CERTIFICATION TEST REPORT

Report Number. : 13179116-E20V5

Applicant : APPLE, INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A.

Model : A2172

FCC ID : BCG-E3542A

EUT Description : SMART PHONE

Test Standard : FCC 47 CFR PART 30 MOBILE TRANSMITTER (5G)

Date Of Issue:
September 18, 2020

Prepared by:
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NVLAP LAB CODE 200065-0 (FREMONT)

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	08/21/2020	Initial Issue	GP Chin
V2	9/9/2020	Addressed TCB's questions	GP Chin
V3	9/14/2020	Addressed TCB's questions	GP Chin
V4	9/14/2020	Addressed TCB's questions	GP Chin
V5	9/18/2020	Section 3: Updated Information of Test Sites Section 5.5: Added Test Site Diagrams Sections 8.1, 8.2, 8.3 & 8.4: Updated Info of Testers & Test Sites; correct error on Section 6	GP Chin

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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS 5

2. TEST METHODOLOGY 6

3. FACILITIES AND ACCREDITATION 6

4. CALIBRATION AND UNCERTAINTY 7

4.1. METROLOGICAL TRACEABILITY 7

4.2. DECISION RULES 7

4.3. MEASUREMENT UNCERTAINTY 7

5. EQUIPMENT UNDER TEST 8

5.1. DESCRIPTION OF EUT 8

5.2. SOFTWARE AND FIRMWARE 9

5.3. WORST CASE ORIENTATION 9

5.4. BEAM ID 9

5.5. DESCRIPTION OF TEST SETUP 10

6. TEST AND MEASUREMENT EQUIPMENT 15

7. SUMMARY TABLE 16

8. APPLICABLE LIMITS AND TEST RESULTS 17

8.1. OCCUPIED BANDWITH 17

8.1.1. OCCUPIED BANDWIDTH n260 18
8.1.2. OCCUPIED BANDWIDTH n261 24

8.2. EQUIVALENT ISOTROPIC RADIATED POWER 30

8.2.1. EIRP RESULTS n260 ANT M1 SISO 32
8.2.2. EIRP RESULTS n260 ANT M1 SISO-DUAL 33
8.2.3. EIRP RESULTS n260 ANT M1 MIMO 35
8.2.4. EIRP RESULTS n260 ANT M0 SISO-DUAL 36
8.2.5. EIRP RESULTS n260 ANT M2 SISO 37
8.2.6. EIRP RESULTS n260 ANT M2 SISO-DUAL 38
8.2.7. EIRP RESULTS n260 ANT M2 MIMO 39
8.2.8. EIRP RESULTS n261 ANT M1 SISO 40
8.2.9. EIRP RESULTS n261 ANT M1 SISO-DUAL 41
8.2.10. EIRP RESULTS n261 ANT M1 MIMO 43
8.2.11. EIRP RESULTS n261 ANT M0 SISO-DUAL 44
8.2.12. EIRP RESULTS n261 ANT M2 SISO 45
8.2.13. EIRP RESULTS n261 ANT M2 SISO-DUAL 46
8.2.14. EIRP RESULTS n261 ANT M2 MIMO 47

8.3. BAND EDGE EMISSIONS 48

8.3.1. BAND EDGE RESULTS n260 SISO-DUAL 1CC 50
8.3.2. BAND EDGE RESULTS n260 SISO-DUAL 2CC 62
8.3.3. BAND EDGE RESULTS n260 MIMO 1CC 72

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8.3.4. BAND EDGE RESULTS n260 MIMO 2CC 84
8.3.5. BAND EDGE RESULTS n261 SISO-DUAL 1CC 94
8.3.6. BAND EDGE RESULTS n261 SISO-DUAL 2CC 106
8.3.7. BAND EDGE RESULTS n261 MIMO 1CC 116
8.3.8. BAND EDGE RESULTS n261 MIMO 2CC 128

8.4. RADIATED SPURIOUS EMISSIONS 138
8.4.1. RADIATED EMISSIONS 30 MHz - 1 GHz n260 140
8.4.2. RADIATED EMISSIONS 1-18 GHz n260 142
8.4.3. RADIATED EMISSIONS 18-26.5 GHz n260 144
8.4.4. RADIATED EMISSIONS 26.5-40 GHz n260 146
8.4.5. RADIATED EMISSIONS 40-50 GHz n260 148
8.4.6. RADIATED EMISSIONS 50-75 GHz n260 153
8.4.7. RADIATED EMISSIONS 75-110 GHz n260 155
8.4.8. RADIATED EMISSIONS 110-170 GHz n260 157
8.4.9. RADIATED EMISSIONS 170-200 GHz n260 160
8.4.10. RADIATED EMISSIONS 30 MHz - 1 GHz n261 162
8.4.11. RADIATED EMISSIONS 1-18 GHz n261 164
8.4.12. RADIATED EMISSIONS 18-26.5 GHz n261 166
8.4.13. RADIATED EMISSIONS 26.5-27.5 GHz n261 169
8.4.14. RADIATED EMISSIONS 28.35-30 GHz n261 174
8.4.15. RADIATED EMISSIONS 30-40 GHz n261 177
8.4.16. RADIATED EMISSIONS 40-50 GHz n261 179
8.4.17. RADIATED EMISSIONS 50-75 GHz n261 181
8.4.18. RADIATED EMISSIONS 75-100 GHz n261 184

8.5. FREQUENCY STABILITY 187

9. SETUP PHOTOS 189

APPENDIX A 190

1. 50-80 GHz Keysight M1970V 190
2. 75-110 GHz Keysight M1970W 191
3. 110-170 GHz VDI WR6.5SAX 192
4. 170-260 GHz VDI WR4.3SAX 193
5. 35-50 GHz CMI HO22R HORN ANTENNA 194
6. 50-75 GHz CMI HO15R HORN ANTENNA 195
7. 75-110 GHz CMI HO10R HORN ANTENNA 196
8. 110-170 GHz CMI HO6R HORN ANTENNA 197
9. 170-260 GHz CMI HO4R HORN ANTENNA 198

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014,U.S.A
EUT DESCRIPTION:	SMART PHONE
MODEL:	A2172
SERIAL NUMBERS:	G6TD200904FR G6TCM01MQ5HY G6TCN05TQ5HH
DATE TESTED:	JUNE 7th – AUGUST 17th , 2020

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 30 Mobile Transmitter (5G)	Complies

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Approved & Released For
UL Verification Services Inc. By:

GIA-PIAO (GP) CHIN
SENIOR TEST ENGINEER
UL Verification Services Inc.

Tested By:

STEVE AGUILAR
TEST ENGINEER
UL Verification Services Inc.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 30.
3. ANSI C63.26-2015
4. KDB 842590 D01 Upper Microwave Flexible Use Service v01r01
5. KDB 971168 D01 Power Meas. License Digital Systems v03r01

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street	47658 Kato Rd.
☐ Chamber A	☐ Chamber D	☐ Chamber I
☒ Chamber B - Below 18 GHz	☐ Chamber E	☐ Chamber J
☒ Chamber 1 - mmWave	☐ Chamber F	☐ Chamber K
☒ Chamber 2 - mmWave	☐ Chamber G	☐ Chamber L
☒ Chamber 3 - mmWave	☐ Chamber H	☐ Chamber M

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

Chambers 1, 2 and 3 are fully-anechoic chambers dedicated to make measurements to TRP limits from 18-40 GHz, and field strength, EIRP and TRP measurements at and above 40 GHz. The measurement antenna is nominally 1.5 m high in accordance with C63.10-2013, procedures developed by the C63 mmWave Joint Task Group for inclusion in the next editions of C63.10 and C63.26, and applicable FCC KDB documents. The absorber reflectivity fully supports chamber performance over this frequency range. The dimensions of the chambers are approximately 9 m L by 6 m W by 5.2 m H for chamber 1 and 6.8 m L by 3.7 m W by 3.1 m H for chambers 2 and 3.

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4. CALIBRATION AND UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

4.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{LAB}
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.39 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.07 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.52 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	4.88 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.24 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.37 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.17 dB
Worst Case Radiated Disturbance >40000 MHz	2.85 dB
Temperature	±0.9 °C
Voltages	±0.45 %
Time	±0.02 %

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

This test report addresses the 5G NR operational mode on n260 and n261 bands.

Two FR2 RFIC Chipset + Antennas sets are used. Both Chipsets are identical.
Chipset 1 can transmit on antenna M1 or antenna ANT M0. Chipset 2 transmits on antenna M2 only.

Manufacturer declares that antenna M0 transmits approximately 15-16 dB lower power than antenna M1, therefore antenna M1 was used for full measurements on Chipset 1 in this report. Spot-checks on transmit power of antenna M0 were performed with selected modes. Measurements on Chipset 2 were performed with antenna M2 active.

Manufacturer provided the Beam ID settings that yield the highest EIRP for each antenna by the EIRP Simulation tool. These Beam ID settings were used for all tests. All tests were performed in a non-signaling, stand-alone mode of operation.

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5.2. SOFTWARE AND FIRMWARE

EUT Firmware versions:

WiFi: 20_10_619_14
BT: 18.1.148.558
Cell: 0.28.03-1

5.3. WORST CASE ORIENTATION

For all 5G NR FR2 Bands, the worst-case scenario for all measurements is based on the EIRP measurement investigation results, comparing to TRP limit to demonstrate compliance. EIRPs were measured on BPSK, QPSK, 16QAM and 64QAM modulations. It was found that QPSK results were worst case.

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X (landscape) , Y (portrait), Z (flatbed) and Roll, where is applicable. The final optimum position resulting in the highest EIRP for the frequency or band under investigation is placed on an open air fixture allowing no blockage of the signal as measured by the receiving antenna.

5.4. BEAM ID

In all tests, the following Beam ID settings of each antenna were applied for final measurements.

n260 - Peak BID		
Antenna	**BID**	**Paired with**
M0	8	136
M1	20	148
M2	33	161

n261 - Peak BID		
Antenna	**BID**	**Paired with**
M0	14	142
M1	19	147
M2	153	25

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	**Manufacturer**	**Model**	**Serial Number**
LAPTOP + Adapter	Apple	MacBook Pro	HRP046790
Kanzi-USB Adapter	Apple	---	325191
LAPTOP + Adapter	Apple	MacBook Pro	C02VJ0ZZHV2P
Kanzi-USB Adapter	Apple	---	325B8C
LAPTOP + Adapter	Apple	MacBook Pro	C2QP600QG974
Kanzi-USB Adapter	Apple	---	32535E
USB Power Adapter	Apple	A1357	--
LAPTOP + Adapter	Apple	MacBook Pro	HRP046790

I/O CABLES

I/O Cable List						
Cable No.	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power	2	USB Micro	Shielded	0.9 – 2.0	--
2	Data	1	--	Shielded	0.8	--
3	Data	1	--	Shielded	0.06	--
4	DC Power	1	Clip leads	Un-shielded	1.0	--
5	AC Line	1	3-prong	Un-shielded	1.0	--

TEST SETUP

All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation. When implemented out in the field, the EUT will operate with a maximum uplink configuration (i.e., a maximum uplink duty cycle of 100%).

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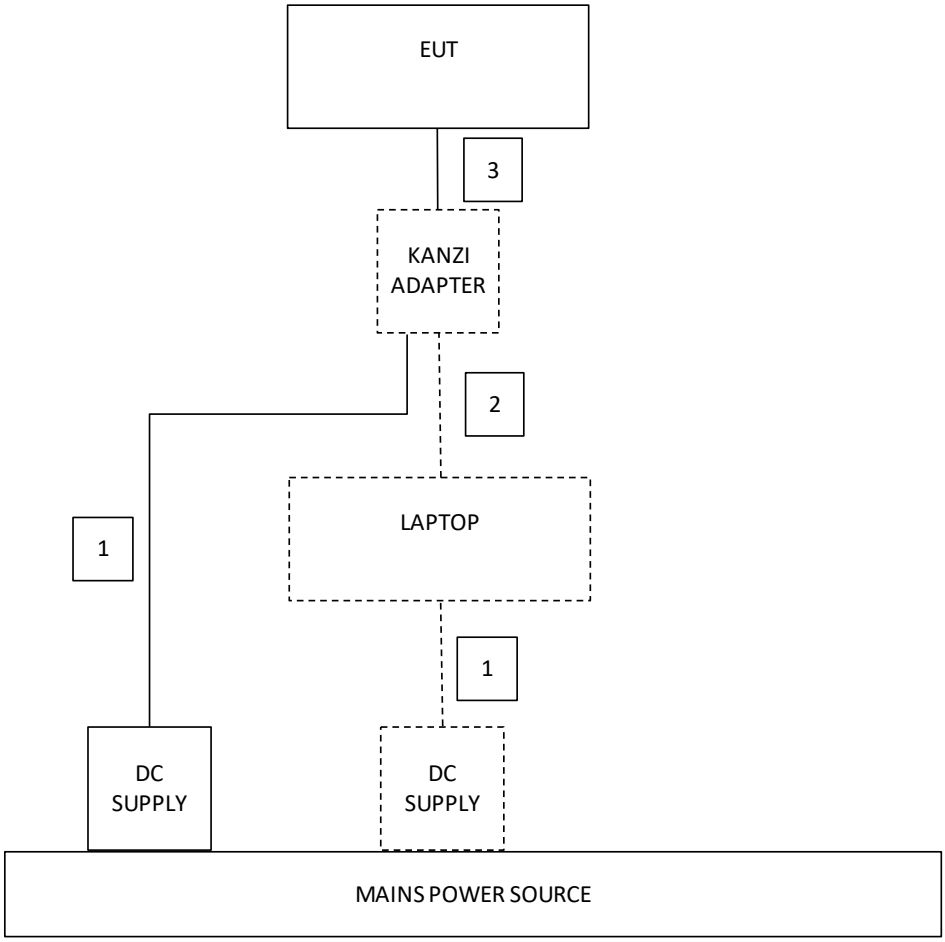
SETUP DIAGRAM FOR TESTS

RF TESTS



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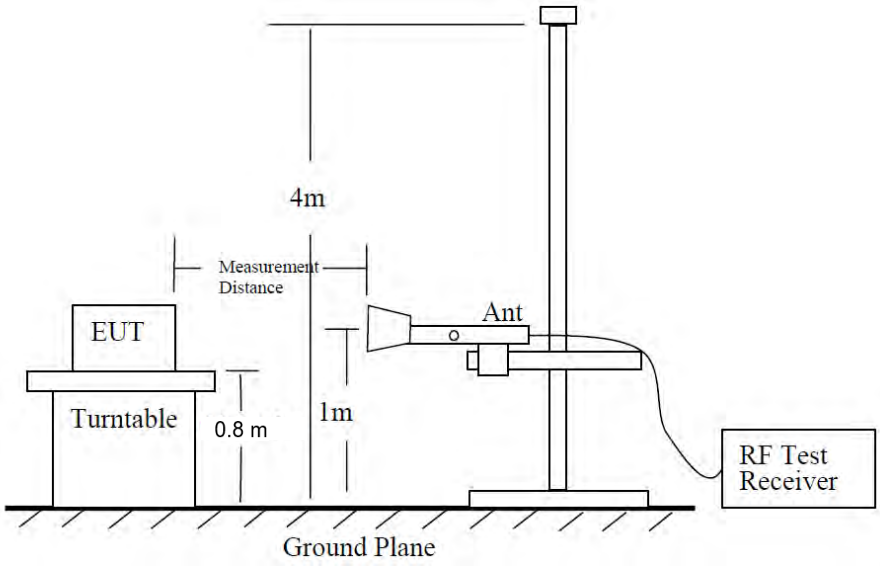
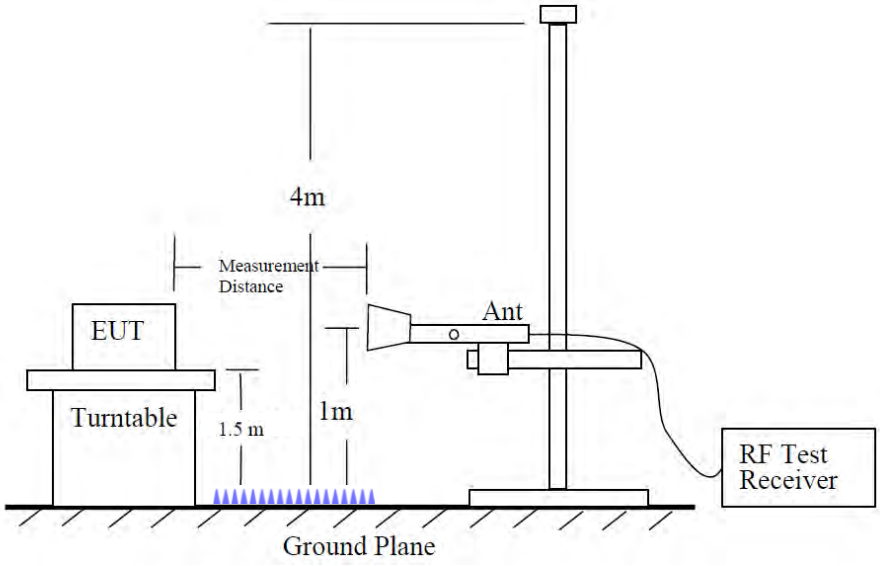
TEST SITE DIAGRAM – Below 1 GHz



TEST SITE DIAGRAM – 1-18 GHz



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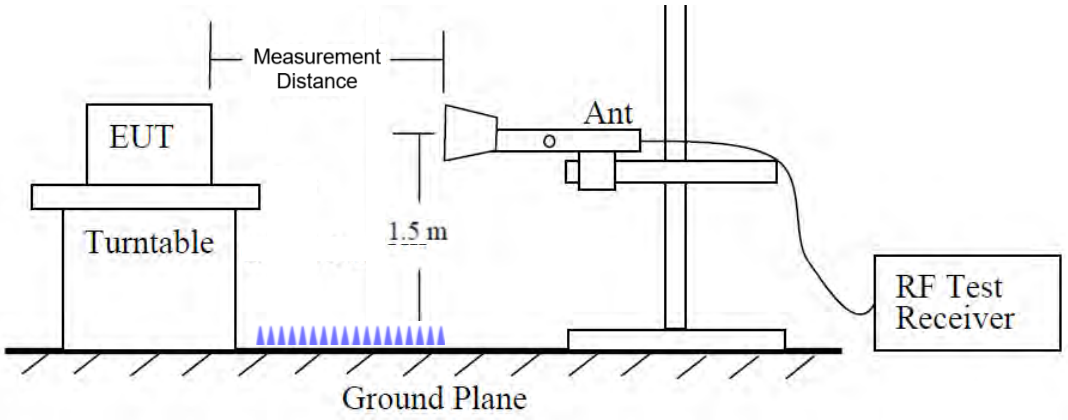
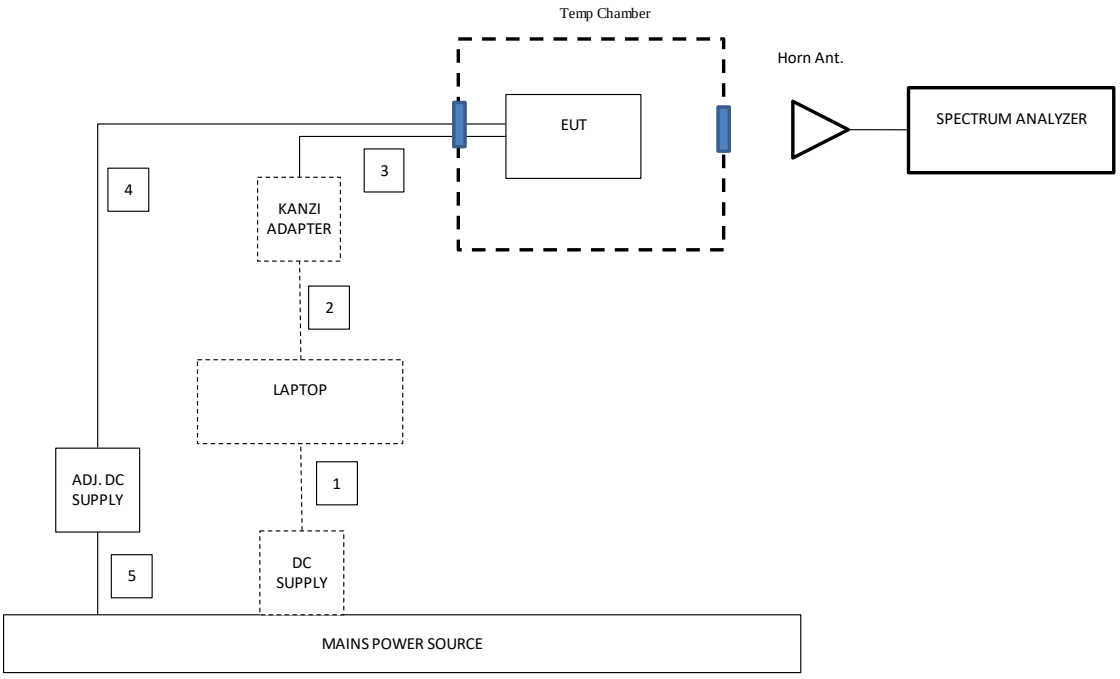
TEST SITE DIAGRAM – Above 18 GHz & mmWave



FREQUENCY STABILITY



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FAR-FIELD DISTANCE AND MEASUREMENT DISTANCE

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable.

