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Amended

Test Report

Includes NCEE Labs report R20170113-20 and its amendment in full

Prepared for:	**Independent Technologies, LLC**
Address:	**26 1st Ave SE** **New London, MN 56273**
Product:	**WESROC RMS CTM**
Model:	**MT9104CTM**
FCC ID:	**RWBMT9104CTM**
IC:	**115A-MT9104CTM**
Test Report No:	**R20170113-20A**
Approved By:	**Nic S. Johnson, NCE** **Technical Manager** **iNARTE Certified EMC Engineer #EMC-003337-NE**
DATE:	**15 February 2017**
Total Pages:	**28**

ACCREDITED
TESTING LABORATORY
CERTIFICATE NO. 1953.01

Table of Figures

Table of Tables

1.0 Summary of test results

The EUT has been tested according to the following specifications:

SUMMARY			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
FCC 15.203	Unique Antenna Requirement	Pass	Internal Antenna
FCC 15.209 RSS-Gen, 7.1.2	Receiver Radiated Emissions	Pass	Meets the requirement of the limit.
FCC 15.247(a)(2) RSS-247, 5.2(1)	Minimum Bandwidth, Limit: Min. 500kHz	Pass	Meets the requirement of the limit.
FCC 15.247(b) RSS-247, 5.4 RSS-247, 5.5	Maximum Peak Output Power, Limit: Max. 30dBm Conducted spurious measurements	Pass	Meets the requirement of the limit.
FCC 15.209 RSS-Gen, 8.9	Transmitter Radiated Emissions	Pass	Meets the requirement of the limit.
FCC 15.247(d) RSS-247, 5.2(2)	Power Spectral Density, Limit: Max. 8dBm	Pass	Meets the requirement of the limit.
FCC 15.247(c) RSS-247, 5.5	Band Edge Measurement, Limit: 20dB less than the peak value of fundamental frequency	Pass	Meets the requirement of the limit.
FCC 15.207 RSS-247, 8.8	Conducted AC power-line emissions	N/A	Not required – non-rechargeable battery power only

1.1 Amendment History

Rev. No.	Date	Description
Original	15 February 2017	Approved by NJohnson Prepared by KVepuri
A	15 February 2017	1] Pages 1 and 4. The model number should be changed from 'MT-9100BPK-02' to 'MT9104CTM'. The number that you used is the model number for the battery pack on the bottom of the device. 2] Pages 11, 13, 17, 21, 23, and 25. The word 'satellite' should be changed to 'cellular'.

2.0 Description

2.1 Equipment under test

The Equipment Under Test (EUT) was WESROC RMS CTM (Cellular Tank Monitor) from Independent Technologies, LLC.

EUT Received Date: 1 February 2017
EUT Tested Date: 1 February 2017- 9 February 2017

PRODUCT	WESROC RMS CTM
MODEL	MT9104CTM
MODULATION TYPE	Frequency-Shift Keying (FSK)
FREQUENCY RANGE	916.5 MHz
POWER SUPPLY	3.6 VDC (Internal Battery)
ANTENNA TYPE	External dipole
SERIAL NUMBER OF TEST UNIT	For all conducted measurements: 00004012 For all radiated measurements: 00004011

NOTE:
1. For more detailed features description, please refer to the manufacturer's specifications or User's Manual.

The EUT includes a pre-certified wireless module, FCC ID: RI7LE910NAV2, IC: 5131A-LE910NAV2. No testing was performed on the radio functionality of this module.

2.2 Laboratory description

All testing was performed at the following Facility:

The Nebraska Center for Excellence in Electronics (NCEE Labs)
4740 Discovery Drive
Lincoln, NE 68521

A2LA Certificate Number:	1953.01
FCC Accredited Test Site Designation No:	US1060
Industry Canada Test Site Registration No:	4294A-1
NCC CAB Identification No:	US0177

Environmental conditions varied slightly throughout the tests:
Relative humidity of 30 ± 4%
Temperature of 23 ± 3° Celsius

2.3 Description of test modes

Channel	Frequency (MHz)
1	916.5

2.4 Applied standards

The EUT is a digital transmission system (DTS) device operating in the 902 MHz to 928 MHz amateur band. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C; 15.209 and 15.247
Industry Canada, RSS-247, Issue 2
Industry Canada, RSS-Gen, Issue 4
ANSI C63.10:2013
ANSI C63.4:2014

All test items have been performed and recorded as per the above standards.

2.5 Description of support units

None

2.6 Configuration of system under test

The EUT was powered by 3.6 VDC, internal Battery for all the tests and had no auxiliary devices. It was tested by itself. The EUT was programmed by the manufacturer to transmit continually for testing purposes only.

The EUT was modified by the manufacturer to test with the device continuously transmitting a series of 1's and 0's, or to set the EUT to continuous receive mode for testing purposes.

The EUT was tested in a vertical and horizontal orientation.

