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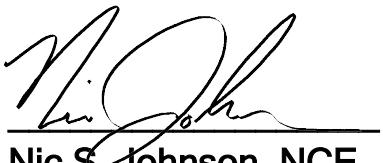
Amended

FCC/ISED Test Report

Prepared for:	Digital Monitoring Products
Address:	2500 North Partnership Blvd. Springfield, MO 6582
Product:	iComL DXX - Z-wave radio
Test Report No:	R20180504-20B
Approved by:	 Nic S. Johnson, NCE Technical Manager iNARTE Certified EMC Engineer #EMC-003337-NE
DATE:	15 August 2018
Total Pages:	34

REVISION PAGE

Rev. No.	Date	Description
0	25 July 2018	Original - NJohnson Prepared by KVepuri
A	8 August 2018	Added FCC Part 15.249 limits for fundamental Corrected the note on Page 28 to state the measurements from Section 4.3 were used. Added note “h” to page 15 stating that the EUT was tested with all possible cable configurations during the preview testing. Includes NCEE Labs report R20180504-20 and its amendment in full
B	15 August 2018	Corrected the note on Page 27 to state the measurements from Section 4.3 were used.

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1.0 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

(1) US Code of Federal Regulations, Title 47, Part 15
(2) ISED RSS-Gen, Issue 5
(3) ISED RSS-210, Issue 9

SUMMARY			
Standard Section	**Test Type and Limit**	**Result**	**Remark**
FCC 15.203	Unique Antenna Requirement	Pass	PCB antenna
FCC 15.35 RSS-Gen, 6.10	Duty cycle of pulsed emissions	N/A	N/A
FCC 15.209 RSS-Gen, 7.1	Receiver Radiated Emissions	Pass	Meets the requirement of the limit.
FCC 15.249	Minimum Bandwidth	N/A	Informational Purpose Only
FCC 15.249	Maximum Peak Output Power	N/A	Informational Purpose Only
FCC 15.209 RSS-Gen, 8.9 RSS-210 A1.2 FCC 15.249(c), (d)	Transmitter Radiated Emissions	Pass	Meets the requirement of the limit.
FCC 15.209, 15.205 RSS-Gen, 8.9	Band Edge Measurement, Limit: 15.209/RSS-Gen limits	Pass	Meets the requirement of the limit.
FCC 15.207 RSS-Gen. 8.8	Conducted AC Emissions	Pass	Meets the requirement of the limit.

2.0 EUT DESCRIPTION

2.1 EQUIPMENT UNDER TEST

Summary

The Equipment Under Test (EUT) was an iComL Keypad manufactured by DMP wireless devices. It has a Z-Wave radio that operates at 908.40 MHz and 916 MHz and has transmit and receive capabilities.

The device also contained a pre-approved radio, FCC ID RI7ME910C1NV, IC:5131A-ME910C1NV. The module was capable of transmitting simultaneously as the 908.4 and 916 MHz radio, so intermodulation testing was performed.

EUT	IComL- DXX radio
EUT Received	5/23/2018
EUT Tested	6/12/2018 - 7/18/2018
Serial No.	NCEETEST1 (Assigned)
Operating Band	900.0 - 928.0 MHz
Device Type	Z-wave
Power Supply	MH Electronics, 12 VDC ITE Power Supply MN: ST12500-W (Used for Conducted Emissions and verified receive mode Radiated Emissions, this power supply is expected to be shipped with the unit) MH Electronics, 12 VDC ITE Power Supply MN: MGT-12500-SPS (Used for Radiated Emissions as representative power supply)

NOTE: For more detailed features description, please refer to the manufacturer's specifications or user's manual.

2.2 DESCRIPTION OF TEST MODES

The EUT operates on, and was tested at the frequencies below:

Channel	Frequency
1	908.4 MHz
2	916.0 MHz

The radio that was tested and reported in here only operated on the 2 frequencies listed above.

This EUT was set to transmit in a worse-case scenario with modulation on. The manufacturer modified the unit to transmit continuously on the lowest and highest frequency channels.

2.3 DESCRIPTION OF SUPPORT UNITS

None

3.0 LABORATORY DESCRIPTION

3.1 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 35 ± 4%
Temperature of 22 ± 3° Celsius

3.2 TEST PERSONNEL

No.	PERSONNEL	TITLE	ROLE
1	Karthik Vepuri	EMC Test Engineer	Testing
3	Nic Johnson	Technical Manager	Review of Results

Notes:
All personnel are permanent staff members of NCEE Labs. No testing or review was sub-contracted or performed by sub-contracted personnel.

3.3 TEST EQUIPMENT

DESCRIPTION AND MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CALIBRATION DATE	CALIBRATION DUE DATE
Rohde & Schwarz Test Receiver	ES126	100037	30 Jan 2018	30 Jan 2019
EMCO Biconlog Antenna	3142B	1647	02 Aug 2017	02 Aug 2018
EMCO Horn Antenna	3115	6416	26 Jan 2018	26 Jan 2020
Rohde & Schwarz Preamplifier	TS-PR18	3545700803	09 Mar 2018*	09 Mar 2019*
Trilithic High Pass Filter	6HC330	23042	09 Mar 2018*	09 Mar 2019*
Rohde & Schwarz LISN	ESH3-Z5	836679/010	25 Jul 2017	25 Jul 2018
RF Cable (preamplifier to antenna)	MFR-57500	01-07-002	09 Mar 2018*	09 Mar 2019*
RF Cable (antenna to 10m chamber bulkhead)	FSCM 64639	01E3872	09 Mar 2018*	09 Mar 2019*
RF Cable (10m chamber bulkhead to control room bulkhead)	FSCM 64639	01E3874	09 Mar 2018*	09 Mar 2019*
RF Cable (Control room bulkhead to RF switch)	FSCM 64639	01E3871	09 Mar 2018*	09 Mar 2019*
RF Cable (RF switch to test receiver)	FSCM 64639	01F1206	09 Mar 2018*	09 Mar 2019*
RF switch – Rohde and Schwarz	TS-RSP	1113.5503.14	09 Mar 2018*	09 Mar 2019*
N connector bulkhead (10m chamber)	PE9128	NCEEBH1	09 Mar 2018*	09 Mar 2019*
N connector bulkhead (control room)	PE9128	NCEEBH2	09 Mar 2018*	09 Mar 2019*

*Internal Characterization

Notes:
All equipment is owned by NCEE Labs and stored permanently at NCEE Labs facilities.