The measurement distance is in the far field per formula $2D^2/\lambda$ where D is the larger dimension of the antenna. For fundamental or band edge emissions, the largest far-field distance of either the EUT antenna or measurement antenna shall be used. For above 18 GHz spurious emissions, the far-field distance will be based on the measured antenna. In this case, the measurement antenna has the largest far-field distance. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest EIRP reading on the receive spectrum analyzer.

Frequency Range (GHz)	Wavelength (m)	Far Field Distance (m)	Measurement Distance Used (m)
18-26.5	0.0113	3.39	3.50
26.5-40	0.0075	2.67	3.00
40-50	0.0060	1.61	3.00
50-75	0.0040	1.05	1.50
75-110	0.0027	0.70	1.00
110-170	0.0018	0.02	1.00
170-200	0.0015	0.33	0.50

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning.

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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List					
Description	**Manufacturer**	**Model**	**Local ID**	**Last Cal**	**Cal Due**
Spectrum Analyzer, PXA, 3Hz to 50GHz w/Ext. Mixer	Keysight	N9030A	MY52350427	1/23/2020	1/23/2021
Spectrum Analyzer, PXA, 3Hz to 50GHz w/Ext. Mixer	Keysight	N9030A	PRE0213097	6/29/2020	6/29/2021
EMI Test Receiver	Rohde & Schwarz	FSW50	PRE0211337	4/30/2020	4/30/2021
EMI Test Receiver	Rohde & Schwarz	FSW50	PRE0211887	5/12/2020	5/12/2021
EMI Test Receiver	Rohde & Schwarz	ESW44	PRE0203385	2/22/2020	2/22/2021
Antenna, Horn 18-26.5 GHz	ARA	MWH-1826/B	PRE0079151	11/7/2019	11/7/2020
Antenna, Horn 26.5-40 GHz	ARA	MWH-2640/B	PRE0079317	11/7/2019	11/7/2020
Antenna, Horn 18-26.5 GHz	ARA	MWH-1826/B	PRE0182199	4/27/2019	4/27/2021
Antenna, Horn 26.5-40 GHz	ARA	MWH-2640/B	PRE0182202	5/27/2020	5/27/2021
Antenna, Horn 18-26.5 GHz	ARA	MWH-1826/B	PRE0213446	6/19/2020	6/19/2021
Antenna, Horn 26.5-40 GHz	ARA	MWH-2640/B	PRE0212449	6/25/2020	6/25/2021
Antenna, Horn 18-26.5 GHz	ARA	MWH-1826/B	PRE0212447	6/25/2020	6/25/2021
Antenna, Horn 26.5-40 GHz	ARA	MWH-2640/B	PRE0212448	6/19/2020	6/19/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	PRE0077927	1/22/2020	1/22/2021
Antenna, Double Ridge Guide Horn Antenna 700MHz to 18GHz	A.H. Systems, Inc.	SAS-571	PRE0078352	1/25/2020	1/25/2021
Amplifier, 9KHz to 1GHz, 32dB	Sonoma Instruments	310	PRE0180176	7/14/2020	7/14/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	PRE0077974	5/20/2020	5/20/2021
Amplifier, 1 - 18GHz	MITEQ	AFS42-00101800-25-S-42	PRE0078089	5/11/2020	5/11/2021
Environmental Chamber	Thermotron Industries	SE-600-10-10	PRE0079138	11/20/2020	11/20/2021
Digital Multimeter	Fluke	87V	PRE0073921	1/22/2020	1/22/2021
50V/3A Adj. DC Power Supply	Rigol	DP712	T1746	CNR	CNR
Horn antenna, 35-50 GHz	CMI	HO22R	--	9/13/2019	9/13/2020
LNA, 40-50 GHz	Spacek Labs	SL4510-33-4W	14J05	9/24/2019	9/24/2020
Filter Low Pass	Spacek Labs	LPF5-50-8-22	T1099	9/24/2019	9/24/2020
50-75 GHz Horn	C M i	HO15R	H15-1	9/13/2019	9/13/2020
LNA, 50-75 GHz	Vivatech	VTLNA-15-6018-FB	2013051	9/19/2019	9/19/2020
Waveguide Harmonic Mixer, 50 to 80 GHz	Keysight	M1970V	MY51390830	12/20/2019	12/20/2020
75-110 GHz Horn	C M i	HO10R	H10-1	9/13/2019	9/13/2020
LNA, 75-110 GHz	Spacek	SLW-22-5	15J04	9/20/2020	9/20/2020
Waveguide Harmonic Mixer, 75 to 110 GHz	Keysight	M1970W	MY51430784	12/20/2019	12/20/2020
110-170 GHz Horn	C M i	HO6R	H06-1	9/13/2019	9/13/2020
LNA 110-170 GHz	VivaTech	VTLNA-01S01	2015085	9/23/2019	9/23/2020
110-170 GHz Downconverter	VDI	WR6.5SAX	PRE0209972	4/7/2020	4/7//2021
170-260 GHz Horn	C M i	HO4R	H04-1	9/13/2019	9/13/2020
170-260 GHz Downconverter	VDI	WR4.3SAX	PRE0212241	5/22/2020	5/22/20201
UL EMC Radiated Software	Version	Rev.9.5.06			

All horn antennas at and above the 33-50 GHz band are standard gain horns. In accordance with ANSI C63.10 clause 4.4.3 (a) Standard gain horns need not be periodically recalibrated, unless damage or deterioration is suspected or known to have occurred. If a standard gain horn is not periodically recalibrated, then its critical dimensions (see IEEE Std 1309-2005) shall be verified and documented on an annual basis.

UL measures the critical dimensions on an annual basis and checks for damage and deterioration before each test.

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7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Bandwidth	N/A	Radiated	Compliant
2.1046 30.202	Equivalent Isotropic Radiated Power (EIRP)	+43 dBm	Radiated	Compliant
2.1051 30.203	Out-of-Band Emissions at the Band Edge	-13 dBm/MHz for All out-of-band emissions. -5 dBm/MHz from the band edge up to 10% of the channel BW	Radiated	Compliant
2.1051 30.203	Spurious Emissions	-13 dBm/MHz for all out-of-band emissions	Radiated	Compliant
2.1055	Frequency Stability	N/A	Radiated	Compliant

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8. APPLICABLE LIMITS AND TEST RESULTS

8.1. OCCUPIED BANDWITH

RULE PART

FCC: §2.1049

LIMIT

For reporting purposes only

TEST PROCEDURES

99% bandwidth measurement function of the signal analyzer was used to measure 99% occupied.

- RBW = 1 – 5% of OBW
- VBW ≥ 3 x RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- The trace was allowed to stabilize

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.3
ANSI C63.26-2015 Clause 5.4.3.

All modulations were investigated in SISO/SISO-Dual/MIMO to determine worst case configuration. All modes of operations were investigation and results are reported in this section.

RESULTS

See the following pages.

TESTED BY:

Employee IDs: 19296 & 19459, n261 band, Chamber 1
Employee IDs: 19470 & 19437, n260 band, Chamber 2

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8.1.1. OCCUPIED BANDWIDTH n260

RESULTS

n260 ANT M1 Ant, Full-RB

Control System	Modulation	Channel	Bandwidth	CCs Active	OBW (MHz)
SISO-DUAL	BPSK	Mid	50	1	45.85
MIMO	BPSK	Mid	100	1	93.43
SISO-DUAL	BPSK	Mid	50	2	95.36
MIMO	BPSK	Mid	100	2	189.88
SISO	QPSK	Mid	50	1	45.86
SISO-DUAL	QPSK	Low	50	1	45.51
SISO-DUAL	QPSK	Mid	50	1	45.77
SISO-DUAL	QPSK	High	50	1	45.57
MIMO	QPSK	Mid	50	1	45.37
SISO	QPSK	Mid	100	1	91.62
SISO-DUAL	QPSK	Low	100	1	92.11
SISO-DUAL	QPSK	Mid	100	1	92.67
SISO-DUAL	QPSK	High	100	1	92.35
MIMO	QPSK	Mid	100	1	93.44
SISO	QPSK	Mid	50	2	95.38
SISO-DUAL	QPSK	Mid	50	2	95.00
MIMO	QPSK	Mid	50	2	95.38
SISO	QPSK	Mid	100	2	189.21
SISO-DUAL	QPSK	Mid	100	2	189.32
MIMO	QPSK	Mid	100	2	190.93
SISO-DUAL	16QAM	Mid	50	1	45.69
MIMO	16QAM	Mid	100	1	92.78
SISO-DUAL	16QAM	Mid	50	2	95.20
MIMO	16QAM	Mid	100	2	191.16
SISO-DUAL	64QAM	Mid	50	1	45.89
MIMO	64QAM	Mid	100	1	92.95
SISO-DUAL	64QAM	Mid	50	2	94.97
MIMO	64QAM	Mid	100	2	190.59

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n260 ANT M2, Full-RB

Control System	Modulation	Channel	Bandwidth	CCs Active	OBW (MHz)
SISO-DUAL	BPSK	Mid	50	1	46.36
MIMO	BPSK	Mid	100	1	93.63
SISO-DUAL	BPSK	Mid	50	2	95.50
MIMO	BPSK	Mid	100	2	190.63
SISO	QPSK	Mid	50	1	45.95
SISO-DUAL	QPSK	Low	50	1	46.13
SISO-DUAL	QPSK	Mid	50	1	45.95
SISO-DUAL	QPSK	High	50	1	46.05
MIMO	QPSK	Mid	50	1	46.46
SISO	QPSK	Mid	100	1	91.12
SISO-DUAL	QPSK	Low	100	1	91.95
SISO-DUAL	QPSK	Mid	100	1	91.60
SISO-DUAL	QPSK	High	100	1	91.85
MIMO	QPSK	Mid	100	1	92.93
SISO	QPSK	Mid	50	2	95.41
SISO-DUAL	QPSK	Mid	50	2	95.42
MIMO	QPSK	Mid	50	2	95.39
SISO	QPSK	Mid	100	2	190.00
SISO-DUAL	QPSK	Mid	100	2	188.49
MIMO	QPSK	Mid	100	2	191.15
SISO-DUAL	16QAM	Mid	50	1	46.37
MIMO	16QAM	Mid	100	1	93.33
SISO-DUAL	16QAM	Mid	50	2	95.68
MIMO	16QAM	Mid	100	2	191.36
SISO-DUAL	64QAM	Mid	50	1	46.23
MIMO	64QAM	Mid	100	1	93.22
SISO-DUAL	64QAM	Mid	50	2	95.15
MIMO	64QAM	Mid	100	2	191.26

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ANT M1

n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 50 MHz

n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 100 MHz

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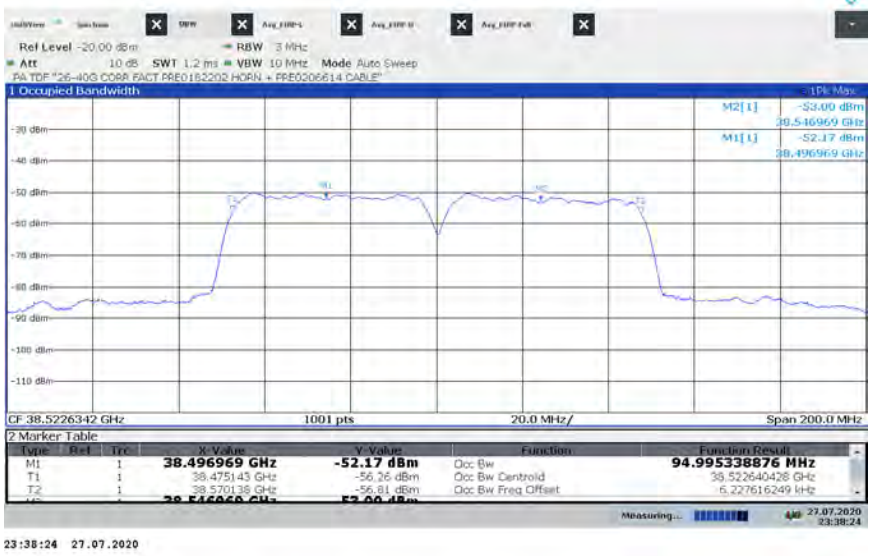
n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 50 MHz



n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 100 MHz

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ANT M2

n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 50 MHz

n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 100 MHz

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n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 50 MHz

n260, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 100 MHz

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8.1.2. OCCUPIED BANDWIDTH n261

RESULTS

n261 ANT M1, Full-RB

Control System	Modulation	Channel	Bandwidth	CCs Active	OBW (MHz)
SISO-DUAL	BPSK	Mid	50	1	45.53
MIMO	BPSK	Mid	100	1	93.24
SISO-DUAL	BPSK	Mid	50	2	97.03
MIMO	BPSK	Mid	100	2	189.15
SISO	QPSK	Mid	50	1	45.37
SISO-DUAL	QPSK	Low	50	1	45.53
SISO-DUAL	QPSK	Mid	50	1	45.32
SISO-DUAL	QPSK	High	50	1	45.41
MIMO	QPSK	Mid	50	1	45.33
SISO	QPSK	Mid	100	1	91.45
SISO-DUAL	QPSK	Low	100	1	91.95
SISO-DUAL	QPSK	Mid	100	1	91.30
SISO-DUAL	QPSK	High	100	1	91.40
MIMO	QPSK	Mid	100	1	94.06
SISO	QPSK	Mid	50	2	95.29
SISO-DUAL	QPSK	Mid	50	2	95.56
MIMO	QPSK	Mid	50	2	95.66
SISO	QPSK	Mid	100	2	188.95
SISO-DUAL	QPSK	Mid	100	2	189.54
MIMO	QPSK	Mid	100	2	191.97
SISO-DUAL	16QAM	Mid	50	1	45.46
MIMO	16QAM	Mid	100	1	93.49
SISO-DUAL	16QAM	Mid	50	2	95.35
MIMO	16QAM	Mid	100	2	191.55
SISO-DUAL	64QAM	Mid	50	1	45.44
MIMO	64QAM	Mid	100	1	94.05
SISO-DUAL	64QAM	Mid	50	2	95.50
MIMO	64QAM	Mid	100	2	191.16

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n261 ANT M2, Full-RB

Control System	Modulation	Channel	Bandwidth	CCs Active	OBW (MHz)
SISO-DUAL	BPSK	Mid	50	1	45.49
MIMO	BPSK	Mid	100	1	94.59
SISO-DUAL	BPSK	Mid	50	2	97.70
MIMO	BPSK	Mid	100	2	189.01
SISO	QPSK	Mid	50	1	45.57
SISO-DUAL	QPSK	Low	50	1	45.81
SISO-DUAL	QPSK	Mid	50	1	45.72
SISO-DUAL	QPSK	High	50	1	45.63
MIMO	QPSK	Mid	50	1	45.75
SISO	QPSK	Mid	100	1	91.48
SISO-DUAL	QPSK	Low	100	1	92.85
SISO-DUAL	QPSK	Mid	100	1	92.29
SISO-DUAL	QPSK	High	100	1	92.74
MIMO	QPSK	Mid	100	1	94.21
SISO	QPSK	Mid	50	2	95.12
SISO-DUAL	QPSK	Mid	50	2	95.33
MIMO	QPSK	Mid	50	2	95.43
SISO	QPSK	Mid	100	2	189.50
SISO-DUAL	QPSK	Mid	100	2	189.22
MIMO	QPSK	Mid	100	2	190.94
SISO-DUAL	16QAM	Mid	50	1	45.84
MIMO	16QAM	Mid	100	1	94.07
SISO-DUAL	16QAM	Mid	50	2	95.43
MIMO	16QAM	Mid	100	2	190.52
SISO-DUAL	64QAM	Mid	50	1	45.73
MIMO	64QAM	Mid	100	1	94.76
SISO-DUAL	64QAM	Mid	50	2	95.25
MIMO	64QAM	Mid	100	2	190.75

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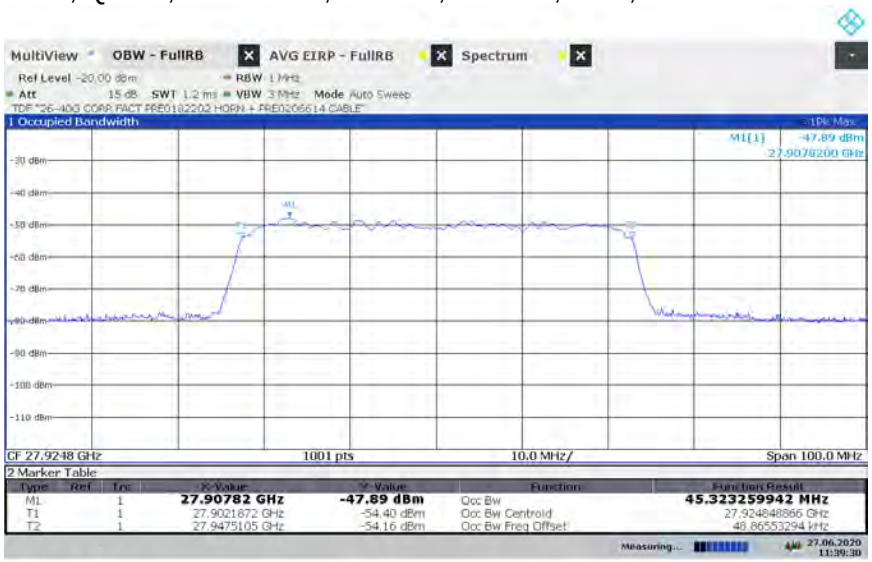
ANT M1

n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 50 MHz



n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 100 MHz

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n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 50 MHz

n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 100 MHz

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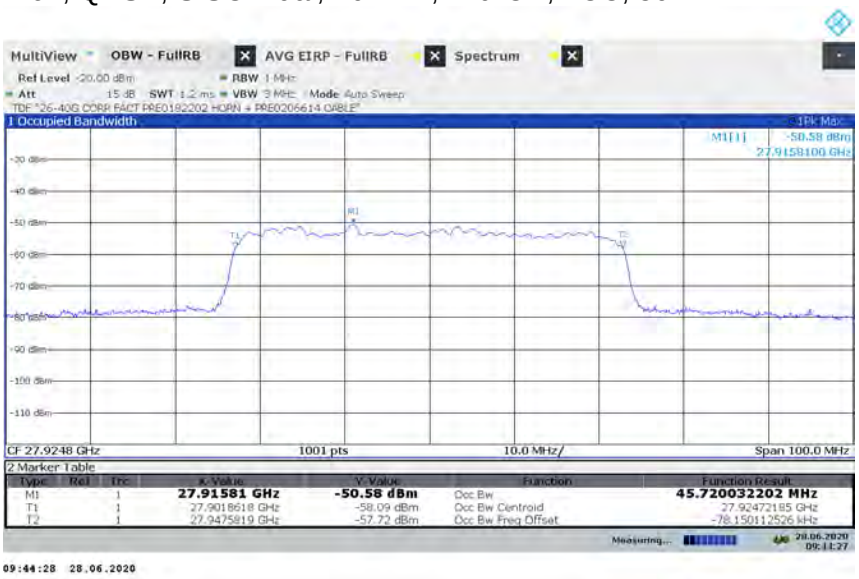
ANT M2

n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 50 MHz



n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 1CC, 100 MHz

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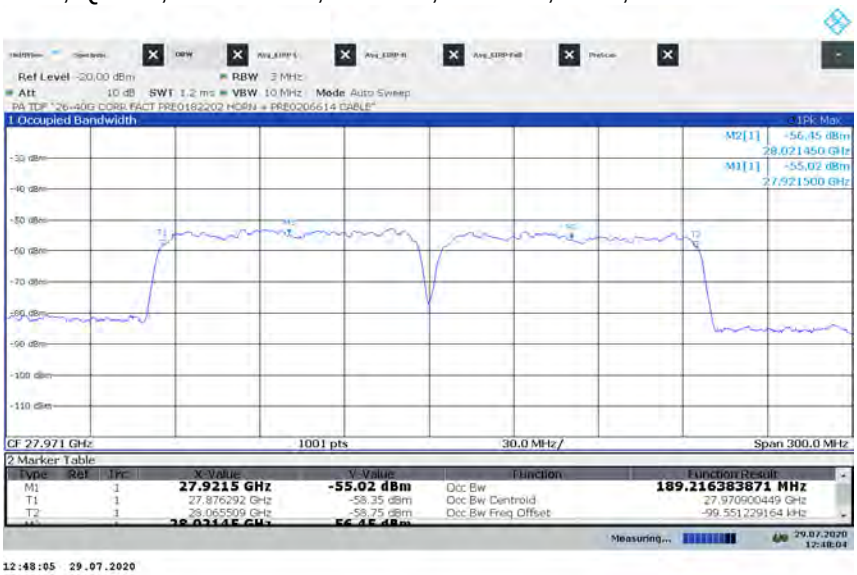
n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 50 MHz

n261, QPSK, SISO-Dual, Full-RB, Mid-CH, 2CC, 100 MHz



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8.2. EQUIVALENT ISOTROPIC RADIATED POWER

RULE PART(S)

FCC: §2.1046, §30.202

LIMIT

30.202 (b) - For mobile stations, the average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

TEST PROCEDURES

Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.

