Choose Scandinavian trust

Wireless Test Report – 387256-7R1TRFWL

Applicant:

Ring LLC

Product name:

Ring

Model:

4HB1V9

FCC ID:

2AEUPBHABV002

Specifications:

FCC 47 CFR Part 15 Subpart C, §15.249

Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz

Date of issue: July 7, 2020

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Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.
This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

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Section 1. Report summary

1.1 Applicant and manufacturer

Company name	Ring LLC
Address	1523 26th Street, Santa Monica, CA, United States, 90404

1.2 Test specifications

FCC 47 CFR Part 15, Subpart C, Clause 15.249	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz

1.3 Test methods

ANSI C63.10 v2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

1.4 Exclusions

None

1.5 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See “Summary of test results” for full details.

1.6 Test report revision history

Table 1.6-1: Test report revision history

Revision #	Date of issue	Details of changes made to test report
TRF	November 27, 2019	Original report issued
R1TRF	July 7, 2020	Updated product model and description/theory of operation

Section 2. Summary of test results

2.1 Testing period

Test start date	October 22, 2019
Test end date	November 11, 2019

2.2 FCC Part 15 Subpart C, general requirements test results

Table 2.2-1: *FCC general requirements results*

Part	Test description	Verdict
§15.31(e)	Variation of power source	Pass
§15.31(m)	Number of tested frequencies	Pass
§15.203	Antenna requirement	Pass
§15.207(a)	Conducted limits	Pass

Notes: None

2.3 FCC Part 15 Subpart C, intentional radiators test results

Table 2.3-1: *FCC subpart C results*

Part	Test description	Verdict
§15.249(a)	Radiated emissions not in restricted bands	Pass
§15.249(b)	Fixed Point-to-Point operation in the 24.0–24.25 GHz band	Not applicable
§15.249(d)	Spurious emissions (except harmonics)	Pass
§15.215(c)	20 dB bandwidth	Pass

Notes: None

Section 3. Equipment under test (EUT) details

3.1 Sample information

Receipt date	October 16, 2019
Nemko sample ID number	Item # 2

3.2 EUT information

Product name	Ring
Model	4HB1V9
Serial number	BHBV21931PG001894

3.3 Technical information

Frequency band (MHz)	902–928
Frequency Min (MHz)	908.4
Frequency Max (MHz)	916.0
RF power Max (W), Conducted	N/A
Field strength, Units @ distance	93.9 dBµV/m @ 3 m
Measured BW (kHz) (99%)	108.3
Type of modulation	2FSK
Emission classification	F1D
Transmitter spurious, Units @ distance	1.968 GHz, 50.25 dBµV/m (peak) and 29.29 dBµV/m (average) @ 3 m
Power requirements	5 V_{DC} (via external 100–240 V_{AC}, 50/60 Hz power adapter)
Antenna information	Internal monopole type antenna, peak gain 1.3 dBi The EUT uses a unique antenna coupling/ non-detachable antenna to the intentional radiator.

3.4 Product description and theory of operation

Communications device using LTE, BLE, Wi-Fi, ZigBee, Z-Wave, and SimpleLink (TI1310) technologies.

3.5 EUT exercise details

The EUT was setup in continuous transmit state using Z-Wave.
During the test, power setting was set as below:

Channel frequency / Baud rate	Field strength of emissions test	Spurious emissions test
908.400MHz / 9.6k	31	31
908.420MHz / 9.6k	31	31
908.400MHz / 40k	31	31
916.000MHz / 100k	29	31

3.6 EUT setup diagram

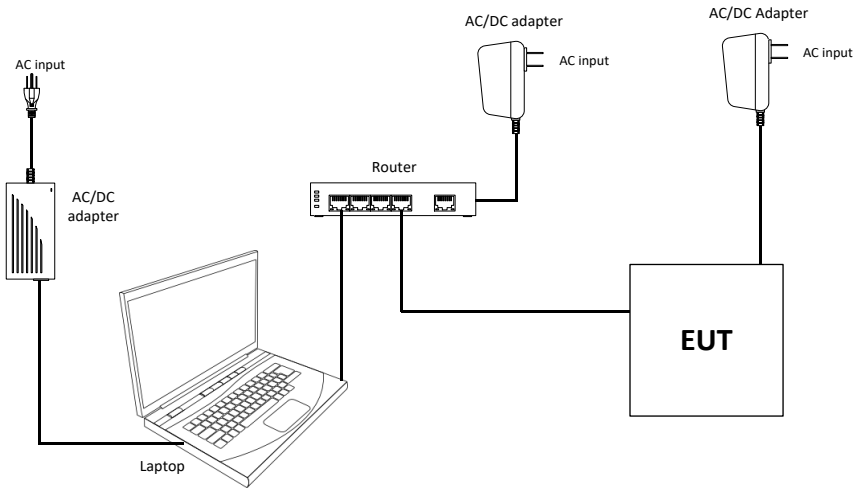


Figure 3.6-1: Setup diagram

3.7 EUT sub assemblies

Table 3.7-1: EUT sub assemblies

Description	Brand name	Model/Part number	Serial number
AC/DC Adapter	Ring	DSA-13PFG-05 050250	BHAB11930DV046916
Laptop	Dell	Inspiron 15	DW78NJ2
Router	D-Link	DIR-822	RZSC3IA001646

Section 4. Engineering considerations

4.1 Modifications incorporated in the EUT for compliance

There were no modifications performed to the EUT during this assessment.

4.2 Technical judgment

None

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5. Test conditions

5.1 Atmospheric conditions

Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	86–106 kPa

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ±5 %, for which the equipment was designed.

Section 6. Measurement uncertainty

6.1 Uncertainty of measurement

UKAS Lab 34 and TIA-603-B have been used as guidance for measurement uncertainty reasonable estimations with regards to previous experience and validation of data. Nemko Canada, Inc. follows these test methods in order to satisfy ISO/IEC 17025 requirements for estimation of uncertainty of measurement for wireless products.

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of K = 2 with 95% certainty.

Table 6.1-1: Measurement uncertainty

Test name	Measurement uncertainty, dB
All antenna port measurements	0.55
Conducted spurious emissions	1.13
Radiated spurious emissions	3.78
AC power line conducted emissions	3.55

Section 7. Test equipment

7.1 Test equipment list

Table 7.1-1: Equipment list

Equipment	Manufacturer	Model no.	Asset no.	Cal./Ver. cycle	Next cal./ver.
3 m EMI test chamber	TDK	SAC-3	FA003012	1 year	Nov. 12/19
Flush mount turntable	SUNAR	FM2022	FA003006	—	NCR
Controller	SUNAR	SC110V	FA002976	—	NCR
Antenna mast	SUNAR	TLT2	FA003007	—	NCR
Receiver/spectrum analyzer	Rohde & Schwarz	ESR26	FA002969	1 year	June 04/20
Horn antenna (1–18 GHz)	ETS-Lindgren	3117	FA002911	1 year	Sept. 11/20
Preamp (1–18 GHz)	ETS-Lindgren	124334	FA002956	1 year	Sept. 26/20
Bilog antenna (30–2000 MHz)	SUNAR	JB1	FA003010	1 year	Sept. 17/20
50 Ω coax cable	Huber + Suhner	None	FA003047	1 year	Nov. 12/19
50 Ω coax cable	Huber + Suhner	None	FA003044	1 year	Nov. 12/19
Filter 902 – 928 MHz	Microwave Circuits	N03916M1	FA003032	1 year	Oct. 09/20
Two-line v-network	Rohde & Schwarz	ENV216	FA002964	1 year	June 20/20
50 Ω coax cable	Rohde & Schwarz	None	FA003074	1 year	Dec. 21/19
AC Power source	Chroma	61605	FA003034	—	VOU

Notes: NCR - no calibration required, VOU - verify on use

Section 8. Testing data

8.1 FCC 15.31(e) Variation of power source

8.1.1 Definitions and limits

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

8.1.2 Test date

Start date	October 22, 2019

8.1.3 Observations, settings and special notes

The testing was performed as per ANSI C63.10 Section 5.13.

a) Where the device is intended to be powered from an external power adapter, the voltage variations shall be applied to the input of the adapter provided with the device at the time of sale. If the device is not marketed or sold with a specific adapter, then a typical power adapter shall be used.
b) For devices where operating at a supply voltage deviating ±15% from the nominal rated value may cause damages or loss of intended function, test to minimum and maximum allowable voltage per manufacturer's specification and document in the report.
c) For devices with wide range of rated supply voltage, test at 15% below the lowest and 15% above the highest declared nominal rated supply voltage.
d) For devices obtaining power from an input/output (I/O) port (USB, firewire, etc.), a test jig is necessary to apply voltage variation to the device from a support power supply, while maintaining the functionalities of the device.

