RF TEST REPORT

FCC/ISED

APPLICANT

Tarana Wireless, Inc.

MODEL NAME

G1RN5AHB012

FCC ID

2ABOF-G1RN5AHB012

ISED ID

11717A-G1RN5AHB012

REPORT NUMBER

HA220826-TAR-006-R02

TEST REPORT

Date of Issue
October 10, 2022

Test Site
Hyundai C-Tech, Inc. dba HCT America, Inc.
1726 Ringwood Ave, San Jose, CA 95131, USA

Applicant	Tarana Wireless, Inc.
Applicant Address	590 Alder Drive, Milpitas, CA 95035
FCC ID	2ABOF-G1RN5AHB012
ISED ID	11717A-G1RN5AHB012
Model Name	G1RN5AHB012
EUT Type	5GHz RF Remote Node (RN)
Classification	Unlicensed National Information Infrastructure (NII)
FCC Rule Part(s)	Part 15.407
ISED Rule Part(s)	RSS-247 Issue 2 (February 2017) RSS-Gen Issue 5 Amd 2 (February 2021)
Test Procedure	ANSI C63.10-2013, KDB 789033 D02 v02r01

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures required. The results of testing in this report apply only to the product which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Hyundai C-Tech, Inc. dba HCT America, Inc. certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

Tested By	**Reviewed By**
Yongsoo Park	Sunwoo Kim
Test Engineer	Technical Manager

REVISION HISTORY

The revision history for this document is shown in table.

TEST REPORT NO.	DATE	DESCRIPTION
HA220826-TAR-006-R02	October 10, 2022	Initial Issue

TABLE OF CONTENTS

1. GENERAL INFORMATION

EUT DESCRIPTION

Model	G1RN5AHB012
Serial Number	S158T1223600281 (RF Conducted) S160T1223000007 (RF Radiated)
EUT Type	5GHz RF Remote Node (RN)
Description of Device	Fixed outdoor point-to-point device
Power Supply	PoE (Power over Ethernet) : 44 ~ 60 V d.c.
RF Specification	5 GHz RF : U-NII 1 band / U-NII 3 band Single Carrier : 10 / 20 / 40 MHz Multi-Carrier (Contiguous) : 10+10 / 20+20 / 20+40 / 40+20 / 40+40 MHz Multi-Carrier (Non-Contiguous) : 10+10 / 20+20 / 20+40 / 40+20 MHz
Transmitter Chain	8
Operating Environment	Outdoor
Operating Temperature	-40°C - 55°C

RF SPECIFICATION SUBJECT TO THE REPORT

RF Specification	5 GHz RF : U-NII 1 band Single Carrier : 10 / 20 / 40 MHz Multi-Carrier (Contiguous) : 10+10 / 20+20 / 20+40 / 40+20 / 40+40 MHz Multi-Carrier (Non-Contiguous) : 10+10 / 20+20 / 20+40 / 40+20 MHz	
Frequency Range	U-NII 3	10 MHz BW : 5740 MHz – 5830 MHz 20 MHz BW : 5745 MHz – 5825 MHz 40 MHz BW : 5755 MHz – 5795 MHz
Max. RF Output Power	U-NII 3	29.92 dBm (981.75 mW)
Modulation Type	OFDM, Adaptive MCS (QPSK to 256QAM 7.35/8)	
Antenna Specification [1)]	Array Antenna RN Antenna Gain : 14.5 dBi Directional Gain with Array Gain : 20.52 dBi	
Firmware Version [2)]	SYS.A3.R10.XXX.0.992.033.02	
Hardware Version [2)]	31-0170-301.1.0	
Date(s) of Tests	September 12, 2022 ~ October 7, 2022	

Note :
1. Antenna information is based on the document provided.
2. Firmware and Hardware Version are as received by the client.

ANTENNA CONFIGURATION

DIRECTIONAL GAIN

In accordance with KDB 662911 D01 v02r01, KDB 662911 D02 v01

Directional Gain = RN Antenna Gain + Array Gain

The EUT has 4 Horizontal and 4 Vertical Cross-polarized antennas.

RN Antenna Gain : 14.5 dBi
Array Gain = 10 log(4/1) = 6.02 dB, where No of Horizontal Antenna = 4 / No of Spatial Stream = 1

Directional Gain = 14.5 dBi + 6.02 dB = 20.52 dBi

ADDITIONAL LOSS

The RF conducted sample has internal loss of 25.73 dB between RF chipset and the antenna port for RF conducted emission measurement purpose. The loss was provided by the manufacturer and applied during the conducted test.

Additional loss detail:
In order to conduct tests in a conducted fashion, the RN antenna board is replaced with a RWFS, which stands for RN Wave-Front Simulator. This board basically connects the RF ports to the SMA connectors that show on the face of the radome. This RWFS board is a lossy board since it has multiple stages of splitter / combiners. In order to reflect the measured power on a spectrum analyzer all the way to the RF connector, this loss needs to be accounted for. The 1W is always referred to at the antenna connector itself, and not at the SMA connector on the radome. The 25.73 dB is the loss of the RWFS which was calibrated using a network analyzer.

OPERATING FREQUENCY CHANNELS

Band	Channel	Frequency (MHz)	10 MHz	20 MHz	40 MHz
U-NII 3	148	5740	O	-	-
	149	5745	O	O	-
	150	5750	O	O	-
	151	5755	O	O	O
	152	5760	O	O	O
	153	5765	O	O	O
	154	5770	O	O	O
	155	5775	O	O	O
	156	5780	O	O	O
	157	5785	O	O	O
	158	5790	O	O	O
	159	5795	O	O	O
	160	5800	O	O	-
	161	5805	O	O	-
	162	5810	O	O	-
	163	5815	O	O	-
	164	5820	O	O	-
	165	5825	O	O	-
	166	5830	O	-	-

Note :
This product is not limited to the channel, and the frequency can be freely selected within the frequency range.

2. METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 dated December 14, 2017 entitled “Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E” and ANSI C63.10(Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’ were used in the measurement.

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.407 under the FCC Rules Part 15 Subpart E. / RSS-Gen issue 5, RSS-247 issue 2.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz. Above 1GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. Also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emission, the relative positions of this hand-held transmitter (EUT) were rotated through three orthogonal axes according to the requirements in Section 8 of ANSI C63.10. (Version: 2013)

DESCRIPTION OF TEST MODES

The EUT has been tested under radio operating condition. Test software to control the channel, power level setting, and the bandwidth has been pre-installed in the EUT and Teraterm application was used to control the RF parameters during the test.

3. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment’s, which is traceable to recognized national standards. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC (Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at 1726 Ringwood Avenue, San Jose, California 95131, USA.
The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.

Accredited Laboratory

A2LA has accredited

HYUNDAI C-TECH, INC. DBA HCT AMERICA, INC.

San Jose, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 10th day of June 2021.

Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4201.01
Valid to July 31, 2023

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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."

(1) The antenna of this E.U.T is permanently attached and there is no provision for connection to an external antenna.
(2) The E.U.T Complies with the requirement of §15.203

According to RSS-Gen Issue 5 (Section 6.8) :
The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty
Output Power, Conducted	± 0.35 dB
Occupied Bandwidth	± 12.4 kHz
Unwanted Emissions, Conducted	± 0.46 dB
Radiated Emissions (below 1 GHz)	± 6.09 dB
Radiated Emissions (Above 1 GHz)	± 5.23 dB

7. DESCRIPTION OF TESTS

7.1. DUTY CYCLE

TEST SETUP

TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.
Measurement is performed in accordance with the section B.2 in KDB 789033 D02 v02r01.

The largest available value of RBW is 8 MHz and VBW is 50 MHz.
The zero-span method of measuring duty cycle shall not be used if T ≤ 6.25 microseconds. (50/6.25 = 8)
The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/*T*.

- RBW = 8 MHz (the largest available value)
- VBW = 8 MHz (≥ RBW)
- SPAN = 0 Hz
- Detector = Peak
- Number of points in sweep > 100
- Trace mode = Clear write
- Measure T_{total} and T_{on}
- Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10*log(1/Duty Cycle)

7.2. 6 dB BANDWIDTH / 26 dB BANDWIDTH / 99 % OCCUPIED BANDWIDTH

LIMIT

Emission bandwidth was measured to define the minimum frequency range which the spectrum is integrated for maximum conducted output power measurement.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

TEST SETUP

TEST PROCEDURE (26 dB Bandwidth)

Testing was performed according to the section C.1 in KDB 789033 D02 v02r01.
The transmitter output is connected to the spectrum analyzer.

- RBW = Approximately 1 % of the emission bandwidth
- VBW > RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

TEST PROCEDURE (6 dB Bandwidth)

Testing was performed according to the procedure C.1 in KDB 789033 D02 v02r01.
The transmitter output is connected to the Spectrum Analyzer.

- RBW = 100 kHz
- VBW ≥ 3*RBW
- Detector = Peak
- Trace mode = Max hold
- Allow the trace to stabilize
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points(upper and lower frequencies) that are attenuated by 6 dB relative to the maximum lever measured in the fundamental emission.

Note:
1. The bandwidth measurement function from the spectrum analyzer is used to measure X dB bandwidth.
2. 26 dB bandwidth is used to determine the conducted power limits.

TEST PROCEDURE (99% Bandwidth)

Testing was performed according to the section D in KDB 789033 D02 v02r01.
The transmitter output is connected to the spectrum analyzer.

- RBW = 1% ~ 5% of the occupied bandwidth
- VBW ≒ 3 x RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- Allow the trace to stabilize

7.3. OUTPUT POWER

LIMIT

Band	47 CFR §15.407(a)(3)(i)	RSS-247, 6.2.4.1
U-NII 3	≤ 1 W (= 30dBm)	≤ 1 W (= 30dBm)

TEST SETUP

TEST PROCEDURE

Refer to the section E.2.d) in KDB 789033 D02 v02r01
The transmitter output is connected to the Spectrum Analyzer.
Spectrum analyzer's integrated band power measurement function was used.

- Measure the duty cycle.
- Set span to encompass the 26 dB EBW of the signal.
- RBW = 1 MHz
- VBW ≥ 3 MHz
- Number of points in sweep ≥ 2*span/RBW.
- Sweep time = auto.
- Detector = RMS.
- Do not use sweep triggering. Allow the sweep to "free run".
- Trace average at least 100 traces in power averaging (RMS) mode
- Integrated bandwidth = EBW

Add 10log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times

Sample Calculation

- Conducted Output Power (Average) = Reading Value + ATT loss + Cable loss + Duty Cycle Factor

7.4. POWER SPECTRAL DENSITY

LIMIT

Band	47 CFR §15.407(a)(3)(i)	RSS-247, 6.2.4.1
U-NII 3	≤ 30 dBm/500 kHz	≤ 30 dBm/500 kHz

TEST SETUP

TEST PROCEDURE

Refer to the section F in KDB 789033 D02 v02r01.

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- RBW = 1 MHz (510 kHz for U-NII 3)
- VBW ≥ 3 MHz
- Number of points in sweep ≥ 2*span/RBW.
- Sweep time = auto.
- Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- Do not use sweep triggering. Allow the sweep to “free run”.
- Trace average at least 100 traces in power averaging (RMS) mode
- Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
- If Method SA-2 was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.

Sample Calculation

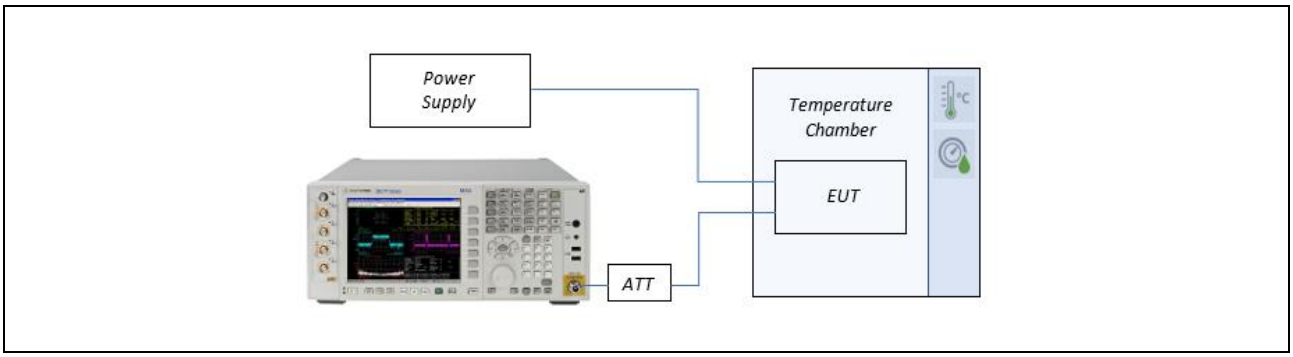
Total PSD (Average) = Reading Value + ATT loss + Cable loss + Duty Cycle Factor

7.5. FREQUENCY STABILITY

LIMIT

§15.407(g) / RSS-Gen, 8.8
Fundamental emissions of the radio devices should be kept within at least the central 80% of its permitted operating frequency band to minimize the possibility of out of band operation.

TEST SETUP



TEST PROCEDURE

- The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 ℃ and 50 ℃.

- The temperature was incremented by 10 ℃ intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

- The primary supply voltage is varied from 85% to 115% of the nominal value for non-hand carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

- While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

7.6. UNDESIRABLE EMISSION

LIMIT

Frequency Band	47 CFR § 15.407(b)(4) / RSS-247, 6.2.4.2
U-NII 3	All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

7.7. RADIATED EMISSIONS

RADIATION EMISSION LIMIT

FCC : 47 CFR § 15.209		
Frequency (MHz)	**Field Strength (uV/m)**	**Measurement Distance (m)**
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

ISED : RSS-GEN Section 8.9		
Frequency (MHz)	**Field Strength (uV/m)**	**Measurement Distance (m)**
0.009 – 0.490	6.37/F(kHz)	300
0.490 – 1.705	63.7/F(kHz)	30
1.705 – 30	0.08	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

RECEIVER RADIATED EMISSION LIMIT

ISED : RSS-GEN Section 7.3		
Frequency (MHz)	**Field Strength (uV/m)**	**Measurement Distance (m)**
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

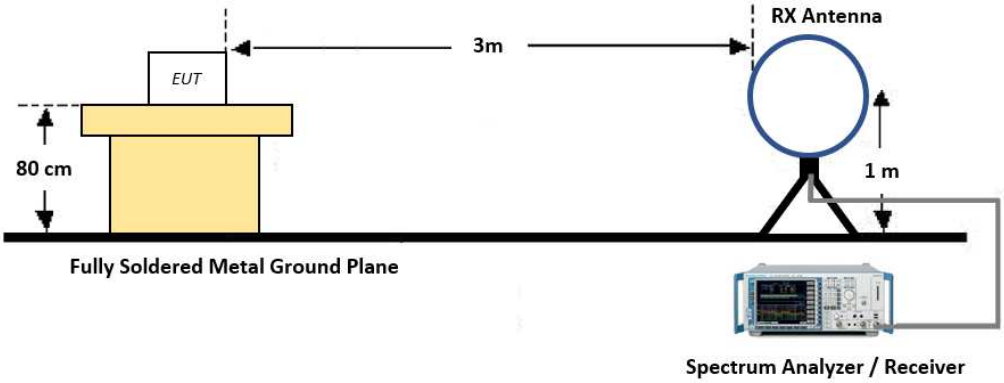
RESTRICTED BANDS OF OPERATION

FCC : 47 CFR § 15.205(a)				
Frequency (MHz)	**Frequency (MHz)**	**Frequency (MHz)**	**Frequency (MHz)**	**Frequency (MHz)**
0.090 – 0.110	12.29 - 12.293	149.9 - 150.05	1660.0 - 1710.0	8025 - 8500
0.495 - 0.505	12.51975 - 12.52025	156.52475 - 156.52525	1718.8 - 1722.2	9000 - 9200
2.1735 - 2.1905	12.57675 - 12.57725	156.7 - 156.9	2200.0 - 2300.0	9300 - 9500
4.125 - 4.128	13.36 - 13.41	162.0125 - 167.17	2310.0 - 2390.0	10600 - 12700
4.17725 - 4.17775	16.42 - 16.423	167.72 - 173.2	2483.5 - 2500.0	13250 - 13400
4.20725 - 4.20775	16.69475 - 16.69525	240.0 - 285.0	2690.0 - 2900.0	14470 - 14500
6.215 - 6.218	16.80425 - 16.80475	322.0 - 335.4	3260.0 - 3267.0	15350 - 16200
6.26775 - 6.26825	25.5 - 25.67	399.9 - 410.0	3332.0 - 3339.0	17700 - 21400
6.31175 - 6.31225	37.5 - 38.25	608.0 - 614.0	3345.8 - 3358.0	22010 - 23120
8.291 - 8.294	73 - 74.6	960.0 - 1240.0	3600.0 - 4400.0	23600 - 24000
8.362 - 8.366	74.8 - 75.2	1300.0 - 1427.0	4500.0 - 5150.0	31200 - 31800
8.37625 - 8.38675	108 - 121.94	1435.0 - 1626.5	5350.0 - 5460.0	36430 - 36500
8.41425 - 8.41475	123 - 138	1645.5 - 1646.5	7250.0 - 7750.0	Above 38600

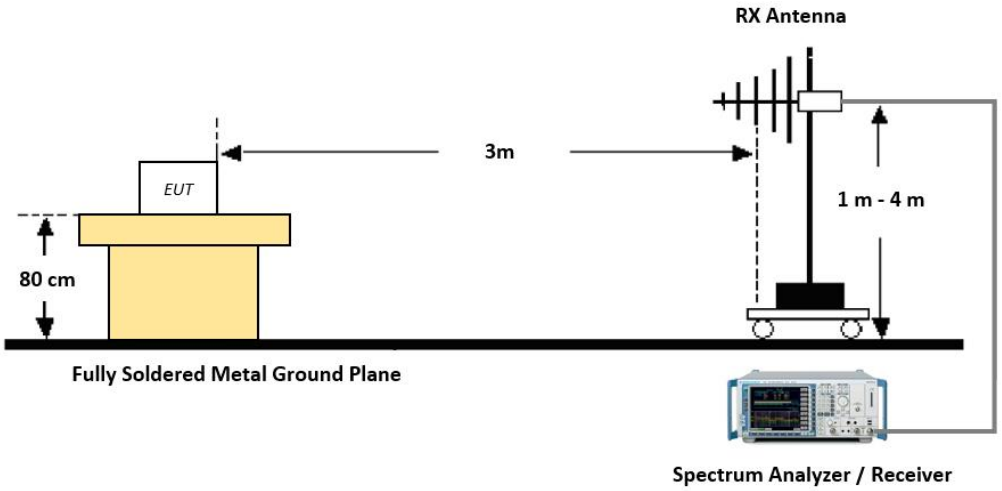
ISED : RSS-GEN Section 8.10				
Frequency (MHz)	**Frequency (MHz)**	**Frequency (MHz)**	**Frequency (MHz)**	**Frequency (MHz)**
0.090 - 0.110	8.37625 - 8.38675	108 – 138	1660 - 1710	8025 - 8500
0.495 - 0.505	8.41425 - 8.41475	149.9 - 150.05	1718.8 - 1722.2	9000 - 9200
2.1735 - 2.1905	12.29 - 12.293	156.52475 - 156.52525	2200 - 2300	9300 - 9500
3.020 - 3.026	12.51975 - 12.52025	156.7 - 156.9	2310 - 2390	10600 - 12700
4.125 - 4.128	12.57675 - 12.57725	162.0125 - 167.17	2483.5 - 2500	13250 - 13400
4.17725 - 4.17775	13.36 - 13.41	167.72 - 173.2	2655 - 2900	14470 - 14500
4.20725 - 4.20775	16.42 - 16.423	240 - 285	3260 - 3267	15350 - 16200
5.677 - 5.683	16.69475 - 16.69525	322 - 335.4	3332 - 3339	17700 - 21400
6.215 - 6.218	16.80425 - 16.80475	399.9 - 410	3345.8 - 3358	22010 - 23120
6.26775 - 6.26825	25.5 - 25.67	608 - 614	3500 - 4400	23600 - 24000
6.31175 - 6.31225	37.5 - 38.25	960 - 1427	4500 - 5150	31200 - 31800
8.291 - 8.294	73 - 74.6	1435 - 1626.5	5350 - 5460	36430 - 36500
8.362 - 8.366	74.8 - 75.2	1645.5 - 1646.5	7250 - 7750	Above 38600

TEST SETUP

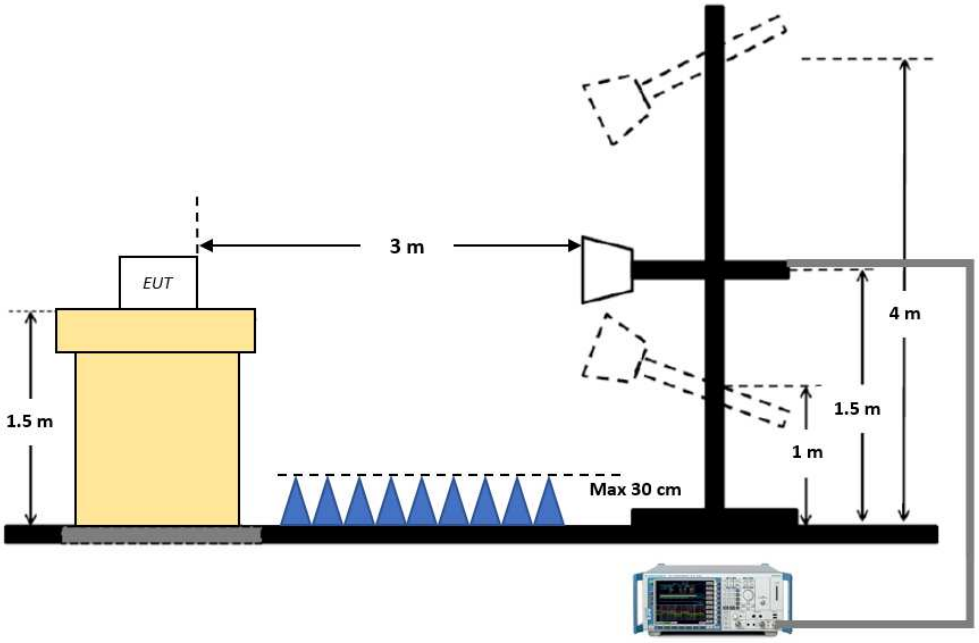
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (BELOW 30 MHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3m from the EUT
3. The EUT is placed on a turntable, which is 0.8m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor (0.009 MHz – 0.490 MHz) = 40*log(3 m/300 m) = - 80 dB
   Measurement Distance: 3 m
7. Distance Correction Factor (0.490 MHz – 30 MHz) = 40*log(3 m/30 m) = - 40 dB
   Measurement Distance: 3 m
8. Spectrum Setting

   - Frequency Range = 9 kHz ~ 30 MHz
   - Detector = Peak
   - Trace = Max hold
   - RBW = 9 kHz
   - VBW ≥ 3*RBW

9. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)
10. There is a comparison data both open-field test site and alternative test site – semi-Anechoic chamber according to 414788 D01. And the results are properly calibrated.

TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (30 MHz – 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. Spectrum Setting

   (1) Measurement Type (Peak):
   - Measured Frequency Range: 30 MHz – 1 GHz
   - Detector = Peak
   - Trace = Max hold
   - RBW = 100 kHz
   - VBW ≥ 3*RBW

   (2) Measurement Type(Quasi-peak):
   - Measured Frequency Range: 30 MHz – 1 GHz
   - Detector = Quasi-Peak
   - RBW = 120 kHz

6. Total = Reading Value + Antenna Factor (A.F) + Cable Loss (C.L)

TEST PROCEDURE OF RADIATED SPURIOUS EMISSION (ABOVE 1 GHz)

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

   (1) Measurement Type(Peak, G.5 in KDB 789033 v02r01):
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep Time = auto
   - Trace mode = Max hold
   - Allow sweeps to continue until the trace stabilizes.
   - Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

   (2) Measurement Type(Average, G.6.d in KDB 789033 v02r01):
   - RBW = 1 MHz
   - VBW(Duty cycle ≥ 98 percent) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
   - VBW(Duty cycle is < 98 percent) = VBW ≥ 1/T, where T is the minimum transmission duration.
   - The analyzer is set to linear detector mode.
   - Detector = Peak.
   - Sweep time = auto.
   - Trace mode = Max hold.
   - Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle.

9. Measurement value only up to 6 maximum emissions noted or would be lesser if no specific emissions from the EUT are recorded (i.e.: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor

10. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency (or 40 GHz whichever comes first)

11. Sample Calculation

    (1) Total (Peak) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G)
    (2) Total (Average, Duty ≥ 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G)
    (3) Total (Average, Duty < 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G) + Duty Cycle Factor

TEST PROCEDURE OF RADIATED RESTRICTED BAND EDGE

1. Radiated test is performed with hopping off (if there is any)
2. The EUT is placed on a turntable, which is 1.5 m above ground plane.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
4. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
5. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with its standard battery.
8. Spectrum Setting

(1) Measurement Type(Peak, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW ≥ 3 MHz
- Detector = Peak
- Sweep Time = auto
- Trace mode = Max hold
- Allow sweeps to continue until the trace stabilizes.
- Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately 1/x, where x is the duty cycle.

(2) Measurement Type(Average, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW(Duty cycle ≥ 98 percent) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 percent) = VBW ≥ 1/T, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = Max hold.
- Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of 1/x, where x is the duty cycle.

9. Sample Calculation

(1) Total (Peak) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L)
(2) Total (Average, Duty ≥ 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G)
(3) Total (Average, Duty < 98%) = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G) + Duty Cycle Factor

7.8. AC POWER LINE CONDUCTED EMISSIONS

LIMIT

47 CFR § 15.207 / RSS-GEN Section 8.8

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 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

*Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency.
voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

TEST SETUP

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.

According to FCC KDB 174176 D01 Line Conducted FAQ v01r01 :

Devices Operating Above 30 MHz

For a device with a permanent or detachable antenna operating above 30 MHz, measurements must be performed with the antenna connected as specified in clause 6.2 of ANSI C63.10-2013.

Devices Operating Below 30 MHz

For a device with a permanent or detachable antenna operating at or below 30 MHz, the FCC will accept measurements performed with a suitable dummy load in lieu of the antenna under the following conditions:

(1) Perform the AC power-line conducted tests with the antenna connected to determine compliance with Section 15.207 limits outside the transmitter's fundamental emission band;

(2) Retest with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network which simulates the antenna in the fundamental frequency band. All measurements must be performed as specified in clause 6.2 of ANSI C63.10-2013.

Sample Calculation

Quasi-peak(Final Result) = Reading Value + Correction Factor

8. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	ISED Part Section(s)	Test Limit	Test Condition	Test Result
26 dB Bandwidth	§15.407	-	N/A (For power measurement)	Conducted	-
6 dB Bandwidth	§15.407(e)	RSS-247, 6.2.4.1	≥ 500 kHz		PASS
Occupied bandwidth	-	RSS-Gen, 6.7	N/A		-
Maximum Conducted Output Power	§15.407(a)(3)(i)	RSS-247, 6.2.4.1	≤ 1 W		PASS
Power Spectral Density	§15.407(a)(3)(i)	RSS-247, 6.2.4.1	≤ 30 dBm/500 kHz		PASS
Frequency Stability	§15.407(g) §2.1055	RSS-Gen, 8.11	Maintained within the band		PASS
AC Power line Conducted Emissions	§15.207 §15.407(b)(9)	RSS-Gen, 8.8	cf. Section 7.8		PASS
Undesirable Emissions	§15.407(b)(4)	RSS-247, 6.2.4.2	cf. Section 7.6	Radiated	PASS
Radiated Spurious Emissions	§15.209 §15.407(b)(9)	RSS-Gen, 8.9	cf. Section 7.7		PASS
Radiated Restricted Band Edge	§15.407(b)(7) §15.205(a)	RSS-Gen, 8.10	cf. Section 7.7		PASS
Receiver Spurious Emissions	-	RSS-Gen, 7.3	Cf. Section 7.7		PASS

WORST CASE CONFIGURATION

RADIATED TEST

1. EUT Axis

All X, Y, and Z positions for horizontal / vertical antenna polarization were investigated to find the worst-case position. Y position was selected for the final evaluation for the radiated band edge and spurious emission.

2. The EUT supports single carrier mode and multi-carrier mode (contiguous and non-contiguous) except for receive mode. Receive mode only supports multi-carriers mode only (contiguous and non-contiguous).

- Single Carrier Mode : 10 MHz / 20 MHz / 40 MHz
- Multi-Carrier Mode (Contiguous) : 10+10 MHz / 20+20 MHz / 20+40 MHz / 40+20 MHz / 40+40 MHz
- Multi-Carrier Mode (Non-Contiguous) : 10+10 MHz / 20+20 MHz / 20+40 MHz / 40+20 MHz

3. The worst case modulation was determined by the manufacturer after comparing the power spectral density, peak-to-average ratio, and roll-off characteristics of the different supported modulation rates.
   QPSK was selected for the final test as the worst case.

Band edge test was performed for each bandwidth and spurious emission measurement was performed for 10 MHz / 20 MHz / 40 MHz for single carrier. and 10+10 MHz / 20+20 MHz / 20+40 MHz / 40+20 MHz for multi-carrier mode.

For below 1GHz, radiated tests were performed for each of the two PoE adapters.
For above 1GHz, radiated tests were performed with the worst adapter #2.

CONDUCTED TEST

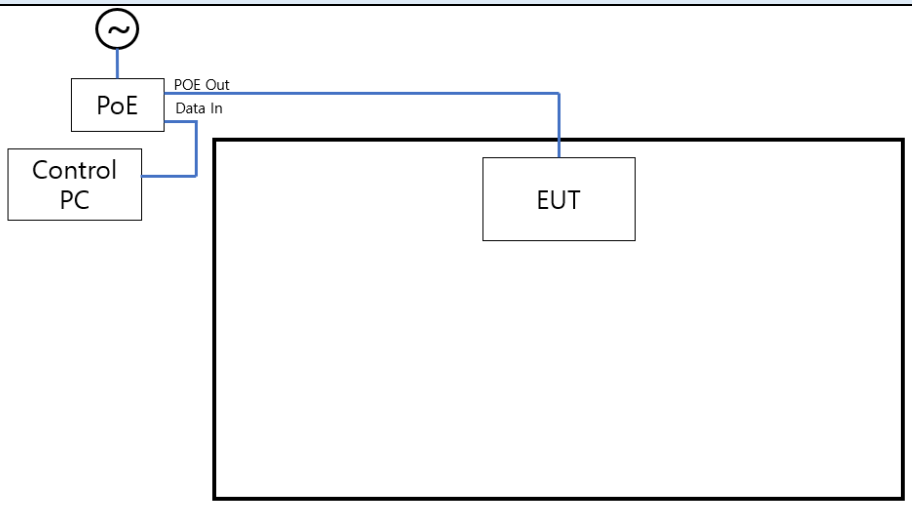
1. AC line conducted emission was performed only in single carrier transmission mode as the worst case for each of the two PoE adapters.
2. RF conducted emission was performed at the low / mid / high channels of each carrier's combination.

CHANNEL UNDER TEST

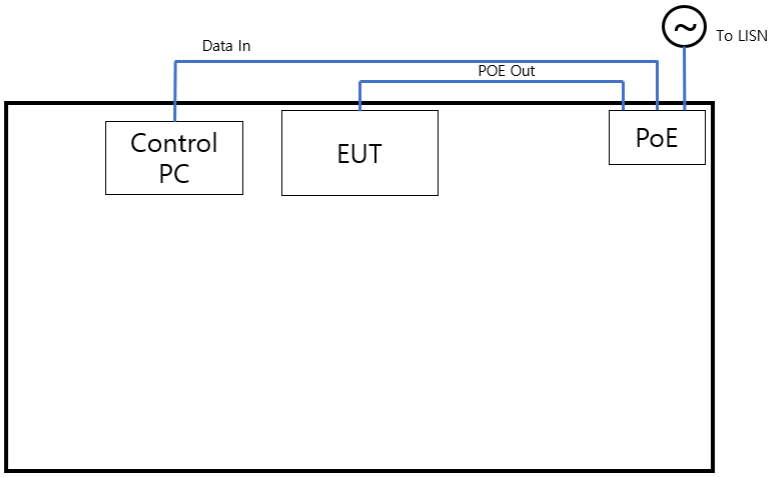
Mode (U-NII 3)	Bandwidth (MHz)	Low Channel (MHz)	Mid Channel (MHz)	High Channel (MHz)
Single Carrier Mode	10	5740	5775	5830
	20	5745	5785	5825
	40	5755	-	5795
Multi-Carrier Mode (Contiguous)	10+10	5740+5750	5775+5785	5820+5830
	20+20	5745+5765	5765+5785	5805+5825
	20+40	-	5765+5795	-
	40+20	5755+5785	-	5795+5825
	40+40	-	5755+5795	-
Multi-Carrier Mode (Non-Contiguous)	10+10	5740+5830		
	20+20	5745+5825		
	20+40	5745+5795		
	40+20	5755+5825		

TEST CONFIGURATION

Radiated Emission



Conducted Emission



LIST OF SUPPORT EQUIPMENT

Equipment Type	Model No.	Serial Number	Manufacturer	Qty	Note
PoE Adapter #1	G0566-500-120	-	Shenzhen Gospell Digital Tech.	1	100-240 VAC, 1.5 A 50/60 Hz (50 VDC)
PoE Adapter #2 (Alternative)	PD-9501GC/AC	C19436280000000494	Microsemi	1	100-240 VAC, 1.5 A 50/60 Hz (55 VDC)
Laptop	TP00076A	R9-0NUJ14 17/08	Lenovo	1	-

SUMMARY OF OUTPUT POWER SETTING

Single Carrier Mode			Power Level Setting	
Bandwidth	Channel	Frequency [MHz]	ATT	ADAK
10 MHz	148	5740	3	-1.8
	155	5775	3	-1.3
	166	5830	3	0
20 MHz	149	5745	3	-1.8
	157	5785	3	0
	165	5825	3	0
40 MHz	151	5755	3	-1.5
	159	5795	3	0

Multi-Carrier Mode (Contiguous)			Power Level Setting	
Bandwidth	Channel	Frequency [MHz]	ATT	ADAK
10+10 MHz	148+150	5740+5750	9	-2.0
	155+157	5775+5785	9	-0.5
	164+166	5820+5830	6	-2.7
20+20 MHz	149+153	5745+5765	9	-1.2
	153+157	5765+5785	9	-0.5
	161+165	5805+5825	6	-2.1
20+40 MHz	153+159	5765+5795	9	-0.2
40+20 MHz	151+157	5755+5785	6	-2.9
	159+165	5795+5825	6	-1.8
40+40 MHz	151+159	5755+5795	6	-2.4

Multi-Carrier Mode (Non-Contiguous)			Power Level Setting	
Bandwidth	Channel	Frequency [MHz]	ATT	ADAK
10+10 MHz	148+166	5740+5830	9	-0.5
20+20 MHz	149+165	5745+5825	9	-0.5
20+40 MHz	149+159	5745+5795	9	-0.5
40+20 MHz	151+165	5755+5825	9	0

Note :
power setting value shown on the table above is based on attenuation. Power level fine tuning was done using the ADAK.

9. TEST RESULT

9.1 DUTY CYCLE

Duty cycle is 100% continuous.

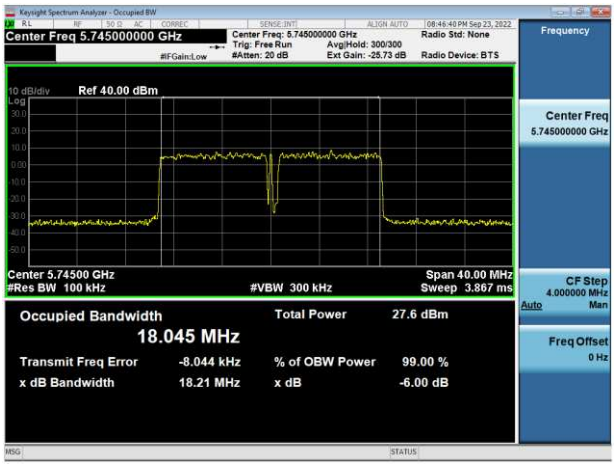
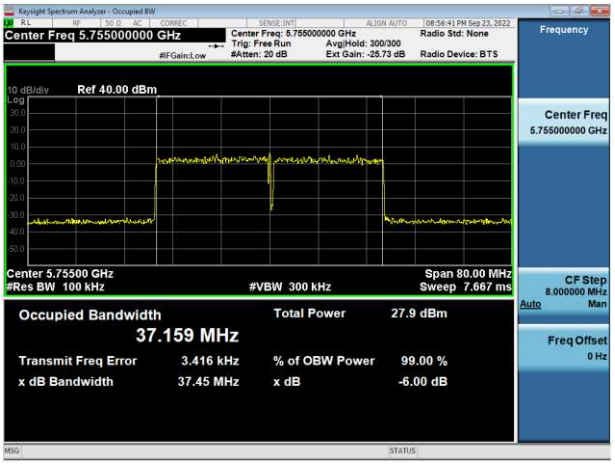
9.2 6 dB BANDWIDTH / 26 dB BANDWIDTH / 99% BANDWIDTH

Single Carrier Mode			6 dB Bandwidth (MHz)	Limit (MHz)
Bandwidth	Channel	Frequency (MHz)		
10 MHz	148	5740	9.10	≥ 0.5
	155	5775	9.10	≥ 0.5
	166	5830	9.10	≥ 0.5
20 MHz	149	5745	18.21	≥ 0.5
	157	5785	18.24	≥ 0.5
	165	5825	18.22	≥ 0.5
40 MHz	151	5755	37.45	≥ 0.5
	159	5795	37.56	≥ 0.5

Multi-Carrier Mode (Contiguous)			6 dB Bandwidth (MHz)	Limit (MHz)
Bandwidth	Channel	Frequency (MHz)		
10+10 MHz	148+150	5740+5750	19.02	≥ 0.5
	155+157	5775+5785	18.67	≥ 0.5
	164+166	5820+5830	19.04	≥ 0.5
20+20 MHz	149+153	5745+5765	37.89	≥ 0.5
	153+157	5765+5785	34.21	≥ 0.5
	161+165	5805+5825	37.99	≥ 0.5
20+40 MHz	153+159	5765+5795	57.27	≥ 0.5
40+20 MHz	151+157	5755+5785	57.42	≥ 0.5
	159+165	5795+5825	57.93	≥ 0.5
40+40 MHz	151+159	5755+5795	77.25	≥ 0.5

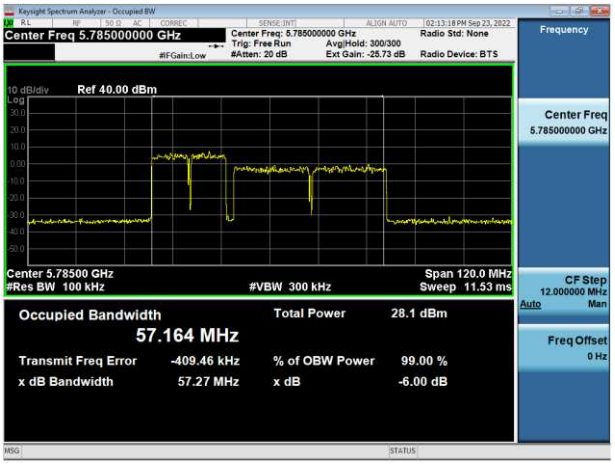
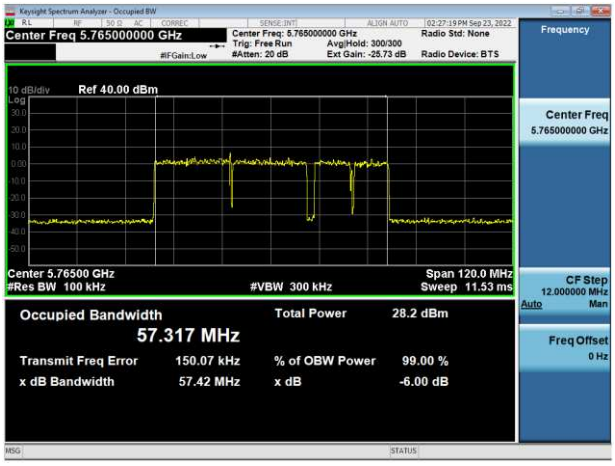
Multi-Carrier Mode (Non-Contiguous)			6 dB Bandwidth (MHz)	Limit (MHz)
Bandwidth	Channel	Frequency [MHz]		
10+10 MHz	148	5740	18.19	≥ 0.5
	+	+		
	166	5830		
20+20 MHz	149	5745	36.43	≥ 0.5
	+	+		
	165	5825		
20+40 MHz	149	5745	55.79	≥ 0.5
	+	+		
	159	5795		
40+20 MHz	151	5755	55.72	≥ 0.5
	+	+		
	165	5825		

▣ TEST PLOTS

6 dB Bandwidth : Single Carrier Mode	
10 MHz BW (5740 MHz)	**20 MHz BW (5745 MHz)**
	
40 MHz (5755 MHz)	
	

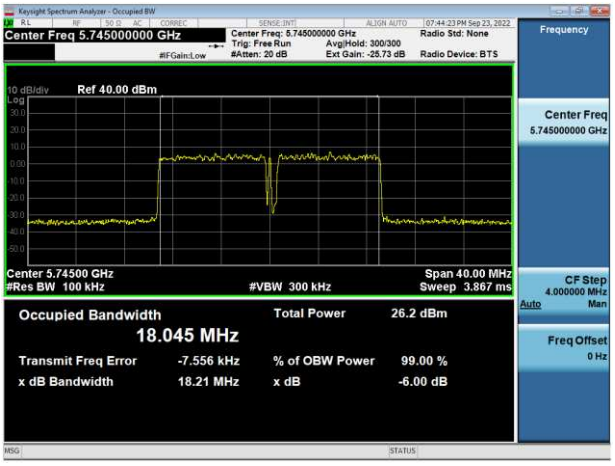
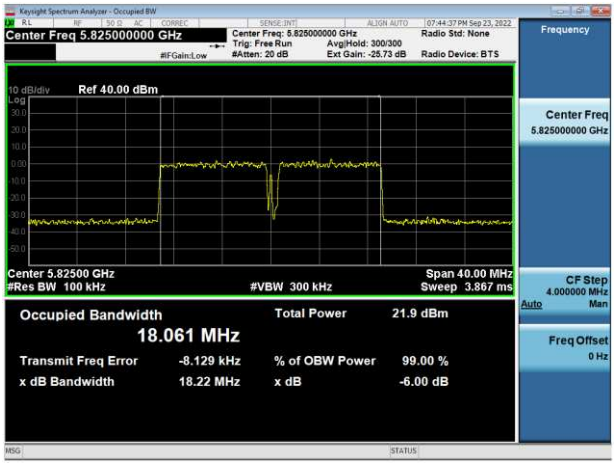
Note :
The worst plots are reported.

▣ TEST PLOTS

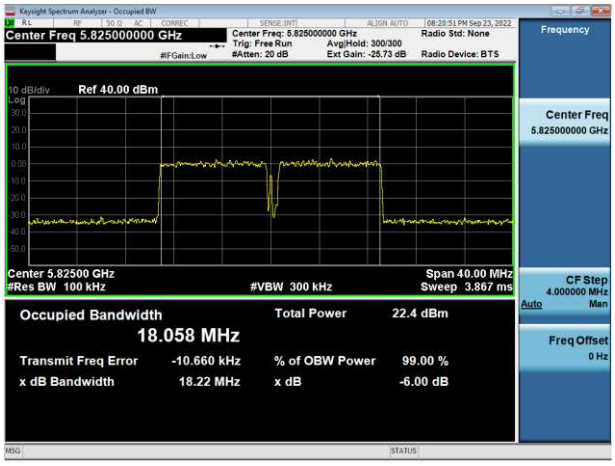
6 dB Bandwidth : Contiguous Carrier Mode	
10+10 MHz (5775+5785 MHz)	**20+20 MHz (5765+5785 MHz)**
	
20+40 MHz (5765+5795 MHz)	**40+20 MHz (5755+5785 MHz)**
	
40+40 MHz (5755+5795 MHz)	
	

Note :
The worst plots are reported.