4.0 DETAILED RESULTS

4.1 PEAK OUTPUT POWER

Test Method: ANSI C63.10-2013, Section(s) 6.3.3

Limits:
EIRP was calculated from field strength measurements using ANSI C63.10:2013, Section 9.5, Equation (22). The field strength was measured at a 3m distance and maximized.

For Informational Purposes only

Test procedures:
All measurements were taken at a distance of 3m from the EUT.

The EUT was maximized in all 3 orthogonal positions in a similar manner as described in Section 4.3.

Deviations from test standard:
No deviation.

Test setup:

See Section 4.3

Measurement device used was power meter

EUT operating conditions:
The EUT was powered by 12 VDC unless specified and set to transmit continuously on the lowest and highest frequency channel.

Test results:

Peak Output Power

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK OUTPUT POWER (dBm)	Method	RESULT
1	908.4	-2.38	EIRP	PASS
2	916.0	-1.89	EIRP	PASS

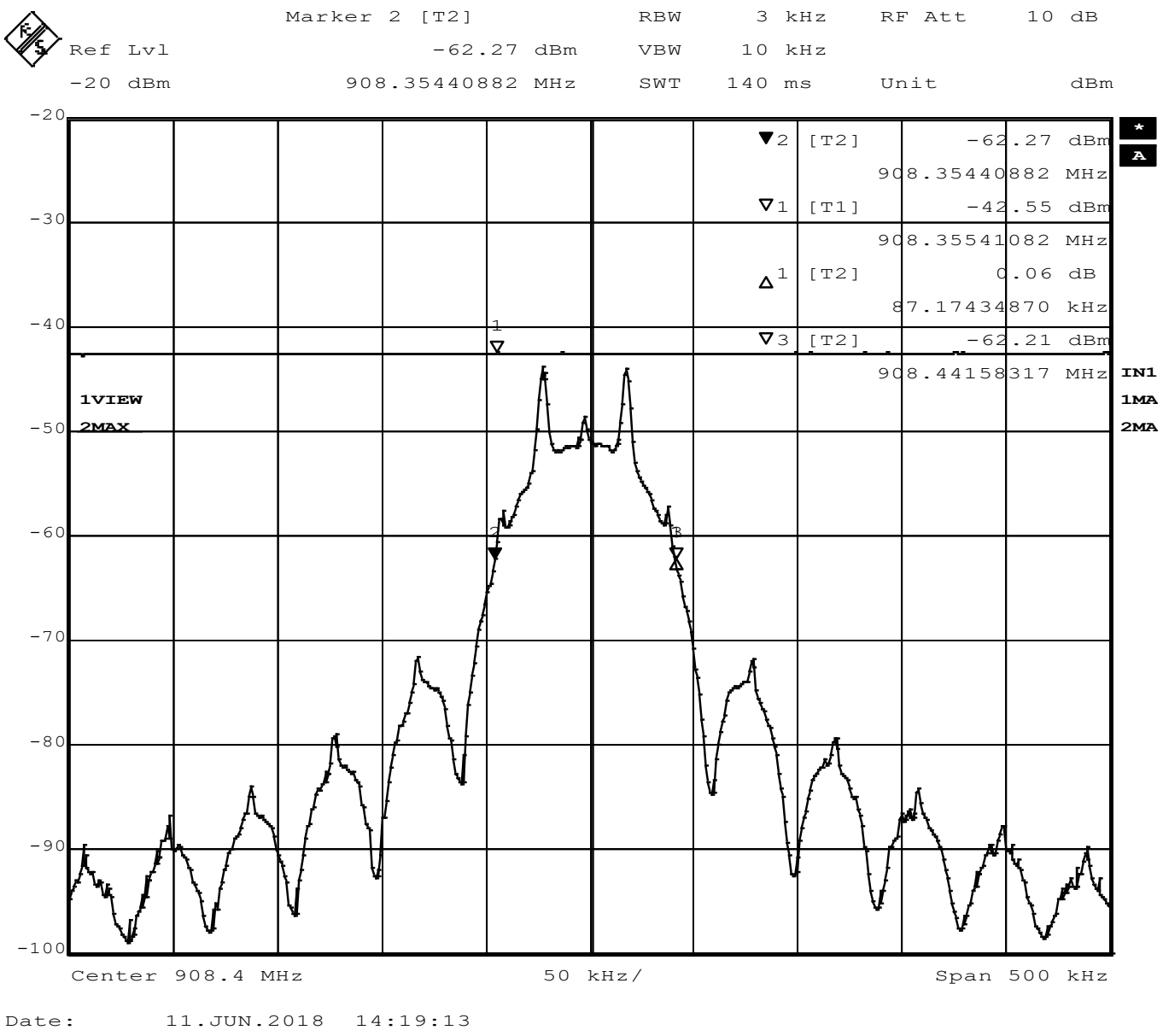

Figure 1 - Output Power, 908.4 MHz.

Maximum power = -42.55 dBm + 107 + CL + AF - 95.23 = -2.38 dBm

CL = cable loss = 4.80 dB

AF = antenna factor = 23.60 dB

107 = conversion from dBm to dBµV on a 50Ω measurement system

-95.23 = Conversion from field strength (dBµV/m) to EIRP (dBm) at a 3m measurement distance.