3.0 Test equipment used

DESCRIPTION AND MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CALIBRATION DATE	CALIBRATION DUE DATE
Rohde & Schwarz Test Receiver	ES126	100037	23 Jan 2017	23 Jan 2018
EMCO Biconilog Antenna 30 MHz – 1 GHz	3142B	1647	02 Aug 2016	02 Aug 2017
EMCO Horn Antenna 1 – 18 GHz	3115	6416	25 Jan 2016	25 Jan 2018
Rohde & Schwarz Preamplifier 1 – 18GHz	TS-PR18	3545700803	09 Feb 2017*	09 Feb 2018*
Trilithic 3 GHz High Pass Filter	6HC330	23042	09 Feb 2017*	09 Feb 2018*
Mini Circuits 1700 – 5000Mhz High Pass Filter	15542	31618	16 June 2016*	16 June 2017*
RF Cable (preamplifier to antenna)	MFR-57500	01-07-002	09 Feb 2017*	09 Feb 2018*
RF Cable (antenna to 10m chamber bulkhead)	FSCM 64639	01E3872	09 Feb 2017*	09 Feb 2018*
RF Cable (10m chamber bulkhead to control room bulkhead)	FSCM 64639	01E3874	09 Feb 2017*	09 Feb 2018*
RF Cable (Control room bulkhead to RF switch)	FSCM 64639	01E3871	09 Feb 2017*	09 Feb 2018*
RF Cable (RF switch to test receiver)	FSCM 64639	01F1206	09 Feb 2017*	09 Feb 2018*
RF switch – Rohde and Schwarz	TS-RSP	1113.5503.14	09 Feb 2017*	09 Feb 2018*
N connector bulkhead (10m chamber)	PE9128	NCEEBH1	09 Feb 2017*	09 Feb 2018*
N connector bulkhead (control room)	PE9128	NCEEBH2	09 Feb 2017*	09 Feb 2018*

*Internal characterization

4.0 Detailed results

4.1 Unique antenna requirement

4.1.1 Standard applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

4.1.2 Antenna description

The antenna is internal to the unit and is not user replaceable

4.2 Radiated emissions

Test Method: ANSI C63.10, Section(s) 6.5, 6.6, 11.11, 11.12.1
ANSI C63.4, Section (s) 8.3

4.2.1 Limits for radiated emissions measurements

Emissions radiated outside of the specified bands shall be applied to the limits in 15.209 as followed:

FREQUENCIES (MHz)	FIELD STRENGTH (μV/m)	MEASUREMENT DISTANCE (m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	3
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 * log * Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits by more than 20dB under any condition of modulation.

REMARKS:
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. Radiated limits according to 15.209 do not apply within the 902MHz to 928MHz band for transmitters or the unrestricted band between 1722.2 to 2200 MHz.

6.For frequencies not in a restricted band as specified in 15.205, spurious emissions shall be at least 20dB less than the field strength at the fundamental frequency.

4.2.2 Test procedures

a. The EUT was placed on the top of a rotating table 0.8 meters and 1.5 meters above the ground plane in a 10 meter semi-anechoic chamber for frequency ranges 30MHz - 1GHz, 1 – 10GHz respectively. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna was a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are used to make the measurement.

d. For each suspected emission, the EUT was arranged to maximize its emissions and then the antenna height was varied from 1 meter to 4 meters and the rotating table was turned from 0 degrees to 360 degrees to find the maximum emission reading.

e. The test-receiver system was set to use a peak detector with a specified resolution bandwidth. For spectrum analyzer measurements, the composite maximum of several analyzer sweeps was used for final measurements.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequencies below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for peak and average detectors at frequencies above 1GHz.

4.2.3 Deviations from test standard

No deviation.

4.2.4 Test setup

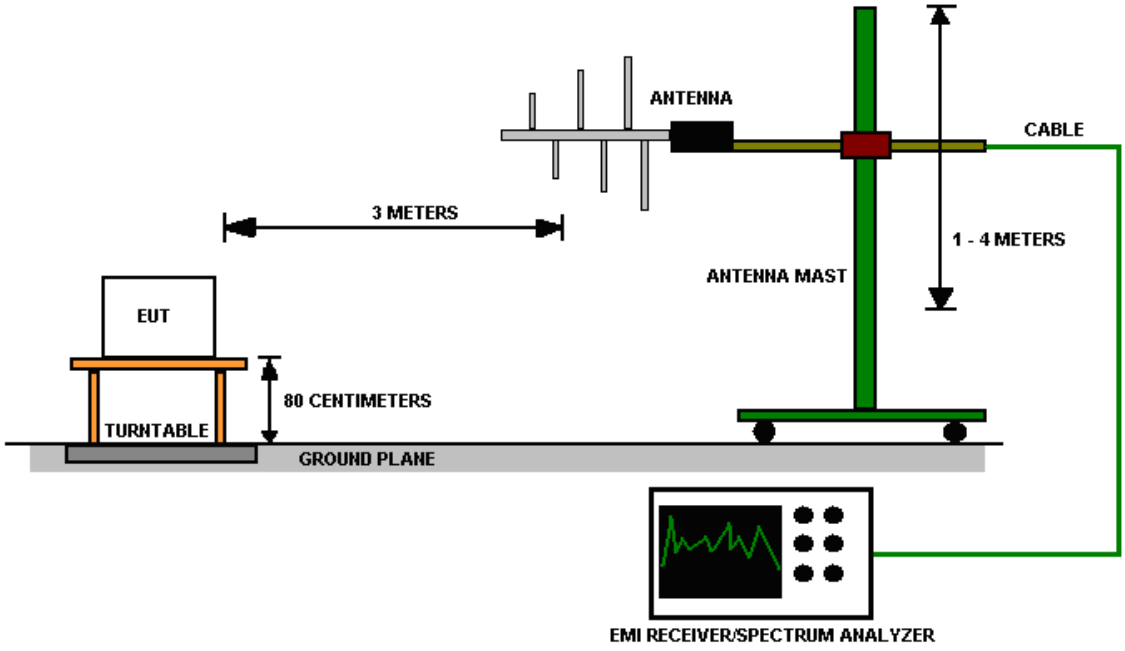


Figure 1 - Radiated Emissions Test Setup

The EUT was tested in all three orthogonal axis to meet the requirements from ANSI C63.10 Section 5.10.1.

4.2.5 EUT operating conditions

See section 2.6.