▣ TEST PLOTS

6 dB Bandwidth : Non-Contiguous Carrier Mode	
10+10 MHz (5740+5830 MHz) : Low	10+10 MHz (5740+5830 MHz) : High
	
20+20 MHz (5745+5825 MHz) : Low	20+20 MHz (5745+5825 MHz) : High
	

▣ TEST PLOTS

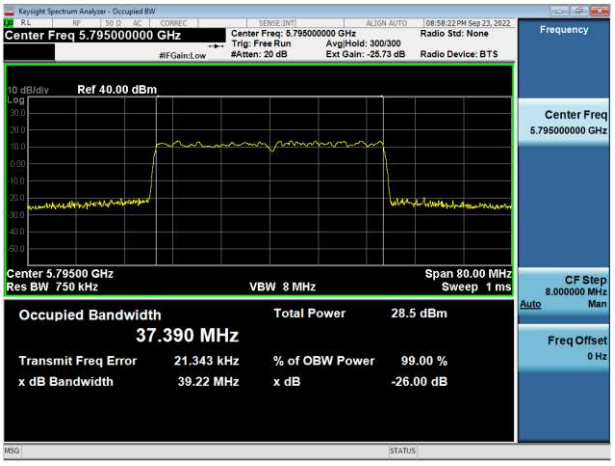
6 dB Bandwidth : Non-Contiguous Carrier Mode	
20+40 MHz (5745+5795 MHz) : Low	**20+40 MHz (5745+5795 MHz) : High**
	
40+20 MHz (5755+5825 MHz) : Low	**40+20 MHz (5755+5825 MHz) : High**
	

Single Carrier Mode			26 dB Bandwidth [MHz]	99% Bandwidth [MHz]
Bandwidth	Channel	Frequency (MHz)		
10 MHz	148	5740	9.51	9.02
	155	5775	9.51	9.01
	166	5830	9.53	9.03
20 MHz	149	5745	19.09	18.06
	157	5785	19.10	18.10
	165	5825	19.09	18.07
40 MHz	151	5755	39.18	37.30
	159	5795	39.22	37.39

Multi-Carrier Mode (Contiguous)			26 dB Bandwidth [MHz]	99% Bandwidth [MHz]
Bandwidth	Channel	Frequency (MHz)		
10+10 MHz	148+150	5740+5750	19.93	18.95
	155+157	5775+5785	19.90	18.93
	164+166	5820+5830	19.94	18.97
20+20 MHz	149+153	5745+5765	39.77	37.85
	153+157	5765+5785	39.72	37.78
	161+165	5805+5825	39.78	37.86
20+40 MHz	153+159	5765+5795	59.97	57.52
40+20 MHz	151+157	5755+5785	60.29	57.37
	159+165	5795+5825	60.28	57.59
40+40 MHz	151+159	5755+5795	80.69	77.15

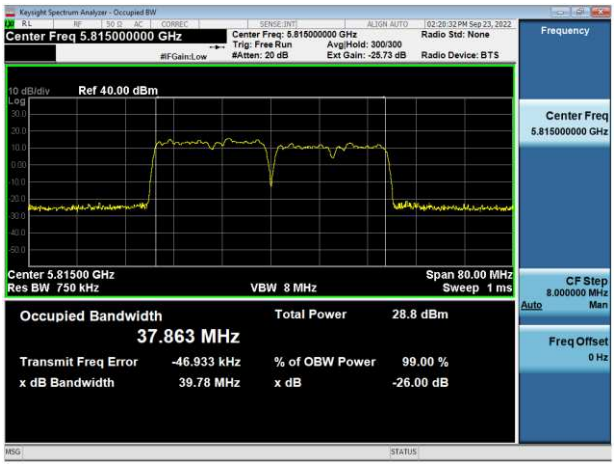
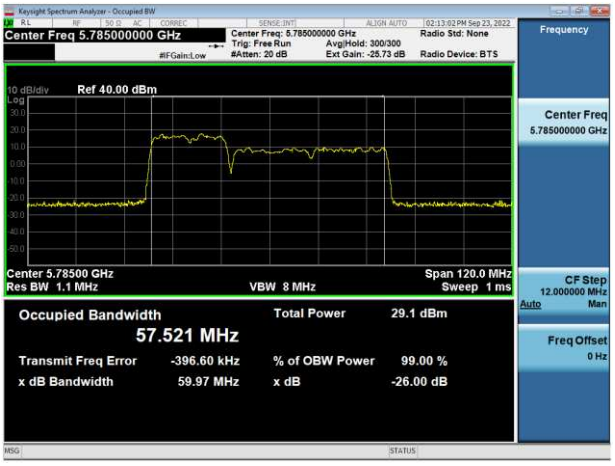
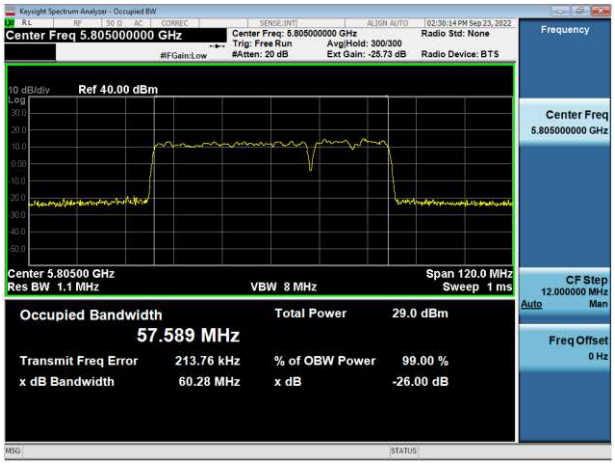
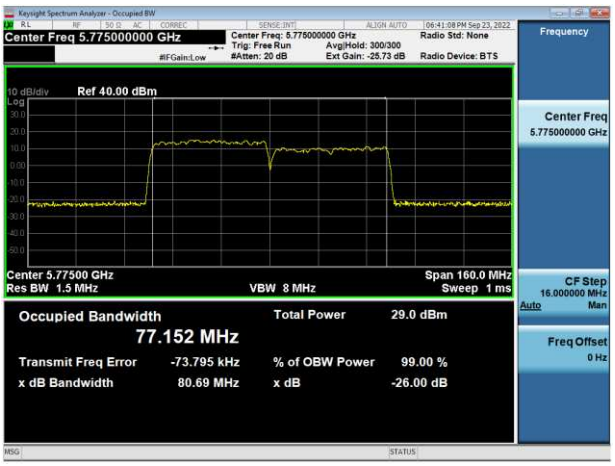
Multi-Carrier Mode (Non-Contiguous)			26 dB Bandwidth [MHz]	99% Bandwidth [MHz]
Bandwidth	Channel	Frequency [MHz]		
10+10 MHz	148	5740	19.02	18.03
	+	+		
	166	5830		
20+20 MHz	149	5745	38.19	36.14
	+	+		
	165	5825		
20+40 MHz	149	5745	78.75	55.46
	+	+		
	159	5795		
40+20 MHz	151	5755	58.29	55.38
	+	+		
	165	5825		

▣ TEST PLOTS

26 dB Bandwidth / 99 % Bandwidth : Single Carrier Mode	
10 MHz BW (5830 MHz)	**20 MHz BW (5785 MHz)**
	
40 MHz (5795 MHz)	
	

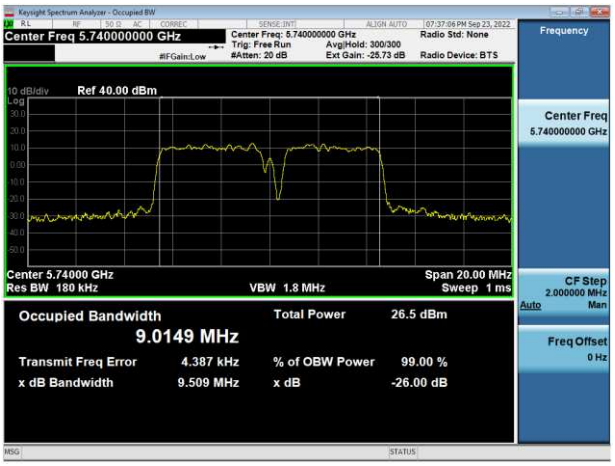
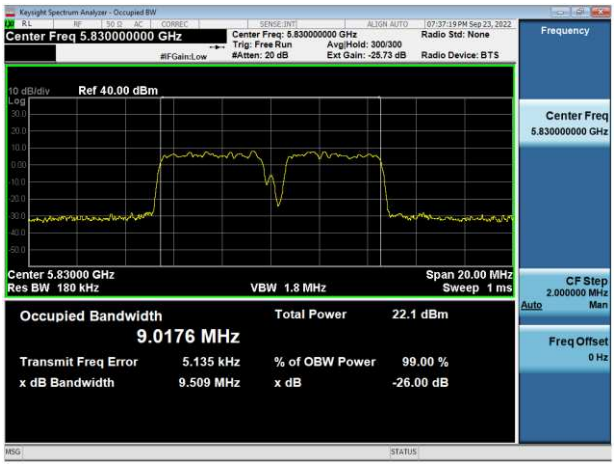
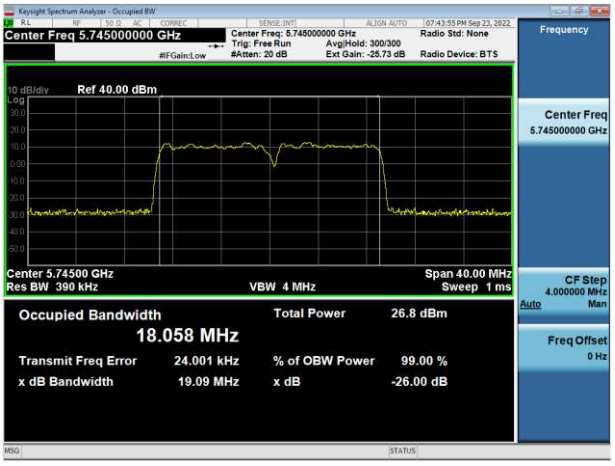
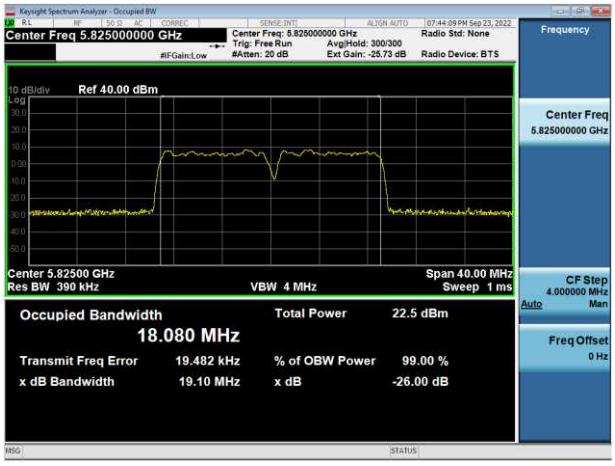
Note :
The worst plots are reported.

▣ TEST PLOTS

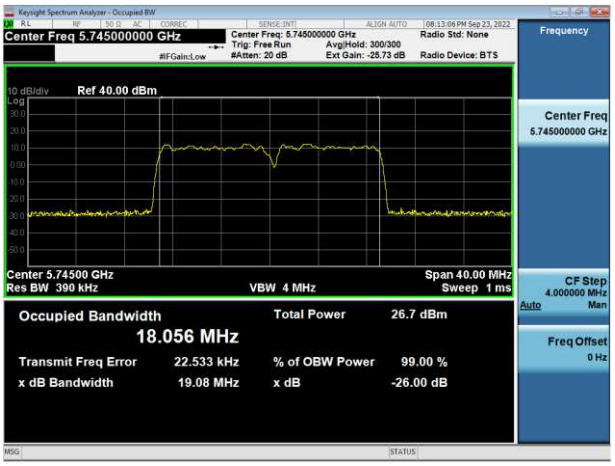
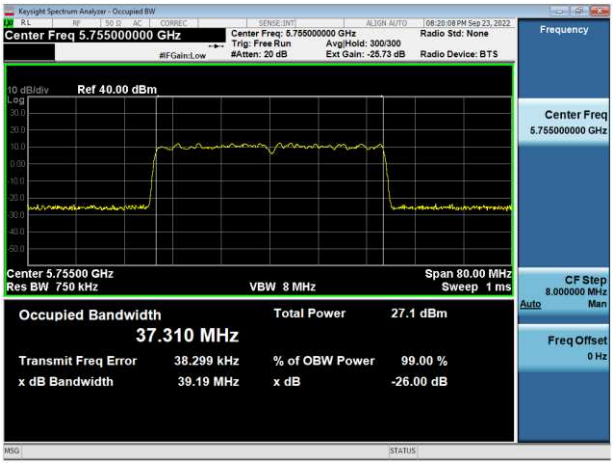
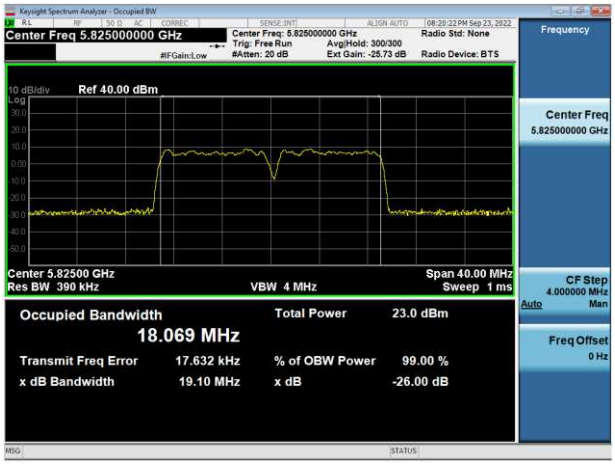
26 dB Bandwidth / 99 % Bandwidth : Contiguous Carrier Mode	
10+10 MHz (5820+5830 MHz)	**20+20 MHz (5805+5825 MHz)**
	
20+40 MHz (5765+5795 MHz)	**40+20 MHz (5795+5825 MHz)**
	
40+40 MHz (5755+5795 MHz)	
	

Note :
The worst plots are reported.

▣ TEST PLOTS

26 dB Bandwidth / 99 % Bandwidth : Non-Contiguous Carrier Mode	
10+10 MHz (5740+5830 MHz) : Low	10+10 MHz (5740+5830 MHz) : High
	
20+20 MHz (5745+5825 MHz) : Low	20+20 MHz (5745+5825 MHz) : High
	

▣ TEST PLOTS

26 dB Bandwidth / 99 % Bandwidth : Non-Contiguous Carrier Mode	
20+40 MHz (5745+5795 MHz) : Low	**20+40 MHz (5745+5795 MHz) : High**
	
40+20 MHz (5755+5825 MHz) : Low	**40+20 MHz (5755+5825 MHz) : High**
	

9.3 OUTPUT POWER

Single Carrier Mode			Output Power [dBm]		Limit [dBm]
Bandwidth	Channel	Frequency [MHz]	Single Chain	All 8 Chains	
10 MHz	148	5740	20.84	29.87	30
	155	5775	20.81	29.84	30
	166	5830	20.67	29.71	30
20 MHz	149	5745	20.83	29.86	30
	157	5785	20.74	29.77	30
	165	5825	20.77	29.81	30
40 MHz	151	5755	20.81	29.84	30
	159	5795	20.71	29.74	30

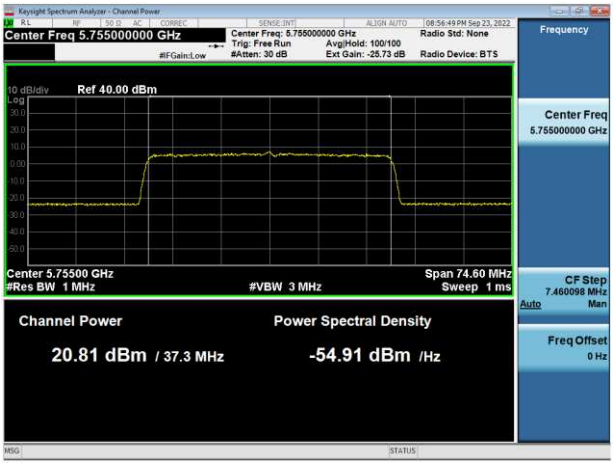
Multi-Carrier Mode (Contiguous)			Output Power [dBm]		Limit [dBm]
Bandwidth	Channel	Frequency [MHz]	Single Chain	All 8 Chains	
10+10 MHz	148+150	5740+5750	20.67	29.70	30
	155+157	5775+5785	20.75	29.79	30
	164+166	5820+5830	20.76	29.79	30
20+20 MHz	149+153	5745+5765	20.78	29.81	30
	153+157	5765+5785	20.80	29.83	30
	161+165	5805+5825	20.83	29.86	30
20+40 MHz	153+159	5765+5795	20.80	29.83	30
40+20 MHz	151+157	5755+5785	20.88	29.92	30
	159+165	5795+5825	20.75	29.78	30
40+40 MHz	151+159	5755+5795	20.64	29.67	30

Multi-Carrier Mode (Non-Contiguous)			Output Power [dBm]			Limit [dBm]
Bandwidth	Channel	Frequency [MHz]	Single Chain		All 8 Chains	
10+10 MHz	148	5740	19.42	20.75	29.79	30
	+	+	+			
	166	5830	14.97			
20+20 MHz	149	5745	19.30	20.67	29.70	30
	+	+	+			
	165	5825	14.97			
20+40 MHz	149	5745	19.15	20.51	29.54	30
	+	+	+			
	159	5795	14.81			
40+20 MHz	151	5755	19.33	20.81	29.84	30
	+	+	+			
	165	5825	15.43			

Note :

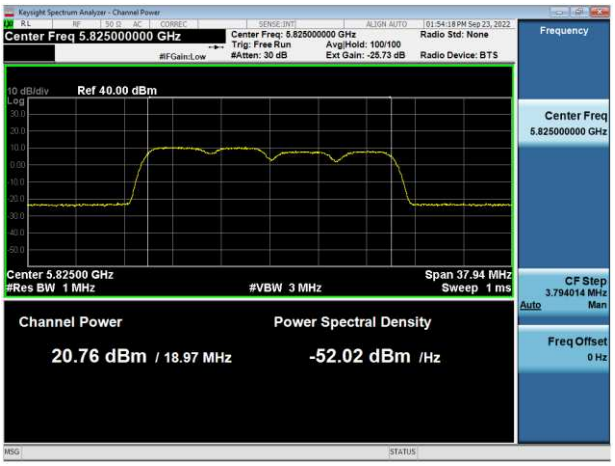
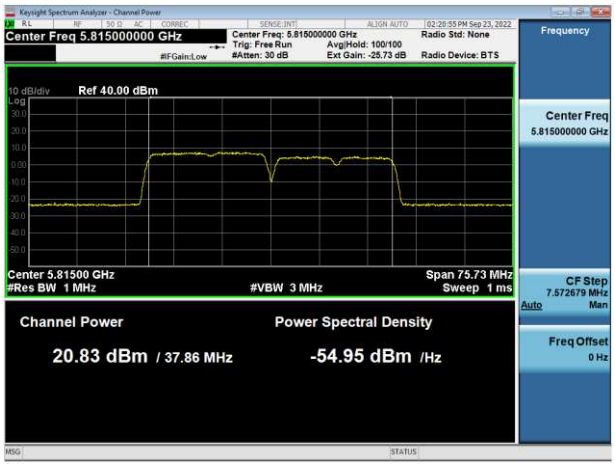
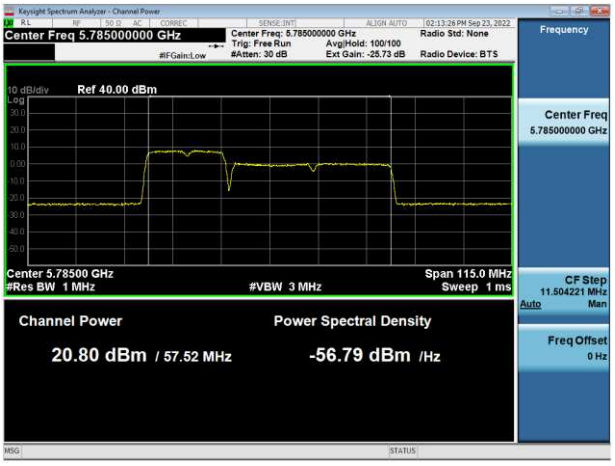
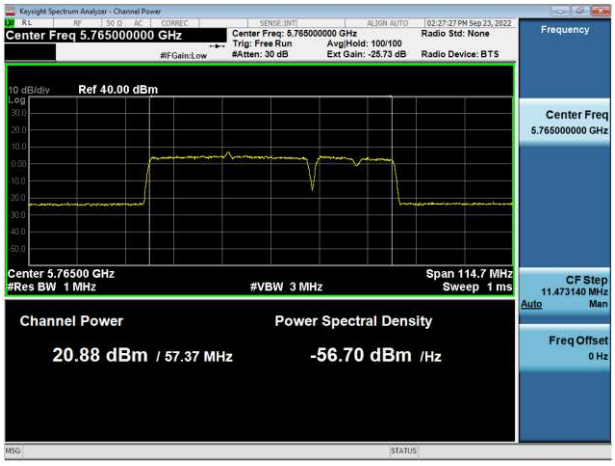
1. The output power results in the table include the spectrum offset, which is a combination loss of the attenuator and the cable used for testing. Attenuation between the chipset and the SMA antenna port used for RF conducted measurement were provided by the manufacturer, which is 25.73 dB.
2. Output Power (All chains) = Output Power (Single Chain) + 10 log(8)

▣ TEST PLOTS

Output Power : Single Carrier Mode	
10 MHz BW (5740 MHz)	**20 MHz BW (5745 MHz)**
	
40 MHz (5755 MHz)	
	

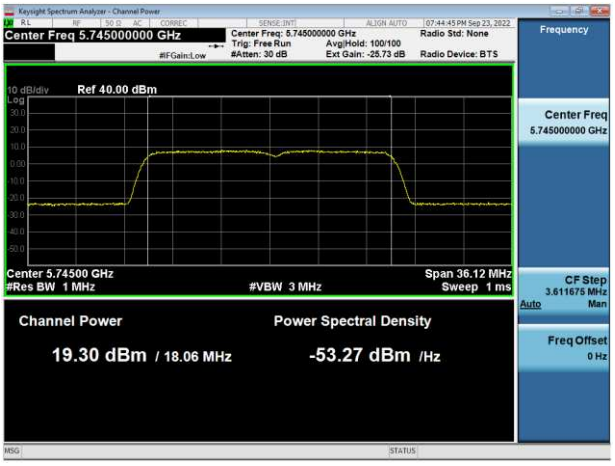
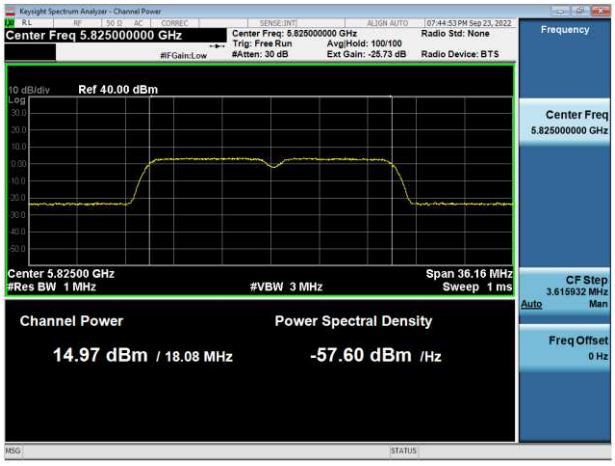
Note :
The worst plots are reported.

