SPORTON International Inc.
No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, TaoYuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	**Realtek Semiconductor Corp.**
Applicant Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan
FCC ID	**TX27305BG13HMCV4**
Manufacturer's company	**Realtek Semiconductor Corp.**
Manufacturer Address	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

Product Name	UWB half mini Card
Brand Name	Realtek
Model Name	RTU7305-BG13-HMC-V2C
Test Rule Part(s)	47 CFR FCC Part 15 Subpart F § 15.519
Test Freq. Range	3100 ~ 10600MHz
Received Date	Jul. 22, 2009
Final Test Date	Jul. 30, 2009
Submission Type	Original Equipment

Statement

The test result in this report refers exclusively to the presented test model / sample.
Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart F**.
The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

ILAC MRA

Table of Contents

History of This Test Report

Original Issue Date: Aug. 05, 2009

Report No.: FR911422-03

■ No additional attachment.

□ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No.: CB9807084

1. CERTIFICATE OF COMPLIANCE

Product Name	:	UWB half mini Card
Brand Name	:	Realtek
Model Name	:	RTU7305-BG13-HMC-V2C
Applicant	:	Realtek Semiconductor Corp.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart F § 15.519

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jul. 22, 2009 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Jordan Hsiao 2009. 8-6

Reviewed By:

Jordan Hsiao

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart F				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	8.49 dB
4.2	15.519(a)	Operational Limitations	Complies	-
4.3	15.519(b)	UWB Bandwidth	Complies	-
4.4	15.519(c)/15.209	Radiated Emissions	Complies	0.07 dB
4.5	15.519(d)	Radiated Emissions in GPS Bands	Complies	4.22 dB
4.5	15.519(e)	Peak Emissions within a 50 MHz Bandwidth	Complies	1.18 dB
4.7	15.517(f)	Labeling Requirements	Complies	-
4.8	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
UWB Bandwidth	$\pm 8.5\times10^{-8}$	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions / in GPS Bands (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Power Type	From Host
Modulation	Multi-band OFDM (QPSK / DCM)
Operation Frequency Range	3168 ~ 4752 MHz; 6336 ~ 7920 MHz
10 dB Bandwidth	515.9 MHz
RF Output Rating	For band group#1 BAND_ID (nb)=1,2,3 (TFC1) Meam power= -41.5 dBm/MHz BAND_ID (nb)=1 (TFC5) Meam power= -41.99 dBm/MHz BAND_ID (nb)=2 (TFC6) Meam power= -41.99 dBm/MHz BAND_ID (nb)=3 (TFC7) Meam power= -41.85 dBm/MHz BAND_ID (nb)=1,2 (TFC8) Meam power= -41.65 dBm/MHz BAND_ID (nb)=1,3 (TFC9) Meam power= -41.54 dBm/MHz BAND_ID (nb)=2,3 (TFC10) Meam power= -41.37 dBm/MHz For band group#3 BAND_ID (nb)=7,8,9 (TFC1) Meam power= -41.63 dBm/MHz BAND_ID (nb)=7 (TFC5) Meam power= -41.62 dBm/MHz BAND_ID (nb)=8 (TFC6) Meam power= -41.94 dBm/MHz BAND_ID (nb)=9 (TFC7) Meam power= -42.12 dBm/MHz BAND_ID (nb)=7,8 (TFC8) Meam power= -41.65 dBm/MHz BAND_ID (nb)=7,9 (TFC9) Meam power= -42.07 dBm/MHz BAND_ID (nb)=8,9 (TFC10) Meam power= -43.85 dBm/MHz
Carrier Frequencies	Please refer to section 3.3
Antenna	Antenna 1: Band Group1 : 1.08dBi, Band Group3 : 1.12dBi / External Antenna Antenna Model Number: PE-080140-C
	Antenna 2: Band Group1 : 0.88dBi, Band Group3 : 0.95dBi / External Antenna Antenna Model Number: 2023685-1

Note: Due to Ant.1 ~ Ant. 2 are the same type antenna, only the higher gain antenna "Ant.1" was tested and recorded in this report.

3.2. Accessories

N/A

3.3. Table for Carrier Frequencies

Band Group	BAND_ID (*nb*)	Lower Frequency (MHz)	Center Frequency (MHz)	Upper Frequency (MHz)
1	1	3168	3432	3696
	2	3696	3960	4224
	3	4224	4488	4752
3	7	6336	6600	6864
	8	6864	7128	7392
	9	7392	7656	7920

3.4. Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

For Band Group 1

Test Items	Mode	TFC	BAND_ID (nb)
AC Power Line Conducted Emissions	Normal Link	-	-
UWB Bandwidth	CTX	5, 6, 7	1, 2, 3
Radiated Emissions 9kHz~960MHz	Normal Link	-	-
Radiated Emissions above 960MHz	CTX	1, 5, 6, 7, 8, 9, 10	1
Peak Emissions within a 50 MHz Bandwidth	CTX	1, 5, 6, 7, 8, 9, 10	1, 2, 3

Note: CTX=continuously transmitting

For Band Group 3

Test Items	Mode	TFC	BAND_ID (nb)
AC Power Line Conducted Emissions	Normal Link	-	-
UWB Bandwidth	CTX	5, 6, 7	7, 8, 9
Radiated Emissions 9kHz~960MHz	Normal Link	-	-
Radiated Emissions above 960MHz	CTX	1, 5, 6, 7, 8, 9, 10	7
Peak Emissions within a 50 MHz Bandwidth	CTX	1, 5, 6, 7, 8, 9, 10	7, 8, 9

Note: CTX=continuously transmitting

3.5. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

For Band Group 1

Test Software Version	UWBPhyTest			
TFC	BAND_ID (nb)			Power Parameters
	7	8	9	TPC
1	V	V	V	5
5	V			2
6		V		5
7			V	6
8	V	V		4
9	V		V	5
10		V	V	5

For Band Group 3

Test Software Version	UWBPhyTest			
TFC	BAND_ID (nb)			Power Parameters
	7	8	9	TPC
1	V	V	V	3
5	V			4
6		V		2
7			V	2
8	V	V		3
9	V		V	3
10		V	V	3

3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	480872	IC 4088	-
CO04-HY	Conduction	Hwa Ya	480872	IC 4088	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

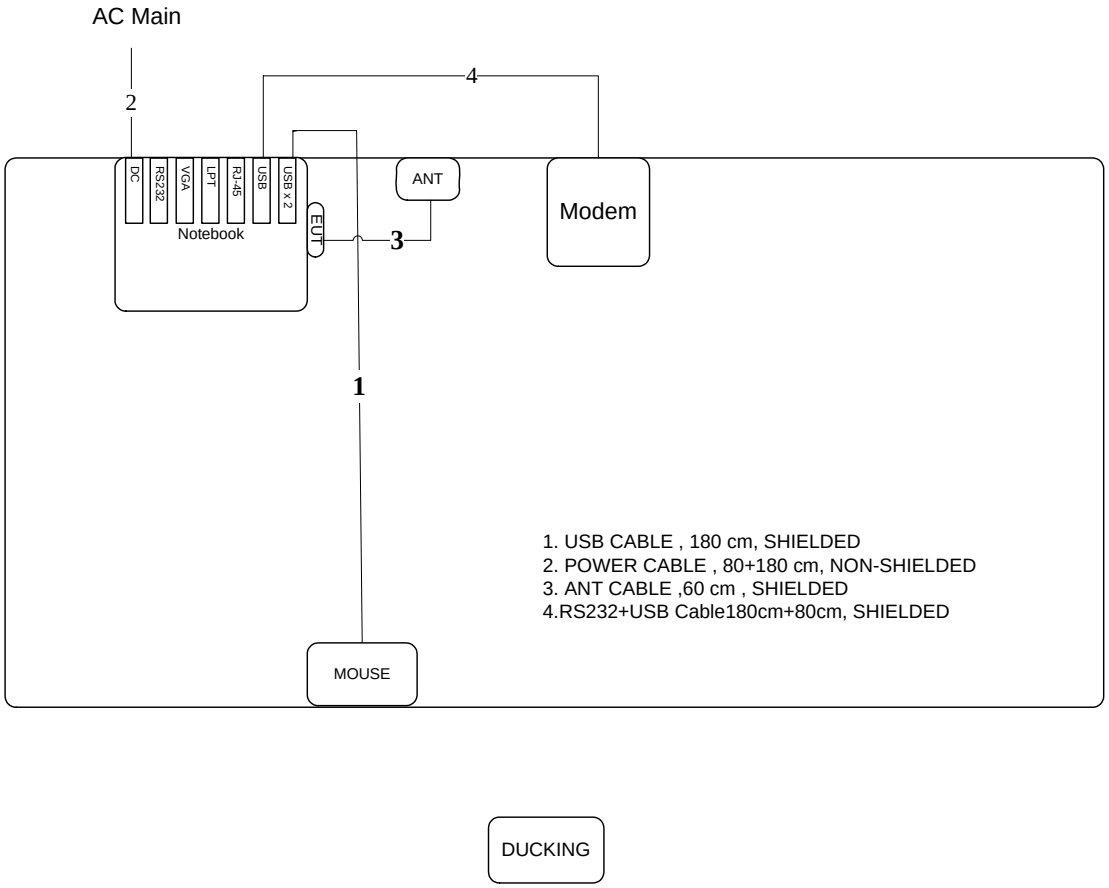
3.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	PP25L	E2K4965AGNM
Mouse	iCooky	AMS0706W	DoC
DUCKING	Realtek	NA	NA

3.8. Test Configurations

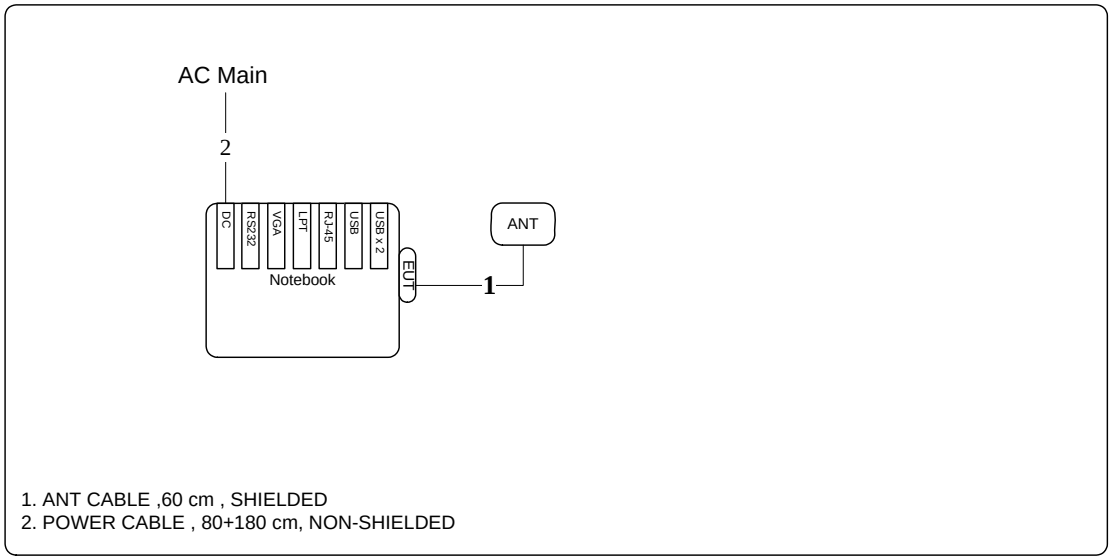
3.8.1. Radiation Emissions Test Configuration

30MHz~960MHz



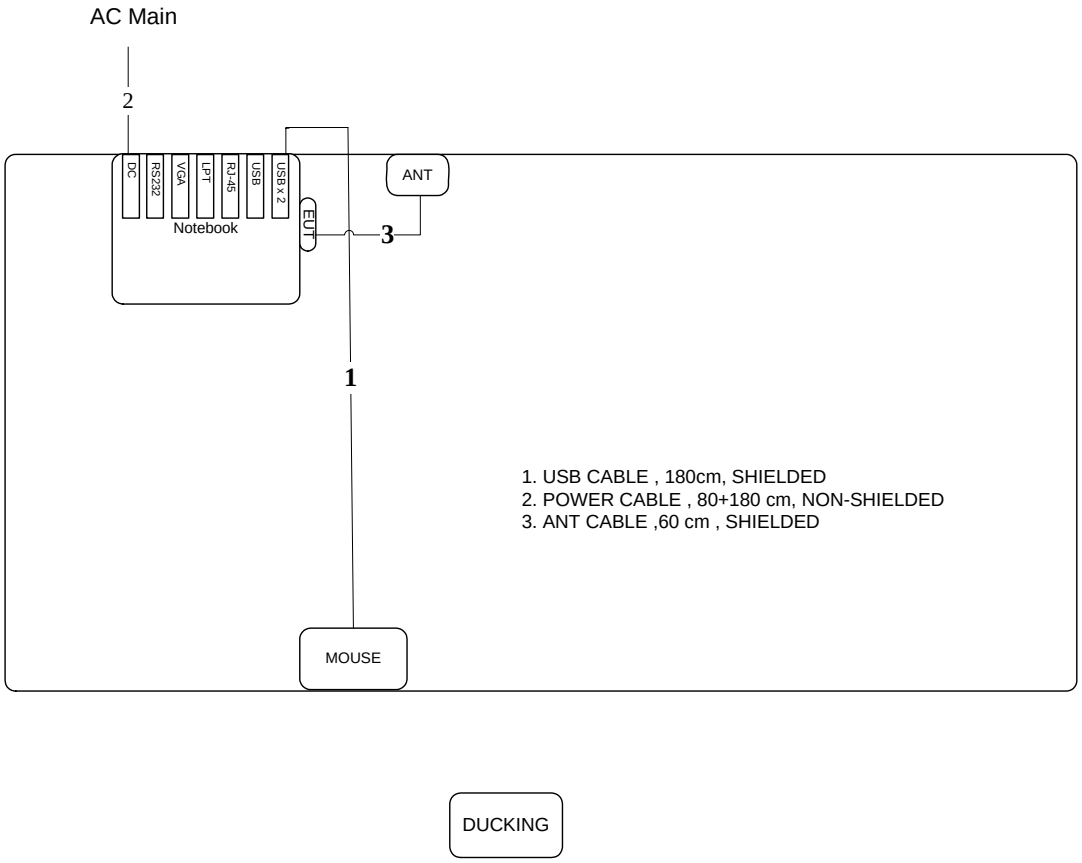
DUCKING

Above 960MHz



1. ANT CABLE ,60 cm , SHIELDED
2. POWER CABLE , 80+180 cm, NON-SHIELDED

3.8.2. AC Power Line Conduction Emissions Test Configuration



4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected to the 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 below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

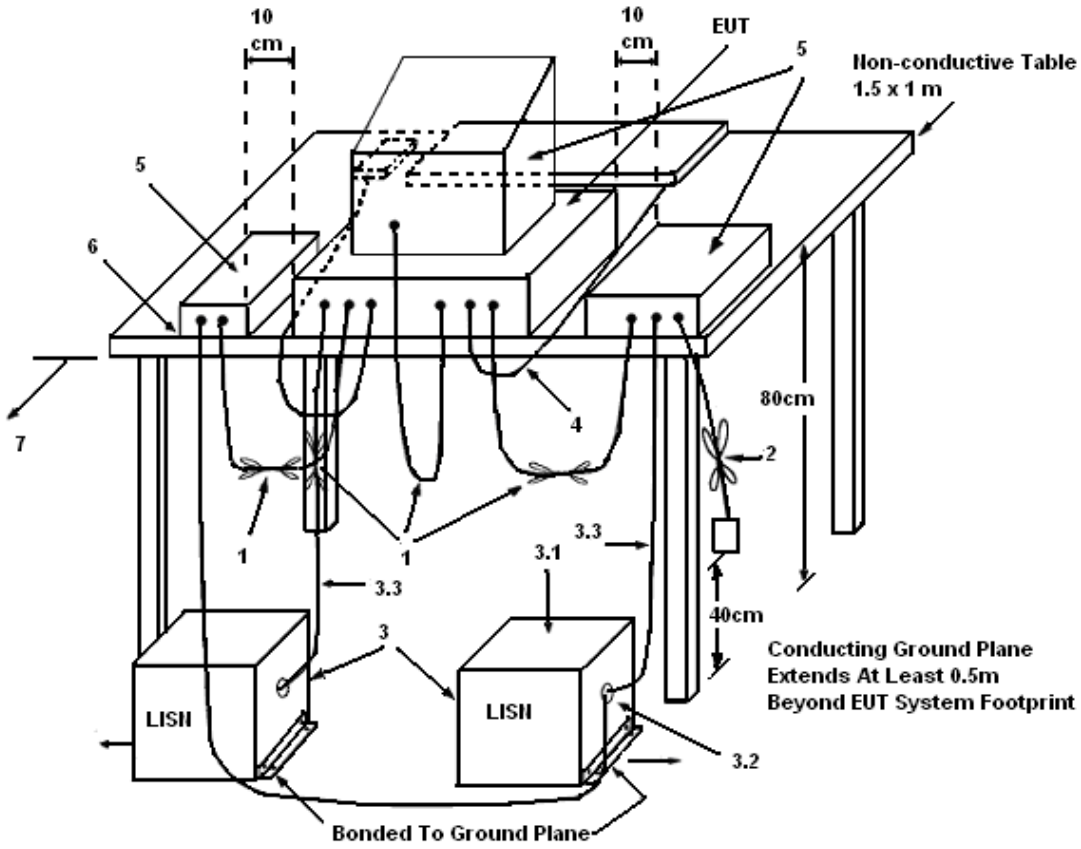
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

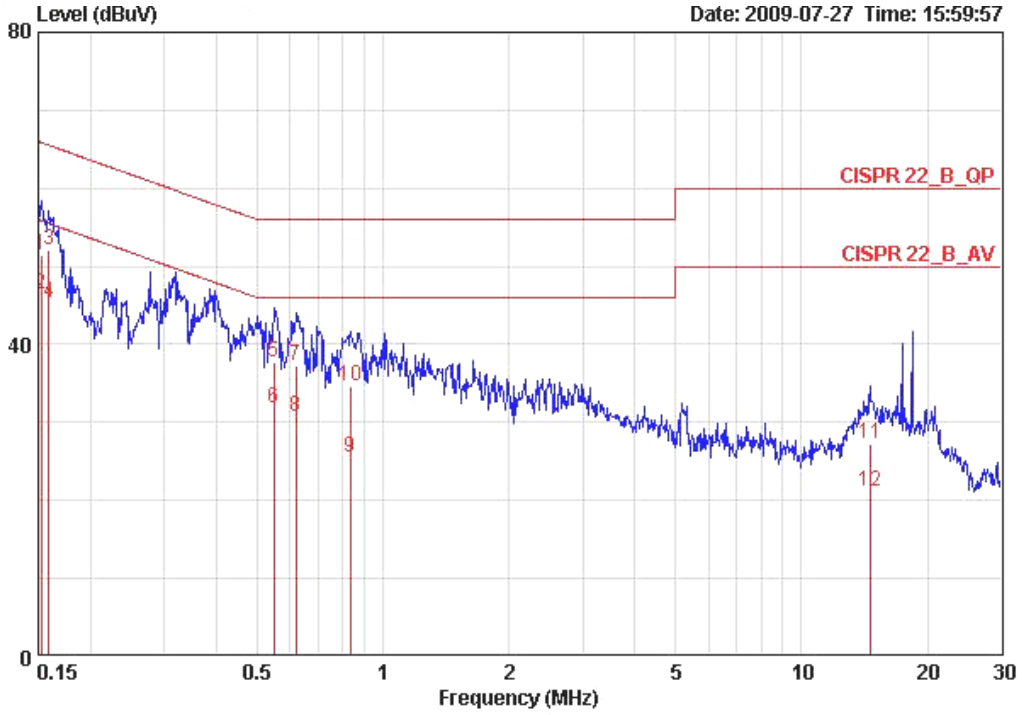
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

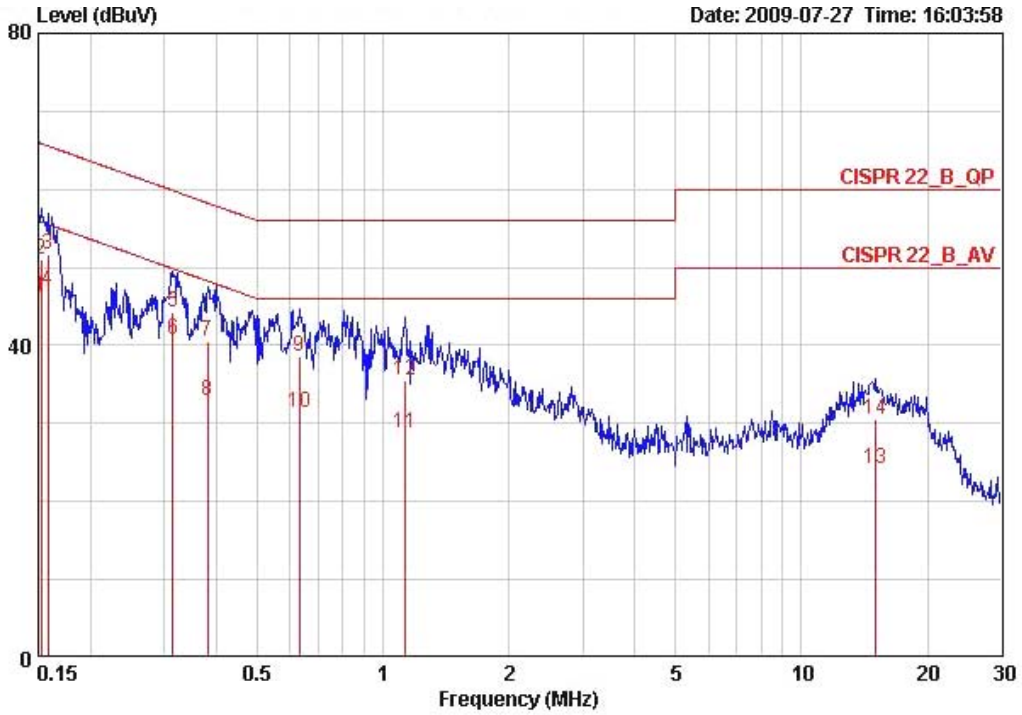
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23℃	Humidity	54%
Test Engineer	Aric Lee	Phase	Line
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15240	51.54	-14.32	65.87	51.27	0.07	0.20	QP
2	0.15240	46.51	-9.35	55.87	46.24	0.07	0.20	AVERAGE
3	0.15900	52.20	-13.32	65.52	51.93	0.07	0.20	QP
4	0.15900	45.31	-10.21	55.52	45.04	0.07	0.20	AVERAGE
5	0.54934	37.61	-18.39	56.00	37.38	0.03	0.20	QP
6	0.54934	31.92	-14.08	46.00	31.69	0.03	0.20	AVERAGE
7	0.62054	37.21	-18.79	56.00	36.98	0.03	0.20	QP
8	0.62054	30.78	-15.22	46.00	30.55	0.03	0.20	AVERAGE
9	0.83488	25.55	-20.45	46.00	25.32	0.03	0.20	AVERAGE
10	0.83488	34.61	-21.39	56.00	34.38	0.03	0.20	QP
11	14.594	27.33	-32.67	60.00	26.39	0.54	0.40	QP
12	14.594	21.14	-28.86	50.00	20.20	0.54	0.40	AVERAGE

Temperature	23°C	Humidity	54%
Test Engineer	Aric Lee	Phase	Neutral
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15240	46.25	-9.61	55.87	45.95	0.10	0.20	AVERAGE
2	0.15240	50.94	-14.92	65.87	50.64	0.10	0.20	QP
3	0.15816	51.60	-13.96	65.56	51.30	0.10	0.20	QP
4 @	0.15816	47.07	-8.49	55.56	46.77	0.10	0.20	AVERAGE
5	0.31495	44.22	-15.62	59.84	43.95	0.07	0.20	QP
6	0.31495	40.68	-9.16	49.84	40.41	0.07	0.20	AVERAGE
7	0.38113	40.46	-17.79	58.25	40.19	0.07	0.20	QP
8	0.38113	32.98	-15.27	48.25	32.71	0.07	0.20	AVERAGE
9	0.63048	38.60	-17.40	56.00	38.33	0.07	0.20	QP
10	0.63048	31.41	-14.59	46.00	31.14	0.07	0.20	AVERAGE
11	1.129	28.77	-17.23	46.00	28.53	0.07	0.17	AVERAGE
12	1.129	35.63	-20.37	56.00	35.39	0.07	0.17	QP
13	14.986	24.30	-25.70	50.00	23.33	0.57	0.40	AVERAGE
14	14.986	30.58	-29.42	60.00	29.61	0.57	0.40	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Operational Limitations

4.2.1. Test Result of Operation Restriction

Operation Restriction	Informed the applicant	Not applicable	User Manual Informed	Passed
☒ 47 CFR FCC Part 15 Subpart F 15.519(a)				
UWB devices operating under the provisions of this section must be hand held, i.e., they are relatively small devices that are primarily hand held while being operated and do not employ a fixed infrastructure. **[A transmitter that had been connected to portable device e.g. Laptop PC…and be considered sufficient to demonstrate not a fixed infrastructure application.]**	☒	☐	☐	☒
(1) The radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver				
A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting. **[The applicant has been informed of this requirement and instruct the caution in user manual.]**	☒	☐	☒	☒
(2) Outdoor mounted antennas				
The use of antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole, or any fixed outdoors infrastructure is prohibited. Antennas may be mounted only on the hand held UWB device. **[The applicant has been informed of this requirement.]**	☒	☐	☐	☒
(5) Indoors or Outdoors				
UWB devices operating under the provisions of this section may operate indoors or outdoors. **[The applicant has been informed of this requirement.]**	☒	☐	☐	☒

4.3. UWB Bandwidth Measurement

4.3.1. Limit

Ultra-wideband (UWB) transmitter. An intentional radiator that, at any point in time, has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.