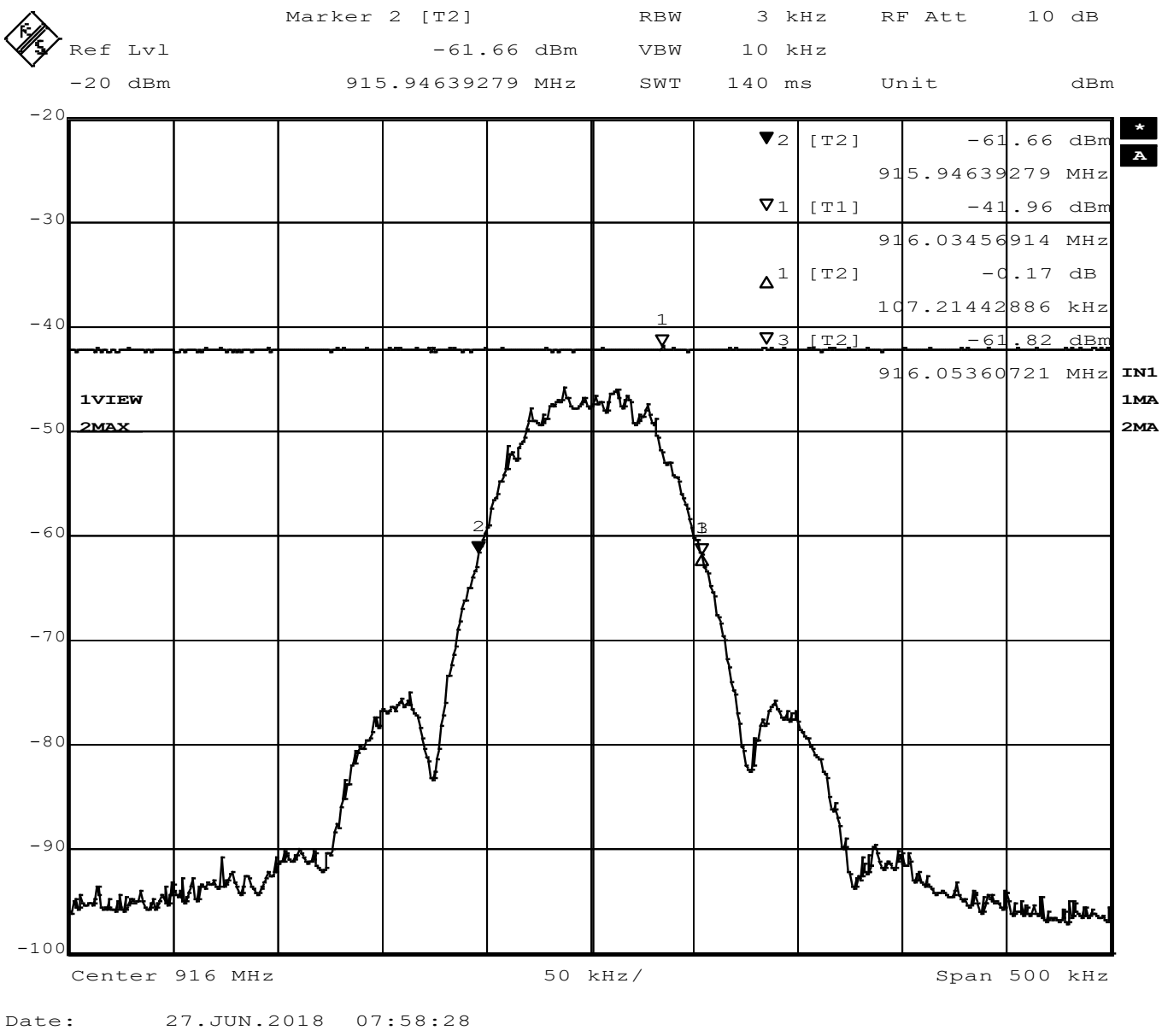

Figure 2 - Output Power, 916 MHz

Maximum power = -41.96 dBm + 107 + CL + AF - 95.23 = -1.89dBm

CL = cable loss = 4.80 dB

AF = antenna factor = 23.50 dB

107 = conversion from dBm to dBµV on a 50Ω measurement system

-95.23 = Conversion from field strength (dBµV/m) to EIRP (dBm) at a 3m measurement distance.

4.2 DUTY CYCLE

Not Applicable

4.3 RADIATED EMISSIONS

Test Method: ANSI C63.10-2013, Section 6.5, 6.6

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 (µV/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.

Test procedures:

a. The EUT was placed on the top of a rotating table above the ground plane in a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The table was 0.8m high for measurements form 30MHz-1Ghz and 1.5m for measurements from 1GHz and higher.

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.

g. The EUT was maximized in all 3 orthogonal positions. The results are presented for the axis that had the highest emissions.

h. during the preview testing, the EUT was tested with all possible connections to the internal terminal block as well as an Ethernet cable. They had very little effect on the emissions.

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 1 MHz for all measurements and at frequencies above 1GHz, A peak detector was used for all measurements above 1GHz. Measurements were made with an EMI Receiver.

Deviations from test standard:

No deviation.

Test setup:

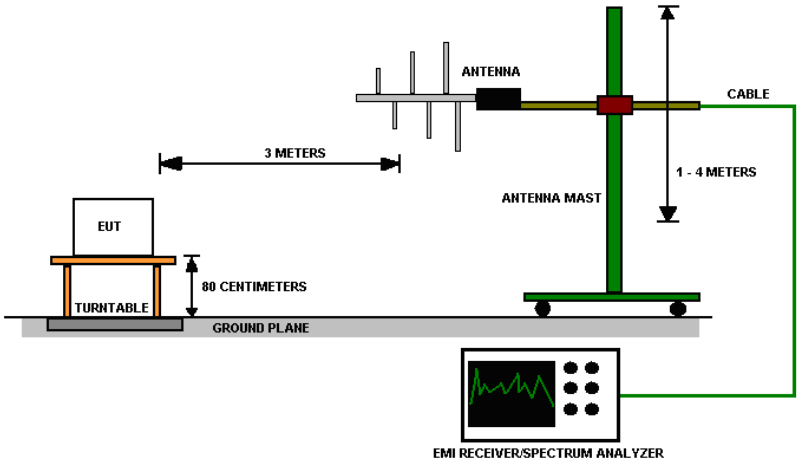

Figure 3 - Radiated Emissions Test Setup

EUT operating conditions
The EUT was powered by 12 VDC unless specified and set to transmit continuously on the lowest and highest frequency channels.