4.2.6 Test results

EUT MODULE	WESROC Cellular Tank Monitor	MODE	Receive
INPUT POWER	3.6 VDC	FREQUENCY	None
ENVIRONMENTAL CONDITIONS	30 % ± 5% RH 23 ± 3ºC	TECHNICIAN	KVepuri

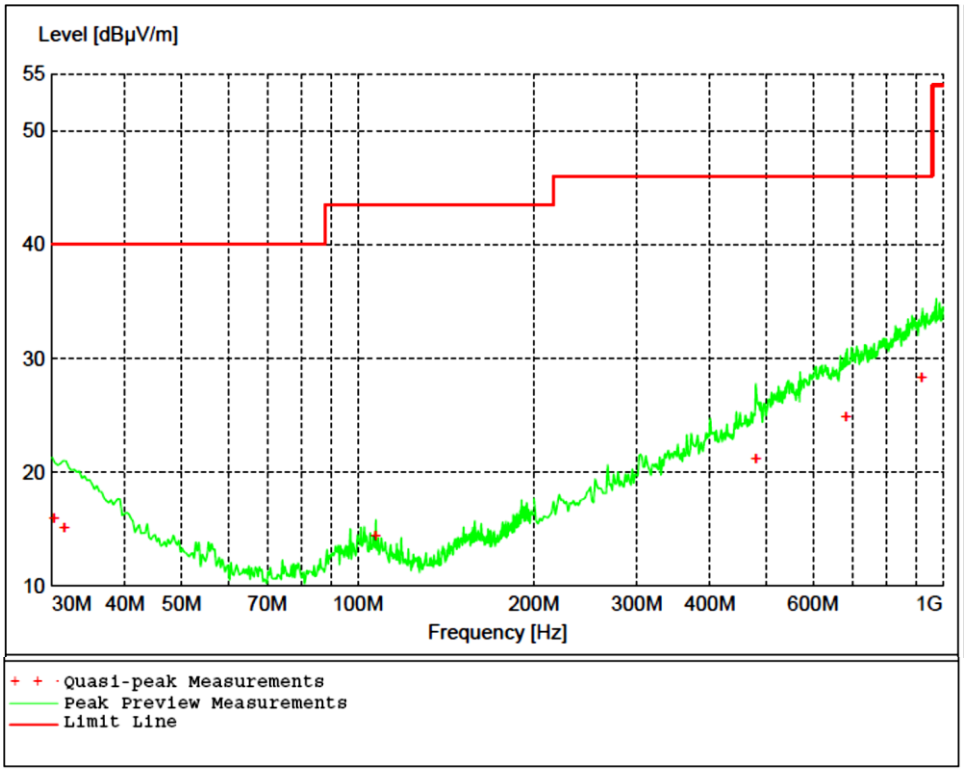


Figure 2 - Radiated Emissions Plot, Receive, Horizontal

Table 1 - Radiated Emissions Quasi-peak Measurements, Receive

Frequency	Level	Limit	Margin	Height	Angle	Pol
MHz	dBµV/m	dBµV/m	dB	cm.	deg.	
30.240000	15.94	40.00	24.10	346	251	VERT
31.500000	15.05	40.00	25.00	221	10	VERT
107.340000	14.34	43.50	29.20	399	0	HORI
479.580000	21.18	46.00	24.80	256	189	HORI
684.480000	24.79	46.00	21.20	203	0	VERT
921.660000	28.27	46.00	17.70	99	316	VERT

Table 2 - Radiated Emissions Peak Measurements, Receive

Frequency	Level	Limit	Margin	Height	Angle	Pol
MHz	dBµV/m	dBµV/m	dB	cm.	deg.	
1824.000000	33.36	54.00	20.60	399	318	HORI
2733.800000	36.26	54.00	17.70	100	255	VERT
3660.000000	38.78	54.00	15.20	99	136	VERT
4586.200000	40.56	54.00	13.40	101	101	HORI
5490.600000	42.76	54.00	11.20	388	162	HORI
6407.600000	43.14	54.00	10.90	398	116	VERT

Peak measurements were compared to average limit and found to be compliant so average measurements were not performed

REMARKS:
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. Since peak measurements were compliant with the average limit, average measurements were not required.

EUT MODULE	WESROC Cellular Tank Monitor	MODE	Transmit
INPUT POWER	3.6 VDC	FREQUENCY	916 MHz
ENVIRONMENTAL CONDITIONS	30 % ± 5% RH 23 ± 3ºC	TECHNICIAN	KVepuri

