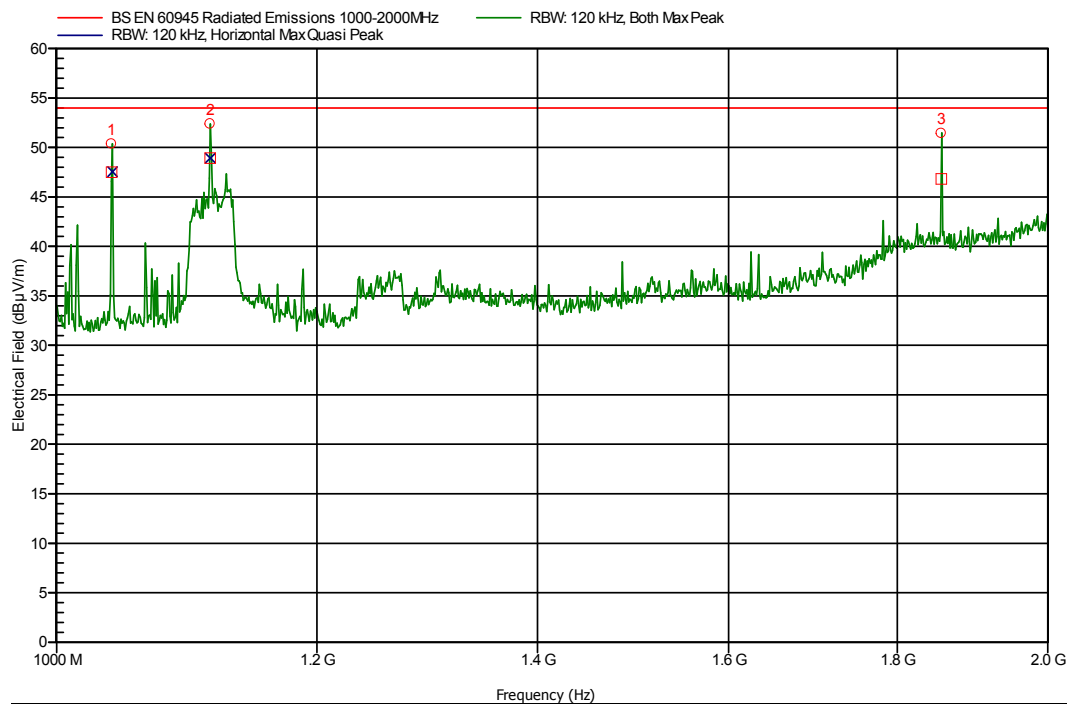
Nr	Frequency (MHz)	Peak Value (dBµV/m)	QP Value (dBµV/m)	QP Limit (dBµV/m)	Result	Angle	Height (m)	H/V
1	297.001	50.02	43.9	46	Pass	285 Degree	100 cm	H
2	258.066	43.82	39.81	46	Pass	225 Degree	100 cm	V
3	74.25	36.18	31.74	40	Pass	22 Degree	100 cm	V

5.11.4 Radiated Emissions gS95 300MHz-1GHz



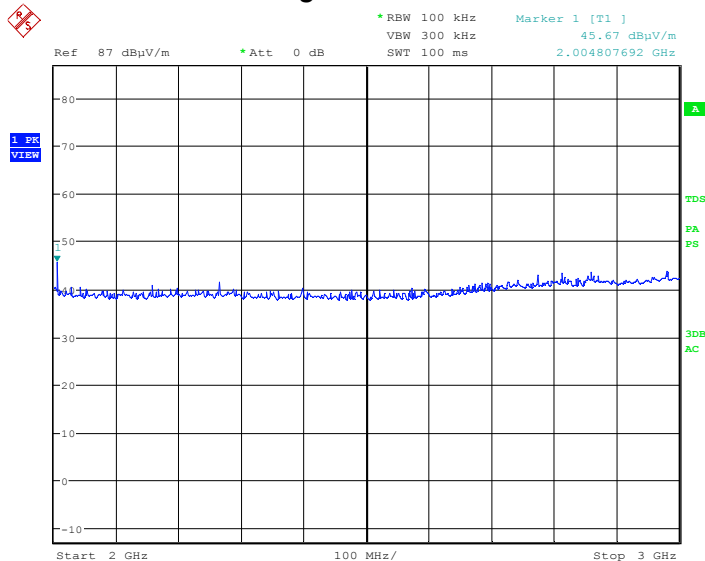
Nr	Frequency (MHz)	Peak Value (dBµV/m)	QP Value (dBµV/m)	QP Limit (dBµV/m)	Result	Angle	Height (m)	H/V
1	816.732	44.67	41.03	46	Pass	22 Degree	100 cm	H
2	891.004	47.62	40.62	46	Pass	67 Degree	100 cm	H
3	877.412	44.92	43.28	46	Pass	270 Degree	100 cm	V
4	309.688	47.04	43.33	46	Pass	0 Degree	1.5 m	V
5	371.243	42.87	40.99	46	Pass	225 Degree	100 cm	V
6	445.494	45.8	39.58	46	Pass	105 Degree	100 cm	H
7	500.014	41.76	35.93	46	Pass	270 Degree	100 cm	V
8	519.751	45.11	43.39	46	Pass	195 Degree	100 cm	V
9	594.028	46.92	39.1	46	Pass	165 Degree	100 cm	V
10	618.766	46.65	38.3	46	Pass	195 Degree	100 cm	V
11	940.394	44.72	33.01	46	Pass	45 Degree	1.5 m	H

5.11.5 Radiated Emissions gS95 1GHz-2GHz



Nr	Frequency (GHz)	Peak Value (dBµV/m)	QP Value (dBµV/m)	QP Limit (dBµV/m)	Result	Angle	Height (m)	H/V
1	1.039	50.36	47.52	54	Pass	60 Degree	100 cm	H
2	1.114	52.38	48.92	54	Pass	22 Degree	100 cm	H
3	1.856	51.43	46.81	54	Pass	165 Degree	100 cm	V

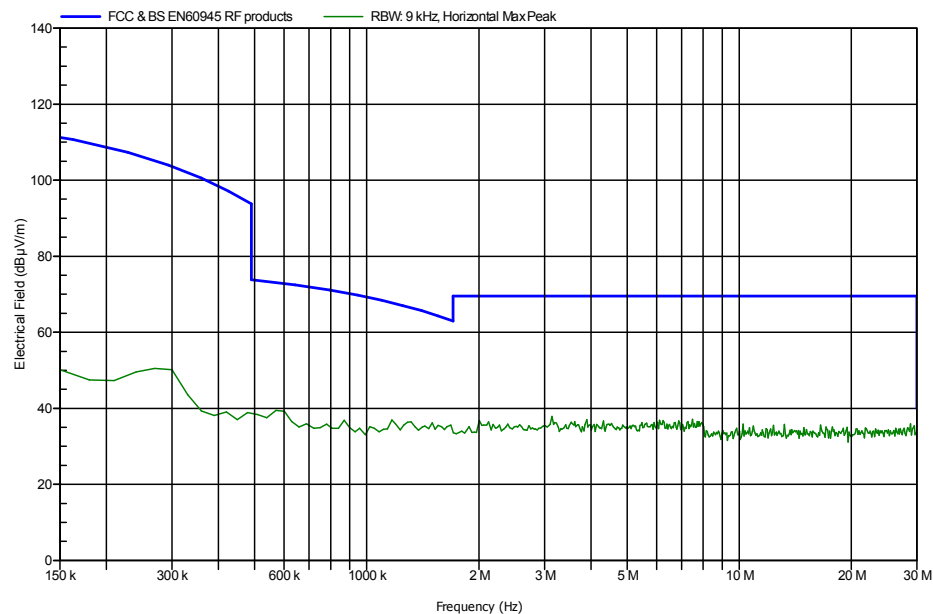
5.11.6 Radiated Emissions gS95 2GHz-3GHz