- RBW = 1 – 5% of the OBW, not to exceed 1 MHz
- VBW ≥ 3 x RBW
- Span = 2x to 3x the OBW
- Number of measurement points in sweep > 2 x span / RBW
- Sweep time = auto-couple
- Detector = RMS
- Trace mode = Average over 100 sweeps

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.2
ANSI C63.26-2015 Clause 5.2, Clause 5.5, Clause 6.4, and Annex C.5.2

EIRP measurements were taken at 3m test distance.

EIRP was calculated using the equations on ANSI C63.26-2015 Annex C.5.2. The total correction factors from 26.5 – 40.2 GHz range of horn antenna gain and cable loss were calculated using equation C.8 and pre-loaded into spectrum analyzer. Then, EIRP was calculated using equation C.9 with Path Loss @ 3m.

Sample calculation of EIRP:

Total Correction Factor = Cable Loss (dB) – Horn Ant Gain (dBi)
= 4 – 23
= -19 dB

EIRP = $P_{measured}$(dBm) + Path Loss @ 3m (dB)
= -45 + 71
= 26 dBm

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning.

For antenna M1 and antenna M2, BPSK, QPSK, 16QAM and 64QAM modulations were all investigated in SISO, SISO-Dual and MIMO configurations. The highest power mode is QPSK for the modulations and SISO-Dual antenna configuration. Full data is provided for those

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combinations. To minimize report size the mid channel data is presented for all other combinations. Single RB (highest power) and full RB allocations were measured.

For antenna M0, only QPSK modulation in SISO-Dual configuration is investigated to verify the manufacture's declaration of lower EIRP comparing to antenna M1. Single RB (highest power) and full RB allocations were measured.

RESULTS

See the following pages.

TESTED BY:

Employee IDs: 19296 & 19459, n261 band, Chamber 1
Employee IDs: 19470 & 19437, n260 band, Chamber 2

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8.2.1. EIRP RESULTS n260 ANT M1 SISO

Channel	Frequency (GHz)	Bandwidth (MHz)	CCs	Modulation	RB (Size/Offset)	Avg EIRP (dBm)	Limit (dBm)	Margin (dB)
Mid	38.4990	50	1	BPSK	1/15	25.29	43	-17.71
Mid	38.4990	50	1	QPSK	1/15	25.51	43	-17.49
Mid	38.4998	50	1	QPSK	32/0	24.65	43	-18.35
Mid	38.4990	50	1	16QAM	1/15	23.59	43	-19.41
Mid	38.4990	50	1	64QAM	1/15	22.17	43	-20.83
Mid	38.4990	100	1	BPSK	1/32	25.79	43	-17.21
Mid	38.4990	100	1	QPSK	1/32	**25.89**	43	-17.11
Mid	38.4990	100	1	QPSK	64/0	24.92	43	-18.08
Mid	38.4990	100	1	16QAM	1/32	23.29	43	-19.71
Mid	38.4990	100	1	64QAM	1/32	21.13	43	-21.87
Mid	38.4970	50	2	BPSK	32/0	23.73	43	-19.27
Mid	38.4970	50	2	QPSK	1/15	18.43	43	-24.57
Mid	38.4970	50	2	QPSK	32/0	23.98	43	-19.02
Mid	38.4970	50	2	16QAM	32/0	21.93	43	-21.07
Mid	38.4970	50	2	64QAM	32/0	19.07	43	-23.93
Mid	38.4965	100	2	BPSK	64/0	23.52	43	-19.48
Mid	38.4964	100	2	QPSK	1/32	18.27	43	-24.73
Mid	38.4964	100	2	QPSK	64/0	24.31	43	-18.69
Mid	38.4964	100	2	16QAM	64/0	22.68	43	-20.32
Mid	38.4964	100	2	64QAM	64/0	20.69	43	-22.31

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8.2.2. EIRP RESULTS n260 ANT M1 SISO-DUAL

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	38.4990	50	1	BPSK	1/15	27.61	43	-15.39
Low	37.0025	50	1	QPSK	1/0	25.79	43	-17.21
Low	37.0241	50	1	QPSK	1/15	27.79	43	-15.21
Low	37.0471	50	1	QPSK	1/31	25.09	43	-17.91
Low	37.0250	50	1	QPSK	32/0	26.52	43	-16.48
Mid	38.4774	50	1	QPSK	1/0	26.26	43	-16.74
Mid	38.4990	50	1	QPSK	1/15	27.78	43	-15.22
Mid	38.5220	50	1	QPSK	1/31	26.75	43	-16.25
Mid	38.4999	50	1	QPSK	32/0	27.06	43	-15.94
High	39.9524	50	1	QPSK	1/0	26.14	43	-16.86
High	39.9740	50	1	QPSK	1/15	28.73	43	-14.27
High	39.9970	50	1	QPSK	1/31	25.64	43	-17.36
High	39.9747	50	1	QPSK	32/0	27.33	43	-15.67
Mid	38.4990	50	1	16QAM	1/15	26.03	43	-16.97
Mid	38.4990	50	1	64QAM	1/15	23.64	43	-19.36
Mid	38.4990	100	1	BPSK	1/32	27.79	43	-15.21
Low	37.0029	100	1	QPSK	1/0	25.32	43	-17.68
Low	37.0490	100	1	QPSK	1/32	27.29	43	-15.71
Low	37.0951	100	1	QPSK	1/64	25.50	43	-17.50
Low	37.0489	100	1	QPSK	64/0	26.40	43	-16.60
Mid	38.4529	100	1	QPSK	1/0	25.35	43	-17.65
Mid	38.4990	100	1	QPSK	1/32	28.00	43	-15.00
Mid	38.5450	100	1	QPSK	1/64	25.71	43	-17.29
Mid	38.4987	100	1	QPSK	64/0	27.27	43	-15.73
High	39.9028	100	1	QPSK	1/0	26.33	43	-16.67
High	39.9489	100	1	QPSK	1/32	**29.56**	43	-13.44
High	39.9950	100	1	QPSK	1/64	26.74	43	-16.26
High	39.9484	100	1	QPSK	64/0	28.03	43	-14.97
Mid	38.4990	100	1	16QAM	1/32	25.55	43	-17.45
Mid	38.4990	100	1	64QAM	1/32	24.18	43	-18.82
Mid	38.4970	50	2	BPSK	32/0	25.05	43	-17.95
Mid	38.4754	50	2	QPSK	1/0	21.53	43	-21.47
Mid	38.4970	50	2	QPSK	1/15	21.40	43	-21.60
Mid	38.5200	50	2	QPSK	1/31	19.41	43	-23.59
Mid	38.4970	50	2	QPSK	32/0	26.51	43	-16.49
Mid	38.4970	50	2	16QAM	32/0	24.48	43	-18.52
Mid	38.4970	50	2	64QAM	32/0	22.27	43	-20.73
Mid	38.4964	100	2	BPSK	64/0	25.05	43	-17.95
Mid	38.4504	100	2	QPSK	1/0	20.39	43	-22.61
Mid	38.4964	100	2	QPSK	1/32	21.01	43	-21.99
Mid	38.5425	100	2	QPSK	1/64	19.61	43	-23.39
Mid	38.4964	100	2	QPSK	64/0	26.16	43	-16.84
Mid	38.4965	100	2	16QAM	64/0	24.71	43	-18.29
Mid	38.4964	100	2	64QAM	64/0	22.48	43	-20.52

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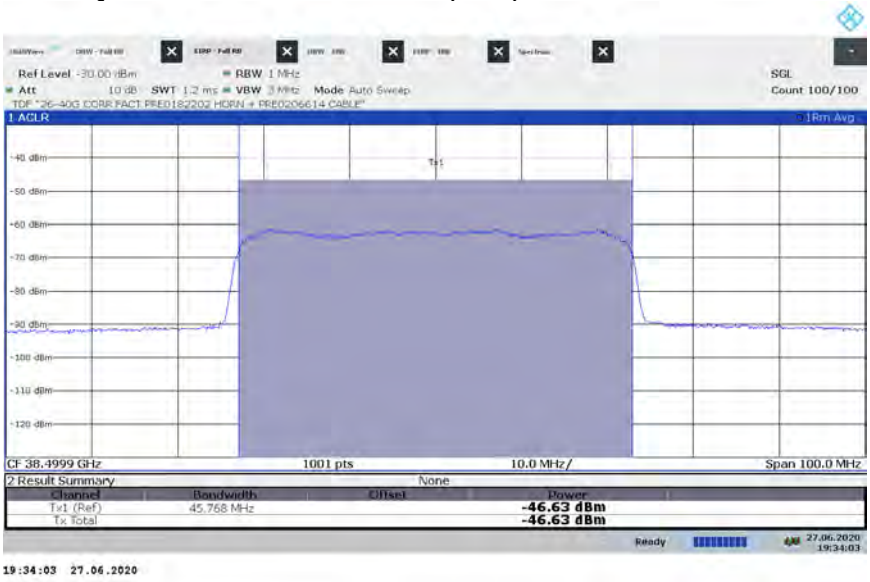
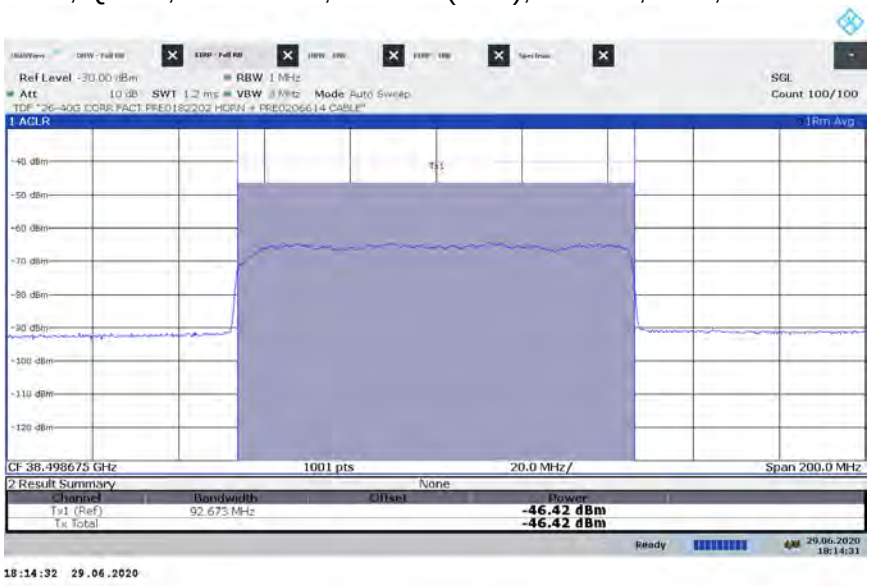
ANT M1

n260, QPSK, SISO-Dual, Full-RB (32/0), Mid-CH, 1CC, 50 MHz



EIRP (dBm) = $P_{measured}$(dBm) + Path Loss @ 3m (dB)
= -46.63 + 73.69
= 27.06

n260, QPSK, SISO-Dual, Full-RB (64/0), Mid-CH, 1CC, 100 MHz



EIRP (dBm) = $P_{measured}$(dBm) + Path Loss @ 3m (dB)
= -46.42 + 73.69
= 27.27

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8.2.3. EIRP RESULTS n260 ANT M1 MIMO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	38.4990	50	1	BPSK	1/15	18.58	43	-24.42
Mid	38.4990	50	1	QPSK	1/15	22.81	43	-20.19
Mid	38.4997	50	1	QPSK	32/0	22.03	43	-20.97
Mid	38.4990	50	1	16QAM	1/15	20.12	43	-22.88
Mid	38.4990	50	1	64QAM	1/15	18.48	43	-24.52
Mid	38.5004	100	1	BPSK	1/33	19.90	43	-23.10
Mid	38.5004	100	1	QPSK	1/33	**24.14**	43	-18.86
Mid	38.4997	100	1	QPSK	66/0	23.00	43	-20.00
Mid	38.5004	100	1	16QAM	1/33	21.31	43	-21.69
Mid	38.5004	100	1	64QAM	1/33	19.74	43	-23.26
Mid	38.4970	50	2	BPSK	32/0	16.10	43	-26.90
Mid	38.4970	50	2	QPSK	1/15	18.85	43	-24.15
Mid	38.4970	50	2	QPSK	32/0	21.98	43	-21.02
Mid	38.4970	50	2	16QAM	32/0	19.66	43	-23.34
Mid	38.4970	50	2	64QAM	32/0	17.25	43	-25.75
Mid	38.4979	100	2	BPSK	66/0	17.48	43	-25.52
Mid	38.4979	100	2	QPSK	1/33	18.10	43	-24.90
Mid	38.4979	100	2	QPSK	66/0	21.88	43	-21.12
Mid	38.4979	100	2	16QAM	66/0	20.09	43	-22.91
Mid	38.4979	100	2	64QAM	66/0	16.88	43	-26.12

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8.2.4. EIRP RESULTS n260 ANT M0 SISO-DUAL

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	38.4990	50	1	QPSK	1/15	**11.59**	43	-31.41
Mid	38.4997	50	1	QPSK	32/0	11.33	43	-31.67
Mid	38.4991	100	1	QPSK	1/32	11.52	43	-31.48
Mid	38.4984	100	1	QPSK	64/0	10.93	43	-32.07

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8.2.5. EIRP RESULTS n260 ANT M2 SISO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	38.4990	50	1	BPSK	1/15	23.96	43	-19.04
Mid	38.4998	50	1	QPSK	1/15	26.50	43	-16.50
Mid	38.4997	50	1	QPSK	32/0	25.65	43	-17.35
Mid	38.4990	50	1	16QAM	1/15	24.49	43	-18.51
Mid	38.4990	50	1	64QAM	1/15	22.72	43	-20.28
Mid	38.4990	100	1	BPSK	1/32	25.01	43	-17.99
Mid	38.4990	100	1	QPSK	1/32	**26.59**	43	-16.41
Mid	38.4986	100	1	QPSK	64/0	25.63	43	-17.37
Mid	38.4990	100	1	16QAM	1/32	24.73	43	-18.27
Mid	38.4990	100	1	64QAM	1/32	22.99	43	-20.01
Mid	38.4970	50	2	BPSK	32/0	21.40	43	-21.60
Mid	38.4970	50	2	QPSK	1/15	16.88	43	-26.12
Mid	38.4970	50	2	QPSK	32/0	21.40	43	-21.60
Mid	38.4970	50	2	16QAM	32/0	19.97	43	-23.03
Mid	38.4970	50	2	64QAM	32/0	16.49	43	-26.51
Mid	38.4965	100	2	BPSK	64/0	21.52	43	-21.48
Mid	38.4964	100	2	QPSK	1/32	17.81	43	-25.19
Mid	38.4964	100	2	QPSK	64/0	22.90	43	-20.10
Mid	38.4964	100	2	16QAM	64/0	21.15	43	-21.85
Mid	38.4964	100	2	64QAM	64/0	18.78	43	-24.22

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8.2.6. EIRP RESULTS n260 ANT M2 SISO-DUAL

Channel	Frequency (GHz)	Bandwidth (MHz)	CCs	Modulation	RB (Size/Offset)	Avg EIRP (dBm)	Limit (dBm)	Margin (dB)
Mid	38.4990	50	1	BPSK	1/15	26.61	43	-16.39
Low	37.0024	50	1	QPSK	1/0	23.58	43	-19.42
Low	37.0241	50	1	QPSK	1/15	25.80	43	-17.20
Low	37.0471	50	1	QPSK	1/31	22.99	43	-20.01
Low	37.0248	50	1	QPSK	32/0	24.57	43	-18.43
Mid	38.4774	50	1	QPSK	1/0	25.87	43	-17.13
Mid	38.4990	50	1	QPSK	1/15	**27.87**	43	-15.13
Mid	38.5220	50	1	QPSK	1/31	25.91	43	-17.09
Mid	38.4997	50	1	QPSK	32/0	26.96	43	-16.04
High	39.9524	50	1	QPSK	1/0	24.43	43	-18.57
High	39.9740	50	1	QPSK	1/15	25.49	43	-17.51
High	39.9970	50	1	QPSK	1/31	23.58	43	-19.42
High	39.9746	50	1	QPSK	32/0	25.06	43	-17.94
Mid	38.4990	50	1	16QAM	1/15	25.14	43	-17.86
Mid	38.4990	50	1	64QAM	1/15	23.63	43	-19.37
Mid	38.4990	100	1	BPSK	1/32	26.91	43	-16.09
Low	37.0029	100	1	QPSK	1/0	22.92	43	-20.08
Low	37.0490	100	1	QPSK	1/32	25.53	43	-17.47
Low	37.0951	100	1	QPSK	1/64	23.18	43	-19.82
Low	37.0488	100	1	QPSK	64/0	24.21	43	-18.79
Mid	38.4529	100	1	QPSK	1/0	24.64	43	-18.36
Mid	38.4990	100	1	QPSK	1/32	27.62	43	-15.38
Mid	38.5450	100	1	QPSK	1/64	25.70	43	-17.30
Mid	38.4986	100	1	QPSK	64/0	26.61	43	-16.39
High	39.9028	100	1	QPSK	1/0	23.97	43	-19.03
High	39.9489	100	1	QPSK	1/32	26.58	43	-16.42
High	39.9950	100	1	QPSK	1/64	24.09	43	-18.91
High	39.9484	100	1	QPSK	64/0	25.18	43	-17.82
Mid	38.4990	100	1	16QAM	1/32	24.84	43	-18.16
Mid	38.4989	100	1	64QAM	1/32	23.19	43	-19.81
Mid	38.4970	50	2	BPSK	32/0	23.97	43	-19.03
Mid	38.4754	50	2	QPSK	1/0	20.80	43	-22.20
Mid	38.4970	50	2	QPSK	1/15	20.88	43	-22.12
Mid	38.5200	50	2	QPSK	1/31	19.45	43	-23.55
Mid	38.4970	50	2	QPSK	32/0	25.57	43	-17.43
Mid	38.4970	50	2	16QAM	32/0	23.55	43	-19.45
Mid	38.4970	50	2	64QAM	32/0	21.55	43	-21.45
Mid	38.4964	100	2	BPSK	64/0	23.70	43	-19.30
Mid	38.4504	100	2	QPSK	1/0	19.82	43	-23.18
Mid	38.4964	100	2	QPSK	1/32	20.74	43	-22.26
Mid	38.5425	100	2	QPSK	1/64	19.35	43	-23.65
Mid	38.4964	100	2	QPSK	64/0	25.43	43	-17.57
Mid	38.4964	100	2	16QAM	64/0	24.34	43	-18.66
Mid	38.4964	100	2	64QAM	64/0	22.31	43	-20.69

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8.2.7. EIRP RESULTS n260 ANT M2 MIMO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	38.4990	50	1	BPSK	1/15	18.95	43	-24.05
Mid	38.4990	50	1	QPSK	1/15	22.86	43	-20.14
Mid	38.4997	50	1	QPSK	32/0	**22.92**	43	-20.08
Mid	38.4989	50	1	16QAM	1/15	20.70	43	-22.30
Mid	38.5004	100	1	BPSK	1/33	18.48	43	-24.52
Mid	38.5004	100	1	QPSK	1/33	22.23	43	-20.77
Mid	38.4997	100	1	QPSK	66/0	21.54	43	-21.46
Mid	38.5004	100	1	16QAM	1/33	22.23	43	-20.77
Mid	38.5004	100	1	64QAM	1/33	19.69	43	-23.31
Mid	38.4970	50	2	BPSK	32/0	17.12	43	-25.88
Mid	38.4970	50	2	QPSK	1/15	19.60	43	-23.40
Mid	38.4970	50	2	QPSK	32/0	22.23	43	-20.77
Mid	38.4970	50	2	16QAM	32/0	20.44	43	-22.56
Mid	38.4970	50	2	64QAM	32/0	18.16	43	-24.84
Mid	38.4979	100	2	BPSK	66/0	17.03	43	-25.97
Mid	38.4979	100	2	QPSK	1/33	18.83	43	-24.17
Mid	38.4979	100	2	QPSK	66/0	22.32	43	-20.68
Mid	38.4979	100	2	16QAM	66/0	20.76	43	-22.24
Mid	38.4979	100	2	64QAM	66/0	15.27	43	-27.73