The UWB bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna. The upper boundary is designated f_H and the lower boundary is designated f_L. The frequency at which the highest radiated emission occurs is designated f_M.

Center frequency. The center frequency, f_C, equals $(f_H + f_L)/2$.

Fractional bandwidth. The fractional bandwidth equals $2(f_H - f_L)/ (f_H + f_L)$.

The UWB bandwidth of a UWB system operating under the provisions of this section must be contained between 3100 MHz and 10,600 MHz.

4.3.2. Measuring Instruments and Setting

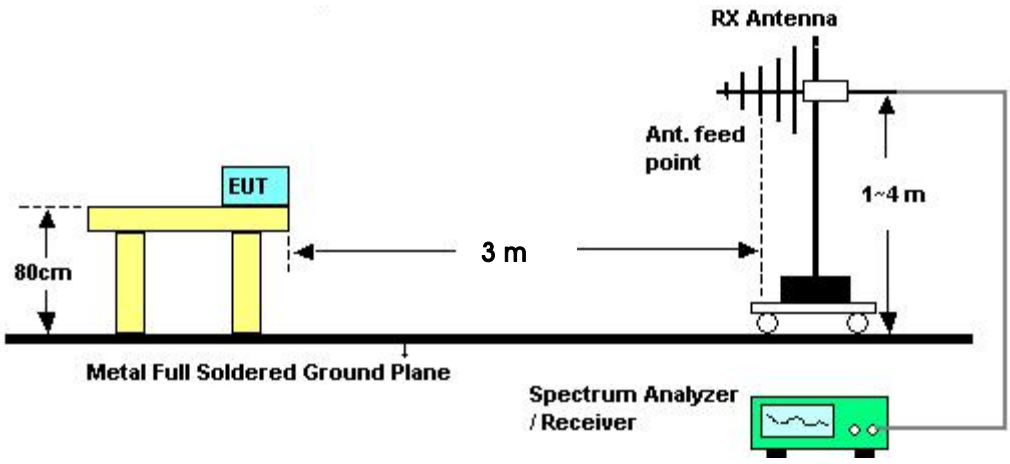
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Power Meter Parameter	Setting
RB / VB	10 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3.3. Test Procedures

1. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. The horn receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
3. For maximum emission amplitude, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading and was used to determine the frequency at which the highest radiated emission occurs, fM. Next, the points that are 10dB or more below the highest radiated emission were observed in a search from fM in both the lower and higher frequency direction in the measured frequency EIRP graph, they are denoted as fL and fH, respectively. The UWB bandwidth is the difference between fL and fH.
4. The individual UWB bandwidths were measured for each BAND_ID (n_b) of the UWB spectrum. Both horizontal and vertical polarizations were taken into account to determine the full UWB BW on the maximized (in azimuth and elevation) signals.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

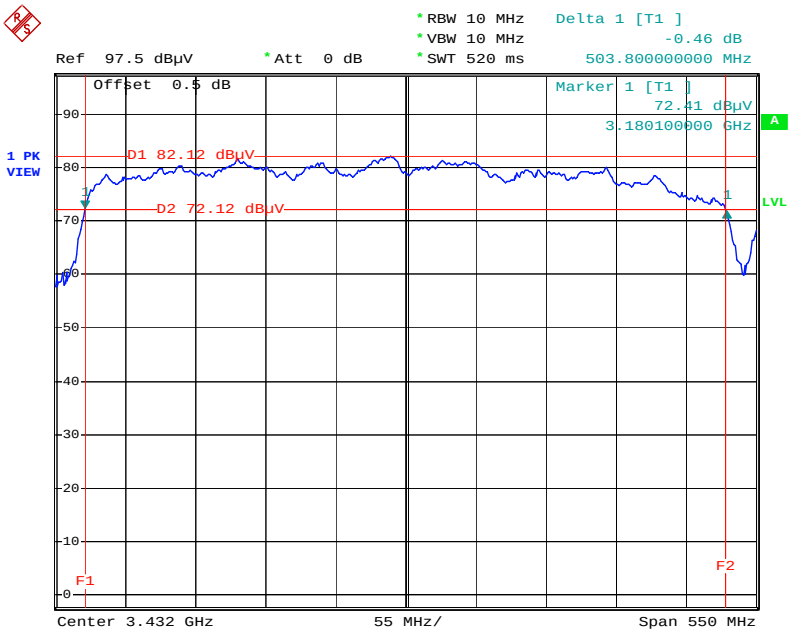
4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of UWB Bandwidth

UWB Bandwidth on BAND_ID (nb) 1

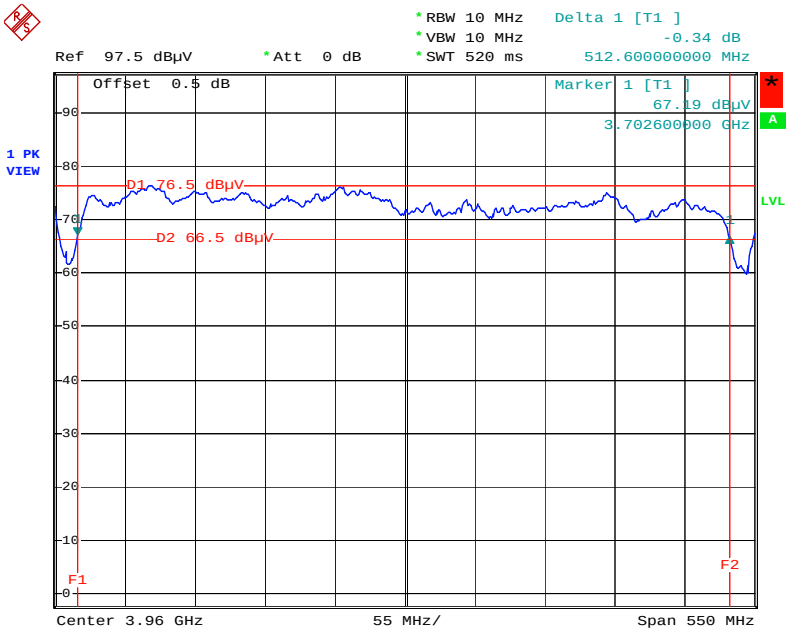
UWB BW = 503 MHz



Date: 28.JUL.2009 10:20:08

UWB Bandwidth on BAND_ID (nb) 2

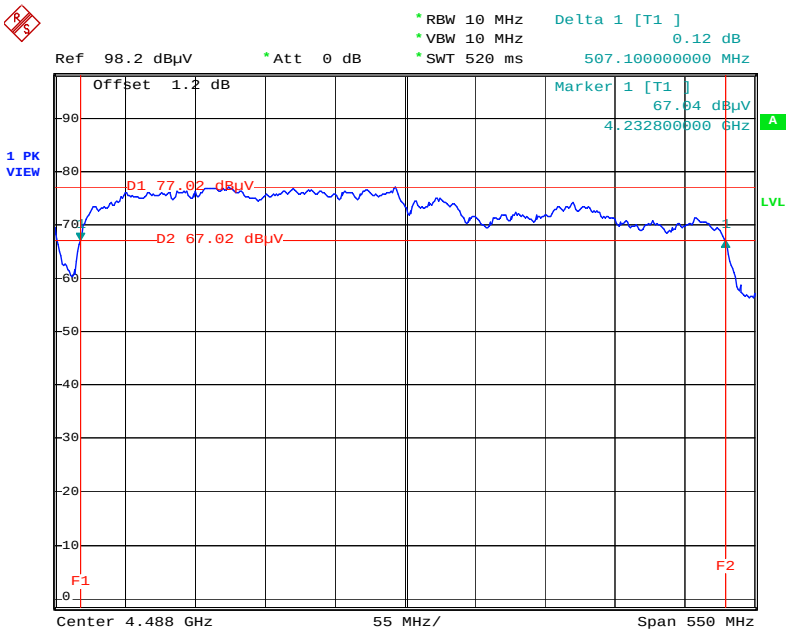
UWB BW = 512.6 MHz



Date: 28.JUL.2009 10:24:39

UWB Bandwidth on BAND_ID (nb) 3

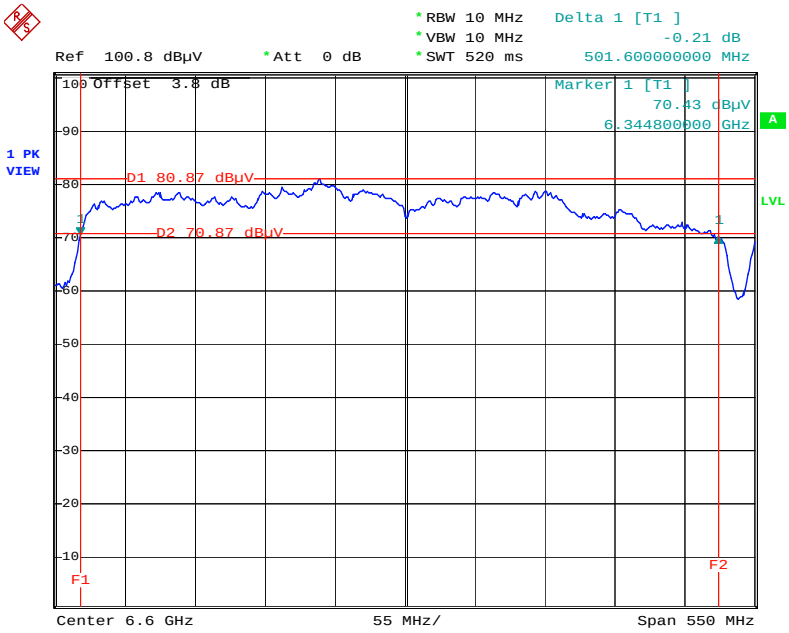
UWB BW = 507.10 MHz



Date: 28.JUL.2009 10:37:37

UWB Bandwidth on BAND_ID (nb) 7

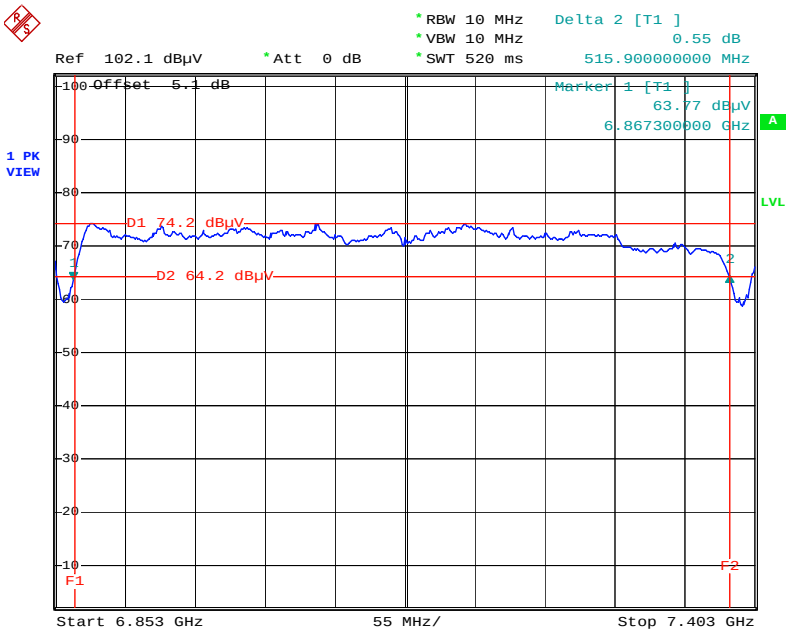
UWB BW = 501.6 MHz



Date: 28.JUL.2009 11:57:03

UWB Bandwidth on BAND_ID (nb) 8

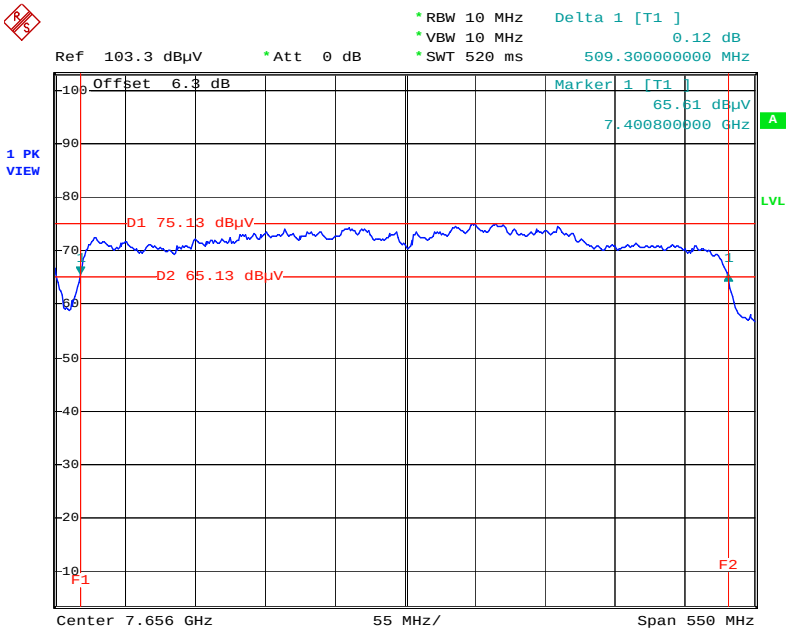
UWB BW = 515.9 MHz



Date: 28.JUL.2009 12:05:03

UWB Bandwidth on BAND_ID (nb) 9

UWB BW =509.3 MHz



Date: 28.JUL.2009 12:11:53

4.4. Radiated Emissions Measurement

4.4.1. Limit

The radiated emissions at or below 960 MHz from a device shall not exceed the emission levels in section 15.209(a) limit below.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3

The radiated emissions above 960 MHz from a device shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

Freq. (MHz)	EIRP (dBm)	E- Field (dB μV/m) at 3m	E- Field (dB μV/m) at 1m	E- Field (dB μV/m) at 0.5m
960-1610	-75.3	19.9	29.44	35.46
1610-1990	-63.3	31.9	41.44	47.46
1990-3100	-61.3	33.9	43.44	49.46
3100-10600	-41.3	53.9	63.44	69.46
10600 above	-61.3	33.9	43.44	49.46

Note 1: This may be converted to a peak field strength level at 3 meters using E(dBuV/m) = P(dBm EIRP) + 95.2 dB.

Note 2: Above 960MHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m. Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB); Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB]. form 3m to 0.5m. Distance extrapolation factor = 20 log (specific distance [3m] / test distance [0.5m]) (dB); Limit line = specific limits (dBuV) + distance extrapolation factor [15.56 dB].

From 47 CFR Section 15.521(c): Emissions from digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in Section 15.209 of this chapter, rather than the limits specified in this subpart, provided it can be clearly demonstrated that those emissions from the UWB device are due solely to emissions from digital circuitry contained within the transmitter and that the emissions are not intended to be radiated from the transmitter's antenna. Emissions from associated digital devices, as defined in Section 15.3(k) of this chapter, e.g., emissions from digital circuitry used to control additional functions or capabilities other than the UWB transmission, are subject to the limits contained in Subpart B of Part 15 of this chapter.

4.4.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	0 dB
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic or 40 GHz
RB / VB	1MHz / 3MHz for RMS for Average, 1 msec averaging time were used for these measurement frequencies

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.4.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable for measured the frequency range below 960 MHz and antenna tower was placed below 1 meters far away from the turntable for measured the frequency range above 960 MHz
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. The measurements made over the frequency range from 9 kHz to 960 MHz were maximized using an EMI receiver with peak detector capabilities. Measurements of the radiated field from 9 kHz to 960 MHz were made with the measurement antenna located a distance of 3 meters from the EUT. If the emissions level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
6. Measurements above 960 MHz were maximized using a spectrum analyzer with RMS detector capabilities. A spectrum analyzer was used for the final measurements utilizing an RMS detector at the frequencies with the largest amplitudes. The prescribed RBW of 1 MHz and VBW of 3 MHz, and a

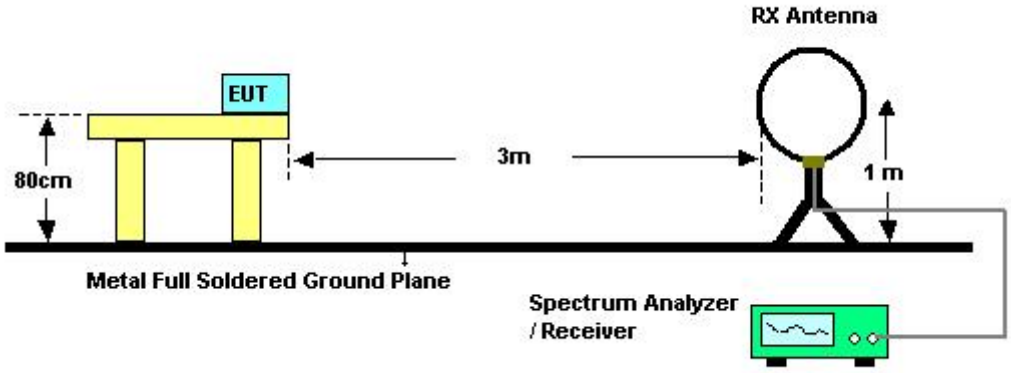
1 msec averaging time were used for these measurements. Measurements of the radiated field at frequencies above 960 MHz were made with the measurement antenna located a distance of below 1 meter from the EUT.

7. The spectrum between 9 kHz and 960 MHz contained no intentional radiation and lies below the limits. The spectrum from 960MHz to18GHz contained intentional UWB signals between 3100 MHz and 10600 MHz and lie below the limits. No other emissions above 10600 MHz were detected. The maximum frequency tested was 40 GHz.
8. Per 47 CFR, Part 15, Subpart F, §15.521(c) (§15.209) all digital emissions from the transmitter not intended to be radiated from the antenna port meet the 15.209 subpart C limits.
9. Additional measurements in the 960 MHz to 40 GHz range were performed to determine the nature of all unintentional emissions in this span. Conducted antenna port measurement and terminated antenna port measurement were done in the 960 MHz to 8 GHz range show that all noise peaks have the same frequency and polarization and are determined to be emission from the digital circuit and are not radiated from the antenna.

4.4.4. Test Setup Layout

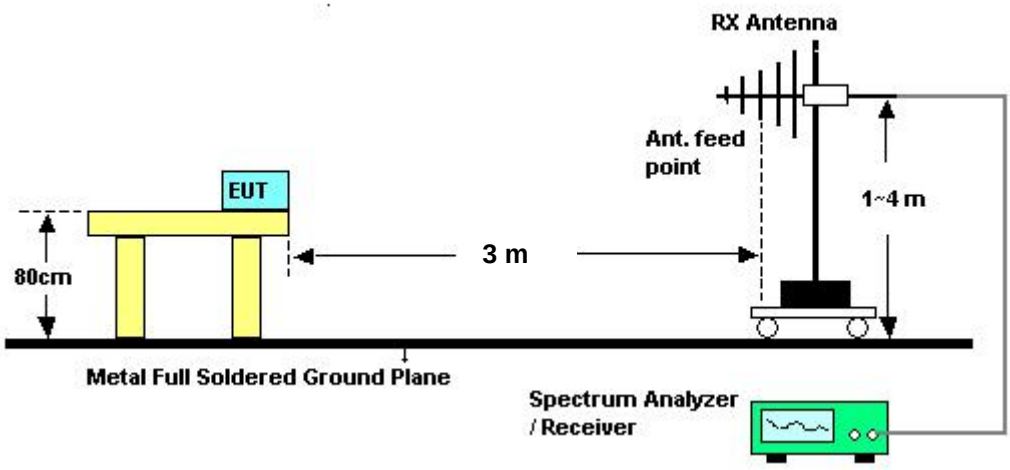
For radiated emissions below 30MHz

Investigated emissions from digital circuitry used to control additional functions or capabilities other than the UWB transmission



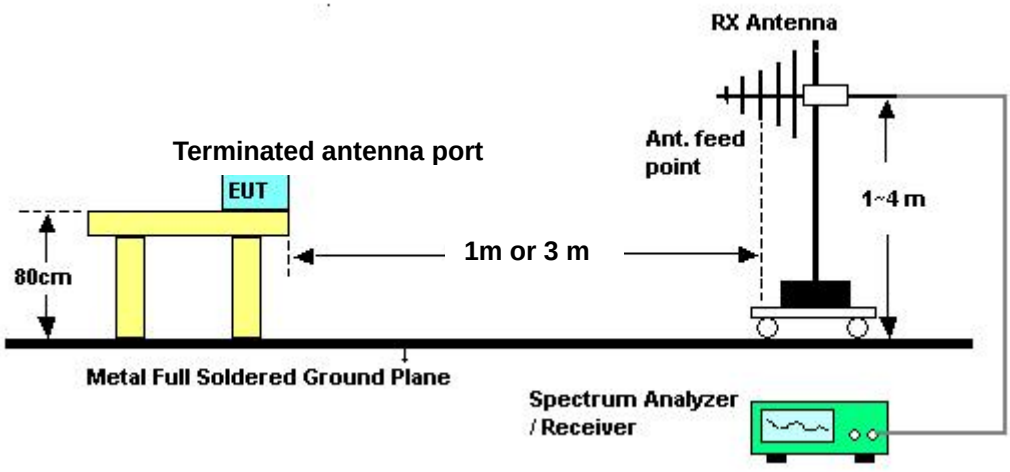
For radiated emissions from 30MHz~960MHz

Investigated emissions from digital circuitry used to control additional functions or capabilities other than the UWB transmission

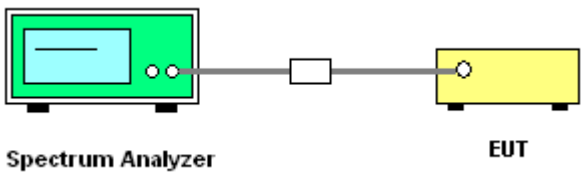


For radiated emissions above 960MHz

Investigated emissions from digital circuitry used to control additional functions or capabilities other than the UWB transmission



For conducted emissions above 960MHz (Conducted antenna port measurement)



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	23°C	Humidity	51%
Test Engineer	Alan Huang		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