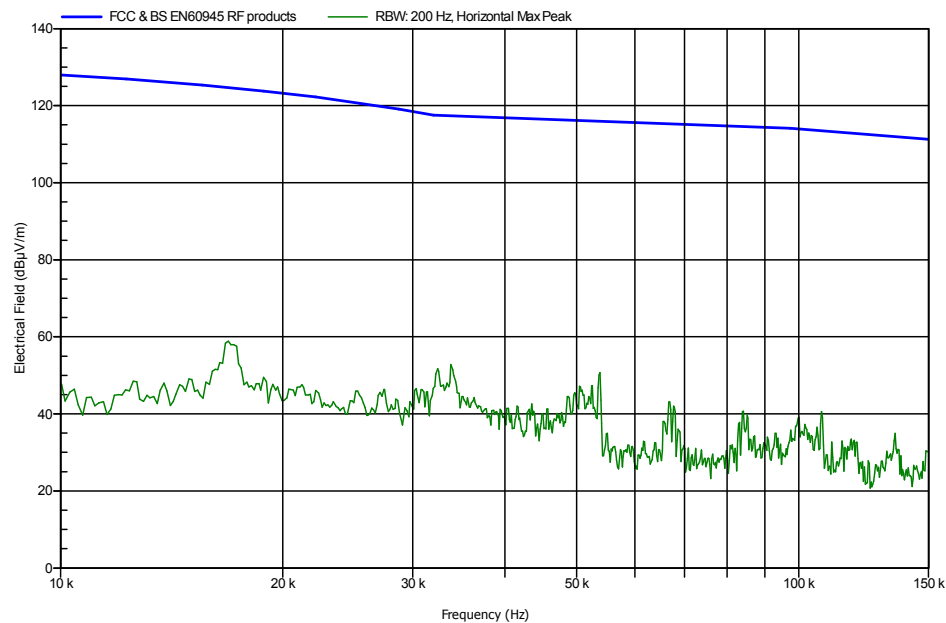
Date: 2.JUL.2013 10:44:05

Marker 1 = 38.54dBuV/m Average measurement @ 2.0048GHz

5.11.7 Radiated Emissions gS125 9kHz to 30MHz

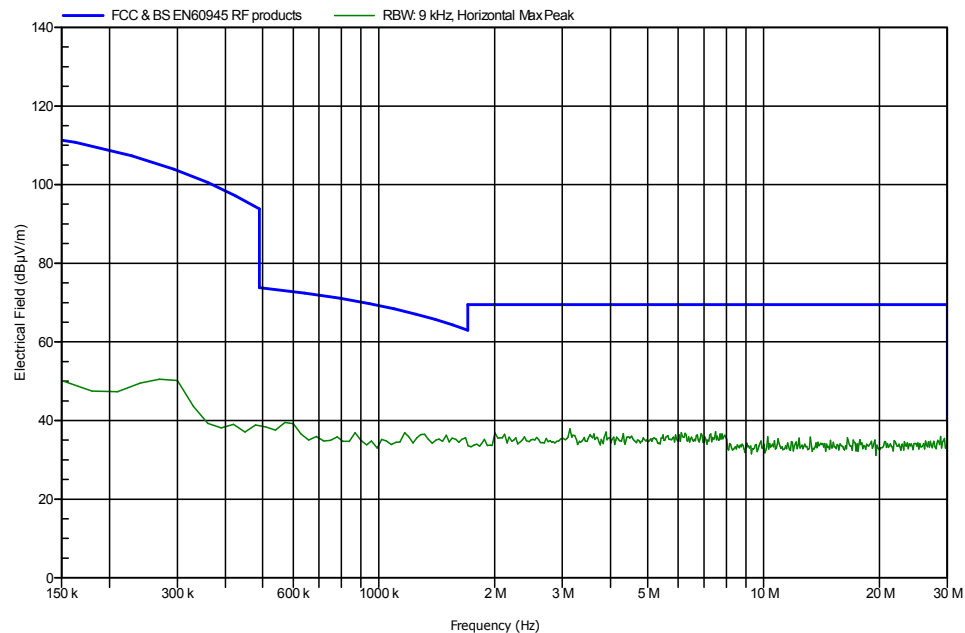


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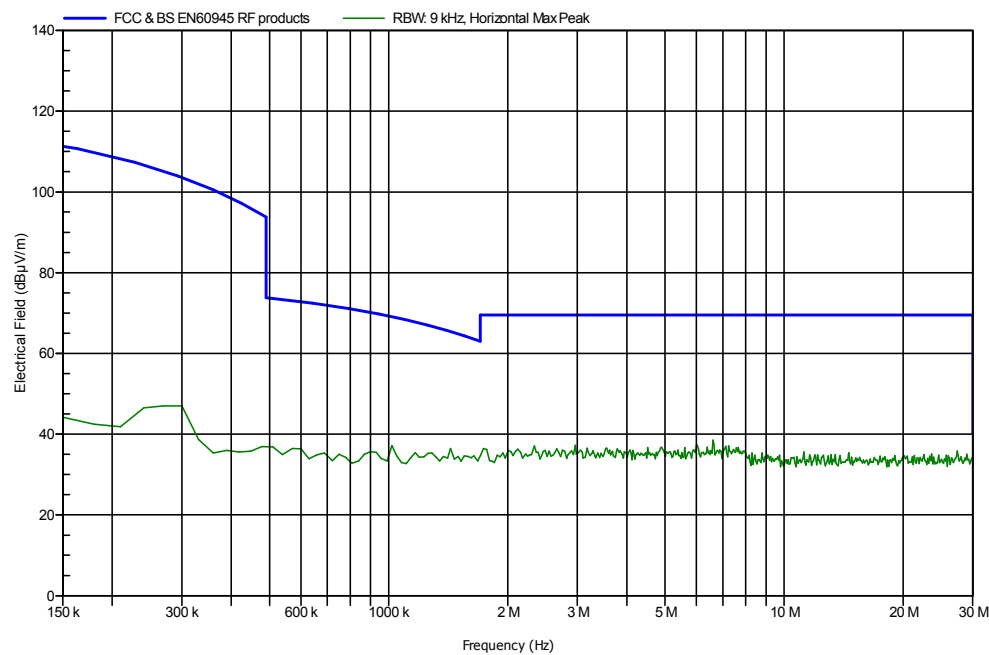


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5.11.8 Radiated Emissions gS125 150kHz to 30MHz

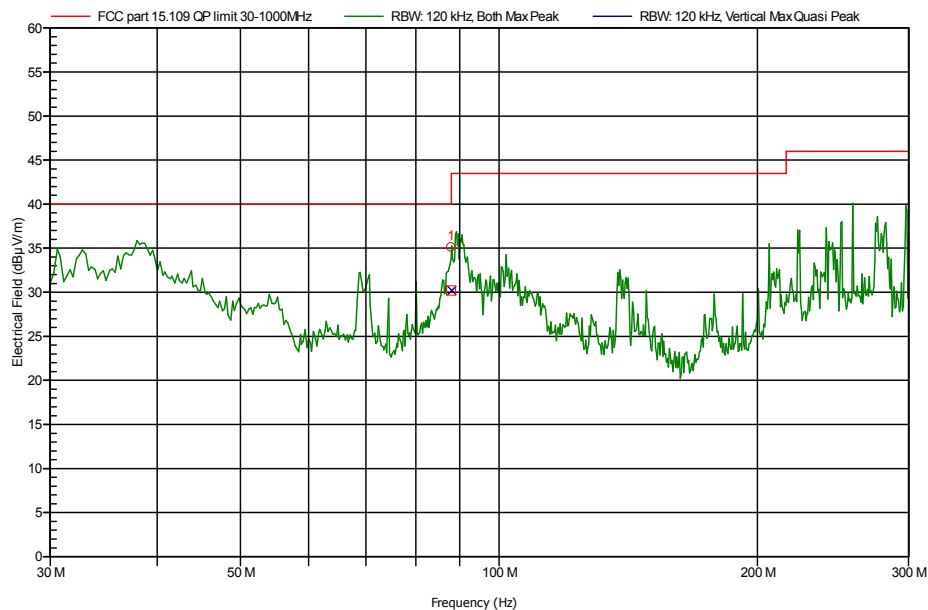


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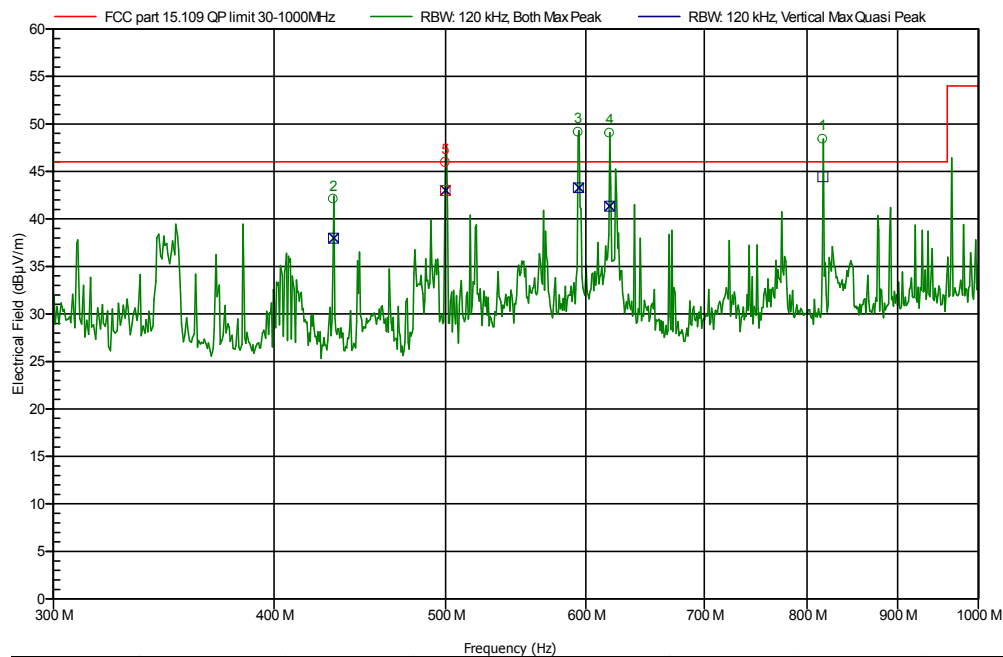


