FCC RADIO TEST REPORT

FCC ID	:	**2ABOF-G1RN3AHB012**
Equipment	:	**Remote Node (RN)**
Brand Name	:	**Tarana Wireless**
Model Name	:	**G1RN3AHB012**
Marketing Name	:	**G1RN3AHB012**
Applicant	:	**Tarana Wireless** **590 Alder Drive, Milpitas, CA 95035**
Manufacturer	:	**Tarana Wireless** **590 Alder Drive, Milpitas, CA 95035**
Standard	:	**FCC 47 CFR Part 2, 96**

The product was received on Feb. 10, 2023 and testing was performed from Feb. 27, 2023 to Apr. 06, 2023. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (USA) Inc., the test report shall not be reproduced except in full.

Lance Tang

Approved by: Lance Tang

Sporton International (USA) Inc.
1175 Montague Expressway, Milpitas, CA 95035

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History of this test report

Report No.	Version	Description	Issue Date
FG230126002A	01	Initial issue of report	Apr. 14, 2023
FG230126002A	02	Antenna gain description modified. This report is an updated version, replacing the report issued on Apr. 14, 2023.	Apr. 22, 2023

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
3.3	§96.41	Peak-to-Average Ratio	Pass	
3.4	§96.41	Effective Isotropic Radiated Power	Pass	-
		Power Density	Pass	-
3.5	§2.1049 §96.41	Occupied Bandwidth	Reporting only	-
3.6	§2.1051 §96.41	Conducted Band Edge Measurement	Pass	-
3.7	§2.1051 §96.41	Conducted Spurious Emission	Pass	
3.8	§2.1055	Frequency Stability for Temperature & Voltage	Pass	-
4.4	§2.1051 §96.41	Radiated Spurious Emission	Pass	0.13 dB under the limit at 7370.000 MHz

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. Please refer to the section ” Uncertainty of Evaluation ” for measurement uncertainty.

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs: This device is a Category B CBSD with manufactured defined Tarana Wireless protocol. **Antenna Type / Gain:** Fixed External Antenna with Antenna Gain 13 dBi **Device Serial Number:** M150M1224800001

Remark:

1. The above EUT's information is declared by manufacturer. Please refer to Disclaimer in report summary.
2. The manufacturer declares that the proprietary test commands to configure EUT transmitting on QPSK.
3. The RF conducted output power level across each chain is identical declared by the manufacturer.

Specification of Accessories				
PoE Adapter	**Brand Name**	Phihong	**Part Number**	POE60U-1BTE

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Location

Test Site	Sporton International (USA) Inc.	
Test Site Location	1175 Montague Expressway, Milpitas, CA 95035 TEL : 408 9043300	
Test Site No.	**Sporton Site No.**	
	TH01-CA	03CH01-CA

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: US1250

1.4 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 96
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 940660 D01 Part 96 CBRS Eqpt v03
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report.

<Single Carrier (SC) Intra Band>

Test Items	Frequency (MHz)	Bandwidth (MHz)				Test Channel		
		10	20	30	40	L	M	H
Max. Output Power	3500~3700	v	v	v	v	v	v	v
Peak EIRP Density	3500~3700	v	v	v	v	v	v	v
26dB and 99% Bandwidth	3500~3700	v	v	v	v		v	
Conducted Band Edge	3500~3700	v	v	v	v	v	v	v
Peak-to-Average Ratio	3500~3700	v					v	
Conducted Spurious Emission	3500~3700	v	v	v	v	v	v	v
E.I.R.P	3500~3700	v	v	v	v	v	v	v
Radiated Spurious Emission	3500~3700	v	v	v	v	v	v	v
Remark	The mark "**v** " means that this configuration is chosen for testing							

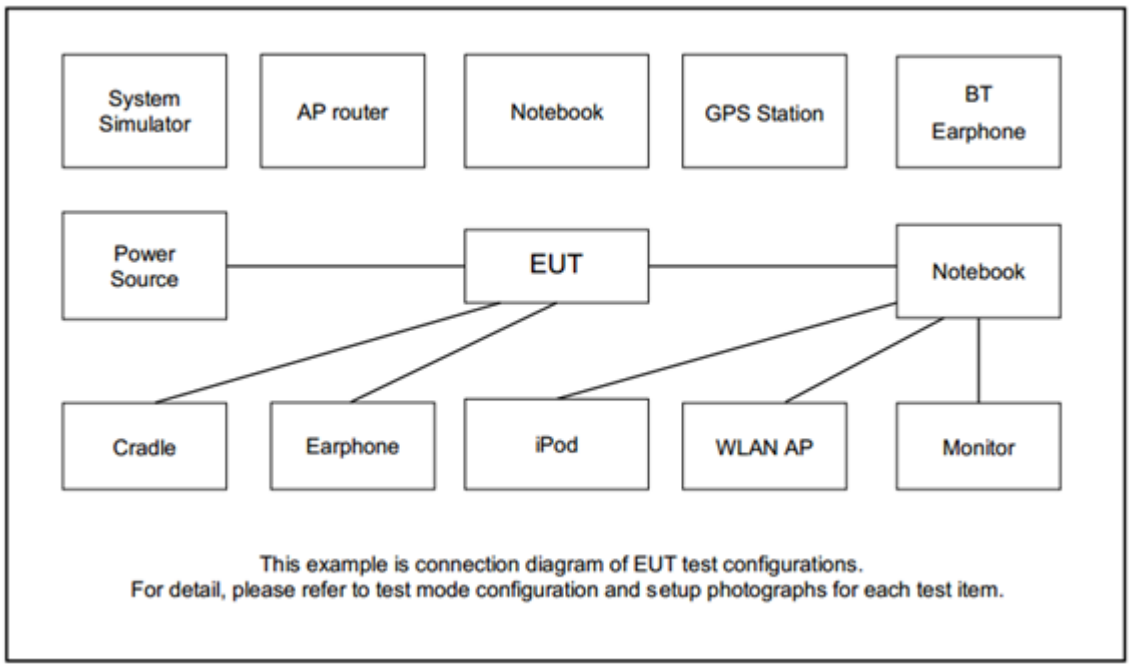
<Multi Carrier (MC) Intra Band Contiguous>

Test Items	Freq. (MHz)	Bandwidth (MHz)				Test Channel		
		20+20	20+40	40+20	40+40	L	M	H
Max. Output Power	3500~3700	v	v	v	v	v	v	v
Peak EIRP Density	3500~3700	v	v	v	v	v	v	v
26dB and 99% Bandwidth	3500~3700	v	v	v	v		v	
Conducted Band Edge	3500~3700	v	v	v	v	v	v	v
Conducted Spurious Emission	3500~3700	v	v	v	v	v	v	v
E.I.R.P.	3500~3700	v	v	v	v	v	v	v
Radiated Spurious Emission	3500~3700	v	v	v	v	v	v	v
Remark	The mark "**v** " means that this configuration is chosen for testing							

<Multi Carrier (MC) Intra Band Non-Contiguous>

Test Items	Freq. (MHz)	Bandwidth (MHz)				Test Channel		
		20+20	20+40	40+20	40+40	L	M	H
Max. Output Power	3500~3700	v	v	v	v	v		v
Peak EIRP Density	3500~3700	v	v	v	v	v		v
26dB and 99% Bandwidth	3500~3700	v	v	v	v	v		v
Conducted Band Edge	3500~3700	v	v	v	v	v		v
Conducted Spurious Emission	3500~3700	v	v	v	v	v		v
E.I.R.P.	3500~3700	v	v	v	v	v		v
Radiated Spurious Emission	3500~3700	v	v	v	v	v		v
Remark	The mark "**v** " means that this configuration is chosen for testing							

2.2 Connection Diagram of Test System



2.3 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

2.4 Frequency List of Low/Middle/High Channels

Single Carrier Frequency List				
BW [MHz]	Frequency(MHz)	Lowest	Middle	Highest
40	Frequency	3570	3625	3680
30	Frequency	3565	3625	3685
20	Frequency	3560	3625	3690
10	Frequency	3555	3625	3695

Multi Carrier (Contiguous) Frequency List					
BW [MHz]	Frequency(MHz)		Lowest	Middle	Highest
40 + 40	PCC	Frequency	3570	3605	3640
	SCC	Frequency	3610	3645	3680
40 + 20	PCC	Frequency	3570	3615	3660
	SCC	Frequency	3600	3645	3690
20 + 40	PCC	Frequency	3560	3605	3650
	SCC	Frequency	3590	3635	3680
20 + 20	PCC	Frequency	3560	3615	3670
	SCC	Frequency	3580	3635	3690

Multi Carrier (Non-Contiguous) Frequency List				
BW [MHz]	Frequency(MHz)	Lowest (PCC)	-	Highest (SCC)
40 + 40	Frequency	3570	-	3680
40 + 20	Frequency	3570	-	3690
20 + 40	Frequency	3560	-	3680
20 + 20	Frequency	3560	-	3690

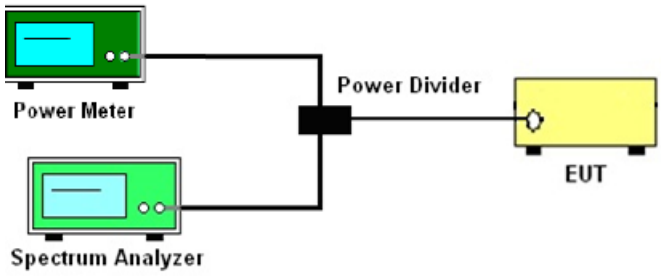
3 Conducted Test Items

3.1 Measuring Instruments

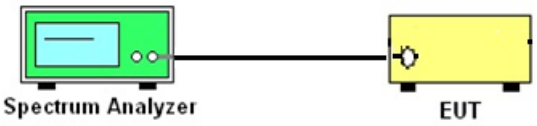
See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 Power Density, Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Description of the Conducted Output Power Measurement

Test commands are used to configure EUT to transmit. The parameters pre-set to force the EUT to always transmit at the maximum output power. The power measured at one of the output terminals of the transmitter is reported in this report based on the manufacturer's declaration that conducted power is identical across all the output terminals.

3.2.2 Test Procedures

1. The transmitting port is connected to a spectrum analyzer and a power meter through a power divider.
2. Enter test commands to force the EUT to transmit the maximum output power.
3. Select the lowest, middle, and highest channels for each band of modulation.
4. The maximum output power transmitted is measured and read by the power meter.
5. The MIMO calculation method can be referred to section 3.9 of this report.

3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

1. The EUT was connected to spectrum via a RF cable.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio

3.4 EIRP and Power Density

3.4.1 Description of the EIRP and Power Density Measurement

The EIRP transmitters must not exceed 47 dBm /10 megahertz

The testing follows ANSI C63.26-2015 Section 5.2.5.5

According to KDB 412172 D01 Power Approach,

EIRP = PT + GT – LC, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

Device	Maximum EIRP (dBm/10 MHz)	Maximum PSD (dBm/MHz)
Category B CBSD	47	37

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.4.5

1. Set instrument center frequency to OBW center frequency.
2. Set span to at least 1.5 times the OBW.
3. Set the RBW to the specified reference bandwidth (often 1 MHz).
4. Set VBW ≥ 3 × RBW.
5. Detector = RMS (power averaging).
6. Ensure that the number of measurement points in the sweep ≥ 2 × span/RBW.
7. Sweep time = auto couple.
8. Employ trace averaging (RMS) mode over a minimum of 100 traces.
9. Use the peak marker function to determine the maximum amplitude level within the reference bandwidth (PSD).
10. The MIMO Calculation method can be referred to section 3.9 of this report.
11. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

3.5 Occupied Bandwidth

3.5.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.5.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99% OB)

1. The EUT was connected to spectrum analyzer via a RF cable.
2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
4. Set the detection mode to peak, and the trace mode to max hold.
5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.6 Conducted Band Edge

3.6.1 Description of Conducted Band Edge Measurement

The conducted power of any CBSD emission outside the fundamental emission bandwidth as specified in paragraph (e)(3) of this section (whether the emission is inside or outside of the authorized band) shall not exceed −13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any CBSD emission shall not exceed −25 dBm/MHz. The upper and lower SAS assigned channel edges are the upper and lower limits of any channel assigned to a CBSD by an SAS, or in the case of multiple contiguous channels, the upper and lower limits of the combined contiguous channels.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT is connected to spectrum analyzer via a RF cable.
2. The band edges of low and high channels for the highest RF powers are measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz is used.
5. Set spectrum analyzer to be RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Follow FCC KDB 662911 D01 Multiple Transmitter Output v02r01to do MIMO calculation.
   Method (iii): Measure and add 10 log (N_{ANT}) dB, the factor should be added to spectrum offset. There are a total of 8 antenna ports which are connected to 4 vertical and 4 horizontal antennas.
   MIMO Factor is 10*log(8) = 9.03 dB

3.7 Conducted Spurious Emission

3.7.1 Description of Conducted Spurious Emission Measurement

Emission and interference limits: the device satisfies the emission limits specified in Section FCC Part 96.41 e) 1) i) & e) 2) at the lowest and highest edges of the band, and in the middle of the band.

3.7.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT is connected to spectrum analyzer via a RF cable.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency is measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
6. Set spectrum analyzer to be RMS detector.
7. Follow FCC KDB 662911 D01 Multiple Transmitter Output v02r01to do MIMO calculation.
   Method (iii): Measure and add 10 log (N_{ANT}) dB, the factor should be added to spectrum offset. There are a total of 8 antenna ports which are connected to 4 vertical and 4 horizontal antennas.
   MIMO Factor is 10*log(8) = 9.03 dB
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is −40dBm/MHz.

3.8 Frequency Stability

3.8.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency

3.8.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the spectrum analyzer.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.8.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

3.9 Antenna Information

3.9.1 Antenna Directional Gain

The device can support MIMO with antenna.

There are a total of 8 antenna ports which are connected to 4 vertical and 4 horizontal antennas.

The manufacturer declares that it always transmits 2 spatial streams jointly across both polarizations.

MIMO calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 “Measure and add 10 log(NANT) dB”. For the MIMO Factor in this report is 10*log(8) = 9.03 dB

According to FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

Array Gain = 10 log(N_{ANT} = 4 /N_{SS}= 2) = 3.01 dB , where the lowest possible N_{SS} is 2 .

Directional gain = Antenna gain + directionality gain = 13 + 10log (N_{ANT}/N_{SS} = 4/2)

= 13 + 3.01 = 16.01 dBi

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

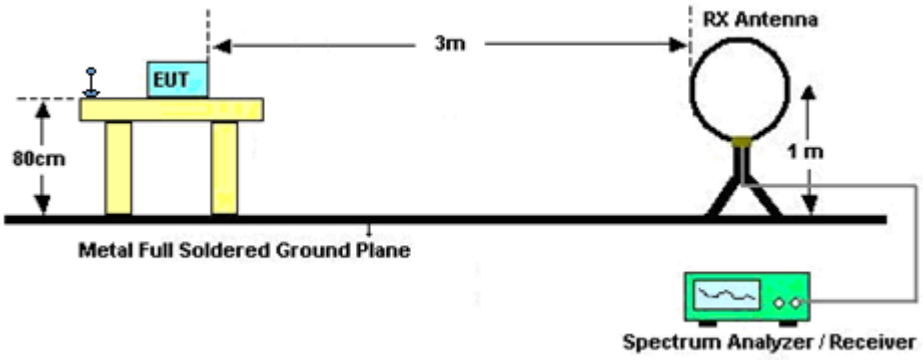
4 Radiated Test Items

4.1 Measuring Instruments

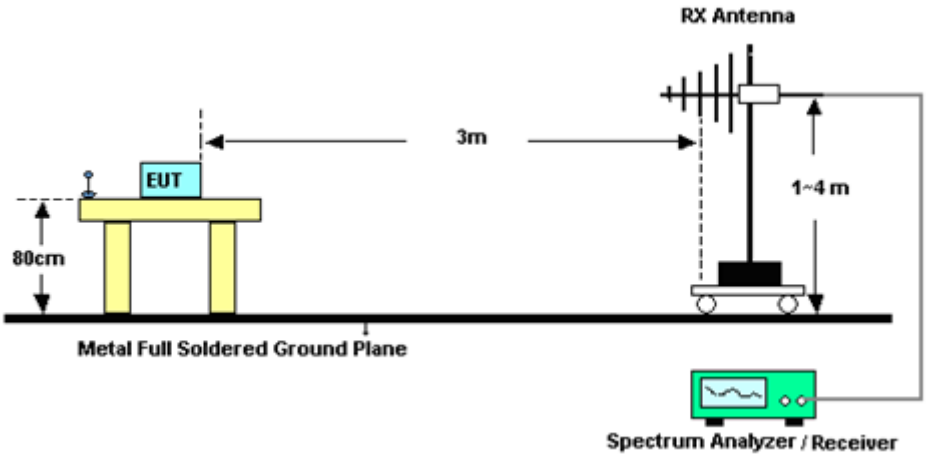
See list of measuring instruments of this test report.

4.2 Test Setup

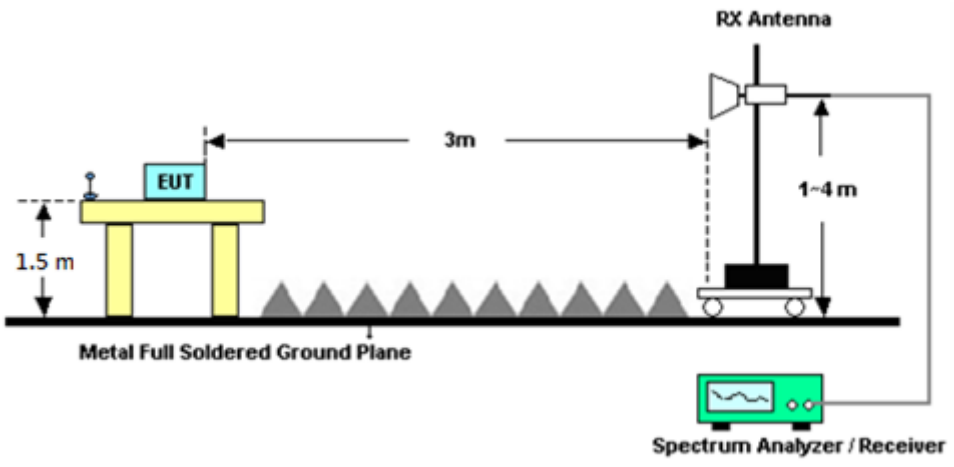
For radiated test below 30MHz



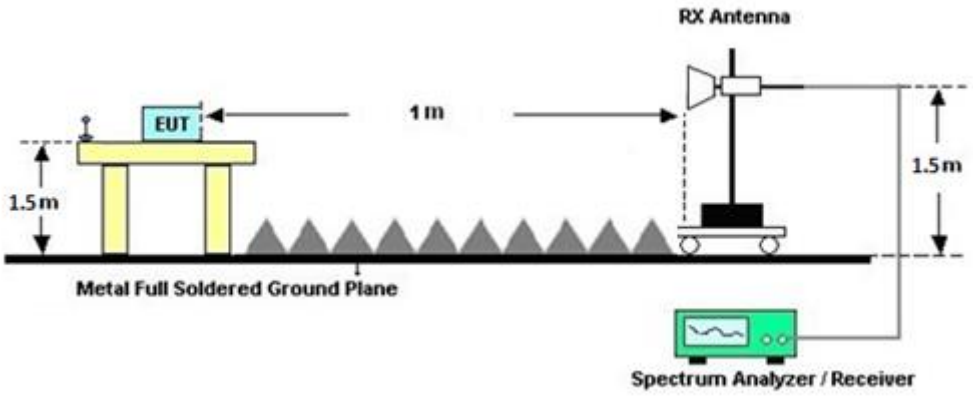
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least -40dBm / MHz .