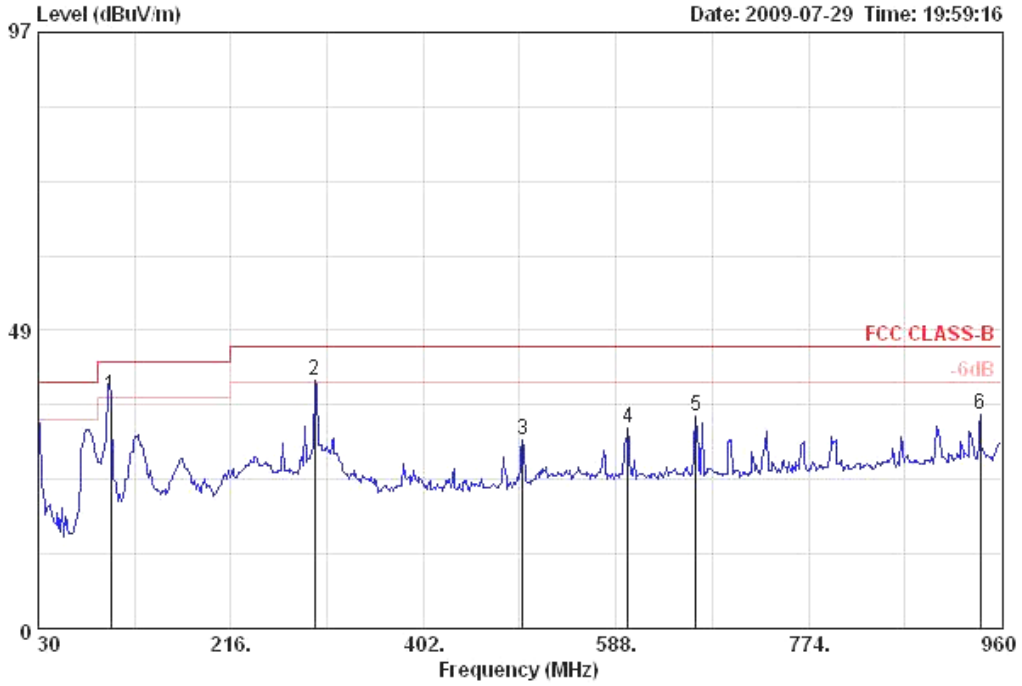
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.4.8. Results of Radiated Emissions (30MHz~960MHz)

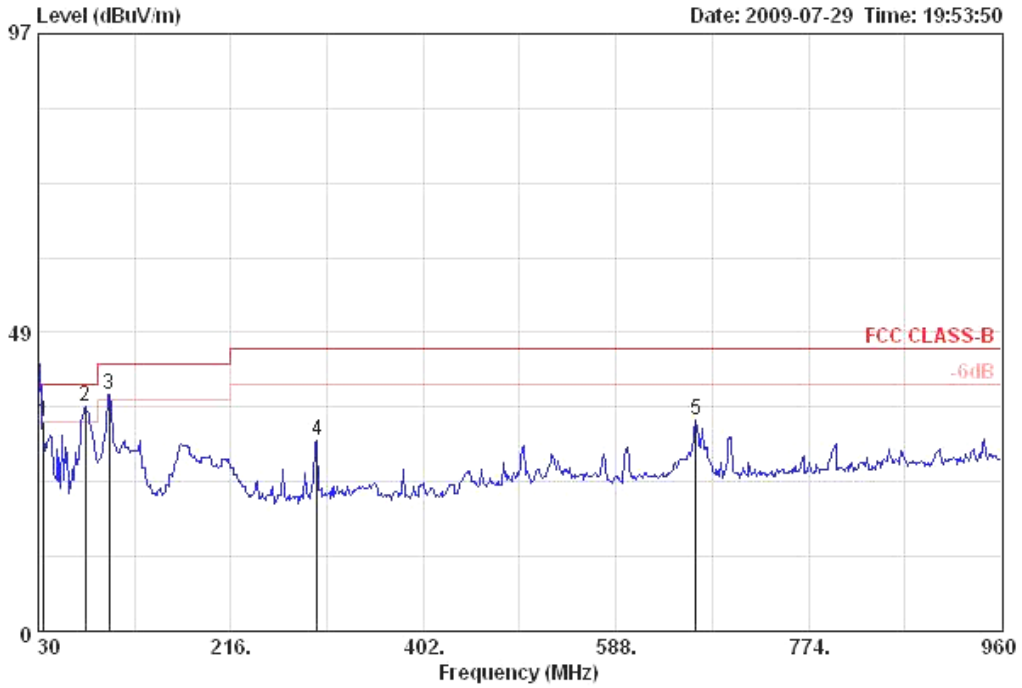
Temperature	23°C	Humidity	51%
Test Engineer	Alan Huang	Configurations	Band group 1

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1 @	99.720	37.99	-5.51	43.50	53.40	10.99	27.60	1.20	QP	HORIZONTAL	195	255
2 !	296.750	40.24	-5.76	46.00	51.73	13.33	26.91	2.09	Peak	HORIZONTAL	0	100
3	497.540	30.58	-15.42	46.00	38.38	17.58	28.09	2.69	Peak	HORIZONTAL	0	100
4	599.390	32.74	-13.26	46.00	39.18	18.76	28.10	2.90	Peak	HORIZONTAL	0	100
5	665.350	34.64	-11.36	46.00	40.26	18.98	28.03	3.44	Peak	HORIZONTAL	0	100
6	939.860	34.94	-11.06	46.00	37.75	20.83	27.24	3.60	Peak	HORIZONTAL	0	100

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	35.280	33.92	-6.08	40.00	45.10	16.08	27.80	0.54	QP	VERTICAL	214	100
2 @	75.590	36.35	-3.65	40.00	56.19	6.93	27.70	0.93	Peak	VERTICAL	0	400
3 @	98.870	38.37	-5.13	43.50	54.01	10.79	27.61	1.18	Peak	VERTICAL	0	400
4	299.660	30.84	-15.16	46.00	42.28	13.36	26.90	2.10	Peak	VERTICAL	0	400
5	665.350	34.31	-11.69	46.00	39.93	18.98	28.03	3.44	Peak	VERTICAL	0	400
6	995.150	34.81	-19.19	54.00	36.89	21.25	27.02	3.69	Peak	VERTICAL	0	400

Note:

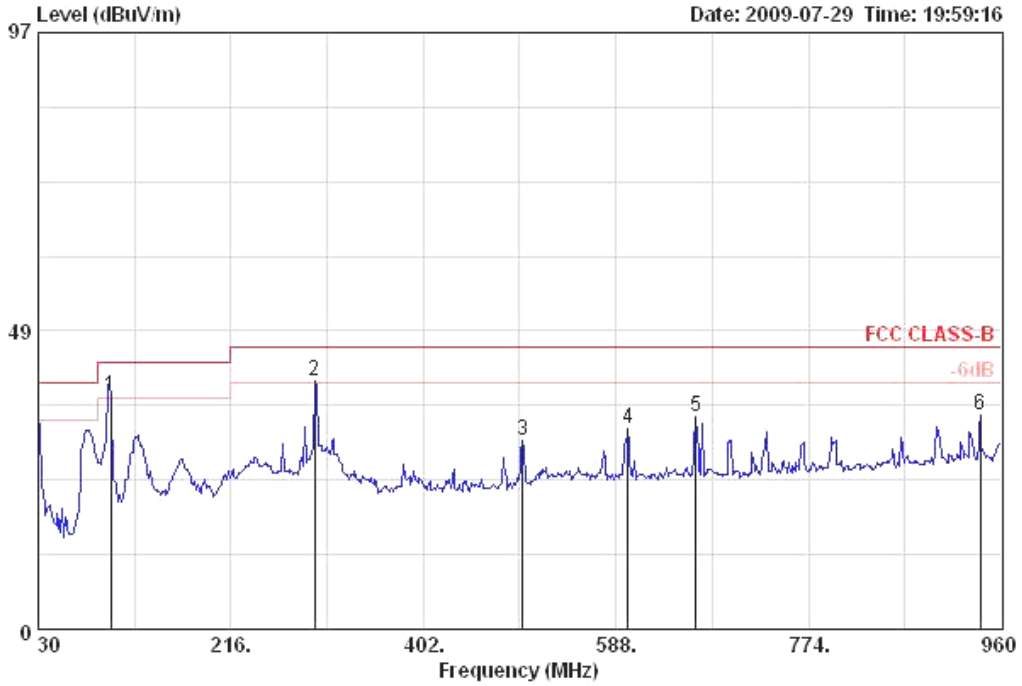
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

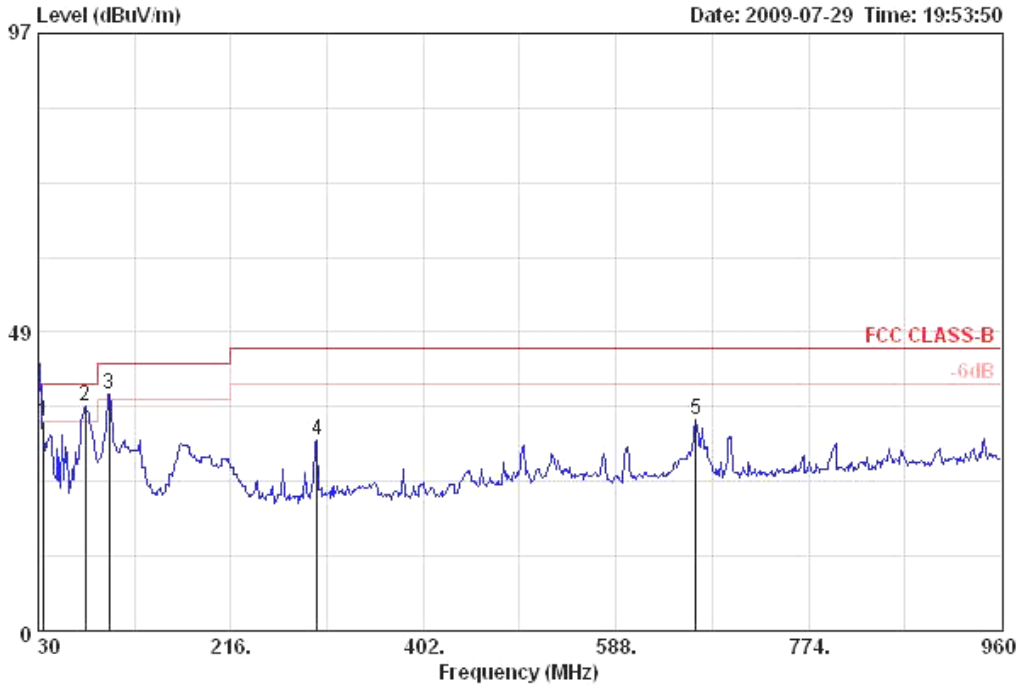
Temperature	23°C	Humidity	51%
Test Engineer	Alan Huang	Configurations	Band group 3

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1 @	99.720	37.99	-5.51	43.50	53.40	10.99	27.60	1.20	QP	HORIZONTAL	195	255
2 !	296.750	40.24	-5.76	46.00	51.73	13.33	26.91	2.09	Peak	HORIZONTAL	0	100
3	497.540	30.58	-15.42	46.00	38.38	17.58	28.09	2.69	Peak	HORIZONTAL	0	100
4	599.390	32.74	-13.26	46.00	39.18	18.76	28.10	2.90	Peak	HORIZONTAL	0	100
5	665.350	34.64	-11.36	46.00	40.26	18.98	28.03	3.44	Peak	HORIZONTAL	0	100
6	939.860	34.94	-11.06	46.00	37.75	20.83	27.24	3.60	Peak	HORIZONTAL	0	100

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	35.280	33.92	-6.08	40.00	45.10	16.08	27.80	0.54	QP	VERTICAL	214	100
2 @	75.590	36.35	-3.65	40.00	56.19	6.93	27.70	0.93	Peak	VERTICAL	0	400
3 @	98.870	38.37	-5.13	43.50	54.01	10.79	27.61	1.18	Peak	VERTICAL	0	400
4	299.660	30.84	-15.16	46.00	42.28	13.36	26.90	2.10	Peak	VERTICAL	0	400
5	665.350	34.31	-11.69	46.00	39.93	18.98	28.03	3.44	Peak	VERTICAL	0	400
6	995.150	34.81	-19.19	54.00	36.89	21.25	27.02	3.69	Peak	VERTICAL	0	400

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

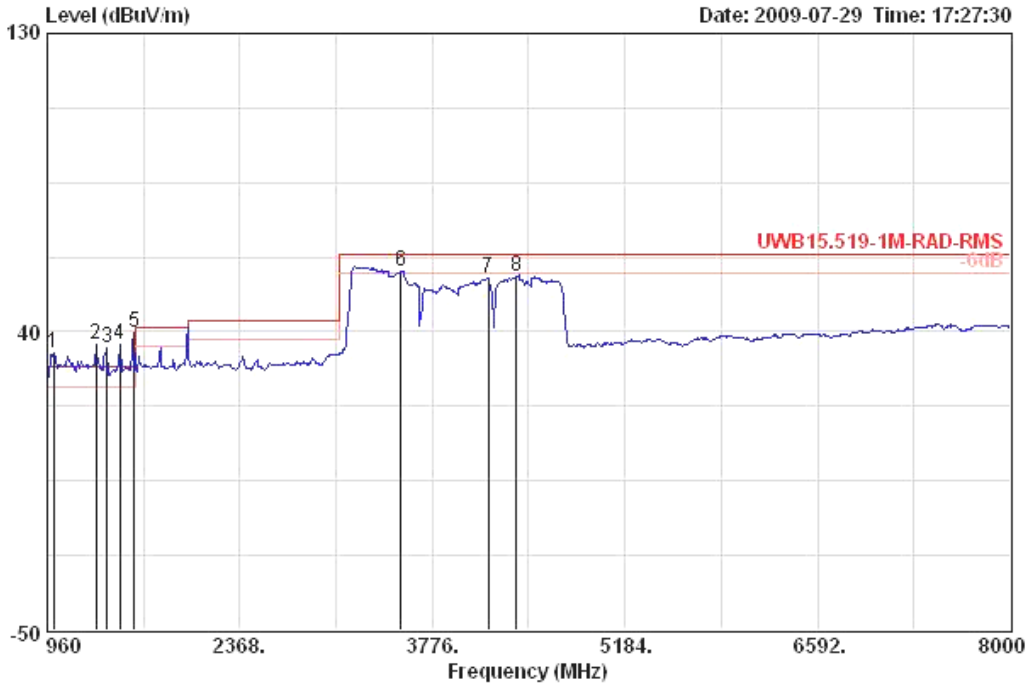
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.4.9. Results for Radiated Emissions (960MHz~40GHz Emissions from the UWB transmission)

Temperature	23°C	Humidity	51%
Test Engineer	Alan Huang	Configurations	Band group 1

Horizontal

UWB Radiated Emissions 960 MHz to 8 GHz

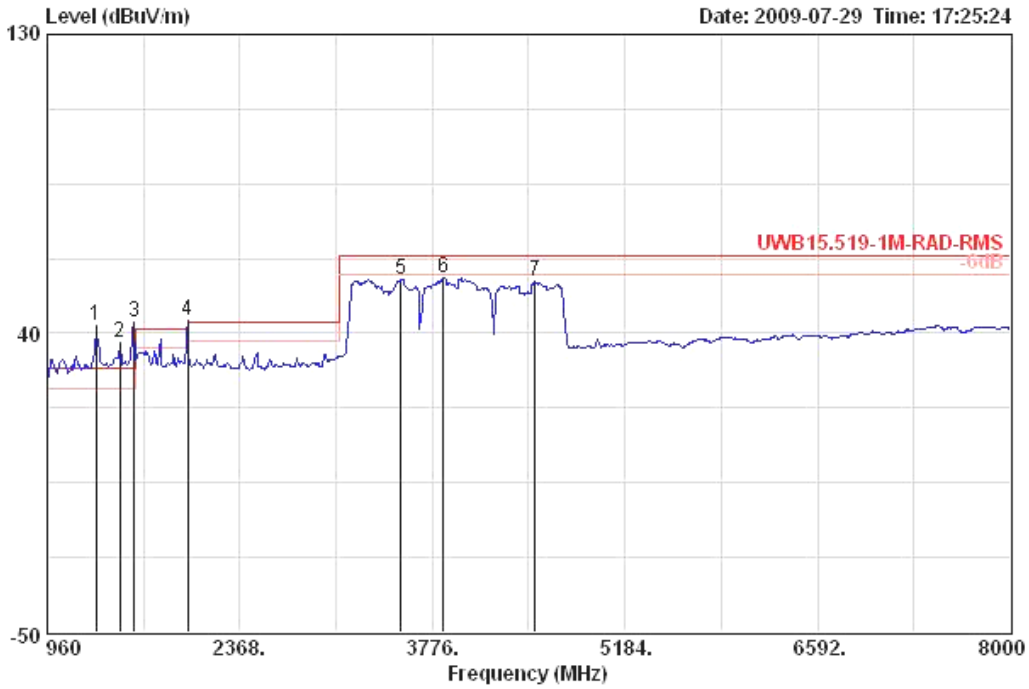


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1009.280	33.78	4.34	29.44	43.63	23.67	36.17	2.65	Peak	HORIZONTAL	0	100
2	1319.040	36.04	6.60	29.44	43.45	24.84	35.22	2.97	Peak	HORIZONTAL	0	100
3	1396.480	34.90	5.46	29.44	41.51	25.17	34.83	3.05	Peak	HORIZONTAL	0	100
4	1488.000	36.03	6.59	29.44	42.06	25.53	34.73	3.17	Peak	HORIZONTAL	0	100
5	1593.600	39.79	10.35	29.44	45.18	26.10	34.78	3.29	Peak	HORIZONTAL	0	100
6 !	3543.680	58.39	-5.05	63.44	57.98	30.52	34.90	4.78	Peak	HORIZONTAL	0	100
7	4184.320	56.23	-7.21	63.44	55.15	31.71	35.43	4.80	Peak	HORIZONTAL	0	100
8	4388.480	56.71	-6.73	63.44	55.58	31.83	35.81	5.11	Peak	HORIZONTAL	0	100

Note: Measurements made with 1 MHz RBW/3MHz VBW (RMS detector) at 3m distance. 1 msec averaging time were used for these frequencies per bin point measurements. Emissions (Mark 1, 2, 3, 4, 5) from digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Vertical

UWB Radiated Emissions 960 MHz to 8 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1319.040	42.08	12.64	29.44	49.48	24.84	35.22	2.97	Peak	VERTICAL	360	100
2	1488.000	37.07	7.63	29.44	43.11	25.52	34.73	3.17	Peak	VERTICAL	360	100
3 @	1593.600	43.18	13.74	29.44	48.56	26.10	34.78	3.29	Peak	VERTICAL	360	100
4	1987.840	43.69	2.25	41.44	46.56	28.40	34.94	3.67	Peak	VERTICAL	360	100
5	3543.680	56.26	-7.18	63.44	55.85	30.52	34.90	4.78	Peak	VERTICAL	360	100
6	3853.440	56.77	-6.67	63.44	55.93	31.27	35.03	4.61	Peak	VERTICAL	360	100
7	4529.280	55.52	-7.92	63.44	54.02	31.93	35.89	5.45	Peak	VERTICAL	360	100

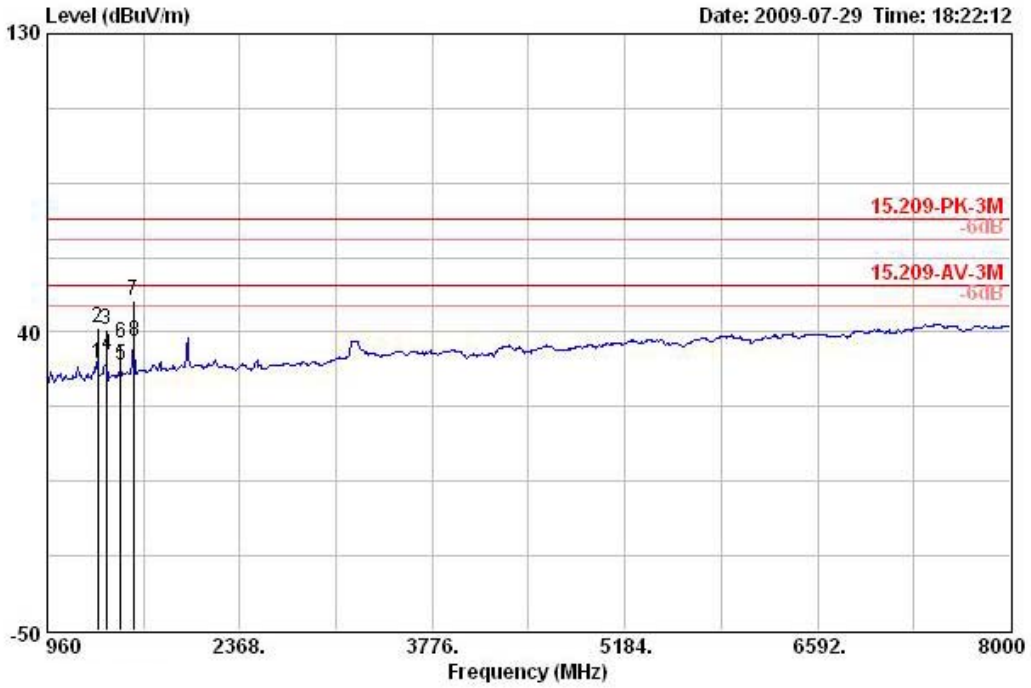
Note: Measurements made with 1 MHz RBW/3MHz VBW (RMS detector) at 3m distance. 1 msec averaging time were used for these frequencies per bin point measurements. Emissions (Mark 1, 2, 3, 4) from digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Radiated Emissions with terminated antenna port (960MHz~8GHz)

Temperature	23°C	Humidity	21%
Test Engineer	Alan Huang	Configurations	Band group 1

Horizontal

Terminated antenna port:

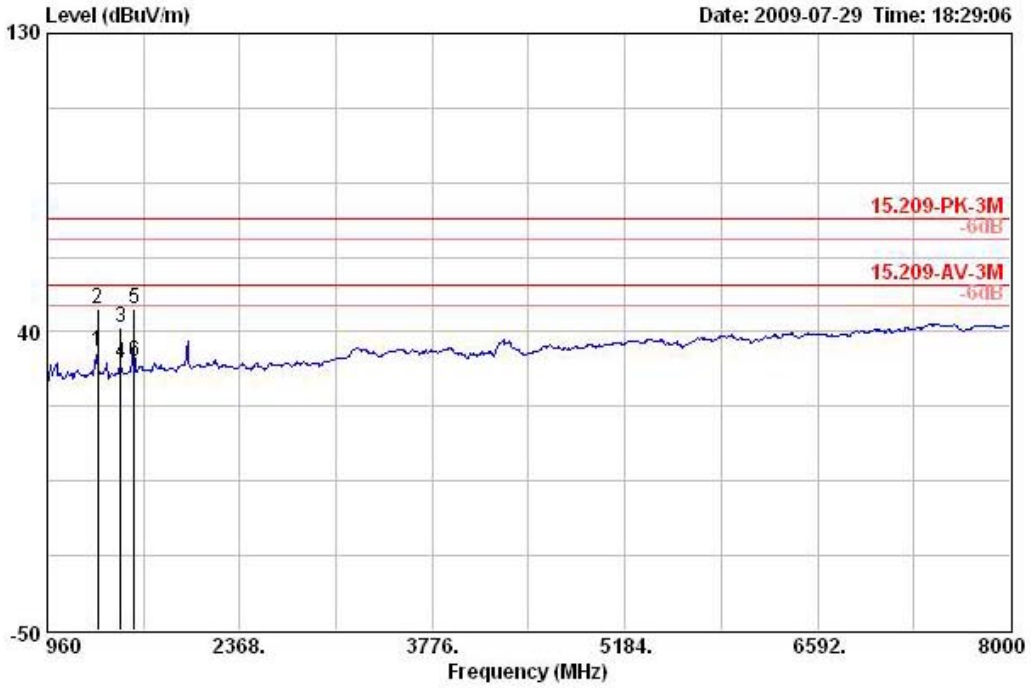


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1329.068	30.28	-23.72	54.00	37.62	24.91	35.22	2.97	AVERAGE	HORIZONTAL	65	100
2	1329.828	41.28	-32.72	74.00	48.62	24.91	35.22	2.97	PEAK	HORIZONTAL	65	100
3	1393.720	40.56	-33.44	74.00	47.23	25.11	34.83	3.05	PEAK	HORIZONTAL	307	100
4	1395.040	32.84	-21.16	54.00	39.44	25.17	34.83	3.05	AVERAGE	HORIZONTAL	307	100
5	1497.280	29.91	-24.09	54.00	35.86	25.62	34.73	3.17	AVERAGE	HORIZONTAL	228	100
6	1499.200	36.73	-37.27	74.00	42.67	25.62	34.73	3.17	PEAK	HORIZONTAL	228	100
7	1593.040	49.44	-24.56	74.00	54.82	26.10	34.78	3.29	PEAK	HORIZONTAL	300	100
8	1598.360	37.00	-17.00	54.00	42.39	26.10	34.78	3.29	AVERAGE	HORIZONTAL	300	100