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5.11.9 Radiated Emissions gS125 30MHz to 300MHz

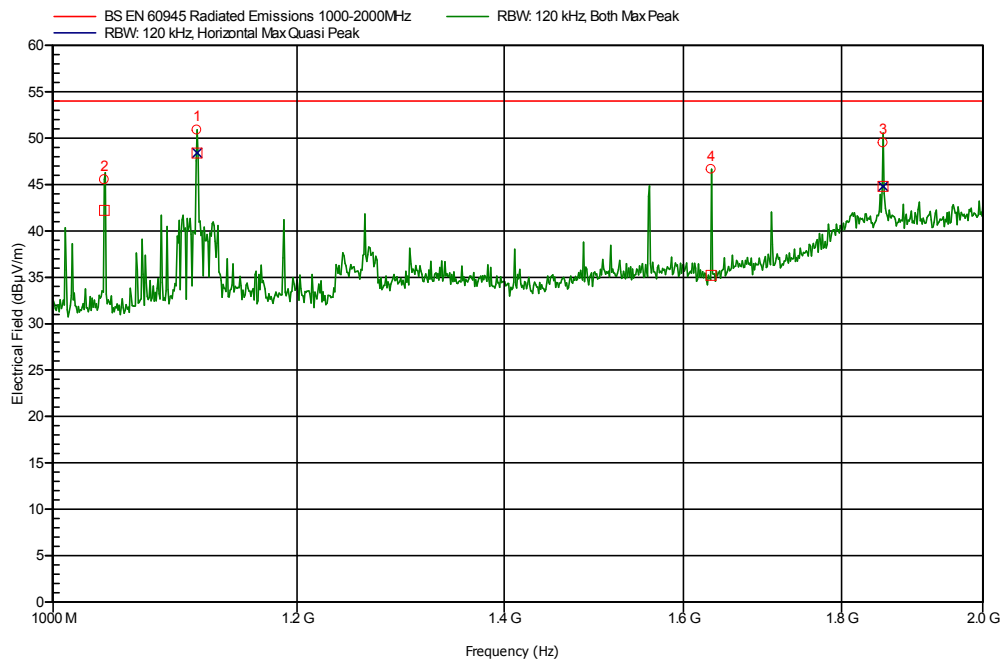


5.11.10 Radiated Emissions gS125 300MHz to 1GHz



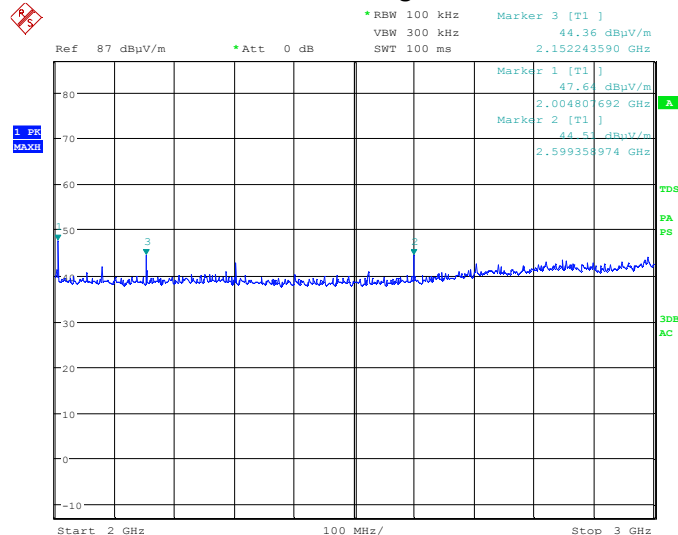
Nr	Frequency (MHz)	Peak Value (dBµV/m)	QP Value (dBµV/m)	QP Limit (dBµV/m)	Result	Angle	Height (m)	H/V
1	816.721	48.41	44.45	46	Pass	112 Degree	100 cm	H
2	432.04	42.09	37.98	46	Pass	15 Degree	100 cm	V
3	594.009	49.14	43.28	46	Pass	0 Degree	100 cm	V
4	618.731	49.04	41.35	46	Pass	0 Degree	100 cm	V
5	499.745	45.96	43.01	46	Pass	75 Degree	100 cm	V

5.11.11 Radiated Emissions gS125 1GHz to 2GHz



Nr	Frequency (GHz)	Peak Value (dBuV/m)	QP Value (dBuV/m)	QP Limit (dBuV/m)	Result	Angle	Height (m)	H/V
1	1.114	50.87	48.39	54	Pass	240 Degree	100 cm	H
2	1.04	45.51	42.23	54	Pass	255 Degree	100 cm	V
3	1.856	49.49	44.8	54	Pass	45 Degree	100 cm	H
4	1.633	46.63	35.2	54	Pass	0 Degree	100 cm	V

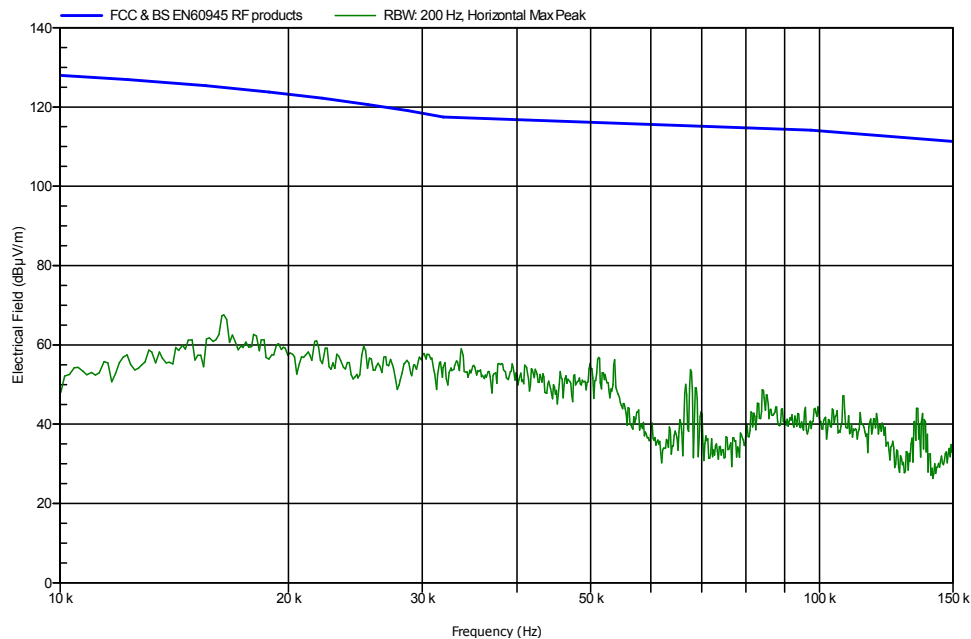
5.11.12 Radiated Emissions gS125 2GHz to 3GHz