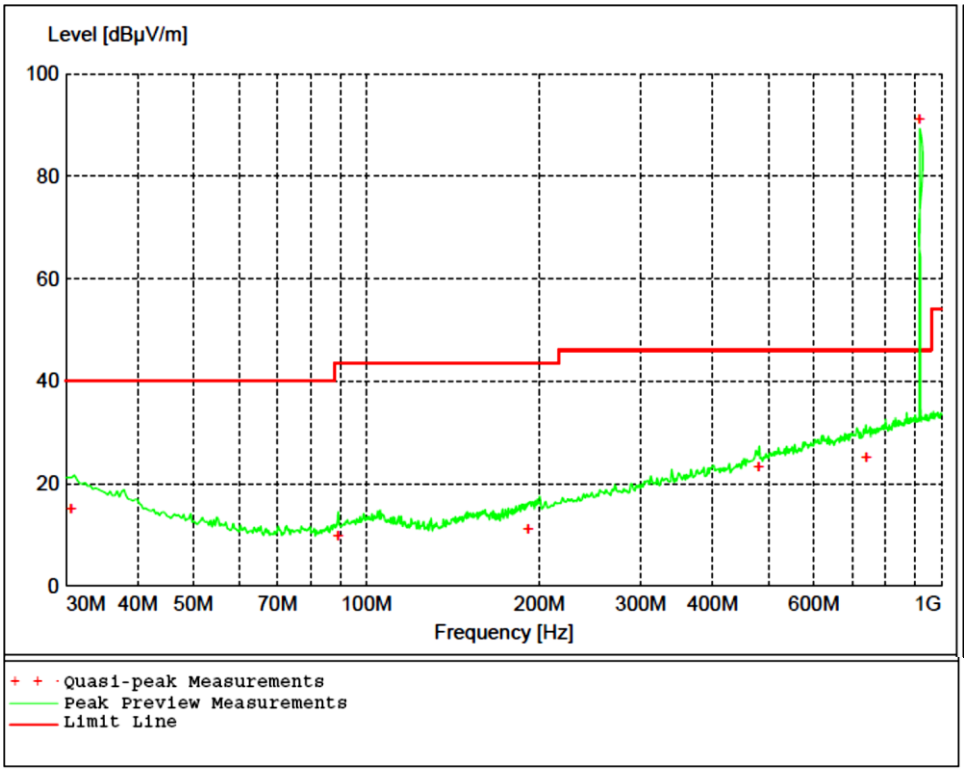


Figure 3 - Radiated Emissions Plot, EUT Horizontal

Table 3 - Radiated Emissions Quasi-peak Measurements

Frequency	Level	Limit	Margin	Height	Angle	Pol
MHz	dBµV/m	dBµV/m	dB	cm.	deg.	
30.660000	15.14	40.00	24.90	371	261	HORI
89.340000	9.73	43.50	33.80	320	274	VERT
191.340000	11.16	43.50	32.40	300	348	HORI
481.260000	23.23	46.00	22.80	102	137	VERT
740.100000	25.17	46.00	20.80	230	4	HORI
916.500000	90.99	NA	NA	111	165	VERT

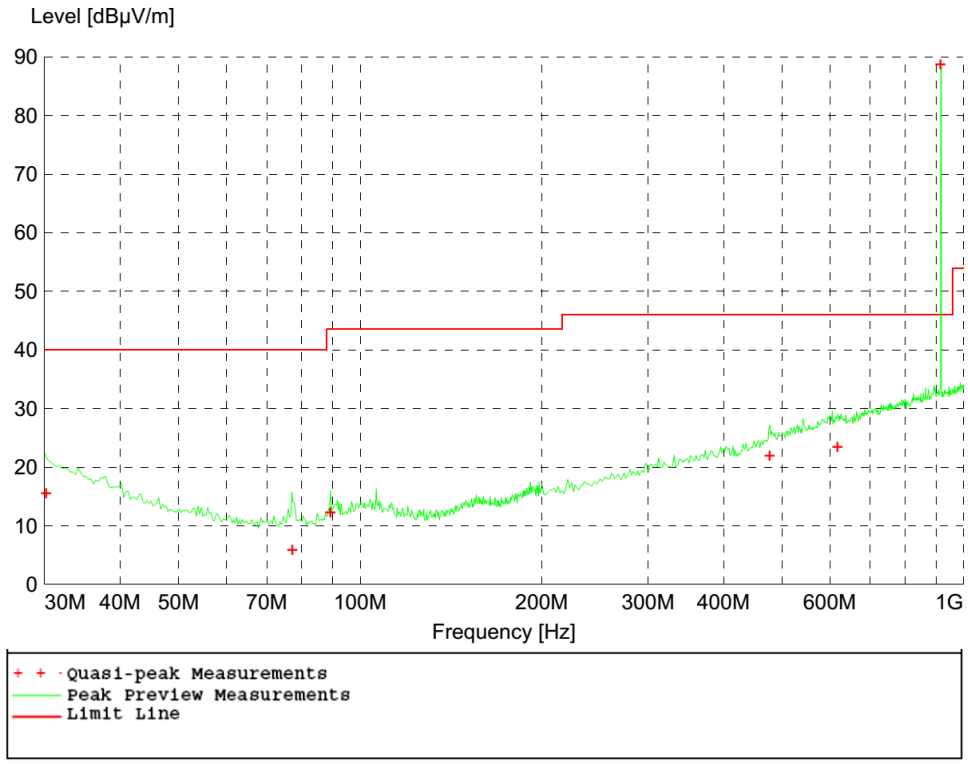


Figure 4 - Radiated Emissions Plot, EUT Vertical

Table 4 - Radiated Emissions Quasi-peak Measurements

Frequency	Level	Limit	Margin	Height	Angle	Pol
MHz	dBµV/m	dBµV/m	dB	cm.	deg.	
30.180000	15.55	40.00	24.85	99	200	VERT
77.220000	5.88	43.50	34.1	213	111	VERT
89.280000	12.29	43.50	31.2	154	273	VERT
477.180000	21.87	46.00	24.1	122	197	VERT
618.600000	23.50	46.00	22.5	99	338	VERT
916.500000	88.68	NA	NA	136	135	HORI

Table 5 - Radiated Emissions Peak Measurements, EUT Horizontal

Frequency	Level	Limit	Margin	Height	Angle	Antenna Pol
MHz	dBµV/m	dBµV/m	dB	cm.	deg.	
1833.200000	36.81	54.00	17.20	389	3	HORI
2749.500000	41.73	54.00	12.30	140	0	HORI
3666.000000	42.11	54.00	11.90	395	182	VERT
4582.500000	47.08	54.00	6.90	169	254	VERT
5499.000000	43.78	54.00	10.20	100	219	VERT
6415.500000	43.86	54.00	10.10	220	119	VERT
7332.000000	44.69	54.00	9.30	338	255	VERT
8248.500000	47.81	54.00	6.20	321	247	VERT
9165.000000	46.64	54.00	7.40	261	24	HORI

Peak measurements were compared to average limit and found to be compliant so average measurements were not performed

Table 6 - Radiated Emissions Peak Measurements, EUT Vertical

Frequency	Level	Limit	Margin	Height	Angle	Antenna Pol
MHz	dBµV/m	dBµV/m	dB	cm.	deg.	
1833.200000	22.91	54.00	31.1	399	202	HORI
2749.500000	30.54	54.00	23.5	101	6	HORI
3666.000000	28.13	54.00	25.9	399	322	VERT
4582.500000	29.52	54.00	24.5	399	360	VERT
5499.000000	32.29	54.00	21.7	100	104	VERT
6415.500000	30.62	54.00	23.4	99	10	VERT
7332.000000	30.89	54.00	23.	100	142	VERT
8248.500000	34.19	54.00	19.8	257	204	VERT
9165.000000	33.83	54.00	20.2	108	52	HORI

Peak measurements were compared to average limit and found to be compliant so average measurements were not performed

REMARKS:
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. Since peak measurements were compliant with the average limit, average measurements were not required.