For battery-operated equipment, the equipment tests shall be performed using a variable power supply.

8.1.4 Test data

The EUT AC Input supply voltage was varied between 85% and 115% of the nominal rated supply voltage. No change to transmitter performance was observed.

8.2 FCC 15.31(m) Number of frequencies

8.2.1 Definitions and limits

Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Table 8.2-1: *Frequency Range of Operation*

Frequency range over which the device operates (in each band)	Number of test frequencies required	Location of measurement frequency inside the operating frequency range
1 MHz or less	1	Center (middle of the band)
1–10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near center and 1 near low end

Notes: "near" means as close as possible to or at the centre / low end / high end of the frequency range over which the device operates.

8.2.2 Test date

Start date	October 22, 2019

8.2.3 Observations, settings and special notes

Per ANSI C63.10 Subclause 5.6.2.1:
The number of channels tested can be reduced by measuring the center channel bandwidth first and then applying the following relaxations as appropriate:

a) For each operating mode, if the measured channel bandwidth on the middle channel is at least 150% of the minimum permitted bandwidth, then it is not necessary to measure the bandwidth on the high and low channels.
b) For multiple-input multiple-output (MIMO) systems, if the measured channel bandwidth on testing the middle channel exceeds the minimum permitted bandwidth by more than 50% on one transmit chain, then it is not necessary to repeat testing on the other chains.
c) If the measured channel bandwidth on the middle channel is less than 50% of the maximum permitted bandwidth, then it is not necessary to measure the bandwidth on the high and low channels.

Per ANSI C63.10 Subclause 5.6.2.2:
For devices with multiple operating modes, measurements on the middle channel can be used to determine the worst-case mode(s). The worst-case modes are as follows:

a) Band edge requirements—Measurements on the mode with the widest bandwidth can be used to cover the same channel (center frequency) on modes with narrower bandwidth that have the same or lower output power for each modulation family (e.g., OFDM and direct sequence spread spectrum).
b) Spurious emissions—Measure the mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum).
c) In-band PSD—Measurements on the mode with the narrowest bandwidth can be used to cover all modes within the same modulation family of an equal or lower output power provided the result is less than 50% of the limit.

8.2.4 Test data

Table 8.2-2: *Test channels selection*

Start of Frequency range, MHz	End of Frequency range, MHz	Frequency range bandwidth, MHz	Channel 1, MHz / Baud rate, k	Channel 2, MHz / Baud rate, k	Channel 3, MHz / Baud rate, k	Channel 4, MHz / Baud rate, k
902	928	26	908.400 / 9.6	908.400 / 40	908.420 / 9.6	916.000/ 100k

8.3 FCC 15.203 Antenna requirement

8.3.1 Definitions and limits

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

8.3.2 Test date

Start date	October 22, 2019

8.3.3 Observations, settings and special notes

None

8.3.4 Test data

- The EUT has an internal integrated antenna, non-detachable.
- The EUT will not be professionally installed

8.4 FCC 15.207(a) AC power line conducted emissions limits

8.4.1 Definitions and limits

FCC §15.207:

a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (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 the limits in the following table, as measured using a 50 µH/50 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

ANSI: C63.10 subclause 6.2

If the EUT normally receives power from another device that in turn connects to the public utility ac power lines, measurements shall be made on that device with the EUT in operation to demonstrate that the device continues to comply with the appropriate limits while providing the EUT with power. If the EUT is

operated only from internal or dedicated batteries, with no provisions for connection to the public utility ac power lines (600 VAC or less) to operate the EUT (such as an adapter), then ac power-line conducted measurements are not required.

For direct current (dc) powered devices where the ac power adapter is not supplied with the device, an "off-the-shelf" unmodified ac power adapter shall be used. If the device is supposed to be installed in a host (e.g., the device is a module or PC card), then it is tested in a typical compliant host.

Table 8.4-1: *AC power line conducted emissions limit*

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: * - The level decreases linearly with the logarithm of the frequency.

** - A linear average detector is required.

8.4.2 Test date

Start date	November 11, 2019

8.4.3 Observations, settings and special notes

Port under test – Coupling device	AC Input – Artificial Mains Network (AMN)
EUT power input during test	5 V_{DC} (Powered via external power adapter @ 120 V_{AC} 60 Hz)
EUT setup configuration	Table top
Measurement details	– A preview measurement was generated with the receiver in continuous scan mode. Emissions detected within 10 dB or above the limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement. – The spectral plots have been corrected with transducer factors. (i.e. cable loss, LISN factors, and attenuators) – No emissions were detected within 10 dB of the applicable limit.

Receiver settings:

Resolution bandwidth	9 kHz
Video bandwidth	30 kHz
Detector mode	Peak and Average (Preview measurement), Quasi-peak and CAverage (Final measurement)
Trace mode	Max Hold
Measurement time	– 100 ms (Peak and Average preview measurement) – 100 ms (Quasi-peak final measurement) – 160 ms (CAverage final measurement)

8.4.4 Test data

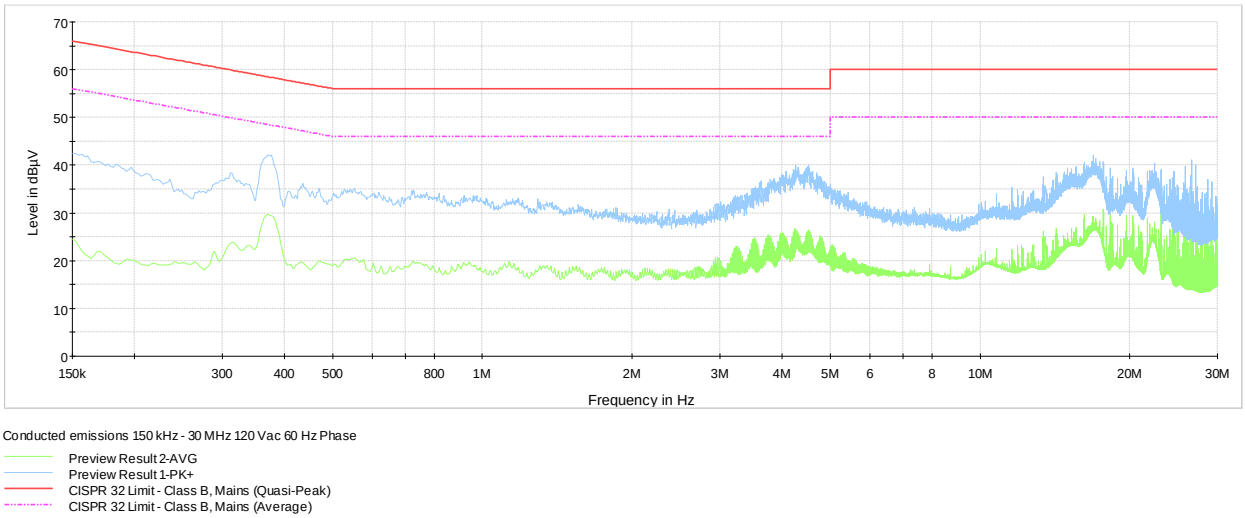


Figure 8.4-1: *AC power line conducted emissions – spectral plot on phase line*

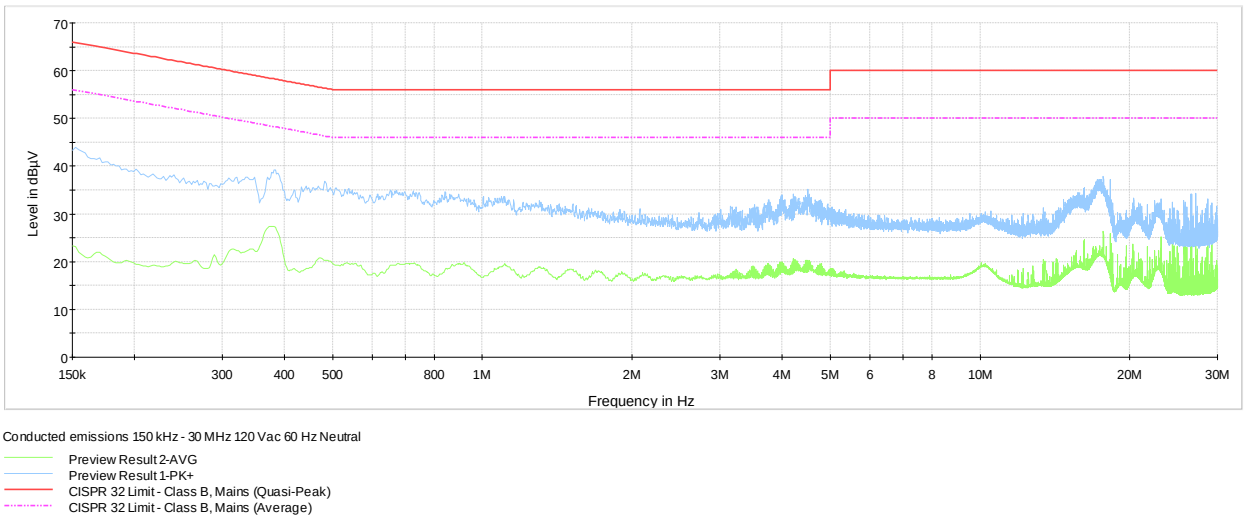


Figure 8.4-2: *AC power line conducted emissions – spectral plot on neutral line*