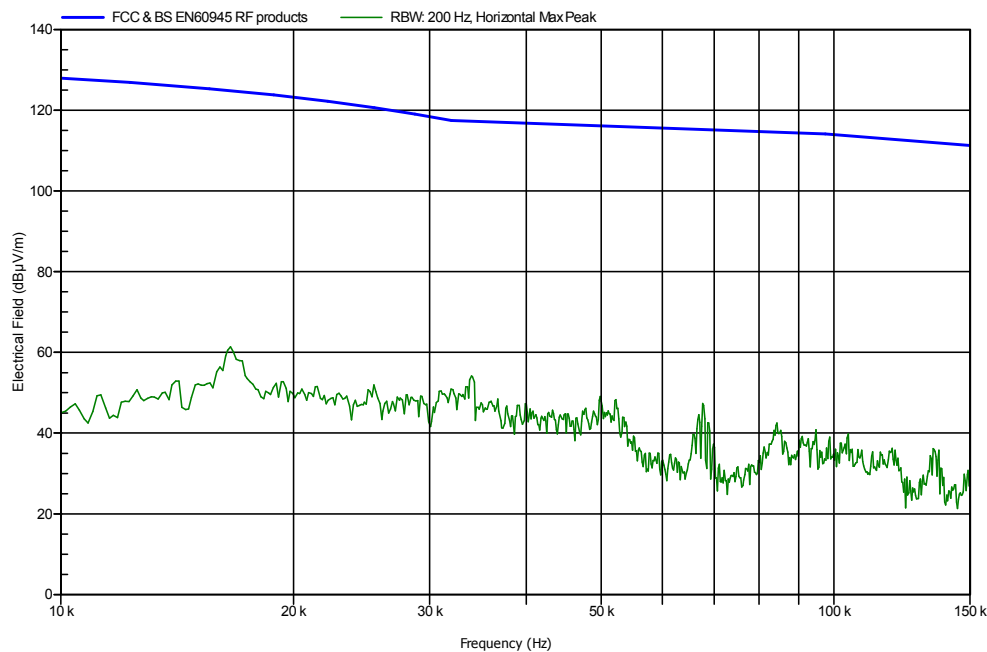
Date: 2.JUL.2013 11:02:17

Marker 1 = 46,15 dBuV/m Average measurement @ 2.0048GHz
Marker 2 = 33.10 dBuV/m Average measurement @ 2.1522GHz
Marker 3 = 35.36 dBuV/m Average measurement @ 2.5993GHz