4.4 Bandwidth

Test Method: ANSI C63.10, Section(s) 6.9, 11.8.1 (Option 1)

4.4.1 Limits of bandwidth measurements

The 6dB bandwidth of the signal must be greater than 500 kHz

4.4.2 Test procedures

6dB Bandwidth:

The transmitter output was connected to the spectrum analyzer directly. The bandwidth of the fundamental frequency was measured by spectrum analyzer with **100 kHz RBW and 300 kHz VBW**. The 6 dB bandwidth is defined as the bandwidth of which is higher than peak power minus 6dB. A peak detector was used in max hold trace mode. The sweep was set to **auto-couple**.

Occupied Bandwidth:

The 99% occupied is defined as the bandwidth at which 99% of the signal power is found. This corresponds to 20dB down from the maximum power level. The maximum power was measured with the largest resolution bandwidth possible (10MHz) and this value was recorded. The signal was then captured with a **100 kHz RBW** and the frequencies where the measurements were 20dB below the maximum power were marked. The bandwidth between these frequencies was recorded as the 99% occupied bandwidth. A peak detector was used in max hold trace mode. The sweep was set to **auto-couple**.

Both the traces from the 100 kHz and 10 MHz RBW are shown on the plot together. The screen capture indicates 100 kHz because it was the second measurement made.

4.4.3 Deviations from test standard

No deviation.

4.4.4 Test setup

The cable used to go from the spectrum analyzer to the EUT had a loss of 0.5 dB. The plot shows the corrected value using a 0.5 dB offset.

4.4.5 EUT operating conditions

See section 2.6.

4.4.6 Test results

EUT MODULE	WESROC Cellular Tank Monitor	MODE	Transmit
INPUT POWER	3.6 VDC	FREQUENCY	916.5 MHz
ENVIRONMENTAL CONDITIONS	30 % ± 5% RH 23 ± 3ºC	TECHNICIAN	KVepuri

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BW (kHz)	6dB MINIMUM LIMIT (kHz)	99% Occupied BW (MHz)	RESULT
1	916.5	869.73	500.00	1.21	PASS