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

All the 8 antennas are activated to transmit the maximum power simultaneously during the test.

1. The EUT is placed on a turntable of 0.8 meter height from the ground for frequency below 1GHz, whereas 1.5 meter for frequency above 1GHz.
2. The EUT is settled 3 meters away from the receiving antenna mounted on an antenna lifter.
3. The table rotates 360 degrees to identify the position where the highest spurious emission is.
4. The receiving antenna moves up and down within the heights from one meter to four meters to identify where the maximum spurious emission is for both horizontal and vertical polarizations.
5. Set RBW = 1MHz, VBW = 3MHz on a spectrum analyzer to do the measurements then record the maximum spurious emission.
6. Substitute the EUT with a horn antenna driven by a signal generator.
7. Tune the emission power level of the signal generator to be the same as the EUT's maximum spurious emission.
8. Take a record of the output power at antenna port.
9. Repeat step 7 to step 8 for the other polarization.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

    EIRP (dBm) = S.G. Power – Substitution Cable Loss + Substitution Antenna Gain

    ERP (dBm) = EIRP - 2.15

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Signal Generator	Rohde & Schwarz	SMF100A	105544	9kHz~44GHz	May 17, 2022	Mar. 15, 2023~ Mar. 23, 2023	May 16, 2023	Radiation (03CH01-CA)
Loop Antenna	R&S	HFH2-Z2E	100840	9kHz~30MHz	Jul. 05, 2022	Mar. 15, 2023~ Mar. 23, 2023	Jul. 04, 2023	Radiation (03CH01-CA)
Bilog Antenna	TESEQ	6111D	50392	30MHz~1GHz	Jul. 11, 2022	Mar. 15, 2023~ Mar. 23, 2023	Jul. 10, 2023	Radiation (03CH01-CA)
Bilog Antenna	TESEQ	6111D	54683	30MHz~1GHz	Nov. 01, 2022	Mar. 15, 2023~ Mar. 23, 2023	Oct. 31, 2023	Radiation (03CH01-CA)
Horn Antenna	SCHWARZBECK	BBHA 9120D	02115	1GHz~18GHz	Aug. 16, 2022	Mar. 15, 2023~ Mar. 23, 2023	Aug. 15, 2023	Radiation (03CH01-CA)
Horn Antenna	SCHWARZBECK	BBHA 9120D	02113	1GHz~18GHz	Jun. 22, 2022	Mar. 15, 2023~ Mar. 23, 2023	Jun. 21, 2023	Radiation (03CH01-CA)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00842	18GHz~40GHz	Aug. 16, 2022	Mar. 15, 2023~ Mar. 23, 2023	Aug. 15, 2023	Radiation (03CH01-CA)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00841	18GHz~40GHz	Sep. 12, 2022	Mar. 15, 2023~ Mar. 23, 2023	Sep. 11, 2023	Radiation (03CH01-CA)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40 ST	SN8	6.75GHz High Pass Filter	Jul. 21, 2022	Mar. 15, 2023~ Mar. 23, 2023	Jul. 20, 2023	Radiation (03CH01-CA)
Preamplifier	EMEC	00675	EMC18G40G	060725	May 10, 2022	Mar. 15, 2023~ Mar. 23, 2023	May 09, 2023	Radiation (03CH01-CA)
Preamplifier	SONOMA	310N	372241	9kHz~1GHz	May 09, 2022	Mar. 15, 2023~ Mar. 23, 2023	May 08, 2023	Radiation (03CH01-CA)
Preamplifier	E-instrument	ERA-100M-18G-56-01-A70	EC1900252	1GHz~18GHz	May 09, 2022	Mar. 15, 2023~ Mar. 23, 2023	May 08, 2023	Radiation (03CH01-CA)
Spectrum Analyzer	R&S	FW43	104042	2Hz~43GHz	Dec. 11, 2022	Mar. 15, 2023~ Mar. 23, 2023	Dec. 10, 2023	Radiation (03CH01-CA)
EMI Test Receiver	R&S	ESU26	100049	20Hz~26.5GHz	Jun. 01, 2022	Mar. 15, 2023~ Mar. 23, 2023	May 31, 2023	Radiation (03CH01-CA)
RF Cable	HUBER+SUHNER	SUCOFLEX 102	8015932/2, 8015762/2, 804938/2	N/A	Mar. 06, 2023	Mar. 15, 2023~ Mar. 23, 2023	Mar. 05, 2024	Radiation (03CH01-CA)
Hygrometer	TESTO	608-H1	45141354	N/A	Jul. 27, 2022	Mar. 15, 2023~ Mar. 23, 2023	Jul. 26, 2023	Radiation (03CH01-CA)
Controller	Chaintek	EM-1000	060881	Control Turn Table & Antenna Mast	N/A	Mar. 15, 2023~ Mar. 23, 2023	N/A	Radiation (03CH01-CA)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Mar. 15, 2023~ Mar. 23, 2023	N/A	Radiation (03CH01-CA)
Test Software	Audix E3	E6.2009-8-24d	PK-002093	N/A	N/A	Mar. 15, 2023~ Mar. 23, 2023	N/A	Radiation (03CH01-CA)
Hygrometer	Testo	608-H1	45141354	N/A	Jul. 27, 2022	Feb. 27, 2023~ Apr. 06, 2023	Jul. 26, 2023	Conducted (TH01-CA)
Power Sensor	Raditeq	RPR3008W	RPR6W-3202002	10MHz-8GHz	Feb. 08, 2023	Feb. 27, 2023~ Apr. 06, 2023	Feb. 07, 2024	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101545	10Hz-40GHz	May 31, 2022	Feb. 27, 2023~ Apr. 06, 2023	May 30, 2023	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101089	10Hz-40GHz	Jun. 01, 2022	Feb. 27, 2023~ Apr. 06, 2023	May 31, 2023	Conducted (TH01-CA)

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.40 dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.60 dB**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.30 dB**

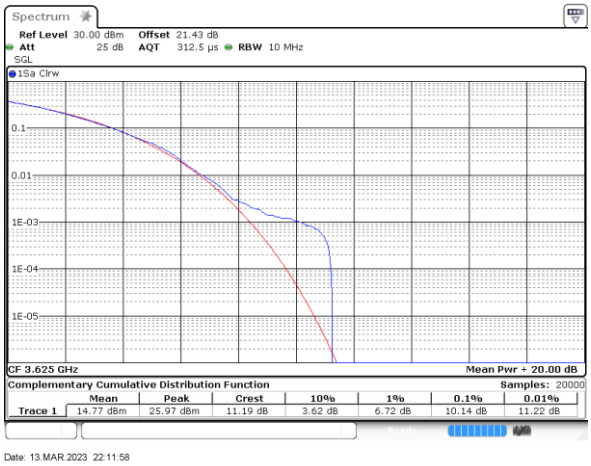
Appendix A. Test Results of Conducted Test

<Single Carrier>

Peak-to-Average Ratio

Mode	3625MHz / 10MHz	Limit: 13dB
		Result
Middle CH	10.14 dB	PASS

3625MHz
Middle Channel

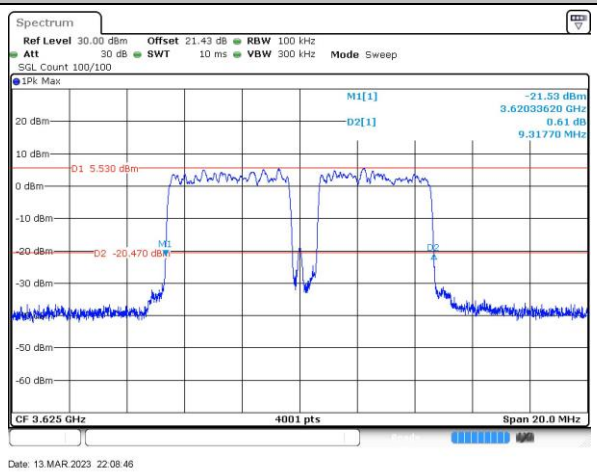


26dB Bandwidth

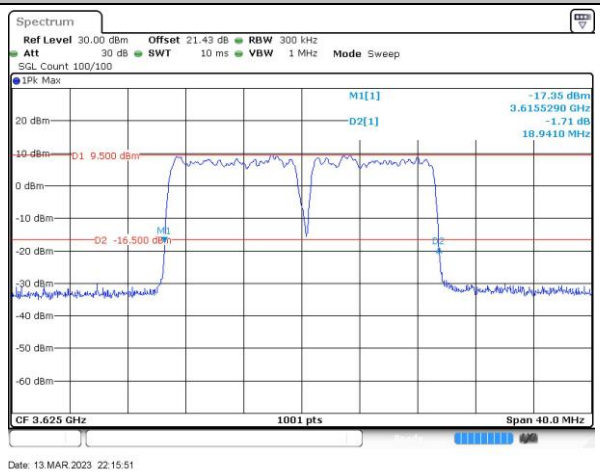
Mode	26dB BW(MHz)			
Frequency	3625MHz			
BW	10MHz	20MHz	30MHz	40MHz
Middle CH	9.32	18.94	29.67	39.88

26dB BW(MHz)

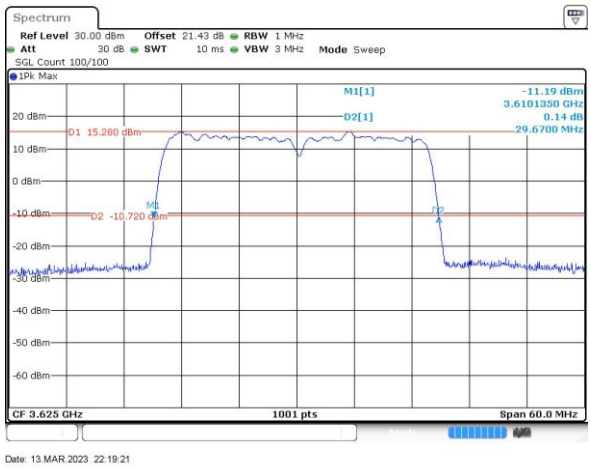
Middle Channel / 10MHz



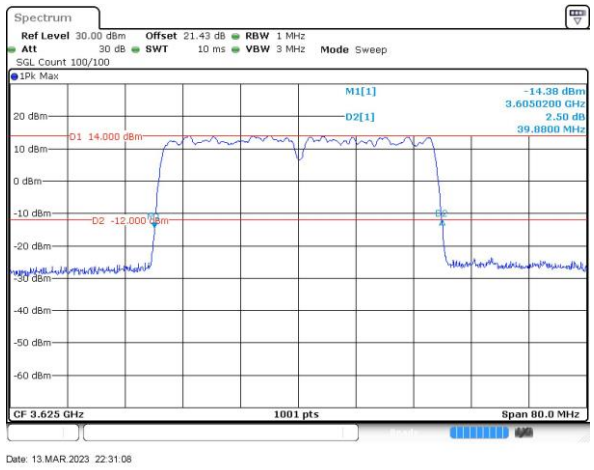
Middle Channel / 20MHz



Middle Channel / 30MHz



Middle Channel / 40MHz

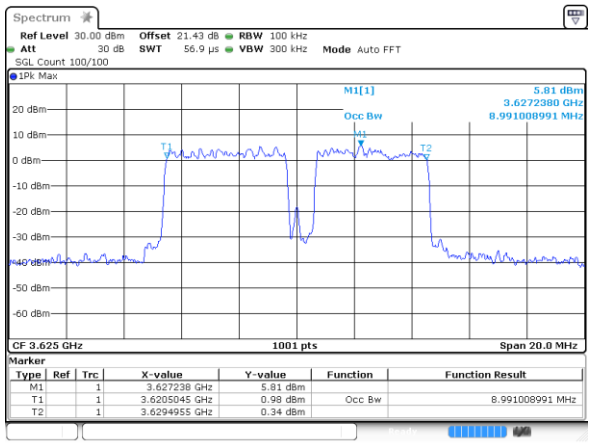


Occupied Bandwidth

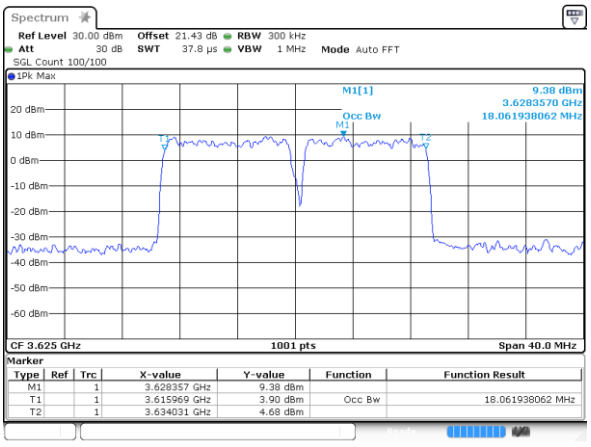
Mode	3625MHz : 99%OBW(MHz)			
Frequency	3625MHz			
BW	10MHz	20MHz	30MHz	40MHz
Middle CH	8.99	18.06	27.51	37.48

99%OBW(MHz)

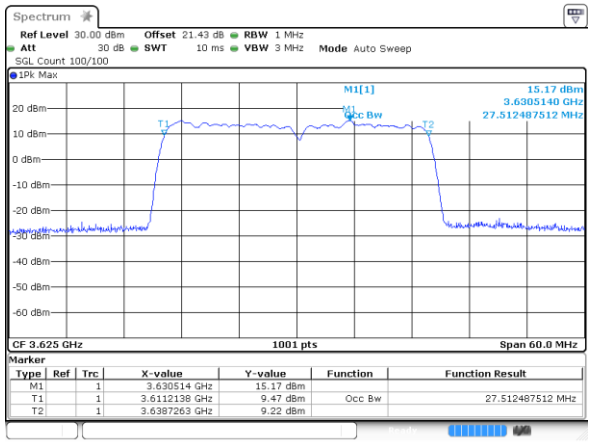
Middle Channel / 10MHz



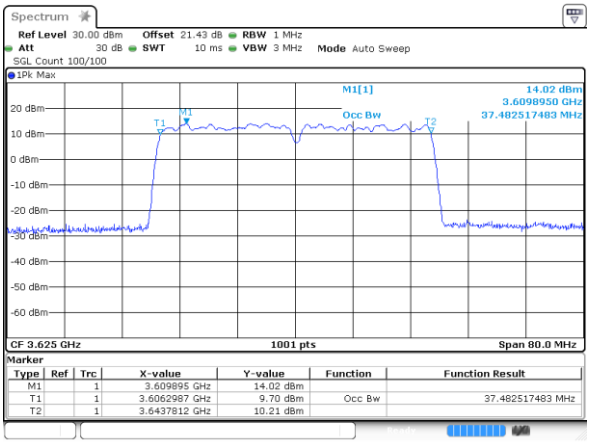
Middle Channel / 20MHz



Middle Channel / 30MHz



Middle Channel / 40MHz



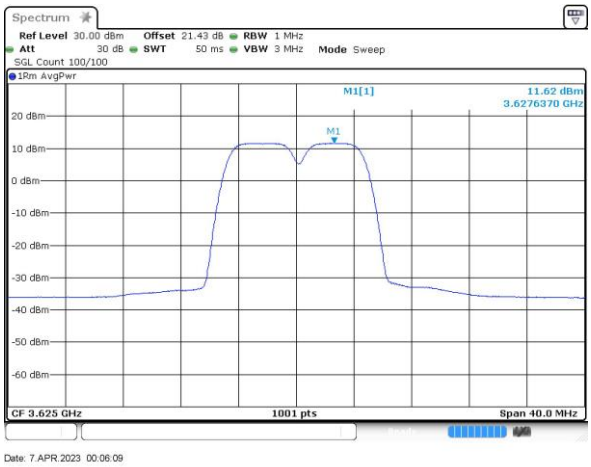
EIRP Power Density

EIRP PSD (dBm/MHz)								
	Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm/MHz)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)
Single Carrier(SC) Intra Band	10MHz_Low	3555	12/-1.5	16.01	9.03	7.15	32.19	< 37 dBm/MHz
	10MHz_Middle	3625	9/-2	16.01	9.03	11.62	36.66	
	10MHz_High	3695	9/-2.5	16.01	9.03	10.43	35.47	
	20MHz_Low	3560	9/-2.5	16.01	9.03	6.13	31.17	
	20MHz_Middle	3625	9/-2.5	16.01	9.03	7.77	32.81	
	20MHz_High	3690	9/-2	16.01	9.03	8.12	33.16	
	30MHz_Low	3565	6/-2.5	16.01	9.03	7.43	32.47	
	30MHz_Middle	3625	9/-2	16.01	9.03	6.37	31.41	
	30MHz_High	3685	9/0	16.01	9.03	8.49	33.53	
	40MHz_Low	3570	9/-0.5	16.01	9.03	5.5	30.54	
	40MHz_Middle	3625	9/-0.5	16.01	9.03	6.5	31.54	
	40MHz_High	3680	9/-0.5	16.01	9.03	6.68	31.72	

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Maximun EIRP Power Density –10MHz mode 3695MHz



