THE STANDARDS INSTITUTION OF ISRAEL

Electronics & Telematics Laboratory

Test Report No. 9312308467

***Applicant*: LifeWatch Technologies Ltd.**

Equipment Under Test:

Vital Signs Patch

Models: ***CG1101B, CG1101U and CG1101UC***

FCC ID: ***SQ6VSPS***

From The Standards Institution
Of Israel
Industry Division
Electronics & Telematics Laboratory
EMC Branch

ACLASS®
ISO/IEC 17025 Accredited for Testing

ACLASS Accreditation Services

Certificate Number: AT-1359

Test Report No.: 9312308467 **Page 1 of 45 pages**

Title: Vital Signs Patch
Model: CG1101B, CG1101U and CG1101UC **FCC ID: SQ6VSPS**

Applicant:	LifeWatch Technologies Ltd.
Address:	2 Pekeris St., POB 7670202, Rehovot, Israel
Sample for test selected by:	The customer
The date of tests:	22 April, 1 May 2013

Description of Equipment Under Test (EUT):	Vital Signs Patch.
Models:	CG1101B, CG1101U and CG1101UC
Software version of brain unit	0.4.0.1
Hardware version of brain unit	MAL-00021 rev.0B
Serial Number:	N/A
Manufactured by:	LifeWatch Technologies Ltd.

Reference Documents:

- CFR 47 FCC: Rules and Regulations; Part 15. "Radio frequency devices";
  Subpart B: "Unintentional radiators" (2009).
  Section 15.109. "Radiated emission limits".
  Subpart C: "Intentional radiators" (2009).
  Section 15.209. "Radiated emission limits, general requirements".
  "Radiated Emission Limits, Additional Provisions";
  Section 15.249. "Operation within the bands 902 – 928 MHz, 2400 – 2483.5 MHz, 5725 – 5875 MHz and 24.0 - 24.25 GHz".

This Test Report contains 45 pages and may be used only in full.	This Test Report applies only to the specimen tested and may not be applied to other specimens of the same product.

Table of Contents

1. EUT Description and operation

1.1. General description:

* Note: the customer supplied all information in clause below.

The EUT, Vital Signs Patch system, is intended to be used by patients for the continuous, non-invasive monitoring of ECG, Heart Rate (HR), respiration, body temperature, and blood saturation when prescribed by a physician or other qualified healthcare professional.
Three Patch model were presented for tests: CG1101B, CG1101U and CG1101UC.
A **Main Processing Unit** (Brain) plugs into a cradle on the Patch with a 16-pin connector. The Brain receives the power from the Patch's battery. The data from the sensors are transmitted using the 16-pin connector. The Brain transmits data to the Gateway application using the RF component. The patient can manually trigger an event by the pressing a button on the Brain. In addition, the Brain contains a 32MB Flash memory chip that can store 8-10 hours of data in case of communication failure with the Gateway.

Type of modulation:	GFSK
Antenna type:	Internal on PCB

The EUT power source: 3.0 VDC Lithium battery.
The EUT external views are presented in photo # 1-5.

2. Test summary

Parameter	FCC Part 15 Reference paragraph	Verdict
Radiated emission test on unintentional radiator.	Subpart B Section 15.109	Comply
Test of field strength emission from intentional radiators	"Radiated Emission Limits, Additional Provisions"; Section 15.249.	Comply
Conducted emission test.	Subpart C Section 15.207	N/A

Electronics & Telematics Laboratory

July 2013

Name: Eng. Yuri Rozenberg
Position: Head of EMC Branch

Name: Michael Feldman

Position: Test Technician

Measurement uncertainty.

Were relevant, the following measurement uncertainty level have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:
This uncertainty represents an expended uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test description	Expanded uncertainty
Radiated emissions in the open field test site at 3 m measuring distance:	
30 MHz – 1.0 GHz	2 Uc (E) = ± 4.32 dB
1.0 GHz – 18 GHz	2 Uc (E) = ± 4.47 dB

Photo 1. Brain external front and rear view

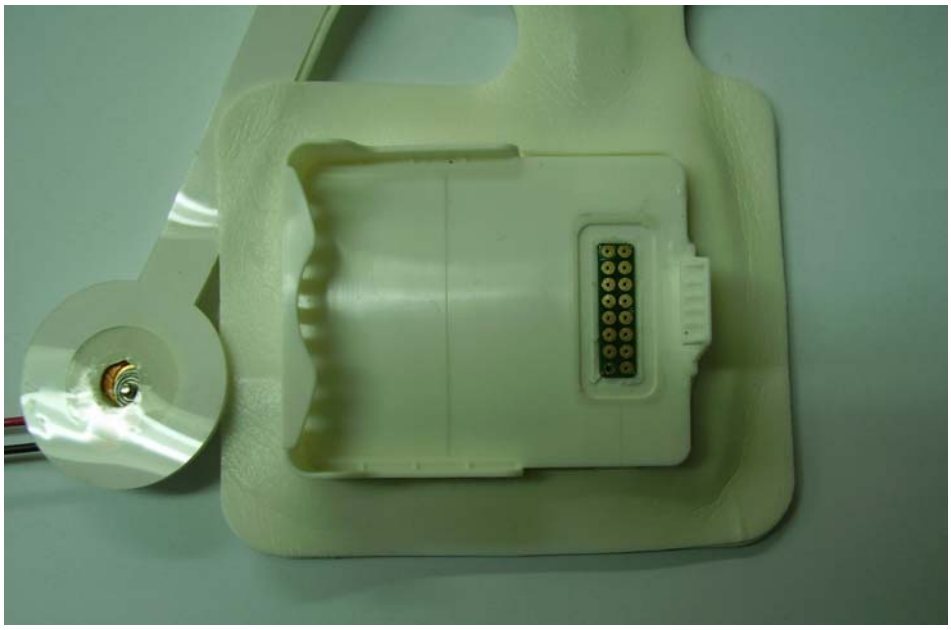


Photo 2. Patch external view

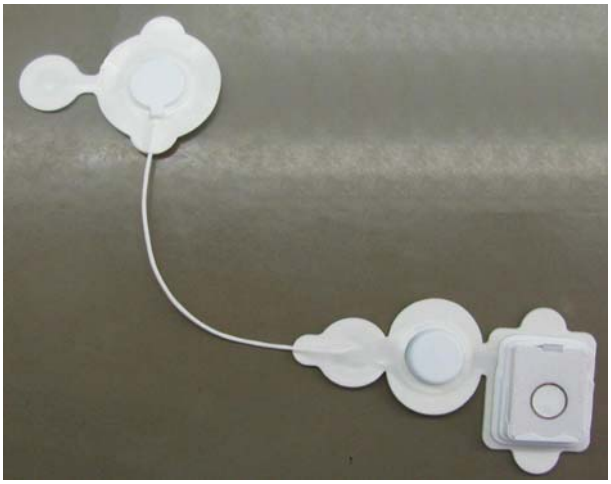


Photo 3. Model CG-1101B.

Photo 4. Model CG-1101U.

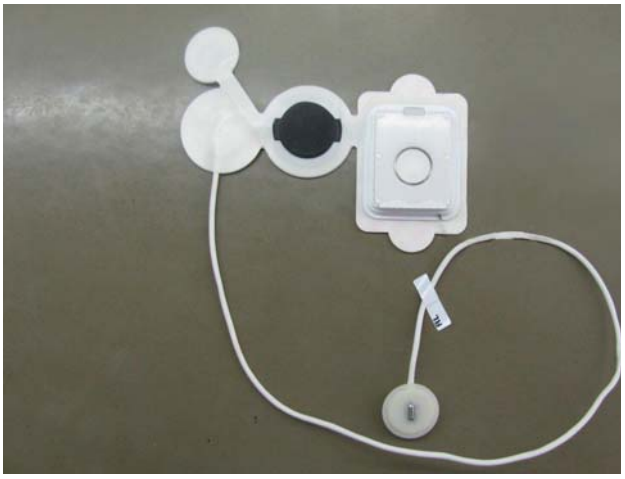


Photo 5. Model CG-1101UC.

2.1. Potential emission sources:

The potential emission sources are detailed in Table 1.

Table 1. Potential emission sources

Frequency	Location
16.384 MHz	Microcontroller oscillator
16.0 MHz	RF Lo oscillator
2404 - 2480 MHz	RF signal

2.2. EUT setup and operation:

Respective tests were performed in transmission (Tx) and receive modes.
Test was performed for three patch models: CG1101B, CG1101U and CG1101UC.
Radiated emission test was performed at three points - low 2404 MHz, middle 2440 MHz and top 2480 MHz of 2400 – 2483.5 MHz frequency band.
Measurements of transmitter were performed in continue transmit mode.

3. Measurements, examinations and derived results

3.1. Location of the Test Site:

Preliminary radiated test was conducted at the EMC laboratory of the Standards Institution of Israel in Tel-Aviv. Final tests were conducted in an Open Area Test Site located at Kibbutz Native Halamed Hai in Emek HaEla, Israel.

3.2. Test condition:

Temperature: 22 °C. Humidity: 47 %. Atmospheric pressure: 1009 mbar.

3.3. Initial visual check and functional test:

Initial visual check and brief built - in- test of the EUT was performed before testing.
No external damages were found.

3.4. Radiated emission test.

3.4.1. General:

Per FCC Part 15 Subpart C Sections 15.209, 15.249.

- Initial scans were made using a peak detector but still using the appropriate ANSI IF bandwidth.
- A tolerance limit was set 10 dB below the specification limit. Levels above the tolerance limit were retested using the Peak, QP and Average detectors.

3.4.2. Preliminary radiated emission tests:

Preliminary investigation was performed from the lowest radio frequency signal generated in the equipment up to ten harmonic of a carrier frequency. Test was conducted in a semi-anechoic chamber at distance 1 and 3 meters. The EUT was setup in its typical configuration and operated in its various modes. For each mode of operation the frequency spectrum was monitored. EUT configuration, cable configuration and mode of operation, which produced the maximum level of emission, were documented. A list of frequencies to be tested was prepared.

3.4.3. Final measurements:

The final radiated emission measurements were performed at the Open Area Test Site at the 3 and 1m test distances. The EUT was operated as described above. The EUT was installed on a turn - table. Biconilog and Double Ridged Guide antennas were used. The measurements were performed at each frequency that founded previously at which the signal level was 10 dB below the limit or less. The levels were maximized by rotating turntable through 360°, changing antenna height and changing antenna-to-EUT polarization from vertical to horizontal. The worst case result was noted in tables.

3.4.4. Radiated emission test results:

Final result measurements in transmit mode are presented in tables and plots ## 1 - 73 in section 3.5.5.

3.5. Test of field strength emission from intentional radiator.

3.5.1. General:

Per FCC Part 15 Subpart C clause 15.249.

3.5.2. Requirements:

The field strength emissions from intentional radiators operated according to section 15.249 (a) shall comply with the follow limits .

Table 2. Section 15.249 limit.

Specified field strength limit of Fundamental dBμV/m	Specified field strength limit of Harmonics dBμV/m
94.0	54.0

Note: The field strength of emissions radiated on any frequency outside of the specified band, except for harmonics shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emissions limits in section 15.209 whichever is lesser attenuation.

3.5.3. Test procedure:

The test was conducted according to clause 15.249.

3.5.4. Test summary:

The tested unit meets the standard requirement.

3.5.5. Test results:

Radiated emission result at carrier frequencies.

CG1101B

Carrier frequency MHz	Antenna polarization.	Peak Ampl. dBµV/m	Specified limit dBµV/m	Margin dB	Reference to plot #
2404.0	Vertical	85.0	94.0	9.0	1
2440.0	Vertical	88.0	94.0	6.0	2
2480.0	Vertical	88.9	94.0	5.1	3

CG1101U

Carrier frequency MHz	Antenna polarization.	Peak Ampl. dBµV/m	Specified limit dBµV/m	Margin dB	Reference to plot #
2404.0	Vertical	86.8	94.0	7.2	4
2440.0	Vertical	85.8	94.0	8.2	5
2480.0	Vertical	86.4	94.0	7.6	6

CG1101UC

Carrier frequency MHz	Antenna polarization.	Peak Ampl. dBµV/m	Specified limit dBµV/m	Margin dB	Reference to plot #
2404.0	Vertical	84.6	94.0	9.4	7
2440.0	Vertical	87.0	94.0	7.0	8
2480.0	Vertical	87.9	94.0	6.1	9

Spurious emission result.

CG1101B

Carrier frequency 2404 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2399	Vertical	51.2	74.0	22.8	46.4	54.0	7.6	15
2994	Vertical	47.3	74.0	26.7	42.5	54.0	11.5	16

Carrier frequency 2440 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2400	Vertical	46.3	74.0	27.7	41.5	54.0	12.5	21
2939	Vertical	48.6	74.0	25.4	43.8	54.0	10.2	22

Carrier frequency 2480 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2400	Vertical	45.9	74.0	28.1	41.1	54.0	12.9	27
2483.6	Vertical	50.2	74.0	23.8	45.4	54.0	8.6	28
2903	Vertical	48.7	74.0	25.3	43.9	54.0	10.1	29

*Average amplitude result was calculated from measured Peak value – Average factor.
Average factor = 20 Log Tx on/100msec = 20 Log [57.5 ms/100ms] = -4.8 dB
For transmitter average factor calculation see plot # 74.

CG1101U

Carrier frequency 2404 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2399	Vertical	48.6	74.0	25.4	43.8	54.0	10.2	35
2971	Vertical	49.9	74.0	24.1	45.1	54.0	8.9	36

Carrier frequency 2440 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2347	Vertical	46.0	74.0	28.0	41.2	54.0	12.8	41
2988	Vertical	48.8	74.0	25.2	44.0	54.0	10.0	42

Carrier frequency 2480 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2116	Vertical	45.6	74.0	28.4	40.8	54.0	13.2	47
2483.5	Vertical	52.8	74.0	21.2	48.0	54.0	6.0	48
2939	Vertical	49.3	74.0	24.7	44.5	54.0	9.5	49

*Average amplitude result was calculated from measured Peak value – Average factor.
Average factor = 20 Log Tx on/100msec = 20 Log [57.5 ms/100ms] = -4.8 dB
For transmitter average factor calculation see plot # 74.