Note: For digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Vertical

Terminated antenna port:



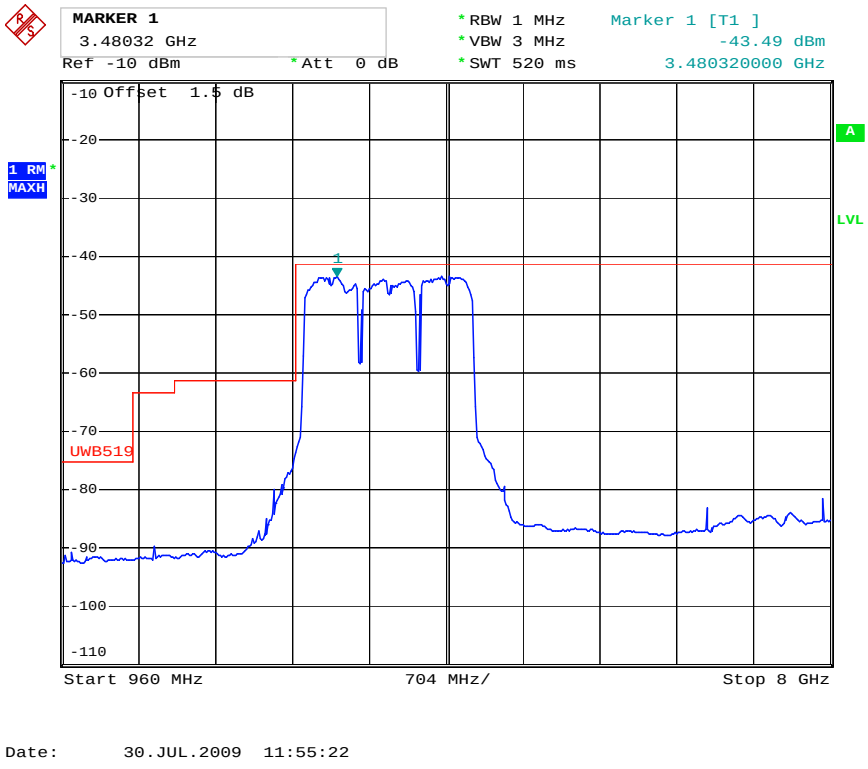
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1329.180	34.31	-19.69	54.00	41.65	24.91	35.22	2.97	AVERAGE	VERTICAL	299	100
2	1330.380	46.86	-27.14	74.00	54.05	24.91	35.09	2.99	PEAK	VERTICAL	299	100
3	1495.120	41.22	-32.78	74.00	47.26	25.52	34.73	3.17	PEAK	VERTICAL	248	100
4	1498.640	30.60	-23.40	54.00	36.56	25.61	34.73	3.17	AVERAGE	VERTICAL	248	100
5	1593.420	46.75	-27.25	74.00	52.14	26.10	34.78	3.29	PEAK	VERTICAL	162	100
6	1594.580	31.06	-22.94	54.00	36.45	26.10	34.78	3.29	AVERAGE	VERTICAL	162	100

Note: For digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Conducted Antenna Port Emissions (960MHz~8GHz)

Temperature	23°C	Humidity	21%
Test Engineer	Alan Huang	Configurations	Band group 1

Conducted antenna port:



Note: Conducted antenna port measurements made with 1 MHz RBW/3MHz VBW (RMS detector) at 50 ohm impedance. 1 msec averaging time were used for these frequencies per bin point measurements

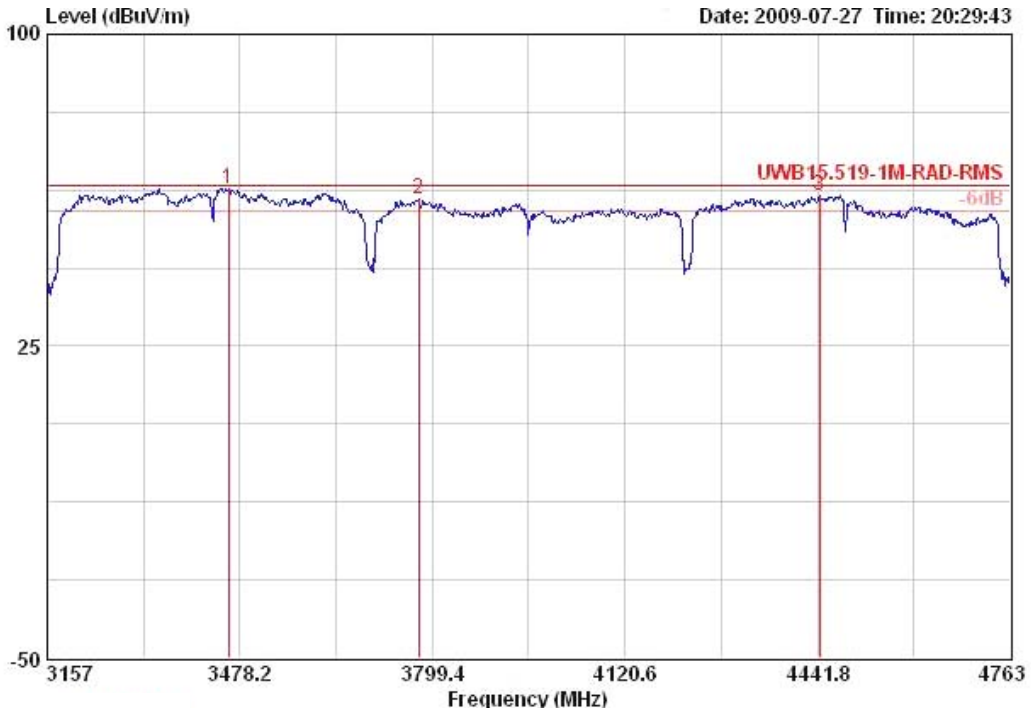
Horizontal

UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC1(3432MHz,3960MHz,4488MHz)

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3552.450	59.75	63.44	-3.69	61.35	3.41	35.28	30.26	112	126	Peak	HORIZONTAL
2	3837.900	62.33	63.44	-1.11	62.24	3.54	35.17	31.72	111	119	Peak	HORIZONTAL
3	4278.450	63.24	63.44	-0.20	62.10	3.79	35.10	32.44	360	122	Peak	HORIZONTAL

Vertical

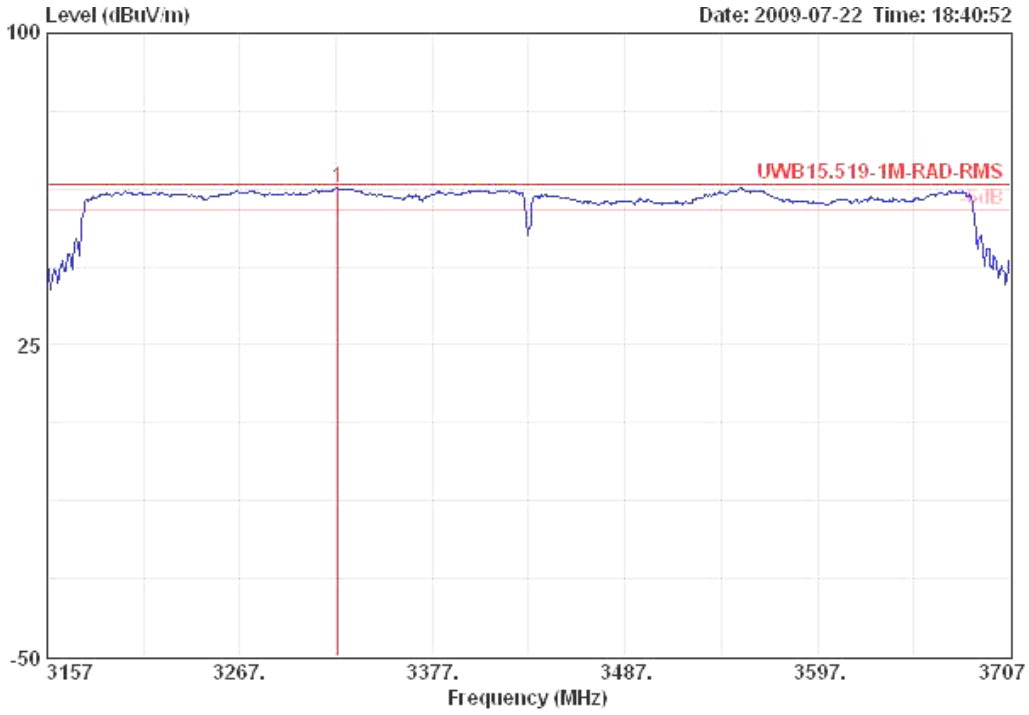
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC1(3432MHz,3960MHz,4488MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	3459.500	62.92	63.44	-0.52	64.88	3.35	35.31	30.00	352	126	Peak	VERTICAL
2 @	3776.300	60.18	63.44	-3.26	60.49	3.51	35.19	31.38	361	109	Peak	VERTICAL
3 @	4445.100	61.22	63.44	-2.22	60.02	3.89	35.10	32.41	342	119	Peak	VERTICAL

Horizontal

UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC5(3432MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3323.100	62.75	63.44	-0.69	64.81	3.27	35.34	30.00	112	123	Peak	HORIZONTAL

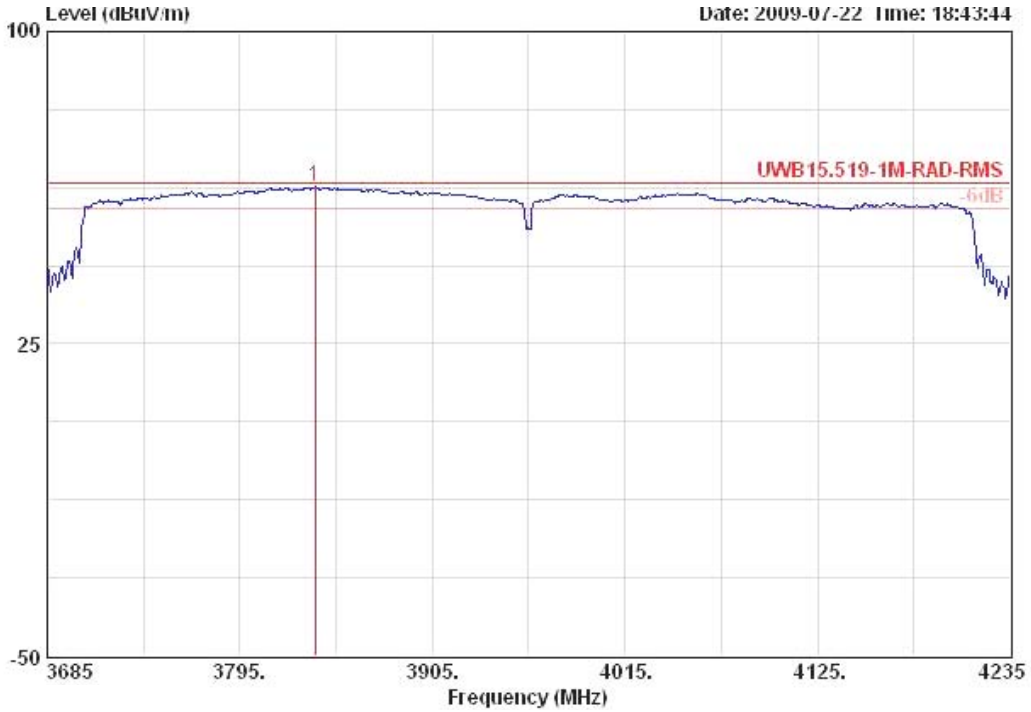
Vertical

UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC5(3432MHz)

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	3627.250	62.66	63.44	-0.78	63.78	3.44	35.25	30.69	359	99	Peak	VERTICAL

Horizontal

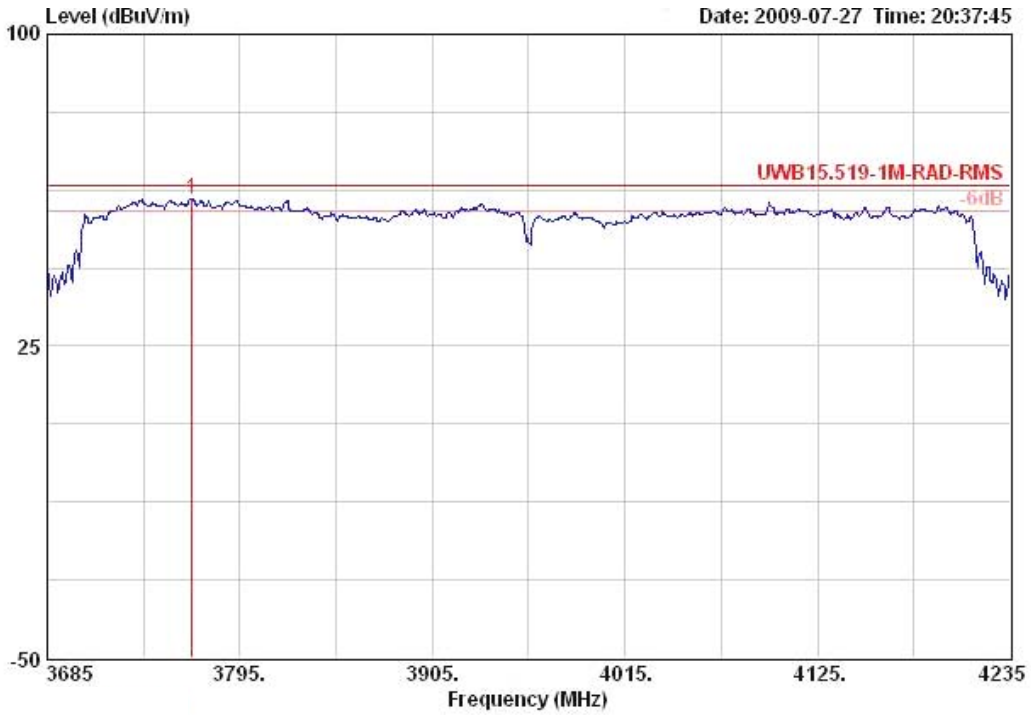
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC6(3960MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3837.900	62.75	63.44	-0.69	62.66	3.54	35.17	31.72	109	120	Peak	HORIZONTAL

Vertical

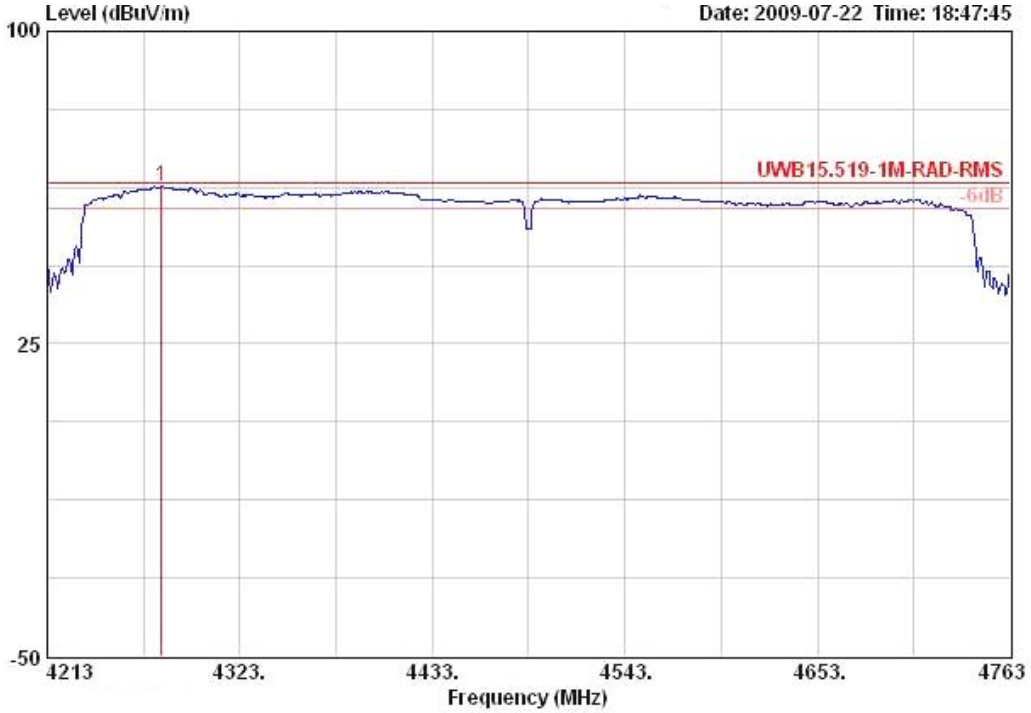
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC6(3960MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	3767.500	60.55	63.44	-2.89	60.87	3.51	35.20	31.38	360	112	Peak	VERTICAL

Horizontal

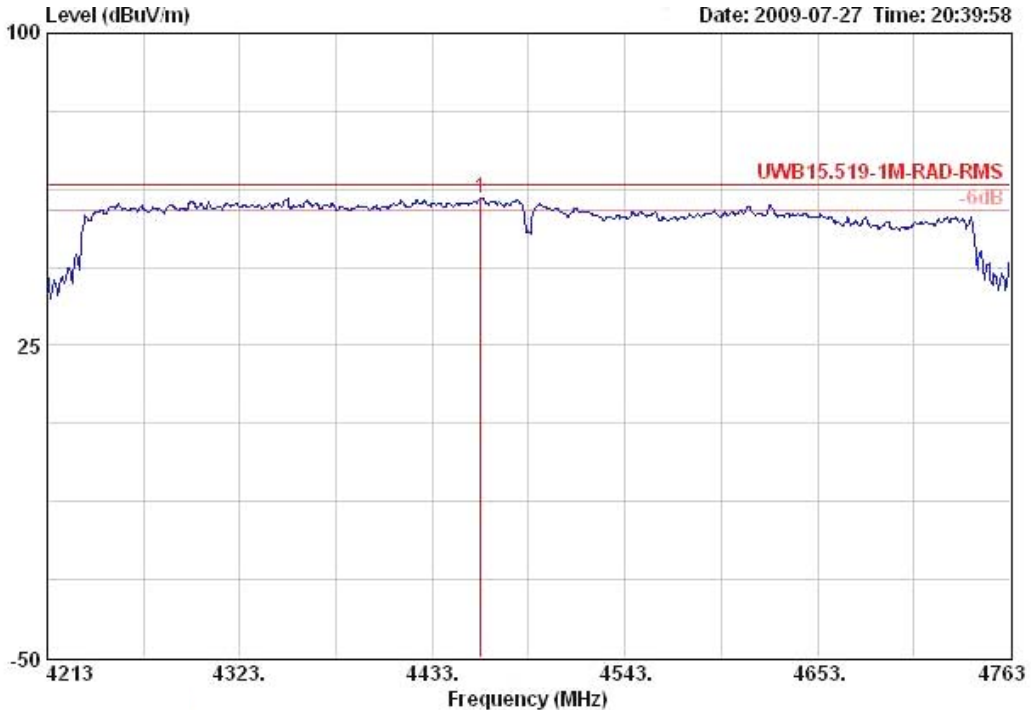
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC7(4488MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4278.450	62.89	63.44	-0.55	61.75	3.79	35.10	32.44	360	120	Peak	HORIZONTAL

Vertical

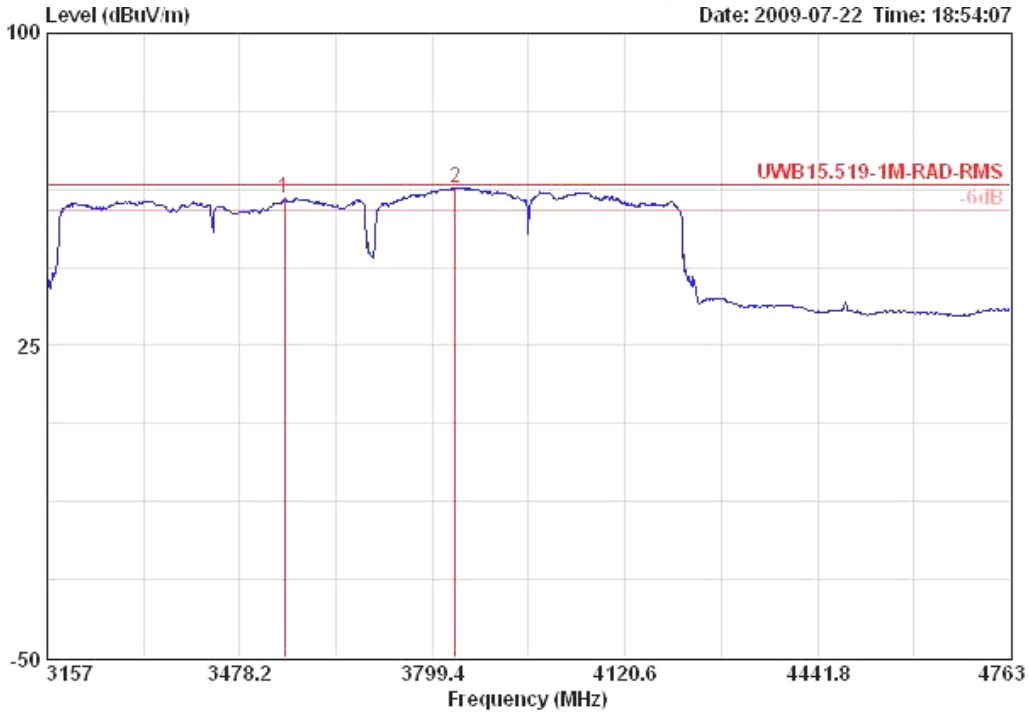
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC7(4488MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	4460.500	60.35	63.44	-3.09	59.13	3.90	35.10	32.41	343	109	Peak	VERTICAL

Horizontal

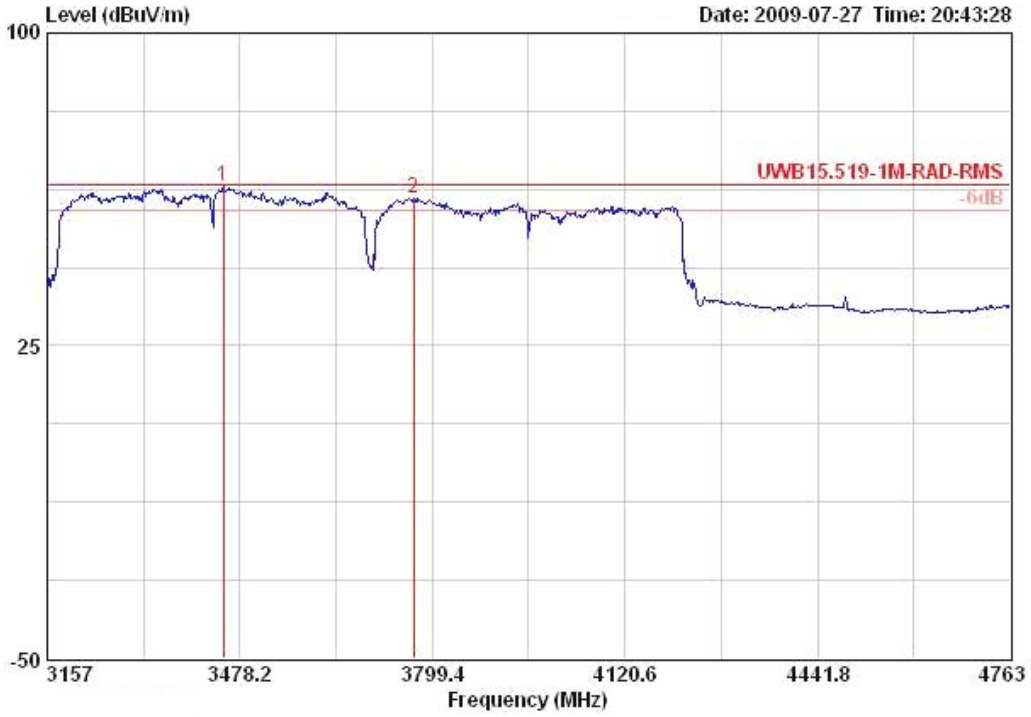
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC8(3432MHz,3960MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3552.450	60.25	63.44	-3.19	61.85	3.41	35.28	30.26	116	121	Peak	HORIZONTAL
2	3837.900	63.01	63.44	-0.43	62.91	3.54	35.17	31.72	108	119	Peak	HORIZONTAL