Test results:

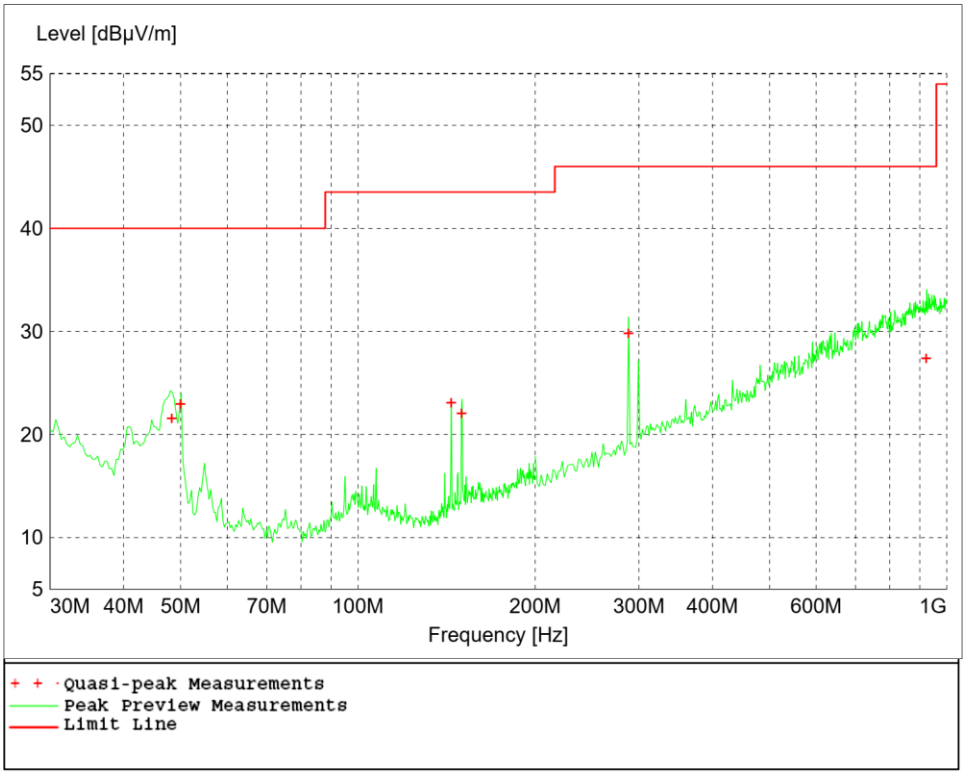

Figure 4 - Radiated Emissions Plot, Receive

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. The EUT was measured in both the horizontal and vertical orientation. It was found that the Horizontal position produced the highest emissions, and this orientation was used for all testing. See Annex A for test photos.

Table 1 - Radiated Emissions Quasi-peak Measurements, Receive

Frequency	Level	Limit	Margin	Height	Angle	Pol	Axis
MHz	dBµV/m	dBµV/m	dB	cm.	deg.		
48.300000	21.52	40.00	18.50	100	305	VERT	Z-axis
49.980000	22.96	40.00	17.00	99	285	VERT	Z-axis
144.000000	23.05	43.50	20.50	101	334	VERT	Z-axis
150.000000	22.03	43.50	21.50	100	305	VERT	Z-axis
288.060000	29.82	46.00	16.20	196	270	VERT	Z-axis
922.920000	27.35	46.00	18.60	317	55	VERT	Z-axis

Table 2 - Radiated Emissions Peak Measurement vs Average Limits, Receive

Frequency	Level	Limit	Margin	Height	Angle	Pol	Axis
MHz	dBµV/m	dBµV/m	dB	cm.	deg.		
1812.800000	33.06	54.00	20.90	298	341	HORI	Z-axis
2725.600000	33.19	54.00	20.80	99	161	VERT	Z-axis
3637.800000	37.70	54.00	16.30	399	360	HORI	Z-axis
4540.600000	39.65	54.00	14.40	100	50	VERT	Z-axis

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

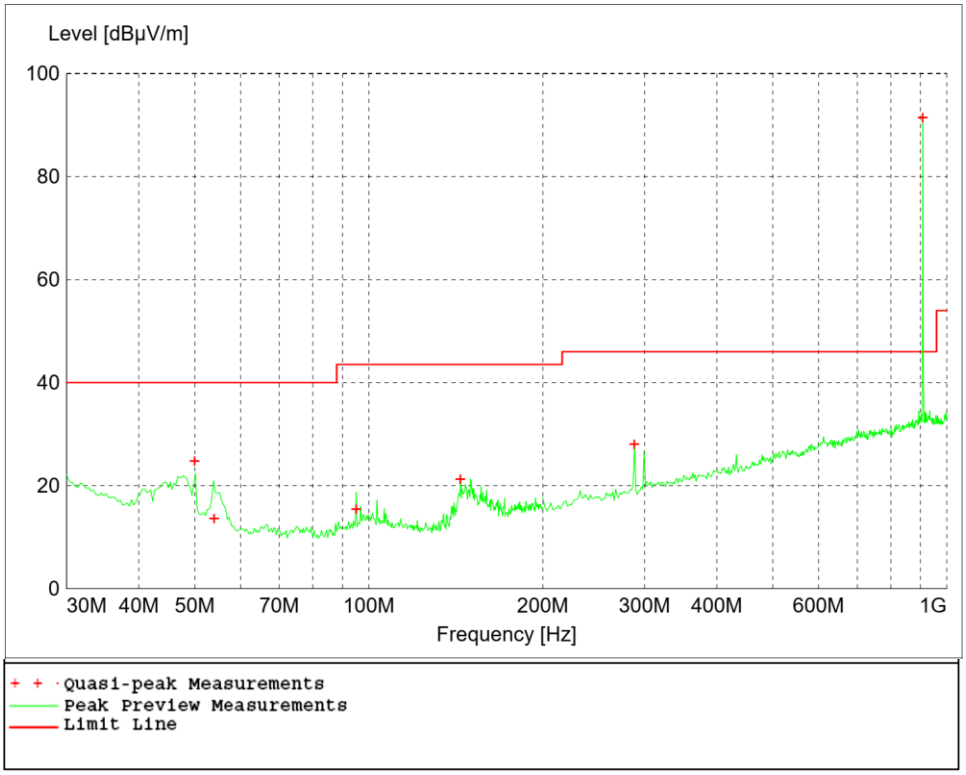

Figure 5 - Radiated Emissions Plot, 908.4 MHz

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. The EUT was measured in both the horizontal and vertical orientation. It was found that the Horizontal position produced the highest emissions, and this orientation was used for all testing. See Annex A for test photos.