8.5 FCC 15.215(c) Occupied (Emission) bandwidth

8.5.1 Definitions and limits

FCC §15.215 (c):

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80 % of the permitted band in order to minimize the possibility of out-of-band operation.

8.5.2 Test date

Start date	November 8, 2019

8.5.3 Observations, settings and special notes

Spectrum analyser settings:

Detector mode	Peak
Resolution bandwidth	1 % to 5 % of OBW
Video bandwidth	RBW × 3
Trace mode	Max Hold

8.5.4 Test data

Table 8.5-1: *Lower 20 dBc frequency cross result*

Fundamental frequency, MHz	Lower 20 dBc frequency cross, MHz	Lower limit, MHz	Margin, MHz
908.400	908.354	904.600	3.754

Table 8.5-2: *Upper 20 dBc frequency cross result*

Fundamental frequency, MHz	Upper 20 dBc frequency cross, MHz	Upper limit, MHz	Margin, MHz
916.000	916.054	925.400	9.346

Table 8.5-3: *99% occupied bandwidth results*

Frequency, MHz	Baud rate, k	99% occupied bandwidth, kHz
908.40	9.6	87.52
908.40	40	88.38
908.42	9.6	86.35
916.00	100	108.34

Notes: There is no 99% occupied bandwidth limit in the standard's requirements, the measurement results provided for information purposes only.

8.5.4 Test data, continued

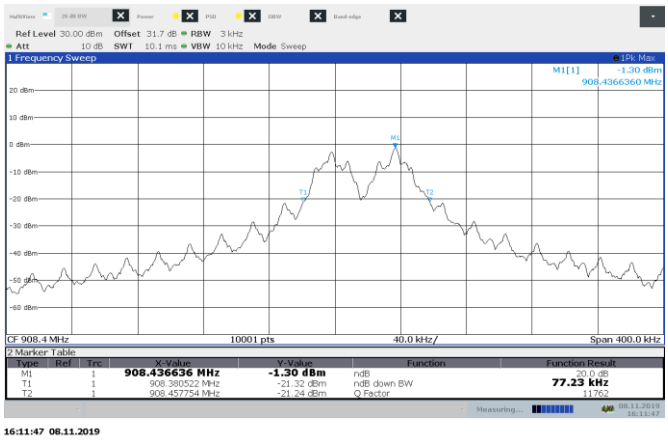


Figure 8.5-1: *20 dB bandwidth @ 908.4 MHz, 9.6k baud rate*

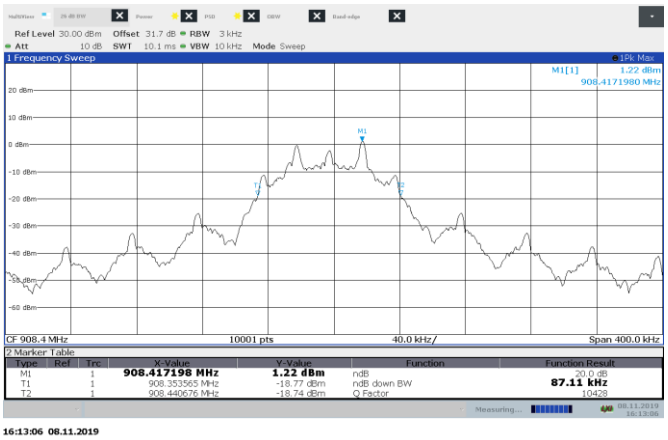


Figure 8.5-2: *20 dB bandwidth @ 908.4 MHz, 40k baud rate*

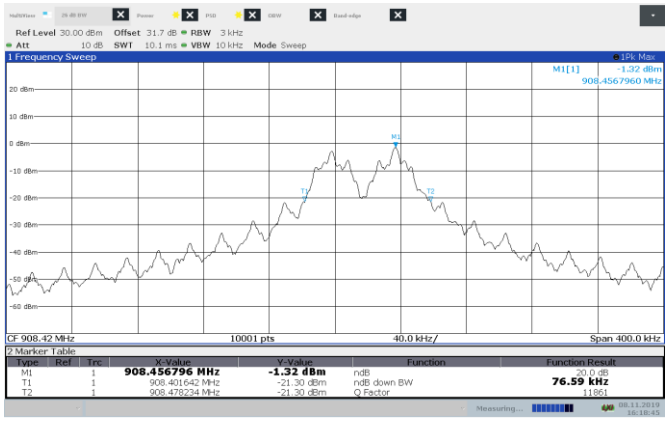


Figure 8.5-3: *20 dB bandwidth @ 908.42 MHz, 9.6k baud rate*

Figure 8.5-4: *20 dB bandwidth @ 916.0 MHz, 100k baud rate*

8.5.4 Test data, continued

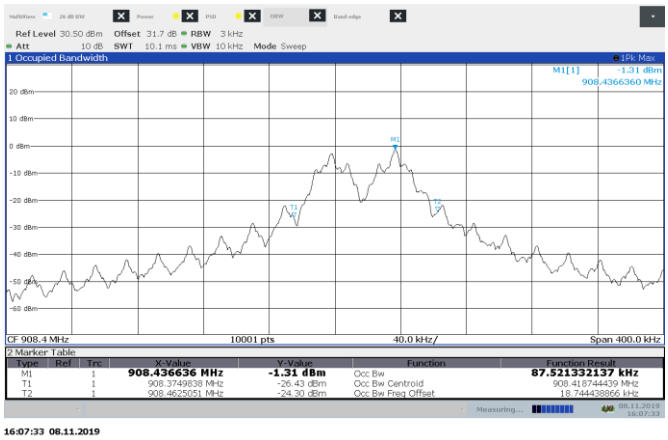


Figure 8.5-5: *99% bandwidth, @ 908.4 MHz, 9.6k baud rate*

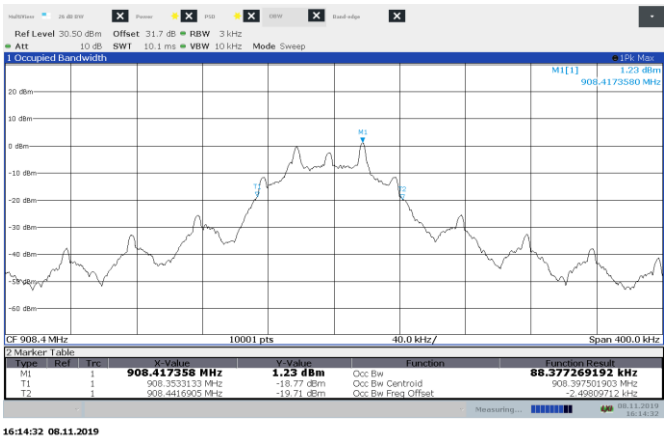


Figure 8.5-6: *99% bandwidth, @ 908.4 MHz, 40k baud rate*

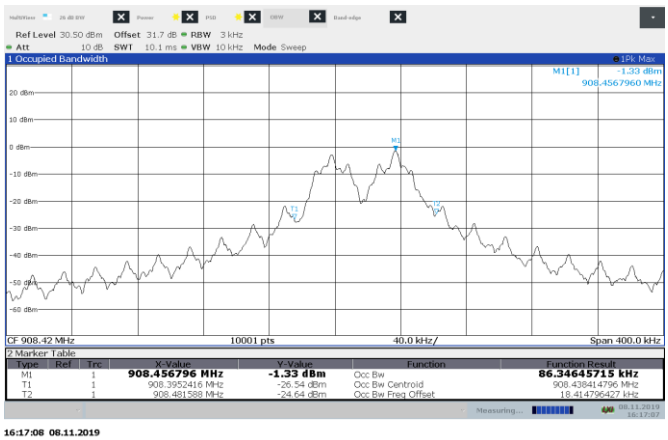


Figure 8.5-7: *99% bandwidth, @ 908.42 MHz, 9.6k baud rate*

Figure 8.5-8: *99% bandwidth, @ 916 MHz, 100k baud rate*

8.6 FCC 15.249(a) Field strength of fundamental and harmonics outside restricted bands

8.6.1 Definitions and limits

FCC §15.249 (a):

The field strength of emissions from intentional radiators shall comply with the following table. Field strength limits are specified at a distance of 3 meters.