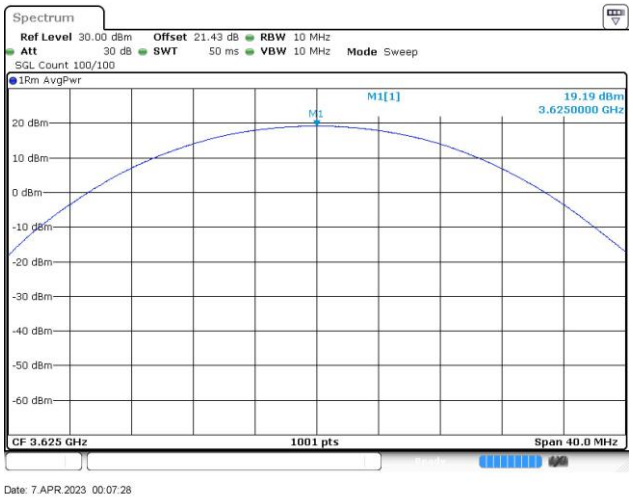
EIRP Power (dBm/10MHz)

EIRP Power (dBm/10MHz)								
	Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm/10MHz)	EIRP Power (dBm/10MHz)	Limit (dBm/10MHz)
Single Carrier(SC) Intra Band	10MHz_Low	3555	12/-1.5	16.01	9.03	14.87	39.91	< 47 dBm/10MHz
	10MHz_Middle	3625	9/-2	16.01	9.03	19.19	44.23	
	10MHz_High	3695	9/-2.5	16.01	9.03	17.81	42.85	
	20MHz_Low	3560	9/-2.5	16.01	9.03	15.08	40.12	
	20MHz_Middle	3625	9/-2.5	16.01	9.03	16.95	41.99	
	20MHz_High	3690	9/-2	16.01	9.03	17.1	42.14	
	30MHz_Low	3565	6/-2.5	16.01	9.03	16.7	41.74	
	30MHz_Middle	3625	9/-2	16.01	9.03	15.89	40.93	
	30MHz_High	3685	9/0	16.01	9.03	17.91	42.95	
	40MHz_Low	3570	9/-0.5	16.01	9.03	14.98	40.02	
	40MHz_Middle	3625	9/-0.5	16.01	9.03	16.15	41.19	
	40MHz_High	3680	9/-0.5	16.01	9.03	16.18	41.22	

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Maximun EIRP Power (dBm/10MHz) –10MHz mode 3695MHz



EIRP total Power (dBm) for reporting only

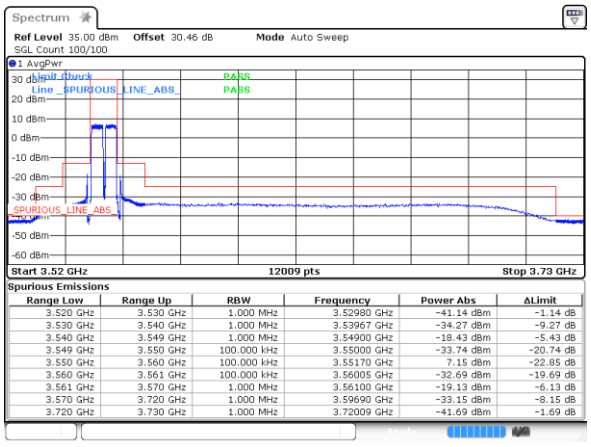
Total EIRP Power (dBm) reporting only							
	Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm)	Total EIRP (dBm)
Single Carrier(SC) Intra Band	10MHz_Low	3555	12/-1.5	16.01	9.03	16.33	41.37
	10MHz_Middle	3625	9/-2	16.01	9.03	20.73	45.77
	10MHz_High	3695	9/-2.5	16.01	9.03	19.03	44.07
	20MHz_Low	3560	9/-2.5	16.01	9.03	18.03	43.07
	20MHz_Middle	3625	9/-2.5	16.01	9.03	19.83	44.87
	20MHz_High	3690	9/-2	16.01	9.03	19.83	44.87
	30MHz_Low	3565	6/-2.5	16.01	9.03	21.13	46.17
	30MHz_Middle	3625	9/-2	16.01	9.03	20.13	45.17
	30MHz_High	3685	9/0	16.01	9.03	21.93	46.97
	40MHz_Low	3570	9/-0.5	16.01	9.03	20.23	45.27
	40MHz_Middle	3625	9/-0.5	16.01	9.03	21.53	46.57
	40MHz_High	3680	9/-0.5	16.01	9.03	21.37	46.41

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Conducted Band Edge

Lowest Channel / 10MHz

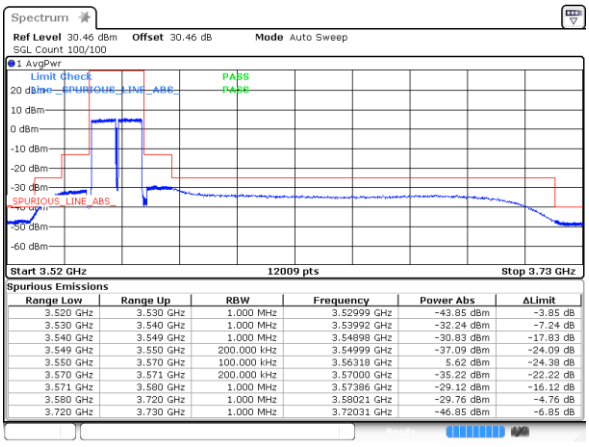


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52980 GHz	-41.14 dBm	-1.14 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53967 GHz	-34.27 dBm	-9.27 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54900 GHz	-18.43 dBm	-5.43 dB
3.549 GHz	3.550 GHz	100.000 kHz	3.55000 GHz	-33.74 dBm	-20.74 dB
3.550 GHz	3.560 GHz	100.000 kHz	3.55170 GHz	7.15 dBm	-22.85 dB
3.560 GHz	3.561 GHz	100.000 kHz	3.56005 GHz	-32.69 dBm	-19.69 dB
3.561 GHz	3.570 GHz	1.000 MHz	3.56100 GHz	-19.13 dBm	-6.13 dB
3.570 GHz	3.720 GHz	1.000 MHz	3.59690 GHz	-33.15 dBm	-8.15 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72009 GHz	-41.69 dBm	-1.69 dB

Date: 25.MAR.2023 00:24:54

Lowest Channel / 20MHz

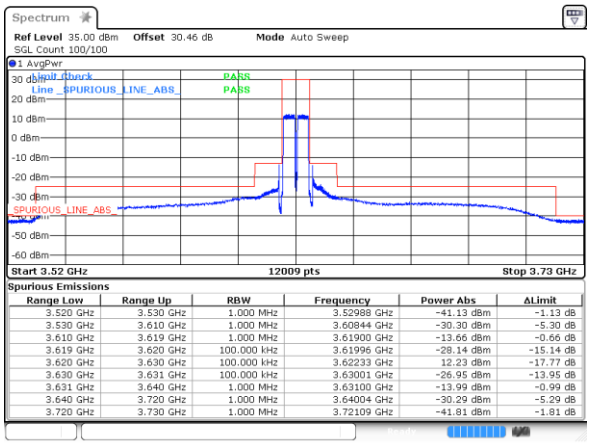


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52999 GHz	-43.85 dBm	-3.85 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53992 GHz	-32.24 dBm	-7.24 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54898 GHz	-30.83 dBm	-17.83 dB
3.549 GHz	3.550 GHz	200.000 kHz	3.54999 GHz	-37.09 dBm	-24.09 dB
3.550 GHz	3.570 GHz	100.000 kHz	3.56318 GHz	5.62 dBm	-24.38 dB
3.570 GHz	3.571 GHz	200.000 kHz	3.57000 GHz	-35.22 dBm	-22.22 dB
3.571 GHz	3.580 GHz	1.000 MHz	3.57386 GHz	-29.12 dBm	-16.12 dB
3.580 GHz	3.720 GHz	1.000 MHz	3.58021 GHz	-29.76 dBm	-4.76 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72031 GHz	-46.85 dBm	-6.85 dB

Date: 24.MAR.2023 22:16:27

Middle Channel / 10MHz

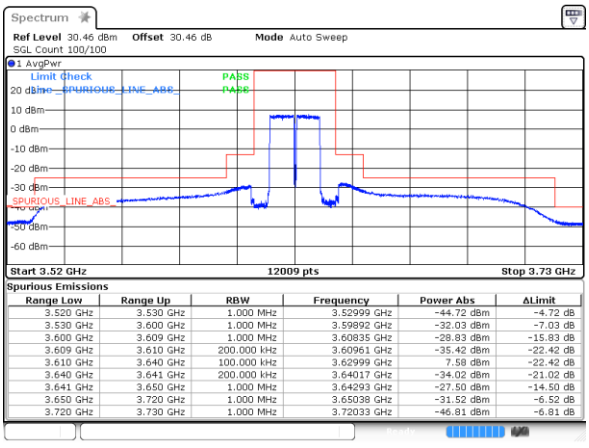


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52988 GHz	-41.13 dBm	-1.13 dB
3.530 GHz	3.610 GHz	1.000 MHz	3.60844 GHz	-30.30 dBm	-5.30 dB
3.610 GHz	3.619 GHz	1.000 MHz	3.61900 GHz	-13.66 dBm	-0.66 dB
3.619 GHz	3.620 GHz	100.000 kHz	3.61996 GHz	-28.14 dBm	-15.14 dB
3.620 GHz	3.630 GHz	100.000 kHz	3.62233 GHz	12.23 dBm	-17.77 dB
3.630 GHz	3.631 GHz	100.000 kHz	3.63001 GHz	-26.95 dBm	-13.95 dB
3.631 GHz	3.640 GHz	1.000 MHz	3.63100 GHz	-13.99 dBm	-0.99 dB
3.640 GHz	3.720 GHz	1.000 MHz	3.64004 GHz	-30.29 dBm	-5.29 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72109 GHz	-41.81 dBm	-1.81 dB

Date: 24.MAR.2023 22:05:18

Middle Channel / 20MHz

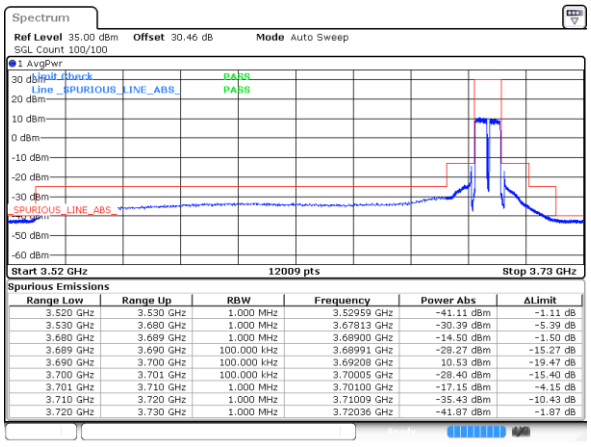


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52999 GHz	-44.72 dBm	-4.72 dB
3.530 GHz	3.600 GHz	1.000 MHz	3.59892 GHz	-32.03 dBm	-7.03 dB
3.600 GHz	3.609 GHz	1.000 MHz	3.60835 GHz	-28.83 dBm	-15.83 dB
3.609 GHz	3.610 GHz	200.000 kHz	3.60961 GHz	-35.42 dBm	-22.42 dB
3.610 GHz	3.640 GHz	100.000 kHz	3.62999 GHz	7.58 dBm	-22.42 dB
3.640 GHz	3.641 GHz	200.000 kHz	3.64017 GHz	-34.02 dBm	-21.02 dB
3.641 GHz	3.650 GHz	1.000 MHz	3.64293 GHz	-27.50 dBm	-14.50 dB
3.650 GHz	3.720 GHz	1.000 MHz	3.65038 GHz	-31.52 dBm	-6.52 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72033 GHz	-46.81 dBm	-6.81 dB

Date: 24.MAR.2023 22:20:10

Highest Channel / 10MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52959 GHz	-41.11 dBm	-1.11 dB
3.530 GHz	3.680 GHz	1.000 MHz	3.67813 GHz	-30.39 dBm	-5.39 dB
3.680 GHz	3.689 GHz	1.000 MHz	3.68900 GHz	-14.50 dBm	-1.50 dB
3.689 GHz	3.690 GHz	100.000 kHz	3.68991 GHz	-28.27 dBm	-15.27 dB
3.690 GHz	3.700 GHz	100.000 kHz	3.69208 GHz	10.53 dBm	-19.47 dB
3.700 GHz	3.701 GHz	100.000 kHz	3.70005 GHz	-28.40 dBm	-15.40 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70100 GHz	-17.15 dBm	-4.15 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71009 GHz	-35.43 dBm	-10.43 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72036 GHz	-41.87 dBm	-1.87 dB

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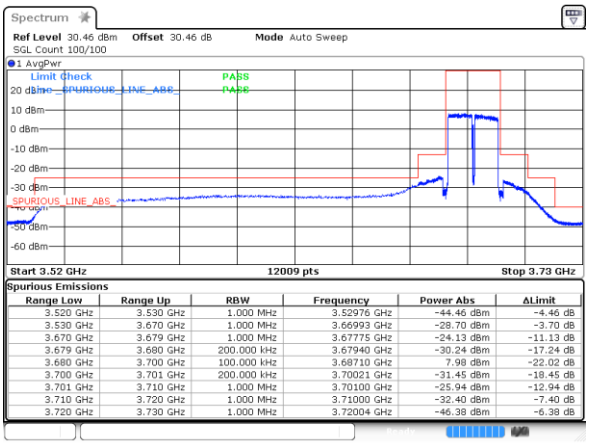
Highest Channel / 20MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52976 GHz	-44.46 dBm	-4.46 dB
3.530 GHz	3.670 GHz	1.000 MHz	3.66993 GHz	-28.70 dBm	-3.70 dB
3.670 GHz	3.679 GHz	1.000 MHz	3.67775 GHz	-24.13 dBm	-11.13 dB
3.679 GHz	3.680 GHz	200.000 kHz	3.67940 GHz	-30.24 dBm	-17.24 dB
3.680 GHz	3.700 GHz	100.000 kHz	3.68710 GHz	7.98 dBm	-22.02 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70021 GHz	-31.45 dBm	-18.45 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70100 GHz	-25.94 dBm	-12.94 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71000 GHz	-32.40 dBm	-7.40 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72004 GHz	-46.38 dBm	-6.38 dB

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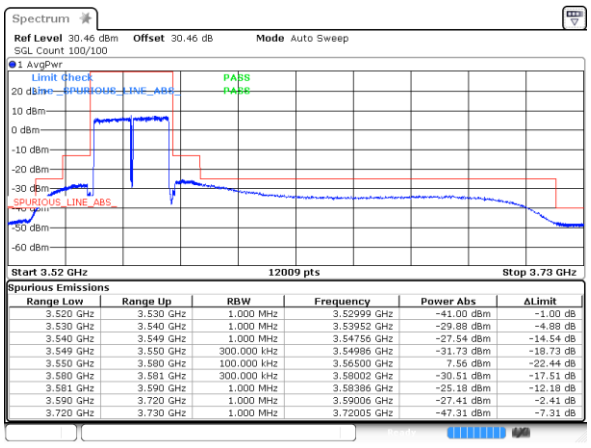
Lowest Channel / 30MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52999 GHz	-41.00 dBm	-1.00 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53952 GHz	-29.88 dBm	-4.88 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54756 GHz	-27.54 dBm	-14.54 dB
3.549 GHz	3.550 GHz	300.000 kHz	3.54986 GHz	-31.73 dBm	-18.73 dB
3.550 GHz	3.580 GHz	100.000 kHz	3.56500 GHz	7.56 dBm	-22.44 dB
3.580 GHz	3.581 GHz	300.000 kHz	3.58002 GHz	-30.51 dBm	-17.51 dB
3.581 GHz	3.590 GHz	1.000 MHz	3.58386 GHz	-25.18 dBm	-12.18 dB
3.590 GHz	3.720 GHz	1.000 MHz	3.59006 GHz	-27.41 dBm	-2.41 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72005 GHz	-47.31 dBm	-7.31 dB

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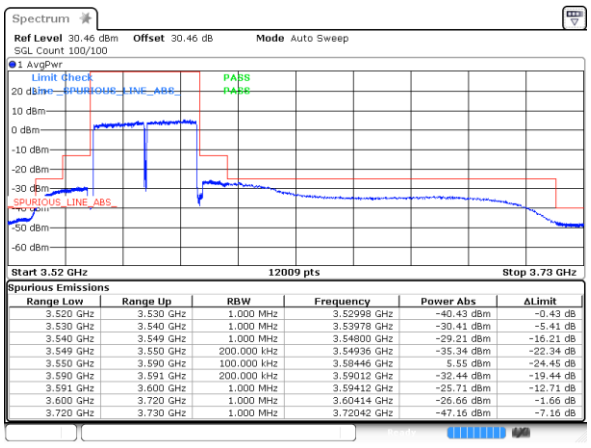
Lowest Channel / 40MHz

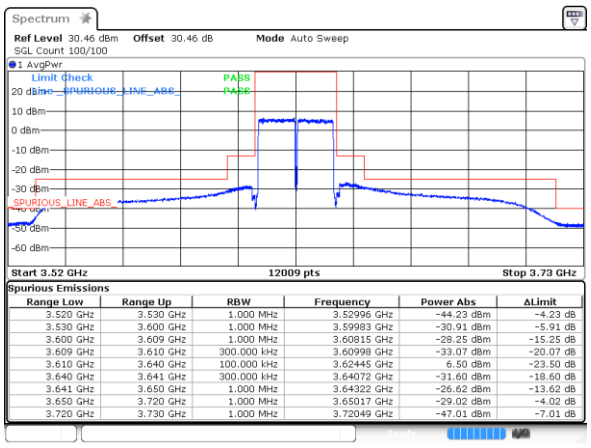


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52998 GHz	-40.43 dBm	-0.43 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53978 GHz	-30.41 dBm	-5.41 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54800 GHz	-29.21 dBm	-16.21 dB
3.549 GHz	3.550 GHz	200.000 kHz	3.54936 GHz	-35.34 dBm	-22.34 dB
3.550 GHz	3.590 GHz	100.000 kHz	3.58446 GHz	5.55 dBm	-24.45 dB
3.590 GHz	3.591 GHz	200.000 kHz	3.59012 GHz	-32.44 dBm	-19.44 dB
3.591 GHz	3.600 GHz	1.000 MHz	3.59412 GHz	-25.71 dBm	-12.71 dB
3.600 GHz	3.720 GHz	1.000 MHz	3.60414 GHz	-26.66 dBm	-1.66 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72042 GHz	-47.16 dBm	-7.16 dB