5.11.13 Radiated Emissions gS165 9kHz to 150kHz

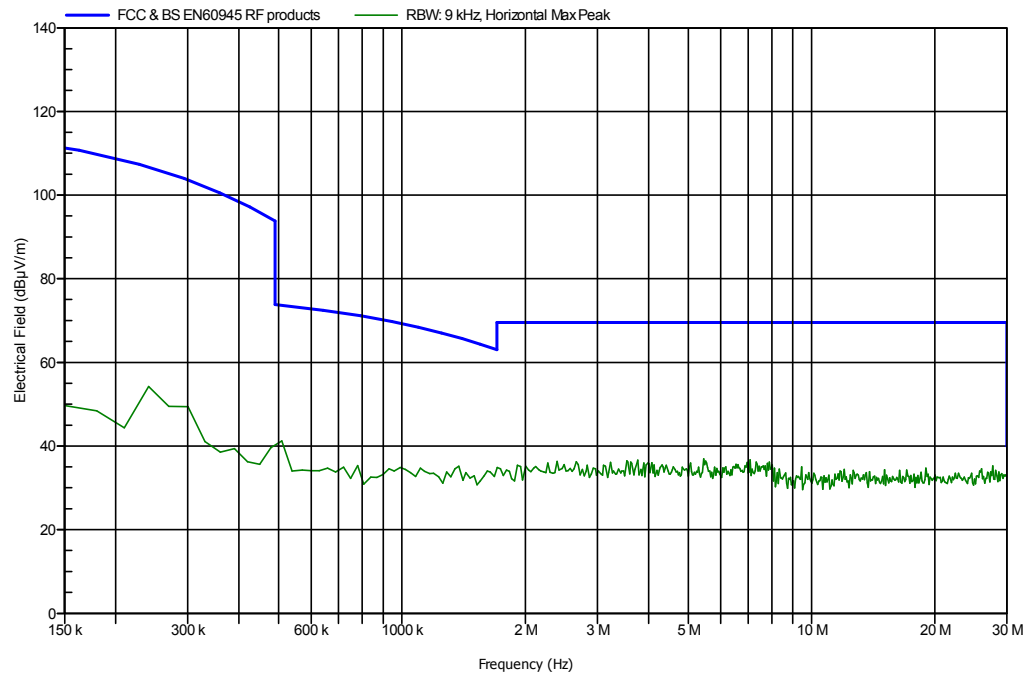


Loop Face On

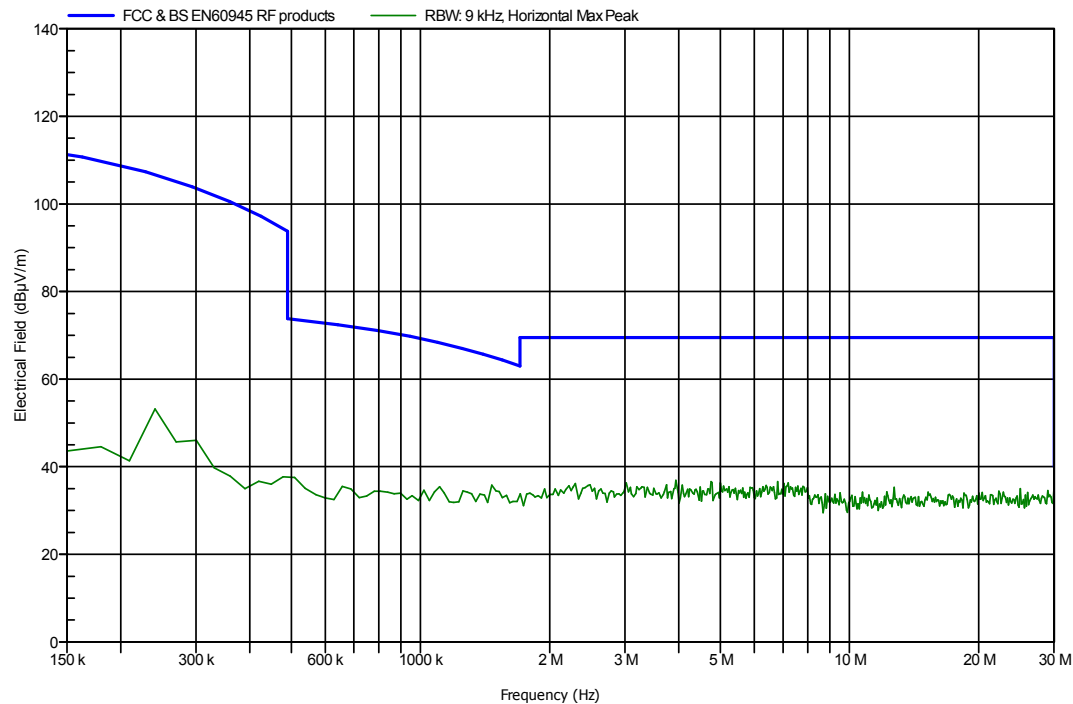


Loop Side On

5.11.14 Radiated Emissions gS165 150kHz to 30MHz

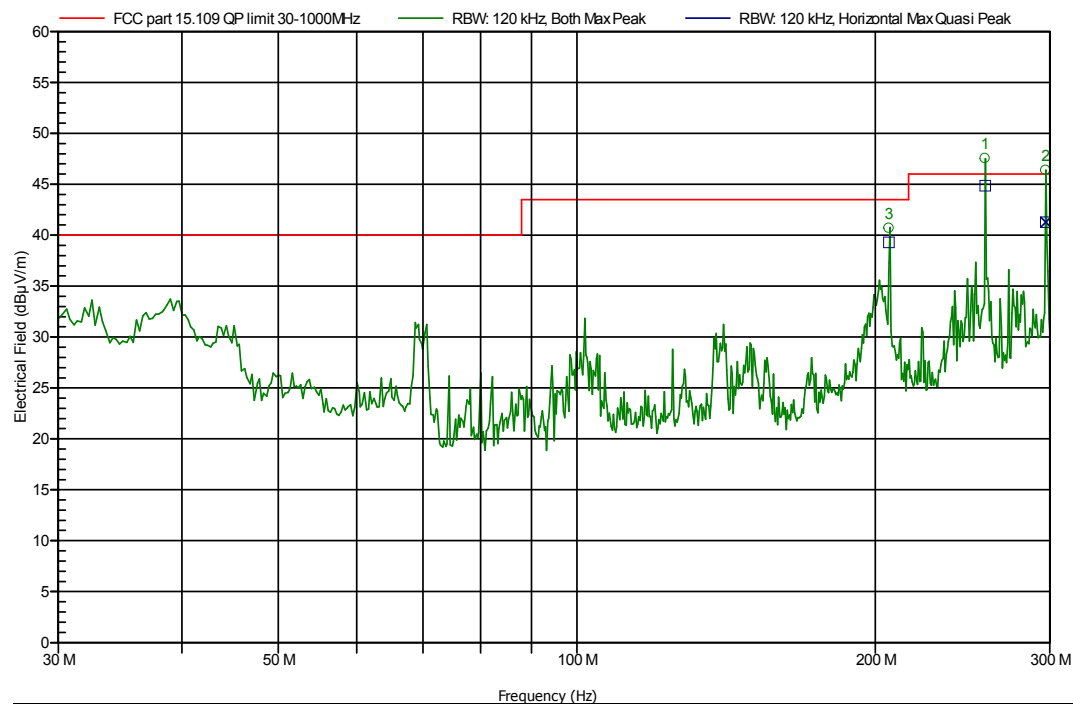


Loop Face On



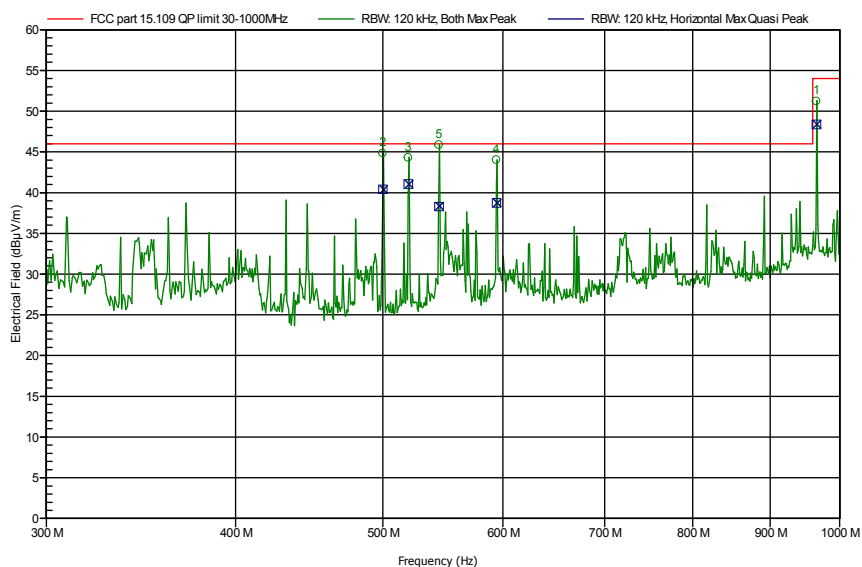
Loop Side On

5.11.15 Radiated Emissions gS165 30MHz to 300MHz



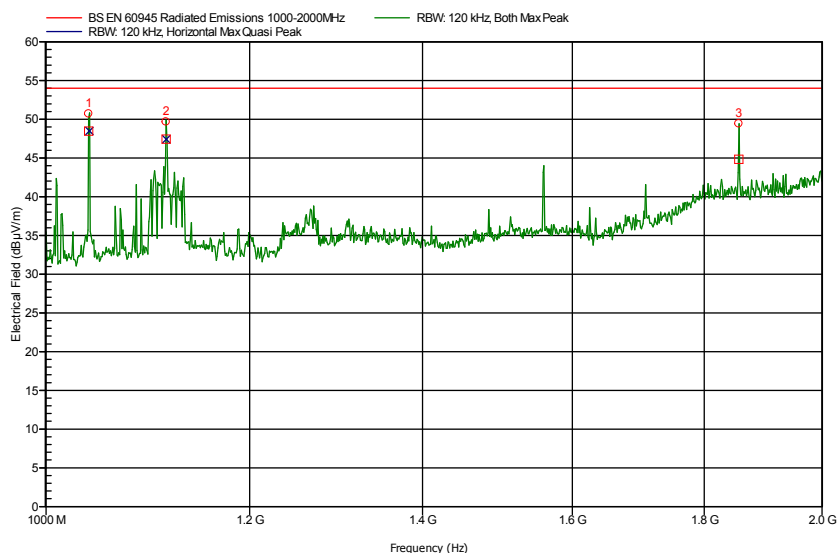
Nr	Frequency (MHz)	Peak Value (dBµV/m)	QP Value (dBµV/m)	QP Limit (dBµV/m)	Result	Angle	Height (m)	H/V
1	258.057	47.53	44.85	46	Pass	240 Degree	100 cm	V
2	297.005	46.37	41.27	46	Pass	112 Degree	100 cm	H
3	206.442	40.68	39.3	43.5	Pass	247 Degree	100 cm	V

5.11.16 Radiated Emissions gS165 300MHz to 1GHz



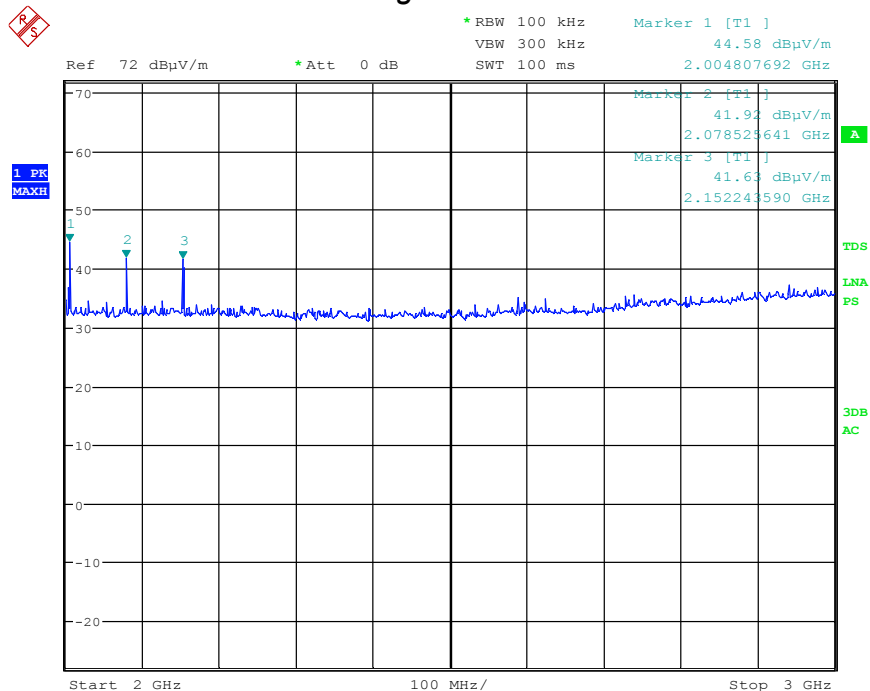
Nr	Frequency (MHz)	Peak Value (dBμV/m)	QP Value (dBμV/m)	QP Limit (dBμV/m)	Result	Angle	Height (m)	H/V
1	965.25	51.21	48.38	54	Pass	67 Degree	1.39 m	H
2	499.999	44.82	40.4	46	Pass	0 Degree	2 m	H
3	519.735	44.27	41.06	46	Pass	240 Degree	1.6 m	H
4	594.012	44.02	38.74	46	Pass	45 Degree	1.39 m	H
5	544.48	45.85	38.28	46	Pass	240 Degree	1.5 m	H
6	445.494	45.8	39.58	46	Pass	105 Degree	100 cm	H

5.11.17 Radiated Emissions gS16 1GHz to 2GHz



Nr	Frequency (GHz)	Peak Value (dBμV/m)	QP Value (dBμV/m)	QP Limit (dBμV/m)	Result	Angle	Height (m)	H/V
1	1.039	50.72	48.48	54	Pass	90 Degree	100 cm	H
2	1.114	49.65	47.42	54	Pass	90 Degree	100 cm	H
3	1.856	49.44	44.82	54	Pass	0 Degree	1.2 m	V

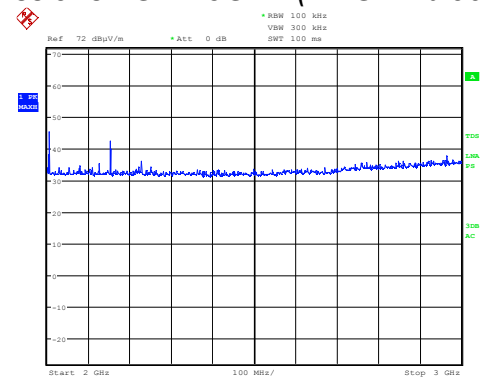
5.11.18 Radiated Emissions gS165 2GHz to 3GHz



Date: 19.JUN.2013 12:57:51

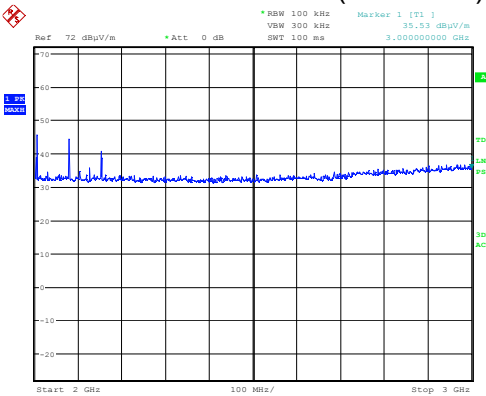
Marker 1 = 2.00487GHz 44.6dBuV/m AVE @ 177 Degrees
 Marker 2 = 2.07885GHz 32dBuV/m AVE @ 170 Degrees
 Marker 3 = 2.15321GHz 42dBuV/m AVE @ 173 Degrees