Table 3 - Radiated Emissions Quasi-peak Measurements, 908.4 MHz

Frequency	Level	Limit	Margin	Height	Angle	Pol	Axis
MHz	dBµV/m	dBµV/m	dB	cm.	deg.		
49.980000	24.77	40.00	15.20	100	294	VERT	Z-axis
54.000000	13.59	40.00	26.40	115	51	VERT	Z-axis
95.100000	15.40	43.50	28.10	136	109	VERT	Z-axis
144.000000	21.20	43.50	22.30	100	99	VERT	Z-axis
288.000000	27.95	46.00	18.00	203	329	VERT	Z-axis
908.400000	91.39	93.98	2.59	112	216	VERT	Z-axis

Table 4 - Radiated Emissions Peak Measurements, 908.4 MHz

Frequency	Level	Limit	Margin	Height	Angle	Pol	Axis
MHz	dBµV/m	dBµV/m	dB	cm.	deg.		
1826.000000	32.56	54.00	21.40	399	300	VERT	Z-axis
2725.200000	45.30	54.00	8.70	173	18	HORI	Z-axis
3633.400000	41.79	54.00	12.20	173	95	VERT	Z-axis
4542.000000	44.68	54.00	9.30	163	79	VERT	Z-axis
5455.600000	40.93	54.00	13.10	100	253	HORI	Z-axis
6358.800000	46.33	54.00	7.70	173	170	VERT	Z-axis
7269.200000	41.07	54.00	12.90	291	99	HORI	Z-axis
8154.600000	44.23	54.00	9.80	99	63	VERT	Z-axis
9084.000000	43.91	54.00	10.10	150	150	VERT	Z-axis

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

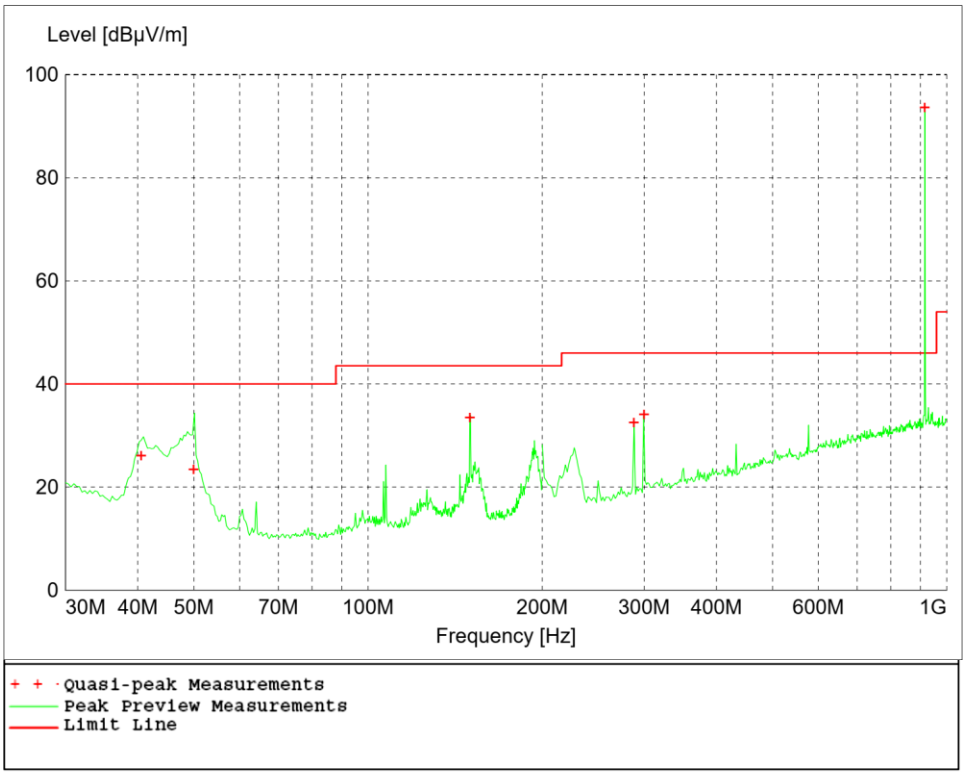

Figure 6 - Radiated Emissions Plot, 916 MHz

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. The EUT was measured in both the horizontal and vertical orientation. It was found that the Horizontal position produced the highest emissions, and this orientation was used for all testing. See Annex A for test photos.

Table 5 - Radiated Emissions Quasi-peak Measurements, 916 MHz

Frequency	Level	Limit	Margin	Height	Angle	Pol	Axis
MHz	dBµV/m	dBµV/m	dB	cm.	deg.		
40.560000	26.05	40.00	13.90	99	226	VERT	Z-axis
49.980000	23.38	40.00	16.60	102	289	VERT	Z-axis
150.000000	33.48	43.50	10.00	101	305	VERT	Z-axis
288.000000	32.49	46.00	13.50	196	324	VERT	Z-axis
300.000000	34.12	46.00	11.90	190	319	VERT	Z-axis
916.000000	93.57	93.98	0.41	119	10	VERT	Z-axis

The EUT was maximized in all 3 orthogonal axis. The worst-case is shown in the table above.

Table 6 - Radiated Emissions Peak Measurements, 916 MHz

Frequency	Level	Limit	Margin	Height	Angle	Pol	Axis
MHz	dBµV/m	dBµV/m	dB	cm.	deg.		
1838.800000	32.47	54.00	21.50	100	329	VERT	Z-axis
2748.000000	45.49	54.00	8.50	133	241	VERT	Z-axis
3675.000000	39.20	54.00	14.80	104	131	VERT	Z-axis
4580.000000	42.85	54.00	11.20	108	345	VERT	Z-axis
5495.800000	41.39	54.00	12.60	106	31	VERT	Z-axis
6412.200000	48.48	54.00	5.50	104	261	VERT	Z-axis
7340.800000	41.58	54.00	12.40	105	214	VERT	Z-axis
8244.200000	50.29	54.00	3.70	99	263	VERT	Z-axis
9165.200000	44.25	54.00	9.70	394	46	VERT	Z-axis

The EUT was maximized in all 3 orthogonal axis. The worst-case is shown in the table above.