Date: 24.MAR.2023 23:57:33

Middle Channel / 30MHz

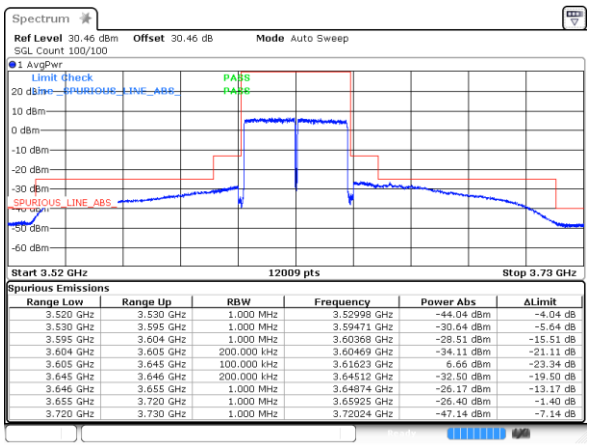


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52996 GHz	-44.23 dBm	-4.23 dB
3.530 GHz	3.600 GHz	1.000 MHz	3.59983 GHz	-30.91 dBm	-5.91 dB
3.600 GHz	3.609 GHz	1.000 MHz	3.60815 GHz	-28.25 dBm	-15.25 dB
3.609 GHz	3.610 GHz	300.000 kHz	3.60998 GHz	-33.07 dBm	-20.07 dB
3.610 GHz	3.640 GHz	100.000 kHz	3.62445 GHz	6.50 dBm	-23.50 dB
3.640 GHz	3.641 GHz	300.000 kHz	3.64072 GHz	-31.60 dBm	-18.60 dB
3.641 GHz	3.650 GHz	1.000 MHz	3.64322 GHz	-26.62 dBm	-13.62 dB
3.650 GHz	3.720 GHz	1.000 MHz	3.65017 GHz	-29.02 dBm	-4.02 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72049 GHz	-47.01 dBm	-7.01 dB

Date: 24.MAR.2023 22:35:47

Middle Channel / 40MHz

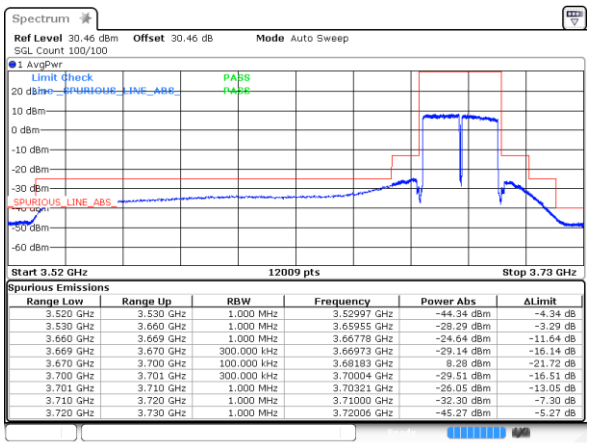


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52998 GHz	-44.04 dBm	-4.04 dB
3.530 GHz	3.595 GHz	1.000 MHz	3.59471 GHz	-30.64 dBm	-5.64 dB
3.595 GHz	3.604 GHz	1.000 MHz	3.60368 GHz	-28.51 dBm	-15.51 dB
3.604 GHz	3.605 GHz	200.000 kHz	3.60469 GHz	-34.11 dBm	-21.11 dB
3.605 GHz	3.645 GHz	100.000 kHz	3.61623 GHz	6.66 dBm	-23.34 dB
3.645 GHz	3.646 GHz	200.000 kHz	3.64512 GHz	-32.50 dBm	-19.50 dB
3.646 GHz	3.655 GHz	1.000 MHz	3.64874 GHz	-26.17 dBm	-13.17 dB
3.655 GHz	3.720 GHz	1.000 MHz	3.65925 GHz	-26.40 dBm	-1.40 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72024 GHz	-47.14 dBm	-7.14 dB

Date: 24.MAR.2023 22:48:05

Highest Channel / 30MHz

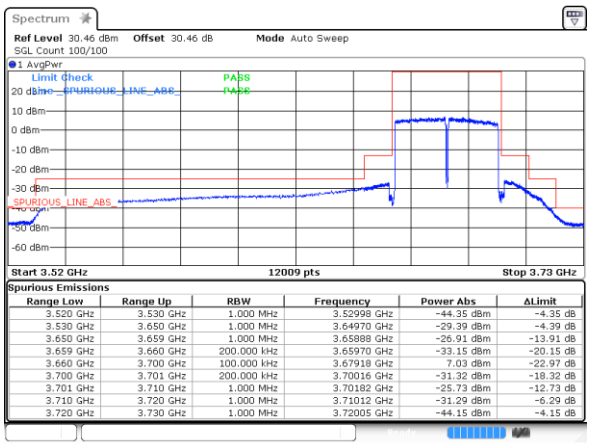


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52997 GHz	-44.34 dBm	-4.34 dB
3.530 GHz	3.660 GHz	1.000 MHz	3.65955 GHz	-28.29 dBm	-3.29 dB
3.660 GHz	3.669 GHz	1.000 MHz	3.66778 GHz	-24.64 dBm	-11.64 dB
3.669 GHz	3.670 GHz	300.000 kHz	3.66973 GHz	-29.14 dBm	-16.14 dB
3.670 GHz	3.700 GHz	100.000 kHz	3.68183 GHz	8.28 dBm	-21.72 dB
3.700 GHz	3.701 GHz	300.000 kHz	3.70004 GHz	-29.51 dBm	-16.51 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70321 GHz	-26.05 dBm	-13.05 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71000 GHz	-32.30 dBm	-7.30 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72006 GHz	-45.27 dBm	-5.27 dB

Date: 24.MAR.2023 22:39:16

Highest Channel / 40MHz



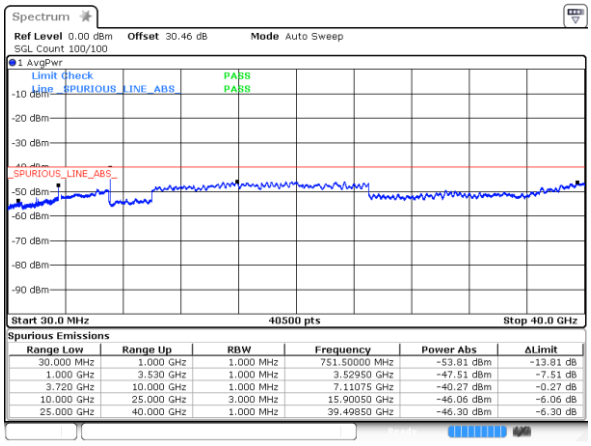
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52998 GHz	-44.35 dBm	-4.35 dB
3.530 GHz	3.650 GHz	1.000 MHz	3.64970 GHz	-29.39 dBm	-4.39 dB
3.650 GHz	3.659 GHz	1.000 MHz	3.65888 GHz	-26.91 dBm	-13.91 dB
3.659 GHz	3.660 GHz	200.000 kHz	3.65970 GHz	-33.15 dBm	-20.15 dB
3.660 GHz	3.700 GHz	100.000 kHz	3.67918 GHz	7.03 dBm	-22.97 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70016 GHz	-31.32 dBm	-18.32 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70182 GHz	-25.73 dBm	-12.73 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71012 GHz	-31.29 dBm	-6.29 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72005 GHz	-44.15 dBm	-4.15 dB

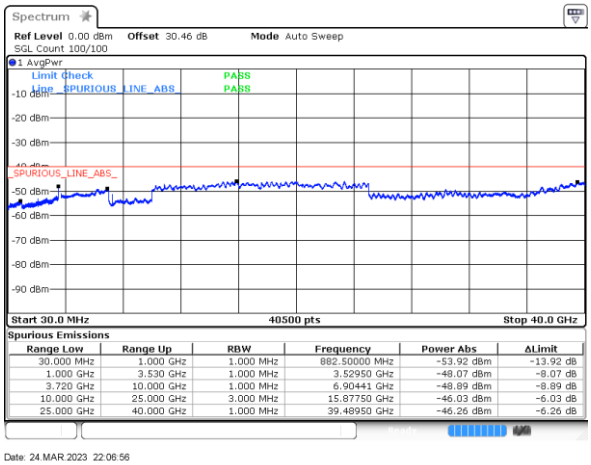
Date: 24.MAR.2023 22:53:14

Conducted Spurious Emission

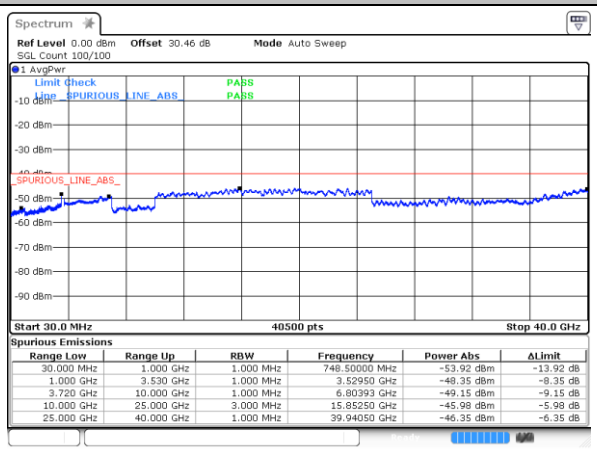
Lowest Channel / 10MHz



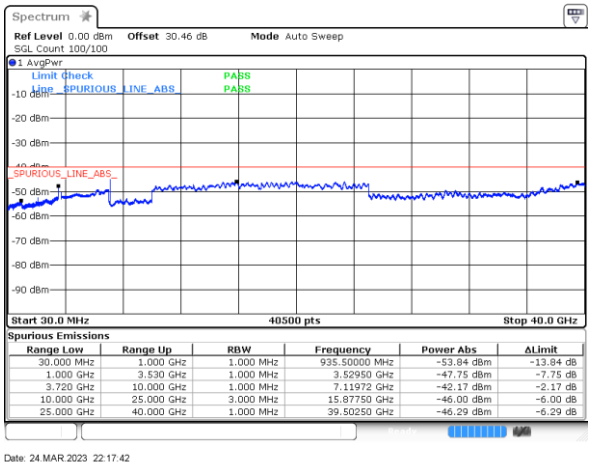
Middle Channel / 10MHz



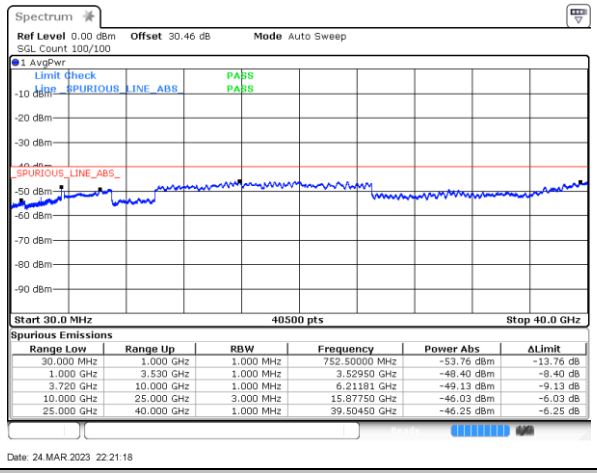
Highest Channel / 10MHz



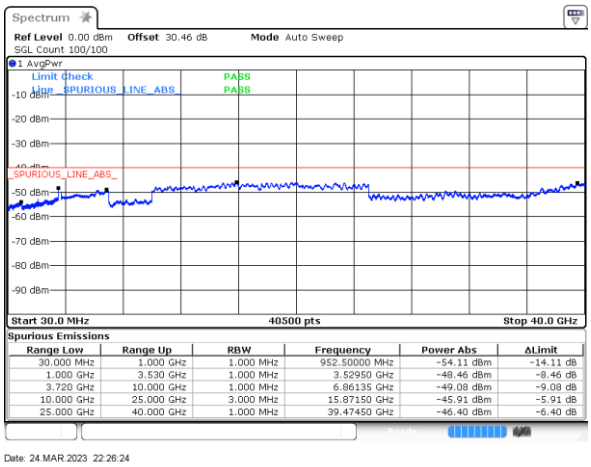
Lowest Channel / 20M



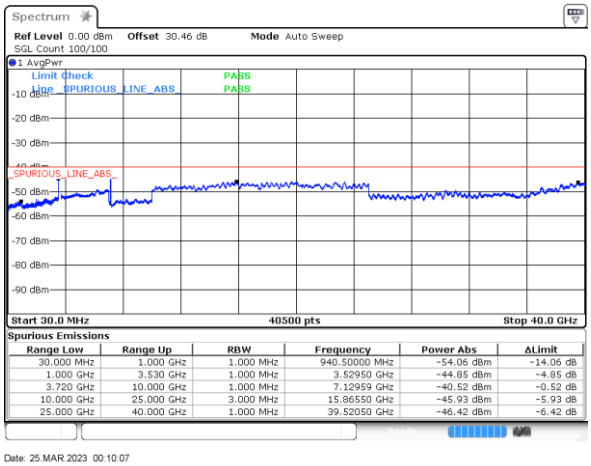
Middle Channel / 20M



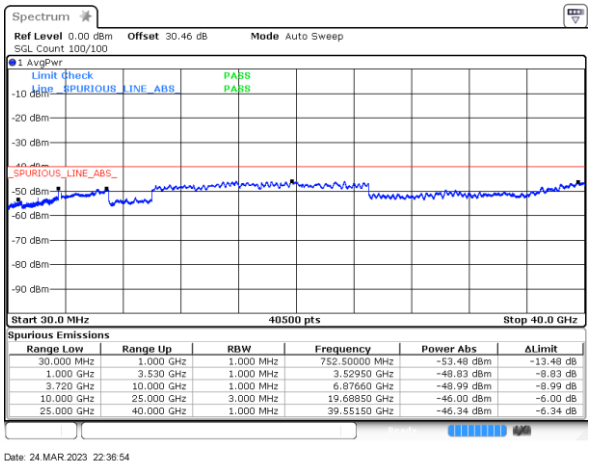
Highest Channel / 20M



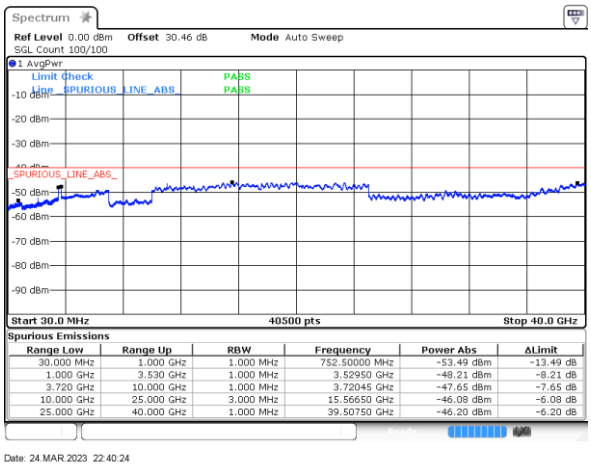
Lowest Channel / 30M



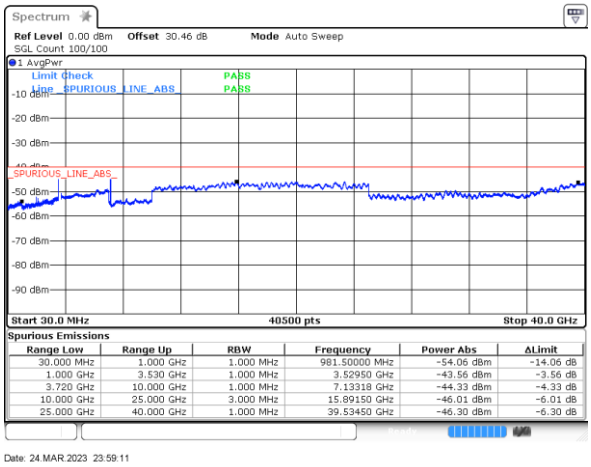
Middle Channel / 30M



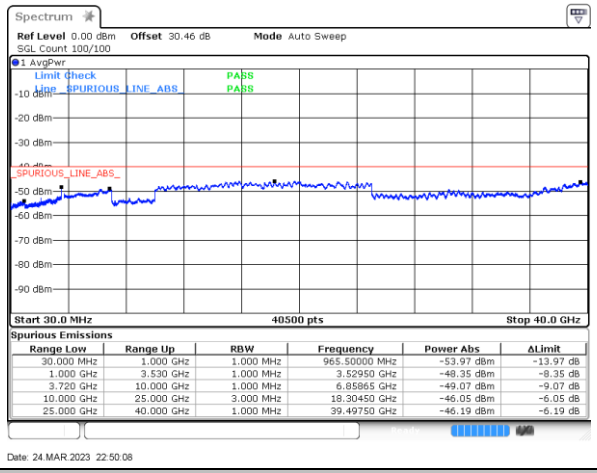
Highest Channel / 30Ml.



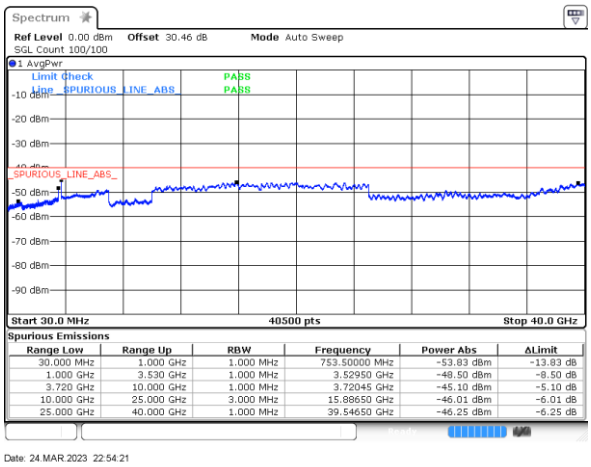
Lowest Channel / 40M



Middle Channel / 40M



Highest Channel / 40M



Frequency Stability

Test Conditions		Middle Channel / 3625MHz	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.00	PASS
40	Normal Voltage	1.38	
30	Normal Voltage	1.38	
20(Ref.)	Normal Voltage	0.00	
10	Normal Voltage	-1.38	
0	Normal Voltage	-1.38	
-10	Normal Voltage	-1.38	
-20	Normal Voltage	0.00	
-30	Normal Voltage	-1.38	
20	Maximum Voltage	1.38	
20	Normal Voltage	-1.38	
20	Minimum Voltage	1.38	

Note:

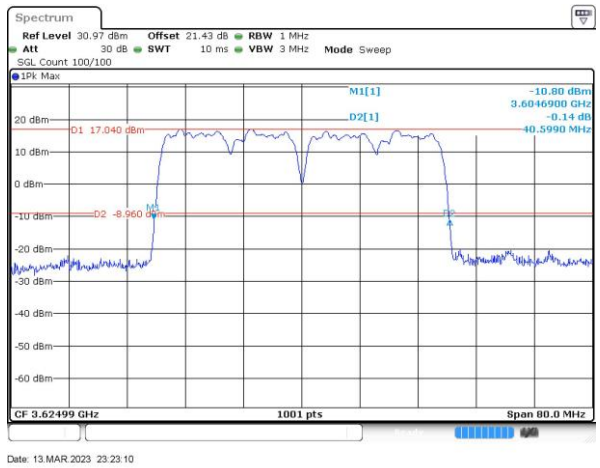
1. PoE Normal Voltage =50Vdc .；Minimum Voltage =42.5 Vdc.；Maximum Voltage =57.5 Vdc.
2. The frequency fundamental emissions stay within the authorized frequency block.