Table 8.6-1: Field strength limits

Fundamental frequencies,	Field strength of fundamental		Field strength of harmonics	
MHz	mV/m	dBµV/m	µV/m	dBµV/m
902–928	50	94	500	54
2400–2483.5	50	94	500	54
5725–5875	50	94	500	54
24000–24250	250	108	2500	68

Notes:
- The field strength limits shall be measured using an average detector, except for the fundamental emission in the frequency band 902–928 MHz, which is based on measurements using an International Special Committee on Radio Interference (CISPR) quasi-peak detector.
- In the emission table above, the tighter limit applies at the band edges. For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test

8.6.2 Test date

Start date	October 23, 2019

8.6.3 Observations, settings and special notes

- The spectrum was searched from 30 MHz to 10th harmonic of fundamental frequency.
- EUT was set to transmit with 100 % duty cycle.
- Radiated measurements were performed at a distance of 3 m.
- The spectral plots have been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators)

Spectrum analyser settings for quasi-peak measurements at the frequencies below 1 GHz:

Resolution bandwidth:	120 kHz
Video bandwidth:	300 kHz
Detector mode:	Quasi-Peak
Trace mode:	Max Hold

Spectrum analyzer settings for peak measurements at the frequencies above 1000 MHz:

Detector mode	Peak
Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Trace mode	Max Hold

Spectrum analyzer settings for average measurements at the frequencies above 1000 MHz:

Detector mode	Peak
Resolution bandwidth	1 MHz
Video bandwidth	10 Hz
Trace mode	Max Hold

8.6.4 Test data

Table 8.6-2: Field strength of fundamental results

Frequency, MHz	Baud rate, k	Q-Peak field strength at 3 m, dBµV/m	Q-Peak field strength limit at 3 m, dBµV/m	Margin, dB
908.400	9.6	93.6	94.0	0.4
908.420	9.6	93.6	94.0	0.4
908.400	40	93.5	94.0	0.5
916.000	100	93.9	94.0	0.1

Notes: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.
No harmonic emissions were detected within 10 dB of limit.

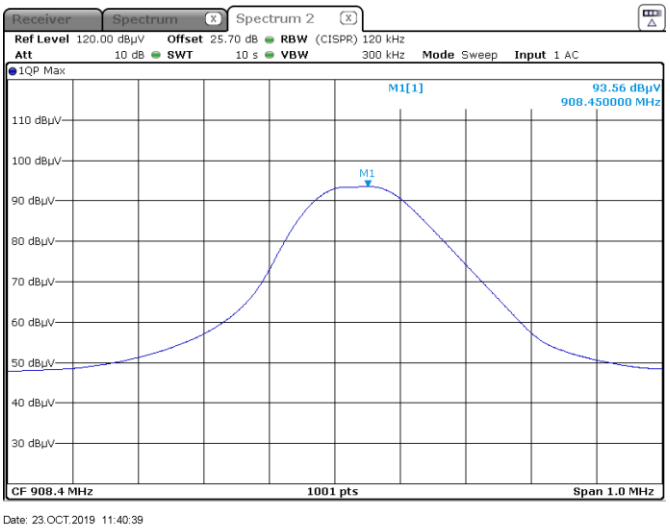


Figure 8.6-1: Field strength of fundamental, 908.4 MHz, 9.6k baud rate

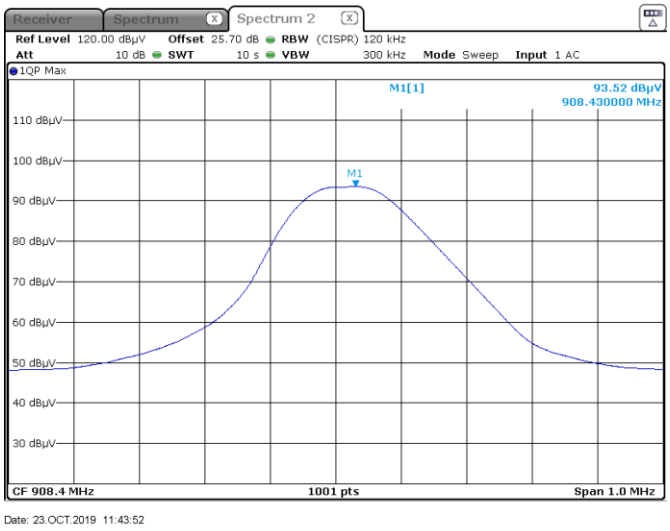


Figure 8.6-2: Field strength of fundamental, 908.4 MHz, 40k baud rate

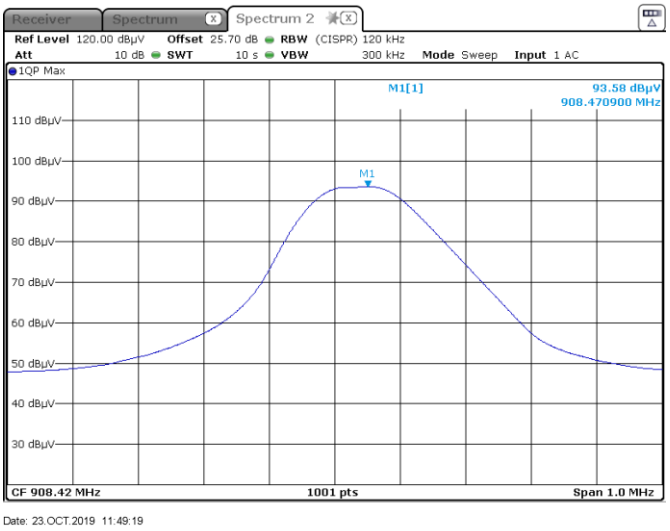


Figure 8.6-3: Field strength of fundamental, 908.42 MHz, 9.6k baud rate

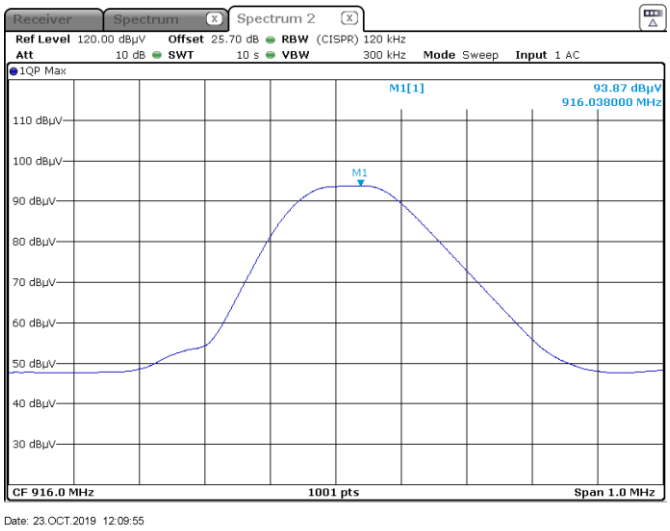


Figure 8.6-4: Field strength of fundamental, 916 MHz, 100k baud rate

8.7 FCC 15.249(d) Spurious emissions (except for harmonics)

8.7.1 Definitions and limits

FCC §15.249 (d):

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Table 8.7-1: FCC §15.209 – Radiated emission limits

Frequency, MHz	Field strength of emissions µV/m	Field strength of emissions dBµV/m	Measurement distance, m
0.009–0.490	2400/F	$67.6 - 20 \times \log_{10}(F)$	300
0.490–1.705	24000/F	$87.6 - 20 \times \log_{10}(F)$	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges.
For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test