▣ TEST PLOTS

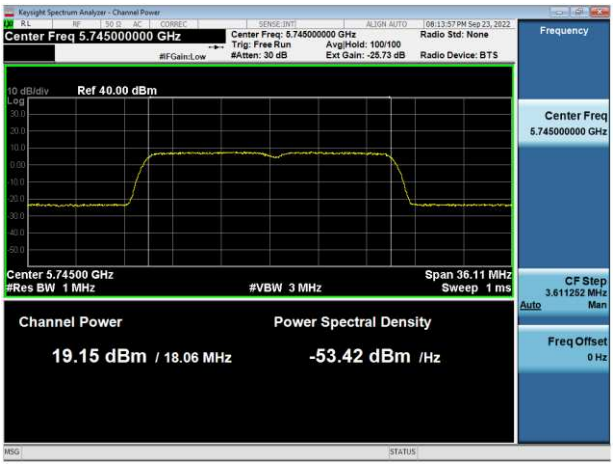
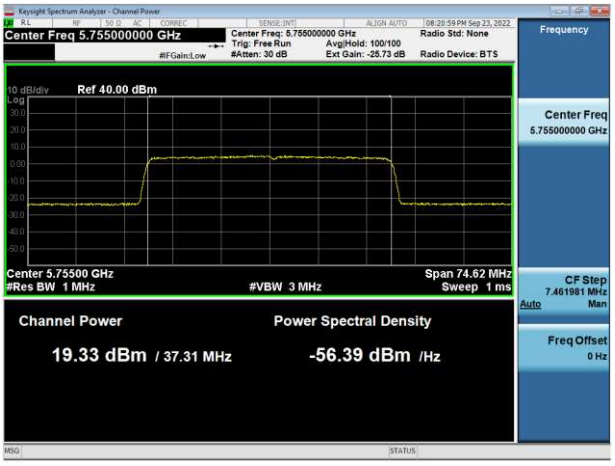
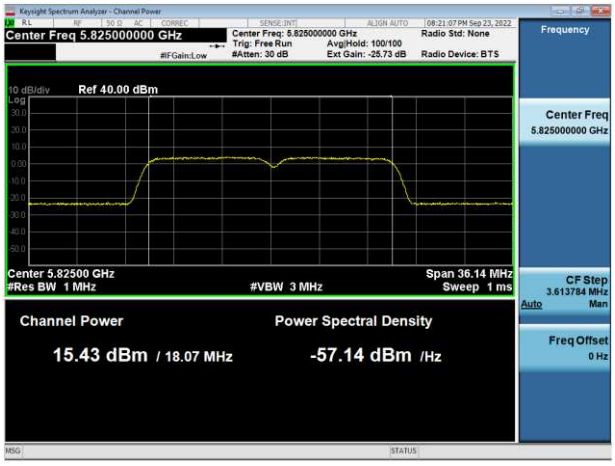
Output Power : Contiguous Carrier Mode	
10+10 MHz (5820+5830 MHz)	**20+20 MHz (5805+5825 MHz)**
	
20+40 MHz (5765+5795 MHz)	**40+20 MHz (5755+5785 MHz)**
	
40+40 MHz (5755+5795 MHz)	
	

Note :
The worst plots are reported.

▣ TEST PLOTS

Output Power : Non-Contiguous Carrier Mode	
10+10 MHz (5740+5830 MHz) : Low	10+10 MHz (5740+5830 MHz) : High
	
20+20 MHz (5745+5825 MHz) : Low	20+20 MHz (5745+5825 MHz) : High
	

▣ TEST PLOTS

Output Power : Non-Contiguous Carrier Mode	
20+40 MHz (5745+5795 MHz) : Low	**20+40 MHz (5745+5795 MHz) : High**
	
40+20 MHz (5755+5825 MHz) : Low	**40+20 MHz (5755+5825 MHz) : High**
	

9.4 POWER SPECTRAL DENSITY

Single Carrier Mode			Power Spectral Density [dBm/500 kHz]		Limit [dBm/500 kHz]
Bandwidth	Channel	Frequency [MHz]	Single Chain	All 8 Chains	
10 MHz	148	5740	10.16	19.19	30
	155	5775	10.39	19.42	30
	166	5830	10.15	19.18	30
20 MHz	149	5745	6.88	15.91	30
	157	5785	7.34	16.37	30
	165	5825	6.77	15.80	30
40 MHz	151	5755	6.09	15.12	30
	159	5795	4.37	13.40	30

Multi-Carrier Mode (Contiguous)			Power Spectral Density [dBm/500 kHz]		Limit [dBm/500 kHz]
Bandwidth	Channel	Frequency [MHz]	Single Chain	All 8 Chains	
10+10 MHz	148+150	5740+5750	8.12	17.15	30
	155+157	5775+5785	8.64	17.67	30
	164+166	5820+5830	7.77	16.80	30
20+20 MHz	149+153	5745+5765	4.92	13.95	30
	153+157	5765+5785	5.33	14.36	30
	161+165	5805+5825	4.96	13.99	30
20+40 MHz	153+159	5765+5795	5.48	14.51	30
40+20 MHz	151+157	5755+5785	6.01	15.04	30
	159+165	5795+5825	4.06	13.09	30
40+40 MHz	151+159	5755+5795	5.47	14.50	30

Multi-Carrier Mode (Non-Contiguous)			Power Spectral Density [dBm/500 kHz]		Limit [dBm/500 kHz]
Bandwidth	Channel	Frequency [MHz]	Single Chain	All 8 Chains	
10+10 MHz	148	5740	9.06	18.09	30
	+	+			
	166	5830			
20+20 MHz	149	5745	5.39	14.42	30
	+	+			
	165	5825			
20+40 MHz	149	5745	5.30	14.33	30
	+	+			
	159	5795			
40+20 MHz	151	5755	3.19	12.22	30
	+	+			
	165	5825			

Note :

1. The output power results in the table and the plot include the spectrum offset, which is a combination loss of the attenuator and the cable used for testing. Attenuation between the chipset and the SMA antenna port used for RF conducted measurement were provided by the manufacturer, which is 25.73 dB.
2. PSD (All chains) = PSD (Single Chain) + 10 log(8)

▣ TEST PLOTS

PSD : Single Carrier Mode	
10 MHz BW (5775 MHz)	**20 MHz BW (5785 MHz)**
	
40 MHz (5755 MHz)	
	

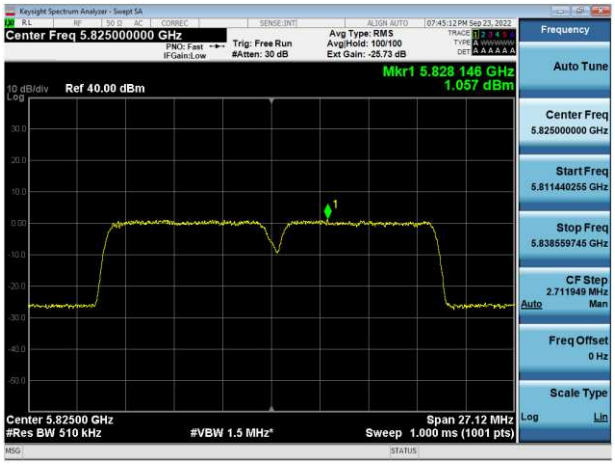
Note :
The worst plots are reported.

▣ TEST PLOTS

PSD : Contiguous Carrier Mode	
10+10 MHz (5775+5785 MHz)	20+20 MHz (5765+5785 MHz)
	
20+40 MHz (5765+5795 MHz)	40+20 MHz (5755+5785 MHz)
	
40+40 MHz (5755+5795 MHz)	
	

Note :
The worst plots are reported.

▣ TEST PLOTS

PSD : Non-Contiguous Carrier Mode	
10+10 MHz (5740+5830 MHz) : Low	10+10 MHz (5740+5830 MHz) : High
	
20+20 MHz (5745+5825 MHz) : Low	20+20 MHz (5745+5825 MHz) : High
	

▣ TEST PLOTS

PSD : Non-Contiguous Carrier Mode	
20+40 MHz (5745+5795 MHz) : Low	20+40 MHz (5745+5795 MHz) : High
	
40+20 MHz (5755+5825 MHz) : Low	40+20 MHz (5755+5825 MHz) : High
	

9.5 FREQUENCY STABILITY

Operating Band :	U-NII Band 3
Operating Frequency :	5,745,000,000 Hz (CH 149)
Reference Voltage :	55 VDC

Voltage (%)	Power (VDC)	Temp (°C)	Frequency error (ppm)			
			0 minutes	2 minutes	5 minutes	10 minutes
100%	55.0	+20 (Ref)	2.51	2.51	2.51	2.49
100%		-30	2.14	2.14	2.14	2.14
100%		-20	2.21	2.25	2.27	2.30
100%		-10	2.37	2.42	2.44	2.45
100%		0	2.48	2.48	2.48	2.49
100%		+10	2.50	2.51	2.51	2.51
100%		+30	2.50	2.51	2.51	2.54
100%		+40	2.58	2.62	2.63	2.63
100%		+50	2.61	2.60	2.58	2.58
115%	63.3	+20	2.47	2.48	2.47	2.47
85%	46.8	+20	2.47	2.48	2.48	2.48

Note:
According to the results of the frequency stability test above, the frequency deviation measured are very small. The channels at the band edge should remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore, the Radio frequency should remain in-band during operation over the temperature and voltage range as tested.

9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : Below 1 GHz (With PoE Adapter #1)

Test Mode Single Carrier (10 MHz)
Operating Frequency 5740 MHz (CH 148)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
32.194	V	43.0	-11.2	31.8	40	8.2	QP
55.779	V	53.7	-22.5	31.2	40	8.8	QP
124.988	V	48.7	-15.6	33.1	43.5	10.4	QP
741.999	H	45.6	-7.0	38.6	46	7.4	QP

Test Mode Single Carrier (10 MHz)
Operating Frequency 5775 MHz (CH 154)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
37.009	V	43.6	-14.0	29.6	40	10.4	QP
57.558	V	52.5	-22.5	30.0	40	10.0	QP
124.999	V	48.7	-15.6	33.1	43.5	10.4	QP
741.997	H	46.0	-7.0	39.0	46	7.0	QP

Test Mode Single Carrier (10 MHz)
Operating Frequency 5830 MHz (CH 166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
35.842	V	43.7	-13.3	30.4	40	9.6	QP
55.047	V	53.0	-22.4	30.6	40	9.4	QP
124.986	V	48.7	-15.6	33.1	43.5	10.4	QP
742.000	H	45.9	-7.0	38.9	46	7.1	QP

Note(s) :
1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

Frequency Range : Below 1 GHz (With PoE Adapter #1)

Test Mode Contiguous Carrier (10+10 MHz)

Operating Frequency 5740+5750 MHz (CH 148+150)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
31.713	V	42.8	-10.9	31.9	40	8.1	QP
56.528	V	53.6	-22.5	31.1	40	8.9	QP
124.992	V	48.7	-15.6	33.1	43.5	10.4	QP
741.997	H	45.5	-7.0	38.5	46	7.5	QP
940.803	H	39.4	-4.1	35.3	46	10.7	QP

Test Mode Contiguous Carrier (10+10 MHz)

Operating Frequency 5775+5785 MHz (CH 155+157)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.173	V	43.8	-13.5	30.3	40	9.7	QP
58.916	V	53.5	-22.4	31.1	40	8.9	QP
124.985	V	48.7	-15.6	33.1	43.5	10.4	QP
742.006	H	45.9	-7.0	38.9	46	7.1	QP

Test Mode Contiguous Carrier (10+10 MHz)

Operating Frequency 5820+5830 MHz (CH 164+166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.037	V	44.0	-13.4	30.6	40	9.4	QP
57.192	V	54.4	-22.5	31.9	40	8.1	QP
124.992	V	48.6	-15.6	33.0	43.5	10.5	QP
741.988	H	45.7	-7.0	38.7	46	7.3	QP

Test Mode Non-Contiguous Carrier (10+10 MHz)

Operating Frequency 5740+5830 MHz (CH 148+166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
32.073	V	41.8	-11.1	30.7	40	9.3	QP
54.438	V	54.0	-22.4	31.6	40	8.4	QP
124.998	V	48.6	-15.6	33.0	43.5	10.5	QP
625.019	V	44.7	-8.8	35.9	46	10.1	QP
741.994	H	45.4	-7.0	38.4	46	7.6	QP

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

Frequency Range : Below 1 GHz (With PoE Adapter #2)

Test Mode Single Carrier (10 MHz)
Operating Frequency 5740 MHz (CH 148)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.492	V	44.6	-13.7	30.9	40	9.1	QP
60.140	V	56.8	-22.3	34.5	40	5.5	QP
124.989	V	53.2	-15.6	37.6	43.5	5.9	QP
625.014	V	47.9	-8.8	39.1	46	6.9	QP
741.991	H	44.5	-7.0	37.5	46	8.5	QP

Test Mode Single Carrier (10 MHz)
Operating Frequency 5775 MHz (CH 154)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.286	V	44.1	-13.6	30.5	40	9.5	QP
60.327	V	57.2	-22.3	34.9	40	5.1	QP
124.994	V	53.4	-15.6	37.8	43.5	5.7	QP
625.016	V	47.1	-8.8	38.3	46	7.7	QP
741.993	H	44.5	-7.0	37.5	46	8.5	QP

Test Mode Single Carrier (10 MHz)
Operating Frequency 5830 MHz (CH 166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1)] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
32.400	V	44.2	-11.3	32.9	40	7.1	QP
60.326	V	57.6	-22.3	35.3	40	4.7	QP
124.995	V	53.2	-15.6	37.6	43.5	5.9	QP
625.008	V	47.8	-8.8	39.0	46	7.0	QP
742.017	H	42.2	-7.0	35.2	46	10.8	QP

Note(s) :
1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

Frequency Range : Below 1 GHz (With PoE Adapter #2)

Test Mode Contiguous Carrier (10+10 MHz)
Operating Frequency 5740+5750 MHz (CH 148+150)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.642	V	44.3	-13.8	30.5	40	9.5	QP
60.783	V	57.2	-22.2	35.0	40	5.0	QP
124.979	V	52.6	-15.6	37.0	43.5	6.5	QP
625.012	H	48.5	-8.8	39.7	46	6.3	QP
742.003	H	46.7	-7.0	39.7	46	6.3	QP

Test Mode Contiguous Carrier (10+10 MHz)
Operating Frequency 5775+5785 MHz (CH 155+157)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
32.419	V	44.7	-11.3	33.4	40	6.6	QP
60.723	V	56.8	-22.2	34.6	40	5.4	QP
124.990	V	53.5	-15.6	37.9	43.5	5.6	QP
625.009	V	47.2	-8.8	38.4	46	7.6	QP
742.000	H	46.0	-7.0	39.0	46	7.0	QP

Test Mode Contiguous Carrier (10+10 MHz)
Operating Frequency 5820+5830 MHz (CH 164+166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.157	V	44.5	-13.5	31.0	40	9.0	QP
62.553	V	55.2	-22.0	33.2	40	6.8	QP
124.981	V	53.1	-15.6	37.5	43.5	6.0	QP
625.008	V	47.2	-8.8	38.4	46	7.6	QP
742.001	H	45.9	-7.0	38.9	46	7.1	QP

Test Mode Non-Contiguous Carrier (10+10 MHz)
Operating Frequency 5740+5830 MHz (CH 148+166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.239	V	44.4	-13.6	30.8	40	9.2	QP
60.550	V	57.0	-22.2	34.8	40	5.2	QP
124.998	V	53.1	-15.6	37.5	43.5	6.0	QP
625.018	V	47.1	-8.8	38.3	46	7.7	QP
742.007	H	44.9	-7.0	37.9	46	8.1	QP

Note(s) :
1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain

Frequency Range : Above 1 GHz

Test Mode Single Carrier (10 MHz)

Operating Frequency 5740 MHz (CH 148)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11480.708	V	38.1	45.9	3.3	41.4	49.2	54	74	12.6	24.8
11480.724	H	36.6	44.9	3.3	39.9	48.2	54	74	14.1	25.8

Test Mode Single Carrier (10 MHz)

Operating Frequency 5775 MHz (CH 154)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11550.625	H	39.6	47.2	3.3	42.9	50.5	54	74	11.1	23.5
11550.699	V	41.3	48.1	3.3	44.6	51.4	54	74	9.4	22.6

Test Mode Single Carrier (10 MHz)

Operating Frequency 5830 MHz (CH 166)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11659.994	H	36.7	45.0	3.5	40.2	48.5	54	74	13.8	25.5
11660.716	V	39.0	46.6	3.5	42.5	50.1	54	74	11.5	23.9

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

Frequency Range : Above 1 GHz

Test Mode Single Carrier (20 MHz)

Operating Frequency 5745 MHz (CH 149)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11490.142	V	38.8	45.8	3.3	42.1	49.1	54	74	11.9	24.9
11490.223	H	36.9	45.3	3.3	40.2	48.6	54	74	13.8	25.4

Test Mode Single Carrier (20 MHz)

Operating Frequency 5785 MHz (CH 157)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11570.664	V	38.9	46.4	3.3	42.2	49.7	54	74	11.8	24.3
11570.750	H	38.6	46.4	3.3	41.9	49.7	54	74	12.1	24.3

Test Mode Single Carrier (20 MHz)

Operating Frequency 5825 MHz (CH 165)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11650.279	H	34.4	45.5	3.5	37.9	49.0	54	74	16.1	25.0
11650.722	V	40.2	48.1	3.5	43.7	51.6	54	74	10.3	22.4

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

Frequency Range : Above 1 GHz

Test Mode Single Carrier (40 MHz)

Operating Frequency 5755 MHz (CH 151)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11509.977	H	37.2	45.6	3.3	40.5	48.9	54	74	13.5	25.1
11510.666	V	41.3	47.6	3.3	44.6	50.9	54	74	9.4	23.1

Test Mode Single Carrier (40 MHz)

Operating Frequency 5795 MHz (CH 159)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
11590.430	V	37.5	46.1	3.3	40.8	49.4	54	74	13.2	24.6
11590.640	H	35.6	45.0	3.3	38.9	48.3	54	74	15.1	25.7

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

Frequency Range : Above 1 GHz

Test Mode Contiguous Carriers (10+10 MHz)

Operating Frequency 5740+5750 MHz (CH 148+150)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (10+10 MHz)

Operating Frequency 5775+5785 MHz (CH 155+157)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (10+10 MHz)

Operating Frequency 5820+5830 MHz (CH 164+166)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

Frequency Range : Above 1 GHz

Test Mode Contiguous Carriers (20+20 MHz)

Operating Frequency 5745+5765 MHz (CH 149+153)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (20+20 MHz)

Operating Frequency 5765+5785 MHz (CH 153+157)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (20+20 MHz)

Operating Frequency 5805+5825 MHz (CH 161+165)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (20+40 MHz)

Operating Frequency 5765+5795 MHz (CH 153+159)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

Frequency Range : Above 1 GHz

Test Mode Contiguous Carriers (40+20 MHz)

Operating Frequency 5755+5785 MHz (CH 151+157)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (40+20 MHz)

Operating Frequency 5795+5825 MHz (CH 159+165)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Contiguous Carriers (40+40 MHz)

Operating Frequency 5755+5795 MHz (CH 151+159)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Note(s) :

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

Frequency Range : Above 1 GHz

Test Mode Non-Contiguous Carriers (10+10 MHz)

Operating Frequency 5740+5830 MHz (CH 148+166)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Non-Contiguous Carriers (20+20 MHz)

Operating Frequency 5745+5825 MHz (CH 149+165)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Non-Contiguous Carriers (20+40 MHz)

Operating Frequency 5745+5795 MHz (CH 149+159)

Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Test Mode Non-Contiguous Carriers (40+20 MHz)

Operating Frequency 5755+5825 MHz (CH 151+165)

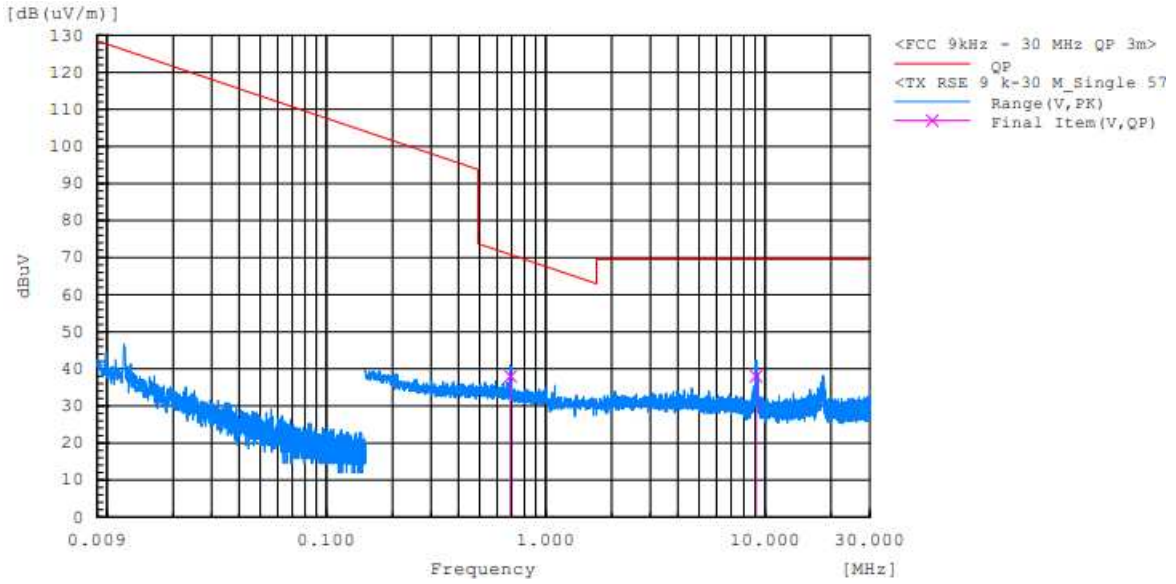
Frequency (MHz)	Polarization	Reading (dBuV)		Factor (dB)	Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		AV	PK	Corr.[1)]	AV	PK	AV	PK	AV	PK
No major peak found										

Note(s) :

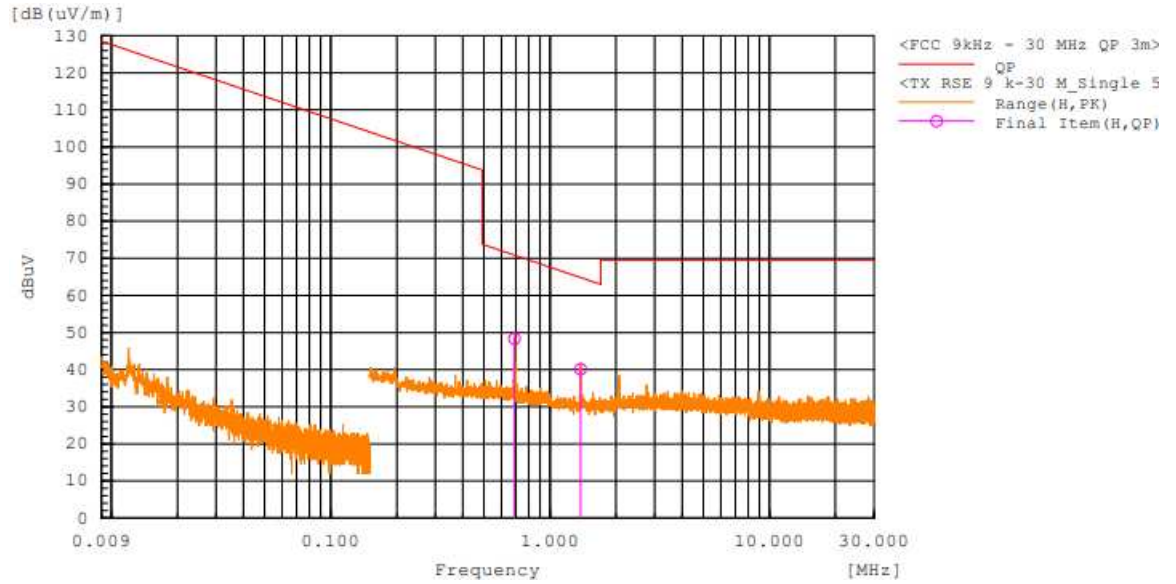
1. Correction Factor: Antenna Factor + Cable loss + Preamplifier Gain
2. AV Level = Measured Power(dBm) + Correction Factor(dB) + Duty Cycle Factor(dB).
   Since the EUT was set to transmit 100 % duty during the test, duty cycle correction factor was not applied.