<Multi Carrier (Contiguous)>

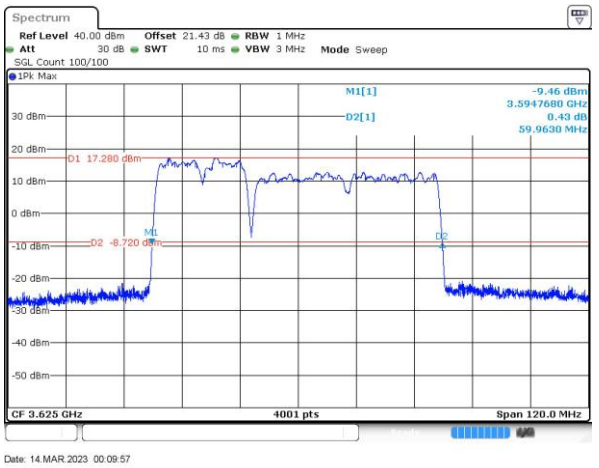
26dB Bandwidth

Mode	26dB BW(MHz)			
Frequency	3615MHz + 3635MHz	3605MHz + 3635MHz	3615MHz + 3645MHz	3605MHz + 3645MHz
BW	20MHz+20MHz	20MHz+40MHz	40MHz+20MHz	40MHz+40MHz
Middle CH	40.599	59.963	60.180	79.920

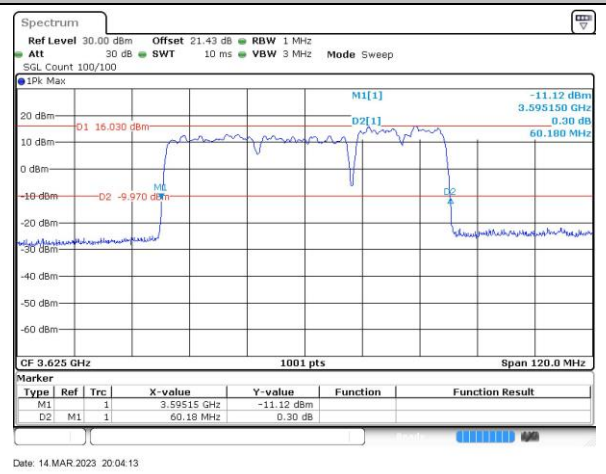
Middle Channel / 20MHz+20MHz



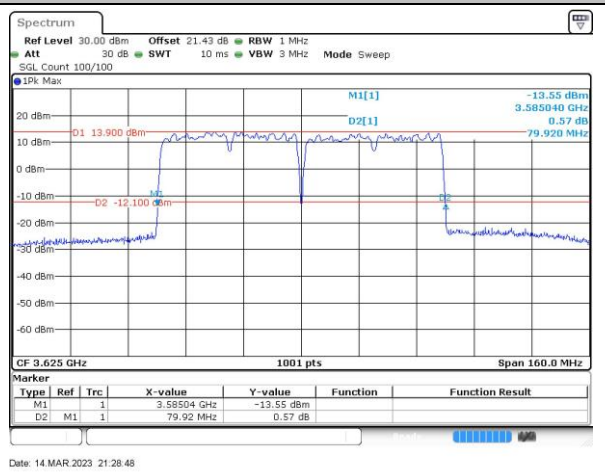
Middle Channel / 20MHz+40MHz



Middle Channel / 40MHz+20MHz



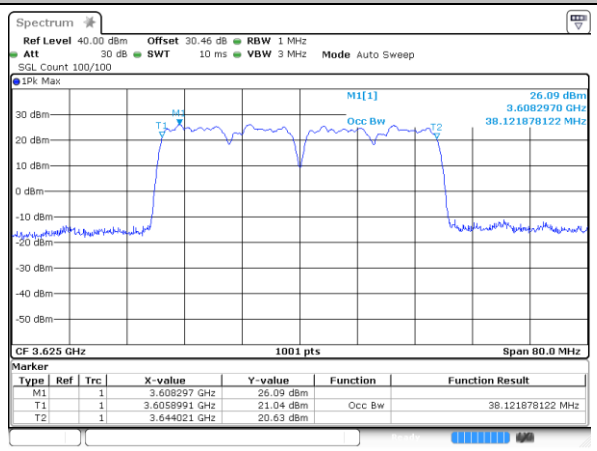
Middle Channel / 40MHz+40MHz



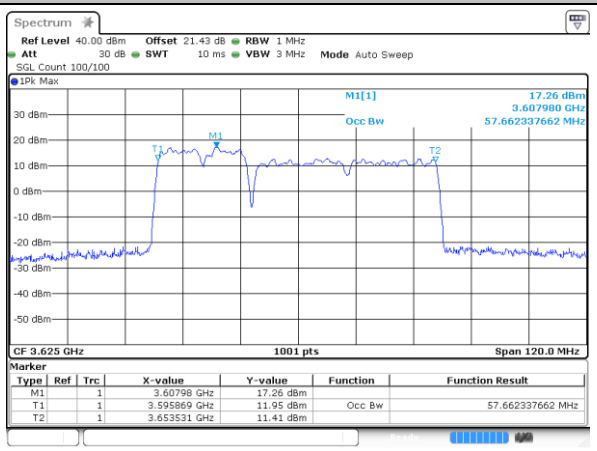
Occupied Bandwidth

Mode	99%OBW(MHz)			
Frequency	3615MHz + 3635MHz	3605MHz + 3635MHz	3615MHz + 3645MHz	3605MHz + 3645MHz
BW	20MHz+20MHz	20MHz+40MHz	40MHz+20MHz	40MHz+40MHz
Middle CH	38.122	57.662	57.423	76.883

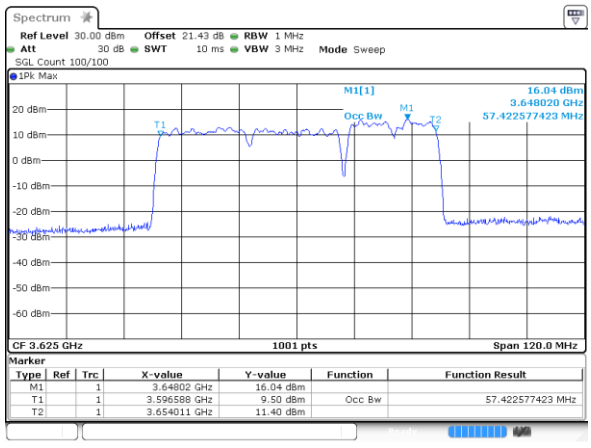
Middle Channel / 20MHz+20MHz



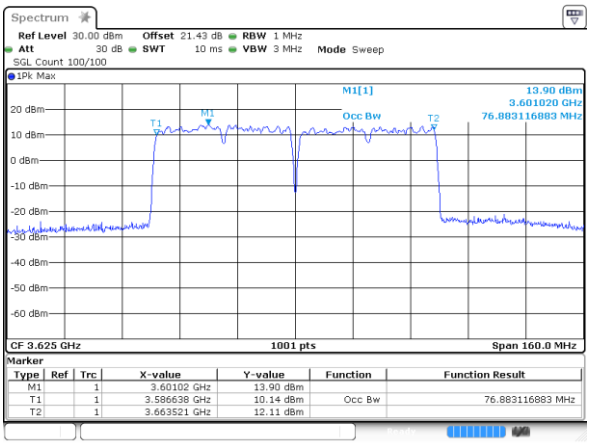
Middle Channel / 20MHz+40MHz



Middle Channel / 40MHz+20MHz



Middle Channel / 40MHz+40MHz



EIRP Power Density

EIRP PSD (dBm/MHz)								
	Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm/MHz)	Total EIRP (dBm/MHz)	Limit (dBm/MHz)
Multi Carrier (MC) Intra Band Contiguous	20MHz+20MHz_Low	3560 + 3580	12/-0.5	16.01	9.03	4.96	30.00	< 37 dBm/MHz
	20MHz+20MHz_Middle	3615 + 3635	9/-1	16.01	9.03	7.48	32.52	
	20MHz+20MHz_High	3670 + 3690	9/0	16.01	9.03	8.45	33.49	
	20MHz+40MHz_Low	3560 + 3590	12/-1	16.01	9.03	3	28.04	
	20MHz+40MHz_Middle	3605 + 3635	9/-1	16.01	9.03	7.6	32.64	
	20MHz+40MHz_High	3650 + 3680	9/-1	16.01	9.03	8.08	33.12	
	40MHz+20MHz_Low	3570 + 3600	12/-0.5	16.01	9.03	6.51	31.55	
	40MHz+20MHz_Middle	3615 + 3645	9/-2.5	16.01	9.03	6.34	31.38	
	40MHz+20MHz_High	3660 + 3690	9/-0.5	16.01	9.03	8.38	33.42	
	40MHz+40MHz_Low	3570 + 3610	12/-0.5	16.01	9.03	3.07	28.11	
	40MHz+40MHz_Middle	3605 + 3645	9/-1.5	16.01	9.03	4.87	29.91	
	40MHz+40MHz_High	3640 + 3680	9/-0.5	16.01	9.03	5.49	30.53	

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Maximum EIRP Power Density – 20+20MHz mode 3670MHz+3690MHz

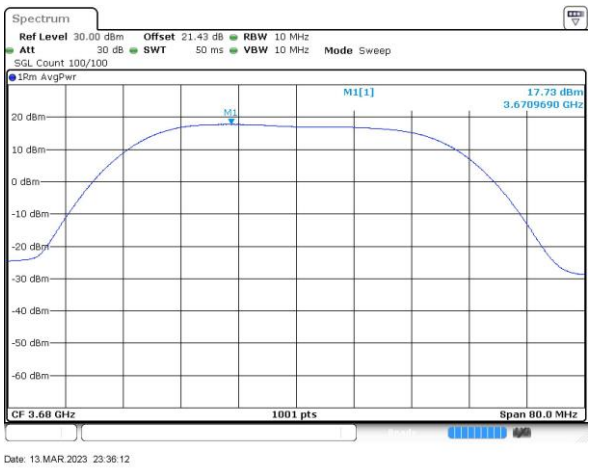
EIRP Power (dBm/10MHz)

EIRP Power (dBm/10MHz)							
Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm)	Total EIRP (dBm/10MHz)	Limit (dBm/10MHz)
20MHz+20MHz_Low	3560 + 3580	12/-0.5	16.01	9.03	14	39.0	< 47 dBm/10MHz
20MHz+20MHz_Middle	3615 + 3635	9/-1	16.01	9.03	16.75	41.8	
20MHz+20MHz_High	3670 + 3690	9/0	16.01	9.03	17.73	42.8	
20MHz+40MHz_Low	3560 + 3590	12/-1	16.01	9.03	12.17	37.2	
20MHz+40MHz_Middle	3605 + 3635	9/-1	16.01	9.03	16.88	41.9	
20MHz+40MHz_High	3650 + 3680	9/-1	16.01	9.03	17.3	42.3	
40MHz+20MHz_Low	3570 + 3600	12/-0.5	16.01	9.03	15.61	40.7	
40MHz+20MHz_Middle	3615 + 3645	9/-2.5	16.01	9.03	15.56	40.6	
40MHz+20MHz_High	3660 + 3690	9/-0.5	16.01	9.03	17.38	42.4	
40MHz+40MHz_Low	3570 + 3610	12/-0.5	16.01	9.03	12.63	37.7	
40MHz+40MHz_Middle	3605 + 3645	9/-1.5	16.01	9.03	14.4	39.4	
40MHz+40MHz_High	3640 + 3680	9/-0.5	16.01	9.03	15.1	40.1	

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Maximum EIRP Power (dBm/10MHz) – 20+20MHz mode 3670MHz+3690MHz



EIRP total Power (dBm) for reporting only

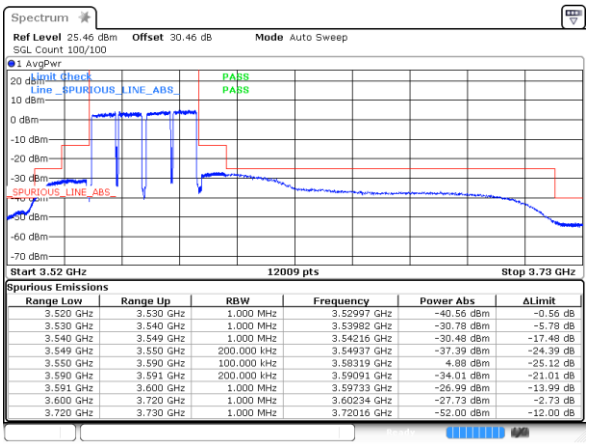
Total EIRP Power (dBm) reporting only						
Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm)	Total EIRP (dBm)
20MHz+20MHz_Low	3560 + 3580	12/-0.5	16.01	9.03	19.6	44.7
20MHz+20MHz_Middle	3615 + 3635	9/-1	16.01	9.03	22.6	47.6
20MHz+20MHz_High	3670 + 3690	9/0	16.01	9.03	23.6	48.6
20MHz+40MHz_Low	3560 + 3590	12/-1	16.01	9.03	19.8	44.9
20MHz+40MHz_Middle	3605 + 3635	9/-1	16.01	9.03	23.5	48.6
20MHz+40MHz_High	3650 + 3680	9/-1	16.01	9.03	23.2	48.3
40MHz+20MHz_Low	3570 + 3600	12/-0.5	16.01	9.03	20.8	45.9
40MHz+20MHz_Middle	3615 + 3645	9/-2.5	16.01	9.03	21.7	46.8
40MHz+20MHz_High	3660 + 3690	9/-0.5	16.01	9.03	23.4	48.5
40MHz+40MHz_Low	3570 + 3610	12/-0.5	16.01	9.03	20.5	45.6
40MHz+40MHz_Middle	3605 + 3645	9/-1.5	16.01	9.03	22.7	47.8
40MHz+40MHz_High	3640 + 3680	9/-0.5	16.01	9.03	23.4	48.5

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Conducted Band Edge

20MHz+20MHz Low Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52997 GHz	-40.56 dBm	-0.56 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53982 GHz	-30.78 dBm	-5.78 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54216 GHz	-30.48 dBm	-17.48 dB
3.549 GHz	3.550 GHz	200.000 kHz	3.54937 GHz	-37.39 dBm	-24.39 dB
3.550 GHz	3.590 GHz	100.000 kHz	3.58319 GHz	4.88 dBm	-25.12 dB
3.590 GHz	3.591 GHz	200.000 kHz	3.59091 GHz	-34.01 dBm	-21.01 dB
3.591 GHz	3.600 GHz	1.000 MHz	3.59733 GHz	-26.99 dBm	-13.99 dB
3.600 GHz	3.720 GHz	1.000 MHz	3.60234 GHz	-27.73 dBm	-2.73 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72016 GHz	-52.00 dBm	-12.00 dB

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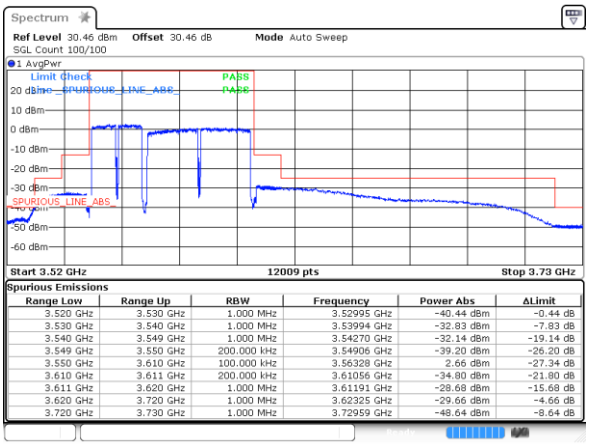
20MHz+40MHz Low Channel

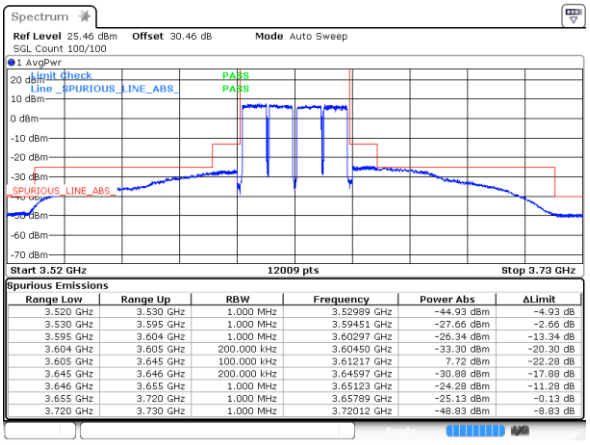


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52995 GHz	-40.44 dBm	-0.44 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53994 GHz	-32.83 dBm	-7.83 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54270 GHz	-32.14 dBm	-19.14 dB
3.549 GHz	3.550 GHz	200.000 kHz	3.54906 GHz	-39.20 dBm	-26.20 dB
3.550 GHz	3.610 GHz	100.000 kHz	3.56328 GHz	2.66 dBm	-27.34 dB
3.610 GHz	3.611 GHz	200.000 kHz	3.61056 GHz	-34.80 dBm	-21.80 dB
3.611 GHz	3.620 GHz	1.000 MHz	3.61191 GHz	-28.68 dBm	-15.68 dB
3.620 GHz	3.720 GHz	1.000 MHz	3.62325 GHz	-29.66 dBm	-4.66 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72959 GHz	-48.64 dBm	-8.64 dB