8.7.2 Test date

Start date	October 22, 2019

8.7.3 Observations, settings and special notes

- The spectrum was searched from 30 MHz to 10th harmonic of fundamental frequency.
- EUT was set to transmit with 100 % duty cycle.
- Radiated measurements were performed at a distance of 3 m.
- The spectral plots have been corrected with the associated transducer factors (i.e. antenna factors, cable loss, amplifier gains, and attenuators)

Spectrum analyser settings for measurements below 1 GHz:

Resolution bandwidth:	100 or 120 kHz
Video bandwidth:	300 kHz
Detector mode:	Peak or Quasi-Peak
Trace mode:	Max Hold

Spectrum analyser settings for peak measurements above 1 GHz:

Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Detector mode:	Peak
Trace mode:	Max Hold

Spectrum analyser settings for average measurements above 1 GHz:

Resolution bandwidth:	1 MHz
Video bandwidth:	10 Hz
Detector mode:	Peak
Trace mode:	Max Hold

8.7.4 Test data

Table 8.7-2: Radiated low band edge measurement results at 902 MHz

Channel, MHz	Baud rate, k	Peak Field strength, dBµV/m		Margin, dB
		Measured	Limit	
908.4	9.6	33.7	46.0	12.3
908.42	9.6	33.0	46.0	13.0
908.4	40.0	35.6	46.0	10.4
916.0	100.0	34.5	46.0	11.5

Notes: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

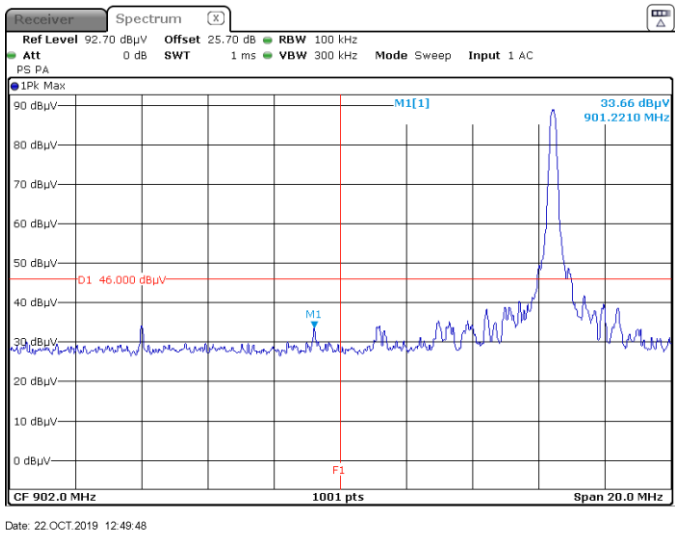


Figure 8.7-1: Low Band edge emissions 908.4 MHz, 9.6 k baud rate

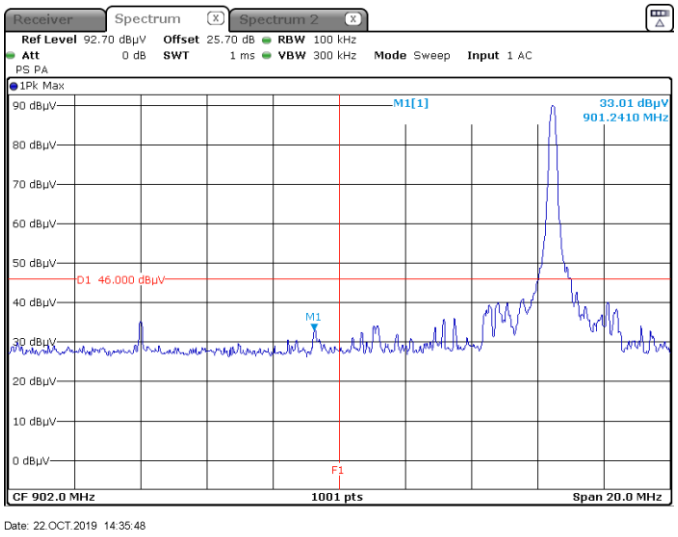


Figure 8.7-2: Low Band edge emissions 908.42 MHz, 9.6 k baud rate

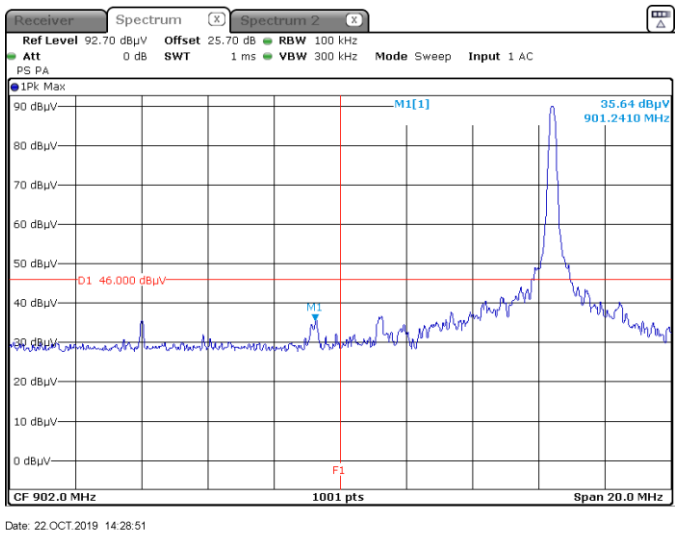


Figure 8.7-3: Low Band edge emissions 908.4 MHz, 40 k baud rate

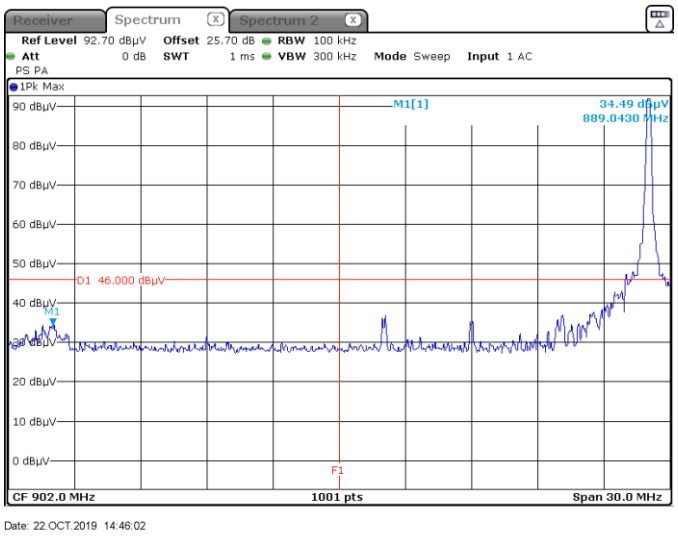


Figure 8.7-4: Low Band edge emissions 916.0 MHz, 100 k baud rate

8.7.4 Test data, continued

Table 8.7-3: Radiated high band edge measurement results at 928 MHz

Channel, MHz	Baud rate, k	Peak Field strength, dBµV/m		Margin, dB
		Measured	Limit	
908.4	9.6	28.5	46.0	17.5
908.42	9.6	29.3	46.0	16.7
908.4	40.0	29.9	46.0	16.1
916.0	100.0	34.6	46.0	11.4