CG1101UC

Carrier frequency 2404 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2399	Vertical	50.0	74.0	22.8	45.2	54.0	8.8	55
2886	Vertical	48.3	74.0	25.7	43.5	54.0	10.5	56

Carrier frequency 2440 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2400	Vertical	47.2	74.0	26.8	42.4	54.0	11.6	61
2923	Vertical	48.7	74.0	25.3	43.7	54.0	10.1	62

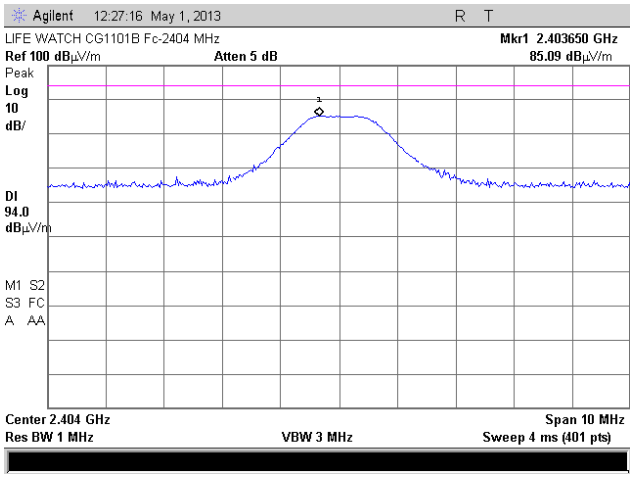
Carrier frequency 2480 MHz.

Freq. MHz	Antenna pol. V/H	Peak Ampl dBμV/m	Peak Ampl limit, dBμV/m	Margin dB	*Avg Ampl. dBμV/m	Specified @3m limit, dBμV/m	Margin dB	Ref. to plot #
2113	Vertical	45.7	74.0	28.3	40.9	54.0	13.1	67
2483.5	Vertical	52.8	74.0	21.2	48.0	54.0	6.0	68
2965	Vertical	46.0	74.0	28.0	41.2	54.0	12.8	69

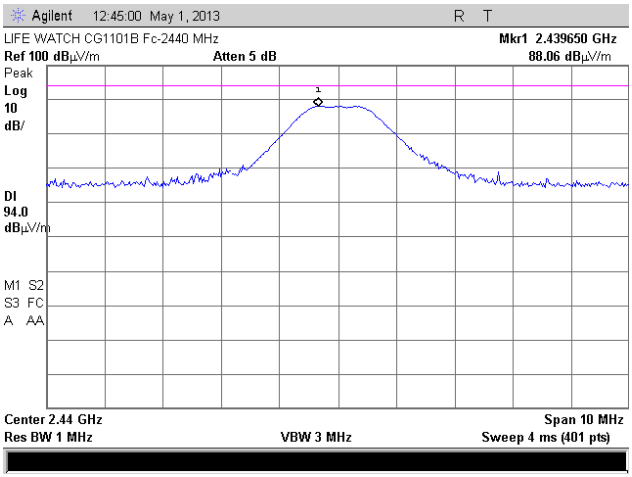
*Average amplitude result was calculated from measured Peak value – Average factor.
Average factor = 20 Log Tx on/100msec = 20 Log [57.5 ms/100ms] = -4.8 dB
For transmitter average factor calculation see plot # 74.

Fundamental frequency test.

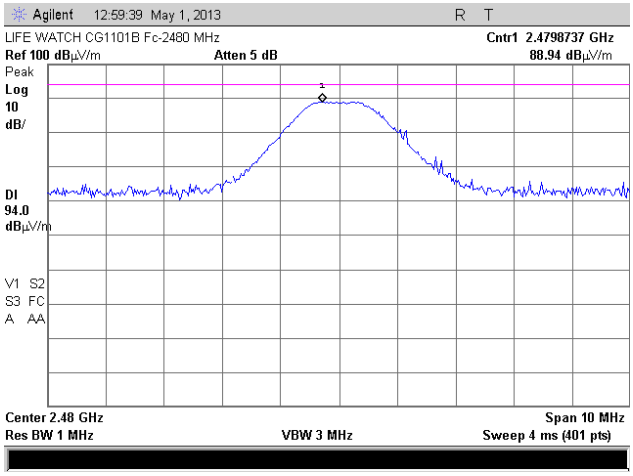
CG1101B



Plot # 1.

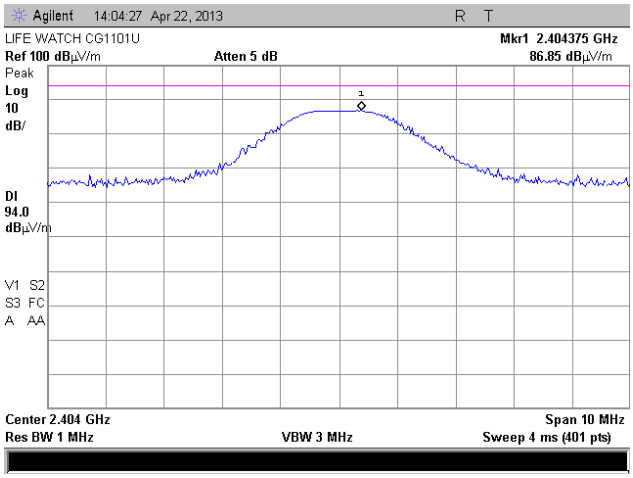


Plot # 2.

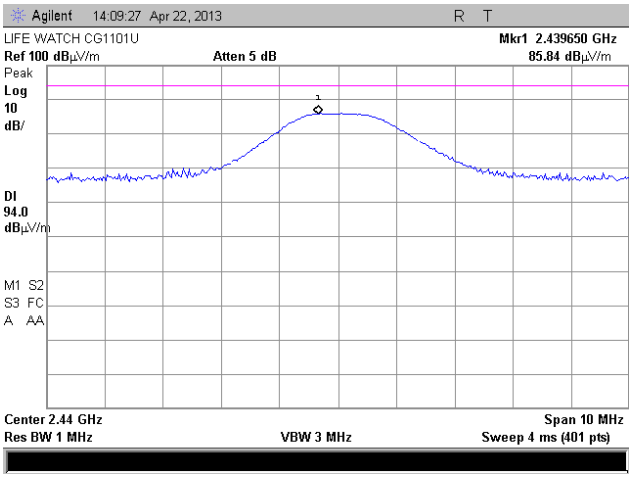


Plot # 3.

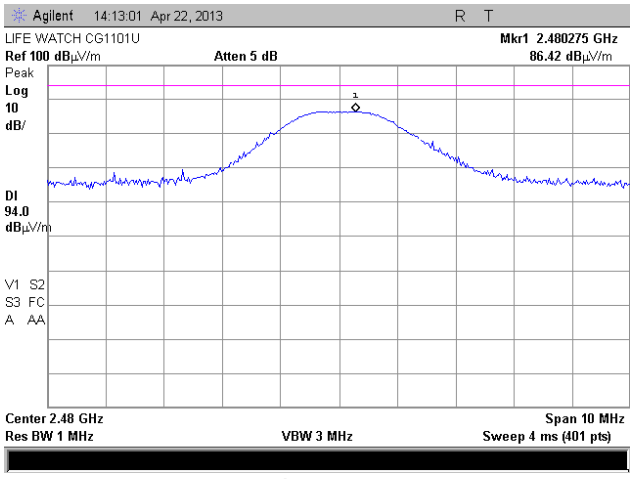
CG1101U



Plot # 4.

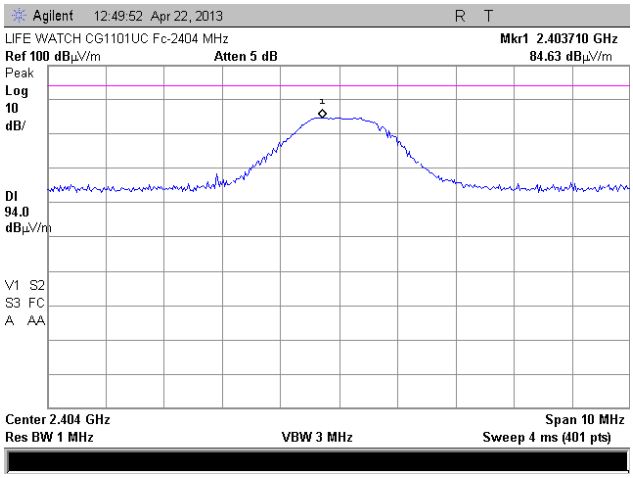


Plot # 5.

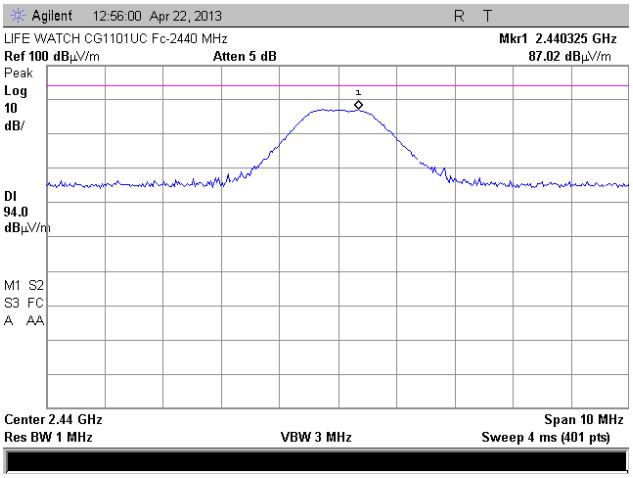


Plot # 6.

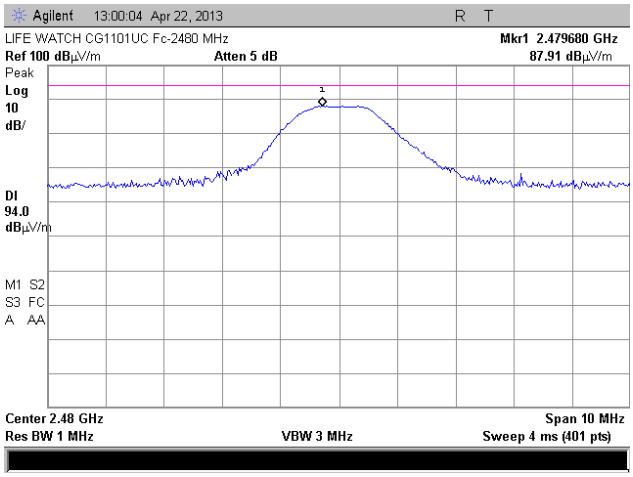
CG1101UC



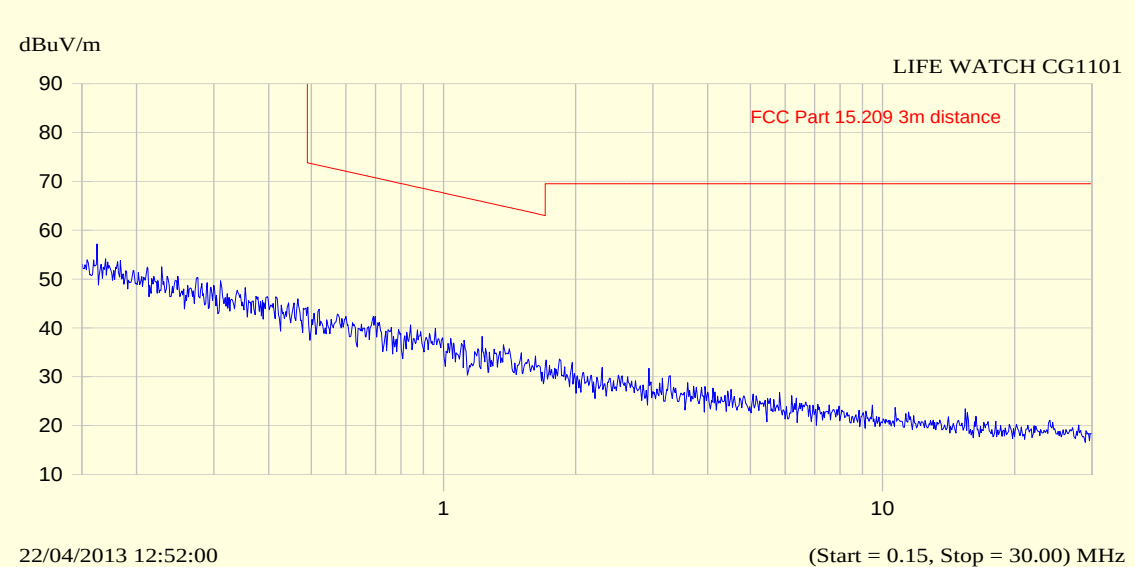
Plot # 7.



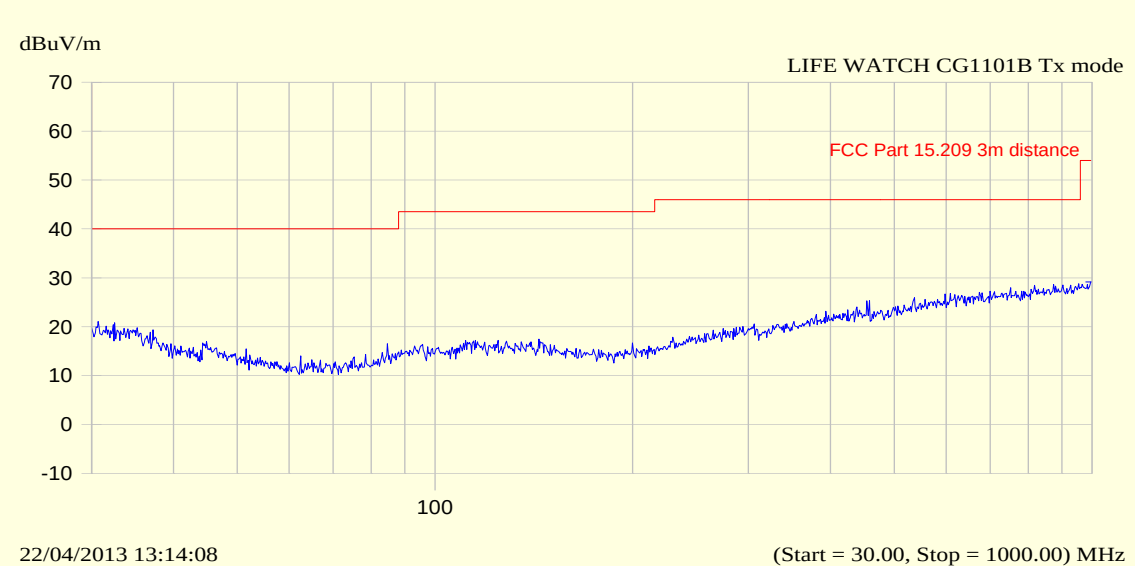
Plot # 8.