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8.2.8. EIRP RESULTS n261 ANT M1 SISO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	27.9240	50	1	BPSK	1/15	26.21	43	-16.79
Mid	27.9240	50	1	QPSK	1/15	26.31	43	-16.69
Mid	27.9248	50	1	QPSK	32/0	25.62	43	-17.38
Mid	27.9240	50	1	16QAM	1/15	25.04	43	-17.96
Mid	27.9240	50	1	64QAM	1/15	22.77	43	-20.23
Mid	27.9240	100	1	BPSK	1/32	26.6	43	-16.40
Mid	27.9240	100	1	QPSK	1/32	**26.61**	43	-16.39
Mid	27.9235	100	1	QPSK	64/0	25.60	43	-17.40
Mid	27.9240	100	1	16QAM	1/32	23.98	43	-19.02
Mid	27.9240	100	1	64QAM	1/32	22.71	43	-20.29
Mid	27.9225	50	2	BPSK	32/0	23.68	43	-19.32
Mid	27.9220	50	2	QPSK	1/15	18.53	43	-24.47
Mid	27.9225	50	2	QPSK	32/0	24.78	43	-18.22
Mid	27.9225	50	2	16QAM	32/0	22.27	43	-20.73
Mid	27.9225	50	2	64QAM	32/0	20.19	43	-22.81
Mid	27.9215	100	2	BPSK	64/0	23.87	43	-19.13
Mid	27.9215	100	2	QPSK	1/32	17.76	43	-25.24
Mid	27.9215	100	2	QPSK	64/0	24.85	43	-18.15
Mid	27.9215	100	2	16QAM	64/0	22.63	43	-20.37
Mid	27.9215	100	2	64QAM	64/0	20.33	43	-22.67

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8.2.9. EIRP RESULTS n261 ANT M1 SISO-DUAL

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	27.9241	50	1	BPSK	1/15	29.65	43	-13.35
Low	27.5025	50	1	QPSK	1/0	26.61	43	-16.39
Low	27.5241	50	1	QPSK	1/15	29.00	43	-14.00
Low	27.5471	50	1	QPSK	1/31	26.58	43	-16.42
Low	27.5248	50	1	QPSK	32/0	27.18	43	-15.82
Mid	27.9024	50	1	QPSK	1/0	26.73	43	-16.27
Mid	27.9240	50	1	QPSK	1/15	29.72	43	-13.28
Mid	27.9470	50	1	QPSK	1/31	26.45	43	-16.55
Mid	27.9248	50	1	QPSK	32/0	27.82	43	-15.18
High	28.3024	50	1	QPSK	1/0	27.44	43	-15.56
High	28.3240	50	1	QPSK	1/15	29.42	43	-13.58
High	28.3470	50	1	QPSK	1/31	26.95	43	-16.05
High	28.3247	50	1	QPSK	32/0	28.48	43	-14.52
Mid	27.9241	50	1	16QAM	1/15	27.14	43	-15.86
Mid	27.9240	50	1	64QAM	1/15	24.00	43	-19.00
Mid	27.9240	100	1	BPSK	1/32	29.64	43	-13.36
Low	27.5031	100	1	QPSK	1/0	27.53	43	-15.47
Low	27.5492	100	1	QPSK	1/32	29.77	43	-13.23
Low	27.5952	100	1	QPSK	1/64	27.54	43	-15.46
Low	27.5486	100	1	QPSK	64/0	28.46	43	-14.54
Mid	27.8780	100	1	QPSK	1/0	28.21	43	-14.79
Mid	27.9240	100	1	QPSK	1/32	29.81	43	-13.19
Mid	27.9701	100	1	QPSK	1/64	27.27	43	-15.73
Mid	27.9235	100	1	QPSK	64/0	28.51	43	-14.49
High	28.2530	100	1	QPSK	1/0	28.20	43	-14.80
High	28.2990	100	1	QPSK	1/32	**30.28**	43	-12.72
High	28.3451	100	1	QPSK	1/64	27.97	43	-15.03
High	28.2986	100	1	QPSK	64/0	28.79	43	-14.21
Mid	27.9240	100	1	16QAM	1/32	28.02	43	-14.98
Mid	27.9240	100	1	64QAM	1/32	25.28	43	-17.72
Mid	27.9221	50	2	BPSK	32/0	26.22	43	-16.78
Mid	27.9004	50	2	QPSK	1/0	22.27	43	-20.73
Mid	27.9220	50	2	QPSK	1/15	22.30	43	-20.70
Mid	27.9451	50	2	QPSK	1/31	21.37	43	-21.63
Mid	27.9220	50	2	QPSK	32/0	27.41	43	-15.59
Mid	27.9220	50	2	16QAM	32/0	25.58	43	-17.42
Mid	27.9220	50	2	64QAM	32/0	23.38	43	-19.62
Mid	27.9215	100	2	BPSK	64/0	25.56	43	-17.44
Mid	27.8754	100	2	QPSK	1/0	21.57	43	-21.43
Mid	27.9215	100	2	QPSK	1/32	21.88	43	-21.12
Mid	27.9676	100	2	QPSK	1/64	21.88	43	-21.12
Mid	27.9215	100	2	QPSK	64/0	26.92	43	-16.08
Mid	27.9215	100	2	16QAM	64/0	24.80	43	-18.20
Mid	27.9215	100	2	64QAM	64/0	22.81	43	-20.19

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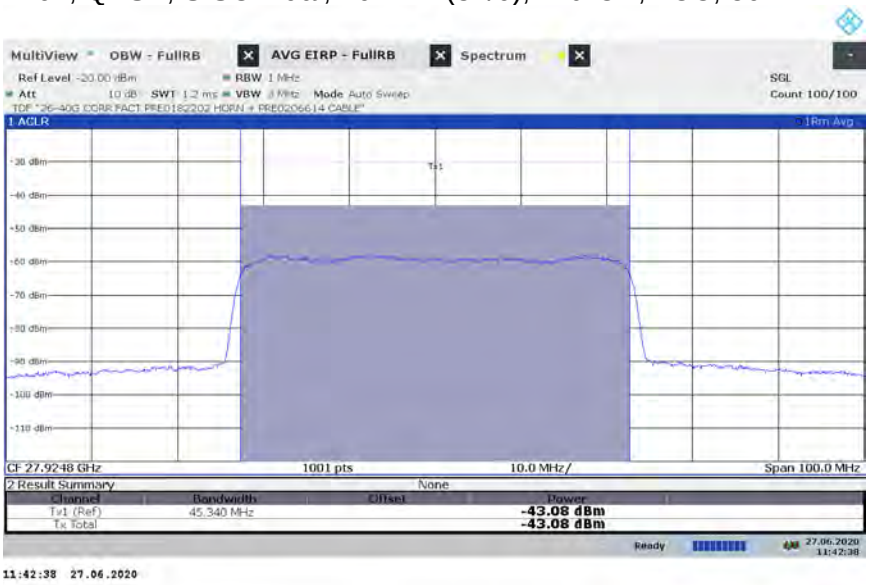
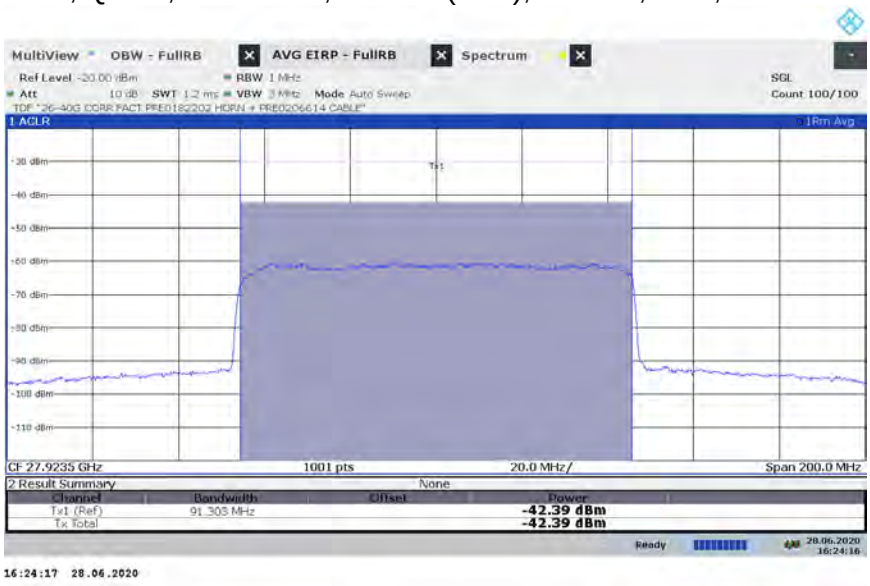
ANT M1

n261, QPSK, SISO-Dual, Full-RB (32/0), Mid-CH, 1CC, 50 MHz



EIRP (dBm) = $P_{measured}$(dBm) + Path Loss @ 3m (dB)
= -43.08 + 70.90
= 27.82

n261, QPSK, SISO-Dual, Full-RB (64/0), Mid-CH, 1CC, 100 MHz



EIRP (dBm) = $P_{measured}$(dBm) + Path Loss @ 3m (dB)
= -42.39 + 70.90
= 28.51

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8.2.10. EIRP RESULTS n261 ANT M1 MIMO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	27.9240	50	1	BPSK	1/15	22.84	43	-20.16
Mid	27.9240	50	1	QPSK	1/15	23.68	43	-19.32
Mid	27.9248	50	1	QPSK	32/0	23.05	43	-19.95
Mid	27.9240	50	1	16QAM	1/15	22.47	43	-20.53
Mid	27.9240	50	1	64QAM	1/15	19.59	43	-23.41
Mid	27.9255	100	1	BPSK	1/33	22.32	43	-20.68
Mid	27.9255	100	1	QPSK	1/33	**24.23**	43	-18.77
Mid	27.9247	100	1	QPSK	66/0	23.26	43	-19.74
Mid	27.9255	100	1	16QAM	1/33	21.77	43	-21.23
Mid	27.9255	100	1	64QAM	1/33	20.11	43	-22.89
Mid	27.9220	50	2	BPSK	32/0	20.88	43	-22.12
Mid	27.9220	50	2	QPSK	1/15	20.03	43	-22.97
Mid	27.9220	50	2	QPSK	32/0	22.66	43	-20.34
Mid	27.9220	50	2	16QAM	32/0	19.71	43	-23.29
Mid	27.9220	50	2	64QAM	32/0	16.81	43	-26.19
Mid	27.9229	100	2	BPSK	66/0	20.27	43	-22.73
Mid	27.9229	100	2	QPSK	1/33	17.86	43	-25.14
Mid	27.9229	100	2	QPSK	66/0	21.22	43	-21.78
Mid	27.9229	100	2	16QAM	66/0	19.79	43	-23.21
Mid	27.9229	100	2	64QAM	66/0	17.05	43	-25.95

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8.2.11. EIRP RESULTS n261 ANT M0 SISO-DUAL

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	27.9240	50	1	QPSK	1/15	**14.74**	43	-28.26
Mid	27.9248	50	1	QPSK	32/0	13.69	43	-29.31
Mid	27.9240	100	1	QPSK	1/32	14.30	43	-28.70
Mid	27.9233	100	1	QPSK	64/0	13.14	43	-29.86

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8.2.12. EIRP RESULTS n261 ANT M2 SISO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	27.9240	50	1	BPSK	1/15	24.56	43	-18.44
Mid	27.9240	50	1	QPSK	1/15	25.02	43	-17.98
Mid	27.9248	50	1	QPSK	32/0	23.44	43	-19.56
Mid	27.9240	50	1	16QAM	1/15	22.45	43	-20.55
Mid	27.9240	50	1	64QAM	1/15	20.06	43	-22.94
Mid	27.9240	100	1	BPSK	1/32	24.65	43	-18.35
Mid	27.9240	100	1	QPSK	1/32	**25.3**	43	-17.70
Mid	27.9235	100	1	QPSK	64/0	23.68	43	-19.32
Mid	27.9240	100	1	16QAM	1/32	22.44	43	-20.56
Mid	27.9240	100	1	64QAM	1/32	20.06	43	-22.94
Mid	27.9221	50	2	BPSK	32/0	22.34	43	-20.66
Mid	27.9220	50	2	QPSK	1/15	15.21	43	-27.79
Mid	27.9220	50	2	QPSK	32/0	22.82	43	-20.18
Mid	27.9220	50	2	16QAM	32/0	19.78	43	-23.22
Mid	27.9220	50	2	64QAM	32/0	17.87	43	-25.13
Mid	27.9215	100	2	BPSK	64/0	21.91	43	-21.09
Mid	27.9215	100	2	QPSK	1/32	14.17	43	-28.83
Mid	27.9215	100	2	QPSK	64/0	**22.71**	43	-20.29
Mid	27.9215	100	2	16QAM	64/0	19.75	43	-23.25
Mid	27.9215	100	2	64QAM	64/0	17.42	43	-25.58

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8.2.13. EIRP RESULTS n261 ANT M2 SISO-DUAL

Channel	Frequency (GHz)	Bandwidth (MHz)	CCs	Modulation	RB (Size/Offset)	Avg EIRP (dBm)	Limit (dBm)	Margin (dB)
Mid	27.9240	50	1	BPSK	1/15	26.19	43	-16.81
Low	27.5025	50	1	QPSK	1/0	24.44	43	-18.56
Low	27.5241	50	1	QPSK	1/15	25.82	43	-17.18
Low	27.5471	50	1	QPSK	1/31	23.09	43	-19.91
Low	27.5248	50	1	QPSK	32/0	25.16	43	-17.84
Mid	27.9024	50	1	QPSK	1/0	23.29	43	-19.71
Mid	27.9240	50	1	QPSK	1/15	**27.36**	43	-15.64
Mid	27.9470	50	1	QPSK	1/31	23.11	43	-19.89
Mid	27.9248	50	1	QPSK	32/0	24.54	43	-18.46
High	28.3024	50	1	QPSK	1/0	23.38	43	-19.62
High	28.3240	50	1	QPSK	1/15	25.85	43	-17.15
High	28.3470	50	1	QPSK	1/31	22.96	43	-20.04
High	28.3247	50	1	QPSK	32/0	24.22	43	-18.78
Mid	27.9240	50	1	16QAM	1/15	23.72	43	-19.28
Mid	27.9240	50	1	64QAM	1/15	21.59	43	-21.41
Mid	27.9240	100	1	BPSK	1/32	26.36	43	-16.64
Low	27.5031	100	1	QPSK	1/0	24.53	43	-18.47
Low	27.5492	100	1	QPSK	1/32	25.28	43	-17.72
Low	27.5952	100	1	QPSK	1/64	24.10	43	-18.90
Low	27.5485	100	1	QPSK	64/0	24.97	43	-18.03
Mid	27.8780	100	1	QPSK	1/0	24.49	43	-18.51
Mid	27.9240	100	1	QPSK	1/32	26.85	43	-16.15
Mid	27.9701	100	1	QPSK	1/64	23.38	43	-19.62
Mid	27.9233	100	1	QPSK	64/0	24.61	43	-18.39
High	28.2530	100	1	QPSK	1/0	24.15	43	-18.85
High	28.2990	100	1	QPSK	1/32	25.53	43	-17.47
High	28.3451	100	1	QPSK	1/64	22.72	43	-20.28
High	28.2986	100	1	QPSK	64/0	24.65	43	-18.35
Mid	27.9241	100	1	16QAM	1/32	23.65	43	-19.35
Mid	27.9240	100	1	64QAM	1/32	21.30	43	-21.70
Mid	27.9221	50	2	BPSK	32/0	24.71	43	-18.29
Mid	27.9004	50	2	QPSK	1/0	17.80	43	-25.20
Mid	27.9220	50	2	QPSK	1/15	18.20	43	-24.80
Mid	27.9451	50	2	QPSK	1/31	17.84	43	-25.16
Mid	27.9220	50	2	QPSK	32/0	25.32	43	-17.68
Mid	27.9220	50	2	16QAM	32/0	21.02	43	-21.98
Mid	27.9220	50	2	64QAM	32/0	19.03	43	-23.97
Mid	27.9215	100	2	BPSK	64/0	24.6	43	-18.40
Mid	27.8754	100	2	QPSK	1/0	17.77	43	-25.23
Mid	27.9215	100	2	QPSK	1/32	18.50	43	-24.50
Mid	27.9676	100	2	QPSK	1/64	17.77	43	-25.23
Mid	27.9215	100	2	QPSK	64/0	25.23	43	-17.77
Mid	27.9215	100	2	16QAM	64/0	21.34	43	-21.66
Mid	27.9215	100	2	64QAM	64/0	19.24	43	-23.76

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8.2.14. EIRP RESULTS n261 ANT M2 MIMO

Channel	Frequency	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin
	(GHz)	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)
Mid	27.9240	50	1	BPSK	1/15	19.98	43	-23.02
Mid	27.9240	50	1	QPSK	1/15	**23.68**	43	-19.32
Mid	27.9248	50	1	QPSK	32/0	23.05	43	-19.95
Mid	27.9240	50	1	16QAM	1/15	20.91	43	-22.09
Mid	27.9240	50	1	64QAM	1/15	19.40	43	-23.60
Mid	27.9255	100	1	BPSK	1/33	20.26	43	-22.74
Mid	27.9255	100	1	QPSK	1/33	22.45	43	-20.55
Mid	27.9247	100	1	QPSK	66/0	22.27	43	-20.73
Mid	27.9255	100	1	16QAM	1/33	21.77	43	-21.23
Mid	27.9255	100	1	64QAM	1/33	20.11	43	-22.89
Mid	27.9221	50	2	BPSK	32/0	19.20	43	-23.80
Mid	27.9220	50	2	QPSK	1/15	18.48	43	-24.52
Mid	27.9220	50	2	QPSK	32/0	20.43	43	-22.57
Mid	27.9220	50	2	16QAM	32/0	18.88	43	-24.12
Mid	27.9220	50	2	64QAM	32/0	16.13	43	-26.87
Mid	27.9229	100	2	BPSK	66/0	18.94	43	-24.06
Mid	27.9229	100	2	QPSK	1/33	18.25	43	-24.75
Mid	27.9229	100	2	QPSK	66/0	21.22	43	-21.78
Mid	27.9229	100	2	16QAM	66/0	19.52	43	-23.48
Mid	27.9229	100	2	64QAM	66/0	16.76	43	-26.24

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8.3. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §2.1051, §30.203

LIMITS

30.203 (a) - The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13 dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be −5 dBm/MHz or lower.

TEST PROCEDURE

- RBW = 1 MHz
- VBW ≥ 3 x RBW
- Number of measurement points in sweep > 2 x span / RBW
- Sweep time = auto-couple
- Detector = RMS
- Trace mode = Average

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.2
ANSI C63.26-2015 Clause 5.2, Clause 5.5, Clause 6.4, and Annex C.5.2

Band Edge measurements were measured as EIRP for direct comparison to the 30.203 TRP limit to demonstrate compliance.

The appropriate far field test distance at 3m, listed on Section 5, was used at test.

EIRP was calculated using the equations on ANSI C63.26-2015 Annex C.5.2. The total correction factors from 26.5 – 40.2 GHz range of horn antenna gain, cable loss and far-field path loss @ 3m were calculated using equations C.8 and C.9, and pre-loaded into spectrum analyzer.

Sample calculation of EIRP:

Total Correction Factor = Cable Loss (dB) – Horn Ant Gain (dBi) + Path Loss @ 3m (dB)
= 4 – 23 + 71
= 52 dB

EIRP = $P_{measured}$(dBm), where Total Correction Factor preloaded.

In order to properly display of signal level on the plots, the pre-loaded correction factors were intentional lowered by 40 dB and an offset factor of 40 dB was applied on spectrum analyzer to compensate the true correction factors across 26.5 to 40.2 GHz range.

BPSK, QPSK, 16QAM and 64QAM modulations were all investigated in SISO, SISO-Dual and MIMO configurations. The highest band edge emissions were for the SISO-Dual antenna

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configuration consistent with this also being the configuration with the highest EIRP. The SISO-Dual configuration was, therefore, use for the final band-edge measurements. Additional measurements were made on the MIMO configuration as it has a wider bandwidth than the SISO-DUAL configuration. To reduce report file size, the plots are provided only for the worst case (QPSK) modulation. The tabular data includes data for the BPSK, 16QAM and 64QAM modulations. Single RB (highest power) and Full RB allocations were measured.

Band edge measurements for multi-carrier (2CC) operations were limited to single RB in each carrier in the (50 MHz + 50 MHz) and (100 MHz + 100 MHz) modes. Note that inter-modulation products which can be seen in the band edge plots are evaluated as part of the radiated spurious emission measurements.

Verified through preliminary testing across other modulations and antenna configurations, there was no significant change of spectrum pattern at band edges on 1CC Full RB and 2CC Full RB, therefore no further investigation was performed on 2CC Full RB operation.

RESULTS

See the following pages.