▣ TEST PLOTS (With PoE Adapter #1)

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 90°) : Single Carrier 10 MHz (5775 MHz)

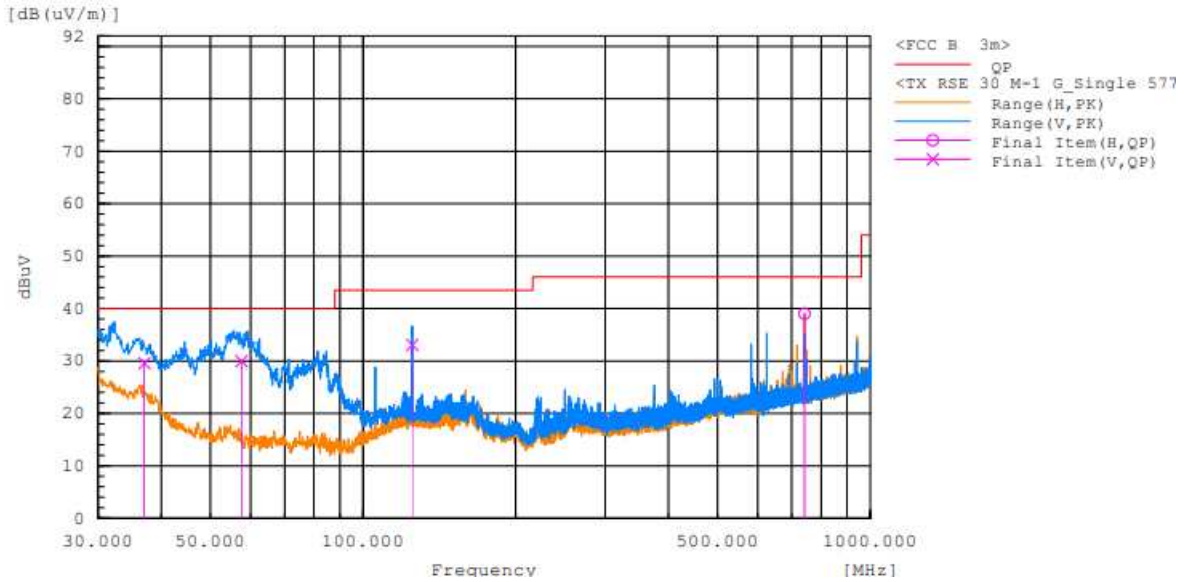


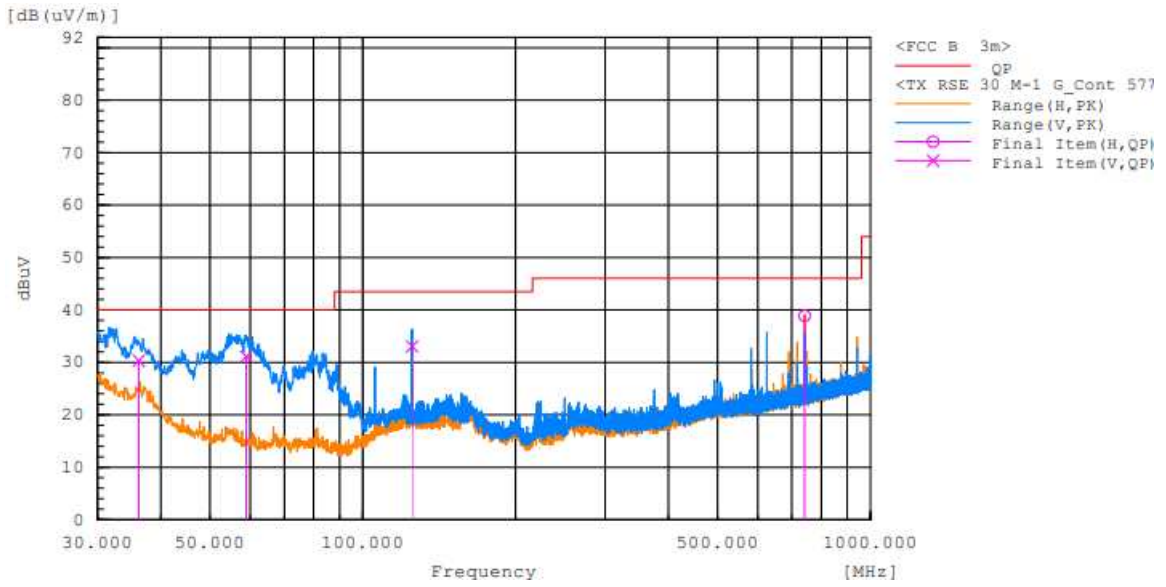
Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 180°) : Single Carrier 10 MHz (5775 MHz)



Note:
The worst-case plots are included in this report.

▣ TEST PLOTS (With PoE Adapter #1)

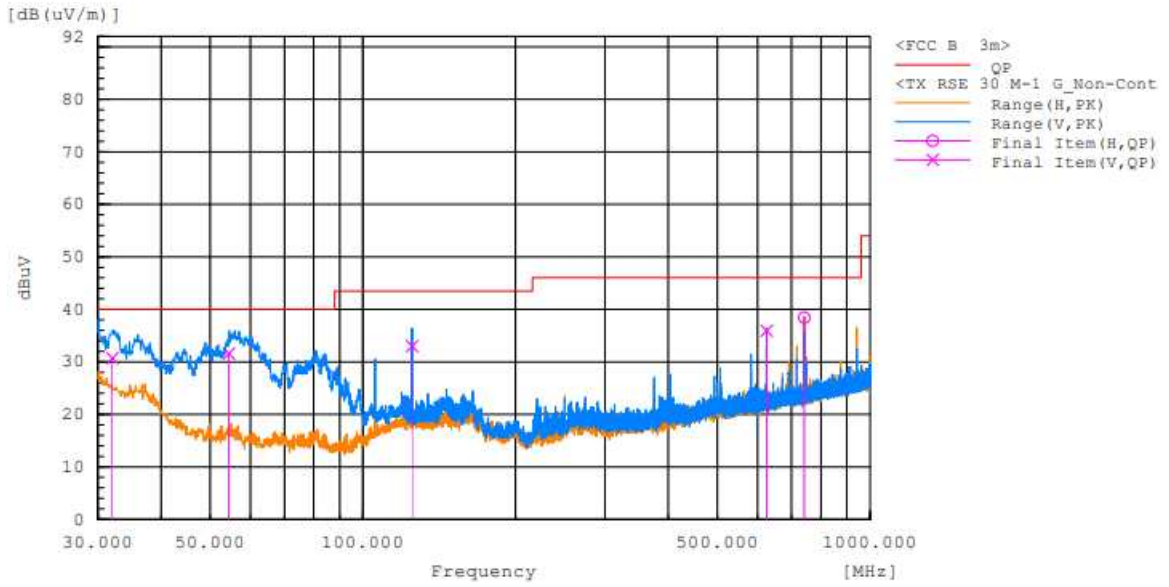
Radiated Spurious Emission 30 MHz – 1 GHz : Single Carrier 10 MHz (5775 MHz)


Radiated Spurious Emission 30 MHz – 1 GHz : Contiguous Carrier 10+10 MHz (5775+5785 MHz)


Note:
The worst-case plots are included in this report.

▣ TEST PLOTS (With PoE Adapter #1)

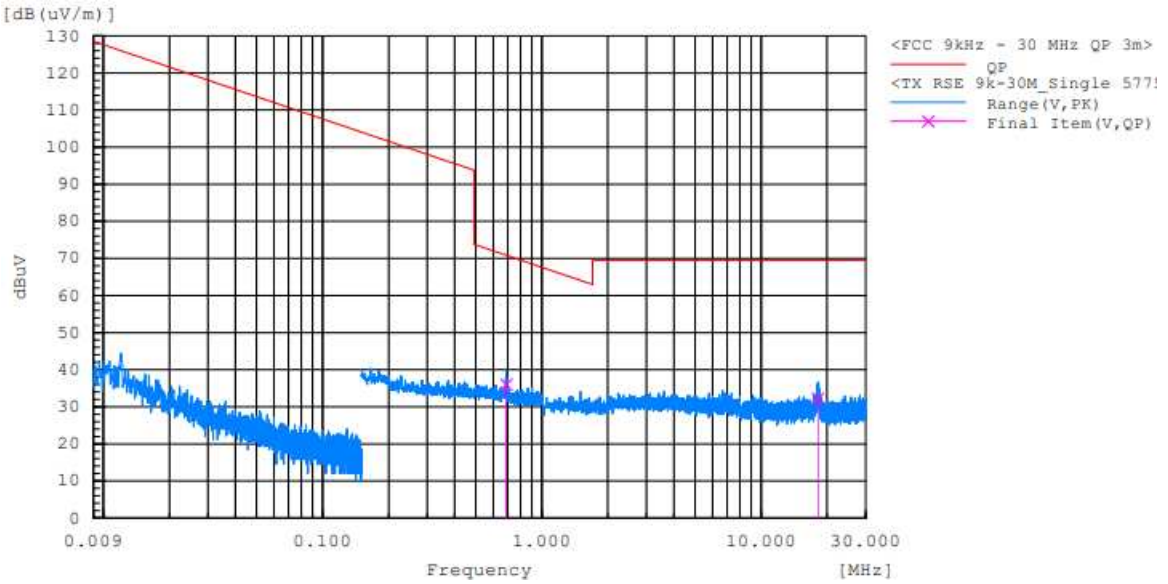
Radiated Spurious Emission 30 MHz – 1 GHz : Non-Contiguous Carrier 10+10 MHz (5740+5830 MHz)



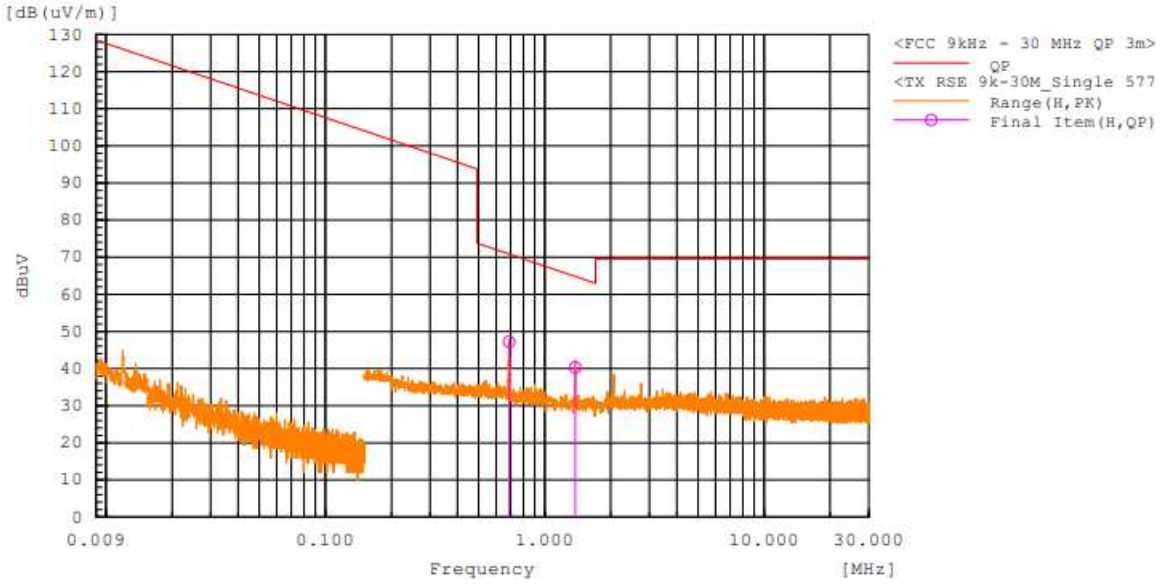
Note:
The worst-case plots are included in this report.

▣ TEST PLOTS (With PoE Adapter #2)

Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 90°) : Single Carrier 10 MHz (5775 MHz)



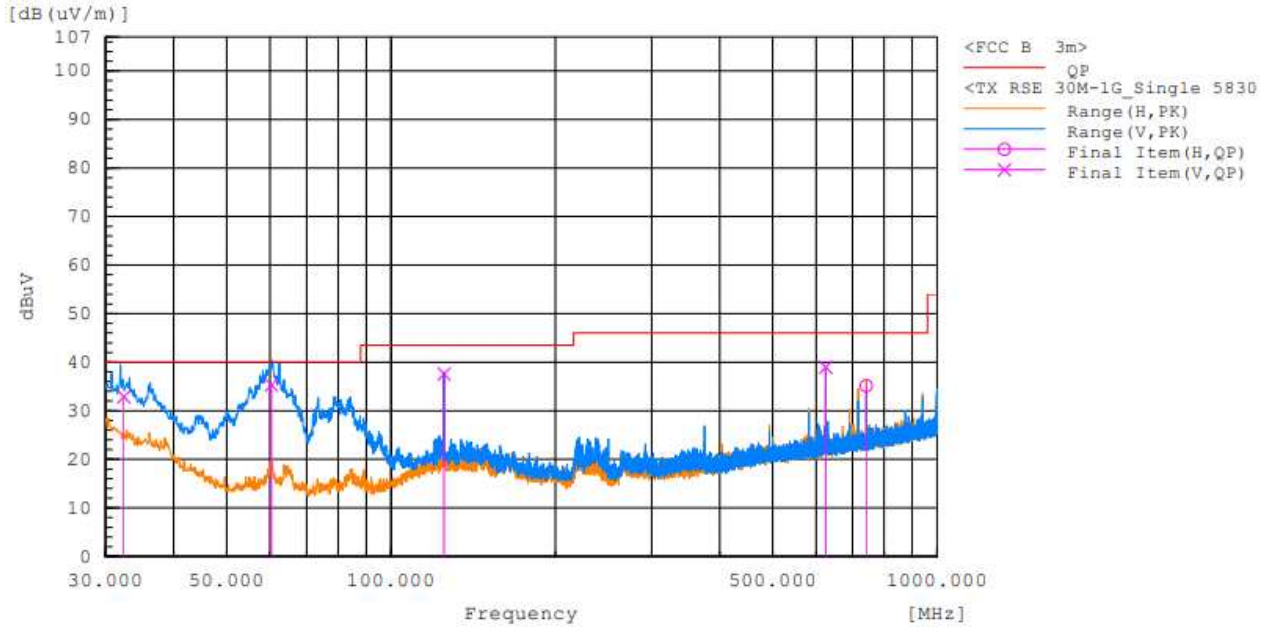
Radiated Spurious Emission 9 kHz – 30 MHz (Antenna Position 180°) : Single Carrier 10 MHz (5775 MHz)



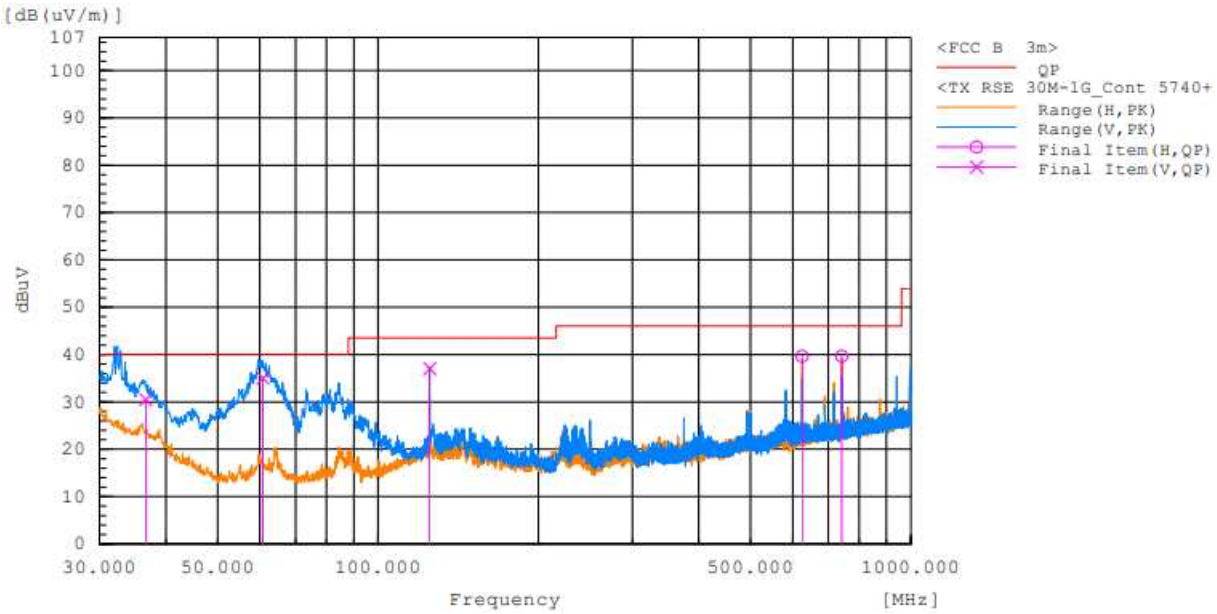
Note:
The worst-case plots are included in this report.

▣ TEST PLOTS (With PoE Adapter #2)

Radiated Spurious Emission 30 MHz – 1 GHz : Single Carrier 10 MHz (5830 MHz)



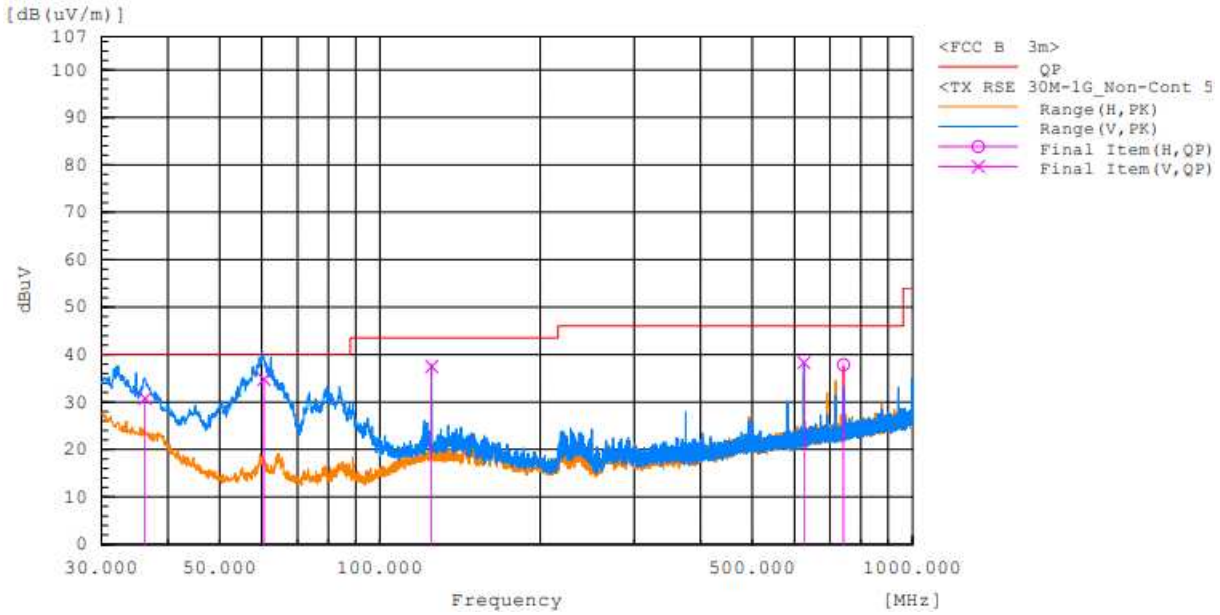
Radiated Spurious Emission 30 MHz – 1 GHz : Contiguous Carrier 10+10 MHz (5740+5750 MHz)



Note:
The worst-case plots are included in this report.