Vertical

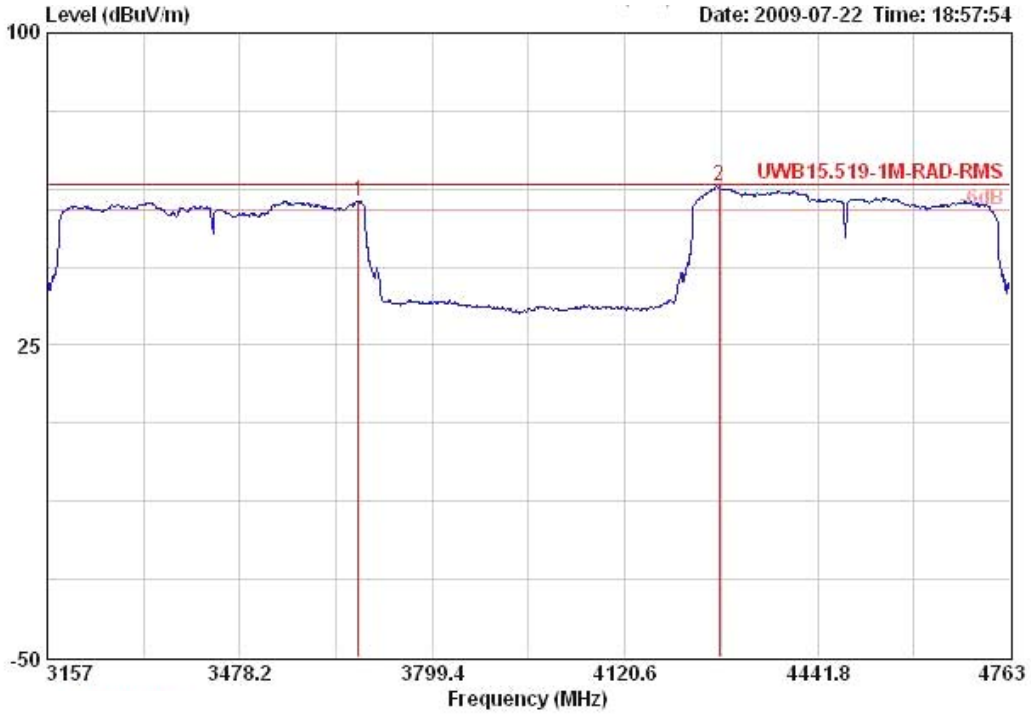
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC8(3432MHz,3960MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	3450.700	63.09	63.44	-0.35	65.05	3.35	35.31	30.00	351	126	Peak	VERTICAL
2 @	3768.050	60.47	63.44	-2.97	60.78	3.51	35.20	31.38	0	111	Peak	VERTICAL

Horizontal

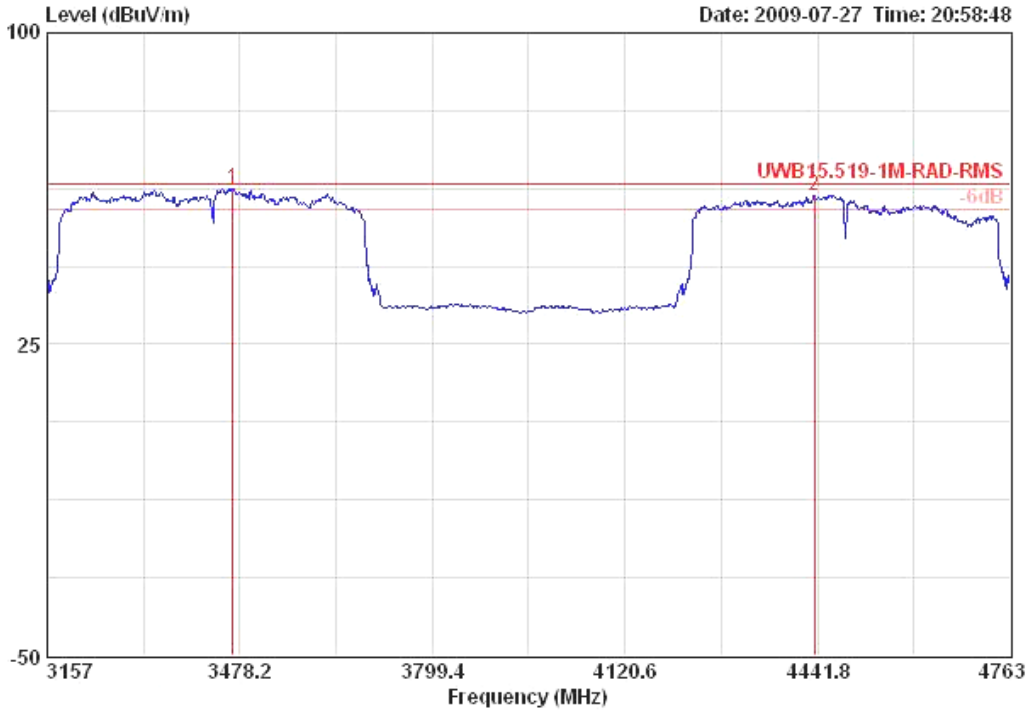
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC9(3432MHz,4488MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3675.650	59.53	63.44	-3.91	60.43	3.46	35.23	30.86	112	119	Peak	HORIZONTAL
2	4278.450	63.20	63.44	-0.24	62.07	3.79	35.10	32.44	360	120	Peak	HORIZONTAL

Vertical

UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC9(3432MHz,4488MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	3466.650	62.32	63.44	-1.12	64.27	3.35	35.31	30.00	353	127	Peak	VERTICAL
2 @	4436.300	60.73	63.44	-2.71	59.53	3.89	35.10	32.41	345	117	Peak	VERTICAL

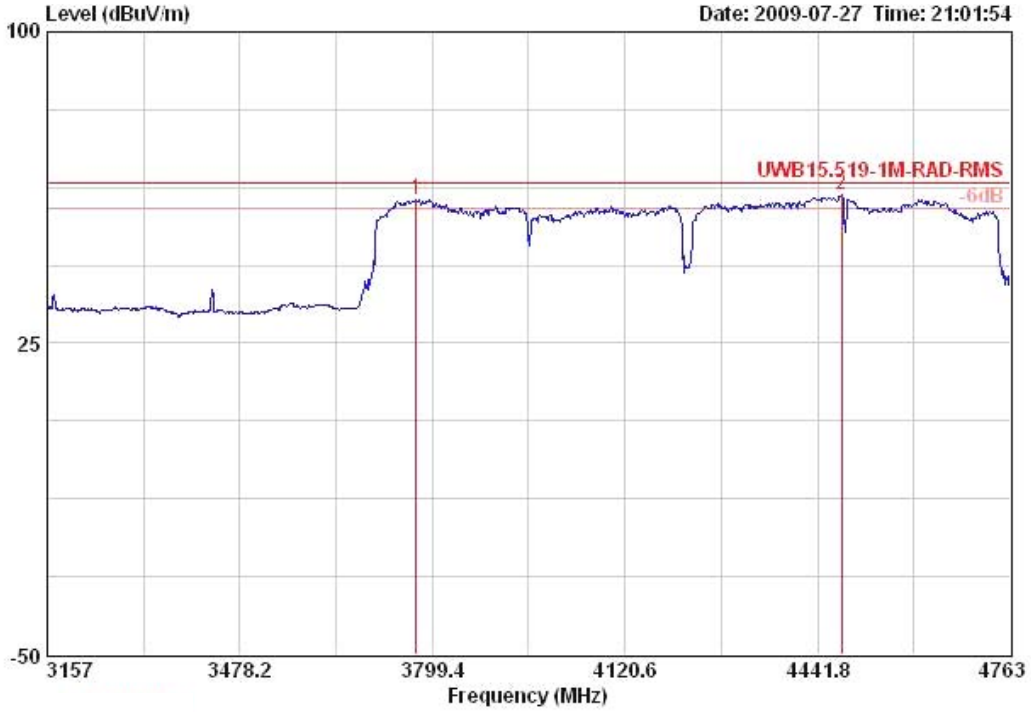
Horizontal

UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC10(3960MHz,4488MHz)

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3837.900	62.28	63.44	-1.16	62.18	3.54	35.17	31.72	107	119	Peak	HORIZONTAL
2	4278.450	63.37	63.44	-0.07	62.24	3.79	35.10	32.44	360	120	Peak	HORIZONTAL

Vertical

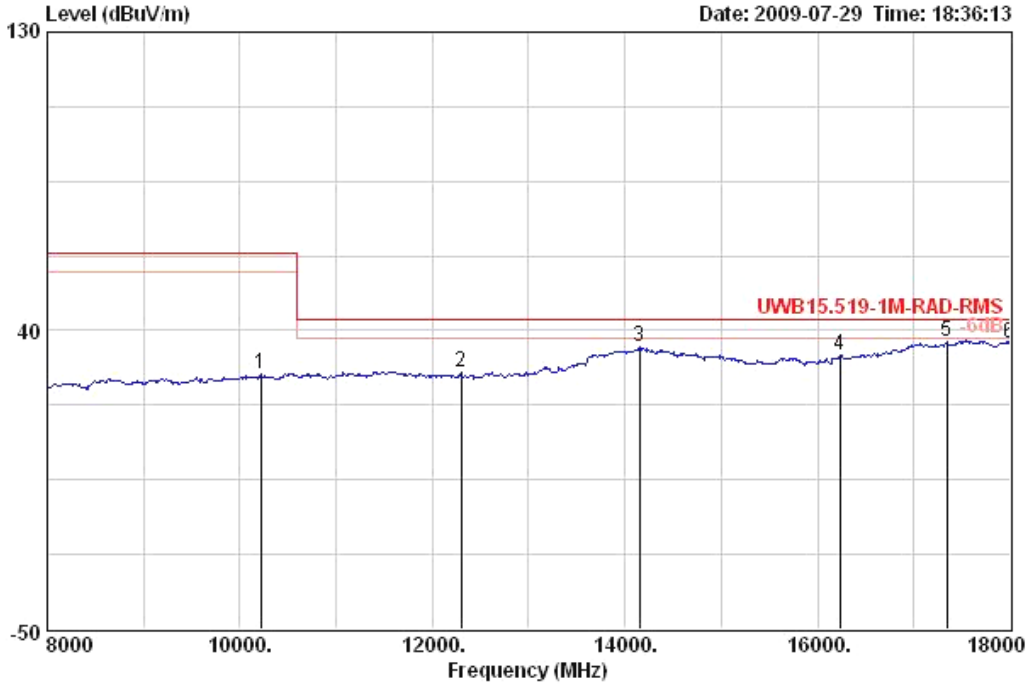
UWB Radiated Emissions 3 GHz to 5 GHz (RMS)/ TFC10(3960MHz,4488MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	3771.900	59.47	63.44	-3.97	59.78	3.51	35.20	31.38	4	111	Peak	VERTICAL
2 @	4482.500	60.60	63.44	-2.84	59.37	3.91	35.10	32.42	351	121	Peak	VERTICAL

Horizontal

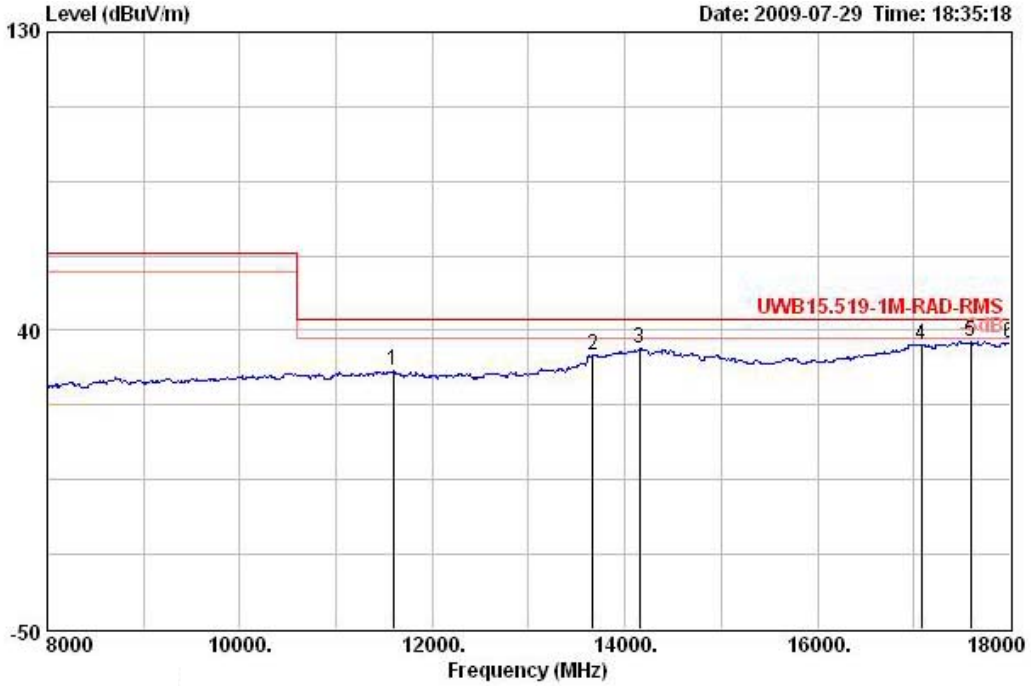
UWB Radiated Emissions 8 GHz to 18 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	10220.000	26.81	-36.63	63.44	13.86	38.37	35.52	10.10	Peak	HORIZONTAL	0	8485
2	12300.000	27.30	-16.14	43.44	13.33	38.72	34.98	10.24	Peak	HORIZONTAL	0	8485
3	14150.000	34.88	-8.56	43.44	15.54	40.89	33.20	11.65	Peak	HORIZONTAL	0	8485
4	16230.000	32.63	-10.81	43.44	16.44	38.93	35.04	12.30	Peak	HORIZONTAL	0	8485
5	17340.000	36.60	-6.84	43.44	16.14	41.93	33.97	12.49	Peak	HORIZONTAL	0	8485
6	18000.000	36.40	-7.04	43.44	15.17	42.70	33.78	12.30	Peak	HORIZONTAL	0	8485

Vertical

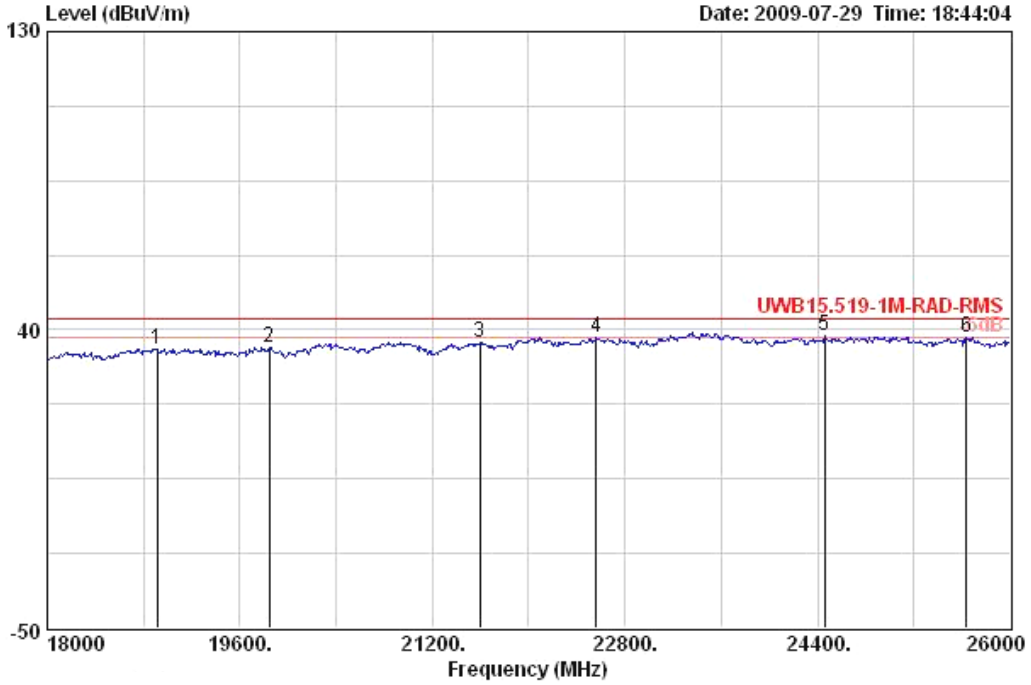
UWB Radiated Emissions 8 GHz to 18 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	11590.000	27.81	-15.63	43.44	13.29	38.52	34.82	10.83	Peak	VERTICAL	360	100
2	13670.000	32.41	-11.03	43.44	13.96	40.53	33.18	11.09	Peak	VERTICAL	360	100
3	14150.000	34.73	-8.71	43.44	15.38	40.89	33.20	11.65	Peak	VERTICAL	360	100
4	17080.000	35.70	-7.74	43.44	15.69	41.68	34.05	12.37	Peak	VERTICAL	360	100
5	17590.000	36.52	-6.92	43.44	15.67	42.20	33.89	12.54	Peak	VERTICAL	360	100
6	18000.000	36.06	-7.38	43.44	14.83	42.70	33.78	12.30	Peak	VERTICAL	360	100

Horizontal

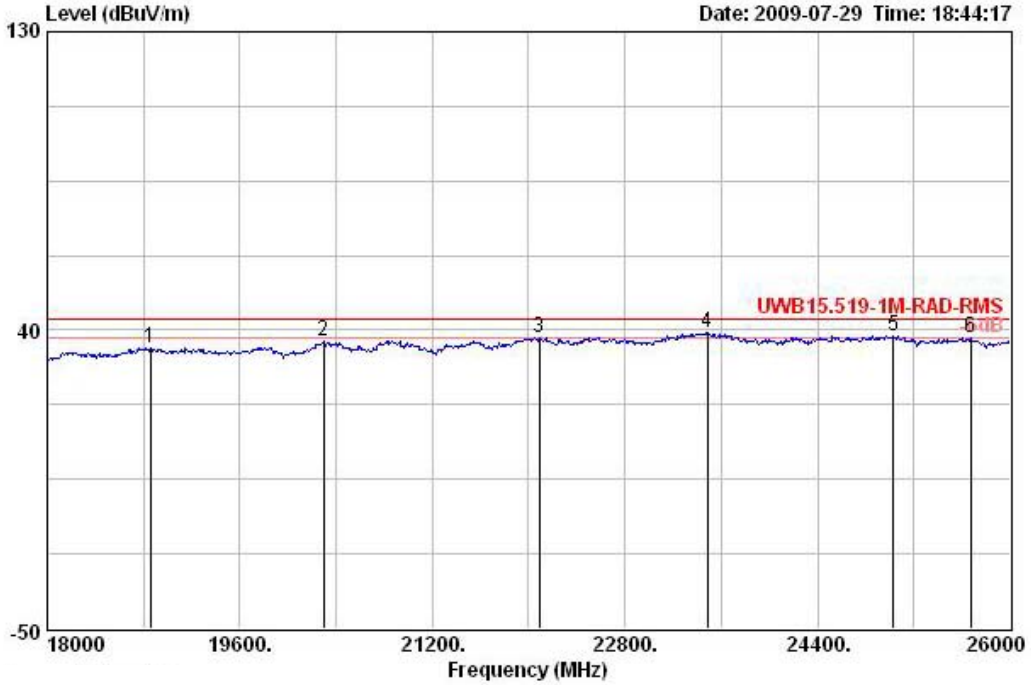
UWB Radiated Emissions 18 GHz to 26 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	18912.000	34.24	-9.20	43.44	15.55	37.99	33.16	13.86	Peak	HORIZONTAL	0	100
2	19848.000	34.79	-8.65	43.44	16.52	38.00	34.34	14.61	Peak	HORIZONTAL	0	100
3	21592.000	36.03	-7.41	43.44	17.56	38.08	34.15	14.54	Peak	HORIZONTAL	0	100
4	22560.000	37.44	-6.00	43.44	16.73	38.97	33.85	15.59	Peak	HORIZONTAL	0	100
5 !	24456.000	37.96	-5.48	43.44	17.52	39.47	34.18	15.16	Peak	HORIZONTAL	0	100
6 !	25640.000	37.60	-5.84	43.44	17.86	39.43	34.94	15.25	Peak	HORIZONTAL	0	100

Vertical

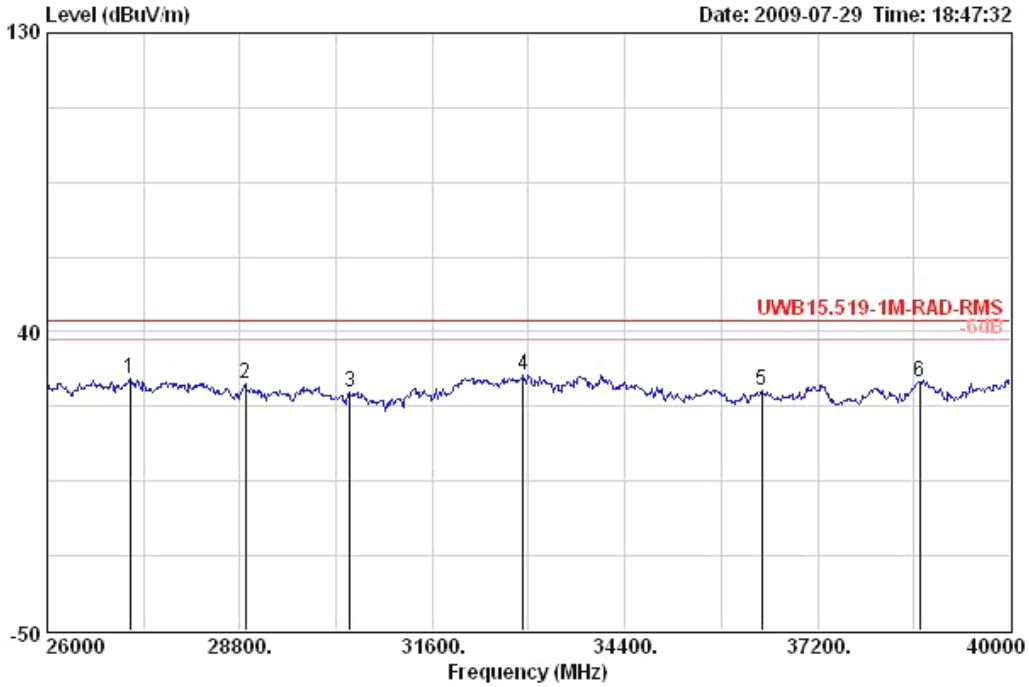
UWB Radiated Emissions 18 GHz to 26 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	18856.000	34.78	-8.66	43.44	16.20	37.99	33.21	13.80	Peak	VERTICAL	0	100
2	20296.000	36.83	-6.61	43.44	18.43	37.97	34.50	14.93	Peak	VERTICAL	0	100
3 !	22088.000	37.78	-5.66	43.44	17.77	38.34	33.86	15.54	Peak	VERTICAL	0	100
4 !	23488.000	39.15	-4.29	43.44	16.71	39.60	33.69	16.54	Peak	VERTICAL	0	100
5 !	25032.000	38.29	-5.15	43.44	18.63	39.31	33.83	14.18	Peak	VERTICAL	0	100
6 !	25672.000	37.58	-5.86	43.44	17.78	39.44	34.89	15.26	Peak	VERTICAL	0	100