TESTED BY:

Employee IDs: 19296 & 19459, n261 band, Chamber 1
Employee IDs: 19470 & 19437, n260 band, Chamber 2

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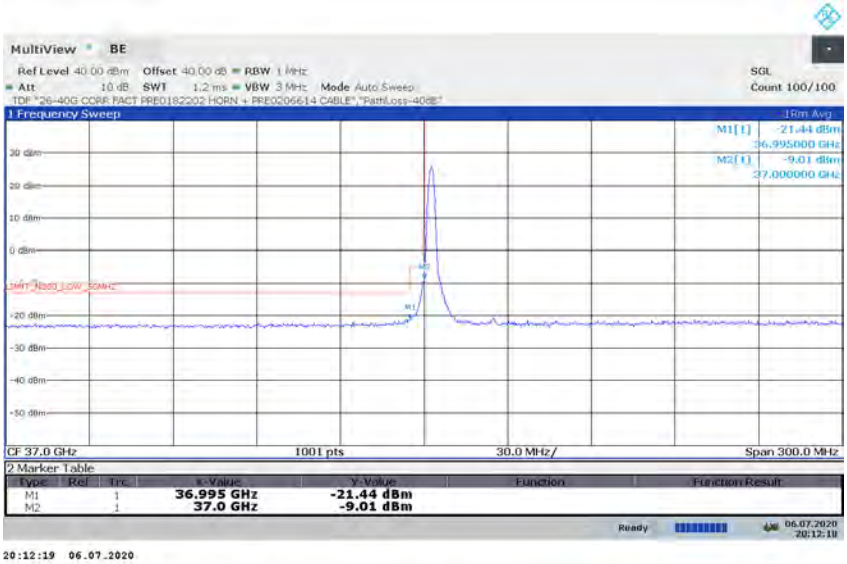
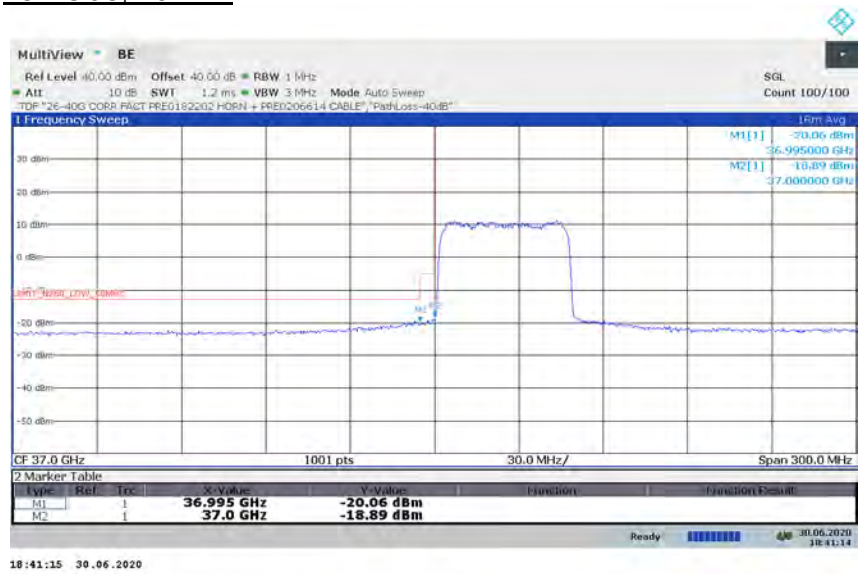
8.3.1. BAND EDGE RESULTS n260 SISO-DUAL 1CC

ANT M1, 50 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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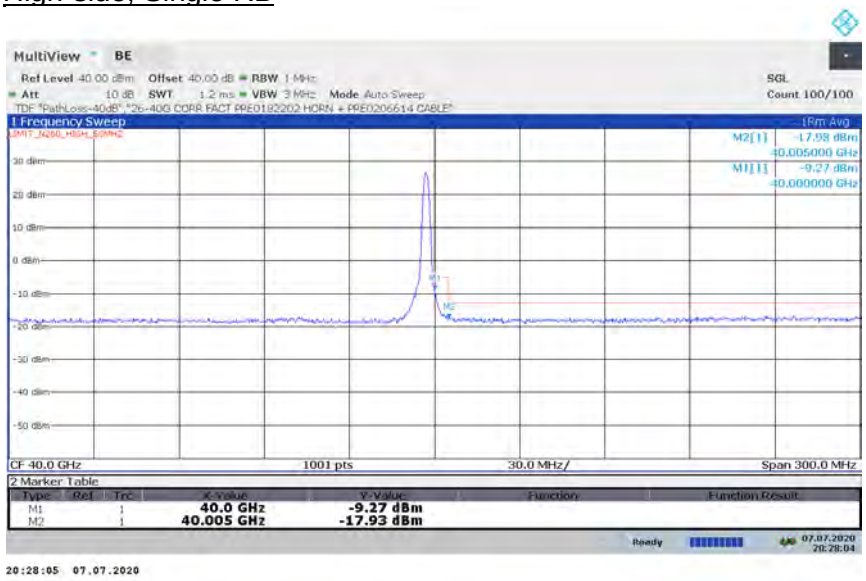
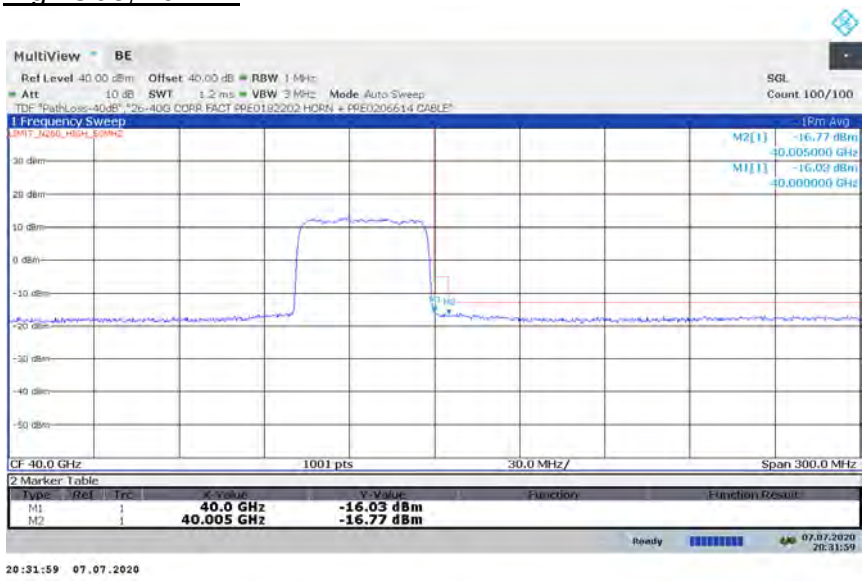
ANT M1, 50 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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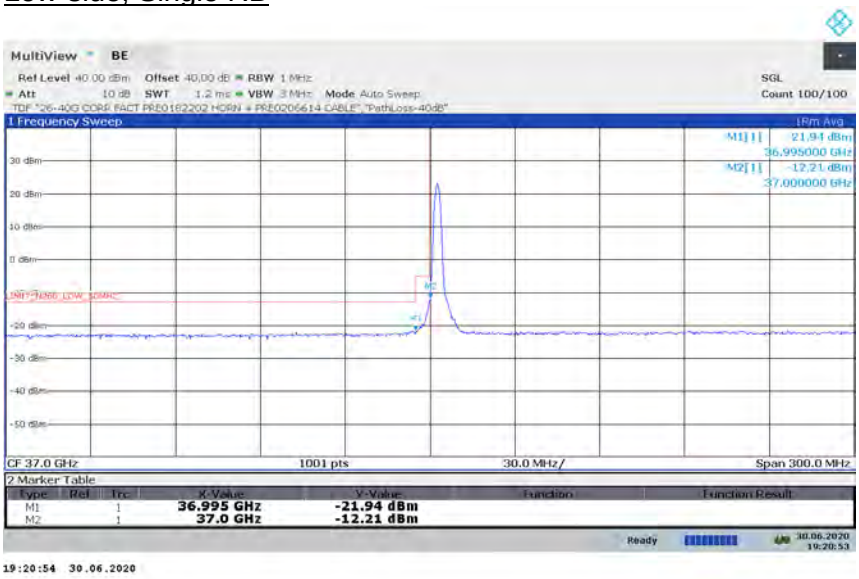
ANT M2, 50 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB

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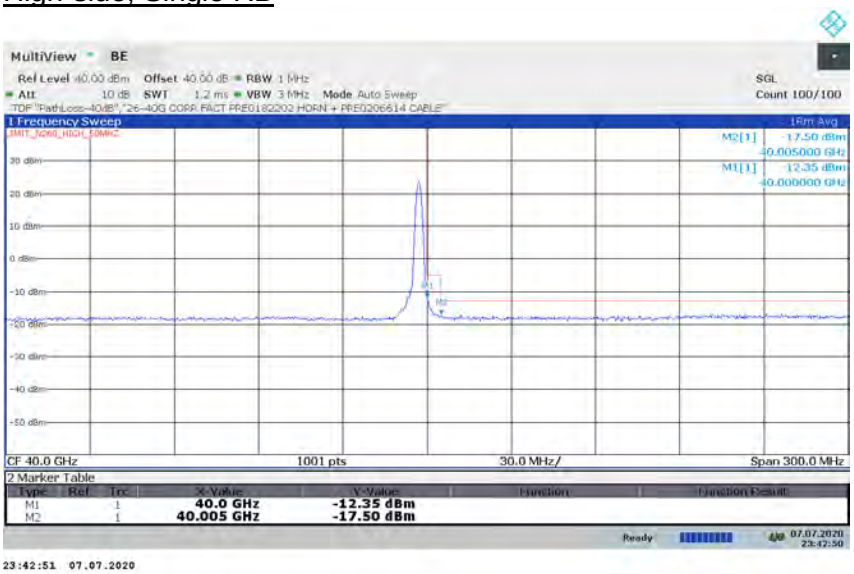
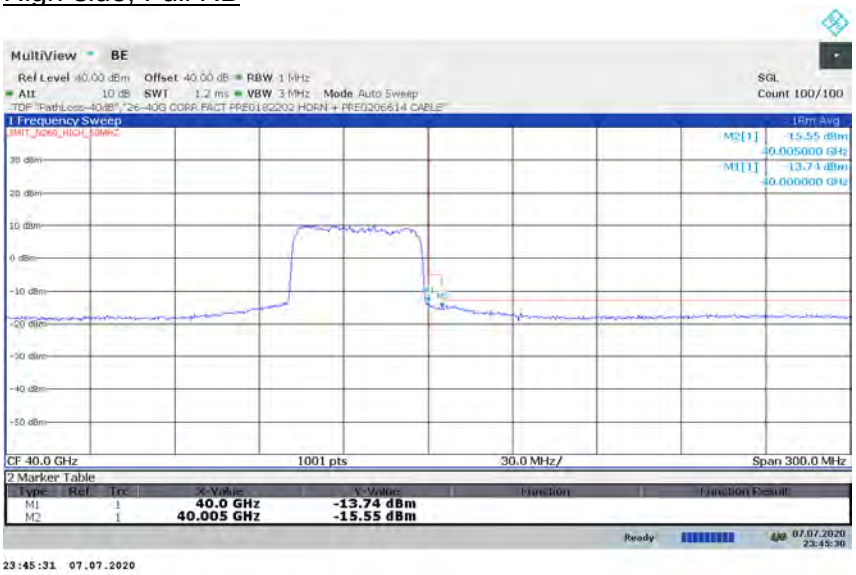
ANT M2, 50 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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ANT M1 and M2, 50 MHz, SISO-DUAL, 1CC, QPSK

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	50	L	1/0	37	-9.01	-5	-4.01
M1	50	L	1/0	36.995	-21.44	-13	-8.44
M2	50	L	1/0	37	-12.21	-5	-7.21
M2	50	L	1/0	36.995	-21.94	-13	-8.94
M1	50	L	32/0	37	-18.89	-5	-13.89
M1	50	L	32/0	36.995	-20.06	-13	-7.06
M2	50	L	32/0	37	-14.80	-5	-9.80
M2	50	L	32/0	36.995	-15.93	-13	-2.93
M1	50	H	1/32	40	-9.27	-5	-4.27
M1	50	H	1/32	40.005	-17.93	-13	-4.93
M2	50	H	1/32	40	-12.35	-5	-7.35
M2	50	H	1/32	40.005	-17.50	-13	-4.50
M1	50	H	32/0	40	-16.03	-5	-11.03
M1	50	H	32/0	40.005	-16.77	-13	-3.77
M2	50	H	32/0	40	-13.74	-5	-8.74
M2	50	H	32/0	40.005	-15.55	-13	-2.55

ANT M1 and M2, 50 MHz, SISO-DUAL, 1CC, BPSK

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	50	L	1/0	37	-13.89	-5	-8.89
M1	50	L	1/0	36.995	-22.89	-13	-9.89
M2	50	L	1/0	37	-16.27	-5	-11.27
M2	50	L	1/0	36.995	-22.93	-13	-9.93
M1	50	L	32/0	37	-21.83	-5	-16.83
M1	50	L	32/0	36.995	-23.21	-13	-10.21
M2	50	L	32/0	37	-20.75	-5	-15.75
M2	50	L	32/0	36.995	-22.29	-13	-9.29
M1	50	H	1/32	40	-15.11	-5	-10.11
M1	50	H	1/32	40.005	-18.71	-13	-5.71
M2	50	H	1/32	40	-15.58	-5	-10.58
M2	50	H	1/32	40.005	-18.52	-13	-5.52
M1	50	H	32/0	40	-19.02	-5	-14.02
M1	50	H	32/0	40.005	-18.07	-13	-5.07
M2	50	H	32/0	40	-18.28	-5	-13.28
M2	50	H	32/0	40.005	-18.34	-13	-5.34

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ANT M1 and M2, 50 MHz, SISO-DUAL, 1CC, 16QAM

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	50	L	1/0	37	-11.91	-5	-6.91
M1	50	L	1/0	36.995	-22.60	-13	-9.60
M2	50	L	1/0	37	-13.95	-5	-8.95
M2	50	L	1/0	36.995	-22.02	-13	-9.02
M1	50	L	32/0	37	-20.61	-5	-15.61
M1	50	L	32/0	36.995	-21.90	-13	-8.90
M2	50	L	32/0	37	-18.73	-5	-13.73
M2	50	L	32/0	36.995	-19.60	-13	-6.60
M1	50	H	1/32	40	-11.74	-5	-6.74
M1	50	H	1/32	40.005	-17.99	-13	-4.99
M2	50	H	1/32	40	-13.42	-5	-8.42
M2	50	H	1/32	40.005	-18.73	-13	-5.73
M1	50	H	32/0	40	-17.91	-5	-12.91
M1	50	H	32/0	40.005	-17.51	-13	-4.51
M2	50	H	32/0	40	-16.24	-5	-11.24
M2	50	H	32/0	40.005	-16.40	-13	-3.40

ANT M1 and M2, 50 MHz, SISO-DUAL, 1CC, 64QAM

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	50	L	1/0	37	-13.54	-5	-8.54
M1	50	L	1/0	36.995	-22.88	-13	-9.88
M2	50	L	1/0	37	-14.97	-5	-9.97
M2	50	L	1/0	36.995	-22.82	-13	-9.82
M1	50	L	32/0	37	-22.74	-5	-17.74
M1	50	L	32/0	36.995	-23.09	-13	-10.09
M2	50	L	32/0	37	-20.57	-5	-15.57
M2	50	L	32/0	36.995	-22.11	-13	-9.11
M1	50	H	1/32	40	-12.08	-5	-7.08
M1	50	H	1/32	40.005	-18.12	-13	-5.12
M2	50	H	1/32	40	-14.84	-5	-9.84
M2	50	H	1/32	40.005	-18.48	-13	-5.48
M1	50	H	32/0	40	-17.62	-5	-12.62
M1	50	H	32/0	40.005	-17.89	-13	-4.89
M2	50	H	32/0	40	-17.95	-5	-12.95
M2	50	H	32/0	40.005	-18.42	-13	-5.42

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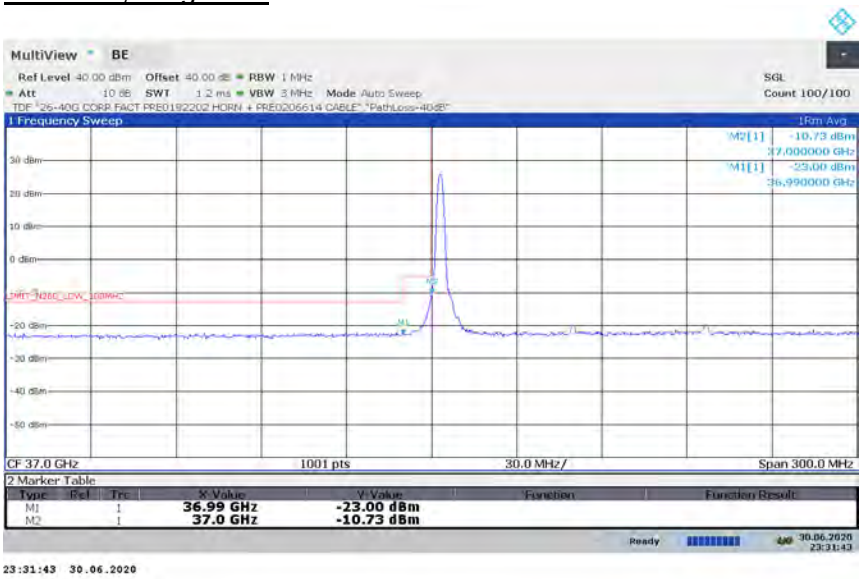
ANT M1, 100 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB

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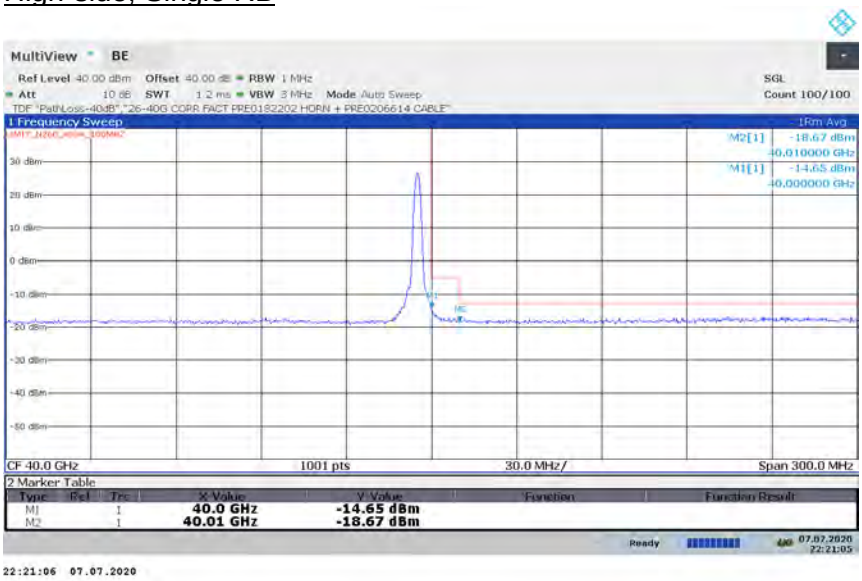
ANT M1, 100 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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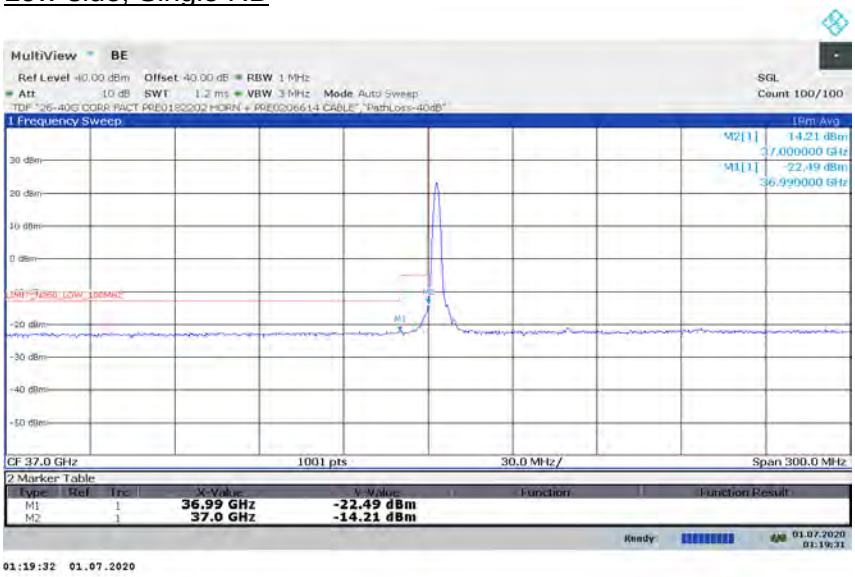
ANT M2, 100 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB

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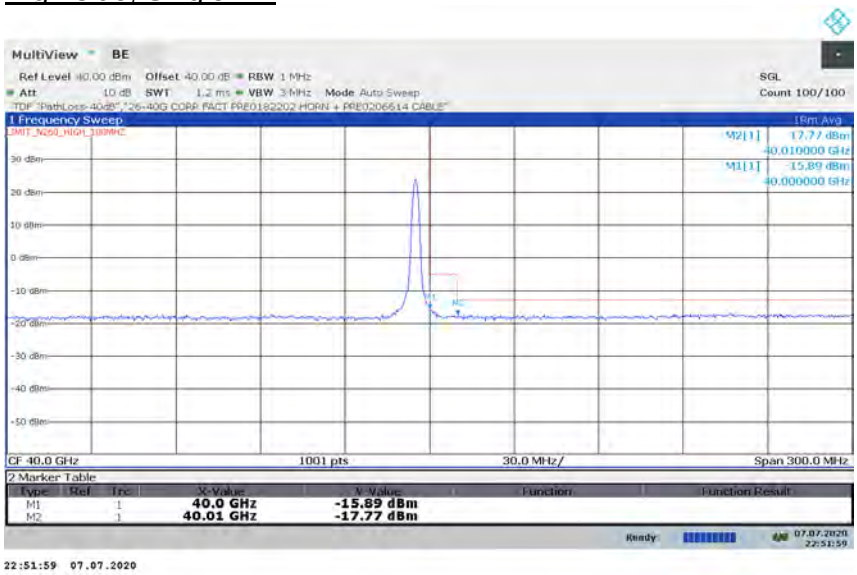
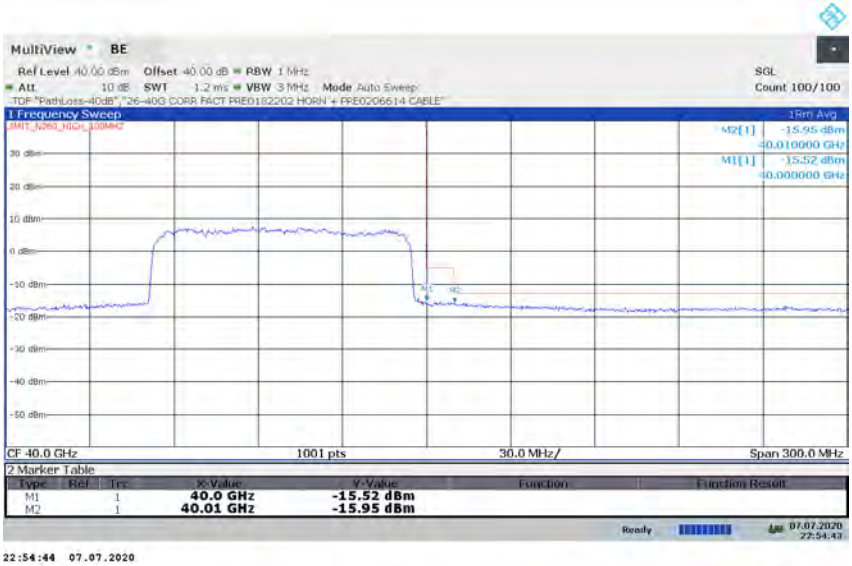
ANT M2, 100 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, QPSK

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	100	L	1/0	37	-10.73	-5	-5.73
M1	100	L	1/0	36.99	-23.00	-13	-10.00
M2	100	L	1/0	37	-14.21	-5	-9.21
M2	100	L	1/0	36.99	-22.49	-13	-9.49
M1	100	L	64/0	37	-20.01	-5	-15.01
M1	100	L	64/0	36.99	-21.37	-13	-8.37
M2	100	L	64/0	37	-21.45	-5	-16.45
M2	100	L	64/0	36.99	-21.64	-13	-8.64
M1	100	H	1/64	40	-14.65	-5	-9.65
M1	100	H	1/64	40.01	-18.67	-13	-5.67
M2	100	H	1/64	40	-15.89	-5	-10.89
M2	100	H	1/64	40.01	-17.77	-13	-4.77
M1	100	H	64/0	40	-17.34	-5	-12.34
M1	100	H	64/0	40.01	-17.58	-13	-4.58
M2	100	H	64/0	40	-15.52	-5	-10.52
M2	100	H	64/0	40.01	-15.95	-13	-2.95

ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, BPSK

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	100	L	1/0	37	-15.95	-5	-10.95
M1	100	L	1/0	36.99	-22.85	-13	-9.85
M2	100	L	1/0	37	-18.85	-5	-13.85
M2	100	L	1/0	36.99	-23.36	-13	-10.36
M1	100	L	64/0	37	-22.55	-5	-17.55
M1	100	L	64/0	36.99	-23.11	-13	-10.11
M2	100	L	64/0	37	-21.05	-5	-16.05
M2	100	L	64/0	36.99	-22.78	-13	-9.78
M1	100	H	1/64	40	-17.75	-5	-12.75
M1	100	H	1/64	40.01	-19.09	-13	-6.09
M2	100	H	1/64	40	-18.13	-5	-13.13
M2	100	H	1/64	40.01	-18.60	-13	-5.60
M1	100	H	64/0	40	-18.56	-5	-13.56
M1	100	H	64/0	40.01	-18.76	-13	-5.76
M2	100	H	64/0	40	-19.18	-5	-14.18
M2	100	H	64/0	40.01	-18.90	-13	-5.90

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ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, 16QAM

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	100	L	1/0	37	-12.69	-5	-7.69
M1	100	L	1/0	36.99	-22.29	-13	-9.29
M2	100	L	1/0	37	-19.78	-5	-14.78
M2	100	L	1/0	36.99	-22.35	-13	-9.35
M1	100	L	64/0	37	-21.78	-5	-16.78
M1	100	L	64/0	36.99	-22.93	-13	-9.93
M2	100	L	64/0	37	-22.64	-5	-17.64
M2	100	L	64/0	36.99	-22.77	-13	-9.77
M1	100	H	1/64	40	-15.75	-5	-10.75
M1	100	H	1/64	40.01	-18.43	-13	-5.43
M2	100	H	1/64	40	-16.71	-5	-11.71
M2	100	H	1/64	40.01	-17.53	-13	-4.53
M1	100	H	64/0	40	-18.01	-5	-13.01
M1	100	H	64/0	40.01	-18.05	-13	-5.05
M2	100	H	64/0	40	-16.90	-5	-11.90
M2	100	H	64/0	40.01	-17.44	-13	-4.44

ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, 64QAM

Antenna	BW (MHz)	Channel	RB (Size Offset)	Freq. (GHz)	Avg EIRP (dBm)	Avg TRP Limit (dBm)	Margin (dB)
M1	100	L	1/0	37	-13.73	-5	-8.73
M1	100	L	1/0	36.99	-22.48	-13	-9.48
M2	100	L	1/0	37	-19.00	-5	-14.00
M2	100	L	1/0	36.99	-22.89	-13	-9.89
M1	100	L	64/0	37	-22.08	-5	-17.08
M1	100	L	64/0	36.99	-22.66	-13	-9.66
M2	100	L	64/0	37	-22.67	-5	-17.67
M2	100	L	64/0	36.99	-23.22	-13	-10.22
M1	100	H	1/64	40	-15.64	-5	-10.64
M1	100	H	1/64	40.01	-18.19	-13	-5.19
M2	100	H	1/64	40	-17.49	-5	-12.49
M2	100	H	1/64	40.01	-18.40	-13	-5.40
M1	100	H	64/0	40	-18.44	-5	-13.44
M1	100	H	64/0	40.01	-18.68	-13	-5.68
M2	100	H	64/0	40	-18.46	-5	-13.46
M2	100	H	64/0	40.01	-18.21	-13	-5.21

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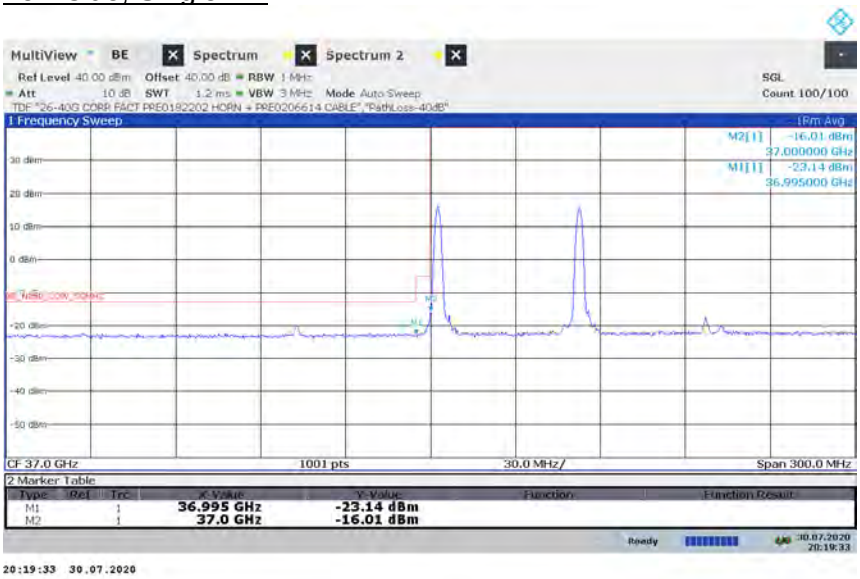
8.3.2. BAND EDGE RESULTS n260 SISO-DUAL 2CC

ANT M1, 50 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB



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ANT M1, 50 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB

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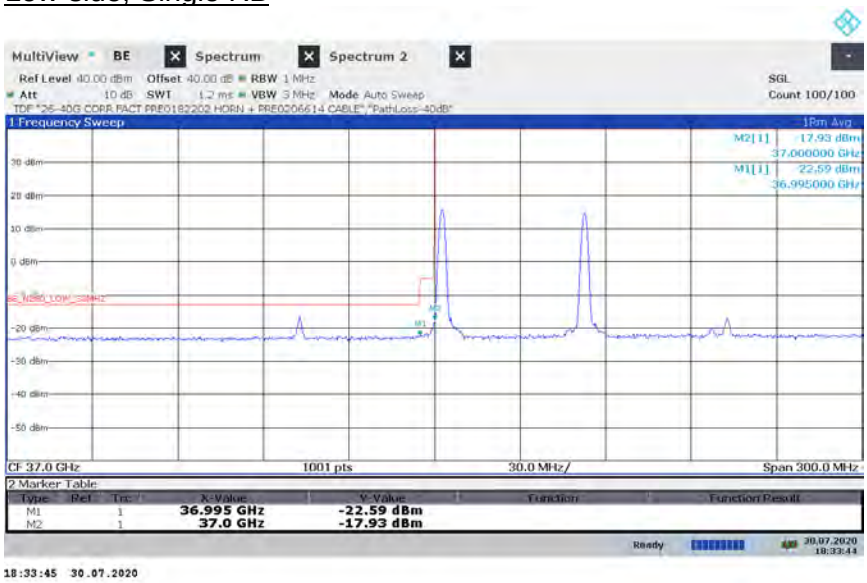
ANT M2, 50 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB



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ANT M2, 50 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB

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ANT 1 & M2, 50 MHz, SISO-DUAL, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-16.01	-5	-11.01
M1	50	L	1/0	36.995	-23.14	-13	-10.14
M2	50	L	1/0	37	-17.93	-5	-12.93
M2	50	L	1/0	36.995	-22.59	-13	-9.59
M1	50	H	1/32	40	-16.25	-5	-11.25
M1	50	H	1/32	40.005	-18.07	-13	-5.07
M2	50	H	1/32	40	-16.85	-5	-11.85
M2	50	H	1/32	40.005	-18.47	-13	-5.47

ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-20.36	-5	-15.36
M1	50	L	1/0	36.995	-23.74	-13	-10.74
M2	50	L	1/0	37	-21.54	-5	-16.54
M2	50	L	1/0	36.995	-24.03	-13	-11.03
M1	50	H	1/32	40	-20.80	-5	-15.80
M1	50	H	1/32	40.005	-24.14	-13	-11.14
M2	50	H	1/32	40	-23.38	-5	-18.38
M2	50	H	1/32	40.005	-24.56	-13	-11.56

ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-18.68	-5	-13.68
M1	50	L	1/0	36.995	-22.75	-13	-9.75
M2	50	L	1/0	37	-19.34	-5	-14.34
M2	50	L	1/0	36.995	-22.93	-13	-9.93
M1	50	H	1/32	40	-18.16	-5	-13.16
M1	50	H	1/32	40.005	-17.60	-13	-4.60
M2	50	H	1/32	40	-18.19	-5	-13.19
M2	50	H	1/32	40.005	-18.79	-13	-5.79

ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-21.78	-5	-16.78
M1	50	L	1/0	36.995	-23.42	-13	-10.42
M2	50	L	1/0	37	-20.44	-5	-15.44
M2	50	L	1/0	36.995	-22.94	-13	-9.94
M1	50	H	1/32	40	-18.20	-5	-13.20
M1	50	H	1/32	40.005	-18.75	-13	-5.75
M2	50	H	1/32	40	-18.84	-5	-13.84
M2	50	H	1/32	40.005	-18.18	-13	-5.18

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ANT M1, 100 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB

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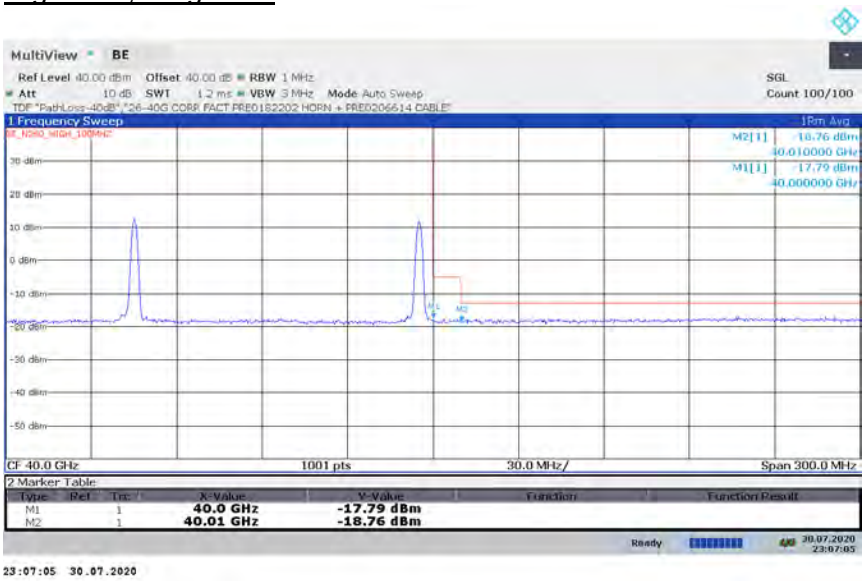
ANT M1, 100 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB



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ANT M2, 100 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB

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ANT M2, 100 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB

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ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-19.84	-5	-14.84
M1	100	L	1/0	36.99	-22.24	-13	-9.24
M2	100	L	1/0	37	-20.73	-5	-15.73
M2	100	L	1/0	36.99	-23.14	-13	-10.14
M1	100	H	1/64	40	-17.79	-5	-12.79
M1	100	H	1/64	40.01	-18.76	-13	-5.76
M2	100	H	1/64	40	-18.68	-5	-13.68
M2	100	H	1/64	40.01	-18.29	-13	-5.29

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-20.80	-5	-15.80
M1	100	L	1/0	36.99	-24.14	-13	-11.14
M2	100	L	1/0	37	-23.38	-5	-18.38
M2	100	L	1/0	36.99	-24.56	-13	-11.56
M1	100	H	1/64	40	-18.28	-5	-13.28
M1	100	H	1/64	40.01	-20.17	-13	-7.17
M2	100	H	1/64	40	-19.67	-5	-14.67
M2	100	H	1/64	40.01	-19.47	-13	-6.47

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-20.86	-5	-15.86
M1	100	L	1/0	36.99	-23.34	-13	-10.34
M2	100	L	1/0	37	-21.61	-5	-16.61
M2	100	L	1/0	36.99	-23.34	-13	-10.34
M1	100	H	1/64	40	-17.79	-5	-12.79
M1	100	H	1/64	40.01	-18.70	-13	-5.70
M2	100	H	1/64	40	-17.57	-5	-12.57
M2	100	H	1/64	40.01	-18.31	-13	-5.31

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-21.54	-5	-16.54
M1	100	L	1/0	36.99	-23.10	-13	-10.10
M2	100	L	1/0	37	-22.30	-5	-17.30
M2	100	L	1/0	36.99	-22.71	-13	-9.71
M1	100	H	1/64	40	-18.54	-5	-13.54
M1	100	H	1/64	40.01	-18.21	-13	-5.21
M2	100	H	1/64	40	-18.52	-5	-13.52
M2	100	H	1/64	40.01	-18.25	-13	-5.25

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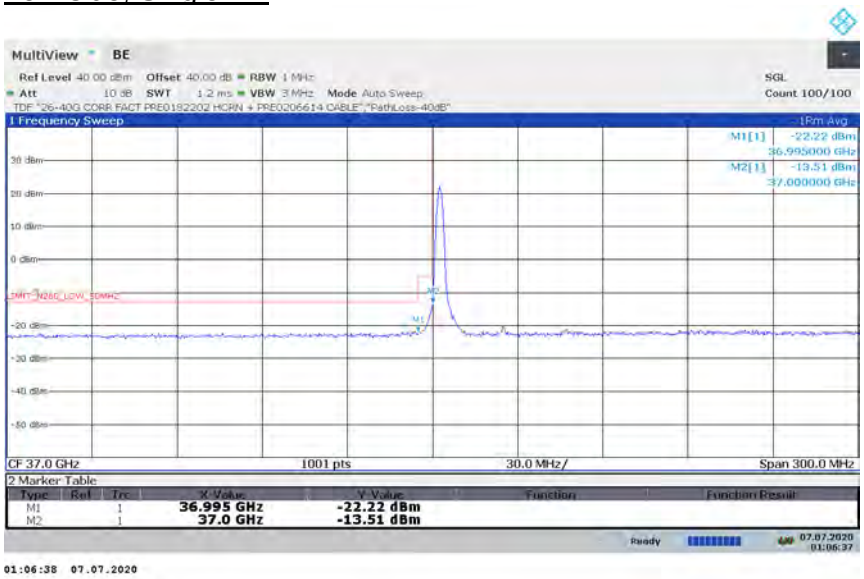
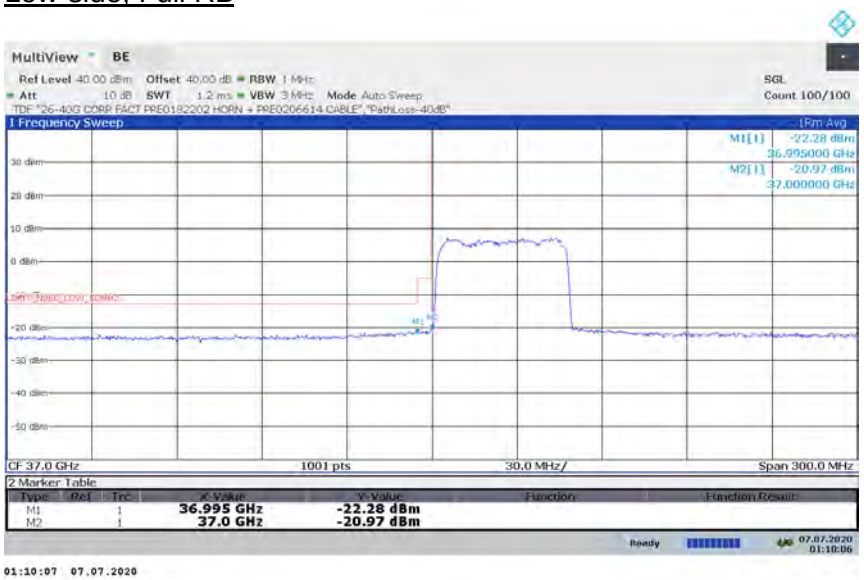
8.3.3. BAND EDGE RESULTS n260 MIMO 1CC