Notes: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

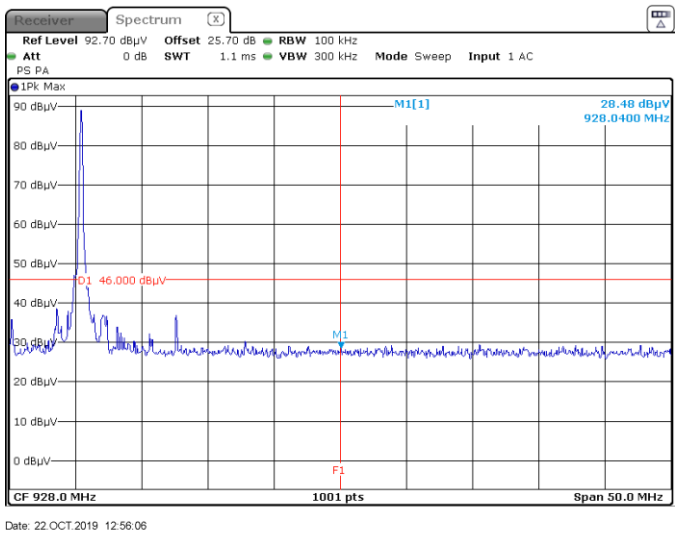


Figure 8.7-5: High Band edge emissions 908.4 MHz, 9.6 k baud rate

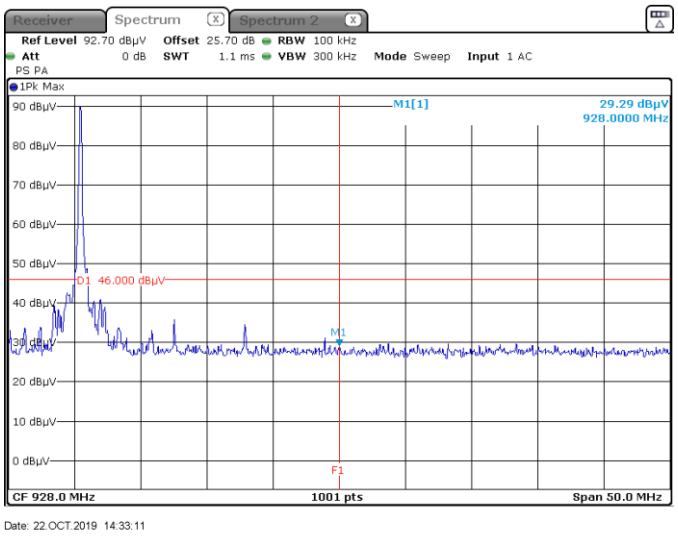


Figure 8.7-6: High Band edge emissions 908.42 MHz, 9.6 k baud rate

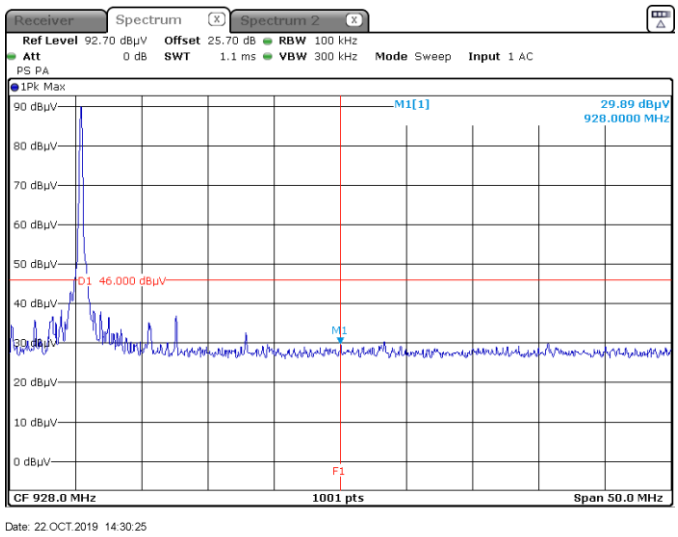


Figure 8.7-7: High Band edge emissions 908.4 MHz, 40 k baud rate

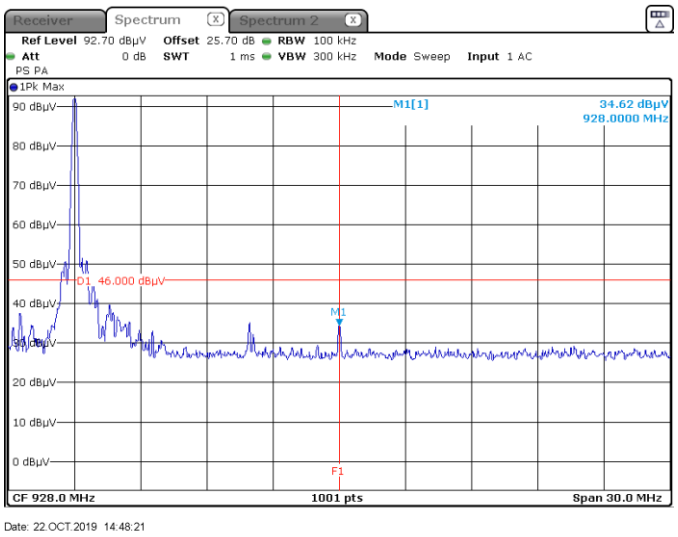


Figure 8.7-8: High Band edge emissions 916.0 MHz, 100 k baud rate

8.7.4 Test data, continued

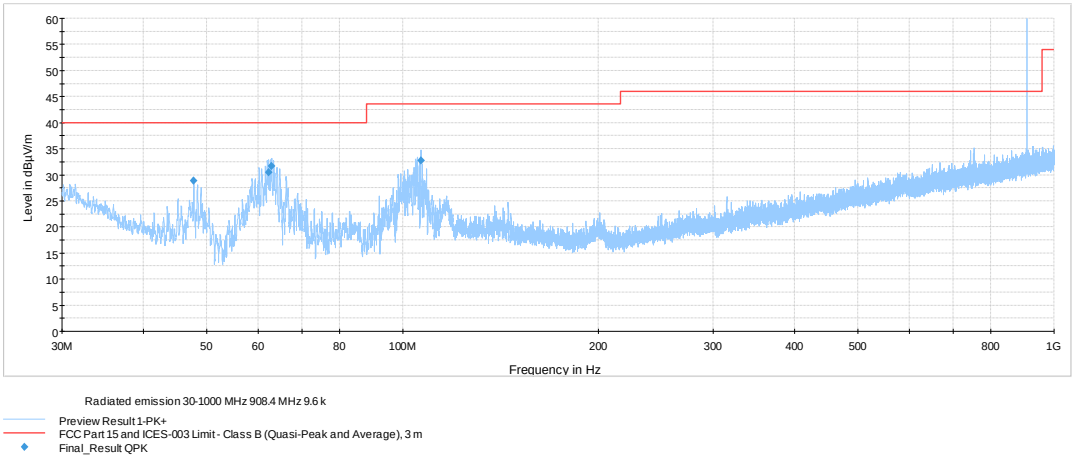


Figure 8.7-9: Radiated spurious emissions 30 MHz – 1 GHz, 908.4 MHz, 9.6 k baud rate

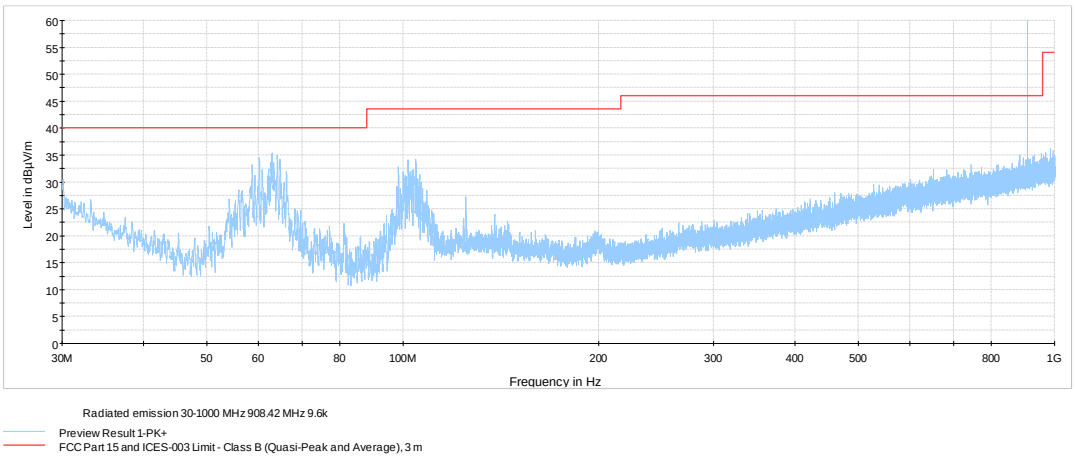


Figure 8.7-10: Radiated spurious emissions 30 MHz – 1 GHz, 908.42 MHz, 9.6 k baud rate