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

Intermodulation Product: EUT contains two separate radios modules. They were all turned ON at the same time. No intermodulation products were found to be above the noise floor.

4.4 BANDWIDTH

Test Method: ANSI C63.10-2013, Section(s) 6.9.3

Limits of bandwidth measurements:

For Informational Purposes only

Test procedures:
Bandwidth measurement was taken at a distance of 3m from the EUT. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 3 kHz RBW and 10 kHz VBW.

The Occupied Bandwidth is defined as the bandwidth of which is higher than peak power minus 20dB.

Test setup:

All the measurements were done at 3m test distance while an operator was trying to activate the hopping sequence manually. See Section 4.3 for more details.

Deviations from test standard:
No deviation.

Test setup:

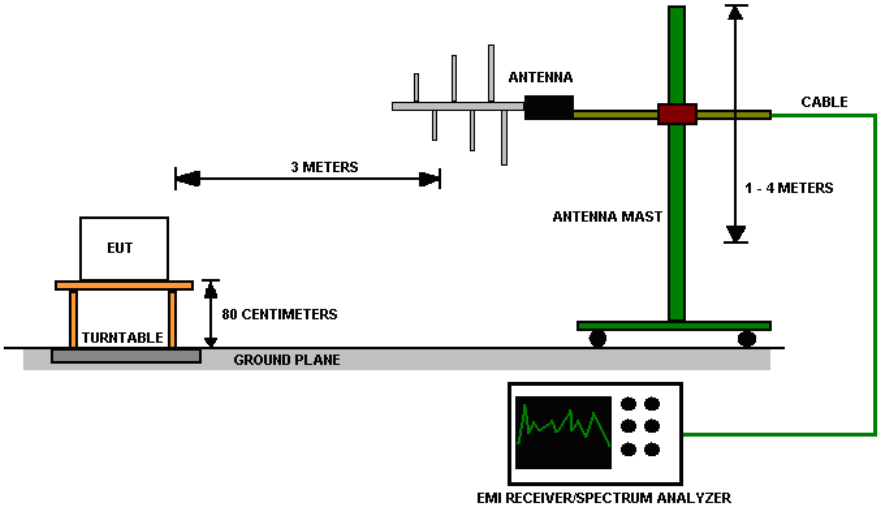

Figure 7 - Bandwidth Measurements Test Setup

EUT operating conditions:

The EUT was powered by 12 VDC unless specified and set to transmit continuously on the lowest and highest frequency channel.

Test results:

Occupied Bandwidth

CHANNEL	CHANNEL FREQUENCY (MHz)	99% BW (kHz)	RESULT
1	908.4	87.17	PASS
2	916.0	108.22	PASS

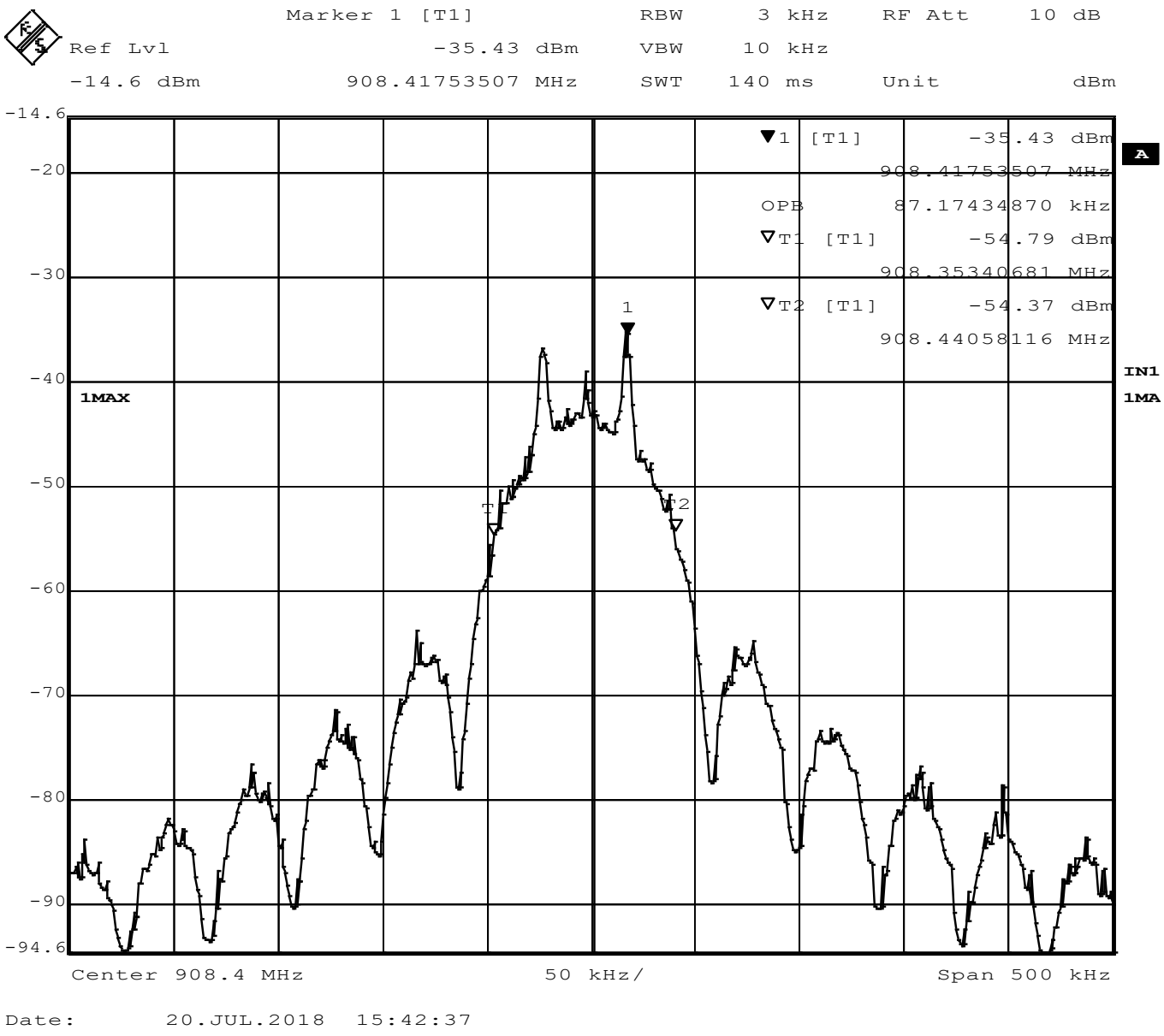

Figure 8 - Occupied Bandwidth, 908.4 MHz

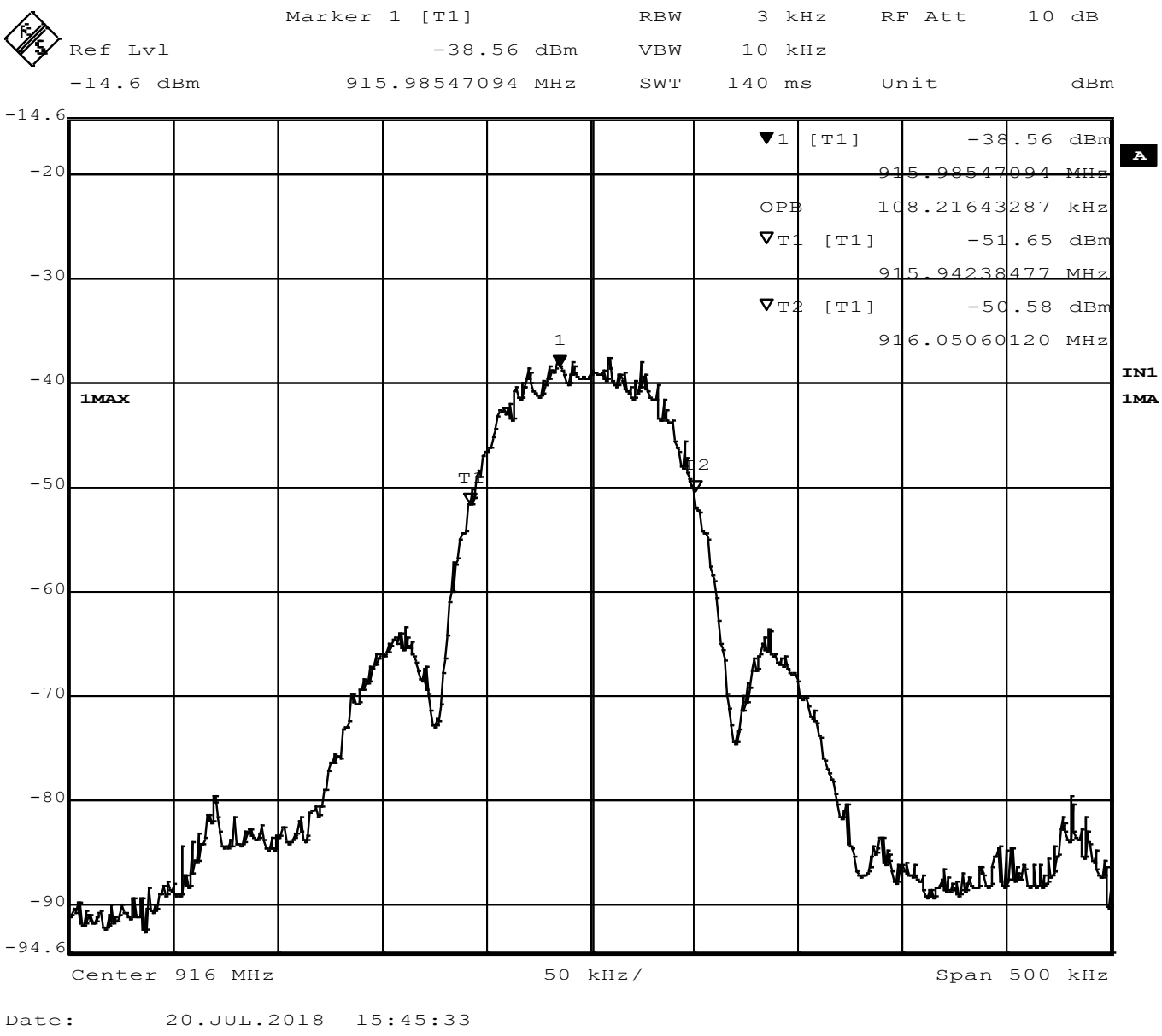

Figure 9 - Occupied Bandwidth, 916 MHz

4.5 BANDEDGES

Test Method: ANSI C63.10-2013, Section 6.5, 6.6

Limits of bandedge measurements:
For emissions outside of the allowed band of operation (902 – 928MHz), field strength levels need to be under that of the limits in 15.209.

Test procedures:
The EUT was tested in the same method as described in section *4.3 Radiated Emissions*. The EUT was oriented as to produce the maximum emission levels. All band edge measurements were evaluated to the general limits in Part 15.209.

Deviations from test standard:
No deviation.

Test setup:
All the measurements were done at 3m test distance while an operator was trying to activate the hopping sequence manually.

EUT operating conditions:
The EUT was powered by 12 VDC unless specified and set to transmit continuously on the lowest frequency channel, and the highest frequency channel.

Test results:

Highest Out of Band Emissions

CHANNEL	Band edge /Measurement Frequency (MHz)	Highest out of band level dBµV/m	Limit (dBµV/m)	Result
Low, Continuous	902 (Un-Restricted)	33.93	46.00	PASS
High, Continuous	928 (Un-Restricted)	35.44	46.00	PASS
Low, Continuous	614 (Un-Restricted)	28.70	46.00	PASS
High, Continuous	960 (Un-Restricted)	32.37	54.00	PASS

*Test method from section 4.3 was used for these measurements

4.7 CONDUCTED AC MAINS EMISSIONS

Test Method: ANSI C63.10-2013, Section(s) 6.2

Limits for conducted emissions measurements:

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Notes:
1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

Test Procedures:

a. The EUT was placed 0.8m above a ground reference plane and 0.4 meters from the conducting wall of a shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). The LISN provides 50 ohm/ 50uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference as well as the ground.
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits are not reported.
d. Results were compared to the 15.207 limits.