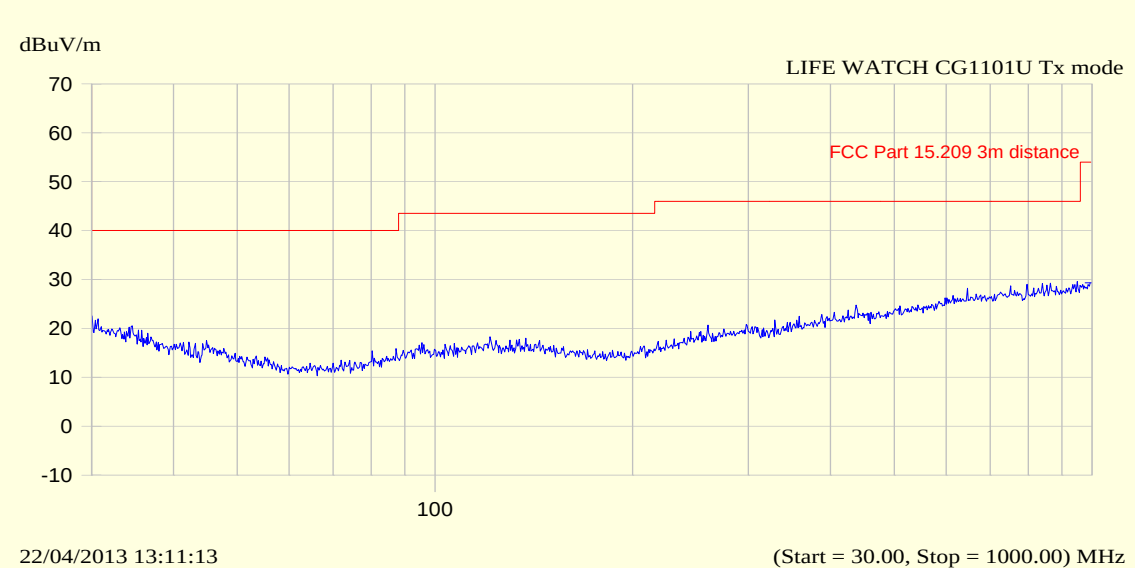
Plot # 9.



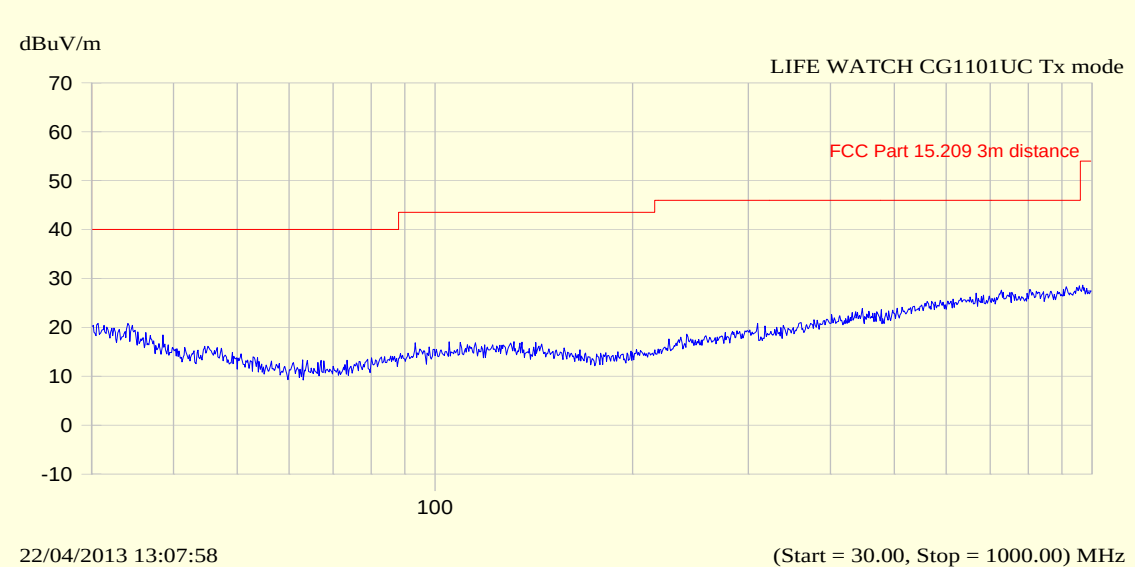
Plot # 10. Spurious emissions scan 0.15 MHz – 30 MHz.



Plot # 11. Spurious emissions scan 30 MHz – 1000 MHz. Patch CG1101B



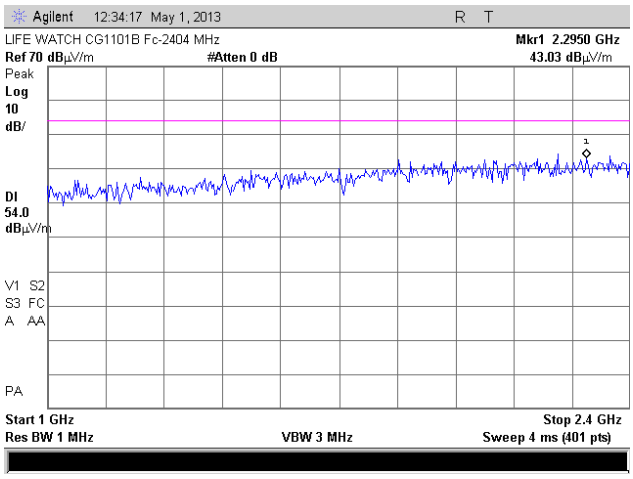
Plot # 12. Spurious emissions scan 30 MHz – 1000 MHz. Patch CG1101U



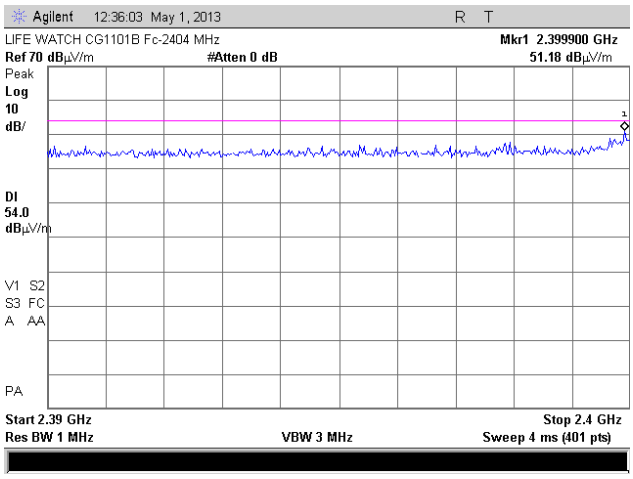
Plot # 13. Spurious emissions scan 30 MHz – 1000 MHz. Patch CG1101UC.

CG1101B

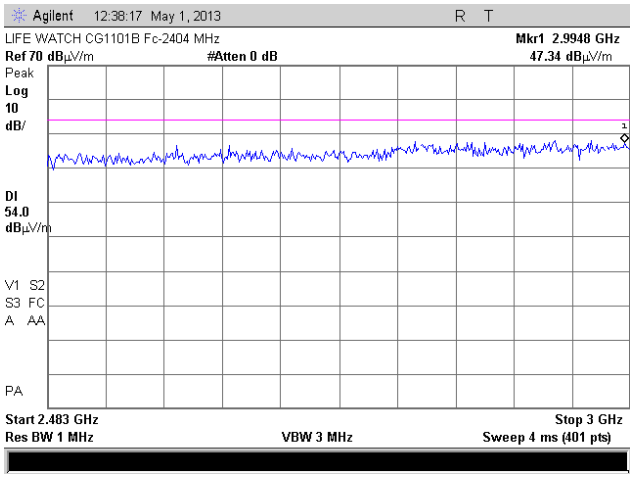
Carrier frequency 2404 MHz.



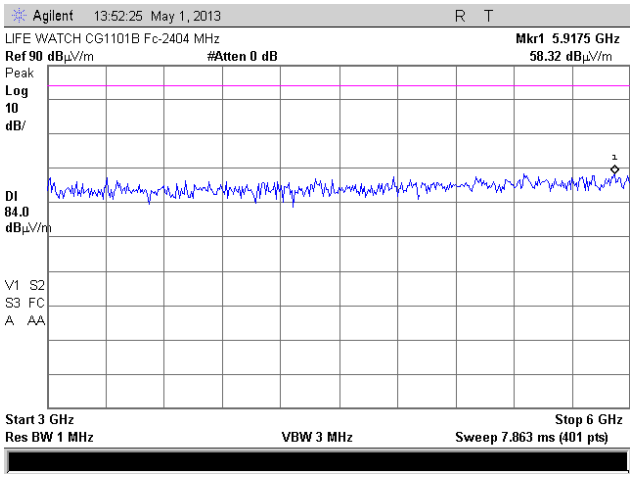
Plot # 14.



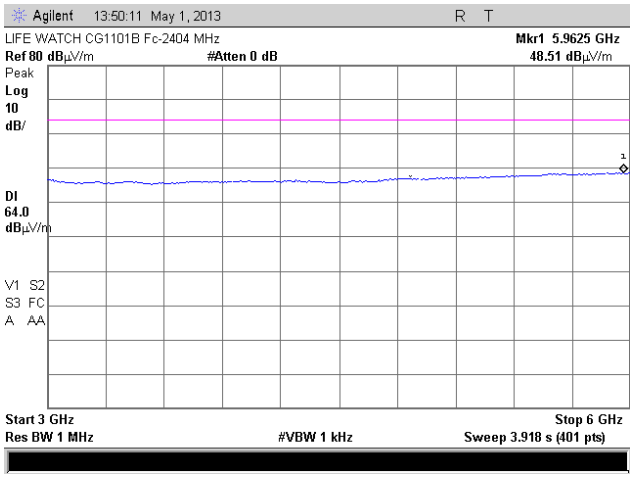
Plot # 15.



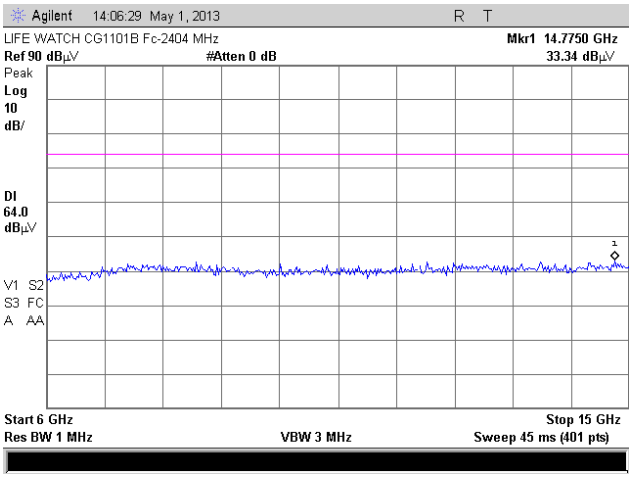
Plot # 16.