Horizontal

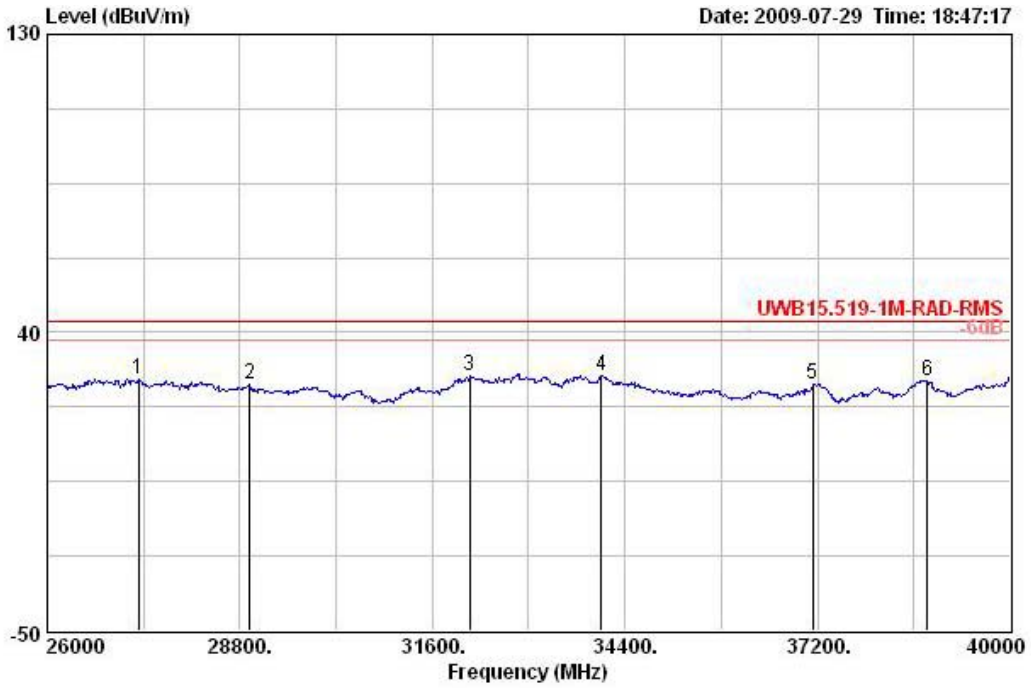
UWB Radiated Emissions 26 GHz to 40 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	27204.000	25.77	-17.67	43.44	17.23	39.56	31.01	0.00	Peak	HORIZONTAL	0	100
2	28884.000	24.36	-19.08	43.44	18.02	39.82	33.48	0.00	Peak	HORIZONTAL	0	100
3	30396.000	21.85	-21.59	43.44	17.70	40.32	36.17	0.00	Peak	HORIZONTAL	0	100
4	32916.000	26.78	-16.66	43.44	18.75	41.34	33.31	0.00	Peak	HORIZONTAL	0	100
5	36388.000	22.50	-20.94	43.44	19.22	42.52	39.23	0.00	Peak	HORIZONTAL	0	100
6	38684.000	24.89	-18.55	43.44	19.90	43.60	38.60	0.00	Peak	HORIZONTAL	0	100

Vertical

UWB Radiated Emissions 26 GHz to 40GHz

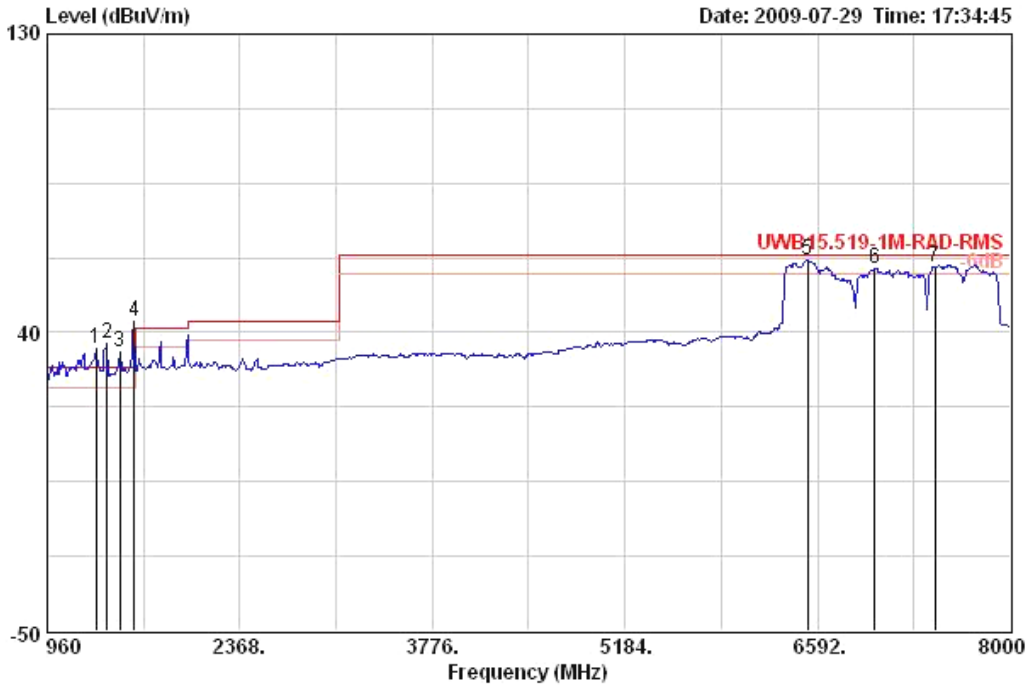


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	27330.000	26.03	-17.41	43.44	17.77	39.57	31.30	0.00	Peak	VERTICAL	0	100
2	28940.000	24.14	-19.30	43.44	17.83	39.84	33.53	0.00	Peak	VERTICAL	0	100
3	32146.000	26.85	-16.59	43.44	18.75	41.22	33.12	0.00	Peak	VERTICAL	0	100
4	34050.000	27.05	-16.39	43.44	20.45	41.52	34.92	0.00	Peak	VERTICAL	0	100
5	37130.000	24.57	-18.87	43.44	20.11	43.10	38.65	0.00	Peak	VERTICAL	0	100
6	38796.000	25.48	-17.96	43.44	20.25	43.56	38.33	0.00	Peak	VERTICAL	0	100

Temperature	23°C	Humidity	51%
Test Engineer	Alan Huang	Configurations	Band group 3

Horizontal

UWB Radiated Emissions 960 MHz to 8 GHz

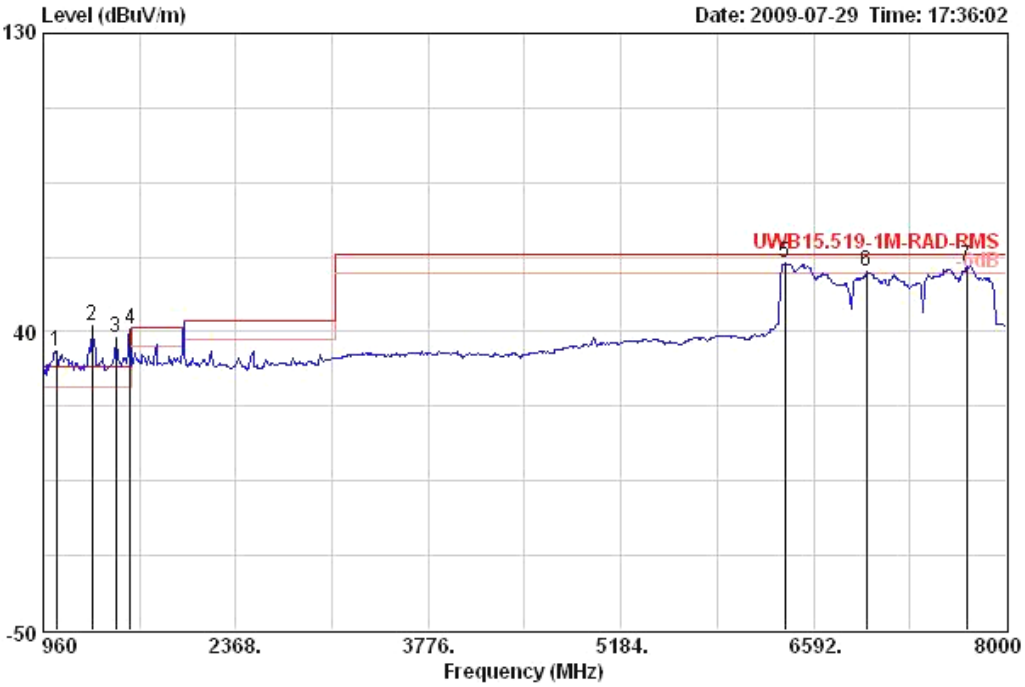


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1319.040	35.24	5.80	29.44	42.64	24.84	35.22	2.97	Peak	HORIZONTAL	360	100
2	1396.480	36.77	7.33	29.44	43.37	25.17	34.83	3.05	Peak	HORIZONTAL	360	100
3	1488.000	34.28	4.84	29.44	40.31	25.53	34.73	3.17	Peak	HORIZONTAL	360	100
4	1593.600	43.26	13.82	29.44	48.65	26.10	34.78	3.29	Peak	HORIZONTAL	360	100
5 !	6521.600	61.79	-1.65	63.44	54.19	35.50	35.21	7.31	Peak	HORIZONTAL	360	100
6 !	7007.360	59.26	-4.18	63.44	50.23	36.30	35.08	7.81	Peak	HORIZONTAL	360	100
7 !	7450.880	59.89	-3.55	63.44	49.52	37.14	34.87	8.10	Peak	HORIZONTAL	360	100

Note: Measurements made with 1 MHz RBW/3MHz VBW (RMS detector) at 3m distance. 1 msec averaging time were used for these frequencies per bin point measurements. Emissions (Mark 1, 2, 3, 4) from digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Vertical

UWB Radiated Emissions 960 MHz to 8 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1058.560	34.16	4.72	29.44	43.66	23.86	36.06	2.70	Peak	VERTICAL	0	100
2	1319.040	41.75	12.31	29.44	49.15	24.84	35.22	2.97	Peak	VERTICAL	0	100
3	1488.000	38.07	8.63	29.44	44.11	25.52	34.73	3.17	Peak	VERTICAL	0	100
4	1593.600	40.96	11.52	29.44	46.35	26.10	34.78	3.29	Peak	VERTICAL	0	100
5 !	6380.800	60.58	-2.86	63.44	53.15	35.39	35.17	7.21	Peak	VERTICAL	0	100
6 !	6979.200	58.21	-5.23	63.44	49.26	36.24	35.09	7.79	Peak	VERTICAL	0	100
7 !	7711.360	59.51	-3.93	63.44	49.22	37.11	35.03	8.21	Peak	VERTICAL	0	100

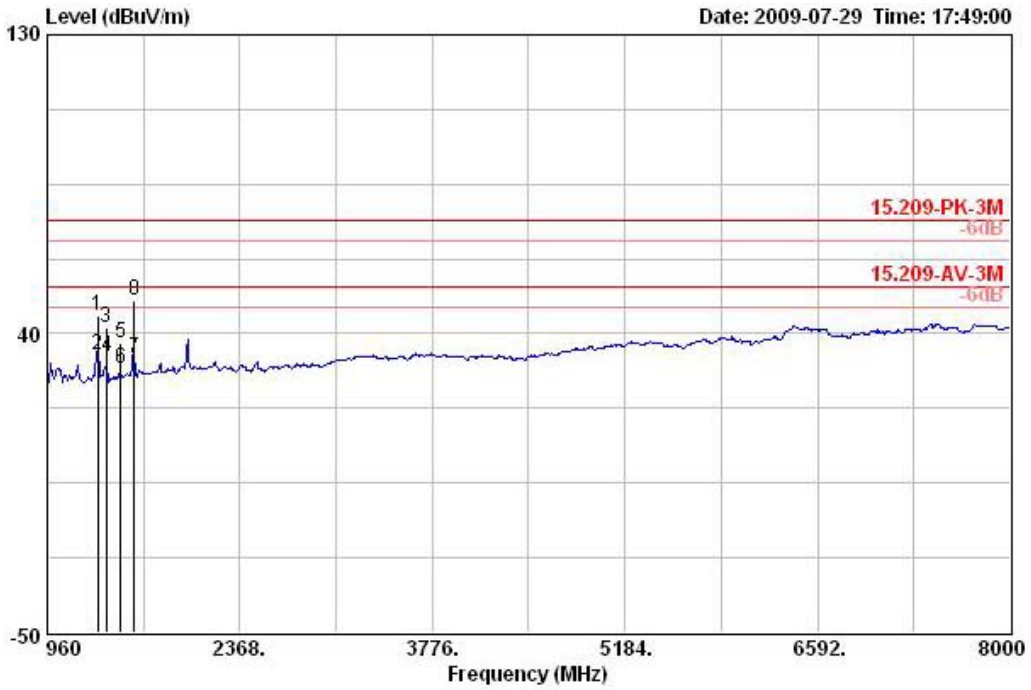
Note: Measurements made with 1 MHz RBW/3MHz VBW (RMS detector) at 3m distance. 1 msec averaging time were used for these frequencies per bin point measurements. Emissions (Mark 1, 2, 3, 4) from digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Radiated Emissions with terminated antenna port (960MHz~8GHz)

Temperature	23°C	Humidity	21%
Test Engineer	Alan Huang	Configurations	Band group 3

Horizontal

Terminated antenna port:

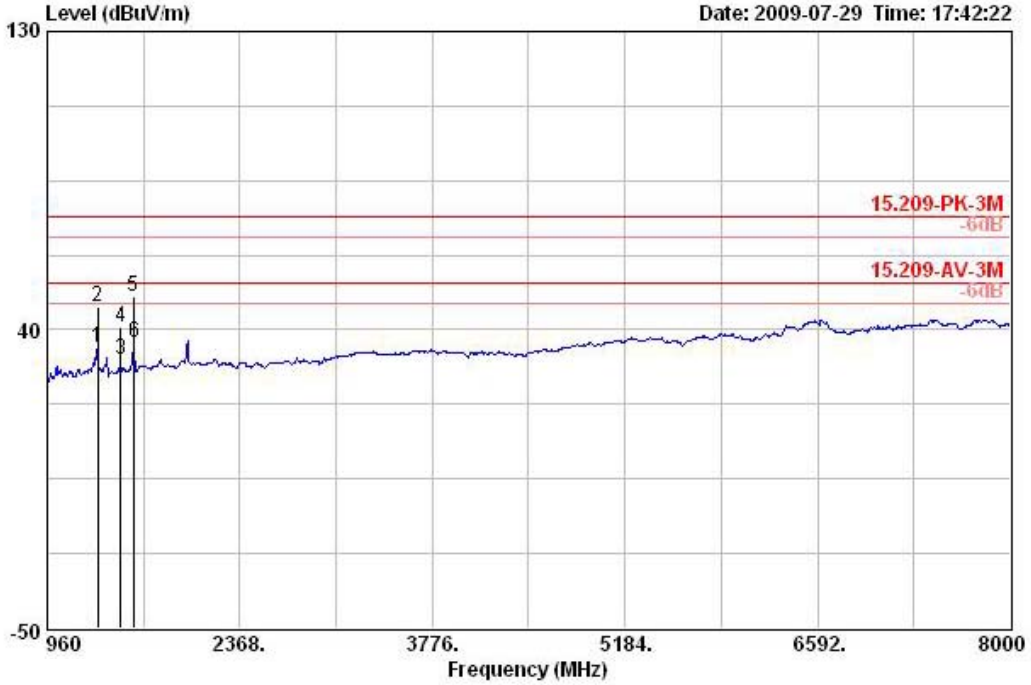


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1330.500	45.41	-28.59	74.00	52.59	24.91	35.09	2.99	PEAK	HORIZONTAL	238	108
2	1330.780	33.58	-20.42	54.00	40.76	24.91	35.09	2.99	AVERAGE	HORIZONTAL	238	108
3	1393.360	41.94	-32.06	74.00	48.61	25.11	34.83	3.05	PEAK	HORIZONTAL	301	100
4	1395.000	32.96	-21.04	54.00	39.57	25.17	34.83	3.05	AVERAGE	HORIZONTAL	301	100
5	1497.960	37.39	-36.61	74.00	43.33	25.62	34.73	3.17	PEAK	HORIZONTAL	293	100
6	1498.640	29.44	-24.56	54.00	35.38	25.62	34.73	3.17	AVERAGE	HORIZONTAL	293	100
7	1595.920	32.63	-21.37	54.00	38.01	26.10	34.78	3.29	AVERAGE	HORIZONTAL	255	100
8	1598.800	50.13	-23.87	74.00	55.52	26.10	34.78	3.29	PEAK	HORIZONTAL	255	100

Note: For digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Vertical

Terminated antenna port:



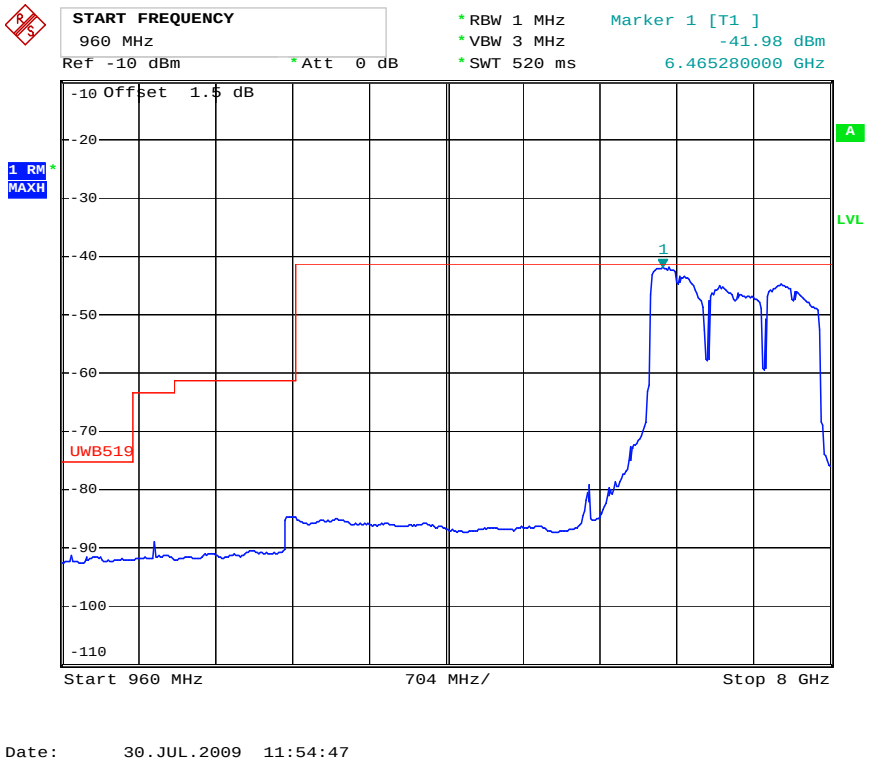
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	1329.560	34.57	-19.43	54.00	41.91	24.91	35.22	2.97	AVERAGE	VERTICAL	193	100
2	1330.320	47.04	-26.96	74.00	54.38	24.91	35.22	2.97	PEAK	VERTICAL	193	100
3	1498.520	30.90	-23.10	54.00	36.85	25.61	34.73	3.17	AVERAGE	VERTICAL	248	100
4	1499.160	40.61	-33.39	74.00	46.56	25.61	34.73	3.17	PEAK	VERTICAL	248	100
5	1592.720	50.07	-23.93	74.00	55.46	26.10	34.78	3.29	PEAK	VERTICAL	227	101
6	1596.760	36.16	-17.84	54.00	41.55	26.10	34.78	3.29	AVERAGE	VERTICAL	227	101

Note: For digital circuitry used to enable the operation of the UWB transmitter shall comply with the limits in 47 CFR, Part 15, Subpart C, §15.209.

Conducted Antenna Port Emissions (960MHz~8GHz)

Temperature	23°C	Humidity	21%
Test Engineer	Alan Huang	Configurations	Band group 3

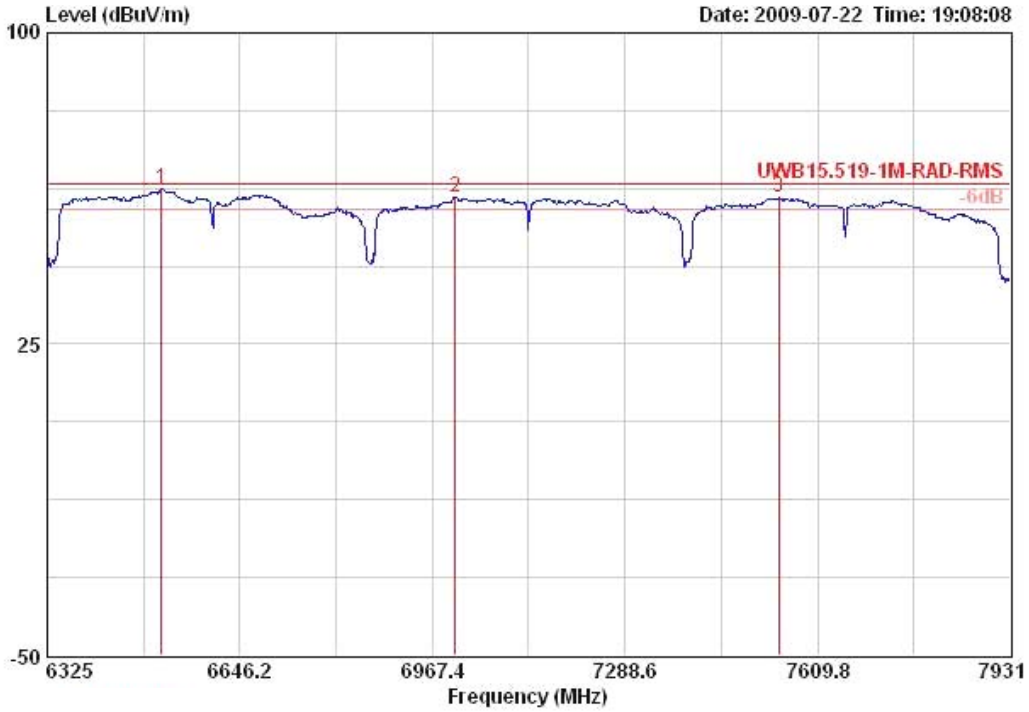
Conducted antenna port:



Note: Conducted antenna port measurements made with 1 MHz RBW/3MHz VBW (RMS detector) at 50 ohm impedance. 1 msec averaging time were used for these frequencies per bin point measurements.