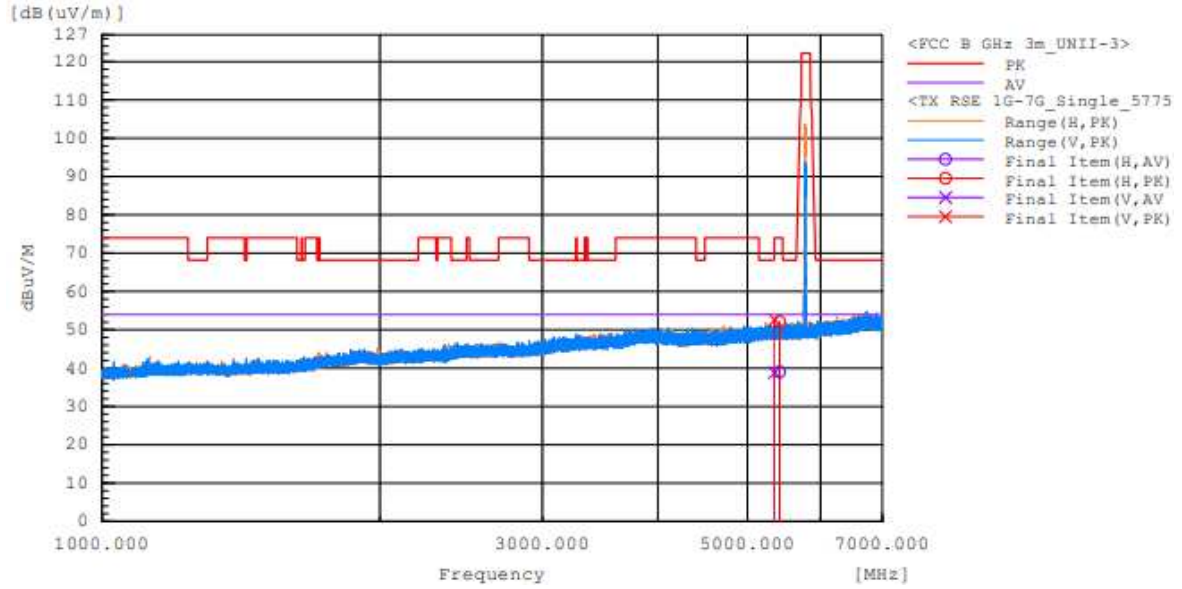
▣ TEST PLOTS (With PoE Adapter #2)

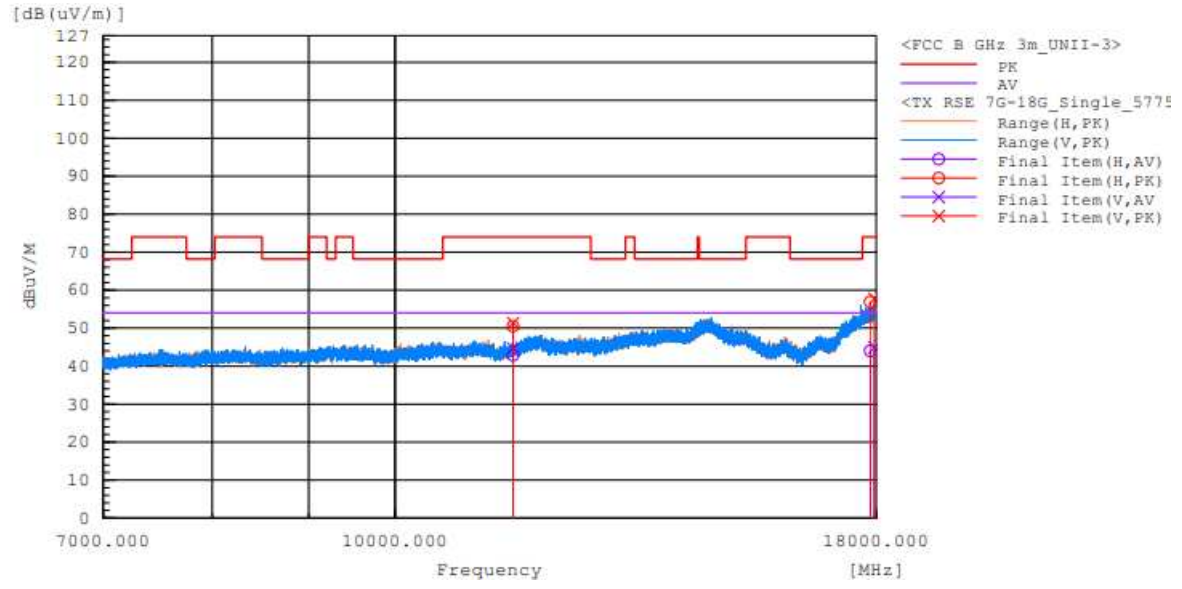
Radiated Spurious Emission 30 MHz – 1 GHz : Non-Contiguous Carrier 10+10 MHz (5740+5830 MHz)



Note:
The worst-case plots are included in this report.

▣ TEST PLOTS

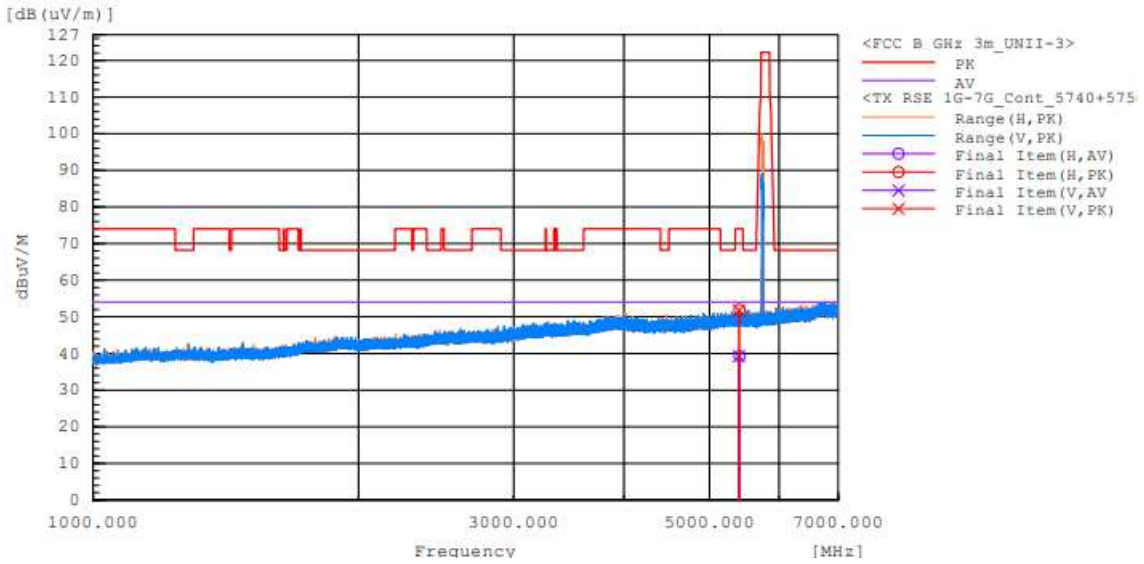
Radiated Spurious Emission 1 GHz - 7 GHz : Single Carrier 10 MHz (5775 MHz)


Radiated Spurious Emission 7 GHz - 18 GHz : Single Carrier 10 MHz (5775 MHz)


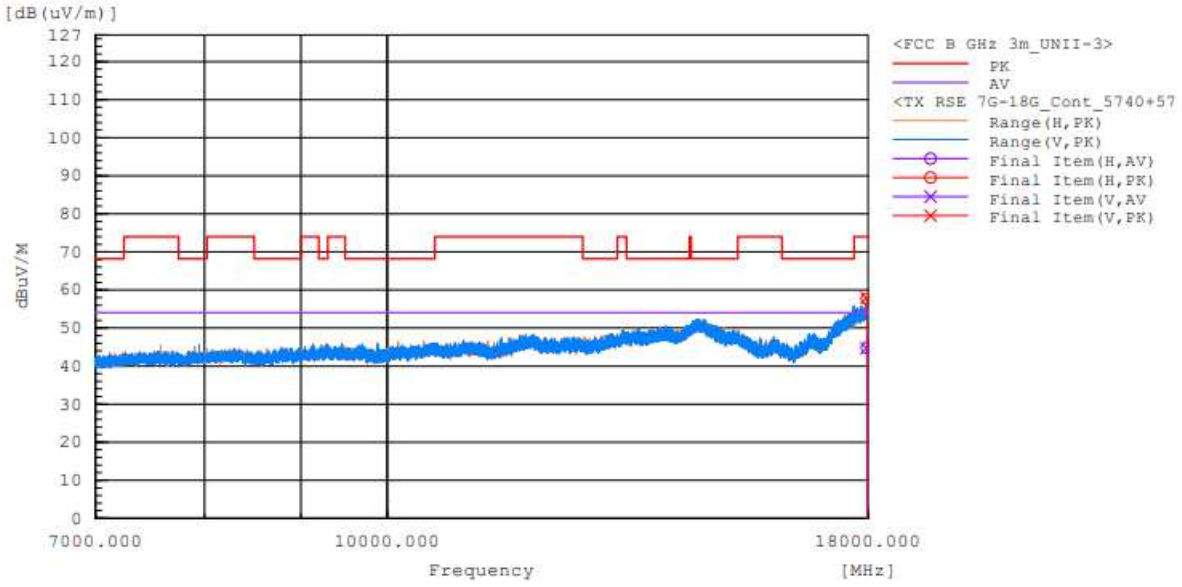
Note:
The worst-case plots are included in this report.

▣ TEST PLOTS

Radiated Spurious Emission 1 GHz - 7 GHz : Contiguous Carrier 10+10 MHz (5740+5750 MHz)



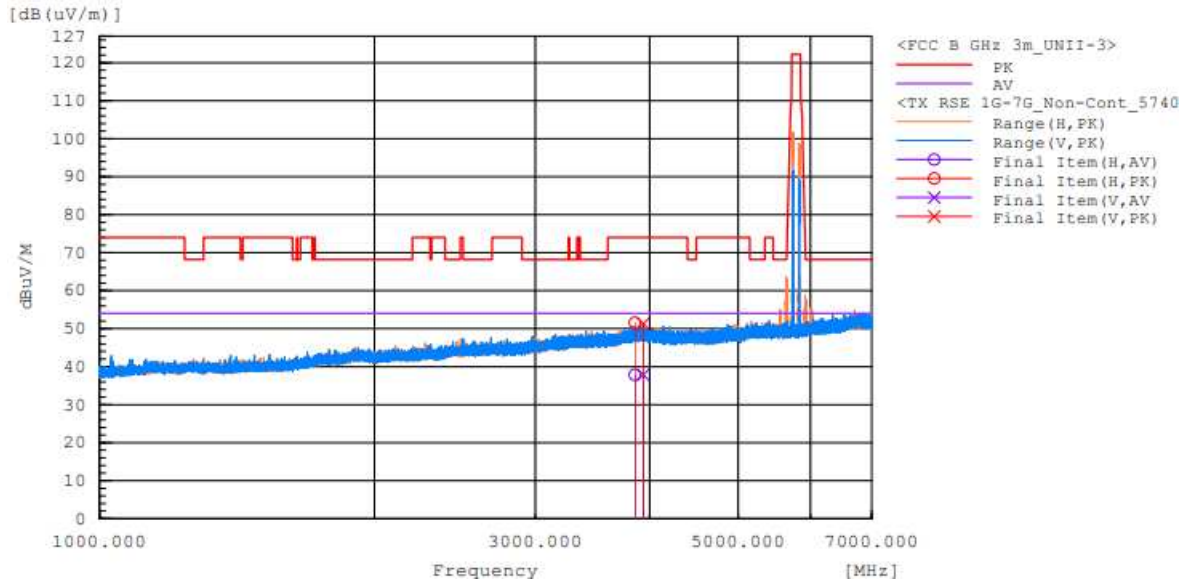
Radiated Spurious Emission 7 GHz - 18 GHz : Contiguous Carrier 10+10 MHz (5740+5750 MHz)



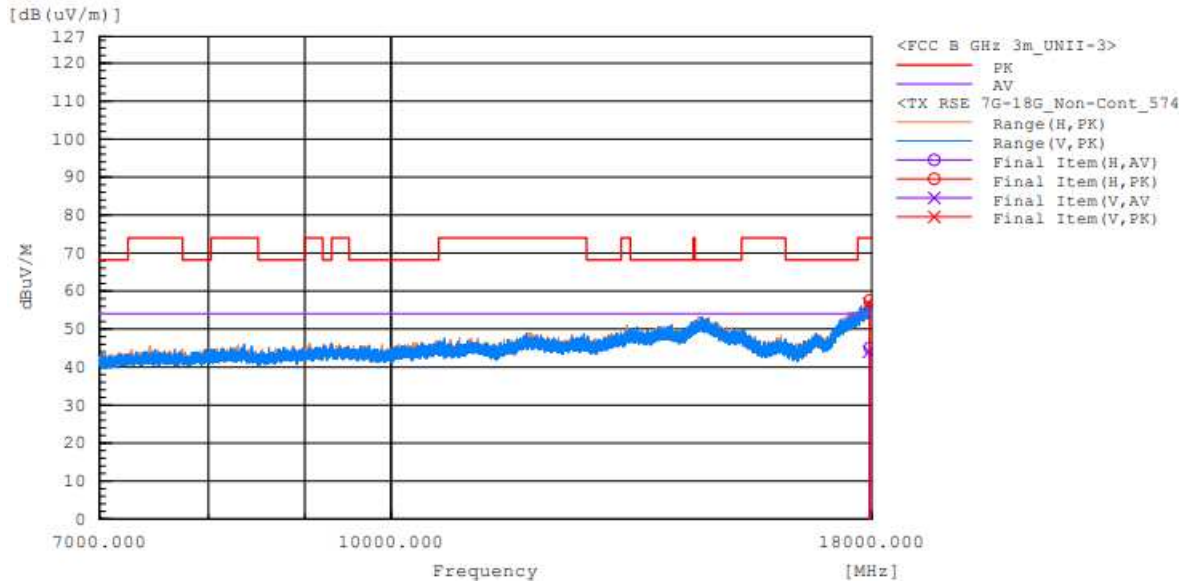
Note:
The worst-case plots are included in this report.

▣ TEST PLOTS

Radiated Spurious Emission 1 GHz - 7 GHz : Non-Contiguous Carrier 10+10 MHz (5740+5830 MHz)



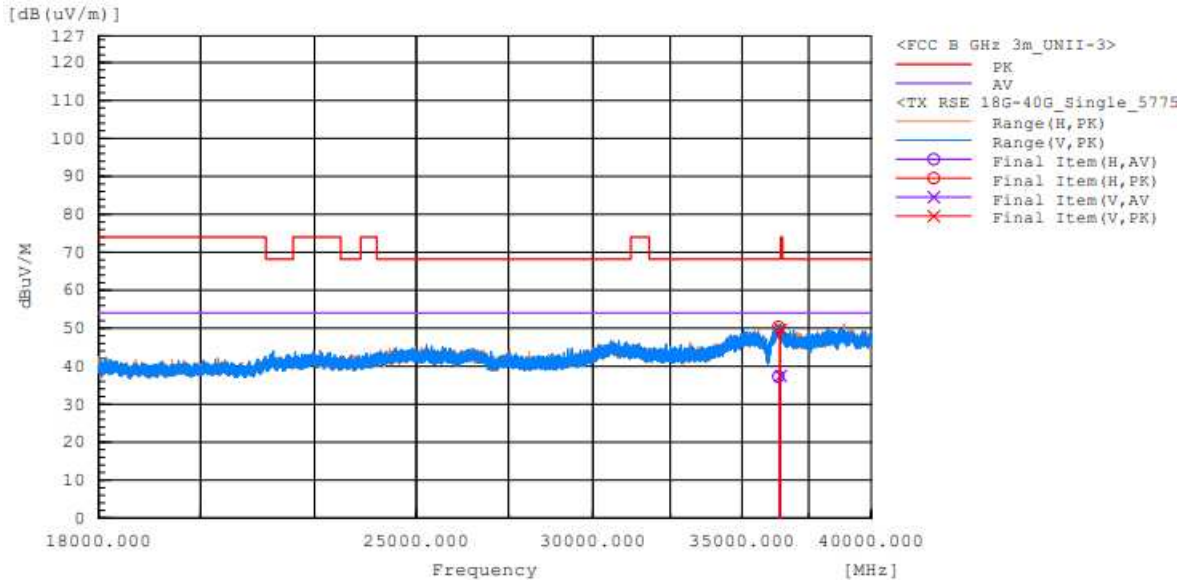
Radiated Spurious Emission 7 GHz - 18 GHz : Non-Contiguous Carrier 10+10 MHz (5740+5830 MHz)



Note:
The worst-case plots are included in this report.

▣ TEST PLOTS

Radiated Spurious Emission 18 GHz - 40 GHz : Single Carrier 10 MHz (5775 MHz)



Note:
The worst-case plots are included in this report.

9.7 RADIATED RESTRICTED BAND EDGES

Operating Frequency	5740 MHz
Channel No.	CH 148
Mode	Single Carrier (10 MHz)

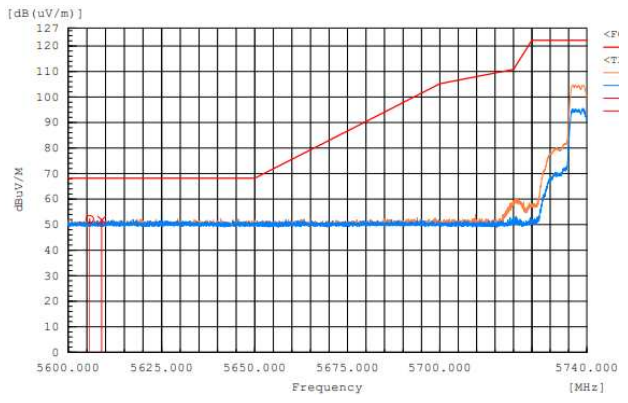
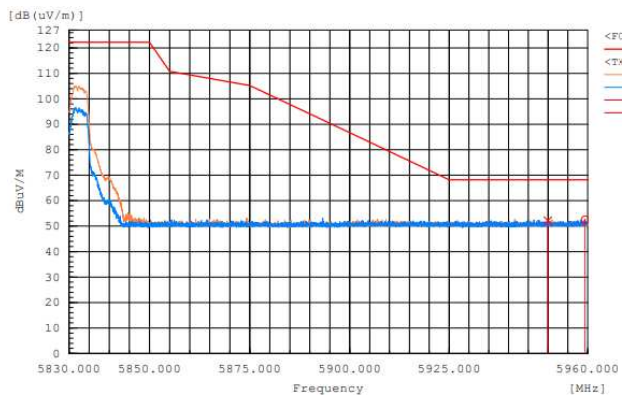
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5605.796	H	45.9	6.2	52.1	68.2	16.1
5608.932	V	45.6	6.2	51.8	68.2	16.4

Operating Frequency	5830 MHz
Channel No.	CH 166
Mode	Single Carrier (10 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5949.886	V	45.4	6.8	52.2	68.2	16.0
5959.350	H	45.7	6.8	52.5	68.2	15.7

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

Band Edges : Single (CH 148) – Low	Band Edges : Single (CH 166) – High
	

Operating Frequency	5745 MHz
Channel No.	CH 149
Mode	Single Carrier (20 MHz)

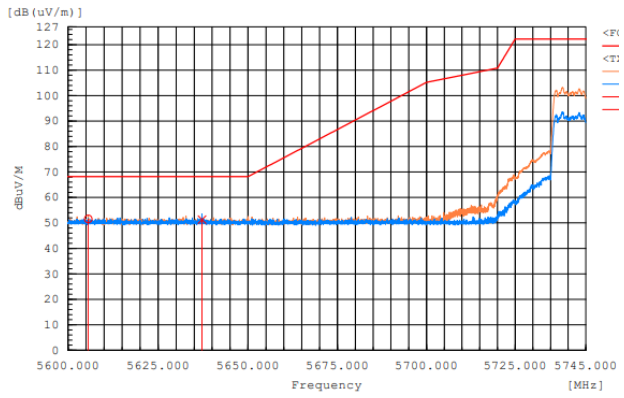
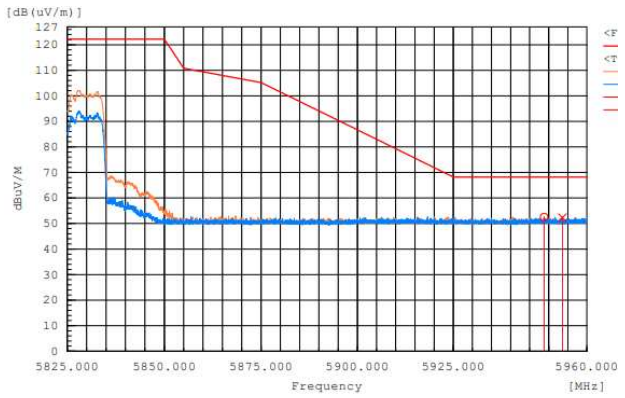
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5605.626	H	45.4	6.2	51.6	68.2	16.6
5637.178	V	45.2	6.1	51.3	68.2	16.9

Operating Frequency	5825 MHz
Channel No.	CH 165
Mode	Single Carrier (20 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5948.768	H	45.7	6.8	52.5	68.2	15.7
5953.574	V	45.5	6.8	52.3	68.2	15.9

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

Band Edges : Single (CH 149) – Low	Band Edges : Single (CH 165) – High
	

Operating Frequency	5755 MHz
Channel No.	CH 151
Mode	Single Carrier (40 MHz)

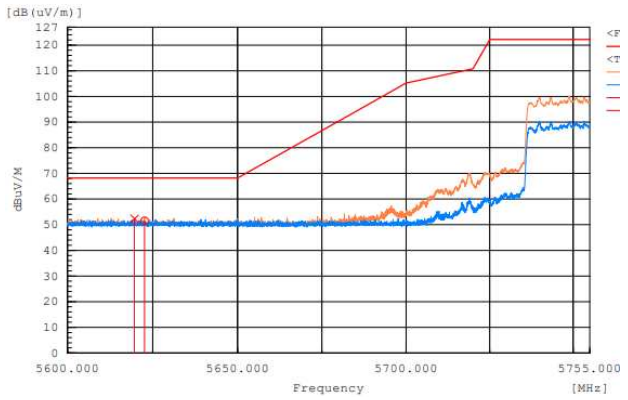
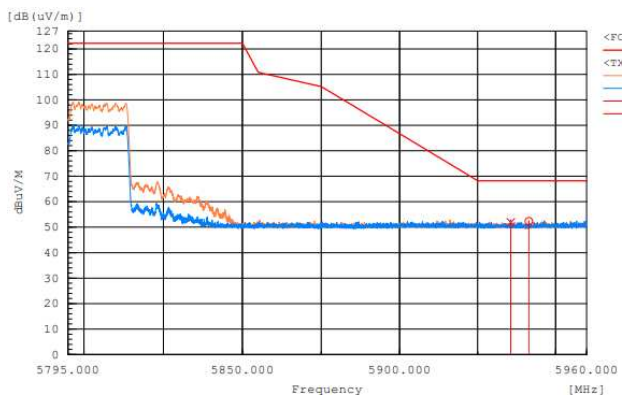
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5619.654	V	46.2	6.1	52.3	68.2	15.9
5622.599	H	45.4	6.1	51.5	68.2	16.7

Operating Frequency	5795 MHz
Channel No.	CH 159
Mode	Single Carrier (40 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5935.580	V	45.2	6.7	51.9	68.2	16.3
5941.355	H	45.6	6.7	52.3	68.2	15.9

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

Band Edges : Single (CH 151) – Low	Band Edges : Single (CH 159) – High
	

Operating Frequency	5740+5750 MHz
Channel No.	CH 148+150
Mode	Contiguous Carriers (10+10 MHz)