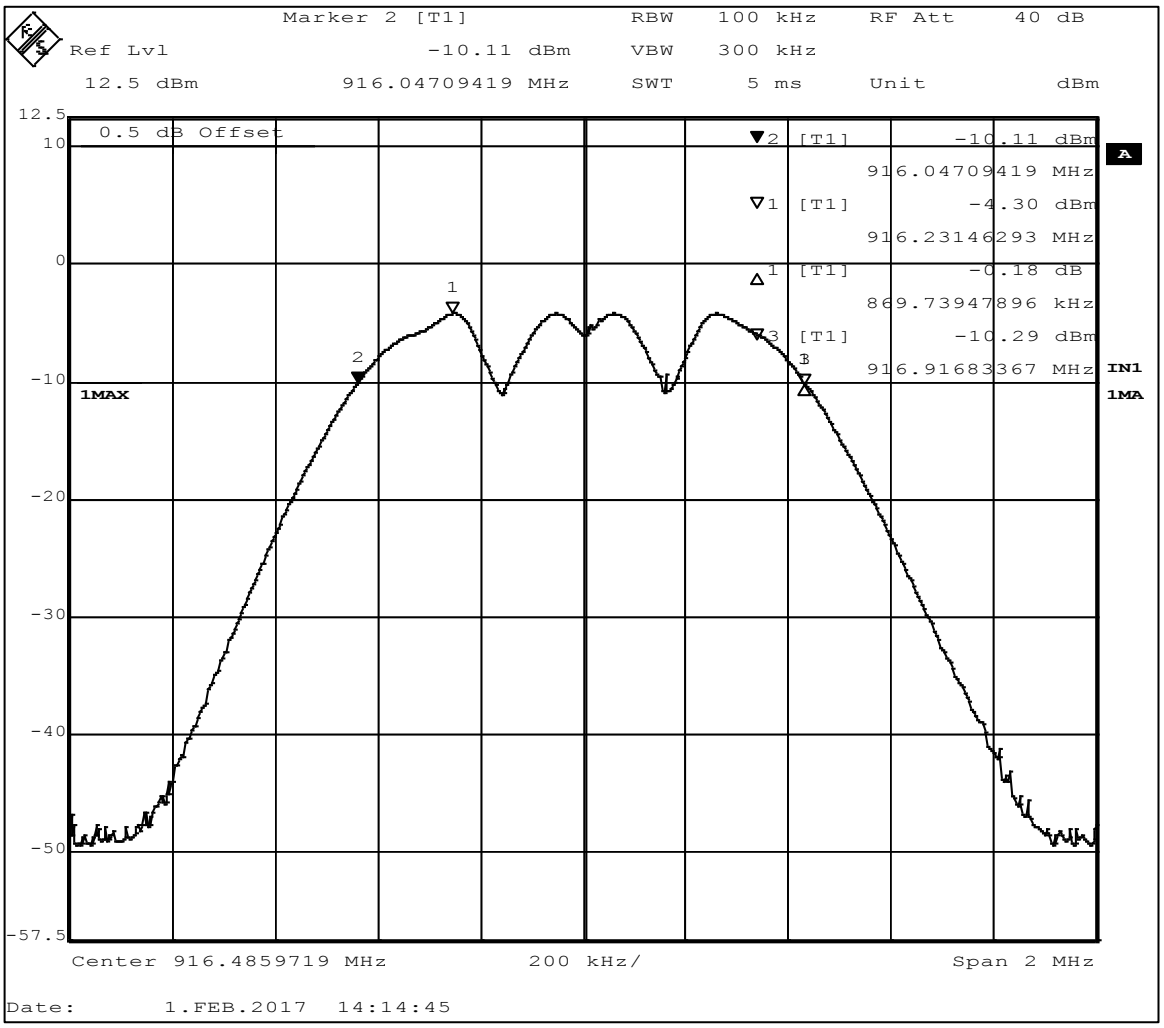


Figure 5 - 6dB Bandwidth

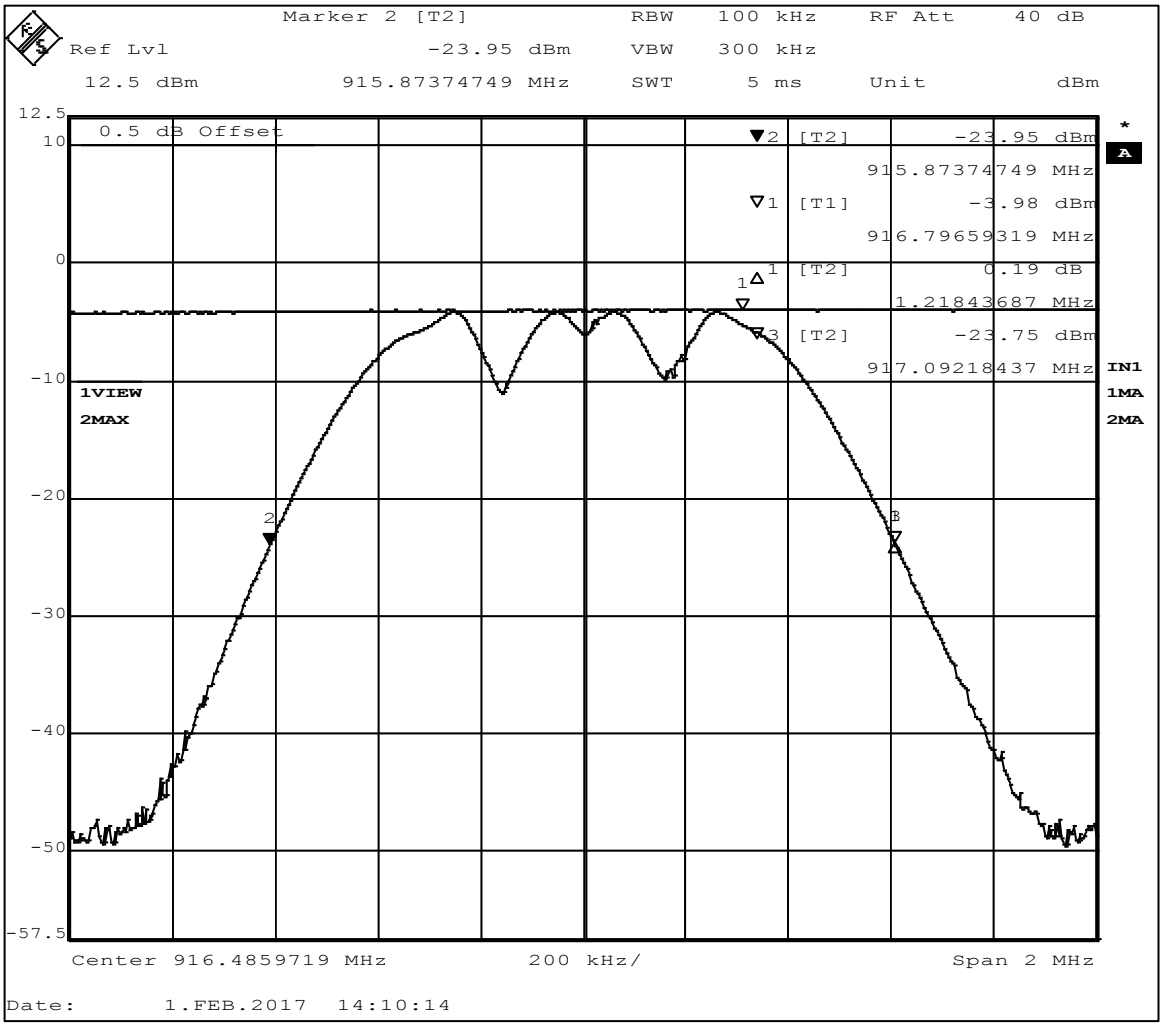


Figure 6 - 99% Occupied Bandwidth

4.5 Maximum peak output power and conducted spurious emissions

Test Method: ANSI C63.10,
Section(s) 6.7, 11.9.1.1 (RBW ≥ DTW bandwidth)

4.5.1 Limits of power measurements

The maximum peak output power allowed is 30dBm

4.5.2 Test procedures

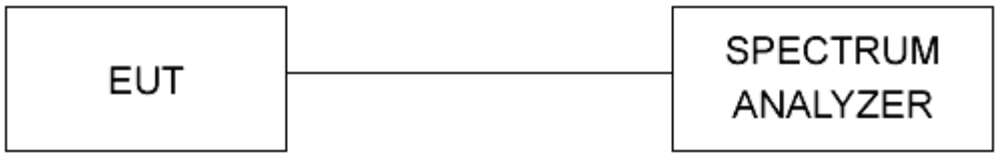
1. The EUT was connected to the spectrum analyzer directly with a low-loss shielded coaxial cable.

2. The resolution bandwidth was set to **10MHz** and the video bandwidth was set to **10MHz** to capture the maximum amount of signal. The analyzer used a peak detector in max hold mode. This represented the maximum output power.