8.7.4 Test data, continued

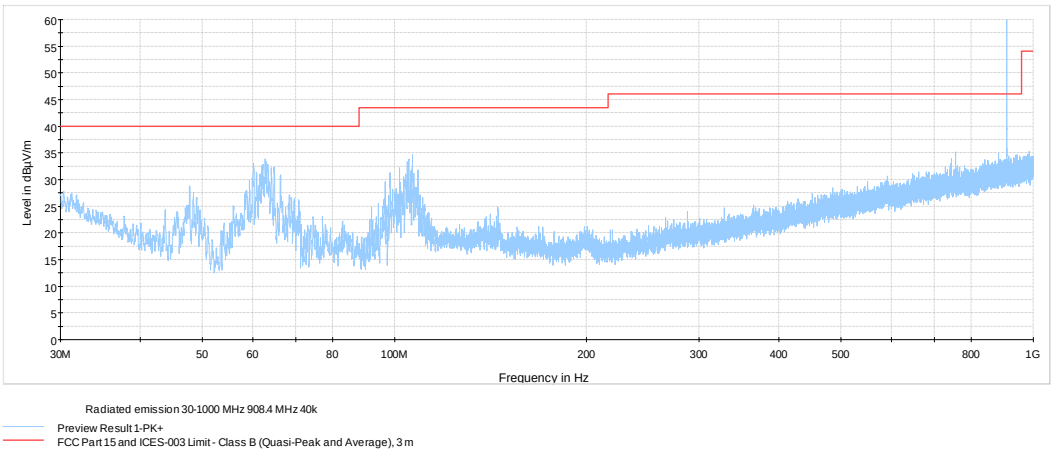


Figure 8.7-11: Radiated spurious emissions 30 MHz – 1 GHz, 908.4 MHz, 40 k baud rate

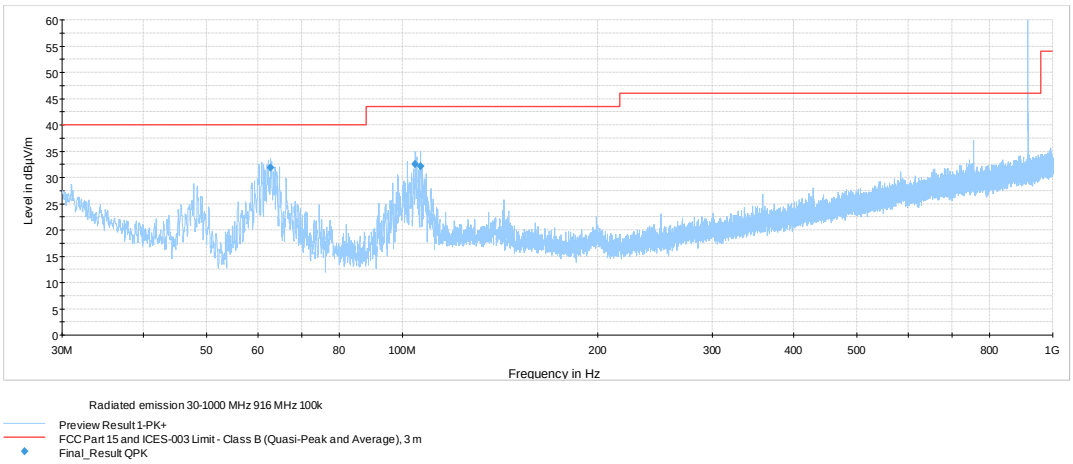


Figure 8.7-12: Radiated spurious emissions 30 MHz – 1 GHz, 916.0 MHz, 100 k baud rate

8.7.4 Test data, continued

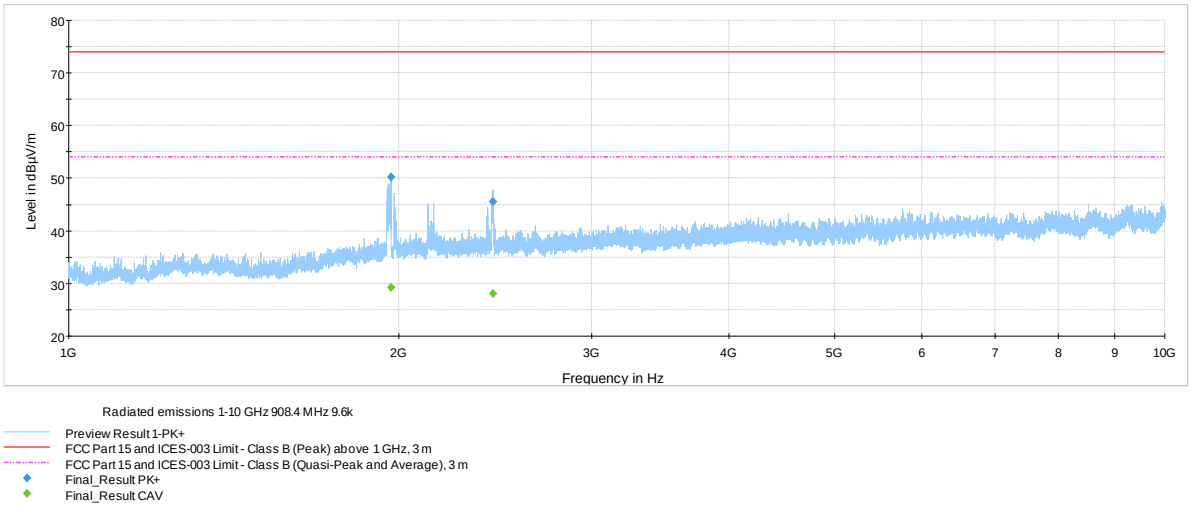


Figure 8.7-13: Radiated spurious emissions 1 - 10 GHz, 908.4 MHz, 9.6 k baud rate

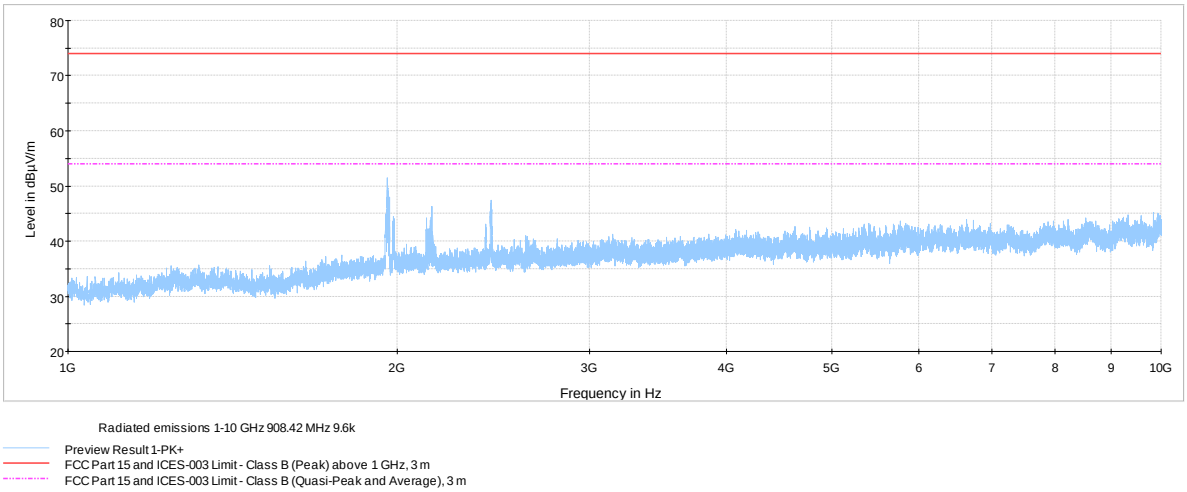


Figure 8.7-14: Radiated spurious emissions 1 - 10 GHz, 908.42 MHz, 9.6 k baud rate