5.11.19 Radiated Emissions 2GHz-3GHz (2.4GHz block used on ESU40)



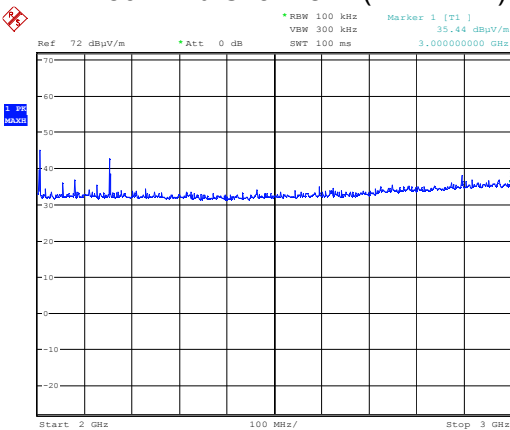
Date: 19.JUN.2013 13:26:03

802.11b Channel 1 (2402MHz)



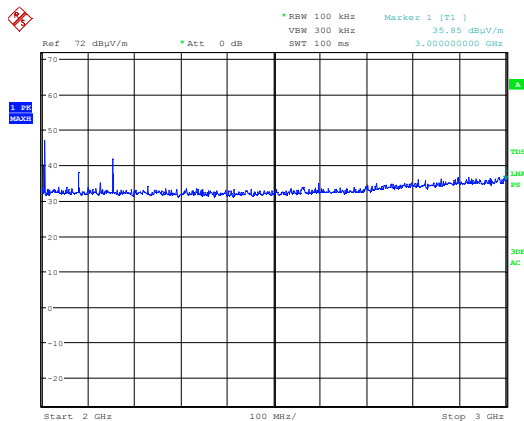
Date: 19.JUN.2013 13:32:52

802.11b Channel 7 (2442MHz)



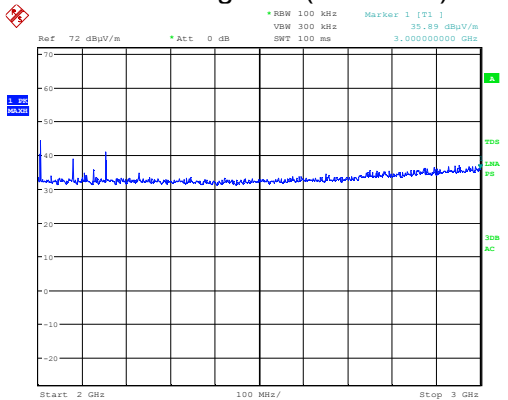
Date: 19.JUN.2013 13:39:38

802.11b Channel 11 (2472MHz)



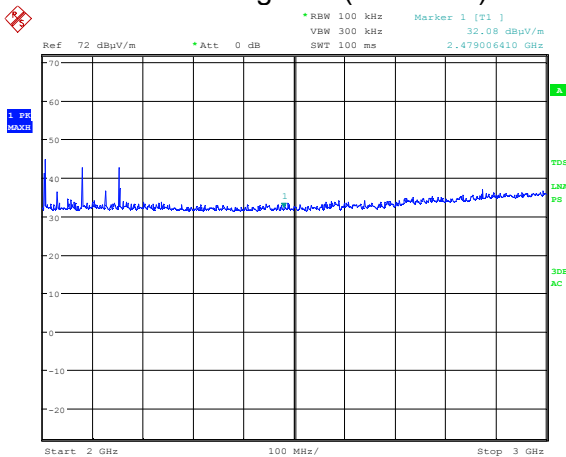
Date: 19.JUN.2013 13:54:34

802.11g Ch1 (2412MHz)



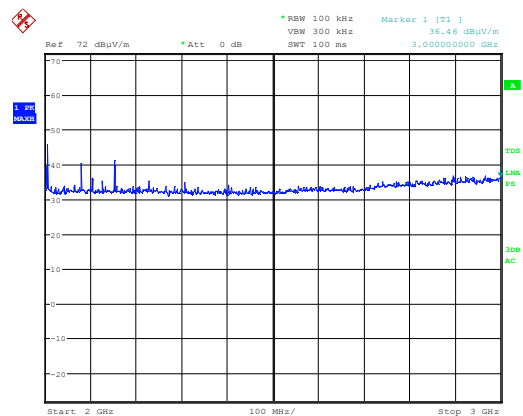
Date: 19.JUN.2013 14:00:20

802.11g Ch7 (2442MHz)



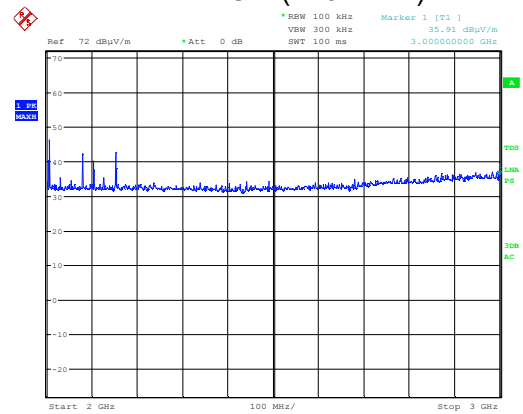
Date: 19.JUN.2013 14:43:49

802.11g Ch11 (2472MHz)



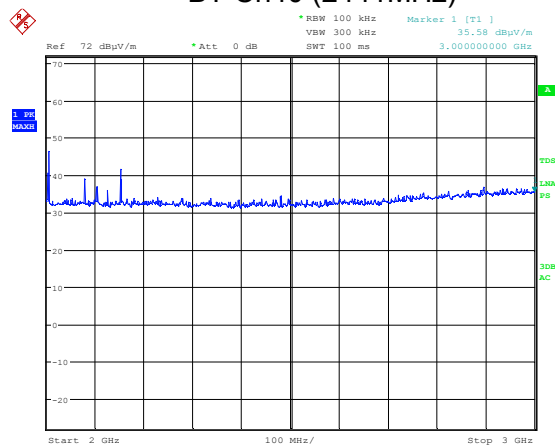
Date: 19.JUN.2013 15:03:35

BT Ch1(2402MHz)



Date: 19.JUN.2013 14:58:03

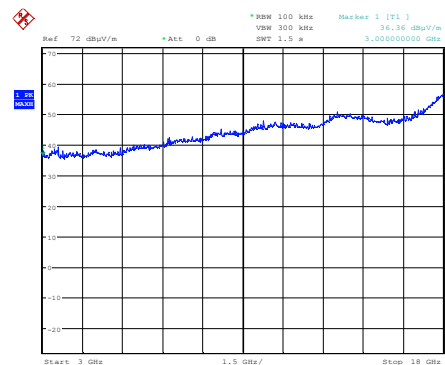
BT Ch40 (2441MHz)



Date: 19.JUN.2013 14:52:19

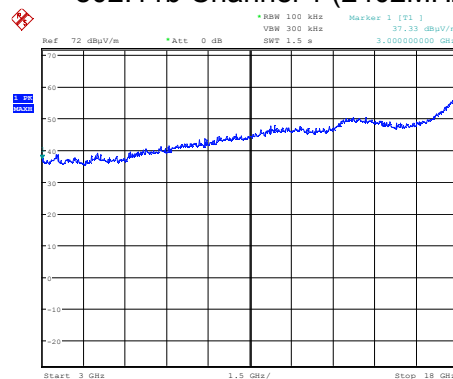
BT Ch79 (2479MHz)

5.11.20 Radiated Emissions 3GHz-18GHz



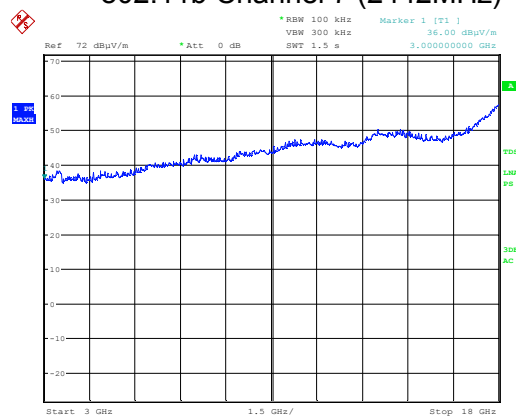
Date: 19.JUN.2013 13:29:43

802.11b Channel 1 (2402MHZ)