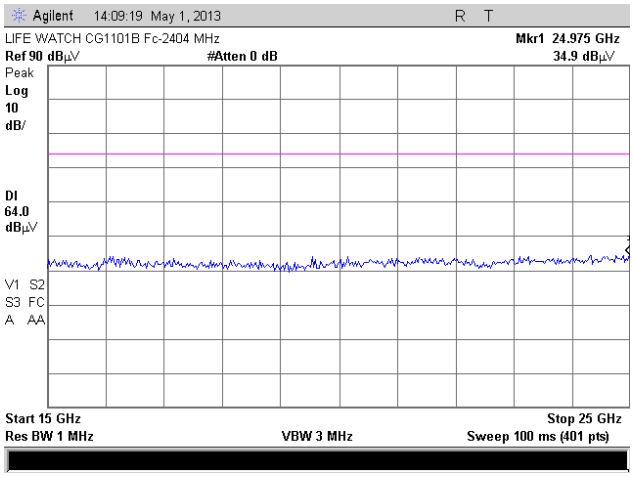
Plot # 17. Test distance =1m



Plot # 18. Test distance =1m

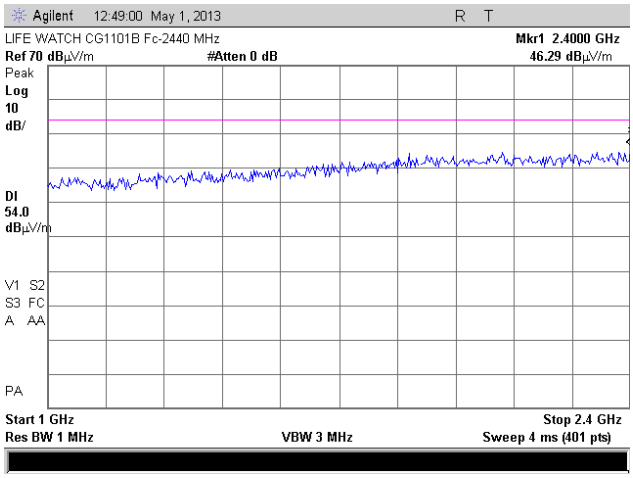


Plot # 19. Test distance =1m

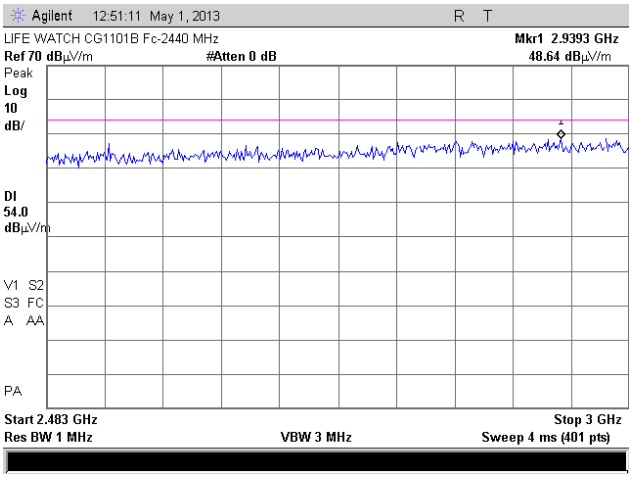


Plot # 20. Test distance =1m

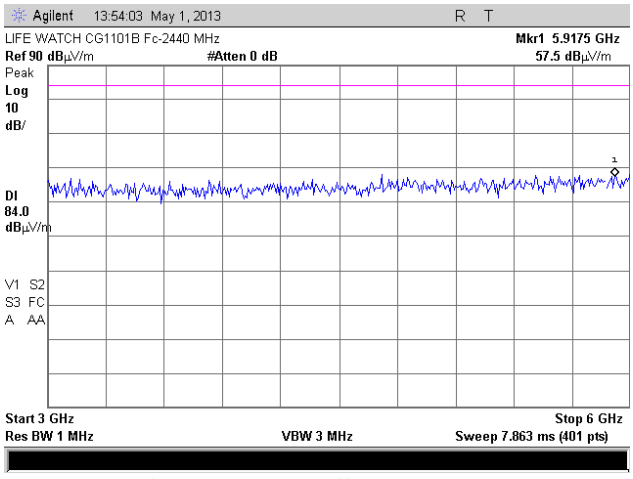
Carrier frequency 2440 MHz.



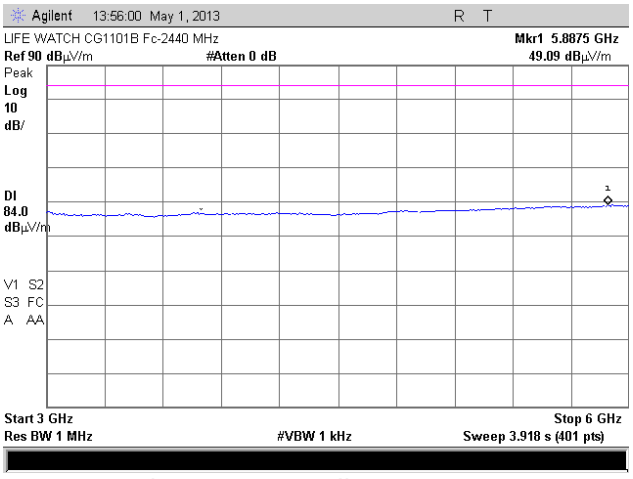
Plot # 21.



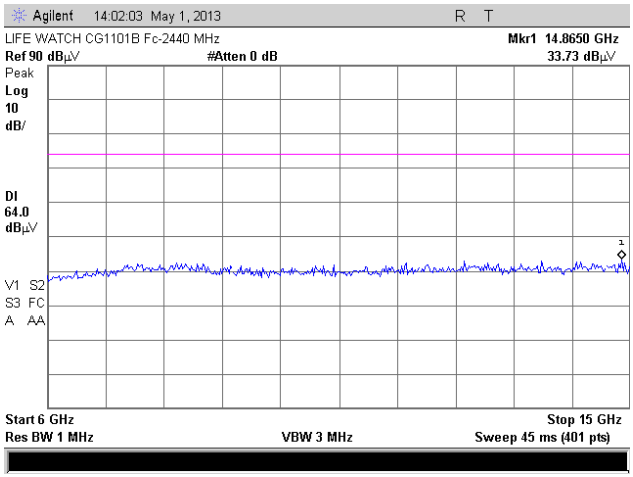
Plot # 22.



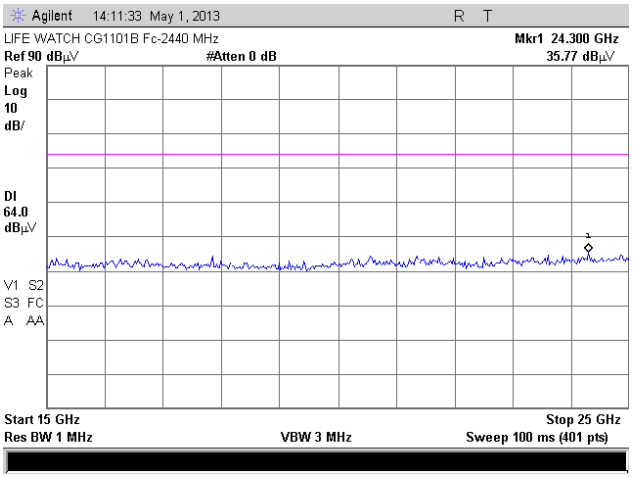
Plot # 23. Test distance =1m



Plot # 24. Test distance =1m

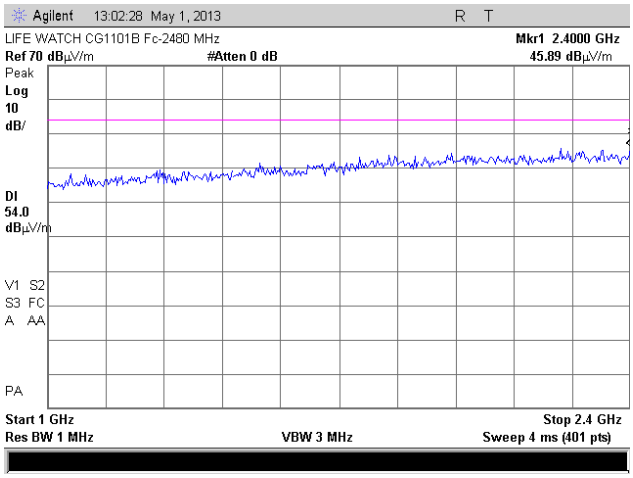


Plot # 25. Test distance =1m

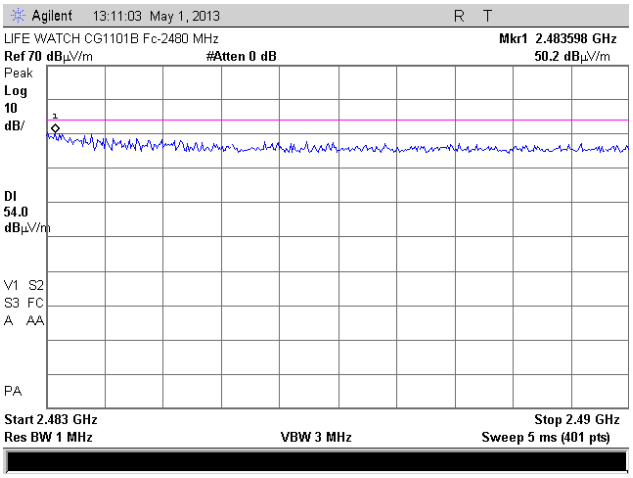


Plot # 26. Test distance =1m.

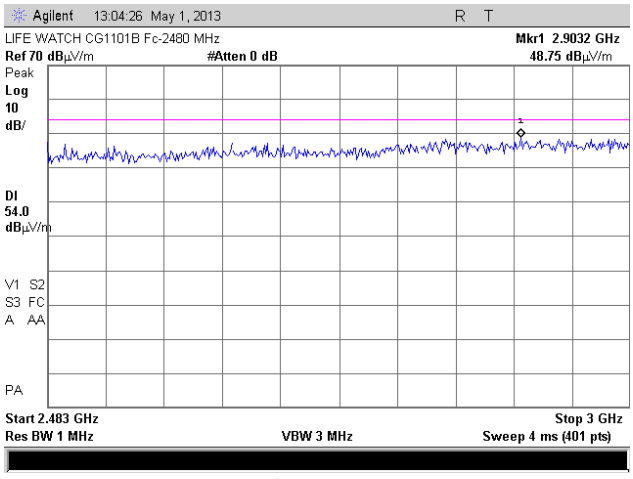
Carrier frequency 2480 MHz.



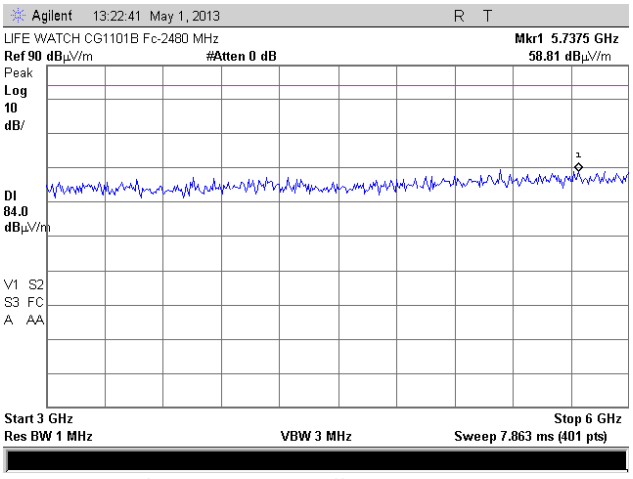
Plot # 27.



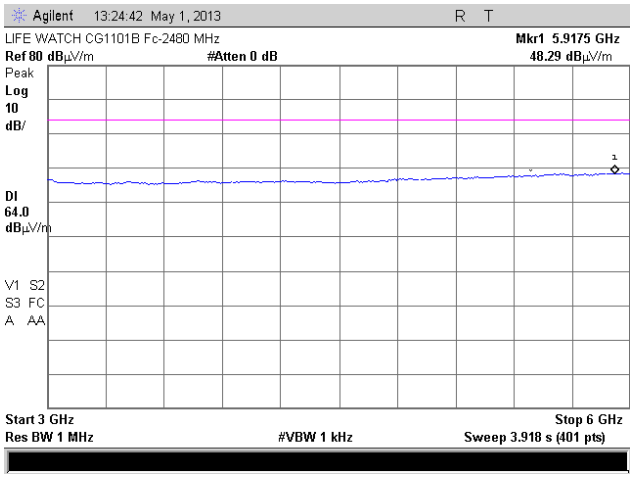
Plot # 28.



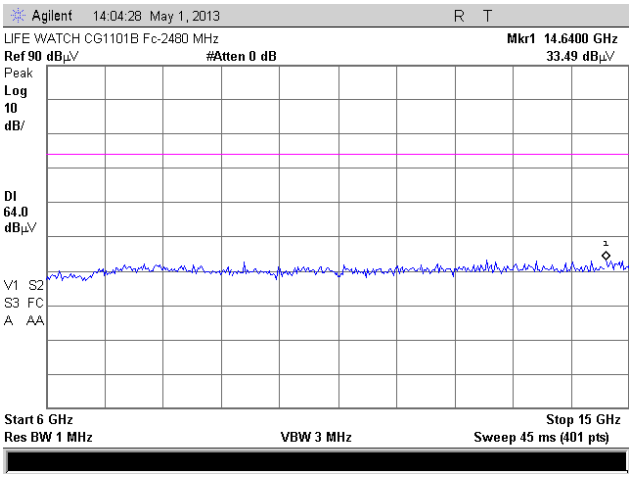
Plot # 29.



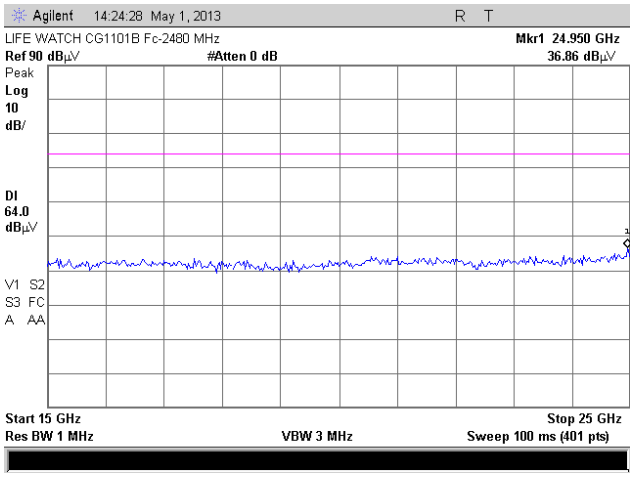
Plot # 30. Test distance =1m.



Plot # 31. Test distance =1m.



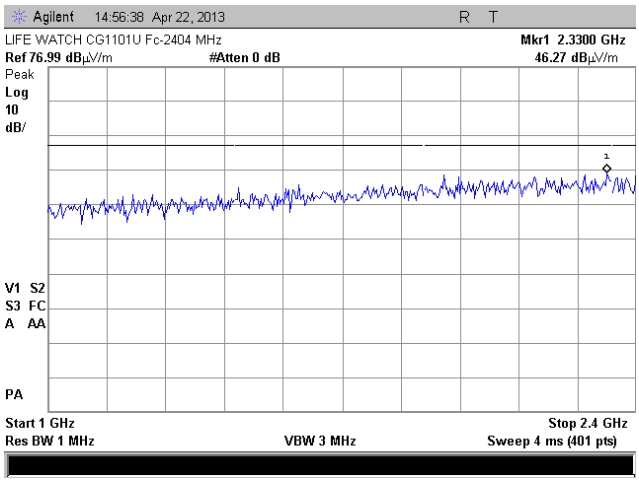
Plot # 32. Test distance =1m.