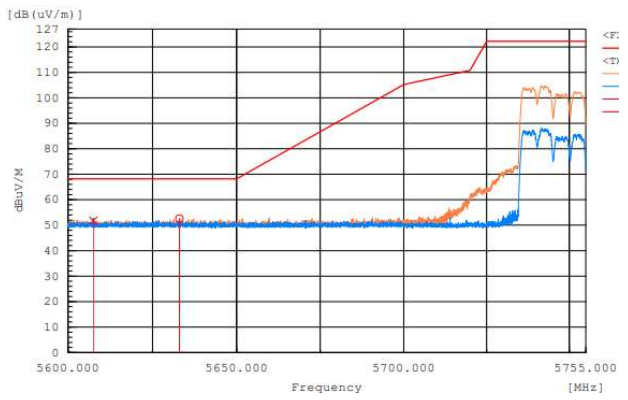
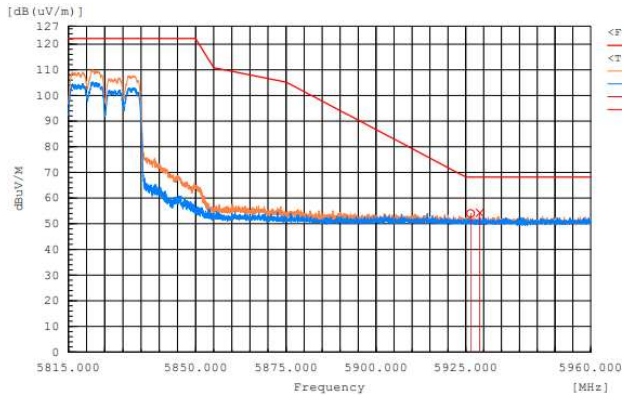
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5607.471	V	45.6	6.2	51.8	68.2	16.4
5632.984	H	46.5	6.1	52.6	68.2	15.6

Operating Frequency	5820+5830 MHz
Channel No.	CH 164+166
Mode	Contiguous Carriers (10+10 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5926.331	H	47.3	6.7	54.0	68.2	14.2
5928.941	V	47.6	6.7	54.3	68.2	13.9

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

Band Edges : Contiguous (CH 148+150) - Low	Band Edges : Contiguous (CH 164+166) - High
	

Operating Frequency	5745+5765 MHz
Channel No.	CH 149+153
Mode	Contiguous Carriers (20+20 MHz)

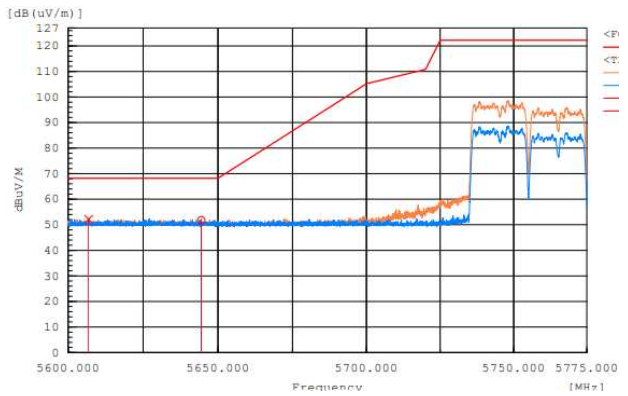
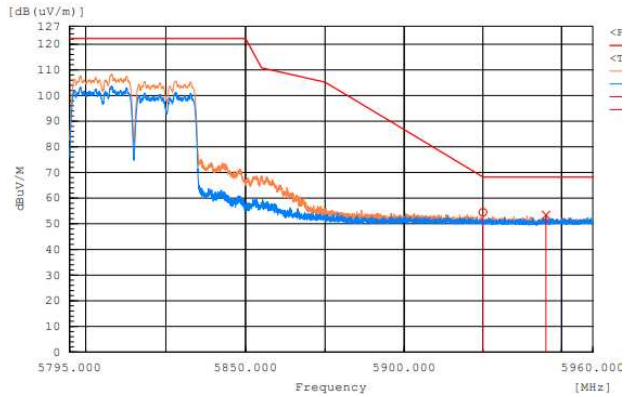
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5606.825	V	46.0	6.2	52.2	68.2	16.0
5644.415	H	45.6	6.1	51.7	68.2	16.5

Operating Frequency	5805+5825 MHz
Channel No.	CH 161+165
Mode	Contiguous Carriers (20+20 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5924.954	H	47.8	6.7	54.5	68.2	13.7
5945.018	V	46.7	6.8	53.5	68.2	14.7

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

Band Edges : Contiguous (CH 149+153) - Low	Band Edges : Contiguous (CH 161+165) - High
	

Operating Frequency	5755+5785 MHz
Channel No.	CH 151+157
Mode	Contiguous Carriers (40+20 MHz)

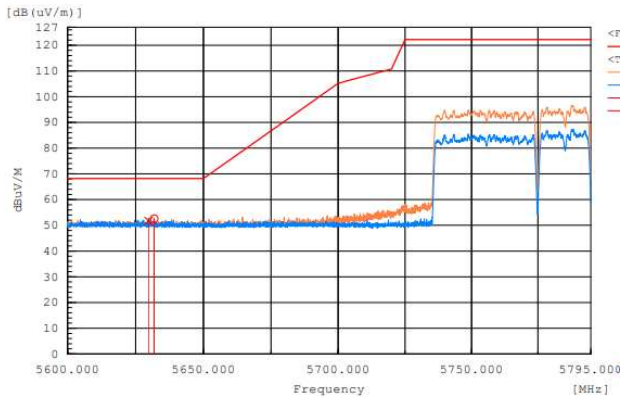
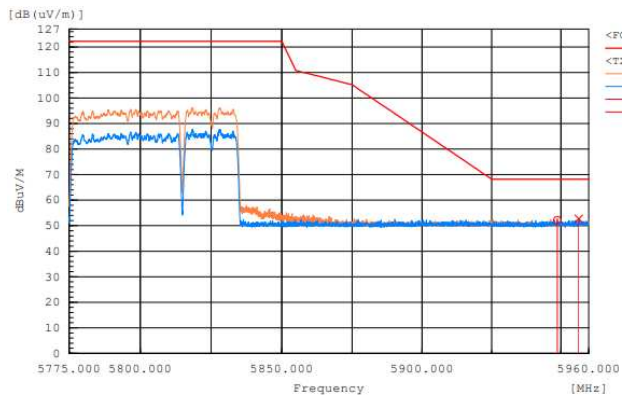
Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5629.718	V	45.6	6.1	51.7	68.2	16.5
5631.785	H	46.5	6.1	52.6	68.2	15.6

Operating Frequency	5795+5825 MHz
Channel No.	CH 159+165
Mode	Contiguous Carriers (40+20 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5948.678	H	45.3	6.8	52.1	68.2	16.1
5956.374	V	45.9	6.8	52.7	68.2	15.5

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

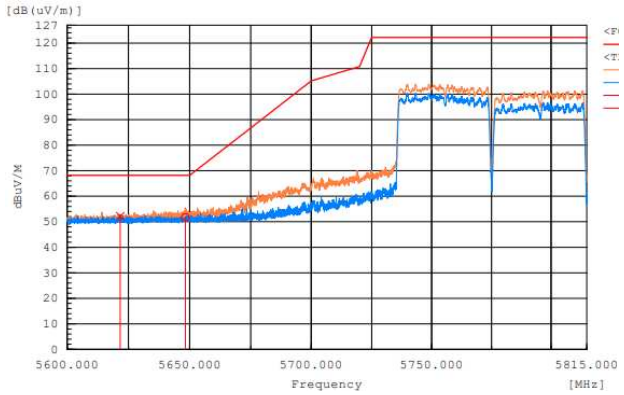
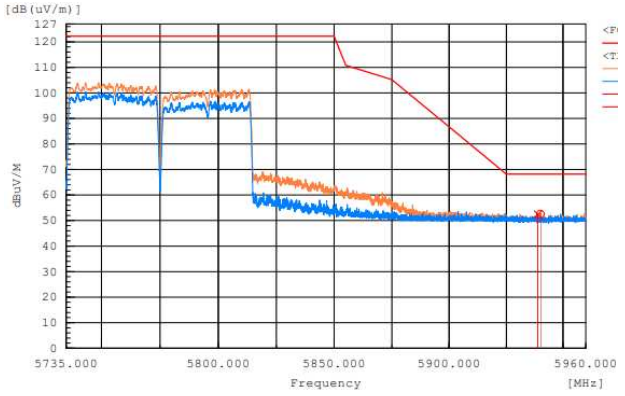
Band Edges : Contiguous (CH 151+157) - Low	Band Edges : Contiguous (CH 159+165) - High
	

Operating Frequency	5755+5795 MHz
Channel No.	CH 151+159
Mode	Contiguous Carriers (40+40 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5621.600	V	46.1	6.1	52.2	68.2	16.0
5648.204	H	45.6	6.1	51.7	68.2	16.5
5938.868	V	45.7	6.7	52.4	68.2	15.8
5940.020	H	45.8	6.7	52.5	68.2	15.7

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

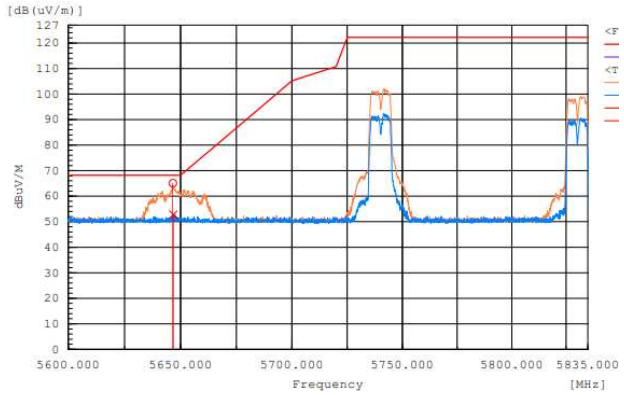
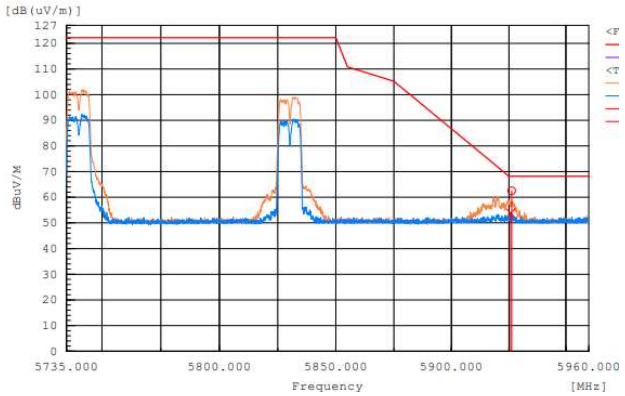
Band Edges : Contiguous (CH 151+159) - Low	Band Edges : Contiguous (CH 151+159) - High
	

Operating Frequency	5740+5830 MHz
Channel No.	CH 148+166
Mode	Non-Contiguous Carriers (10+10 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5646.576	H	59.0	6.1	65.1	68.20	3.1
5646.656	V	46.7	6.1	52.8	68.20	15.4
5925.800	V	47.2	6.7	53.9	68.20	14.3
5926.249	H	55.8	6.7	62.5	68.20	5.7

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

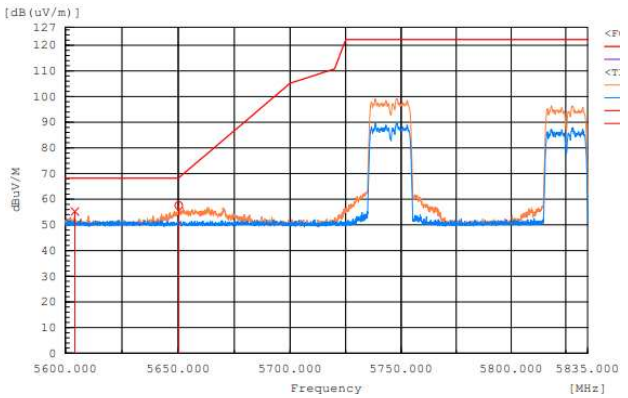
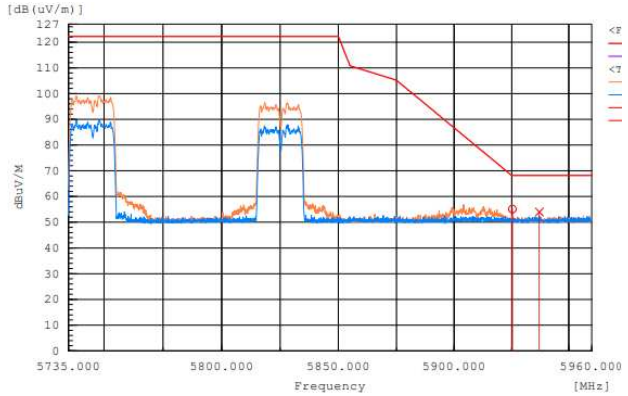
Band Edges : Non-Contiguous (CH 148+166) - Low	Band Edges : Non-Contiguous (CH 148+166) - High
	

Operating Frequency	5745+5825 MHz
Channel No.	CH 149+165
Mode	Non-Contiguous Carriers (20+20 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5604.176	V	49.0	6.2	55.2	68.20	13.0
5650.256	H	51.5	6.1	57.6	68.40	10.8
5925.368	H	48.4	6.7	55.1	68.20	13.1
5937.104	V	47.3	6.7	54.0	68.20	14.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

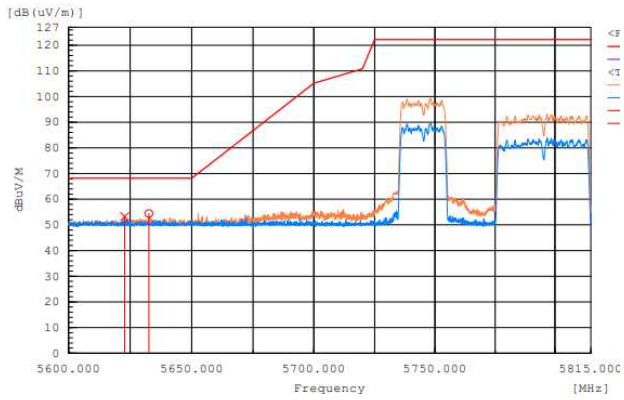
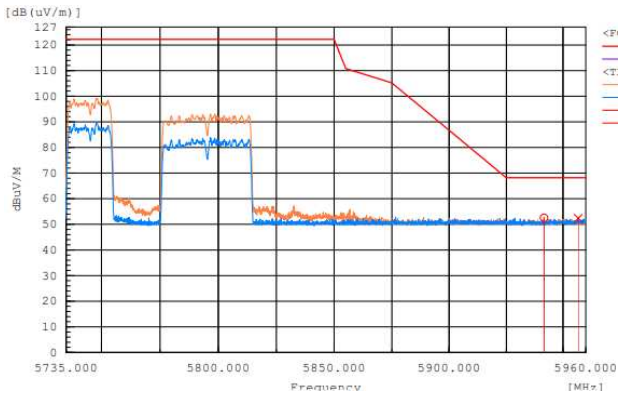
Band Edges : Non-Contiguous (CH 149+165) - Low	Band Edges : Non-Contiguous (CH 149+165) - High
	

Operating Frequency	5745+5795 MHz
Channel No.	CH 149+159
Mode	Non-Contiguous Carriers (20+40 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5622.752	V	47.2	6.1	53.3	68.20	14.9
5632.544	H	48.3	6.1	54.4	68.20	13.8
5941.640	H	45.8	6.7	52.5	68.20	15.7
5956.688	V	45.6	6.8	52.4	68.20	15.8

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

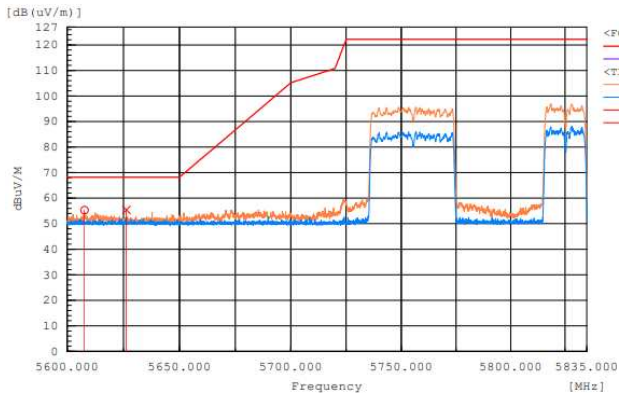
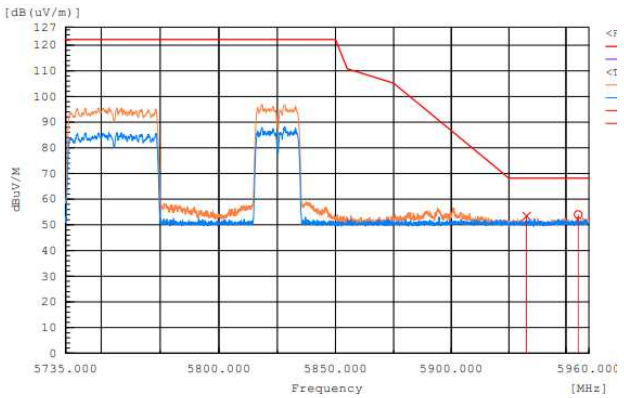
Band Edges : Non-Contiguous (CH 149+159) - Low	Band Edges : Non-Contiguous (CH 149+159) - High
	

Operating Frequency	5755+5825 MHz
Channel No.	CH 151+165
Mode	Non-Contiguous Carriers (40+20 MHz)

Frequency (MHz)	Polarization	Reading (dBuV)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
		PK	Corr.[1)]	PK	PK	PK
5607.704	H	49.1	6.2	55.3	68.20	12.9
5626.352	V	49.3	6.1	55.4	68.20	12.8
5932.784	V	46.8	6.7	53.5	68.20	14.7
5955.248	H	47.2	6.8	54.0	68.20	14.2

Notes:
1. Correction Factor: Antenna Factor + Cable loss

▣ TEST PLOTS

Band Edges : Non-Contiguous (CH 151+165) - Low	Band Edges : Non-Contiguous (CH 151+165) - High
	

9.8 RECEIVER SPURIOUS EMISSIONS

Frequency Range : Below 1 GHz (With PoE Adapter #1)

Test Mode: Non-Contiguous Carriers (10+10 MHz)

Operating Frequency: 5740+5830 MHz (CH 148+166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
35.603	V	43.3	-13.2	30.1	40	9.9	QP
55.896	V	53.3	-22.5	30.8	40	9.2	QP
124.987	V	48.7	-15.6	33.1	43.5	10.4	QP
741.994	H	46.0	-7.0	39.0	46	7.0	QP

Frequency Range : Below 1 GHz (With PoE Adapter #2)

Test Mode: Non-Contiguous Carriers (10+10 MHz)

Operating Frequency: 5740+5830 MHz (CH 148+166)

Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
36.493	V	44.2	-13.7	30.5	40	9.5	QP
60.038	V	56.9	-22.3	34.6	40	5.4	QP
125.005	V	53.0	-15.6	37.4	43.5	6.1	QP
625.013	V	47.9	-8.8	39.1	46	6.9	QP
741.972	H	42.4	-7	35.4	46	10.6	QP

Frequency Range : Above 1 GHz

Test Mode: Non-Contiguous Carriers (10+10 MHz)

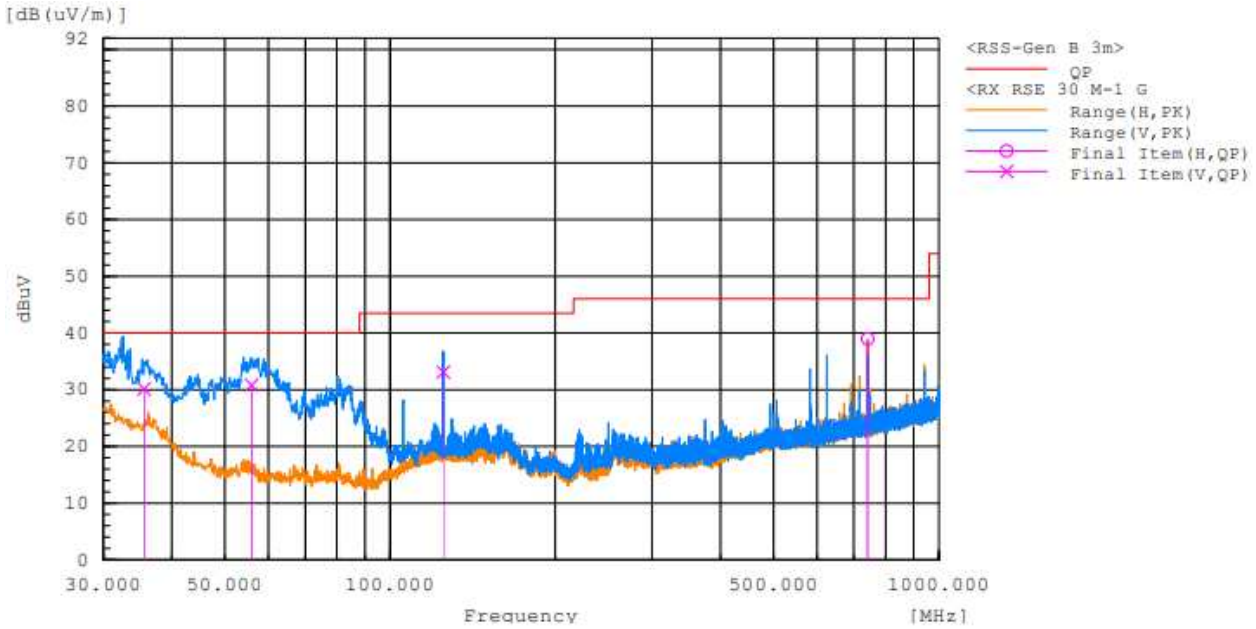
Operating Frequency: 5740+5830 MHz (CH 148+166)

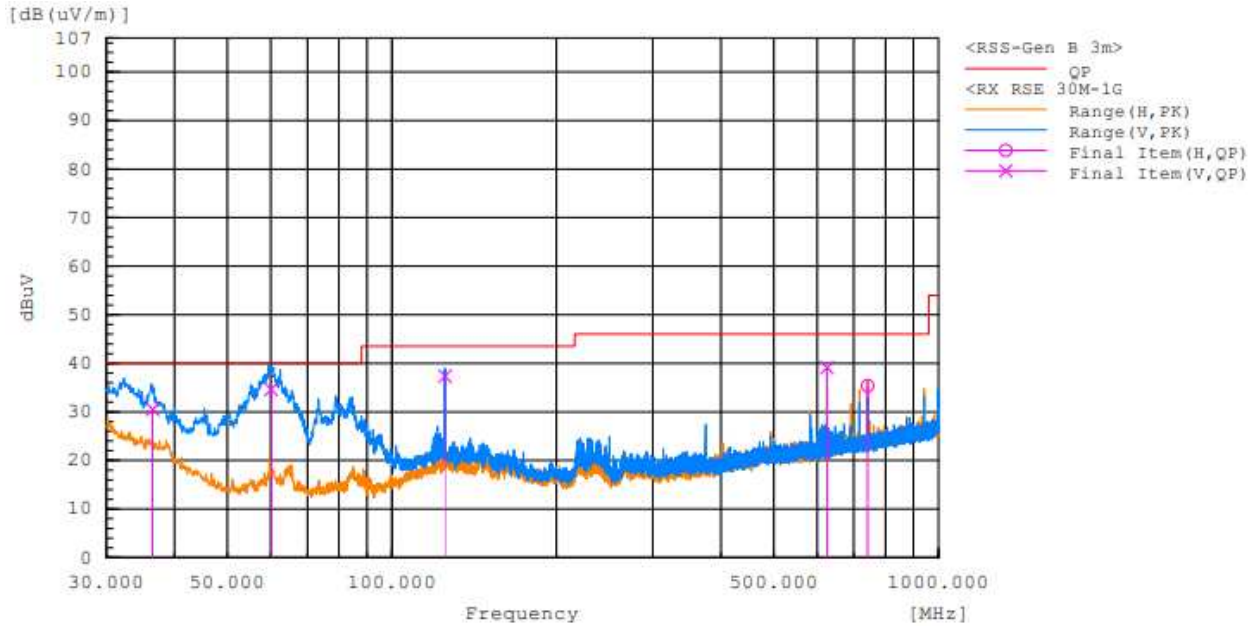
Frequency (MHz)	Polarization	Reading (dBuV)	Corr. [1] (dB)	Total (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Measurement Type
No major peak found							