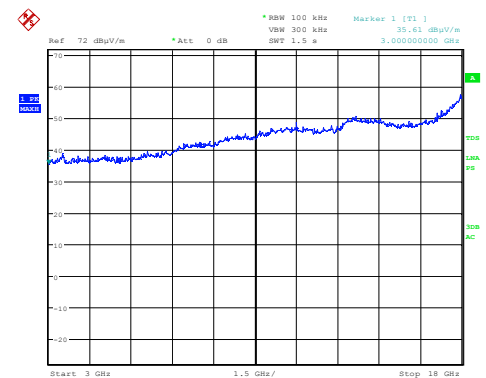
Date: 19.JUN.2013 13:36:04

802.11b Channel 7 (2442MHZ)



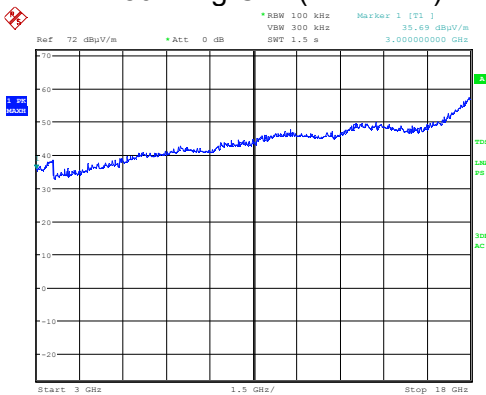
Date: 19.JUN.2013 13:44:28

802.11b Channel 11 (2472MHZ)



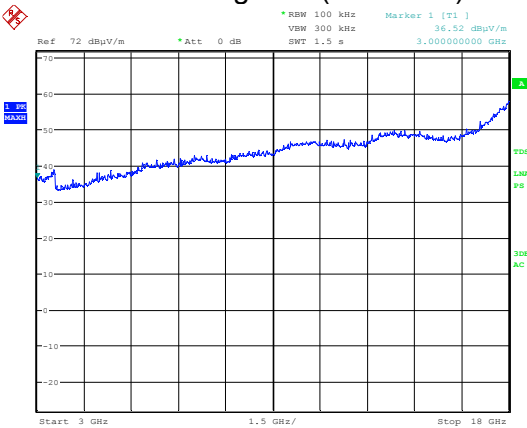
Date: 19.JUN.2013 13:57:35

802.11g Ch1 (2412MHz)



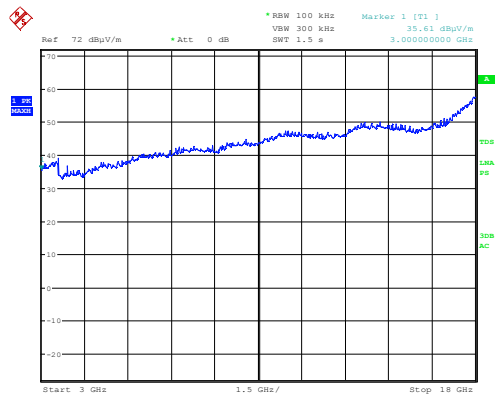
Date: 19.JUN.2013 14:21:37

802.11g Ch7 (2442MHz)



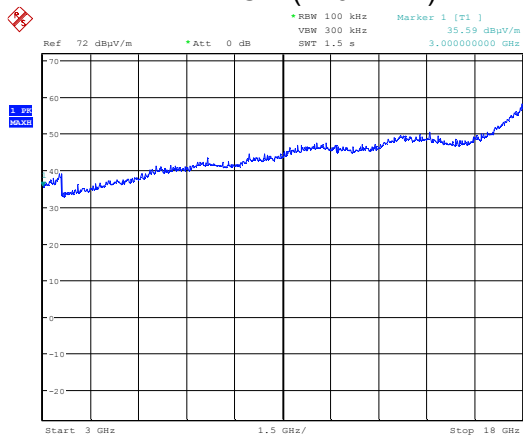
Date: 19.JUN.2013 14:46:34

802.11g Ch11 (2472MHz)



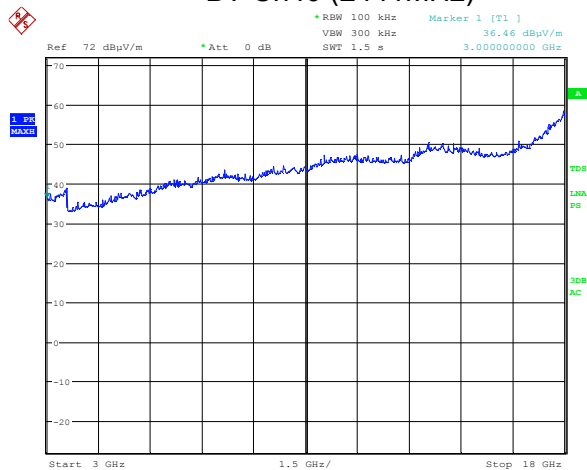
Date: 19.JUN.2013 15:06:02

BT Ch1(2402MHz)



Date: 19.JUN.2013 15:00:42

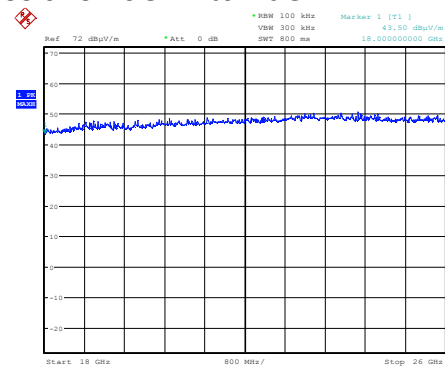
BT Ch40 (2441MHz)



Date: 19.JUN.2013 14:54:52

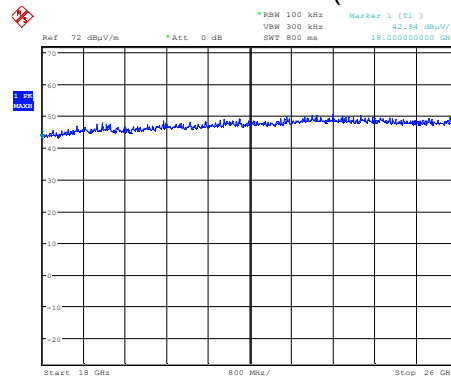
BT Ch79 (2479MHz)

5.11.21 Radiated Emissions 18GHz to 26GHz



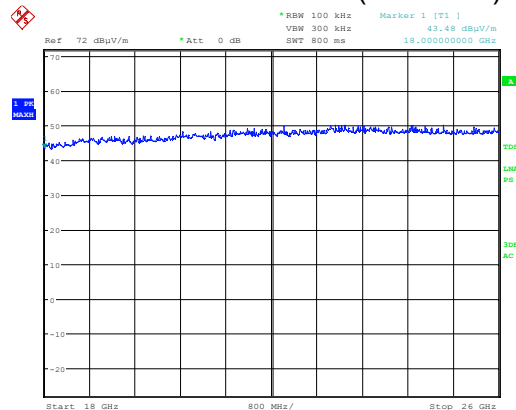
Date: 19 JUN 2013 15:54:02

802.11b Channel 1 (2402MHz)



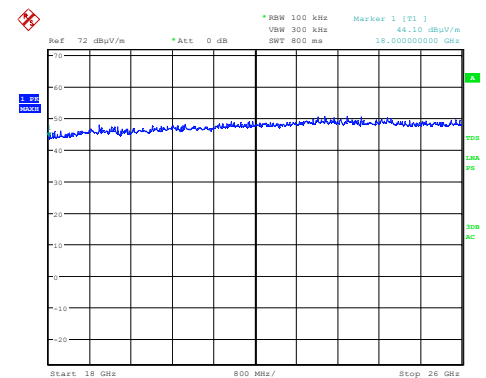
Date: 19 JUN 2013 15:55:57

802.11b Channel 7 (2442MHz)



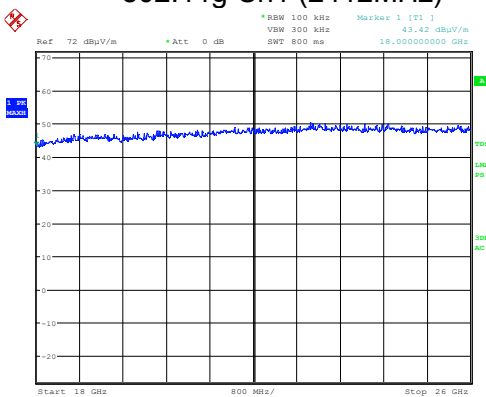
Date: 19 JUN 2013 15:57:47

802.11b Channel 11 (2472MHz)