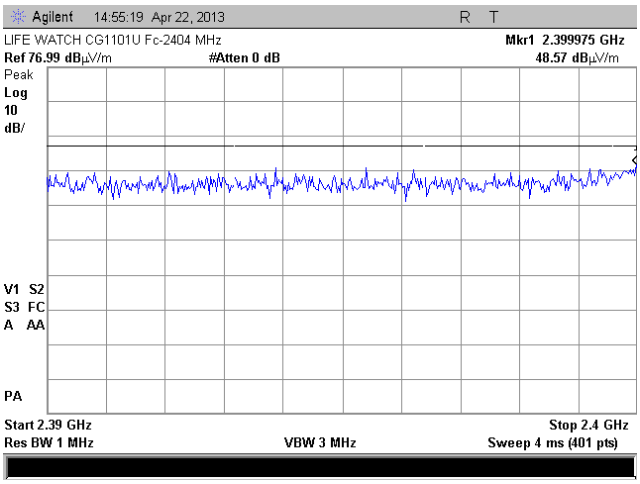
Plot # 33. Test distance =1m.

CG1101U

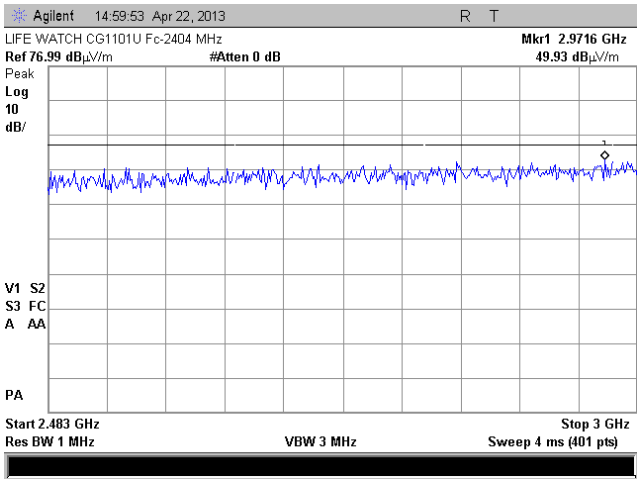
Carrier frequency 2404 MHz.



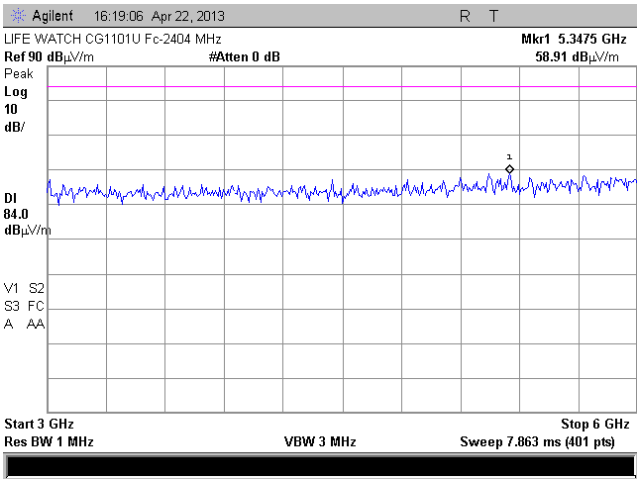
Plot # 34.



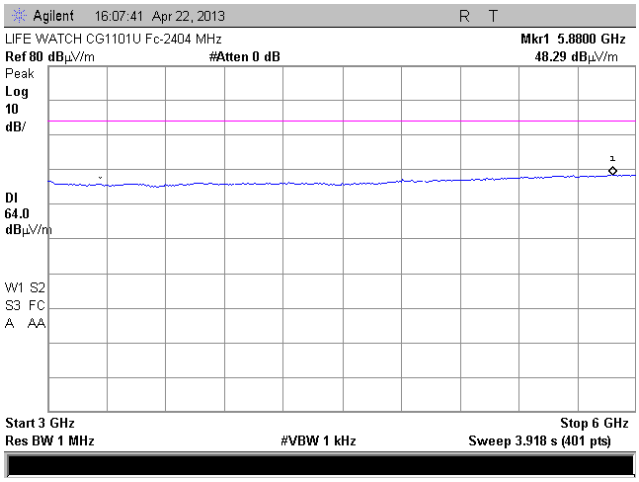
Plot # 35.



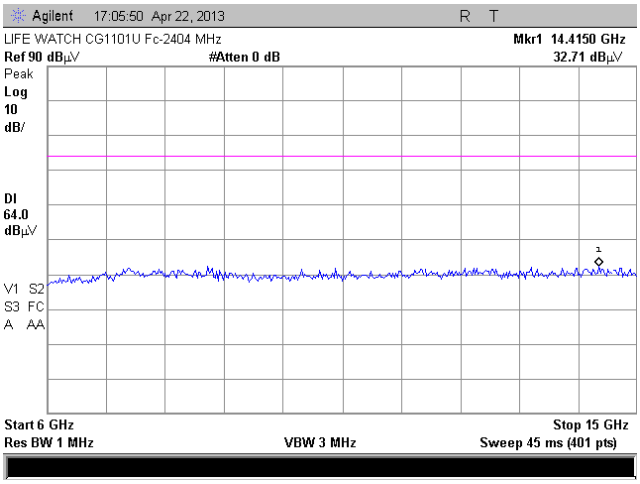
Plot # 36.



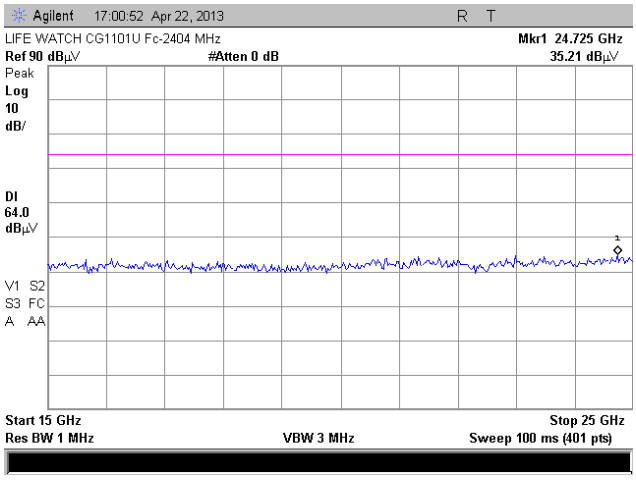
Plot # 37. Test distance =1m.



Plot # 38. Test distance =1m.

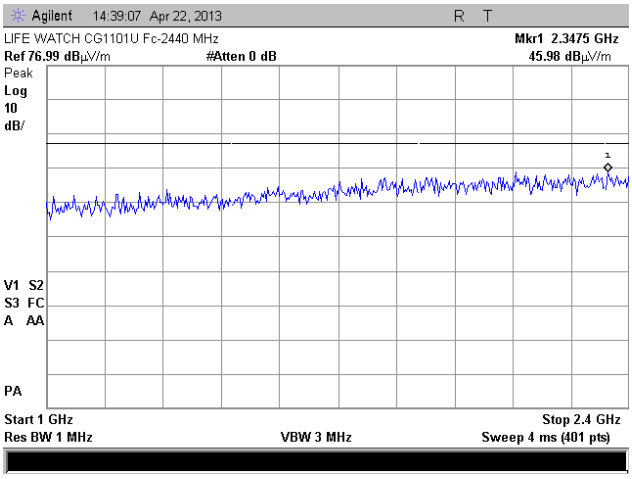


Plot # 39. Test distance =1m.

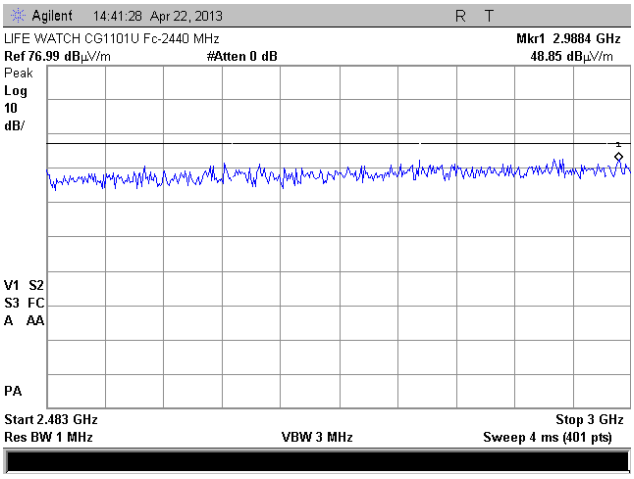


Plot # 40. Test distance =1m.

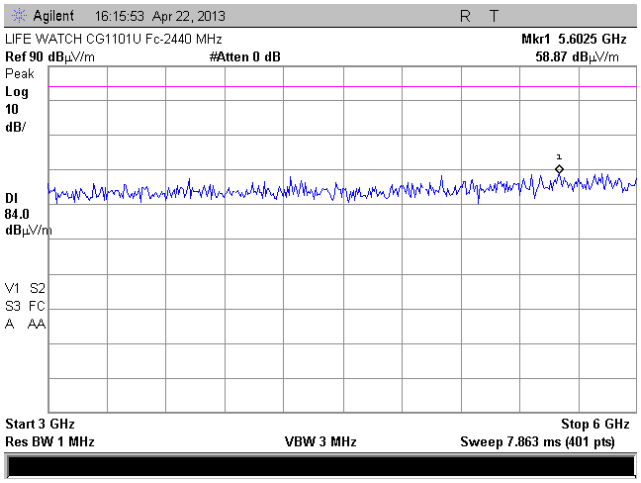
Carrier frequency 2440 MHz.



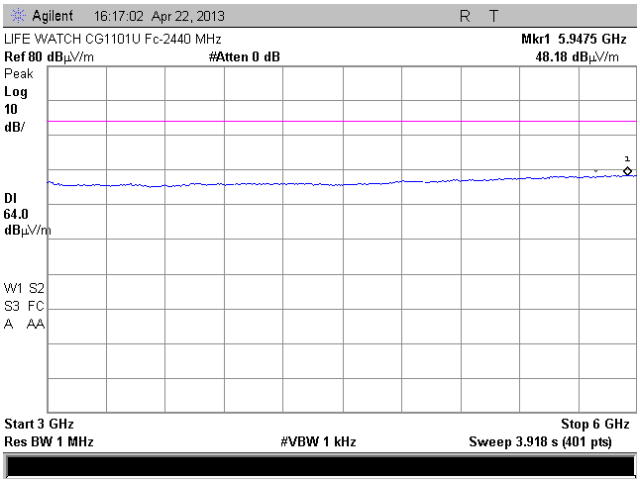
Plot # 41.



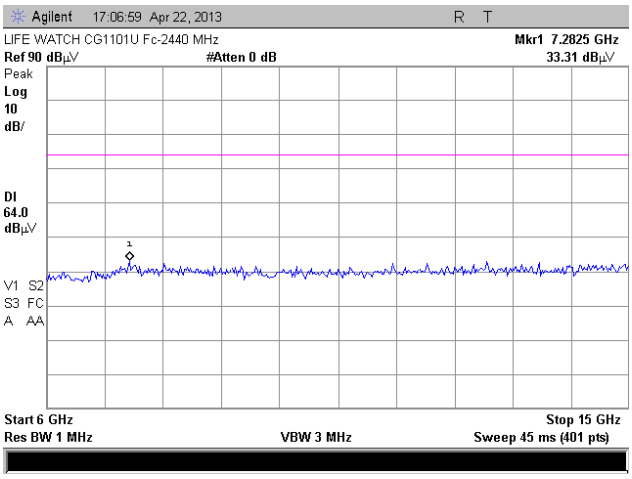
Plot # 42.



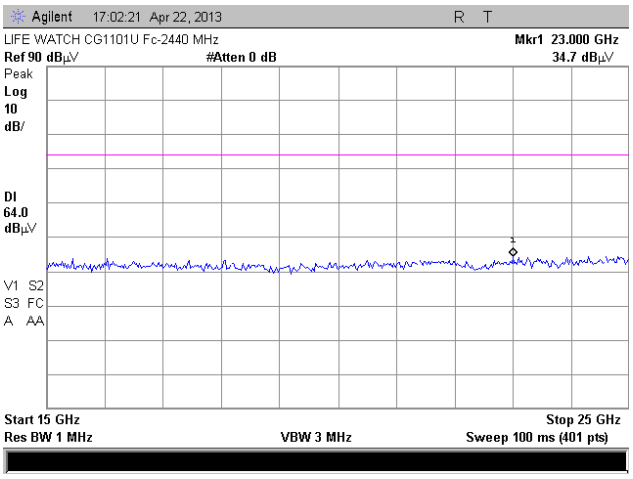
Plot # 43. Test distance =1m.



Plot # 44. Test distance =1m.

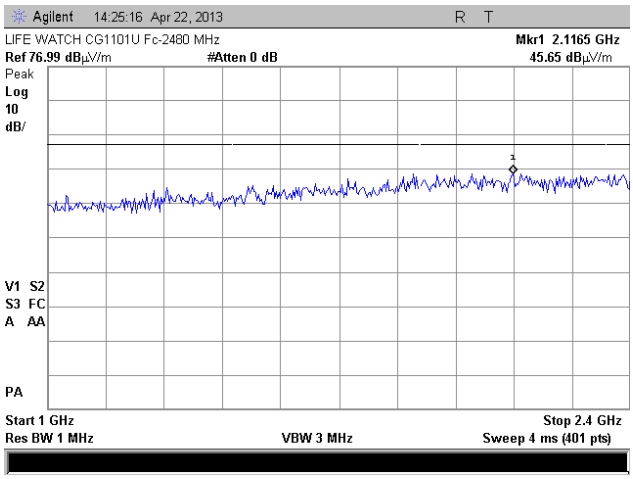


Plot # 45. Test distance =1m.