Horizontal

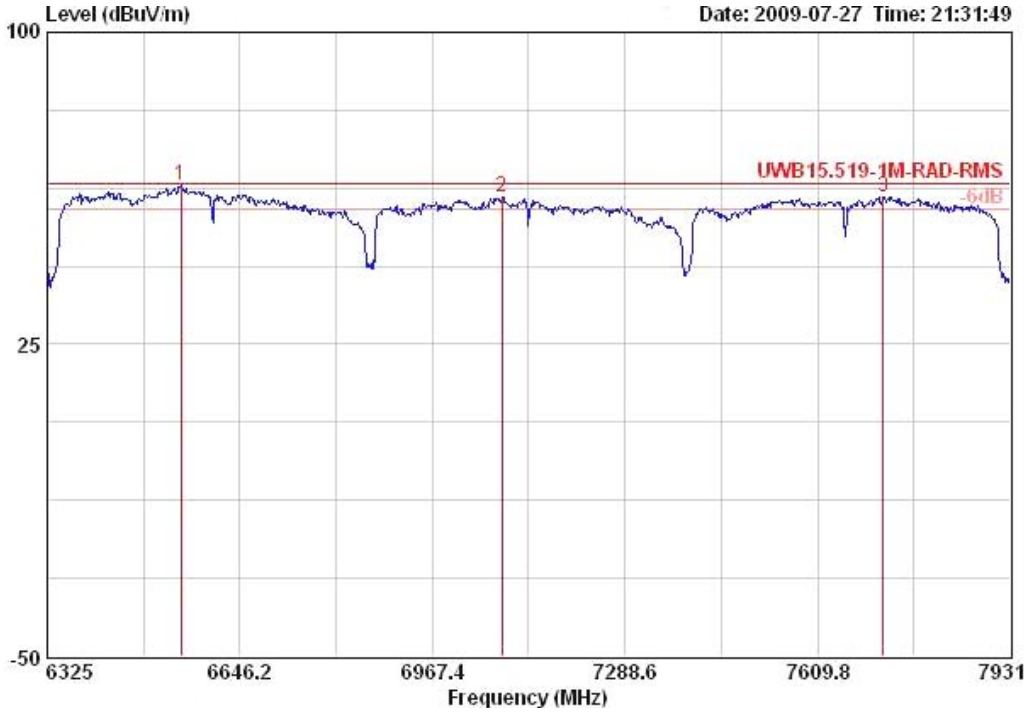
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC1(6600MHz,7128MHz,7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6515.300	62.26	63.44	-1.18	58.42	4.78	35.30	34.36	354	105	Peak	HORIZONTAL
2 @	7005.900	60.48	63.44	-2.96	55.44	5.13	35.40	35.30	350	116	Peak	HORIZONTAL
3 @	7545.450	60.40	63.44	-3.04	54.26	5.21	35.41	36.34	357	121	Peak	HORIZONTAL

Vertical

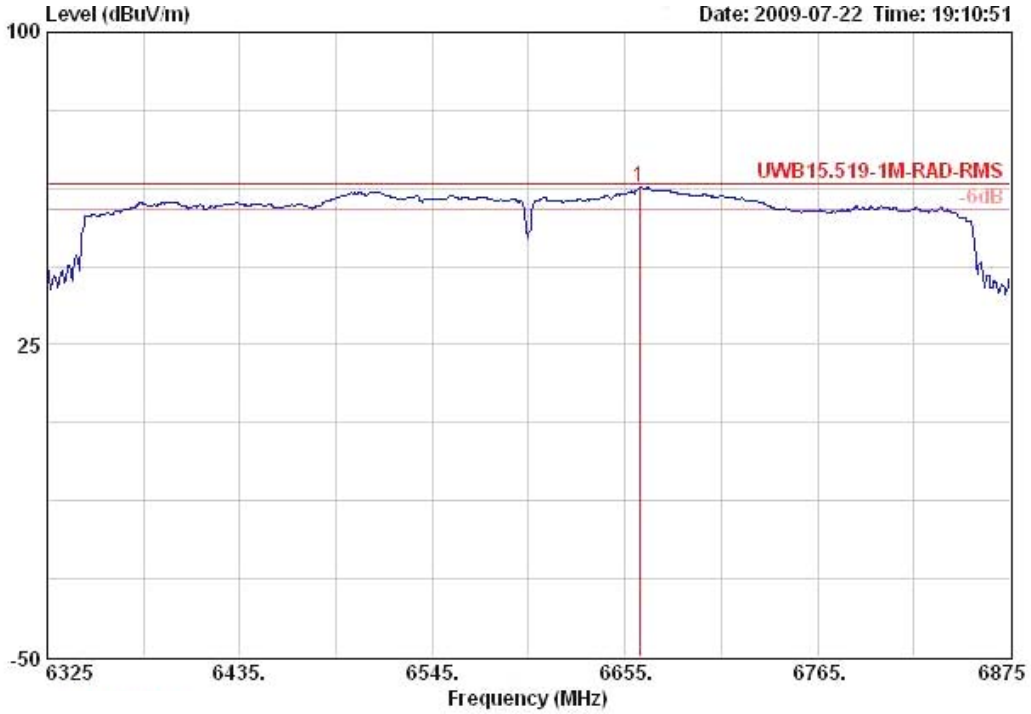
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC1(6600MHz,7128MHz,7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6548.300	63.11	63.44	-0.33	59.23	4.80	35.31	34.39	345	113	Peak	VERTICAL
2 @	7083.450	60.47	63.44	-2.97	55.29	5.14	35.40	35.44	349	100	Peak	VERTICAL
3 @	7719.250	60.42	63.44	-3.02	54.12	5.25	35.44	36.49	11	115	Peak	VERTICAL

Horizontal

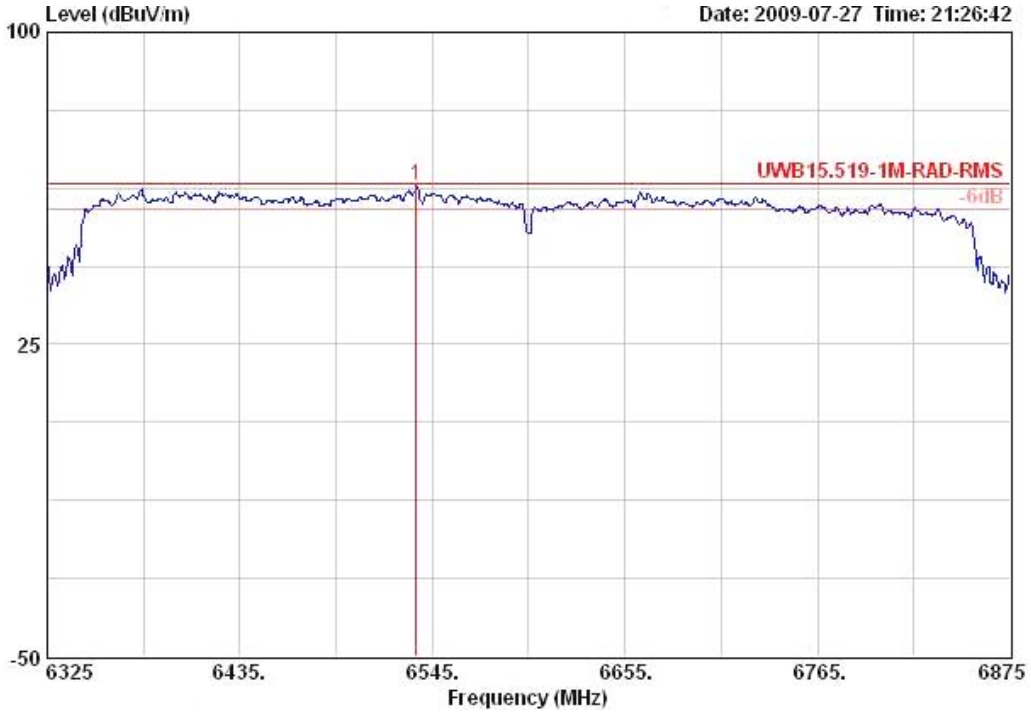
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC5(6600MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	6663.250	62.97	63.44	-0.47	58.82	4.87	35.33	34.61	338	105	Peak	HORIZONTAL

Vertical

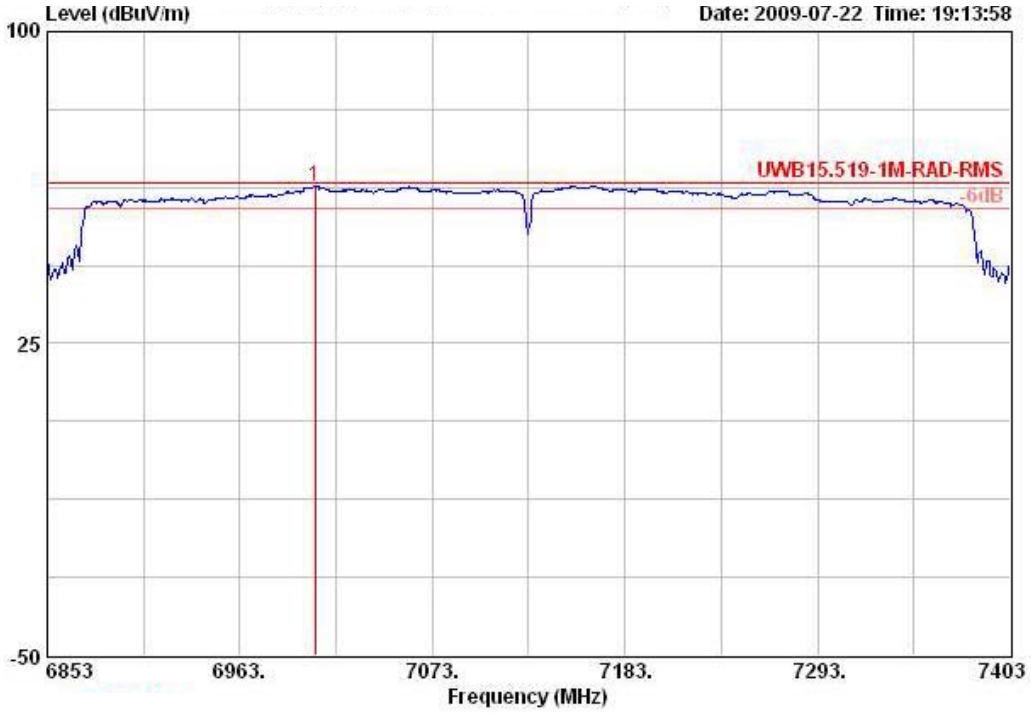
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC5(6600MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6535.650	63.12	63.44	-0.32	59.27	4.78	35.31	34.37	344	101	Peak	VERTICAL

Horizontal

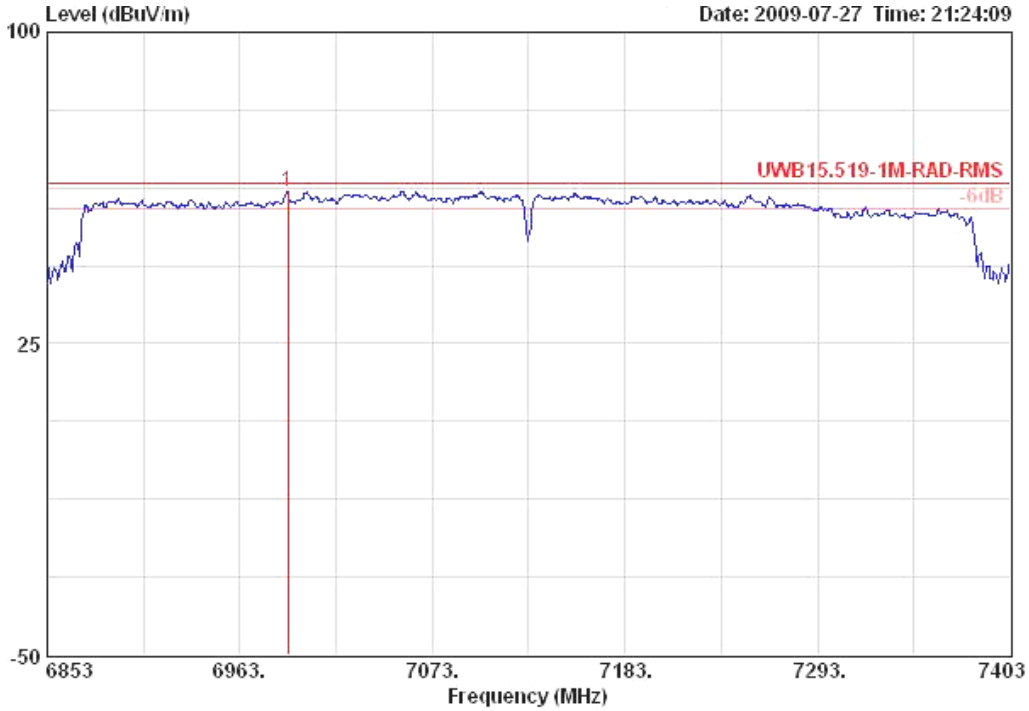
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC6(7128MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	7005.900	62.80	63.44	-0.64	57.76	5.13	35.40	35.30	350	126	Peak	HORIZONTAL

Vertical

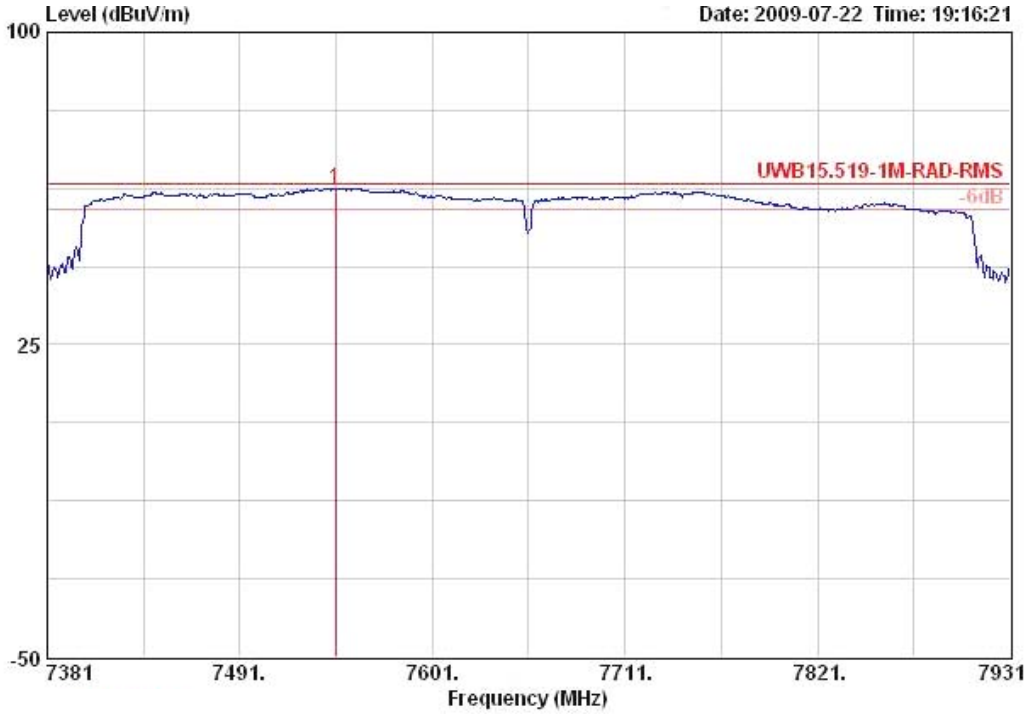
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC6(7128MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6990.500	61.69	63.44	-1.75	56.70	5.13	35.40	35.27	313	110	Peak	VERTICAL

Horizontal

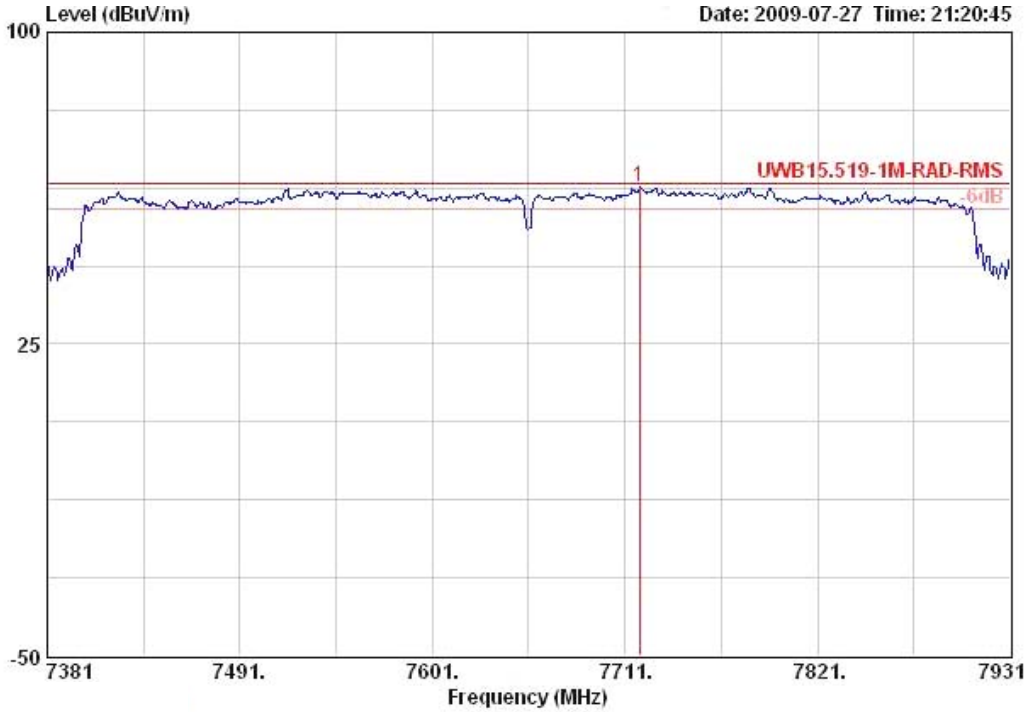
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC7(7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	7545.450	62.58	63.44	-0.86	56.43	5.21	35.41	36.34	354	124	Peak	HORIZONTAL

Vertical

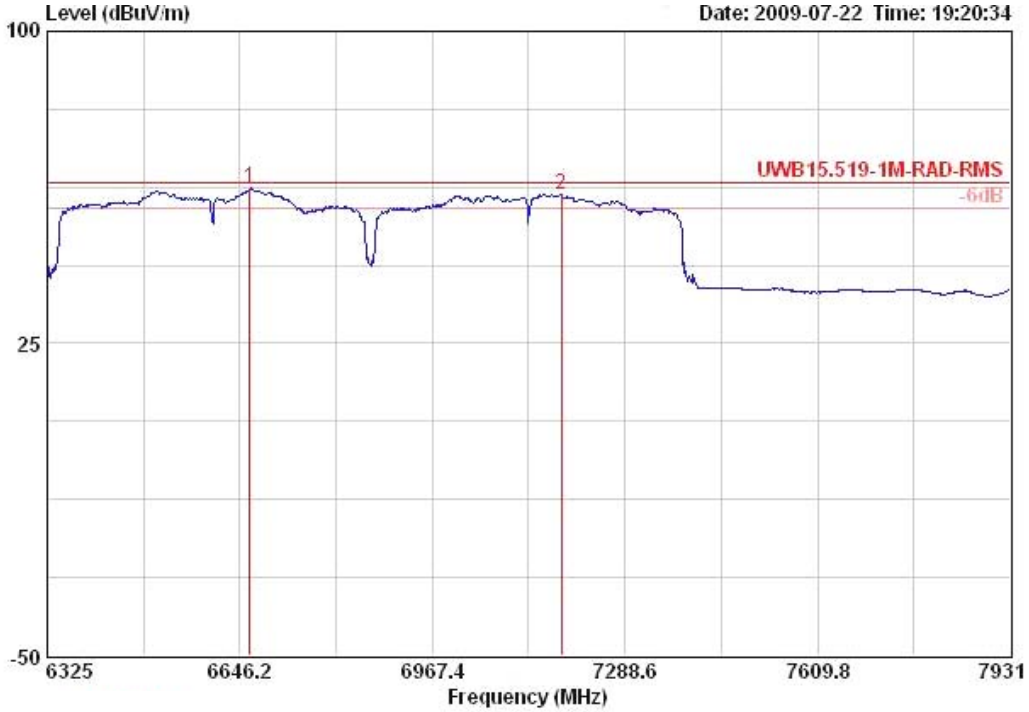
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC7(7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	7719.250	62.62	63.44	-0.82	56.33	5.25	35.44	36.49	12	130	Peak	VERTICAL

Horizontal

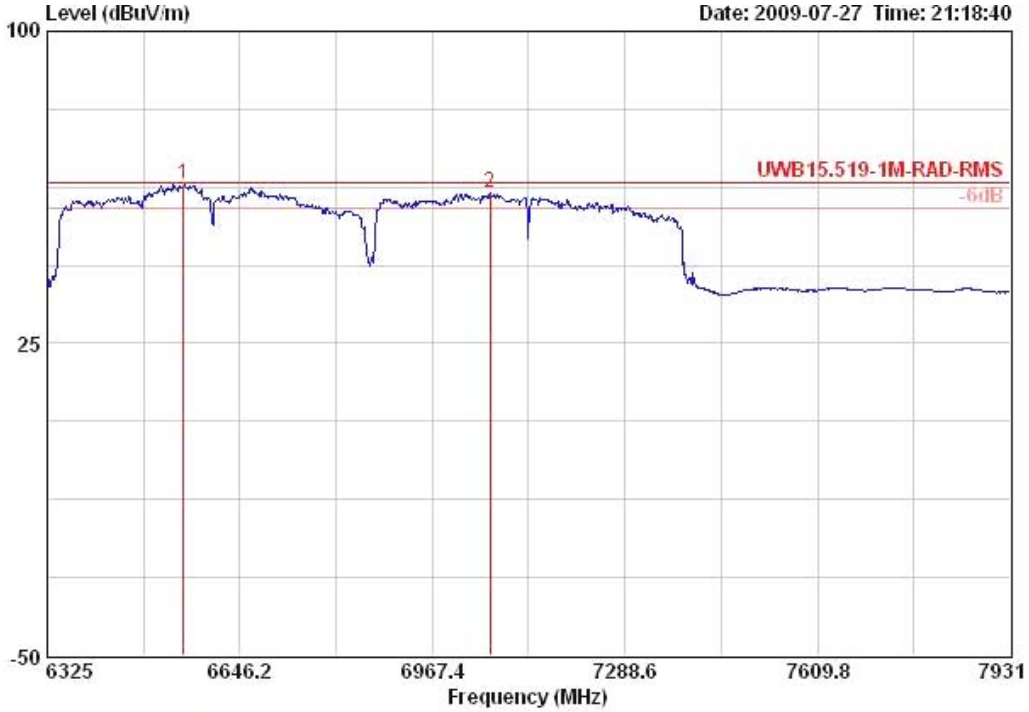
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC8(6600MHz,7128MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	6663.250	62.33	63.44	-1.11	58.18	4.87	35.33	34.61	335	106	Peak	HORIZONTAL
2	7181.900	60.74	63.44	-2.70	55.30	5.16	35.40	35.68	347	127	Peak	HORIZONTAL

Vertical

UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC8(6600MHz,7128MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6552.700	63.09	63.44	-0.35	59.21	4.80	35.31	34.39	349	113	Peak	VERTICAL
2 @	7063.650	61.37	63.44	-2.07	56.23	5.14	35.40	35.40	346	100	Peak	VERTICAL

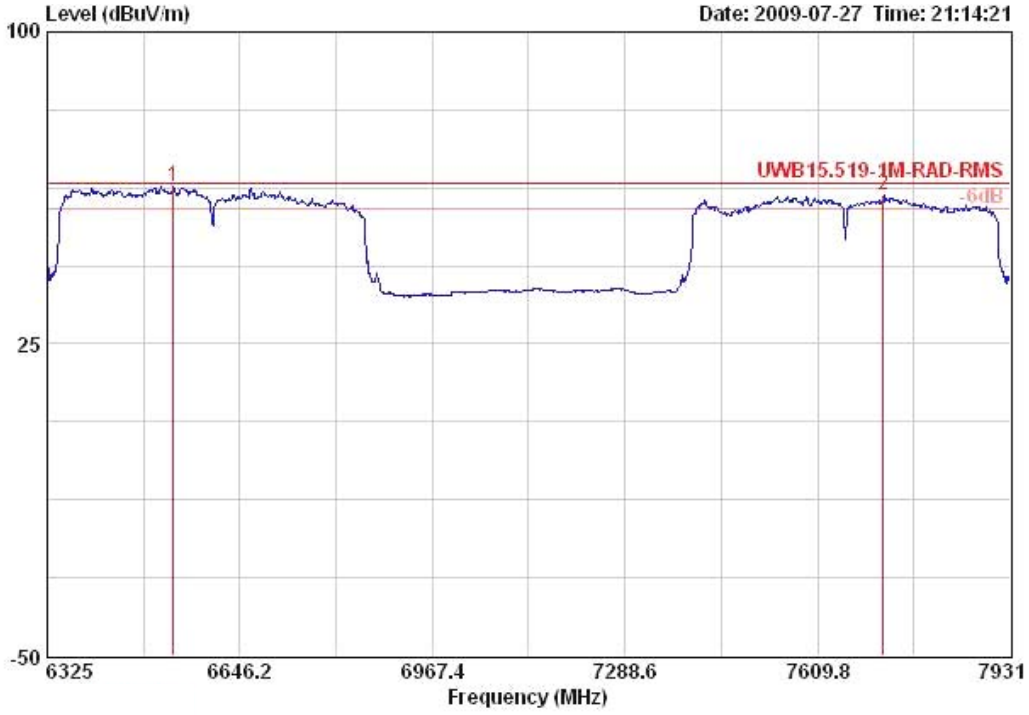
Horizontal

UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC9(6600MHz,7656MHz)

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6663.250	61.76	63.44	-1.68	57.61	4.87	35.33	34.61	337	118	Peak	HORIZONTAL
2 @	7558.650	60.31	63.44	-3.13	54.16	5.21	35.41	36.35	351	123	Peak	HORIZONTAL