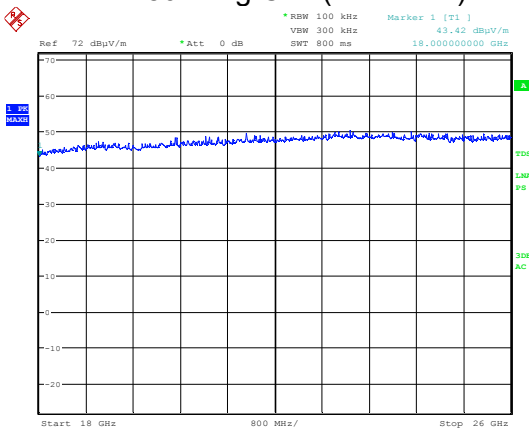
Date: 19.JUN.2013 15:59:57

802.11g Ch1 (2412MHz)



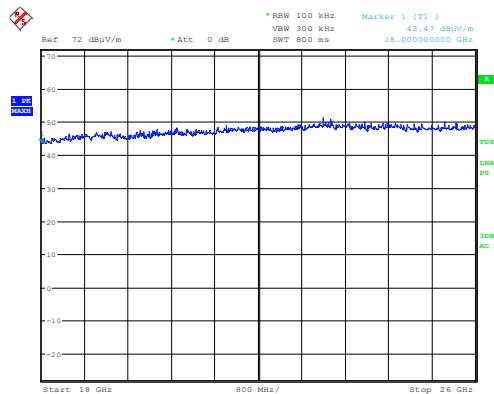
Date: 19.JUN.2013 16:01:34

802.11g Ch7 (2442MHz)



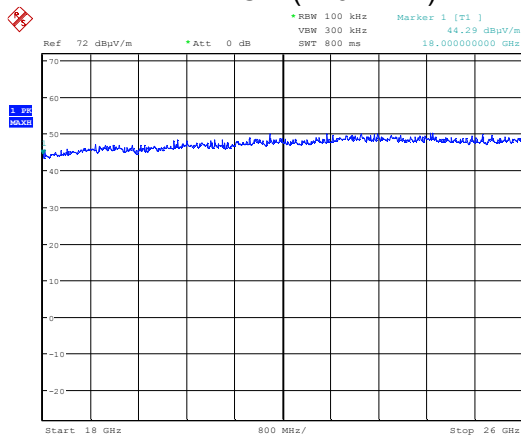
Date: 19.JUN.2013 16:03:21

802.11g Ch11 (2472MHz)



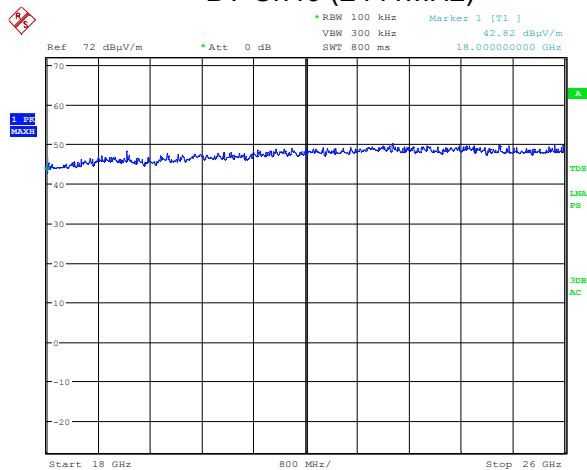
Date: 19.JUN.2013 16:11:27

BT Ch1(2402MHz)



Date: 19.JUN.2013 16:09:45

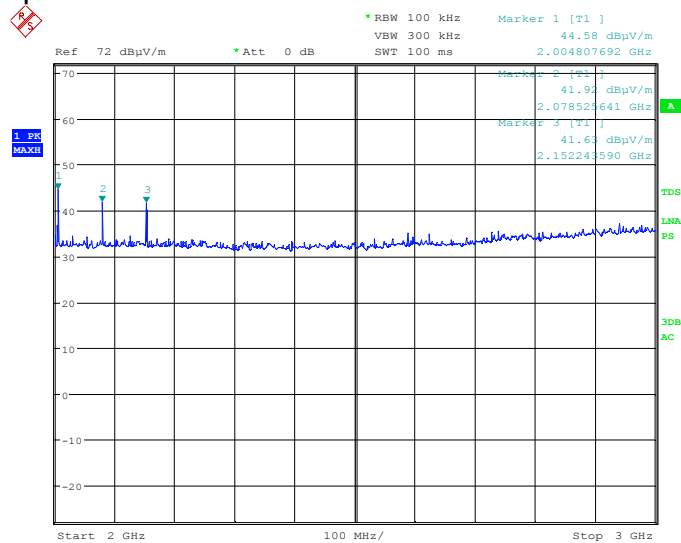
BT Ch40 (2441MHz)



Date: 19.JUN.2013 16:07:39

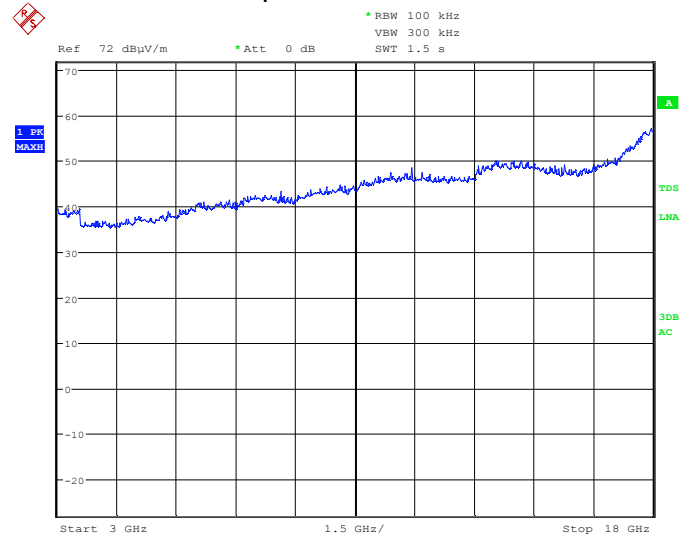
BT Ch79 (2479MHz)

5.12 Receiver Spurious Emissions



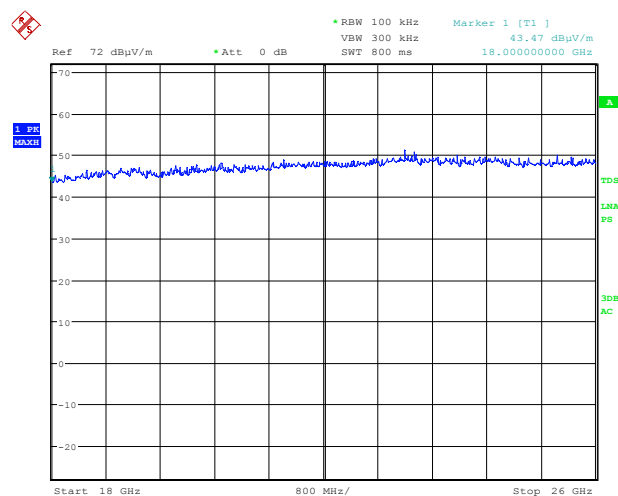
Date: 19.JUN.2013 12:57:51

Receiver spurious emissions 2GHz-3GHz



Date: 19.JUN.2013 13:07:15

Receiver Spurious Emissions 3GHz-18GHz



Date: 19.JUN.2013 16:11:27

Receiver Spurious Emissions 18GHz to 26GHz

6 List of Test Equipment

Test Equipment Type	Manufacturer and Type Number	Serial Number	Cal No.	Cal Due
Digital Multimeter	Fluke 175	97460092	2248	7 th Nov 2013
EMI Receiver 20Hz to 26.5GHz	Rohde & Schwarz ESCI	100416	001692	22 nd Aug 2013
Active Loop Antenna 9kHz - 30MHz	Chase EMC HLA6120	1122	00442	14 th Feb 2014
Loop Antenna PSU/Charger	Chase EMC CBP9721	N/A	02671	N/A
Antenna Horn 1-18GHz	Chase BBHA9120D	9120D-578	01719	2 nd Nov 2014
Antenna Horn 18GHz-26GHz	Credowan 20-R-2843-0007	36755	482	16 th Nov 2014
Antenna 30MHz-3GHz	Chase CBL6141	22932	01802	23 rd Jul 2013
Antenna Mast (Site 1)	Inn-co GmbH MM4000	MM4000/056/13750 806/L	02075	N/A
Turntable (Site 1)	Inn-co GmbH DS1200S	DS1200S/175/1375 0806/L	02076	N/A
Mast/Turntable Controller (Site 1)	Inn-co GmbH Co 2000	CO/2000/359/137/5 0806/L	02077	N/A
EMI Receiver 20Hz to 40GHz	Rohde & Schwarz ESU40	100017	01721	22 nd Mar 2014
Power Supply Unit	Palstar PS30M	G290775401	2020	N/A

In accordance with UKAS requirements, all measuring equipment is on a calibration cycle.