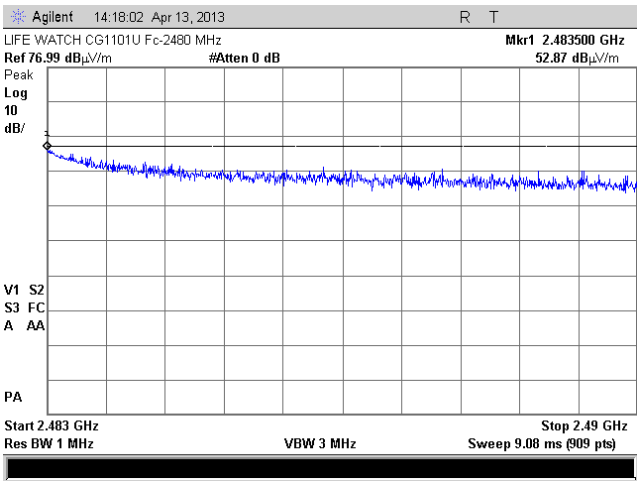


Plot # 46. Test distance =1m.

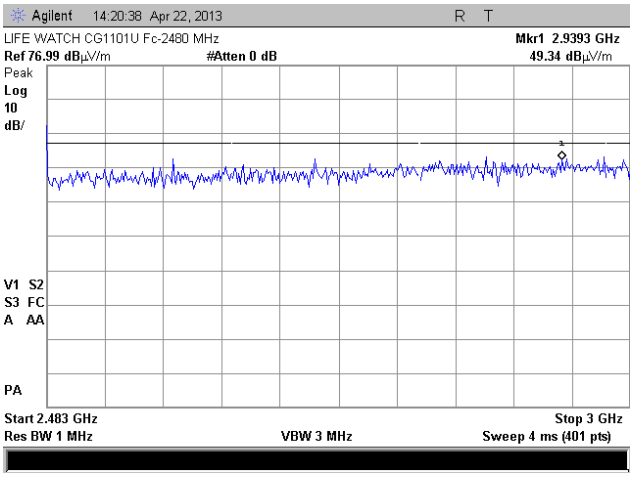
Carrier frequency 2480 MHz.



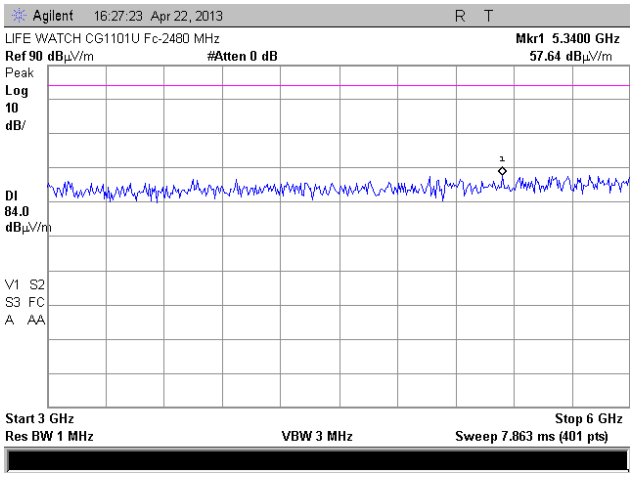
Plot # 47.



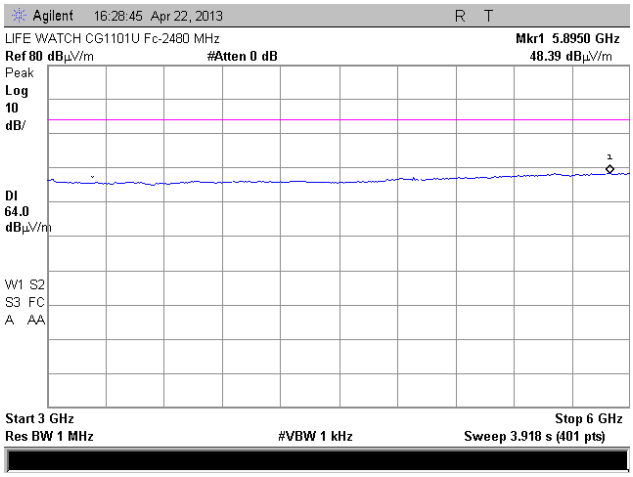
Plot # 48.



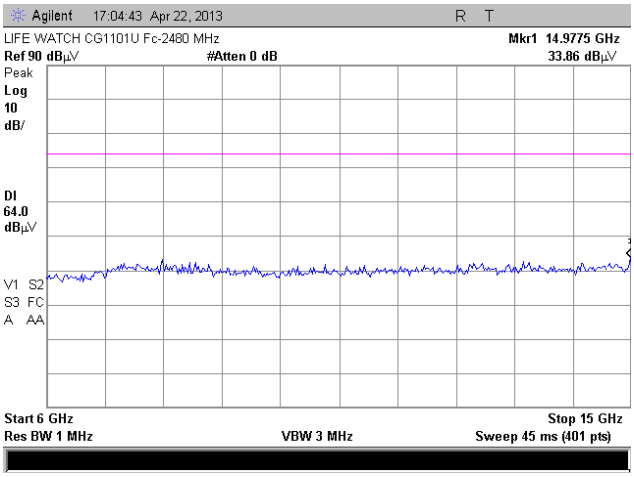
Plot # 49.



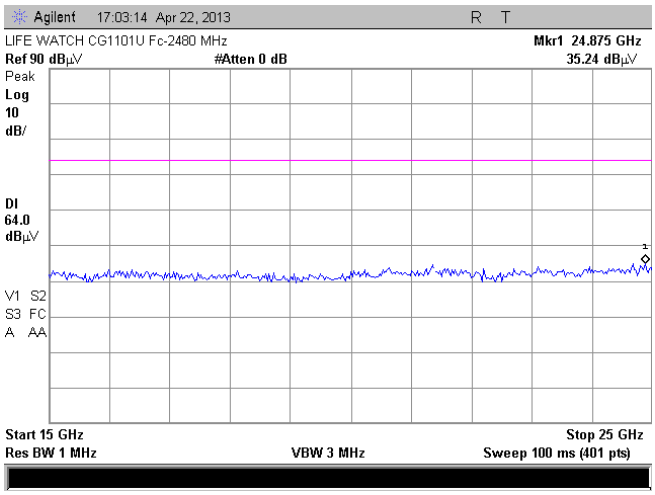
Plot # 50. Test distance =1m.



Plot # 51. Test distance =1m.

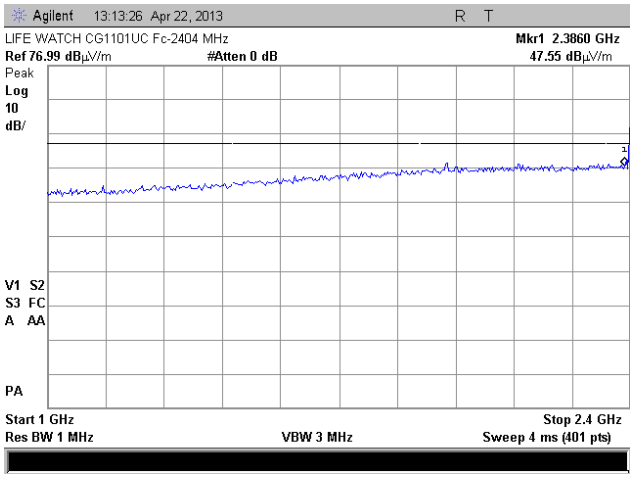


Plot # 52. Test distance =1m.

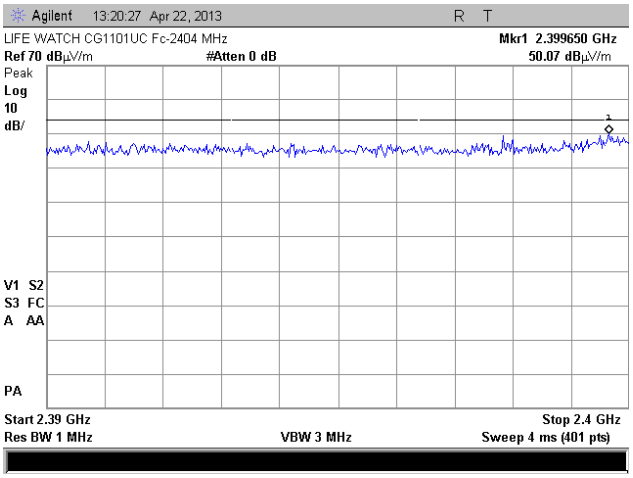


Plot # 53. Test distance =1m.

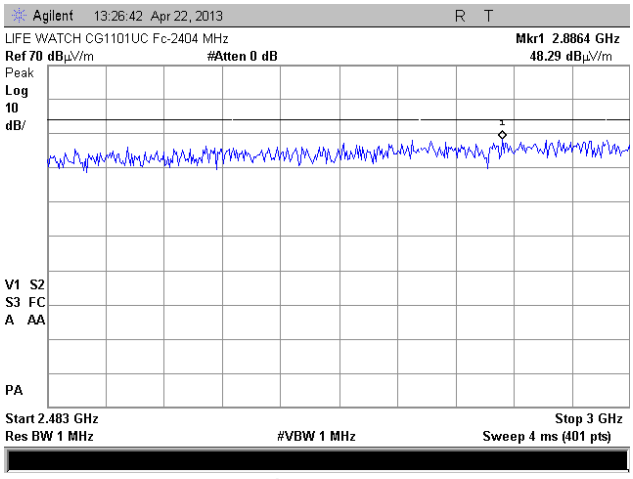
CG1101UC



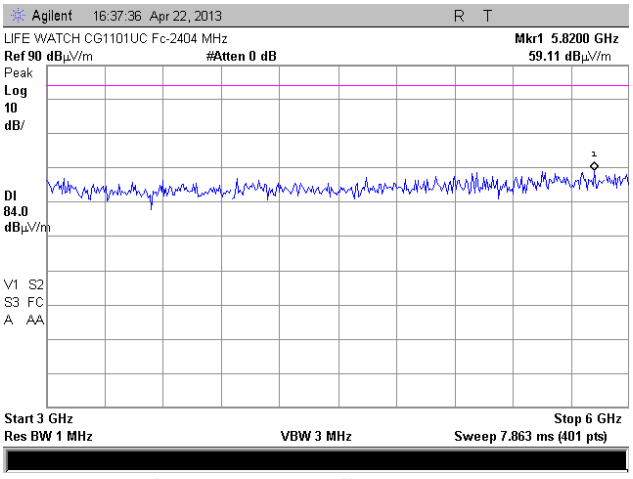
Plot # 54.



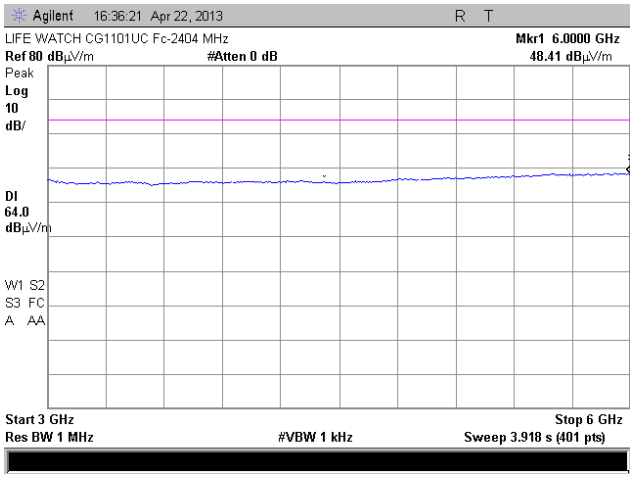
Plot # 55.



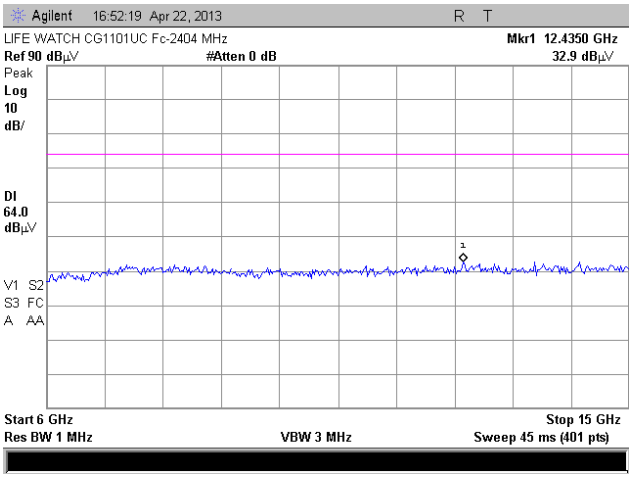
Plot # 56.