Vertical

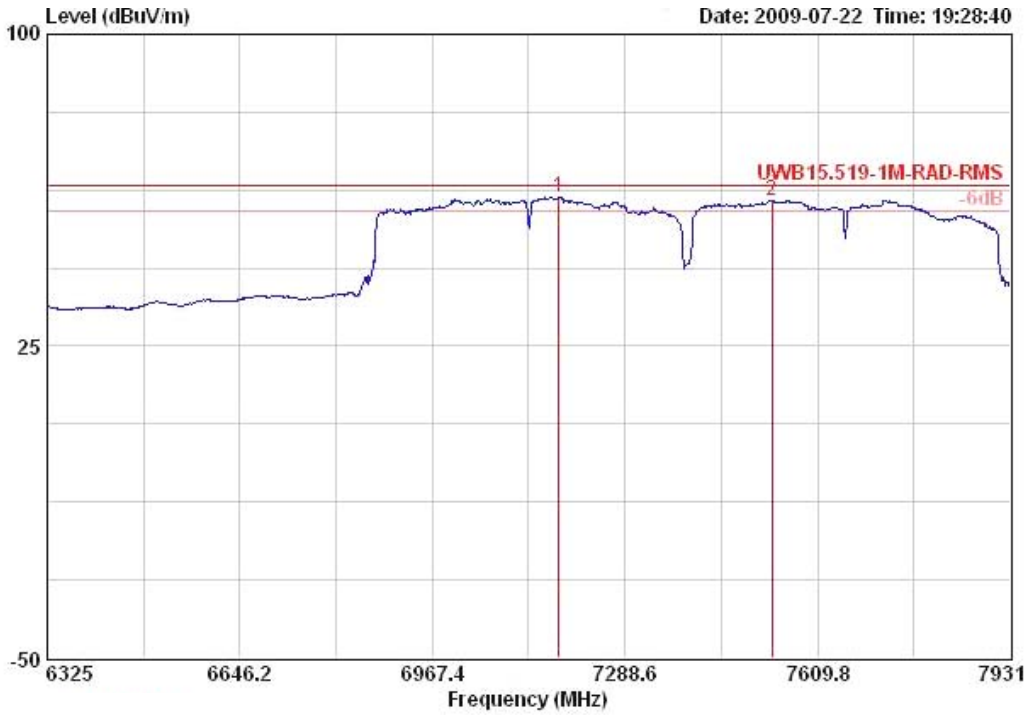
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC9(6600MHz,7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	6535.650	62.67	63.44	-0.77	58.83	4.78	35.31	34.37	340	101	Peak	VERTICAL
2 @	7719.250	60.60	63.44	-2.84	54.31	5.25	35.44	36.49	8	139	Peak	VERTICAL

Horizontal

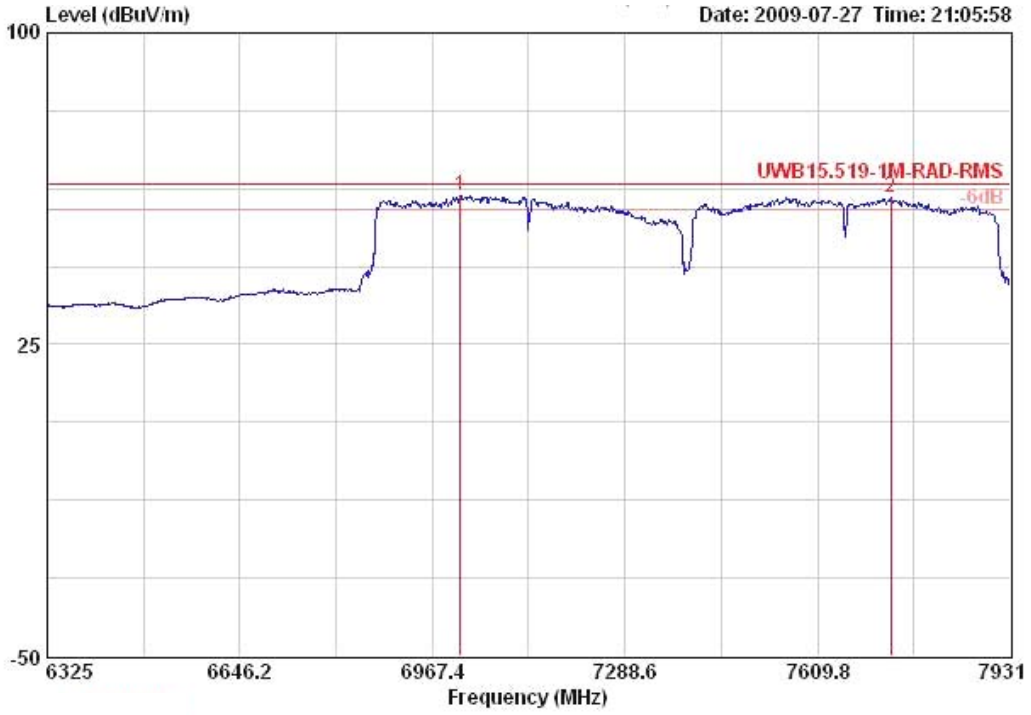
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC10(7128MHz,7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	7178.050	60.89	63.44	-2.55	55.45	5.15	35.40	35.68	346	127	Peak	HORIZONTAL
2 @	7533.900	60.03	63.44	-3.41	53.89	5.21	35.41	36.34	350	123	Peak	HORIZONTAL

Vertical

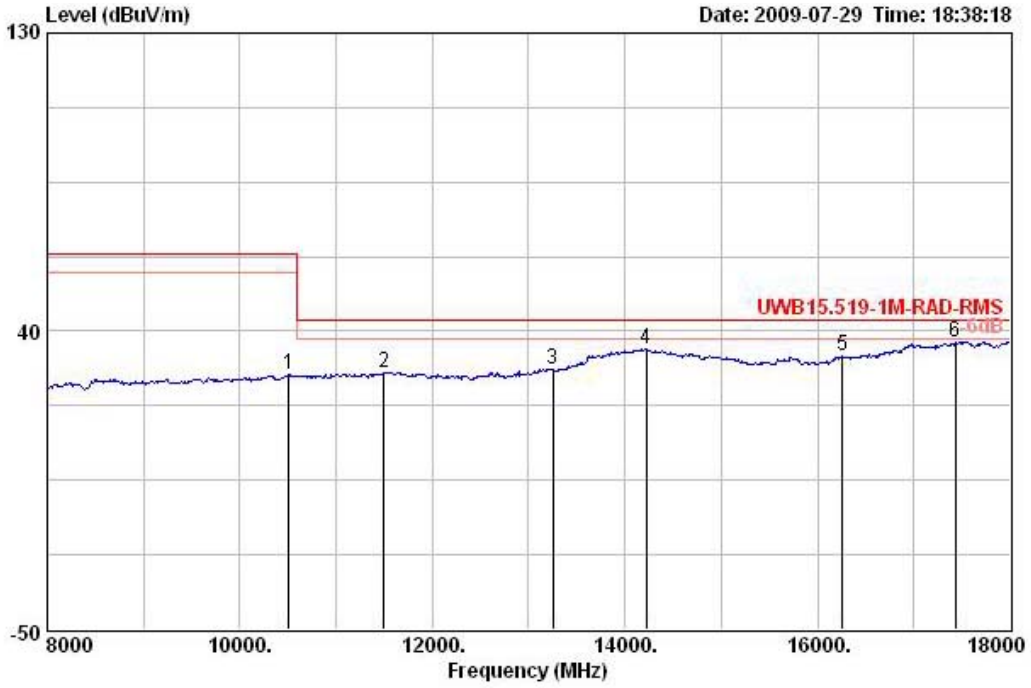
UWB Radiated Emissions 6 GHz to 8 GHz (RMS)/ TFC10(7128MHz,7656MHz)



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Table Pos	Ant Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 @	7014.700	60.68	63.44	-2.76	55.65	5.13	35.40	35.30	345	113	Peak	VERTICAL
2 @	7731.900	60.34	63.44	-3.10	54.05	5.25	35.45	36.49	8	139	Peak	VERTICAL

Horizontal

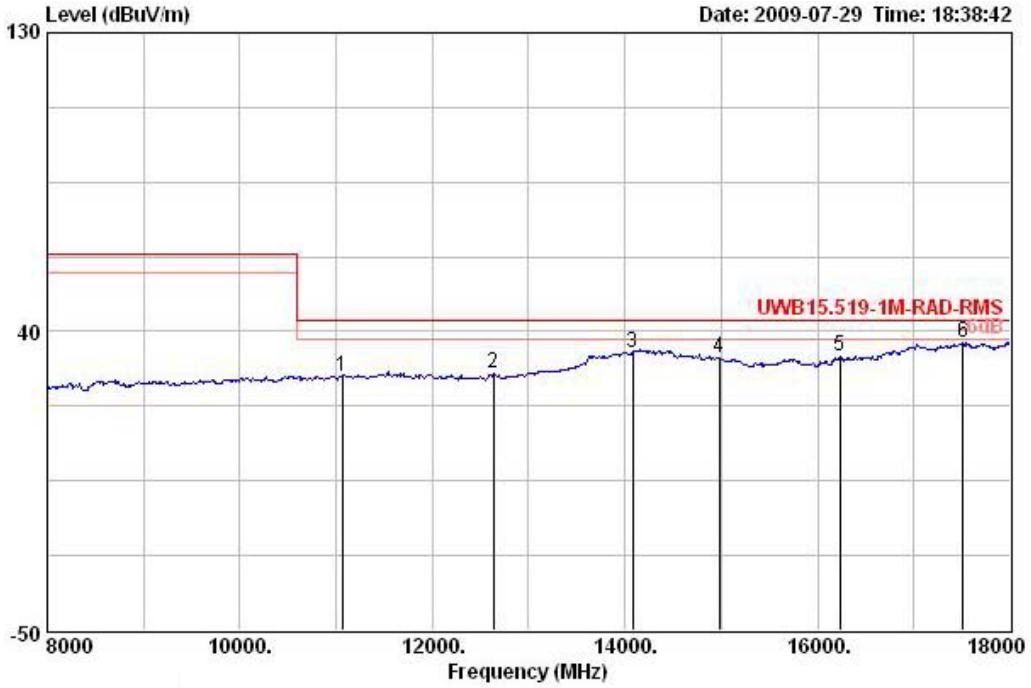
UWB Radiated Emissions 8 GHz to 18 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	10510.000	26.89	-36.55	63.44	13.18	38.57	35.18	10.33	Peak	HORIZONTAL	0	100
2	11500.000	27.64	-15.80	43.44	13.02	38.50	34.76	10.89	Peak	HORIZONTAL	0	100
3	13250.000	28.60	-14.84	43.44	11.93	39.83	33.68	10.52	Peak	HORIZONTAL	0	100
4	14220.000	34.76	-8.68	43.44	15.52	40.83	33.24	11.64	Peak	HORIZONTAL	0	100
5	16260.000	32.42	-11.02	43.44	16.15	38.97	35.03	12.33	Peak	HORIZONTAL	0	100
6	17430.000	36.73	-6.71	43.44	16.09	42.03	33.93	12.54	Peak	HORIZONTAL	0	100

Vertical

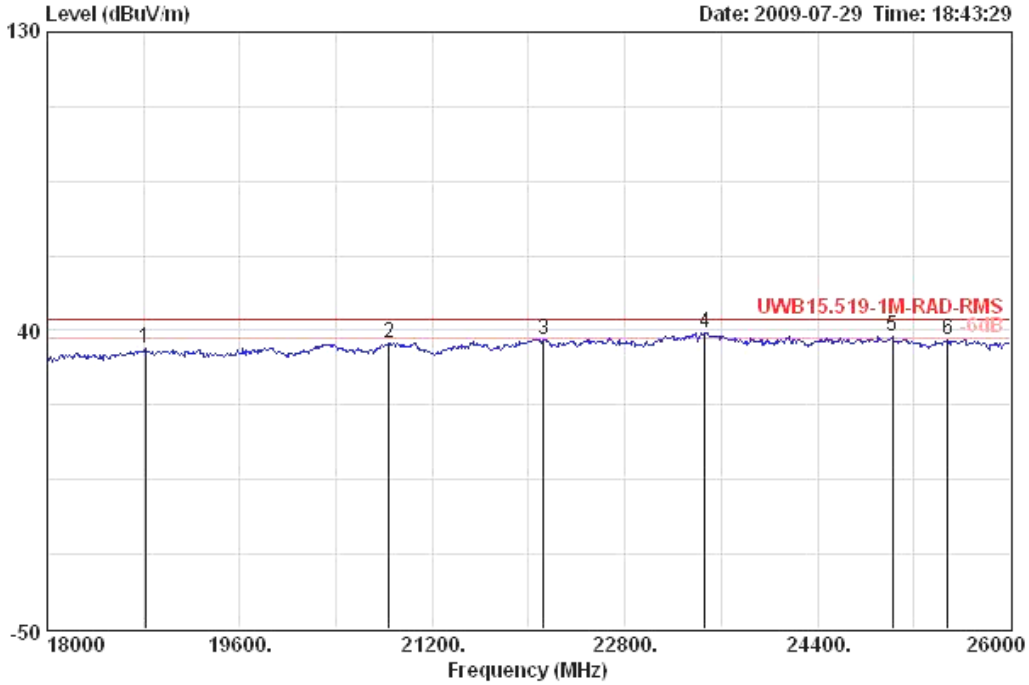
UWB Radiated Emissions 8 GHz to 18 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	11060.000	26.39	-17.05	43.44	12.34	38.41	34.71	10.35	Peak	VERTICAL	0	100
2	12630.000	27.52	-15.92	43.44	12.99	38.96	34.65	10.23	Peak	VERTICAL	0	100
3	14080.000	33.77	-9.67	43.44	14.34	40.94	33.17	11.66	Peak	VERTICAL	0	100
4	14980.000	32.24	-11.20	43.44	15.10	39.17	34.04	12.01	Peak	VERTICAL	0	100
5	16230.000	32.42	-11.02	43.44	16.23	38.93	35.04	12.30	Peak	VERTICAL	0	100
6	17510.000	36.79	-6.65	43.44	16.05	42.10	33.91	12.55	Peak	VERTICAL	0	100

Horizontal

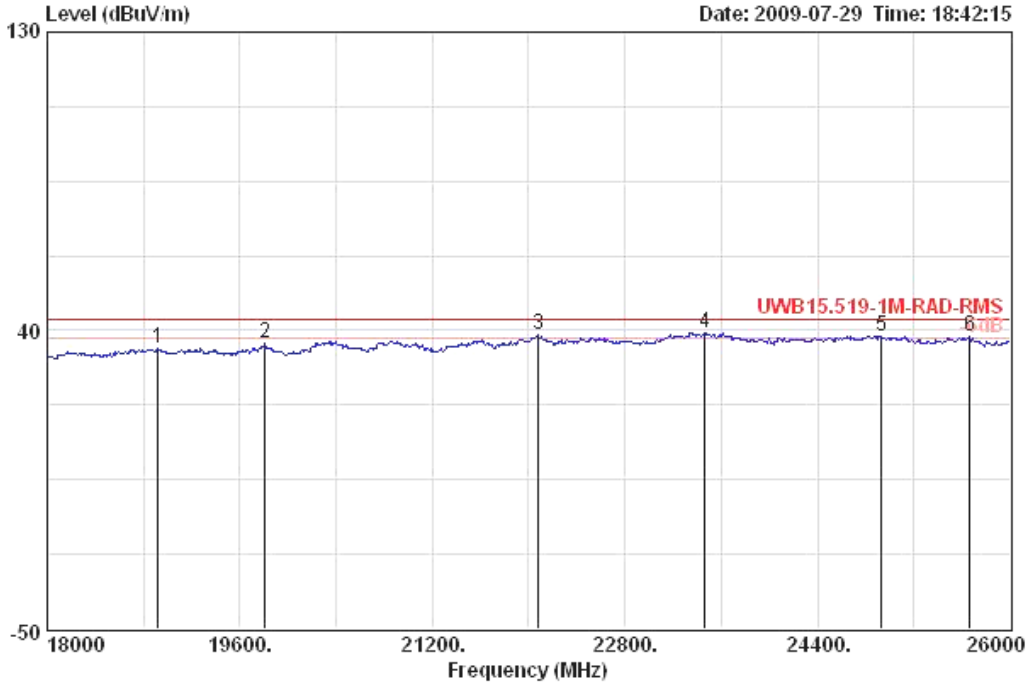
UWB Radiated Emissions 18 GHz to 26 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	18816.000	34.37	-9.07	43.44	15.90	37.98	33.26	13.74	Peak	HORIZONTAL	0	100
2	20840.000	36.16	-7.28	43.44	17.50	37.92	34.39	15.14	Peak	HORIZONTAL	0	100
3	22120.000	37.24	-6.20	43.44	17.16	38.38	33.86	15.56	Peak	HORIZONTAL	0	100
4 !	23464.000	39.32	-4.12	43.44	16.95	39.60	33.68	16.45	Peak	HORIZONTAL	0	100
5 !	25024.000	37.99	-5.45	43.44	18.39	39.31	33.83	14.12	Peak	HORIZONTAL	0	100
6	25480.000	37.22	-6.22	43.44	17.67	39.40	34.95	15.11	Peak	HORIZONTAL	0	100

Vertical

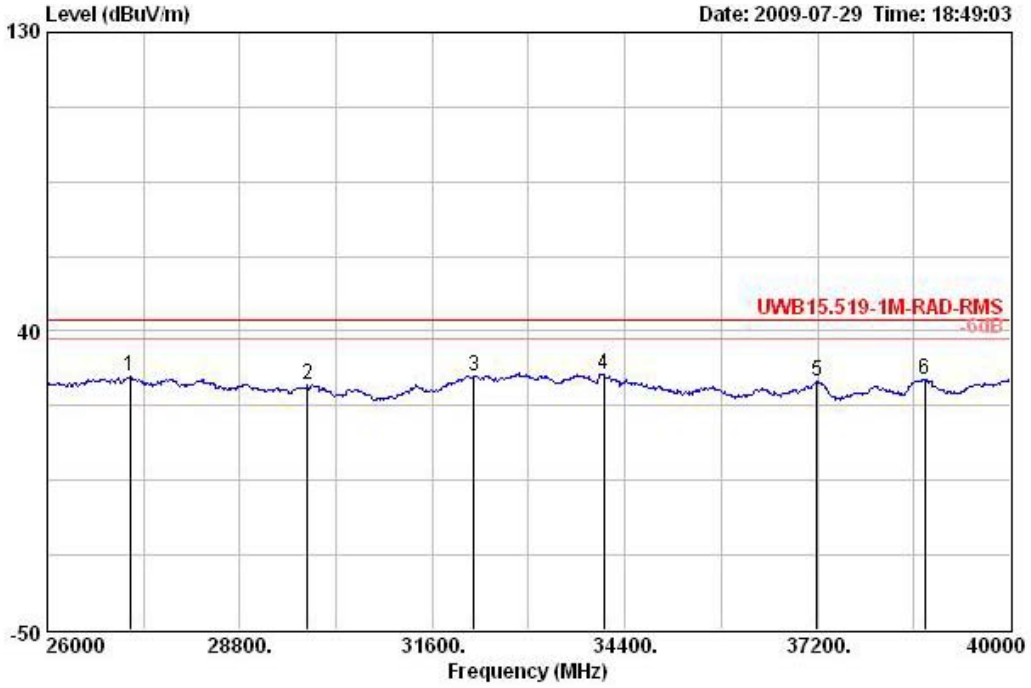
UWB Radiated Emissions 18 GHz to 26 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	18920.000	34.41	-9.03	43.44	15.71	37.99	33.16	13.86	Peak	VERTICAL	0	100
2	19808.000	35.95	-7.49	43.44	17.63	38.00	34.27	14.59	Peak	VERTICAL	0	100
3 !	22080.000	38.69	-4.75	43.44	18.71	38.31	33.86	15.54	Peak	VERTICAL	0	100
4 !	23464.000	39.24	-4.20	43.44	16.87	39.60	33.68	16.45	Peak	VERTICAL	0	100
5 !	24928.000	38.40	-5.04	43.44	18.65	39.32	33.83	14.25	Peak	VERTICAL	0	100
6 !	25664.000	38.40	-5.04	43.44	18.62	39.44	34.91	15.25	Peak	VERTICAL	0	100

Horizontal

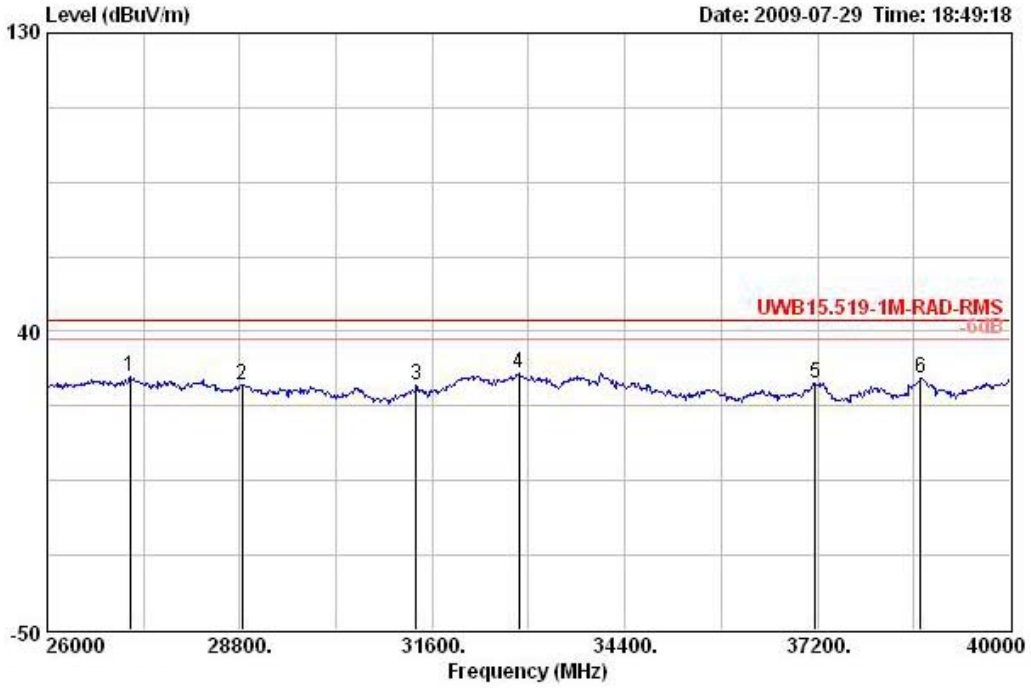
UWB Radiated Emissions 26 GHz to 40 GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	27204.000	26.24	-17.20	43.44	17.70	39.56	31.01	0.00	Peak	HORIZONTAL	0	100
2	29780.000	23.72	-19.72	43.44	18.22	40.04	34.54	0.00	Peak	HORIZONTAL	0	100
3	32202.000	26.44	-17.00	43.44	18.34	41.23	33.13	0.00	Peak	HORIZONTAL	0	100
4	34092.000	26.87	-16.57	43.44	20.32	41.54	34.99	0.00	Peak	HORIZONTAL	0	100
5	37186.000	24.72	-18.72	43.44	20.21	43.14	38.63	0.00	Peak	HORIZONTAL	0	100
6	38754.000	25.46	-17.98	43.44	20.32	43.58	38.43	0.00	Peak	HORIZONTAL	0	100

Vertical

UWB Radiated Emissions 26 GHz to 40GHz



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	27204.000	26.16	-17.28	43.44	17.61	39.56	31.01	0.00	Peak	VERTICAL	0	100
2	28828.000	24.07	-19.37	43.44	17.71	39.81	33.44	0.00	Peak	VERTICAL	0	100
3	31362.000	23.78	-19.66	43.44	19.29	40.84	36.36	0.00	Peak	VERTICAL	0	100
4	32860.000	27.40	-16.04	43.44	19.36	41.33	33.29	0.00	Peak	VERTICAL	0	100
5	37172.000	24.30	-19.14	43.44	19.80	43.14	38.64	0.00	Peak	VERTICAL	0	100
6	38698.000	26.01	-17.43	43.44	20.99	43.59	38.57	0.00	Peak	VERTICAL	0	100