Date: 13.MAR.2023 23:45:41

20MHz+20MHz Middle Channel

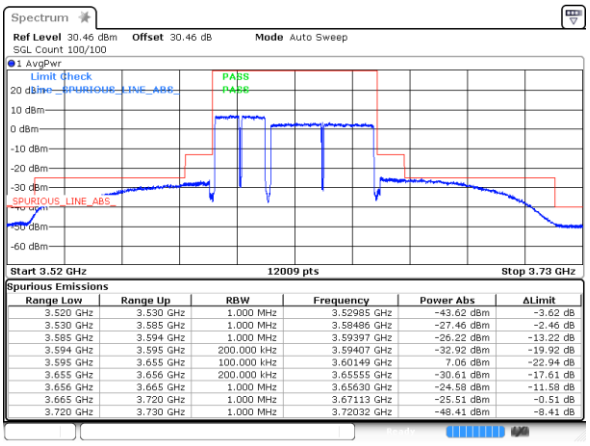


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52989 GHz	-44.93 dBm	-4.93 dB
3.530 GHz	3.595 GHz	1.000 MHz	3.59451 GHz	-27.66 dBm	-2.66 dB
3.595 GHz	3.604 GHz	1.000 MHz	3.60297 GHz	-26.34 dBm	-13.34 dB
3.604 GHz	3.605 GHz	200.000 kHz	3.60450 GHz	-33.30 dBm	-20.30 dB
3.605 GHz	3.645 GHz	100.000 kHz	3.61217 GHz	7.72 dBm	-22.28 dB
3.645 GHz	3.646 GHz	200.000 kHz	3.64597 GHz	-30.88 dBm	-17.88 dB
3.646 GHz	3.655 GHz	1.000 MHz	3.65123 GHz	-24.28 dBm	-11.28 dB
3.655 GHz	3.720 GHz	1.000 MHz	3.65789 GHz	-25.13 dBm	-0.13 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72012 GHz	-48.83 dBm	-8.83 dB

Date: 13.MAR.2023 23:09:48

20MHz+40MHz Middle Channel

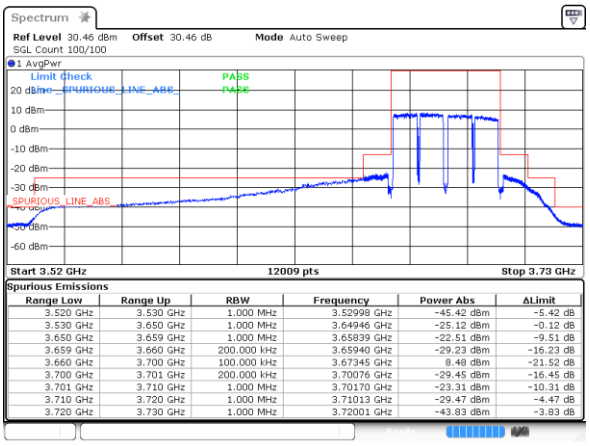


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52985 GHz	-43.62 dBm	-3.62 dB
3.530 GHz	3.585 GHz	1.000 MHz	3.58486 GHz	-27.46 dBm	-2.46 dB
3.585 GHz	3.594 GHz	1.000 MHz	3.59397 GHz	-26.22 dBm	-13.22 dB
3.594 GHz	3.595 GHz	200.000 kHz	3.59407 GHz	-32.92 dBm	-19.92 dB
3.595 GHz	3.655 GHz	100.000 kHz	3.60149 GHz	7.06 dBm	-22.94 dB
3.655 GHz	3.656 GHz	200.000 kHz	3.65555 GHz	-30.61 dBm	-17.61 dB
3.656 GHz	3.665 GHz	1.000 MHz	3.65630 GHz	-24.58 dBm	-11.58 dB
3.665 GHz	3.720 GHz	1.000 MHz	3.67113 GHz	-25.51 dBm	-0.51 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72032 GHz	-48.41 dBm	-8.41 dB

Date: 14.MAR.2023 00:00:02

20MHz+20MHz High Channel

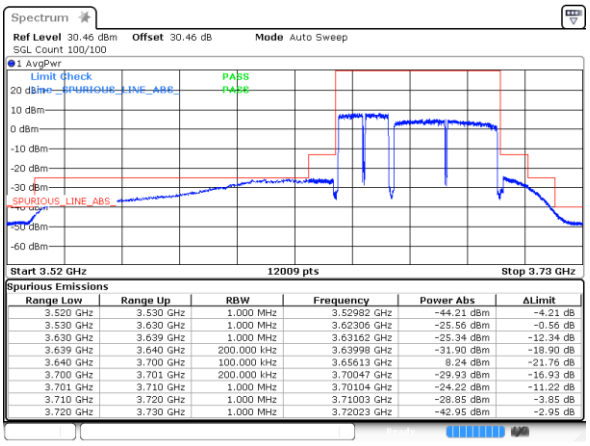


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52998 GHz	-45.42 dBm	-5.42 dB
3.530 GHz	3.650 GHz	1.000 MHz	3.64946 GHz	-25.12 dBm	-0.12 dB
3.650 GHz	3.659 GHz	1.000 MHz	3.65839 GHz	-22.51 dBm	-9.51 dB
3.659 GHz	3.660 GHz	200.000 kHz	3.65940 GHz	-29.23 dBm	-16.23 dB
3.660 GHz	3.700 GHz	100.000 kHz	3.67345 GHz	8.48 dBm	-21.52 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70076 GHz	-29.45 dBm	-16.45 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70170 GHz	-23.31 dBm	-10.31 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71013 GHz	-29.47 dBm	-4.47 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72001 GHz	-43.83 dBm	-3.83 dB

Date: 13.MAR.2023 23:31:15

20MHz+40MHz High Channel

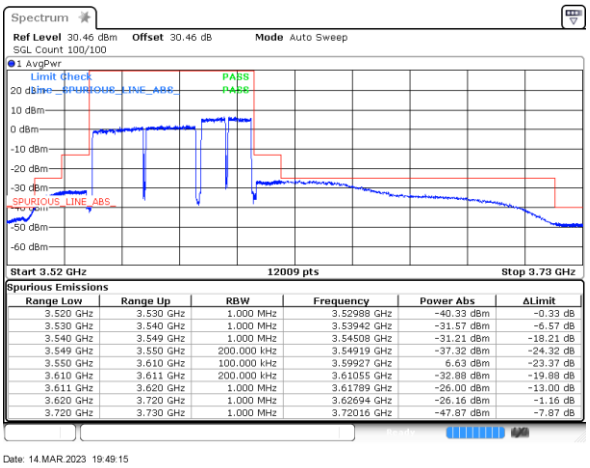


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52982 GHz	-44.21 dBm	-4.21 dB
3.530 GHz	3.630 GHz	1.000 MHz	3.62306 GHz	-25.56 dBm	-0.56 dB
3.630 GHz	3.639 GHz	1.000 MHz	3.63162 GHz	-25.34 dBm	-12.34 dB
3.639 GHz	3.640 GHz	200.000 kHz	3.63998 GHz	-31.90 dBm	-18.90 dB
3.640 GHz	3.700 GHz	100.000 kHz	3.65613 GHz	8.24 dBm	-21.76 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70047 GHz	-29.93 dBm	-16.93 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70104 GHz	-24.22 dBm	-11.22 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71003 GHz	-28.85 dBm	-3.85 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72023 GHz	-42.95 dBm	-2.95 dB

Date: 14.MAR.2023 19:30:14

40MHz+20MHz Low Channel

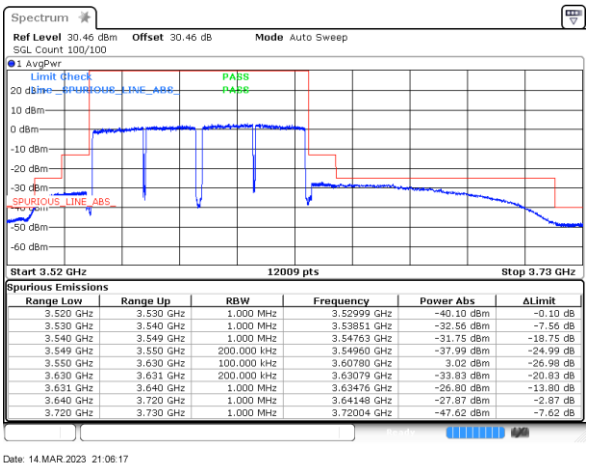


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52988 GHz	-40.33 dBm	-0.33 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53942 GHz	-31.57 dBm	-6.57 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54508 GHz	-31.21 dBm	-18.21 dB
3.549 GHz	3.550 GHz	200.000 kHz	3.54919 GHz	-37.32 dBm	-24.32 dB
3.550 GHz	3.610 GHz	100.000 kHz	3.59927 GHz	6.63 dBm	-23.37 dB
3.610 GHz	3.611 GHz	200.000 kHz	3.61055 GHz	-32.88 dBm	-19.88 dB
3.611 GHz	3.620 GHz	1.000 MHz	3.61789 GHz	-26.00 dBm	-13.00 dB
3.620 GHz	3.720 GHz	1.000 MHz	3.62694 GHz	-26.16 dBm	-1.16 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72016 GHz	-47.87 dBm	-7.87 dB

Date: 14.MAR.2023 19:49:15

40MHz+40MHz Low Channel

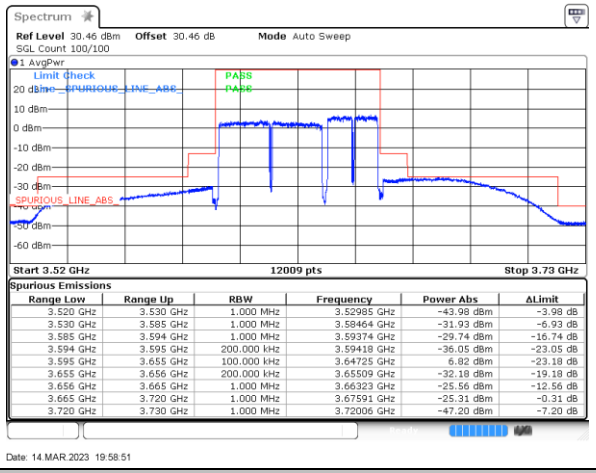


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52999 GHz	-40.10 dBm	-0.10 dB
3.530 GHz	3.540 GHz	1.000 MHz	3.53851 GHz	-32.56 dBm	-7.56 dB
3.540 GHz	3.549 GHz	1.000 MHz	3.54763 GHz	-31.75 dBm	-18.75 dB
3.549 GHz	3.550 GHz	200.000 kHz	3.54960 GHz	-37.99 dBm	-24.99 dB
3.550 GHz	3.630 GHz	100.000 kHz	3.60780 GHz	3.02 dBm	-26.98 dB
3.630 GHz	3.631 GHz	200.000 kHz	3.63079 GHz	-33.83 dBm	-20.83 dB
3.631 GHz	3.640 GHz	1.000 MHz	3.63476 GHz	-26.80 dBm	-13.80 dB
3.640 GHz	3.720 GHz	1.000 MHz	3.64148 GHz	-27.87 dBm	-2.87 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72004 GHz	-47.62 dBm	-7.62 dB

Date: 14.MAR.2023 21:06:17

40MHz+20MHz Middle Channel

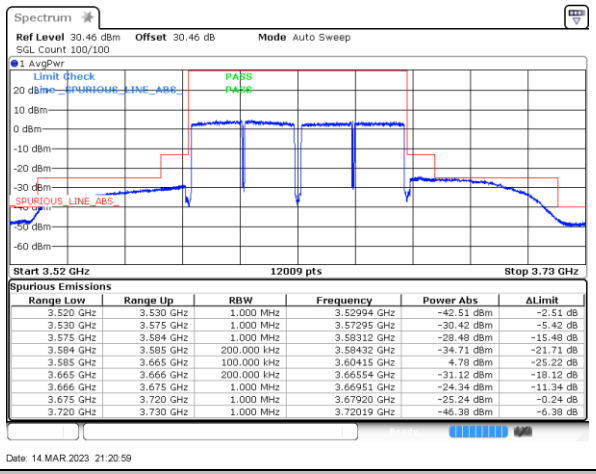


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52985 GHz	-43.98 dBm	-3.98 dB
3.530 GHz	3.585 GHz	1.000 MHz	3.58464 GHz	-31.93 dBm	-6.93 dB
3.585 GHz	3.594 GHz	1.000 MHz	3.59374 GHz	-29.74 dBm	-16.74 dB
3.594 GHz	3.595 GHz	200.000 kHz	3.59418 GHz	-36.05 dBm	-23.05 dB
3.595 GHz	3.655 GHz	100.000 kHz	3.64725 GHz	6.82 dBm	-23.18 dB
3.655 GHz	3.656 GHz	200.000 kHz	3.65509 GHz	-32.18 dBm	-19.18 dB
3.656 GHz	3.665 GHz	1.000 MHz	3.66323 GHz	-25.56 dBm	-12.56 dB
3.665 GHz	3.720 GHz	1.000 MHz	3.67591 GHz	-25.31 dBm	-0.31 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72006 GHz	-47.20 dBm	-7.20 dB

Date: 14.MAR.2023 19:58:51

40MHz+40MHz Middle Channel

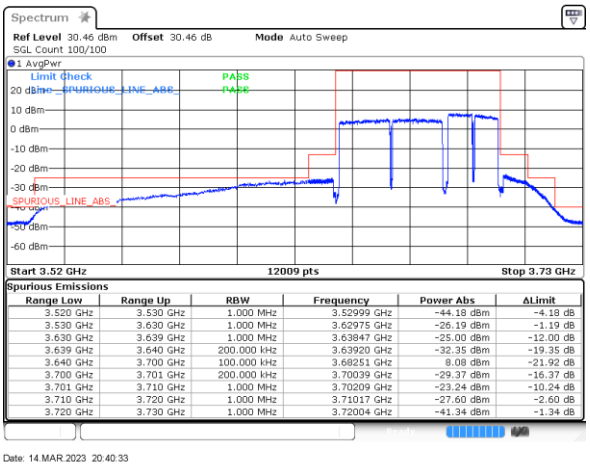


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52994 GHz	-42.51 dBm	-2.51 dB
3.530 GHz	3.575 GHz	1.000 MHz	3.57295 GHz	-30.42 dBm	-5.42 dB
3.575 GHz	3.584 GHz	1.000 MHz	3.58312 GHz	-28.48 dBm	-15.48 dB
3.584 GHz	3.585 GHz	200.000 kHz	3.58432 GHz	-34.71 dBm	-21.71 dB
3.585 GHz	3.665 GHz	100.000 kHz	3.60415 GHz	4.78 dBm	-25.22 dB
3.665 GHz	3.666 GHz	200.000 kHz	3.66554 GHz	-31.12 dBm	-18.12 dB
3.666 GHz	3.675 GHz	1.000 MHz	3.66951 GHz	-24.34 dBm	-11.34 dB
3.675 GHz	3.720 GHz	1.000 MHz	3.67920 GHz	-25.24 dBm	-0.24 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72019 GHz	-46.38 dBm	-6.38 dB

Date: 14.MAR.2023 21:20:59

40MHz+20MHz High Channel

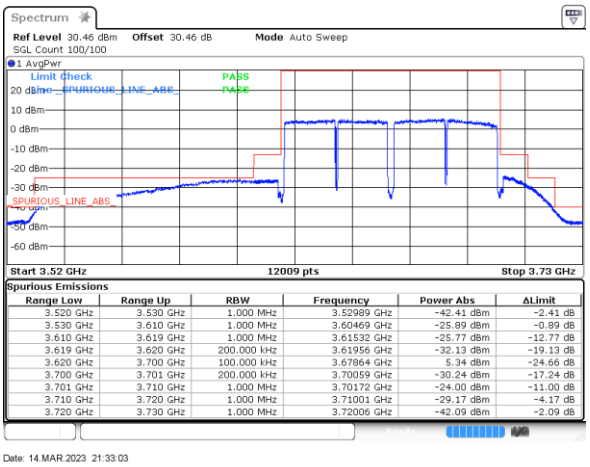


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52999 GHz	-44.18 dBm	-4.18 dB
3.530 GHz	3.630 GHz	1.000 MHz	3.62975 GHz	-26.19 dBm	-1.19 dB
3.630 GHz	3.639 GHz	1.000 MHz	3.63847 GHz	-25.00 dBm	-12.00 dB
3.639 GHz	3.640 GHz	200.000 kHz	3.63920 GHz	-32.35 dBm	-19.35 dB
3.640 GHz	3.700 GHz	100.000 kHz	3.68251 GHz	8.08 dBm	-21.92 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70039 GHz	-29.37 dBm	-16.37 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70209 GHz	-23.24 dBm	-10.24 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71017 GHz	-27.60 dBm	-2.60 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72004 GHz	-41.34 dBm	-1.34 dB

Date: 14.MAR.2023 20:40:33

40MHz+40MHz High Channel



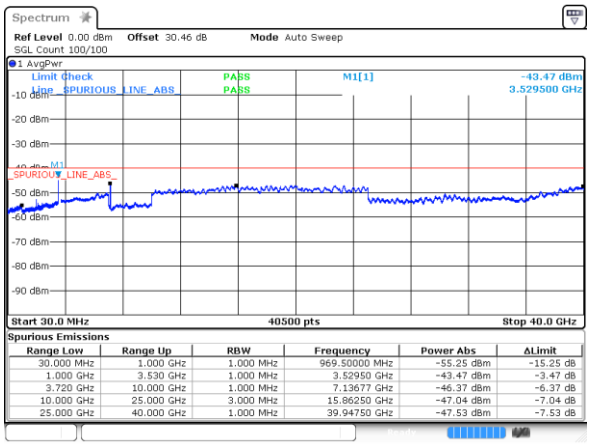
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
3.520 GHz	3.530 GHz	1.000 MHz	3.52989 GHz	-42.41 dBm	-2.41 dB
3.530 GHz	3.610 GHz	1.000 MHz	3.60469 GHz	-25.89 dBm	-0.89 dB
3.610 GHz	3.619 GHz	1.000 MHz	3.61532 GHz	-25.77 dBm	-12.77 dB
3.619 GHz	3.620 GHz	200.000 kHz	3.61956 GHz	-32.13 dBm	-19.13 dB
3.620 GHz	3.700 GHz	100.000 kHz	3.67864 GHz	5.34 dBm	-24.66 dB
3.700 GHz	3.701 GHz	200.000 kHz	3.70059 GHz	-30.24 dBm	-17.24 dB
3.701 GHz	3.710 GHz	1.000 MHz	3.70172 GHz	-24.00 dBm	-11.00 dB
3.710 GHz	3.720 GHz	1.000 MHz	3.71001 GHz	-29.17 dBm	-4.17 dB
3.720 GHz	3.730 GHz	1.000 MHz	3.72006 GHz	-42.09 dBm	-2.09 dB