4.5.3 Deviations from test standard

No deviation.

4.5.4 Test setup



The cable used to go from the spectrum analyzer to the EUT had a loss of 0.5 dB. The plot shows the corrected value.

4.5.5 EUT operating conditions

See Section 2.6

4.5.6 Test results

Maximum peak output power

EUT MODULE	WESROC Cellular Tank Monitor	MODE	Transmit
INPUT POWER	3.6 VDC	FREQUENCY	916.5 MHz
ENVIRONMENTAL CONDITIONS	50 % ± 5% RH 23 ± 3ºC	TECHNICIAN	KVepuri

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	RESULT
1	916.5	-3.98	30	PASS

* 0.5 dB of attenuation added to account for RF cable

Note: Screen captures of the measurements can be found in Section 4.4. The maximum power measurement with a 10 MHz resolution bandwidth can be seen in the 99% occupied bandwidth plots.

Please see Section 4.4.2 for a description of how the measurements were performed.

4.6 Power spectral density (PSD)

Test Method: ANSI C63.10, Section(s) 10.10.2 (peak PSD)

4.6.1 Limits of PSD measurements

The maximum power spectral density allowed is 8dBm.

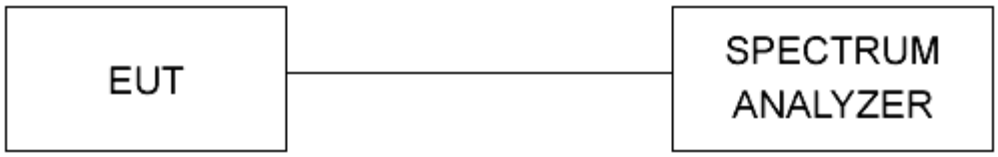
4.6.2 Test procedures

The transmitter output was connected directly to the spectrum analyzer. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using **3 kHz RBW and 30 kHz VBW**, the sweep time was set to **auto-couple**. The power spectral density was measured and recorded at the frequency with the highest emission. The sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

4.6.3 Deviations from test standard

No deviation.

4.6.4 Test setup



The cable used to go from the spectrum analyzer to the EUT had a loss of 0.5 dB. The plot shows the corrected value using a 0.5 dB offset.

4.6.5 EUT operating conditions

See Section 2.6.

4.6.6 Test results

Power Spectral Density

EUT MODULE	WESROC Cellular Tank Monitor	MODE	Transmit
INPUT POWER	3.6 VDC	FREQUENCY	916.5 MHz
ENVIRONMENTAL CONDITIONS	30 % ± 5% RH 23 ± 3ºC	TECHNICIAN	KVepuri

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL (dBm)	MAXIMUM POWER LIMIT (dBm)	RESULT
1	916.5	-4.59	8.0	PASS

*0.5 dB of attenuation added to account for RF cable, table and plot show corrected measurements