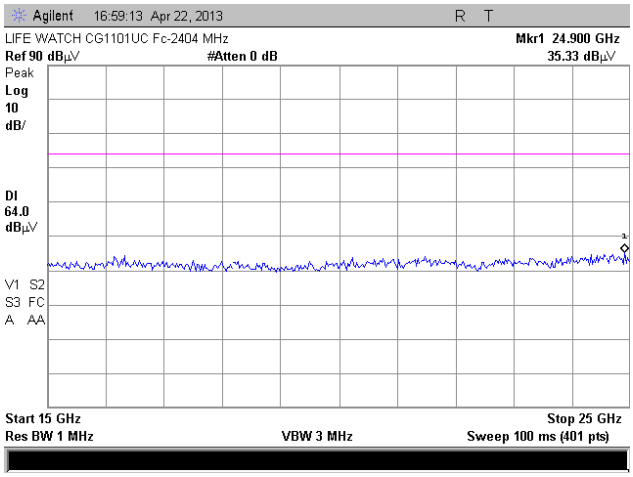
Plot # 57. Test distance=1m



Plot # 58. Test distance =1m

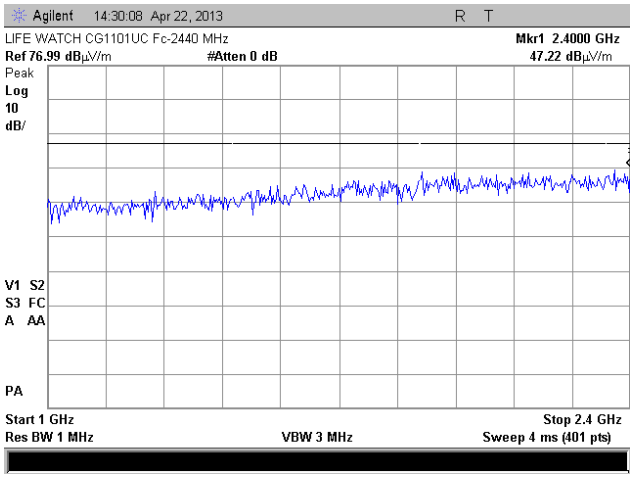


Plot # 59. Test distance =1m

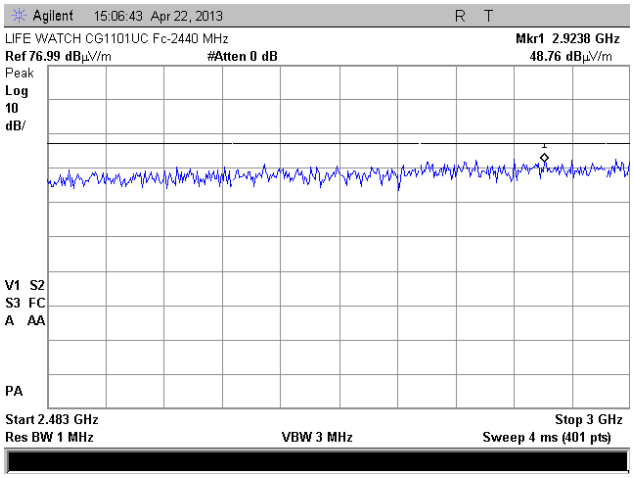


Plot # 60. Test distance =1m

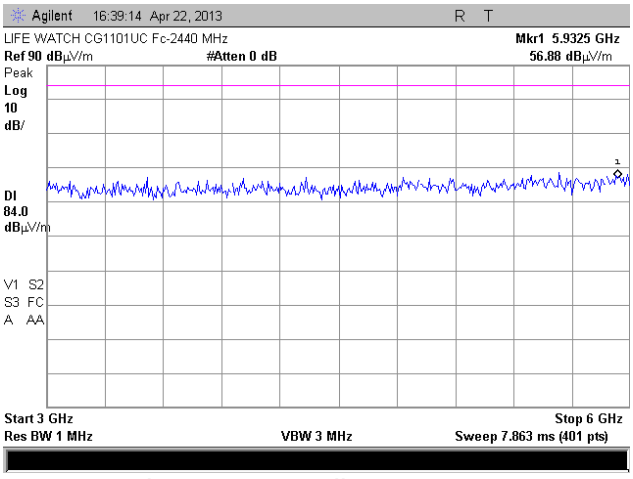
Carrier frequency 2440 MHz.



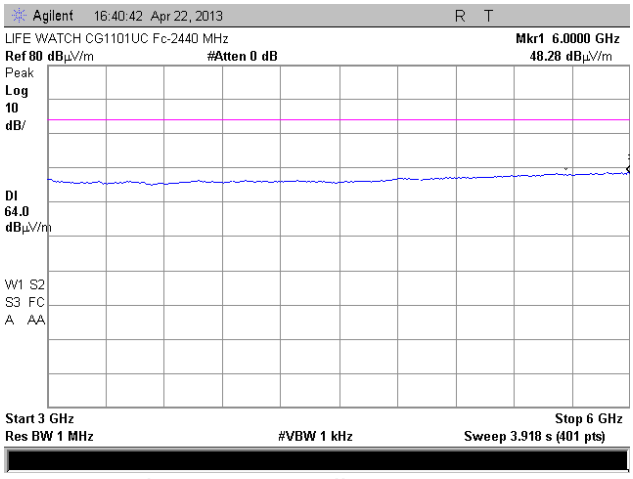
Plot # 61.



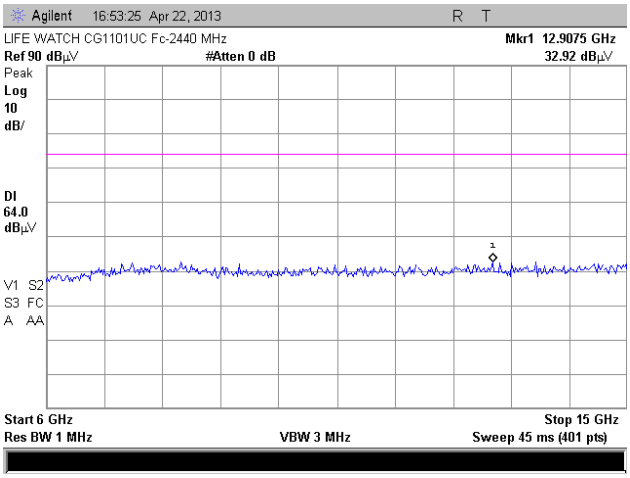
Plot # 62.



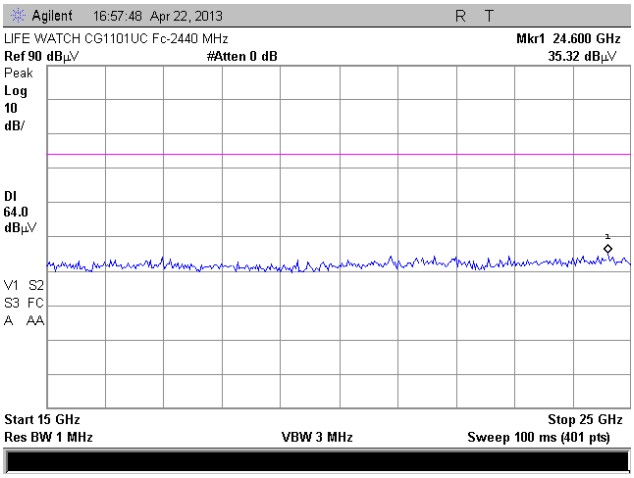
Plot # 63. Test distance =1m.



Plot # 64. Test distance =1m.

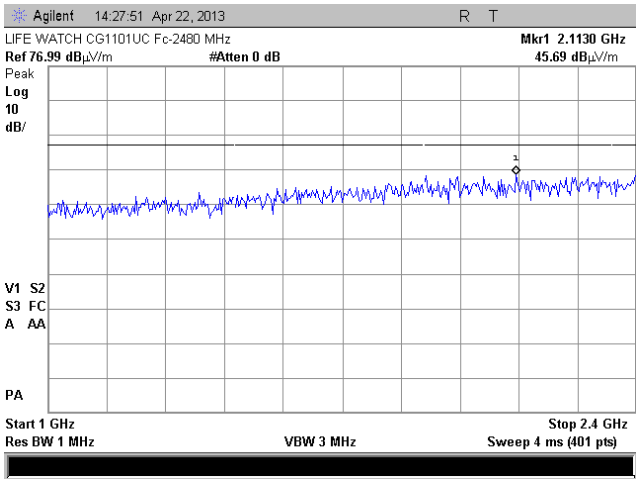


Plot # 65. Test distance =1m.

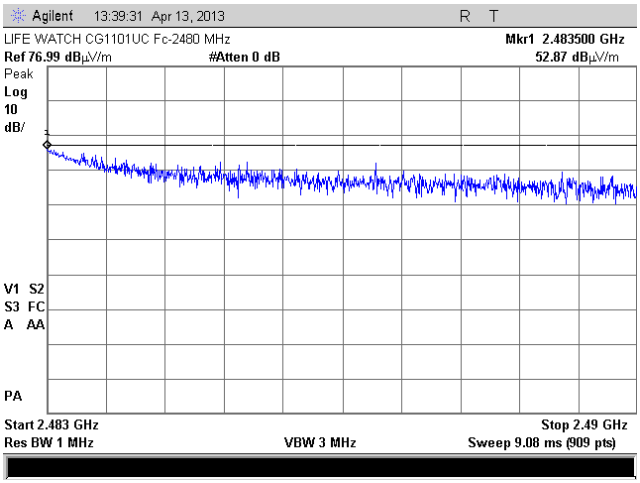


Plot # 66. Test distance =1m.

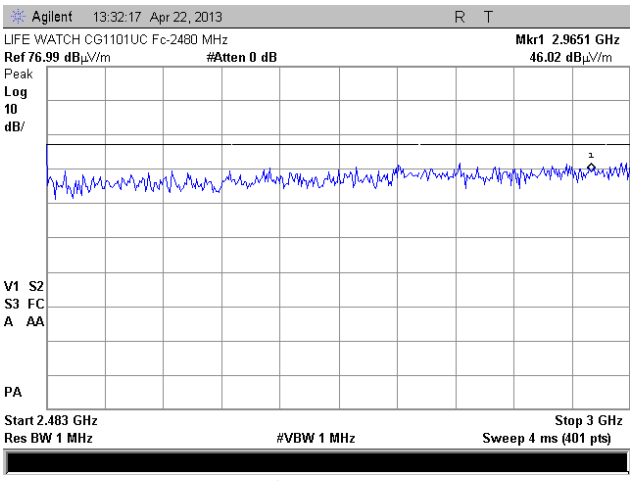
Carrier frequency 2480 MHz.



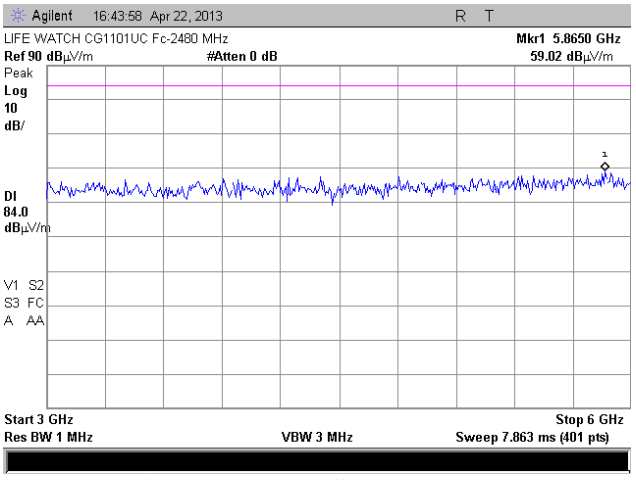
Plot # 67.



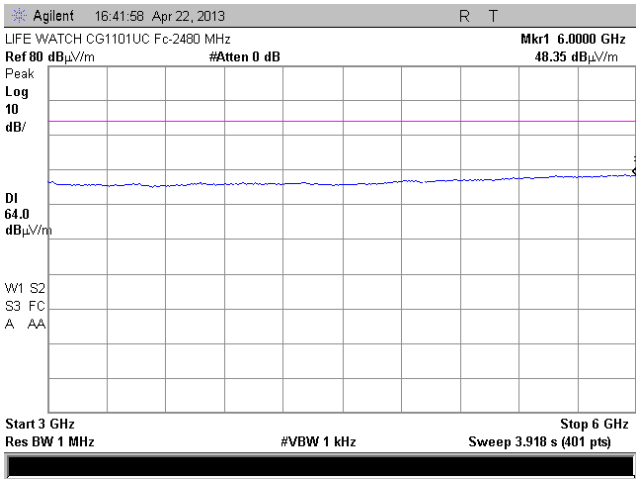
Plot # 68.



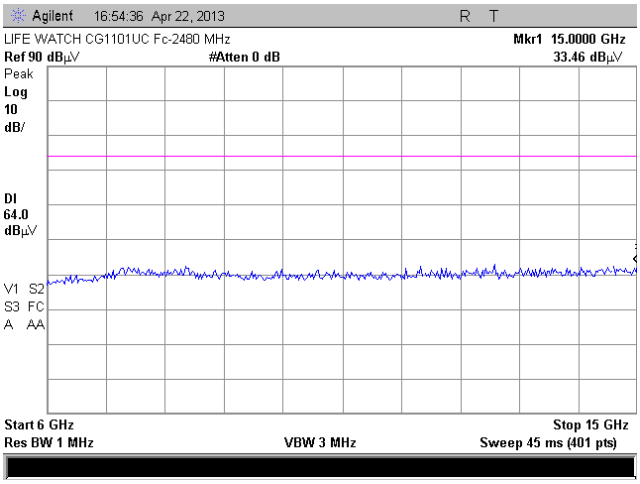
Plot # 69.



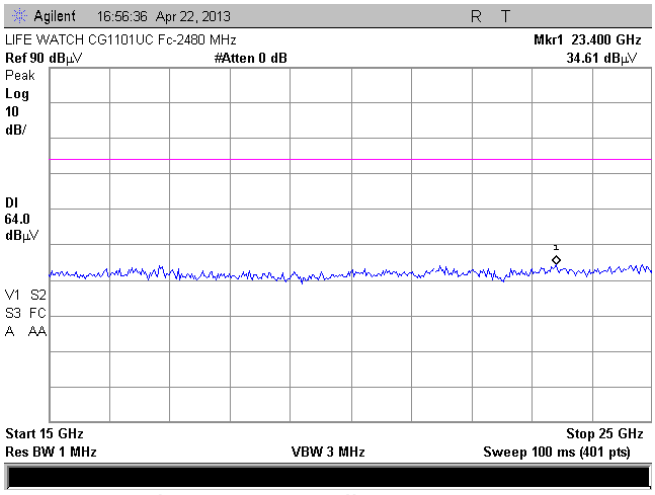
Plot # 70. Test distance =1m.



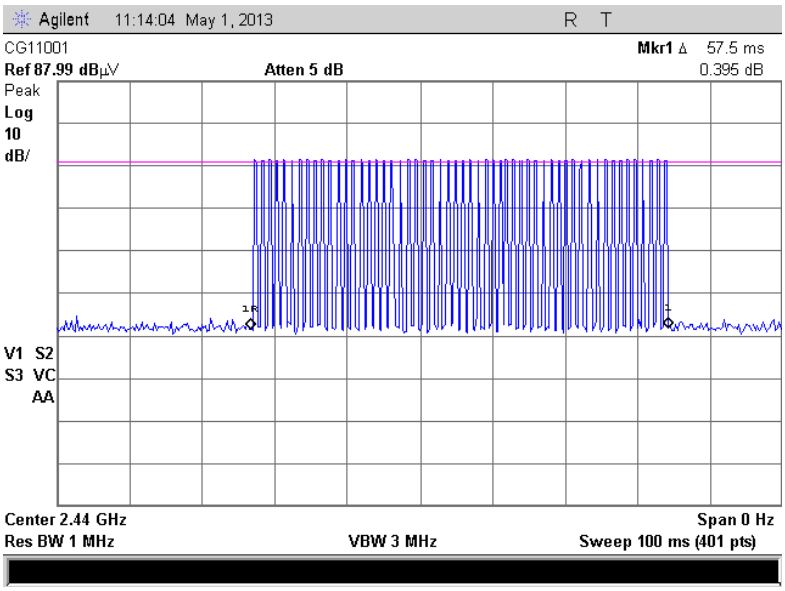
Plot # 71. Test distance =1m.