Deviation from the test standard:
No deviation

EUT operating conditions:
The EUT was powered by 12 VDC unless specified and set to transmit continuously on the lowest and highest frequency channels.

Test Results:

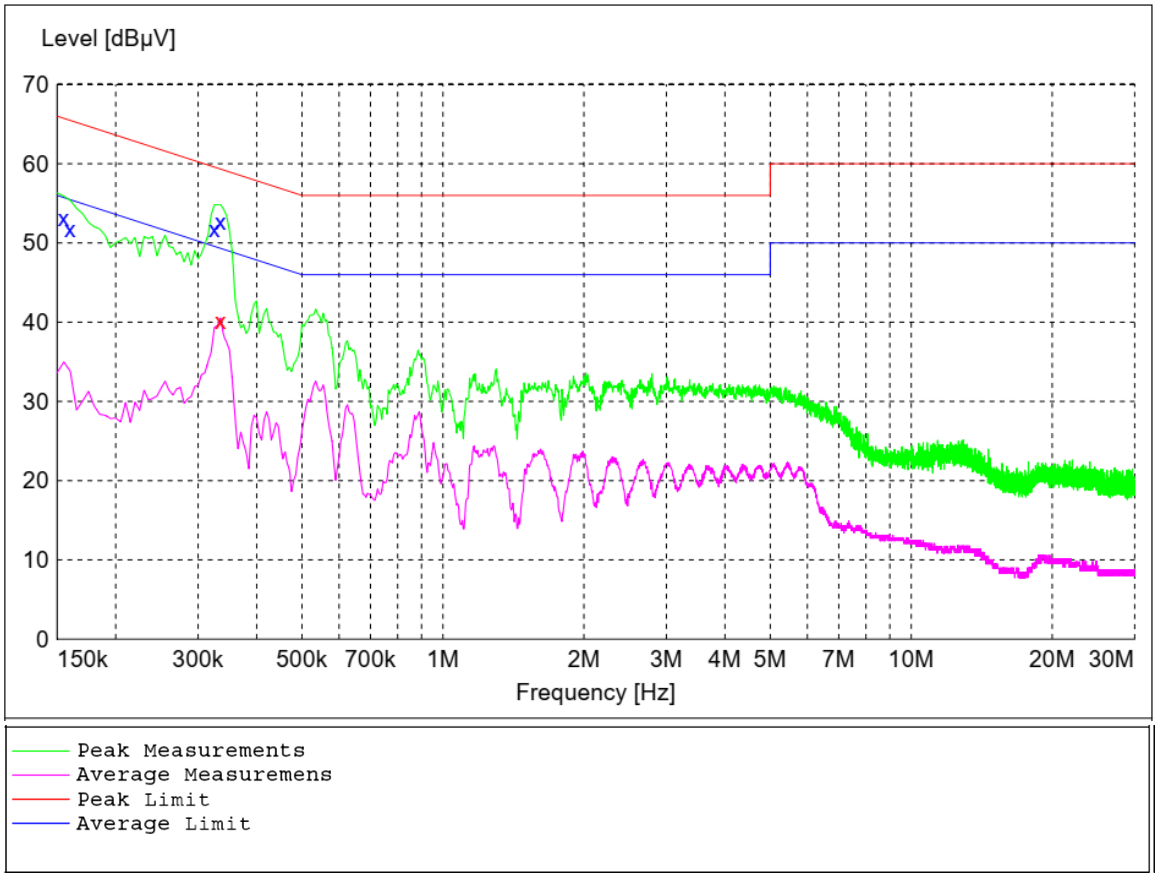

Figure 10 - Conducted Emissions Plot

All measurements were found to be at least 10dB below the applicable limit.

Table 7 - Conducted Emissions Quasi-Peak Measurements

Frequency	Level	Limit	Margin	Line	PE
MHz	dBµV/m	dBµV/m	dB		
0.155000	53.20	66.00	12.60	N	FLO
0.160000	51.80	66.00	13.70	N	FLO
0.325000	51.70	60.00	7.90	L1	FLO
0.335000	52.60	59.00	6.70	N	FLO

Table 8 - Conducted Average-Peak Measurements

Frequency	Level	Limit	Margin	Line	PE
MHz	dBµV/m	dBµV/m	dB		
0.335000	40.10	49.00	9.20	L1	FLO

APPENDIX A: 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

AV is calculated by the taking the 20*log(T_{on}/100) where T_{on} is the maximum transmission time in any 100ms window.

EIRP Calculations

In cases where direct antenna port measurement is not possible or would be inaccurate, output power is measured in EIRP. The maximum field strength is measured at a specified distance and the EIRP is calculated using the following equation;

EIRP (Watts) = [Field Strength (V/m) x antenna distance (m)]^2 / 30

Power (watts) = 10^[Power (dBm)/10] / 1000

Voltage (dBµV) = Power (dBm) + 107 (for 50Ω measurement systems)

Field Strength (V/m) = 10^[Field Strength (dBµV/m) / 20] / 10^6

Gain = 1 (numeric gain for isotropic radiator)

Conversion from 3m field strength to EIRP (d=3):

EIRP = [FS(V/m) x d^2]/30 = FS [0.3] for d = 3

EIRP(dBm) = FS(dBµV/m) - 10(log 10^9)+ 10log[0.3] = FS(dBµV/m) - 95.23

10log(10^9) is the conversion from micro to milli

APPENDIX B - MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been for tests performed in this test report:

Test	Frequency Range	Uncertainty Value (dB)
Radiated Emissions, 3m	30MHz - 1GHz	3.82
Radiated Emissions, 3m	1GHz - 18GHz	4.44
Emissions limits, conducted	30MHz – 18GHz	±3.30 dB

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

REPORT END