Note:

1. Correction Factor: Antenna Factor + Cable loss + Preamplifier

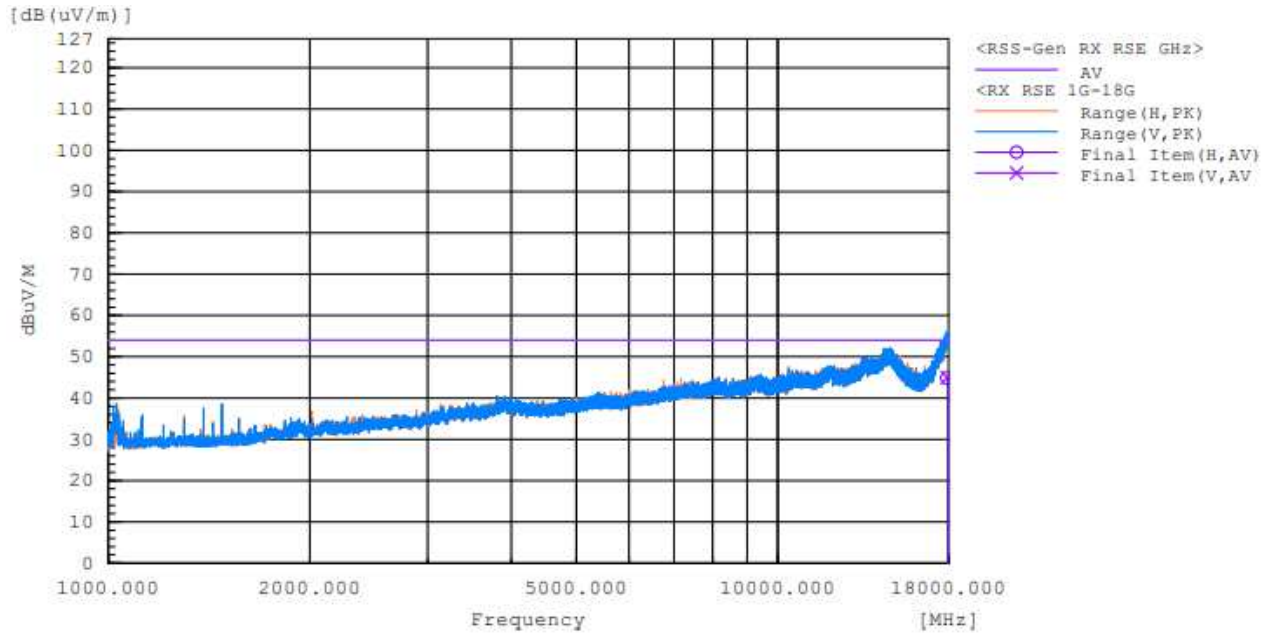
▣ TEST PLOTS

Radiated Receiver Spurious Emission 30 MHz - 1 GHz : Non-Contiguous Carriers 10+10 MHz (5740+5830 MHz) with PoE Adapter #1


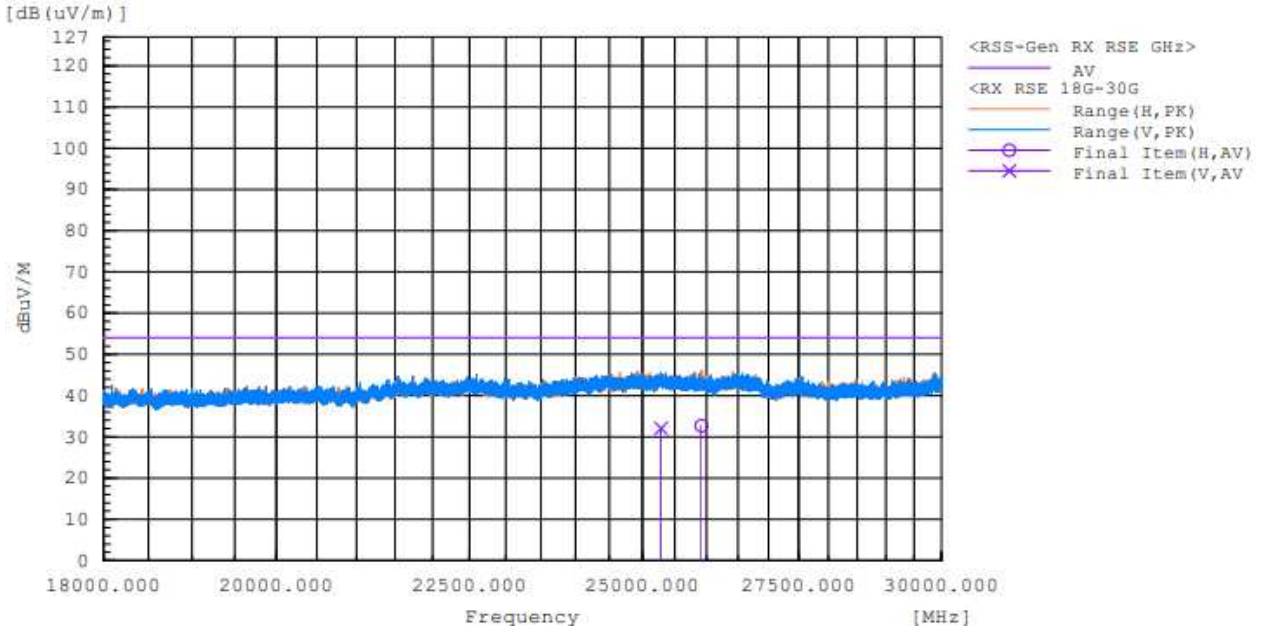
Radiated Receiver Spurious Emission 30 MHz - 1 GHz : Non-Contiguous Carriers 10+10 MHz (5740+5830 MHz) with PoE Adapter #2


▣ TEST PLOTS

Radiated Receiver Spurious Emission 1 GHz - 18 GHz : Non-Contiguous Carriers 10+10 MHz (5740+5830 MHz)



Radiated Receiver Spurious Emission 18 GHz - 30 GHz : Non-Contiguous Carriers 10+10 MHz (5740+5830 MHz)



9.9 POWERLINE CONDUCTED EMISSIONS

PoE Adapter #1

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.190	L1	43.7	36.0	9.7	53.4	45.7	64	54	10.6	8.3
0.266	L1	43.2	33.5	9.7	52.9	43.2	61.2	51.2	8.3	8.0
0.335	L1	40.0	29.3	9.7	49.7	39.0	59.3	49.3	9.6	10.3
0.377	L1	45.7	35.8	9.7	55.4	45.5	58.3	48.3	2.9	2.8
0.465	L1	41.8	30.7	9.6	51.4	40.3	56.6	46.6	5.2	6.3
0.500	L1	44.5	31.1	9.6	54.1	40.7	56	46	1.9	5.3
0.585	L1	40.0	31.5	9.6	49.6	41.1	56	46	6.4	4.9
0.768	L1	37.9	27.7	9.7	47.6	37.4	56	46	8.4	8.6
0.972	L1	36.2	26.9	9.8	46.0	36.7	56	46	10.0	9.3
1.186	L1	37.9	25.3	9.8	47.7	35.1	56	46	8.3	10.9
4.742	L1	40.3	30.0	9.8	50.1	39.8	56	46	5.9	6.2
7.722	L1	40.8	32.4	10.0	50.8	42.4	60	50	9.2	7.6

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.192	N	44.9	37.6	9.7	54.6	47.3	64	54	9.4	6.7
0.263	N	44.2	36.7	9.7	53.9	46.4	61.3	51.3	7.4	4.9
0.376	N	46.2	35.8	9.7	55.9	45.5	58.4	48.4	2.5	2.9
0.334	N	40.7	30.3	9.7	50.4	40.0	59.4	49.4	9.0	9.4
0.466	N	42.0	30.2	9.6	51.6	39.8	56.6	46.6	5.0	6.8
0.499	N	44.9	30.9	9.6	54.5	40.5	56	46	1.5	5.5
0.583	N	40.7	32.0	9.6	50.3	41.6	56	46	5.7	4.4
0.776	N	38.0	29.4	9.7	47.7	39.1	56	46	8.3	6.9
0.934	N	37.7	22.8	9.7	47.4	32.5	56	46	8.6	13.5
1.186	N	38.3	25.8	9.7	48.0	35.5	56	46	8.0	10.5
4.566	N	39.0	28.8	9.8	48.8	38.6	56	46	7.2	7.4
7.331	N	39.8	31.8	9.9	49.7	41.7	60	50	10.3	8.3

Note : Quasi-peak(Final Result) = Reading Value + Correction Factor

PoE Adapter #2

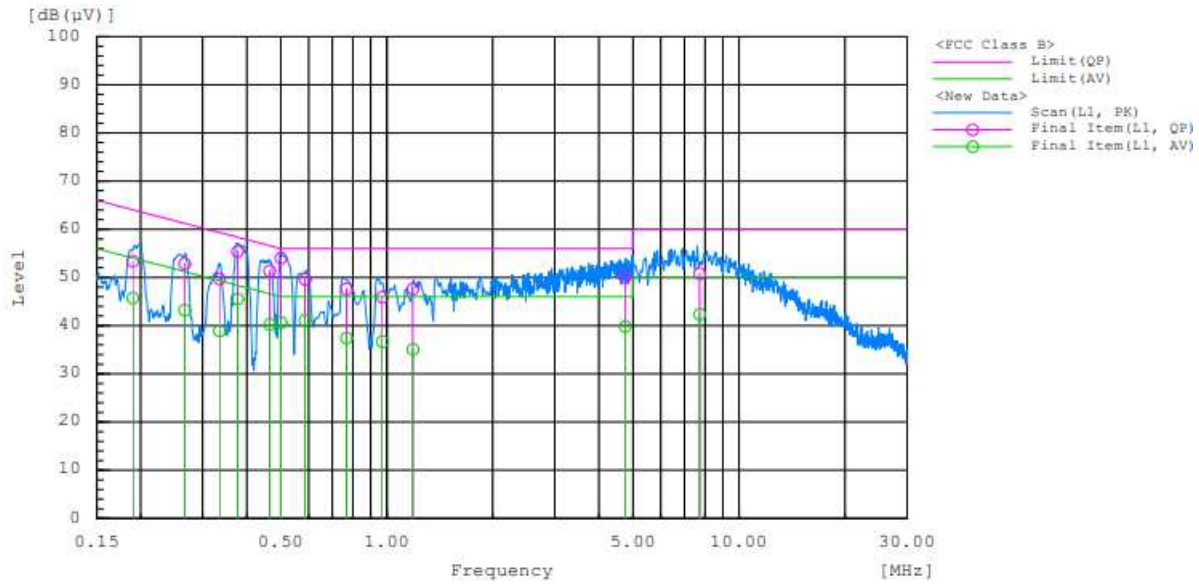
Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.150	L1	46.4	33.6	9.7	56.1	43.3	66	56	9.9	12.7
0.195	L1	40.3	27.7	9.7	50.0	37.4	63.8	53.8	13.8	16.4
0.499	L1	34.3	22.2	9.6	43.9	31.8	56	46	12.1	14.2
0.578	L1	35.8	25.5	9.6	45.4	35.1	56	46	10.6	10.9
2.900	L1	29.1	20.5	9.8	38.9	30.3	56	46	17.1	15.7
11.775	L1	27.6	21.8	10.1	37.7	31.9	60	50	22.3	18.1

Frequency (MHz)	Line	Reading (dBµV)		Corr. (dB)	Level (dBµV)		Limit (dBµV)		Margin (dB)	
		QP	CAV		QP	CAV	QP	CAV	QP	CAV
0.150	N	47.3	34.2	9.7	57.0	43.9	66	56	9.0	12.1
0.192	N	40.8	25.7	9.7	50.5	35.4	63.9	53.9	13.4	18.5
0.498	N	33.9	22.0	9.6	43.5	31.6	56	46	12.5	14.4
0.581	N	34.9	26.4	9.6	44.5	36.0	56	46	11.5	10.0
2.544	N	28.5	20.9	9.7	38.2	30.6	56	46	17.8	15.4
11.773	N	28.8	22.8	10.1	38.9	32.9	60	50	21.1	17.1

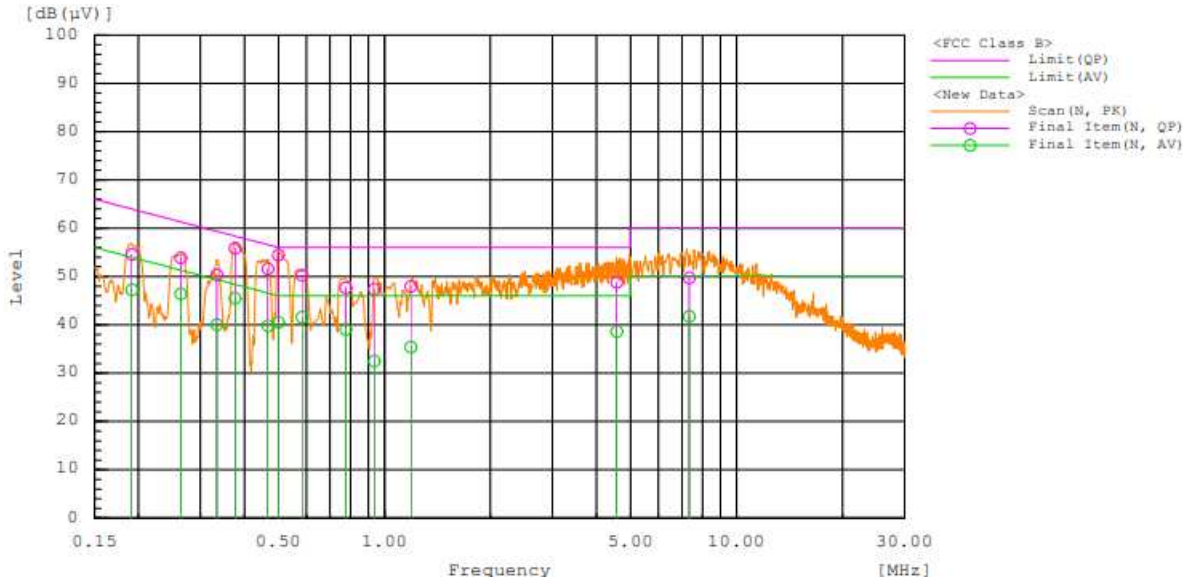
Note : Quasi-peak(Final Result) = Reading Value + Correction Factor

▣ TEST PLOTS

PoE Adapter #1 : AC Line Conducted Emission (L1)

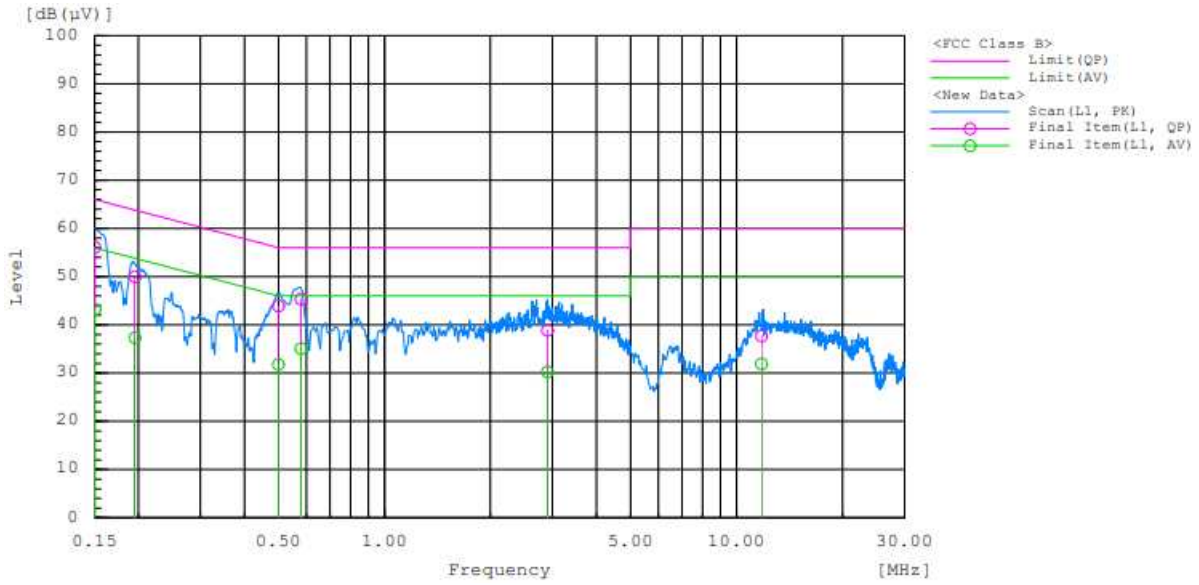


PoE Adapter #1 : AC Line Conducted Emission (N)

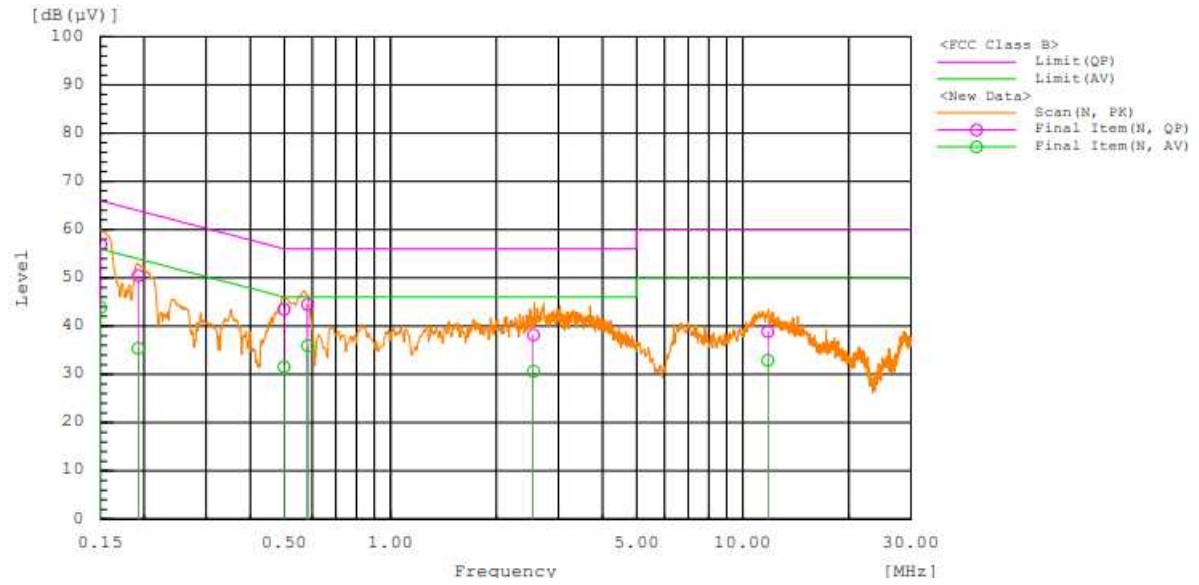


▣ TEST PLOTS

PoE Adapter #2 : AC Line Conducted Emission (L1)



PoE Adapter #2 : AC Line Conducted Emission (N)



10. LIST OF TEST EQUIPMENT

No.	Instrument	Model No.	Calibration Due (mm/dd/yy)	Manufacture	Serial No.
☒	Signal Analyzer (20 Hz ~ 40.0 GHz)	ESU40	12/03/2022	Rohde & Schwarz	100529
☒	Signal Analyzer (10 Hz ~ 40.0 GHz)	ESW44	10/25/2022	Rohde & Schwarz	102015
☒	Signal Analyzer (10 Hz ~ 26.5 GHz)	N9020A	11/04/2022	Keysight	MY52091291
☐	Attenuator (20 dB, DC ~ 26.5 GHz)	CFADC262002	01/13/2023	CERNEX	-
☒	Attenuator (10 dB, DC ~ 26.5 GHz)	CFADC261002	01/13/2023	CERNEX	-
☒	Loop Antenna (0.009 ~ 30 MHz)	HLA 6121	09/15/2023	TESEQ	43964
☒	BI-LOG Antenna (30 MHz ~ 6 GHz)	JB6	10/26/2022	Sunol	A071116
☒	LNA (30 MHz ~ 1GHz)	PAM-103	04/14/2023	Com-Power	18020254
☒	Horn Antenna (1 GHz ~ 18 GHz)	DRH-118	10/21/2022	Sunol	A070516
☒	LNA (1 GHz ~ 18 GHz)	PAM-118A	06/21/2023	Com-Power	18040074
☒	Horn Antenna (18 GHz ~ 40 GHz)	DRH-1840	02/16/2023	Sunol	17121
☒	LNA (18 GHz ~ 40 GHz)	CBL18405045-01	02/10/2023	CERNEX, Inc.	27973
☐	High Pass Filter	WHK10-2520-3000-18000-40EF	01/13/2023	Wainwright	9
☒	High Pass Filter	WHKX8-6090-7000-18000-40SS	01/13/2023	Wainwright	23
☒	EMI Test Receiver	ESR3	12/03/2022	Rohde & Schwarz	102363
☒	LISN	ENV216	01/19/2023	Rohde & Schwarz	101349
☒	DC Power Supply	6030A	01/19/2023	HP	2482A-01331
☒	Temperature/Humidity Chamber	92002929	06/14/2023	ESPEC	92002929

Note(s) :

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

APPENDIX A. TEST SETUP PHOTOS

The setup photos are provided as a separate document.

APPENDIX B. PHOTOGRAPHS OF EUT

B.1. EXTERNAL PHOTOS

The external photos are provided as a separate document.

B.2. INTERNAL PHOTOS

The internal photos are provided as a separate document.

END OF TEST REPORT