ANT M1, 50 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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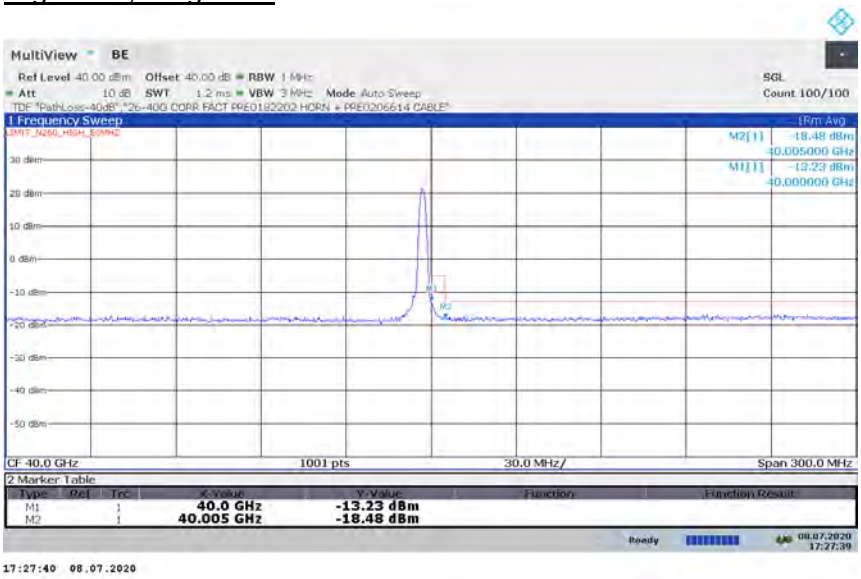
ANT M1, 50 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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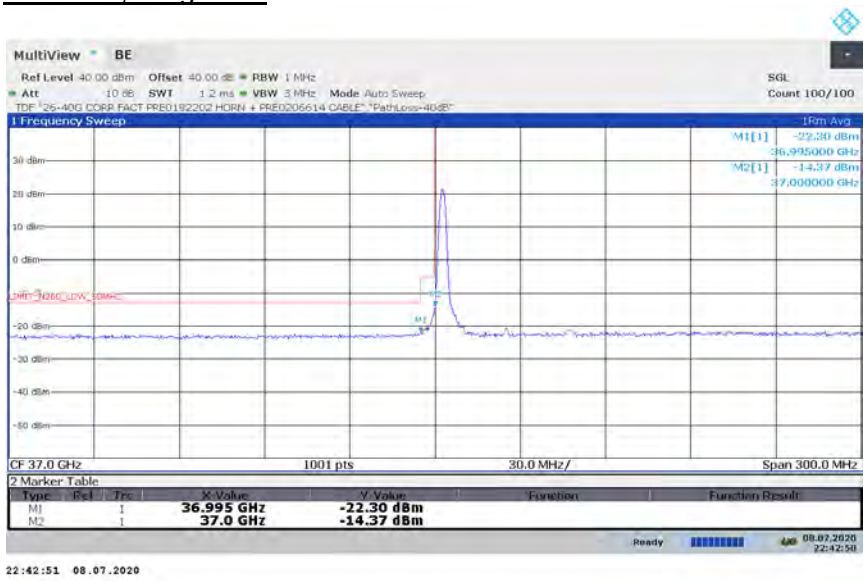
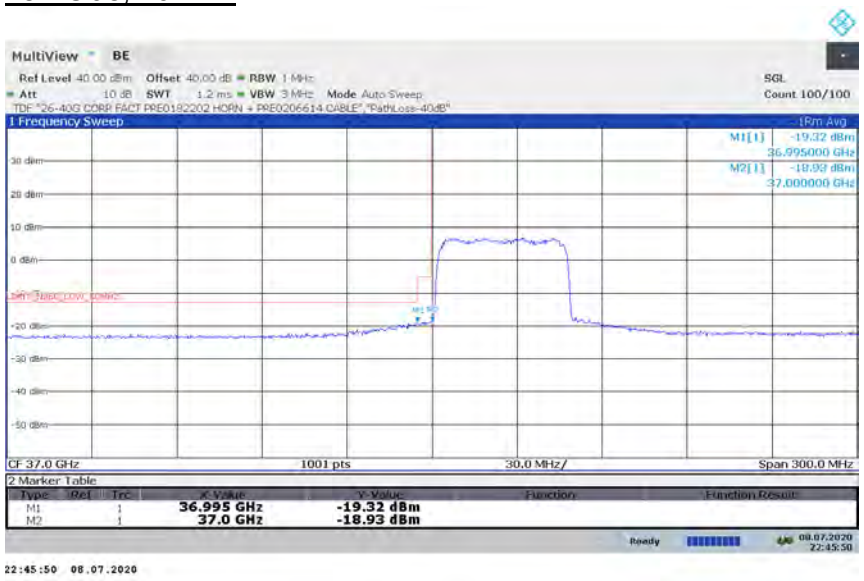
ANT M2, 50 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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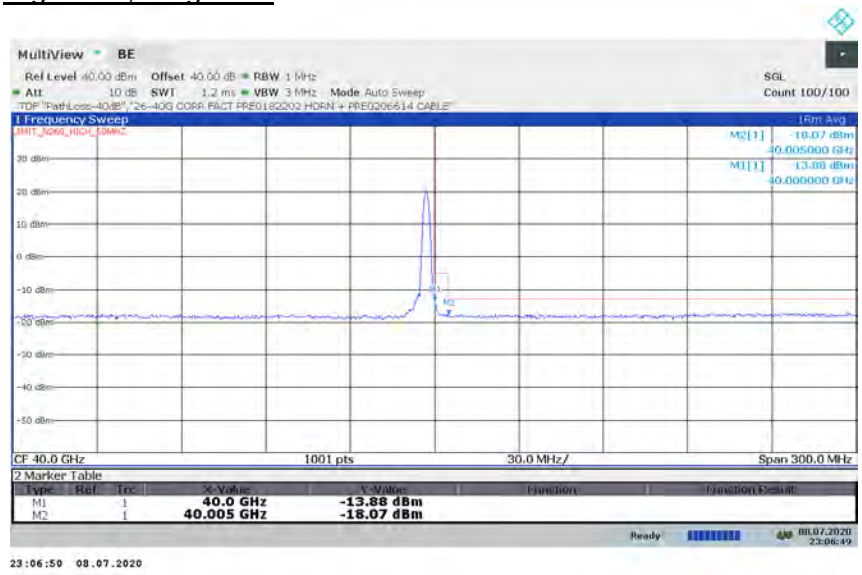
ANT M2, 50 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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ANT M1 and M2, 50 MHz, MIMO, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-13.51	-5	-8.51
M1	50	L	1/0	36.995	-22.22	-13	-9.22
M2	50	L	1/0	37	-14.37	-5	-9.37
M2	50	L	1/0	36.995	-22.30	-13	-9.30
M1	50	L	32/0	37	-20.97	-5	-15.97
M1	50	L	32/0	36.995	-22.28	-13	-9.28
M2	50	L	32/0	37	-18.93	-5	-13.93
M2	50	L	32/0	36.995	-19.32	-13	-6.32
M1	50	H	1/32	40	-13.23	-5	-8.23
M1	50	H	1/32	40.005	-18.48	-13	-5.48
M2	50	H	1/32	40	-13.88	-5	-8.88
M2	50	H	1/32	40.005	-18.07	-13	-5.07
M1	50	H	32/0	40	-17.87	-5	-12.87
M1	50	H	32/0	40.005	-17.96	-13	-4.96
M2	50	H	32/0	40	-16.39	-5	-11.39
M2	50	H	32/0	40.005	-16.62	-13	-3.62

ANT M1 and M2, 50 MHz, MIMO, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-22.53	-5	-17.53
M1	50	L	1/0	36.995	-23.28	-13	-10.28
M2	50	L	1/0	37	-20.59	-5	-15.59
M2	50	L	1/0	36.995	-23.09	-13	-10.09
M1	50	L	32/0	37	-23.27	-5	-18.27
M1	50	L	32/0	36.995	-23.21	-13	-10.21
M2	50	L	32/0	37	-23.52	-5	-18.52
M2	50	L	32/0	36.995	-23.65	-13	-10.65
M1	50	H	1/32	40	-17.64	-5	-12.64
M1	50	H	1/32	40.005	-18.80	-13	-5.80
M2	50	H	1/32	40	-16.96	-5	-11.96
M2	50	H	1/32	40.005	-18.19	-13	-5.19
M1	50	H	32/0	40	-18.72	-5	-13.72
M1	50	H	32/0	40.005	-18.96	-13	-5.96
M2	50	H	32/0	40	-18.59	-5	-13.59
M2	50	H	32/0	40.005	-19.02	-13	-6.02

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ANT M1 and M2, 50 MHz, MIMO, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-15.62	-5	-10.62
M1	50	L	1/0	36.995	-22.54	-13	-9.54
M2	50	L	1/0	37	-16.78	-5	-11.78
M2	50	L	1/0	36.995	-22.34	-13	-9.34
M1	50	L	32/0	37	-21.63	-5	-16.63
M1	50	L	32/0	36.995	-22.40	-13	-9.40
M2	50	L	32/0	37	-20.79	-5	-15.79
M2	50	L	32/0	36.995	-21.18	-13	-8.18
M1	50	H	1/32	40	-14.16	-5	-9.16
M1	50	H	1/32	40.005	-18.64	-13	-5.64
M2	50	H	1/32	40	-13.70	-5	-8.70
M2	50	H	1/32	40.005	-17.84	-13	-4.84
M1	50	H	32/0	40	-17.99	-5	-12.99
M1	50	H	32/0	40.005	-17.80	-13	-4.80
M2	50	H	32/0	40	-17.43	-5	-12.43
M2	50	H	32/0	40.005	-17.67	-13	-4.67

ANT M1 and M2, 50 MHz, MIMO, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-18.22	-5	-13.22
M1	50	L	1/0	36.995	-22.43	-13	-9.43
M2	50	L	1/0	37	-18.04	-5	-13.04
M2	50	L	1/0	36.995	-22.52	-13	-9.52
M1	50	L	32/0	37	-21.76	-5	-16.76
M1	50	L	32/0	36.995	-21.89	-13	-8.89
M2	50	L	32/0	37	-21.89	-5	-16.89
M2	50	L	32/0	36.995	-22.87	-13	-9.87
M1	50	H	1/32	40	-15.37	-5	-10.37
M1	50	H	1/32	40.005	-18.24	-13	-5.24
M2	50	H	1/32	40	-15.94	-5	-10.94
M2	50	H	1/32	40.005	-18.13	-13	-5.13
M1	50	H	32/0	40	-18.53	-5	-13.53
M1	50	H	32/0	40.005	-18.45	-13	-5.45
M2	50	H	32/0	40	-18.84	-5	-13.84
M2	50	H	32/0	40.005	-18.35	-13	-5.35

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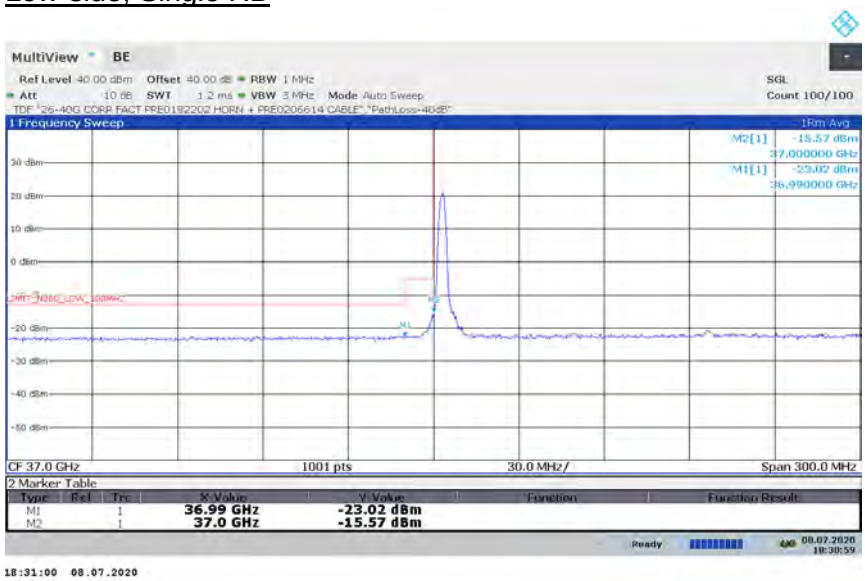
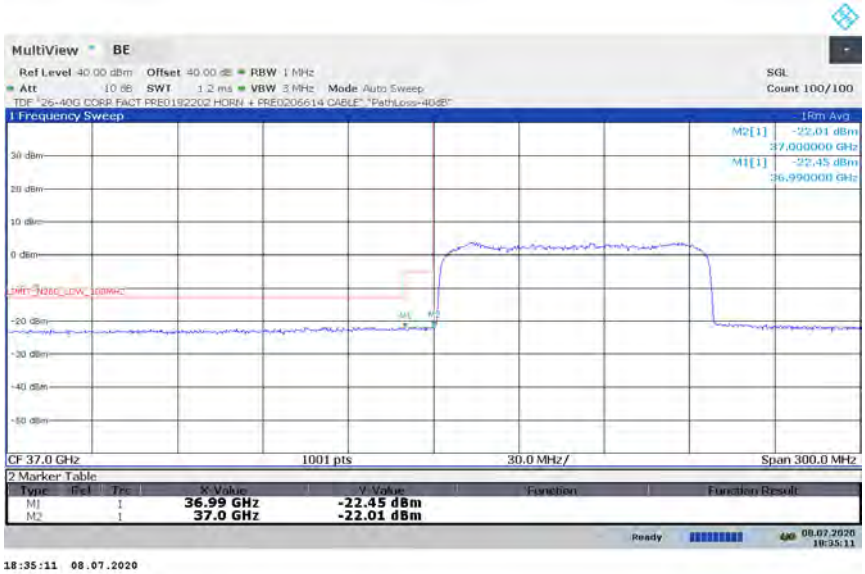
ANT M1, 100 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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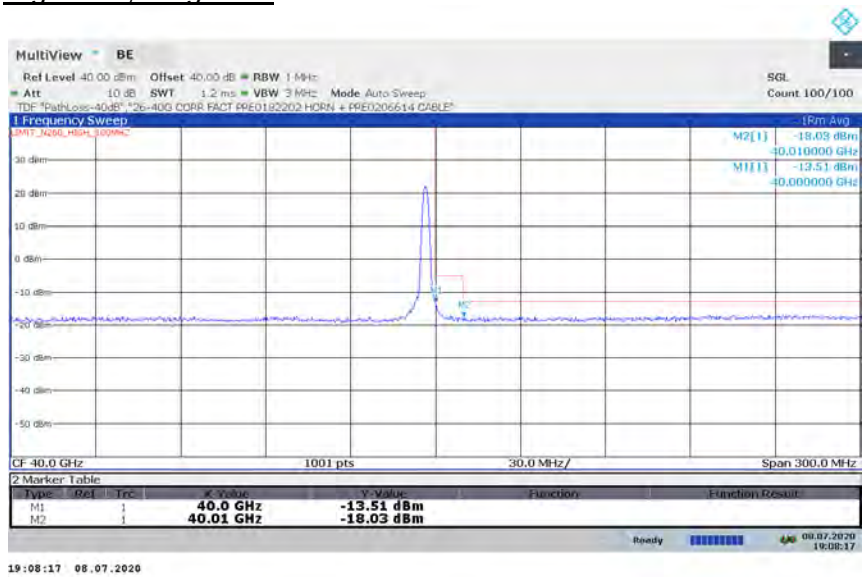
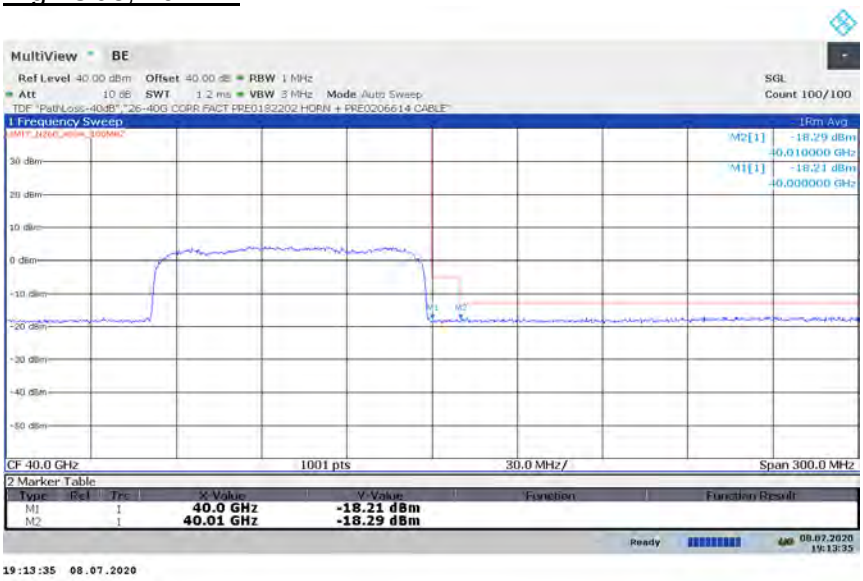
ANT M1, 100 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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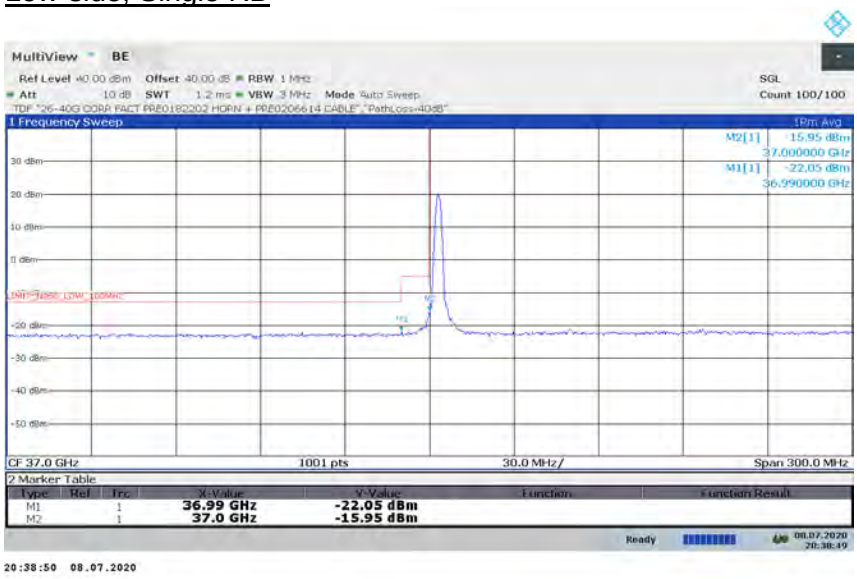
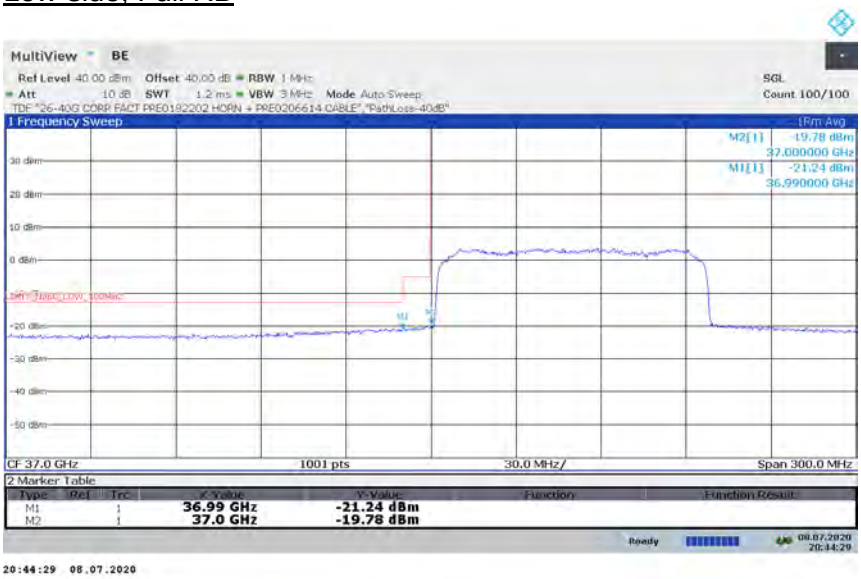
ANT M2, 100 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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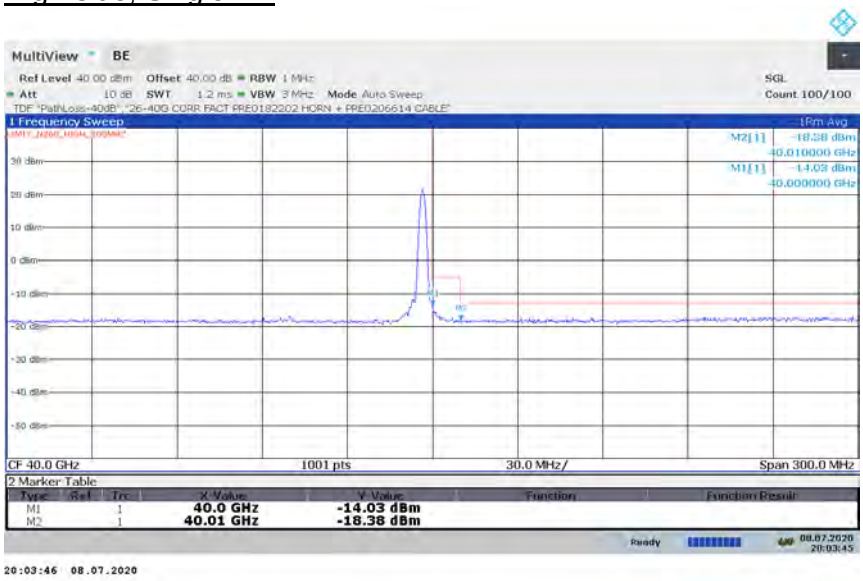
ANT M2, 100 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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ANT M1 & M2, 100 MHz, MIMO, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-15.57	-5	-10.57
M1	100	L	1/0	36.99	-23.02	-13	-10.02
M2	100	L	1/0	37	-15.95	-5	-10.95
M2	100	L	1/0	36.99	-22.05	-13	-9.05
M1	100	L	66/0	37	-22.01	-5	-17.01
M1	100	L	66/0	36.99	-22.45	-13	-9.45
M2	100	L	66/0	37	-19.78	-5	-14.78
M2	100	L	66/0	36.99	-21.24	-13	-8.24
M1	100	H	1/66	40	-13.51	-5	-8.51
M1	100	H	1/66	40.01	-18.03	-13	-5.03
M2	100	H	1/66	40	-14.03	-5	-9.03
M2	100	H	1/66	40.01	-18.38	-13	-5.38
M1	100	H	66/0	40	-18.21	-5	-13.21
M1	100	H	66/0	40.01	-18.29	-13	-5.29
M2	100	H	66/0	40	-16.77	-5	-11.77
M2	100	H	66/0	40.01	-17.09	-13	-4.09