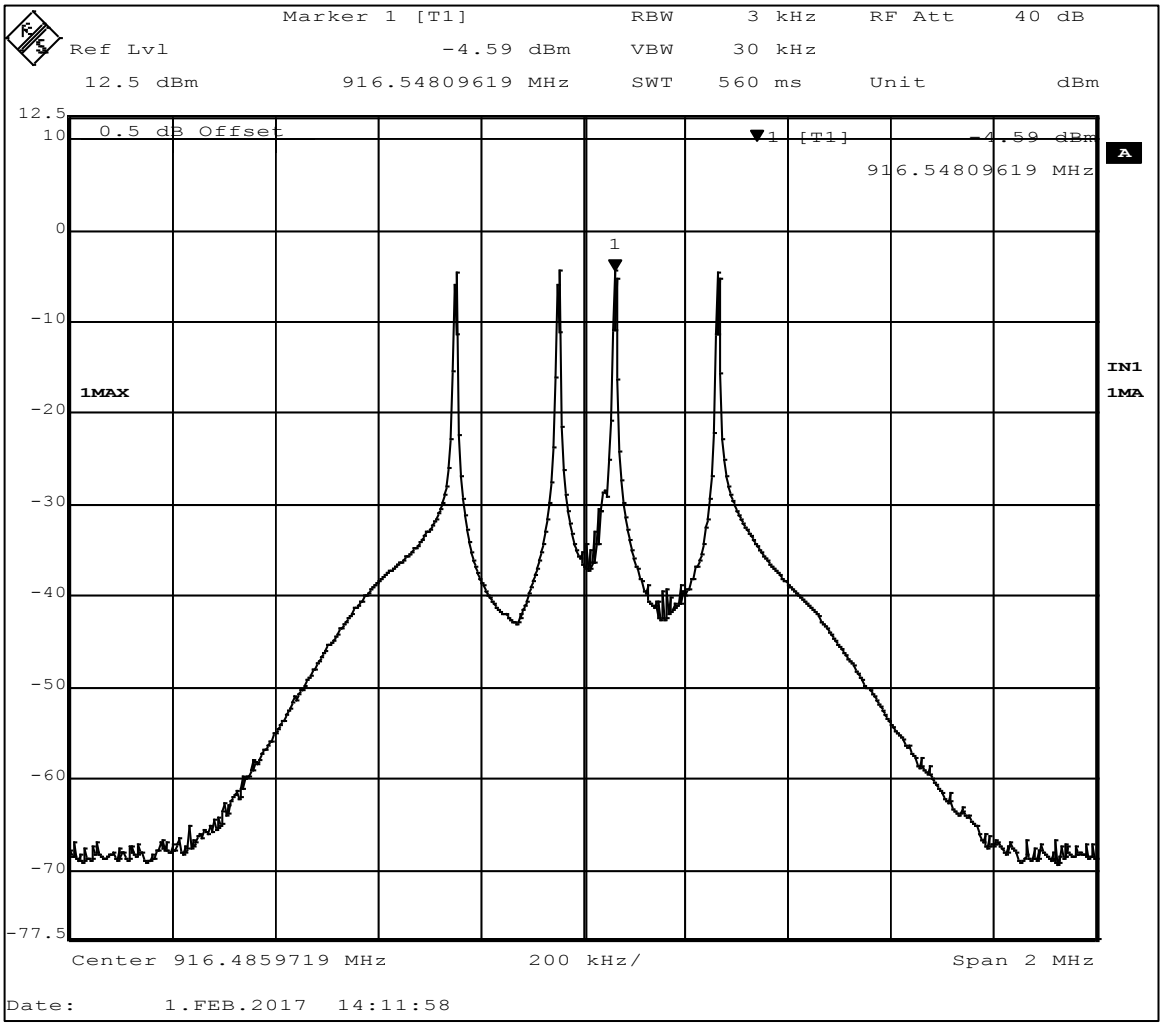


Figure 7 - Power Spectral Density Measurement

4.7 Bandedges

Test Method: ANSI C63.10, Section(s) 6.10.5.2, 11.13

4.7.1 Limits of bandedge measurements

For emissions outside of the allowed band of operation (902MHz – 928MHz) However, if the emissions fall within one of the restricted bands from 15.205 the field strength levels need to be under that of the limits in 15.209.

4.7.2 Test procedures

The transmitter was tested according to procedure in section 4.2.

4.7.3 Deviations from test standard

No deviation.

4.7.4 Test setup

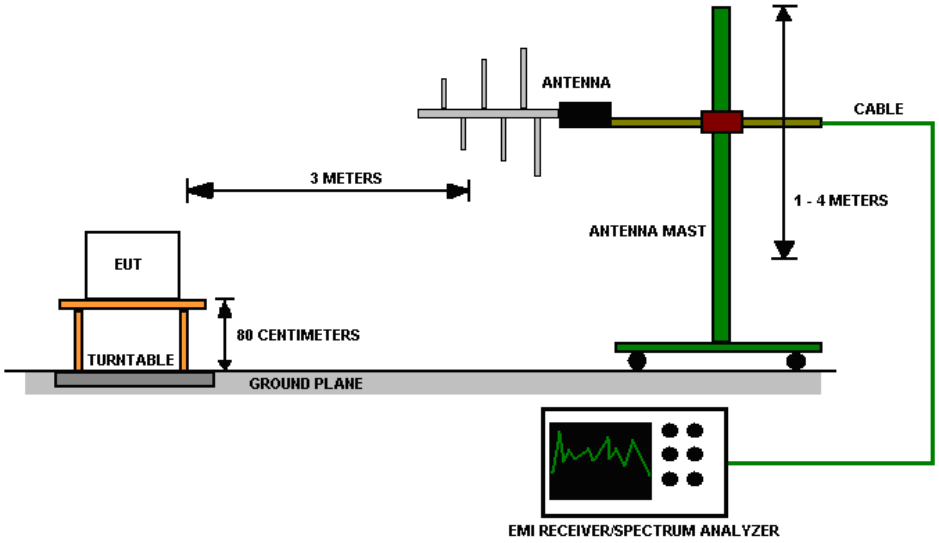


Figure 8 - Radiated Emissions Test Setup

4.7.5 EUT operating conditions

See Section 2.6.

4.7.6 Test results

EUT MODULE	WESROC Cellular Tank Monitor	MODE	Transmit
INPUT POWER	3.6 VDC	FREQUENCY	916.5 MHz
ENVIRONMENTAL CONDITIONS	30 % ± 5% RH 23 ± 3ºC	TECHNICIAN	KVepuri

Highest Out of Band Emissions

CHANNEL	Bandedge/Measurement Frequency (MHz)	Level (dBm)	Fund. Level (dBm)	Delta	Minimum per 15.247	Result
1	902 MHz	-74.61	-16.01	58.60	20.00	PASS
1	928 MHz	-74.28	-16.01	58.27	20.00	PASS

The fundamental level and level were taken from radiated emissions scan (Figure 3).

Appendix A: Measurement Uncertainty

Where relevant, the following measurement uncertainty levels apply to tests performed in this test report:

Test	Frequency Range	NCEE Labs Uncertainty Value (dB)	Maximum Uncertainty Values per CISPR 16-4-2:2011
AC Line Conducted Emissions	150kHz - 30MHz	3.30	3.40
Radiated Emissions, 10m	30MHz - 1GHz	3.82	5.30
Radiated Emissions, 3m	30MHz – 1GHz	4.25	5.30
Radiated Emissions, 3m	1GHz – 18GHz	5.08	5.20
Radiated Emissions, 3m	6GHz – 18GHz	5.08	5.50

Expanded uncertainty values are calculated to a confidence level of 95%.

NCEE Labs meets the maximum uncertainty requirements per CISPR 16-4-2:2011, and therefore does not require a minimum passing margin to state that an EUT is less than the field strength limits of the applicable CISPR, IEC or EN limit per CISPR 16-4-2:2011, Section 4.1.

Appendix B: Sample Calculation

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:
FS = RA + AF – (-CF + AG) + AV

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

AG = Amplifier Gain

AV = Averaging Factor (if applicable)

Assume a receiver reading of 55 dBμV is obtained. The Antenna Factor of 12 and a Cable Factor of 1.1 is added. The Amplifier Gain of 20 dB is subtracted, giving a field strength of 48.1 dBμV/m.

FS = 55 + 12 – (-1.1 + 20) + 0 = 48.1 dBμV/m

The 48.1 dBμV/m value can be mathematically converted to its corresponding level in μV/m.

Level in μV/m = Common Antilogarithm [(48.1 dBμV/m)/20]= 254.1 μV/m
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