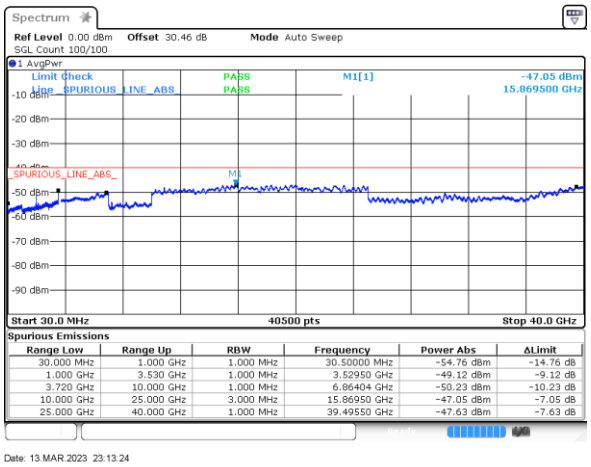
Date: 14.MAR.2023 21:33:03

Conducted Spurious Emission

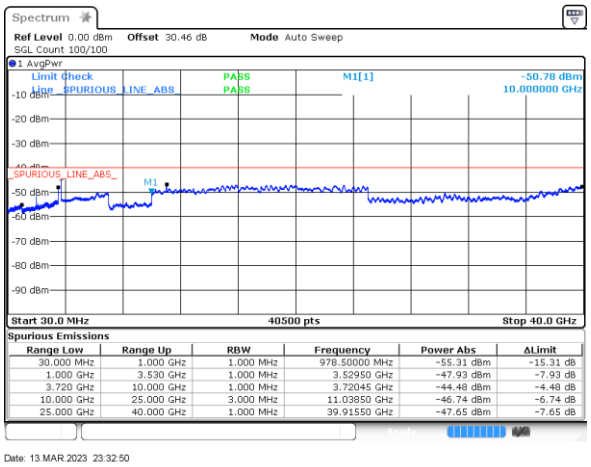
20MHz+20MHz_Low Channel



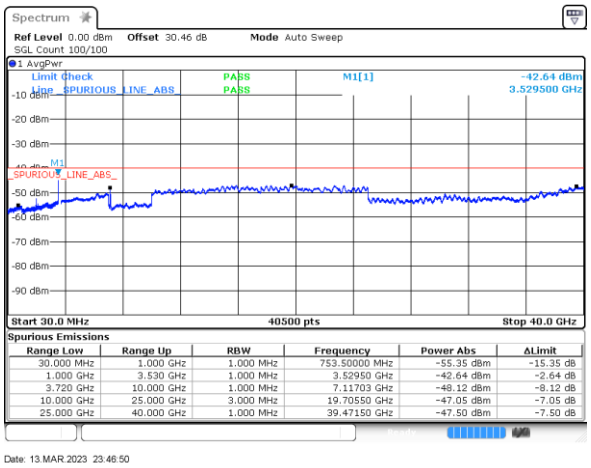
20MHz+20MHz_Middle Channel



20MHz+20MHz_High Channel



20MHz+40MHz_Low Channel

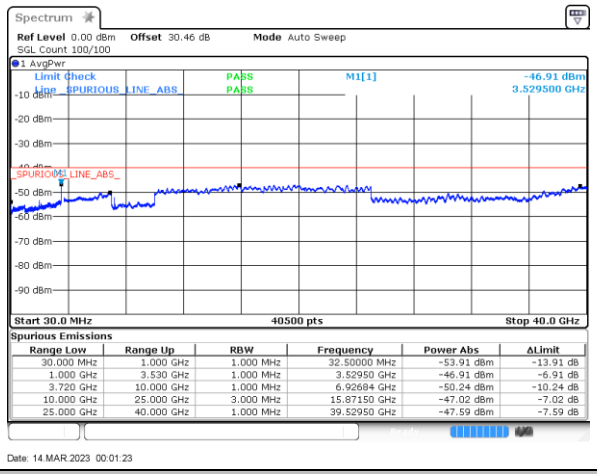


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	753.50000 MHz	-55.35 dBm	-15.35 dB
1.000 GHz	3.530 GHz	1.000 MHz	3.52950 GHz	-42.64 dBm	-2.64 dB
3.720 GHz	10.000 GHz	1.000 MHz	7.11703 GHz	-48.12 dBm	-8.12 dB
10.000 GHz	25.000 GHz	3.000 MHz	19.70550 GHz	-47.05 dBm	-7.05 dB
25.000 GHz	40.000 GHz	1.000 MHz	39.47150 GHz	-47.50 dBm	-7.50 dB

Date: 13.MAR.2023 23:46:50

20MHz+40MHz_Middle Channel

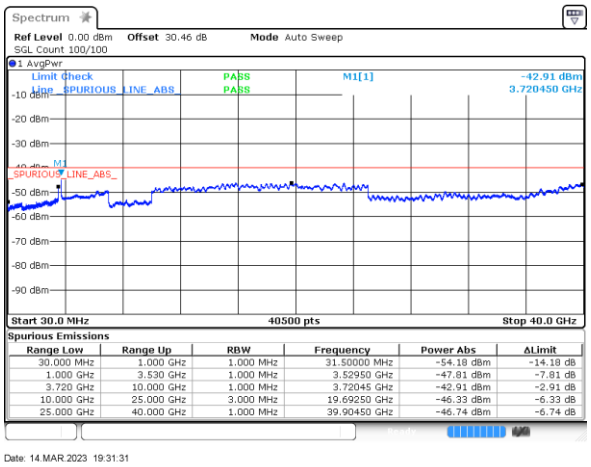


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	32.50000 MHz	-53.91 dBm	-13.91 dB
1.000 GHz	3.530 GHz	1.000 MHz	3.52950 GHz	-46.91 dBm	-6.91 dB
3.720 GHz	10.000 GHz	1.000 MHz	6.92684 GHz	-50.24 dBm	-10.24 dB
10.000 GHz	25.000 GHz	3.000 MHz	15.87150 GHz	-47.02 dBm	-7.02 dB
25.000 GHz	40.000 GHz	1.000 MHz	39.52950 GHz	-47.59 dBm	-7.59 dB

Date: 14.MAR.2023 00:01:23

20MHz+40MHz_High Channel

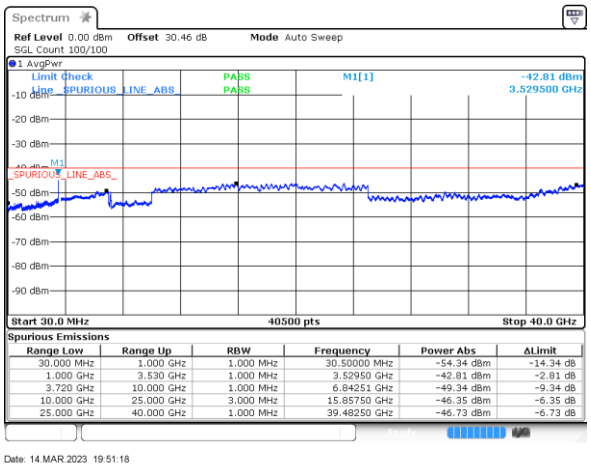


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	31.50000 MHz	-54.18 dBm	-14.18 dB
1.000 GHz	3.530 GHz	1.000 MHz	3.52950 GHz	-47.81 dBm	-7.81 dB
3.720 GHz	10.000 GHz	1.000 MHz	3.72045 GHz	-42.91 dBm	-2.91 dB
10.000 GHz	25.000 GHz	3.000 MHz	19.69250 GHz	-46.33 dBm	-6.33 dB
25.000 GHz	40.000 GHz	1.000 MHz	39.90450 GHz	-46.74 dBm	-6.74 dB

Date: 14.MAR.2023 19:31:31

40MHz+20MHz_Low Channel

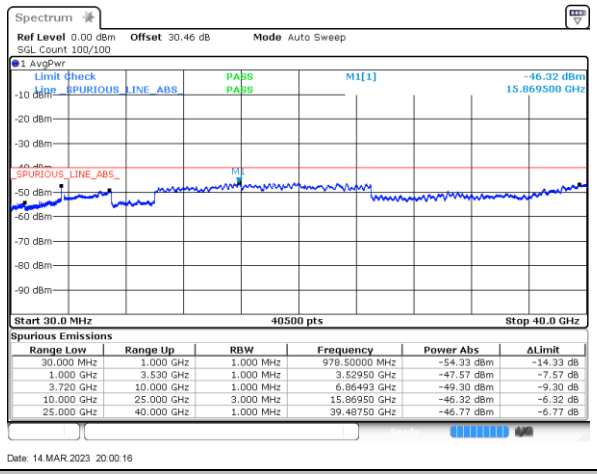


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	30.50000 MHz	-54.34 dBm	-14.34 dB
1.000 GHz	3.530 GHz	1.000 MHz	3.52950 GHz	-42.81 dBm	-2.81 dB
3.720 GHz	10.000 GHz	1.000 MHz	6.84251 GHz	-49.34 dBm	-9.34 dB
10.000 GHz	25.000 GHz	3.000 MHz	15.85750 GHz	-46.35 dBm	-6.35 dB
25.000 GHz	40.000 GHz	1.000 MHz	39.48250 GHz	-46.73 dBm	-6.73 dB

Date: 14.MAR.2023 19:51:18

40MHz+20MHz_Middle Channel

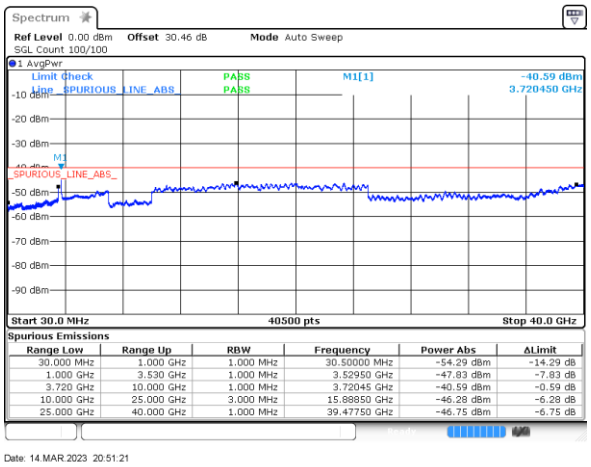


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	978.50000 MHz	-54.33 dBm	-14.33 dB
1.000 GHz	3.530 GHz	1.000 MHz	3.52950 GHz	-47.57 dBm	-7.57 dB
3.720 GHz	10.000 GHz	1.000 MHz	6.86493 GHz	-49.30 dBm	-9.30 dB
10.000 GHz	25.000 GHz	3.000 MHz	15.86950 GHz	-46.32 dBm	-6.32 dB
25.000 GHz	40.000 GHz	1.000 MHz	39.48750 GHz	-46.77 dBm	-6.77 dB

Date: 14.MAR.2023 20:00:16

40MHz+20MHz_High Channel

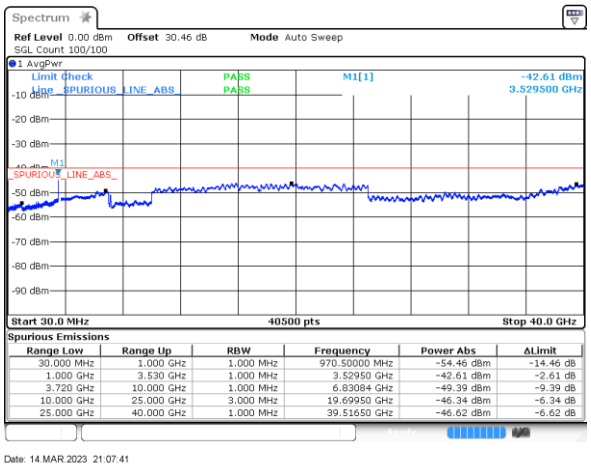


Spurious Emissions

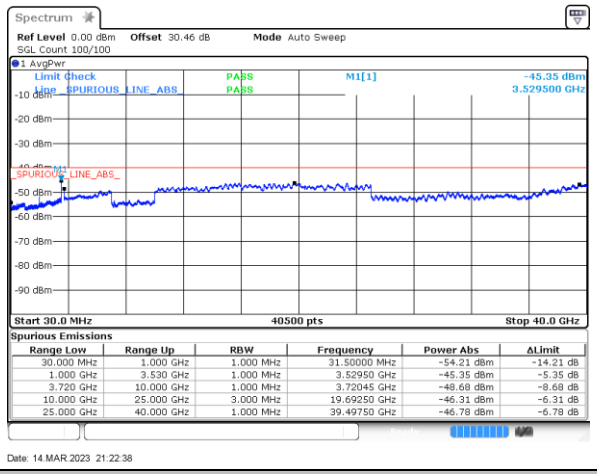
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	30.50000 MHz	-54.29 dBm	-14.29 dB
1.000 GHz	3.530 GHz	1.000 MHz	3.52950 GHz	-47.83 dBm	-7.83 dB
3.720 GHz	10.000 GHz	1.000 MHz	3.72045 GHz	-40.59 dBm	-0.59 dB
10.000 GHz	25.000 GHz	3.000 MHz	15.88850 GHz	-46.28 dBm	-6.28 dB
25.000 GHz	40.000 GHz	1.000 MHz	39.47750 GHz	-46.75 dBm	-6.75 dB

Date: 14.MAR.2023 20:51:21

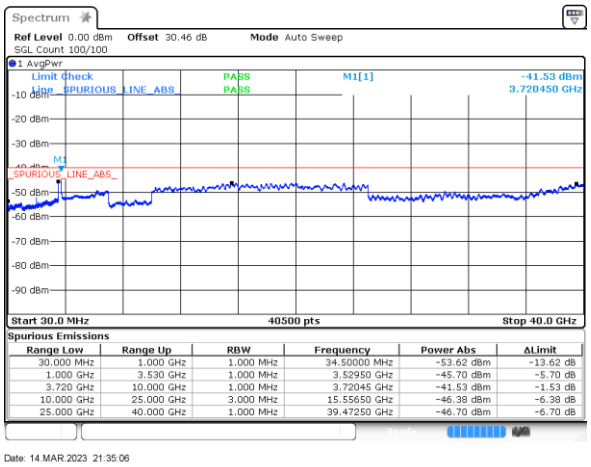
40MHz+40MHz_Low Channel



40MHz+40MHz_Middle Channel



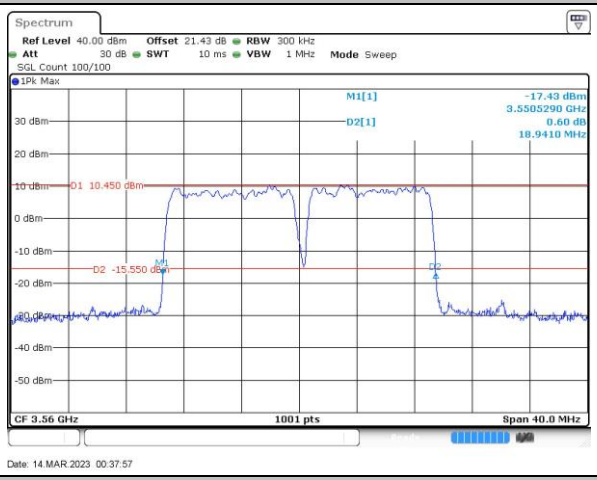
40MHz+40MHz_High Channel

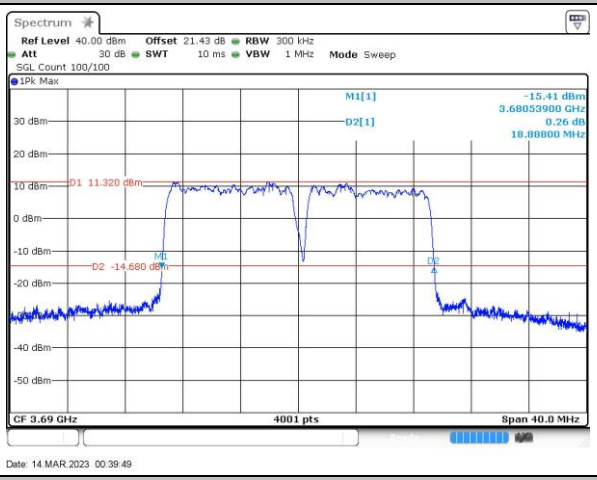


26dB Bandwidth

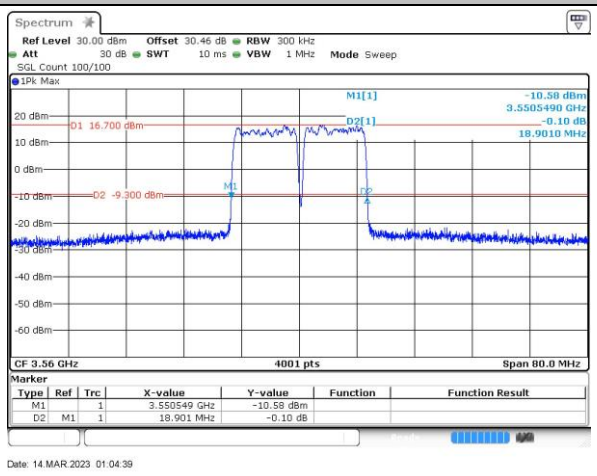
Mode	26dB BW(MHz)			
Frequency	3560MHz + 3690MHz	3560 MHz+3680 MHz	3570 MHz+3690 MHz	3570 MHz +3680MHz
BW	20MHz+20MHz	20MHz+40MHz	40MHz+20MHz	40MHz+40MHz
Middle CH	37.83	58.70	58.60	79.49

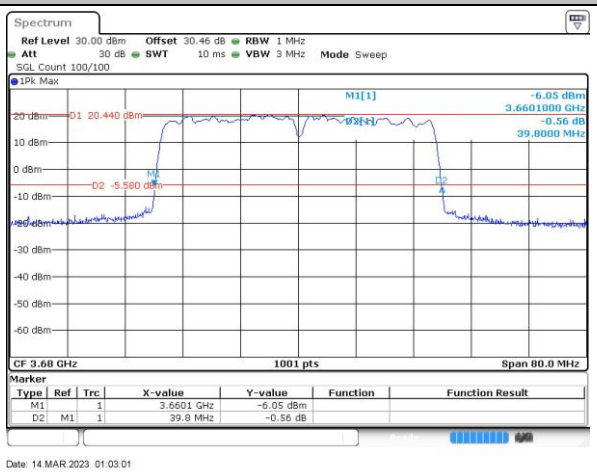
20MHz (Low Channel) +20MHz (High Channel)