Plot # 72. Test distance =1m.



Plot # 73. Test distance =1m.



Plot # 74. Transmission time duration.

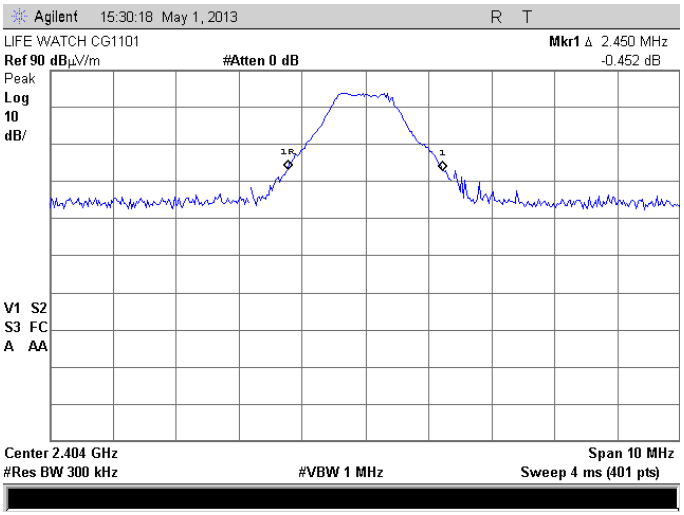
3.6. Test of occupied bandwidth per 15.215(c)

3.6.1. Requirements:

Intentional radiator must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band.

3.6.2. Test results:

Test result presented in plot below.



Plot # 75. Occupied bandwidth test result

3.6.3. Test summary:

20 dB occupied bandwidth is 2.450 MHz.
The tested unit meets the standard requirement.

4. Appendix 1. Test equipment used

All measurements equipment is on SII calibration schedule with a recalibration interval not exceeding one year.

Instrument	MFR	Model	Serial No.	Due calibration date
EMI Receiver 9 kHz – 6.5 GHz	HP	8546A+ 85460A	SII 4068	May 2014
EMI Analyser 9 kHz - 26.5 GHz	Agilent	E7405A	SII 4944	April 2014
Biconilog Antenna 30 – 2000 MHz	Teseq GmbH	CBL 6112D	S/N 23181	December 2013
Antenna Double Ridged Guide, 1-18 GHz	EMCO	3115	SII4873	December 2013
Broadband Horn antenna, 15 – 40 GHz	Schwarzbeck Mess-Electronik	BBHA 9170	9170-341	December 2013
Active Loop antenna 10 kHz – 30 MHz	EMCO	6502	SII 4874	December 2013
LISN 9 kHz – 30 MHz	FCC	LISN 250-32-4-16	SII5023	Aug. 2013
Transient limiter 0.009-200 MHz	HP	11947A	3107105	Aug. 2013
Oscilloscope	HP	54610B	US37340682	May 2014
RF cable, 4m	Huber-Suhner	Sucoflex 104PE	21329/4PE	Oct 2013
Cable RF 0.5m	Huber-Suhner	Sucoflex 104PE	500448/4PE	Oct 2013
Cable RF 1m	ENP Connectivity Solutions	X116LCX10040	10-11-002	Oct 2013
Antenna Mast	Frankonia	FAM6	5952	N/A
Metallic turntable	Frankonia	FTM2-2	5952	N/A
Positioning controller	Frankonia	FCO2	5952	N/A

5. Appendix 2: Antenna Factor and Cable Loss

Cable Loss (10m cable + Mast)

Point	Frequency (MHz)	Cable Loss (dB)	Point	Frequency (MHz)	Cable Loss (dB)
1	30	0.53	21	1000	3.68
2	50	0.75	22	1100	3.82
3	100	1.08	23	1200	4.07
4	150	1.39	24	1300	4.24
5	200	1.61	25	1400	4.43
6	250	1.752	26	1500	4.6
7	300	2.00	27	1600	4.7
8	350	2.15	28	1700	4.85
9	400	2.26	29	1800	4.98
10	450	2.383	30	1900	5.19
11	500	2.52	31	2000	5.34
12	550	2.606	32	2100	5.51
13	600	2.75	33	2200	5.69
14	650	2.856	34	2300	5.89
15	700	3.06	35	2400	6.07
16	750	3.20	36	2500	6.22
17	800	3.27	37	2600	6.28
18	850	3.38	38	2700	6.41
19	900	3.46	39	2800	6.53
20	950	3.55	40	2900	6.84

Table 3. Antenna Factor
For Biconilog Antenna, Model Number: CBL 6112D, S/N: 23181

No.	f / MHz)	AF / dB/m	f / MHz)	AF / dB/m	f / MHz)	AF / dB/m	f / MHz)	AF / dB/m
1	30	17.90	170	9.40	530	17.70	1040	22.20
2	32	16.70	175	9.00	540	18.25	1060	22.50
3	34	15.55	180	8.50	550	18.60	1080	22.50
4	36	14.35	185	8.45	560	14.45	1100	22.40
5	38	13.30	190	8.60	570	18.40	1120	22.60
6	40	12.20	195	8.85	580	18.50	1140	22.45
7	42	11.05	200	8.95	590	18.60	1160	22.50
8	44	9.95	205	8.80	600	18.60	1180	22.40
9	46	8.90	210	8.50	610	18.80	1200	22.80
10	48	8.05	215	8.20	620	18.99	1220	22.95
11	50	7.30	220	8.50	630	19.05	1240	23.10
12	52	6.80	225	9.00	640	19.23	1260	23.40
13	54	6.45	230	9.65	650	19.10	1280	23.35
14	56	6.00	235	10.30	660	19.13	1300	23.62
15	58	5.70	240	11.00	670	19.04	1320	23.64
16	60	5.45	245	11.60	680	19.00	1340	23.86
17	62	5.30	250	12.00	690	19.17	1360	23.95
18	64	5.20	255	12.45	700	19.28	1380	23.90
19	66	5.30	260	12.85	710	19.25	1400	24.45
20	68	5.30	265	12.50	720	19.45	1420	24.74
21	70	5.35	270	12.45	730	19.75	1440	24.93
22	72	5.50	275	12.40	740	19.95	1460	25.03
23	74	5.80	280	12.55	750	20.07	1480	25.45
24	76	6.00	285	12.65	760	19.85	1500	25.30
25	78	6.60	290	12.75	770	19.80	1520	25.25
26	80	6.70	295	12.95	780	19.85	1540	25.36
27	82	7.15	300	13.00	790	19.95	1560	25.58
28	84	7.60	310	13.35	800	20.05	1580	25.50
29	86	8.10	320	13.75	810	20.10	1600	25.65
30	88	8.50	330	13.85	820	20.35	1620	25.60
31	90	8.90	340	14.10	830	20.40	1640	25.70
32	92	9.20	350	14.50	840	20.35	1660	25.83
33	94	9.75	360	14.70	850	20.46	1680	25.97
34	96	9.95	370	14.90	860	20.39	1700	26.10
35	98	10.20	380	15.10	870	20.29	1720	26.25
36	100	10.50	390	15.45	880	20.24	1740	26.04
37	105	11.25	400	16.00	890	20.35	1760	26.14
38	110	11.70	410	16.40	900	20.55	1780	26.20
39	115	11.70	420	16.70	910	20.45	1800	26.40
40	120	11.80	430	16.35	920	20.60	1820	26.64
41	125	11.80	440	16.30	930	20.60	1840	26.86
42	130	11.70	450	16.30	940	20.66	1860	27.12
43	135	11.35	460	16.70	950	20.88	1880	27.00
44	140	10.95	470	17.05	960	21.11	1900	27.25
45	145	10.35	480	17.20	970	20.93	1920	27.36
46	150	10.05	490	17.30	980	21.03	1940	27.68
47	155	9.70	500	17.40	990	21.05	1960	27.10
48	160	9.70	510	17.50	1000	21.10	1980	27.06
49	165	9.45	520	17.60	1020	21.40	2000	27.25

Antenna factor
Active Loop antenna mfr.EMCO mod. 6502 S/N 3424

Frequency (MHz)	Magnetic Antenna factor (dBS/m)	Electric Antenna factor (dB/m)
0.009	-31.46	20.07
0.010	-32.34	19.18
0.020	-36.15	15.38
0.050	-38.57	12.96
0.075	-38.78	12.75
0.100	-39.07	12.46
0.150	-39.07	12.45
0.250	-39.18	12.35
0.500	-39.29	12.24
0.750	-39.38	12.14
1.000	-39.57	11.95
2.000	-39.84	11.69
3.000	-40.09	11.44
4.000	-40.13	11.40
5.000	-40.24	11.28
10.000	-40.26	11.27
15.000	-40.70	10.83
20.000	-41.02	10.51
25.000	-41.94	9.59
30.000	-43.39	8.14

Antenna Factor
Double Ridged Guide Antenna mfr EMCO model 3115 1m calibration

Point	Frequency (MHz)	Antenna Factor (dB/m)
1	1000	23.9
2	2000	28.3
3	3000	31.0
4	4000	33.1
5	4500	32.5
6	5000	32.4
7	6000	53.7
8	6500	35.6
9	7000	36.4
10	7500	36.9
11	8000	37.0
12	8500	38.0
13	9000	38.6
14	9500	38.4
15	10000	38.4
16	10500	38.4
17	11000	38.9
18	11500	39.6
19	12000	39.4
20	12500	39.2
21	13000	40.3
22	13500	41.0
23	14000	41.2
24	14500	41.3
25	15000	40.0
26	15500	38.0
27	16000	38.1
28	16500	40.3
29	17000	42.2
30	17500	44.6
31	18000	46.2

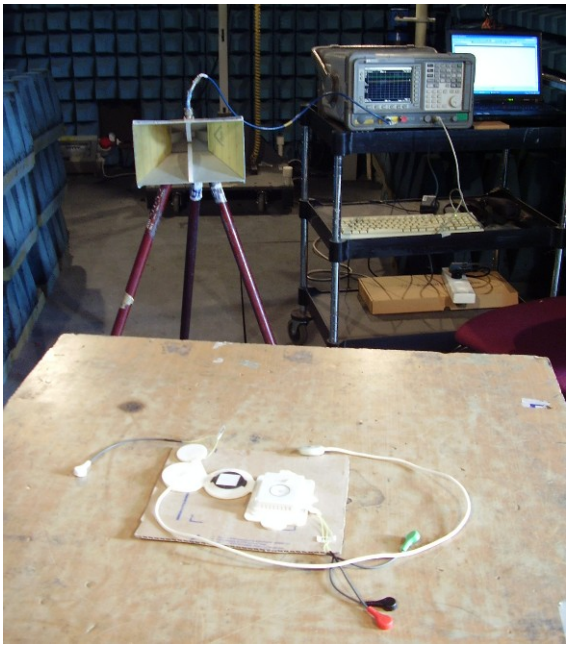
Cable Loss
Type: Sucoflex 104PE; Ser.No.21329/4PE; 4 m length

Point	Frequency (GHz)	Cable Loss (dB)
1	0.0-1.0	1.7
2	1.0– 3.5	3.2
3	3.5– 5.5	4.0
4	5.5 – 7.5	4.7
5	7.5 – 9.5	5.3
6	9.5 – 10.5	5.6
7	10.5 – 12.5	6.2
8	12.5 – 14.5	6.8
9	14.5 – 16.5	7.5
10	16.5 – 18.0	8.1

Antenna Factor
Broadband Horn Antenna model BBHA 9170 1m calibration

Point	Frequency (GHz)	Antenna Factor (dB/m)
1	15.0	38.5
2	16.0	37.7
3	17.0	38.1
4	18.0	37.9
5	19.0	38.0
6	20.0	38.0
7	21.0	37.9
8	22.0	38.2
9	23.0	39.6
10	24.0	39.6
11	25.0	39.3
12	26.0	39.5
13	27.0	39.6
14	28.0	39.6
15	30.0	40.1
16	32.0	41.2
17	34.0	41.5
18	35.0	41.9
19	36.0	42.2
20	38.0	43.8
21	40.0	43.2

6. Appendix 3: Test setups photo.



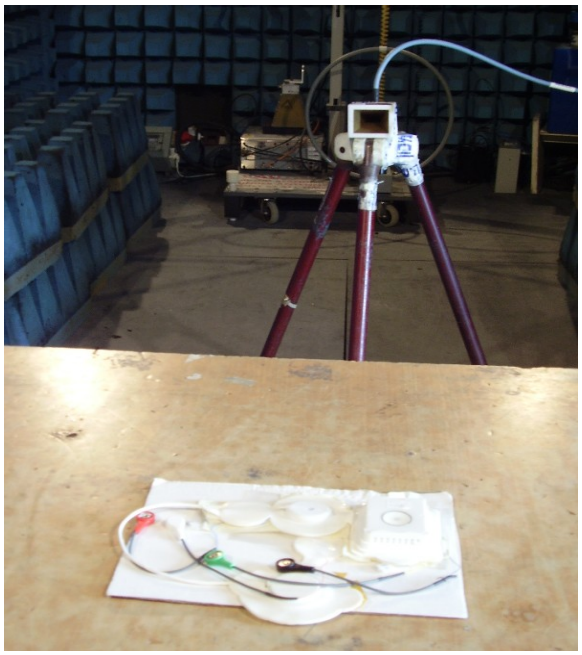


Photo 6. Radiated emissions test.