8.7.4 Test data, continued

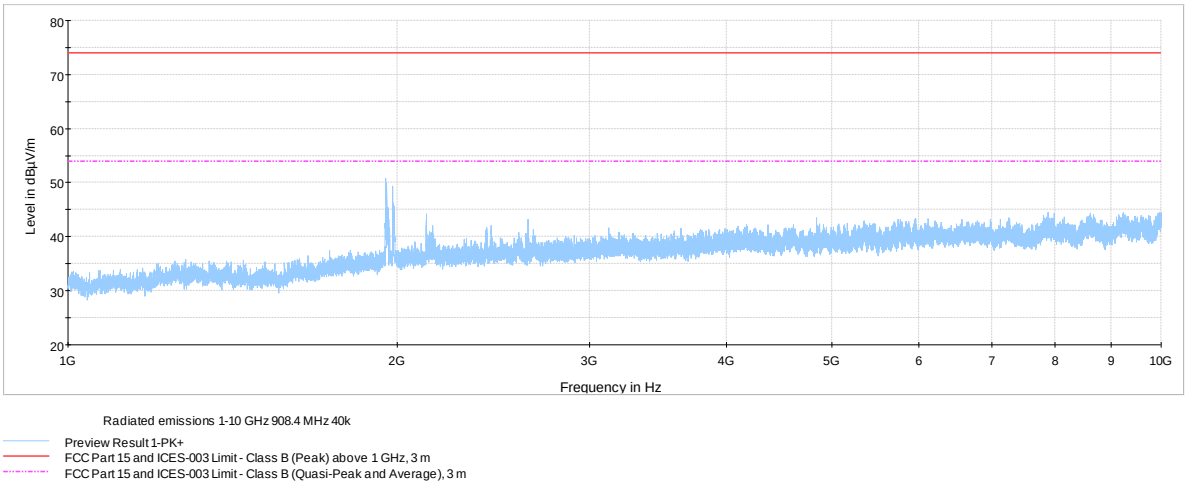


Figure 8.7-15: Radiated spurious emissions 1 - 10 GHz, 908.4 MHz, 40 k baud rate

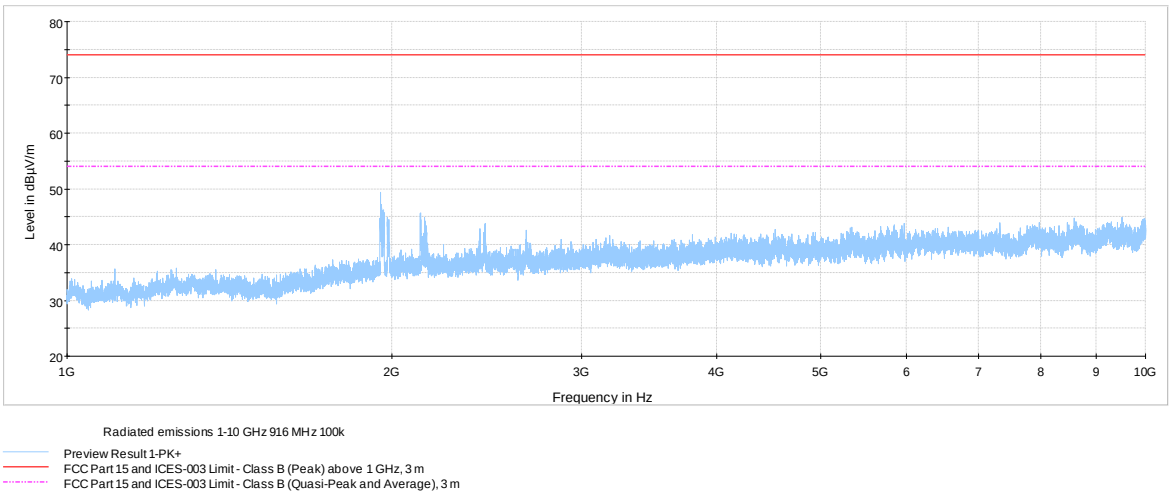
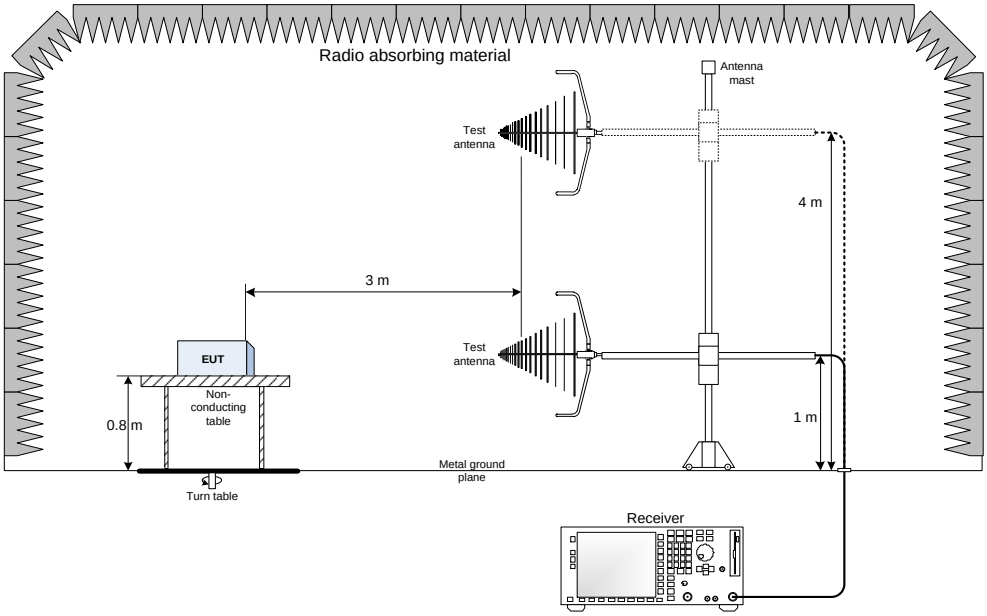


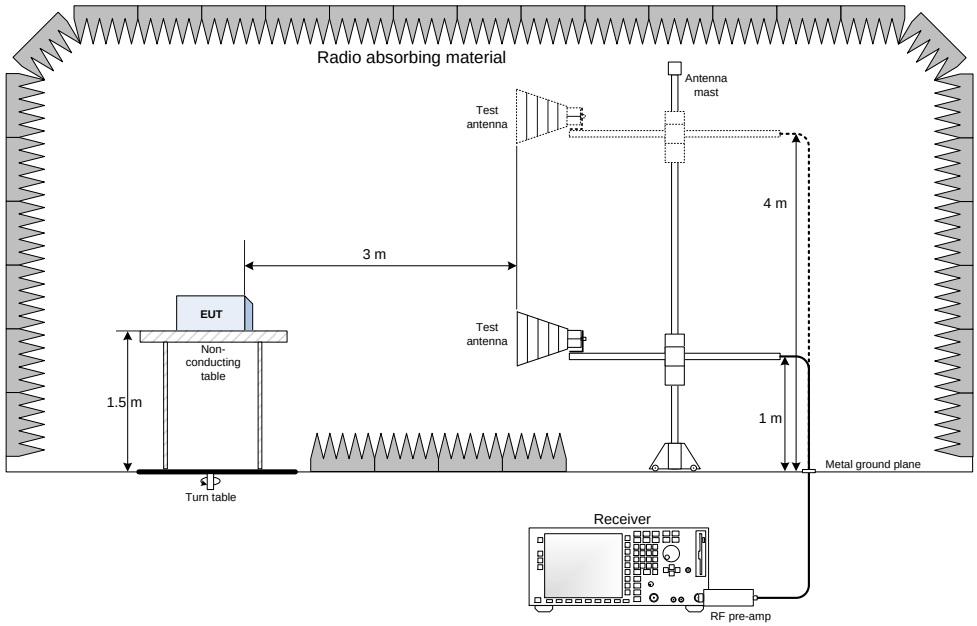
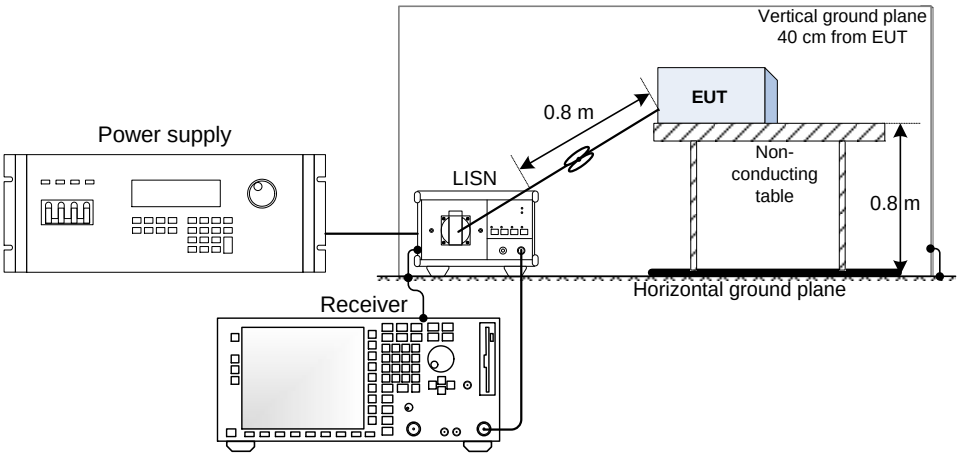
Figure 8.7-16: Radiated spurious emissions 1 – 10 GHz, 916.0 MHz, 100 k baud rate

Section 9. Block diagrams of test set-ups

9.1 Radiated emissions set-up for frequencies below 1 GHz



9.2 Radiated emissions set-up for frequencies above 1 GHz



9.3 Conducted emissions set-up