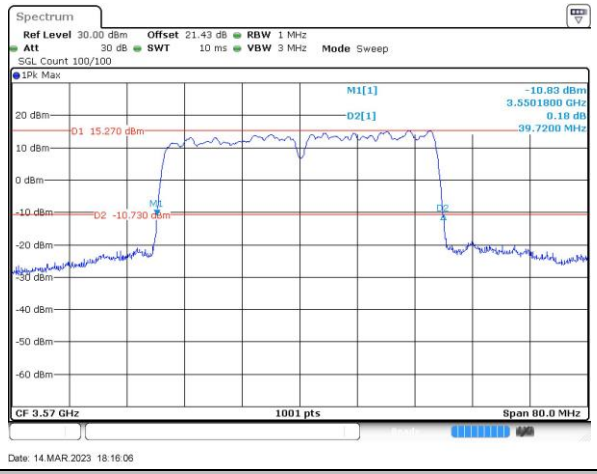


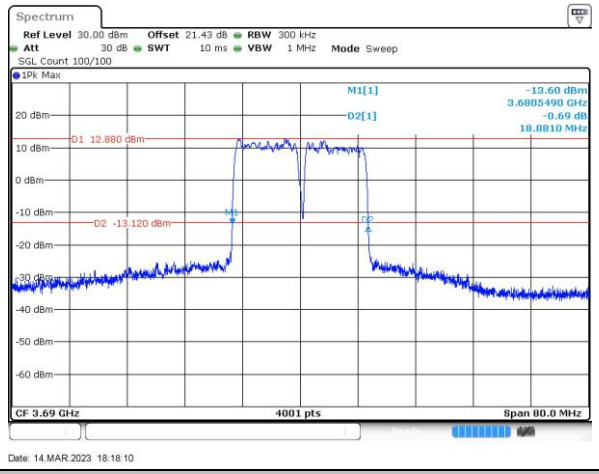
20MHz (Low Channel) +40MHz (High Channel)



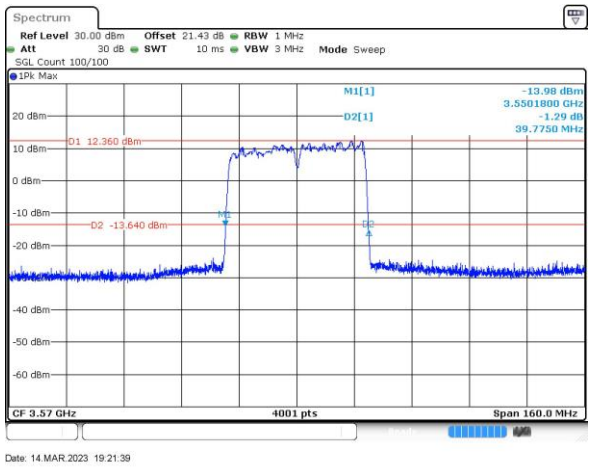


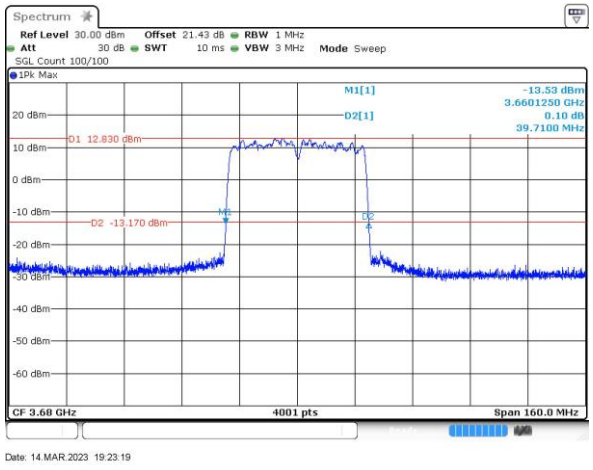
40MHz (Low Channel) + 20MHz (High Channel)





40MHz (Low Channel) + 40MHz (High Channel)

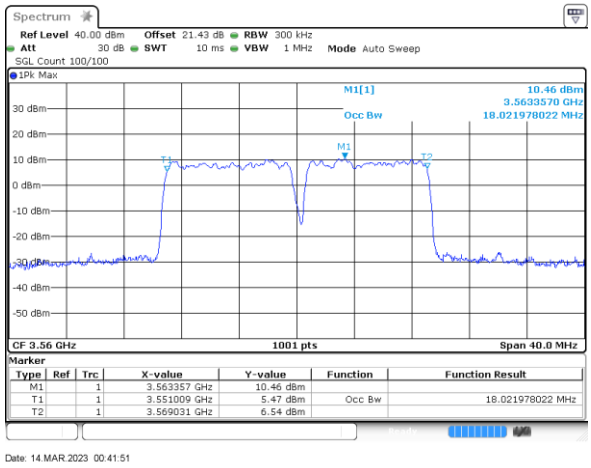


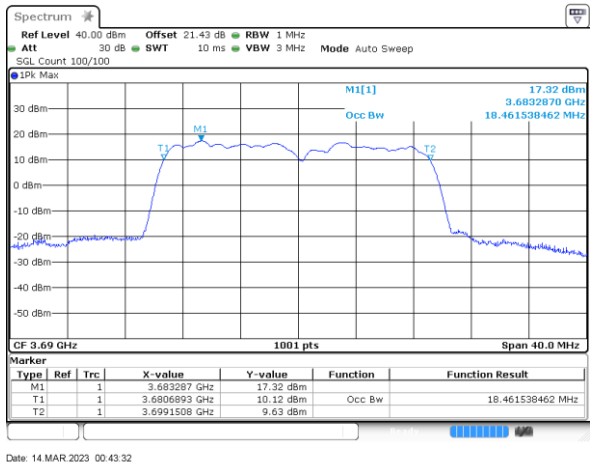


Occupied Bandwidth

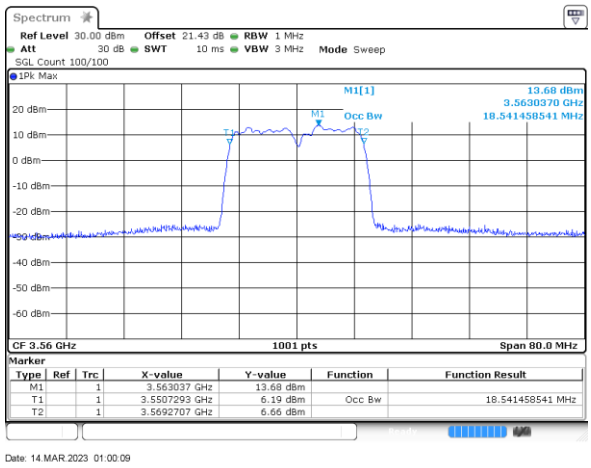
Mode	99%OBW(MHz)			
Frequency	3560MHz + 3690MHz	3560 MHz+3680 MHz	3570 MHz+3690 MHz	3570 MH + 3680 MHz
BW	20MHz+20MHz	20MHz+40MHz	40MHz+20MHz	40MHz+40MHz
Middle CH	36.48	55.94	56.02	74.92

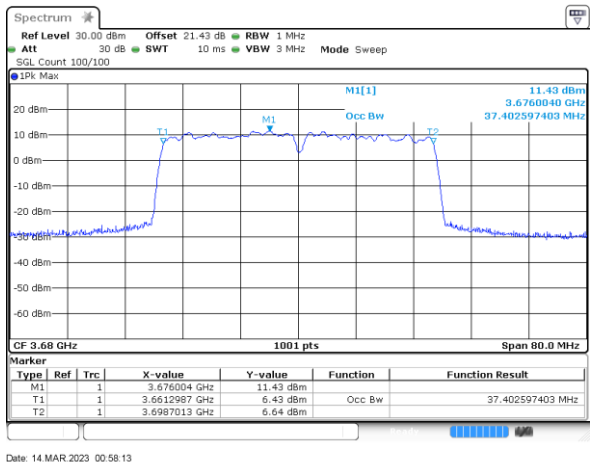
20MHz (Low Channel) + 20MHz (High Channel)



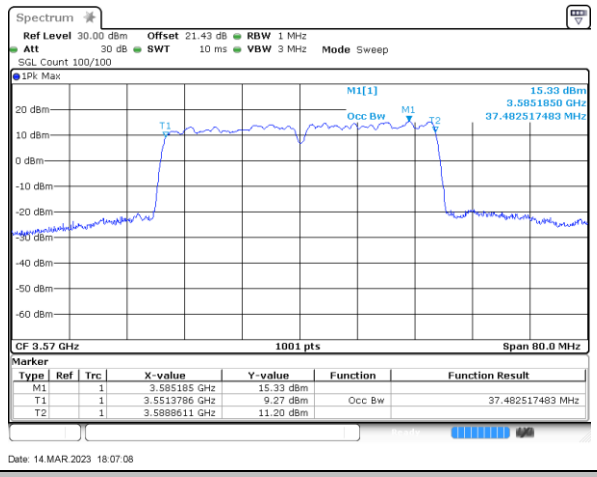


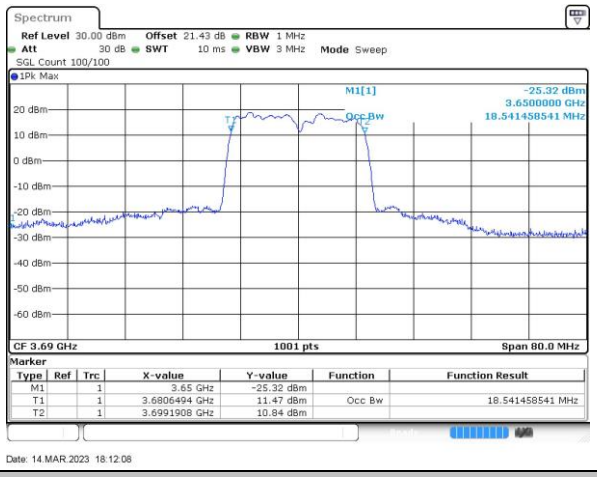
20MHz (Low Channel) + 40MHz (High Channel)



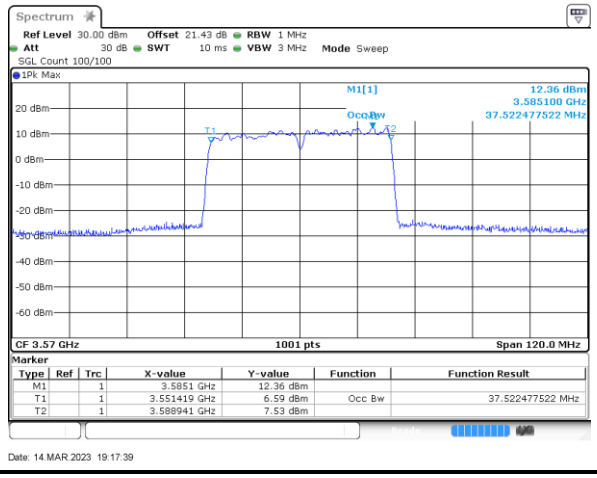


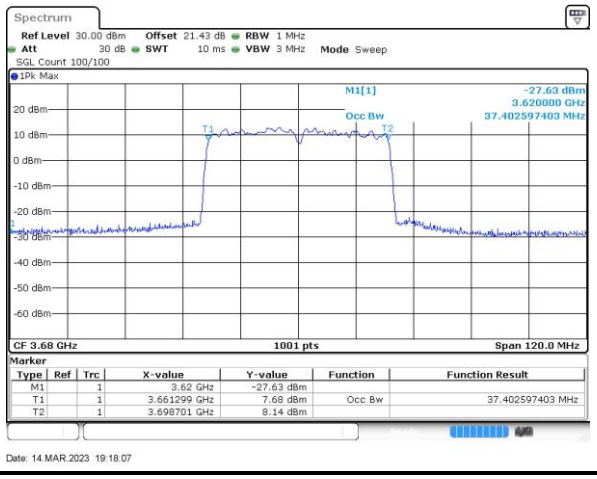
40MHz (Low Channel) + 20MHz (High Channel)





40MHz (Low Channel) + 40MHz (High Channel)





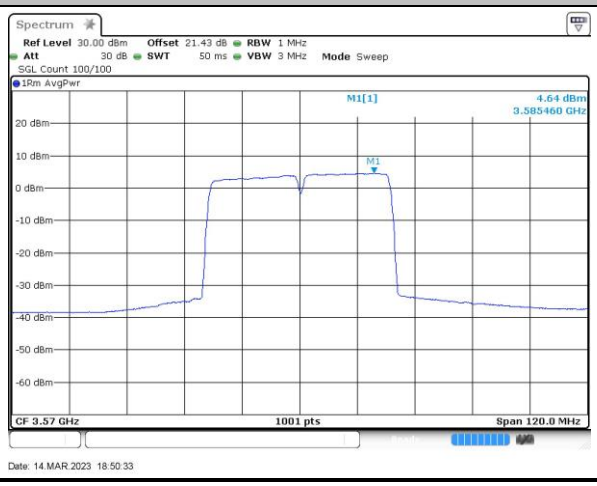
EIRP Power Density

EIRP PSD (dBm/MHz)								
	Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm/MHz)	Total EIRP (dBm/MHz)	Limit (dBm/MHz)
Multi Carrier (MC) Intra Band Non-Contiguous	20MHz (Low) +20MHz (High)	3560 + 3690	9/0	16.01	9.03	7.78	32.82	< 37 dBm/MHz
	20MHz (Low) +40MHz (High)	3560 + 3680	12/-0.5	16.01	9.03	4.73	29.77	
	40MHz (Low) +20MHz (High)	3570 + 3690	9/-1	16.01	9.03	8.1	33.14	
	40MHz (Low) +40MHz (High)	3570 + 3680	9/-2.5	16.01	9.03	3.7	28.74	

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Maximum EIRP Power Density – 40+20MHz mode 3570MHz+3690MHz



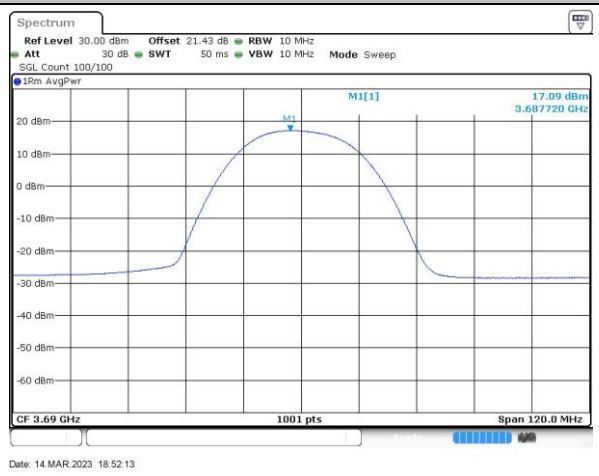
EIRP Power (dBm/10MHz)

EIRP Power (dBm/10MHz)							
Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm)	Total EIRP (dBm/10MHz)	Limit (dBm/10MHz)
20MHz (Low) +20MHz (High)	3560 + 3690	9/0	16.01	9.03	16.81	41.9	< 47 dBm/10MHz
20MHz (Low) +40MHz (High)	3560 + 3680	12/-0.5	16.01	9.03	13.82	38.9	
40MHz (Low) +20MHz (High)	3570 + 3690	9/-1	16.01	9.03	17.09	42.1	
40MHz (Low) +40MHz (High)	3570 + 3680	9/-2.5	16.01	9.03	13.31	38.4	

Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Maximum EIRP Power (dBm/10MHz) – 40+20MHz mode 3570MHz+3690MHz



EIRP total Power (dBm) for reporting only

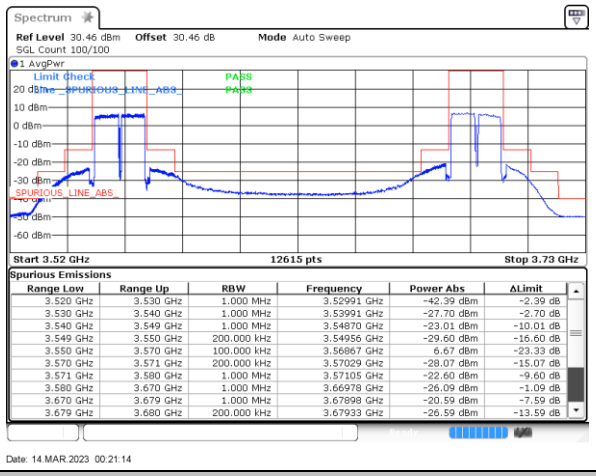
Total EIRP Power (dBm) reporting only						
Mode	Frequency (MHz)	Power Setting (ATT/ADAK)	DG (dBi)	MIMO Factor	Single port conducted power (dBm)	Total EIRP (dBm)
20MHz (Low) +20MHz (High)	3560 + 3690	9/0	16.01	9.03	22.7	47.7
20MHz (Low) +40MHz (High)	3560 + 3680	12/-0.5	16.01	9.03	20.2	45.3
40MHz (Low) +20MHz (High)	3570 + 3690	9/-1	16.01	9.03	22.4	47.5
40MHz (Low) +40MHz (High)	3570 + 3680	9/-2.5	16.01	9.03	20.9	46.0

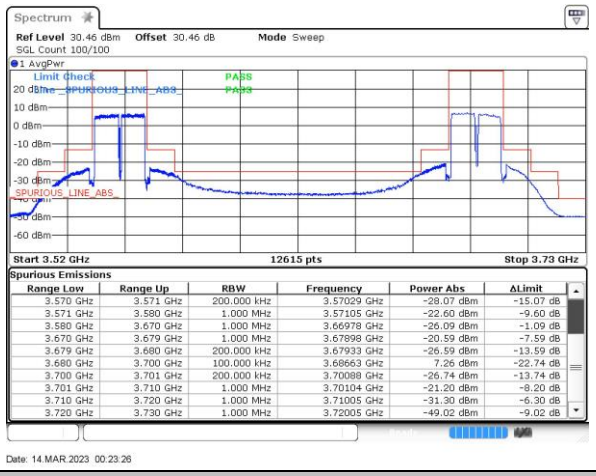
Note : DG (dBi) = antenna gain + 10*log(N_{ant}/N_{ss}) = 13 + 10*log (4/2) = 13 + 3.01 = 16.01 dBi

MIMO Factor: 10*log(8) = 9.03 dB

Conducted Band Edge

20MHz (Low Channel) + 20MHz (High Channel)





20MHz (Low Channel) + 40MHz (High Channel)