ANT M1 & M2, 100 MHz, MIMO, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-20.97	-5	-15.97
M1	100	L	1/0	36.99	-23.44	-13	-10.44
M2	100	L	1/0	37	-20.12	-5	-15.12
M2	100	L	1/0	36.99	-23.22	-13	-10.22
M1	100	L	66/0	37	-23.57	-5	-18.57
M1	100	L	66/0	36.99	-23.34	-13	-10.34
M2	100	L	66/0	37	-22.75	-5	-17.75
M2	100	L	66/0	36.99	-23.01	-13	-10.01
M1	100	H	1/66	40	-17.89	-5	-12.89
M1	100	H	1/66	40.01	-17.68	-13	-4.68
M2	100	H	1/66	40	-18.11	-5	-13.11
M2	100	H	1/66	40.01	-17.91	-13	-4.91
M1	100	H	66/0	40	-19.18	-5	-14.18
M1	100	H	66/0	40.01	-17.92	-13	-4.92
M2	100	H	66/0	40	-19.10	-5	-14.10
M2	100	H	66/0	40.01	-18.26	-13	-5.26

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ANT M1 & M2, 100 MHz, MIMO, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-15.43	-5	-10.43
M1	100	L	1/0	36.99	-23.02	-13	-10.02
M2	100	L	1/0	37	-17.17	-5	-12.17
M2	100	L	1/0	36.99	-23.02	-13	-10.02
M1	100	L	66/0	37	-22.50	-5	-17.50
M1	100	L	66/0	36.99	-22.66	-13	-9.66
M2	100	L	66/0	37	-21.29	-5	-16.29
M2	100	L	66/0	36.99	-22.06	-13	-9.06
M1	100	H	1/66	40	-15.71	-5	-10.71
M1	100	H	1/66	40.01	-18.32	-13	-5.32
M2	100	H	1/66	40	-15.25	-5	-10.25
M2	100	H	1/66	40.01	-18.13	-13	-5.13
M1	100	H	66/0	40	-18.47	-5	-13.47
M1	100	H	66/0	40.01	-18.47	-13	-5.47
M2	100	H	66/0	40	-18.30	-5	-13.30
M2	100	H	66/0	40.01	-18.18	-13	-5.18

ANT M1 & M2, 100 MHz, MIMO, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-18.81	-5	-13.81
M1	100	L	1/0	36.99	-22.65	-13	-9.65
M2	100	L	1/0	37	-18.27	-5	-13.27
M2	100	L	1/0	36.99	-22.53	-13	-9.53
M1	100	L	66/0	37	-22.60	-5	-17.60
M1	100	L	66/0	36.99	-22.49	-13	-9.49
M2	100	L	66/0	37	-22.15	-5	-17.15
M2	100	L	66/0	36.99	-22.91	-13	-9.91
M1	100	H	1/66	40	-15.94	-5	-10.94
M1	100	H	1/66	40.01	-18.51	-13	-5.51
M2	100	H	1/66	40	-16.67	-5	-11.67
M2	100	H	1/66	40.01	-18.55	-13	-5.55
M1	100	H	66/0	40	-18.82	-5	-13.82
M1	100	H	66/0	40.01	-17.95	-13	-4.95
M2	100	H	66/0	40	-18.51	-5	-13.51
M2	100	H	66/0	40.01	-18.00	-13	-5.00

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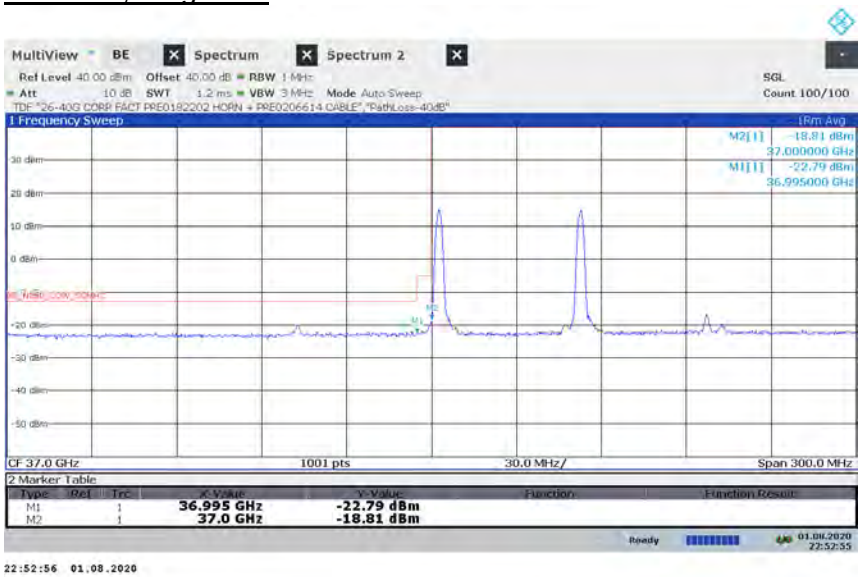
8.3.4. BAND EDGE RESULTS n260 MIMO 2CC

ANT M1, 50 MHz, MIMO, 2CC, QPSK

Low-side, Single RB



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ANT M1, 50 MHz, MIMO, 2CC, QPSK

High-side, Single RB

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ANT M2, 50 MHz, MIMO, 2CC, QPSK

Low-side, Single RB

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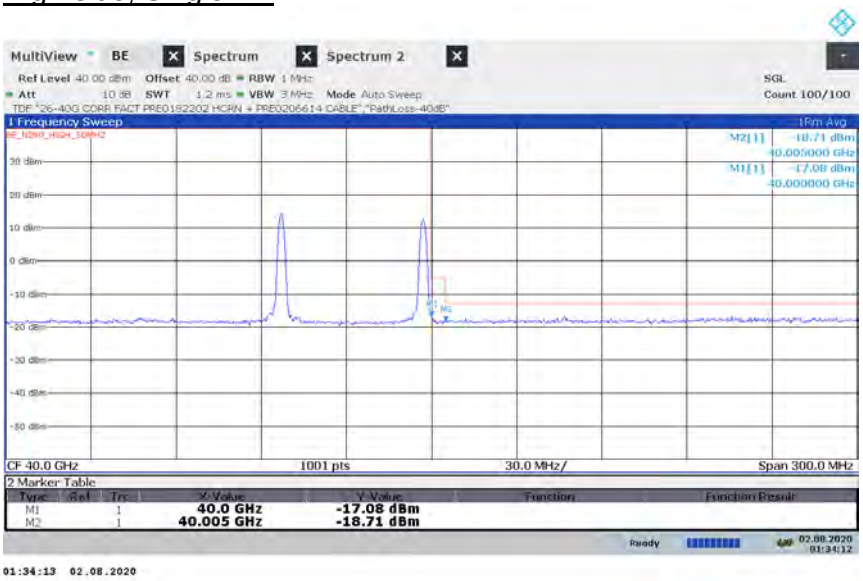
ANT M2, 50 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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ANT M1 & M2, 50 MHz, MIMO, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-18.81	-5	-13.81
M1	50	L	1/0	36.995	-22.79	-13	-9.79
M2	50	L	1/0	37	-17.34	-5	-12.34
M2	50	L	1/0	36.995	-22.88	-13	-9.88
M1	50	H	1/32	40	-17.44	-5	-12.44
M1	50	H	1/32	40.005	-20.53	-13	-7.53
M2	50	H	1/32	40	-17.08	-5	-12.08
M2	50	H	1/32	40.005	-18.71	-13	-5.71

ANT M1 & M2, 50 MHz, MIMO, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-21.67	-5	-16.67
M1	50	L	1/0	36.995	-24.09	-13	-11.09
M2	50	L	1/0	37	-19.86	-5	-14.86
M2	50	L	1/0	36.995	-24.39	-13	-11.39
M1	50	H	1/32	40	-19.24	-5	-14.24
M1	50	H	1/32	40.005	-19.46	-13	-6.46
M2	50	H	1/32	40	-18.29	-5	-13.29
M2	50	H	1/32	40.005	-19.37	-13	-6.37

ANT M1 & M2, 50 MHz, MIMO, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-19.09	-5	-14.09
M1	50	L	1/0	36.995	-23.16	-13	-10.16
M2	50	L	1/0	37	-17.70	-5	-12.70
M2	50	L	1/0	36.995	-22.69	-13	-9.69
M1	50	H	1/32	40	-18.62	-5	-13.62
M1	50	H	1/32	40.005	-20.86	-13	-7.86
M2	50	H	1/32	40	-17.53	-5	-12.53
M2	50	H	1/32	40.005	-18.46	-13	-5.46

ANT M1 & M2, 50 MHz, MIMO, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	37	-21.46	-5	-16.46
M1	50	L	1/0	36.995	-22.87	-13	-9.87
M2	50	L	1/0	37	-21.32	-5	-16.32
M2	50	L	1/0	36.995	-23.14	-13	-10.14
M1	50	H	1/32	40	-18.65	-5	-13.65
M1	50	H	1/32	40.005	-20.69	-13	-7.69
M2	50	H	1/32	40	-18.52	-5	-13.52
M2	50	H	1/32	40.005	-18.70	-13	-5.70

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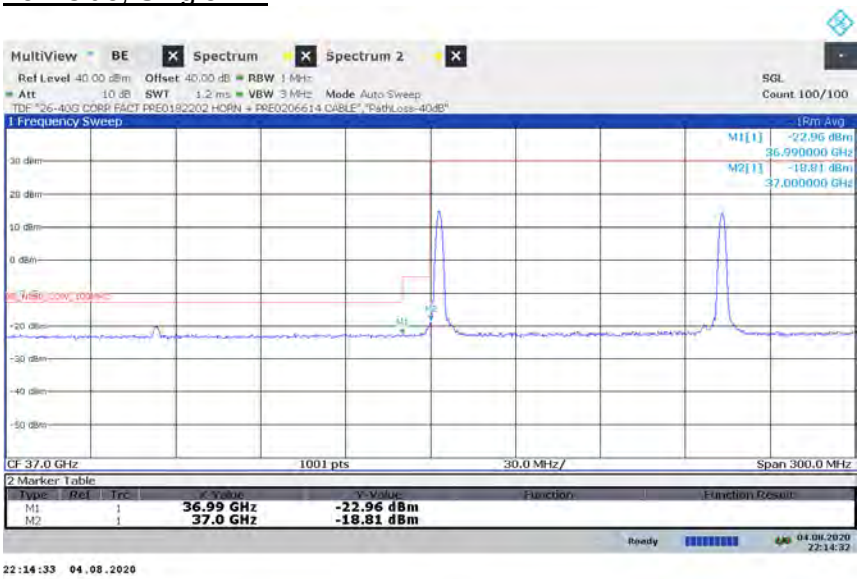
ANT M1, 100 MHz, MIMO, 2CC, QPSK

Low-side, Single RB



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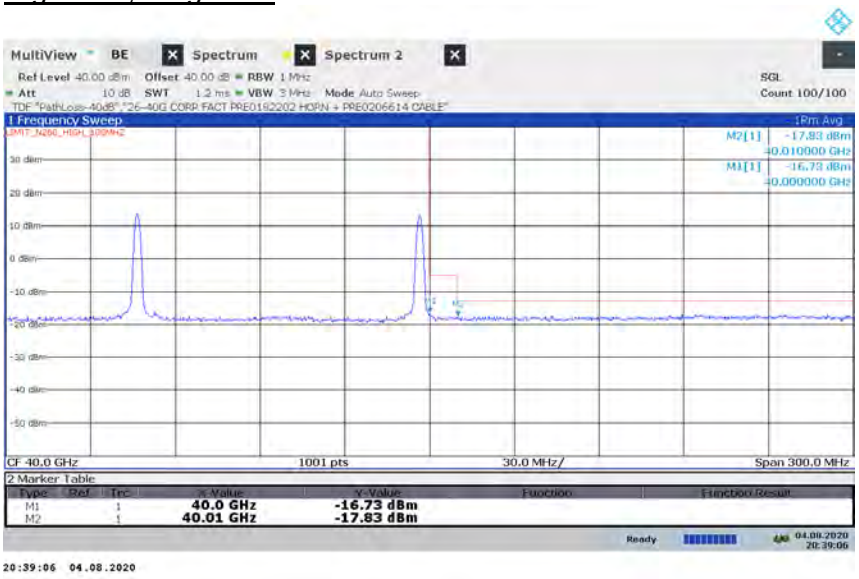
ANT M1, 100 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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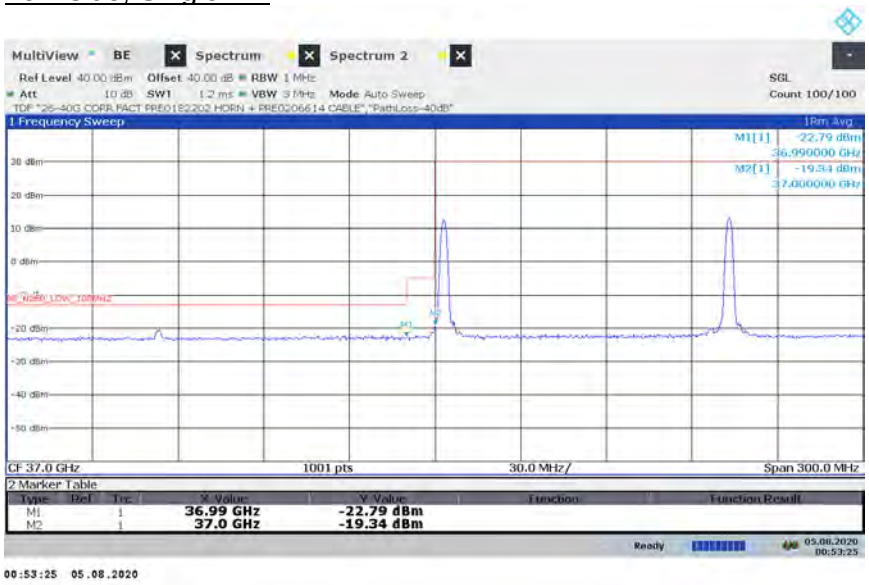
ANT M2, 100 MHz, MIMO, 2CC, QPSK

Low-side, Single RB



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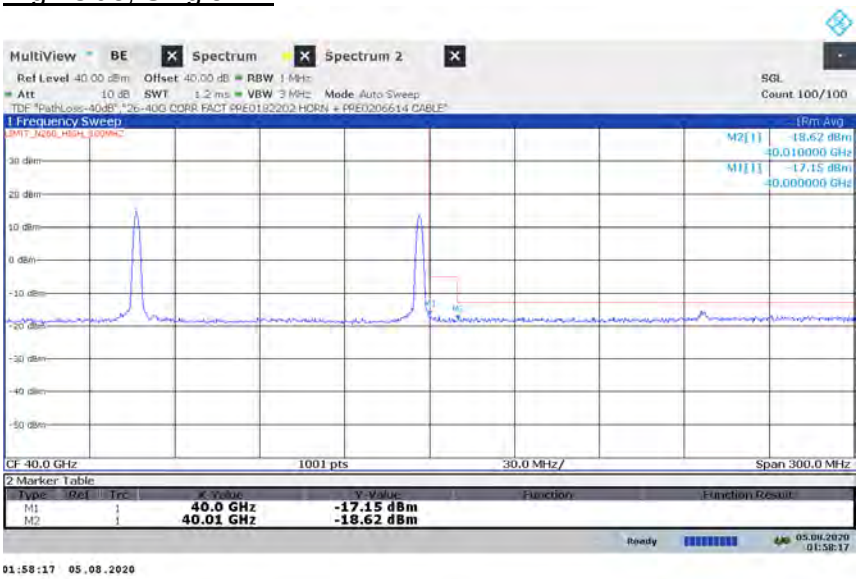
ANT M2, 100 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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ANT M1 & M2, 100 MHz, MIMO, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-18.81	-5	-13.81
M1	100	L	1/0	36.99	-22.96	-13	-9.96
M2	100	L	1/0	37	-19.34	-5	-14.34
M2	100	L	1/0	36.99	-22.79	-13	-9.79
M1	100	H	1/66	40	-16.73	-5	-11.73
M1	100	H	1/66	40.01	-17.83	-13	-4.83
M2	100	H	1/66	40	-17.15	-5	-12.15
M2	100	H	1/66	40.01	-18.62	-13	-5.62

ANT M1 & M2, 100 MHz, MIMO, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-21.21	-5	-16.21
M1	100	L	1/0	36.99	-24.24	-13	-11.24
M2	100	L	1/0	37	-22.52	-5	-17.52
M2	100	L	1/0	36.99	-23.99	-13	-10.99
M1	100	H	1/66	40	-19.40	-5	-14.40
M1	100	H	1/66	40.01	-19.15	-13	-6.15
M2	100	H	1/66	40	-18.83	-5	-13.83
M2	100	H	1/66	40.01	-19.25	-13	-6.25

ANT M1 & M2, 100 MHz, MIMO, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-19.64	-5	-14.64
M1	100	L	1/0	36.99	-23.46	-13	-10.46
M2	100	L	1/0	37	-20.18	-5	-15.18
M2	100	L	1/0	36.99	-23.09	-13	-10.09
M1	100	H	1/66	40	-17.15	-5	-12.15
M1	100	H	1/66	40.01	-18.46	-13	-5.46
M2	100	H	1/66	40	-17.51	-5	-12.51
M2	100	H	1/66	40.01	-18.05	-13	-5.05

ANT M1 & M2, 100 MHz, MIMO, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	37	-21.81	-5	-16.81
M1	100	L	1/0	36.99	-23.67	-13	-10.67
M2	100	L	1/0	37	-22.05	-5	-17.05
M2	100	L	1/0	36.99	-23.24	-13	-10.24
M1	100	H	1/66	40	-18.35	-5	-13.35
M1	100	H	1/66	40.01	-18.80	-13	-5.80
M2	100	H	1/66	40	-18.52	-5	-13.52
M2	100	H	1/66	40.01	-18.91	-13	-5.91

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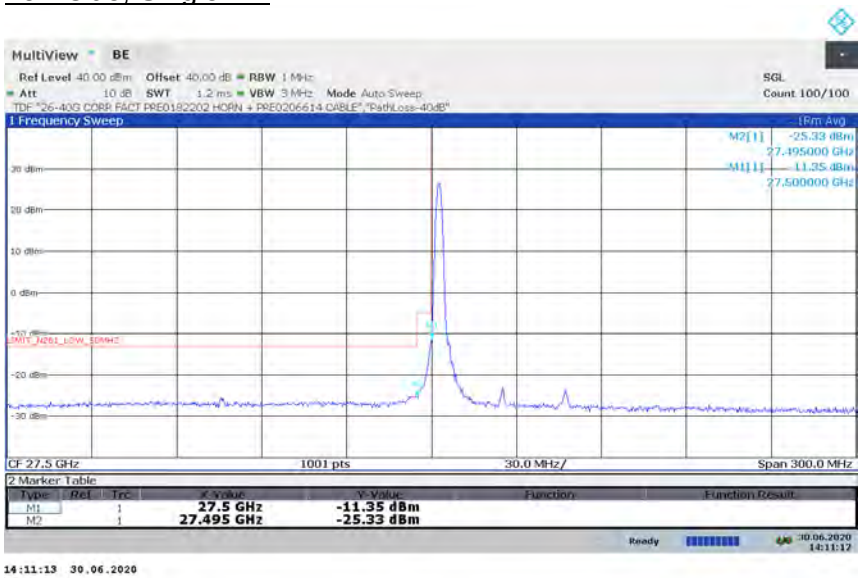
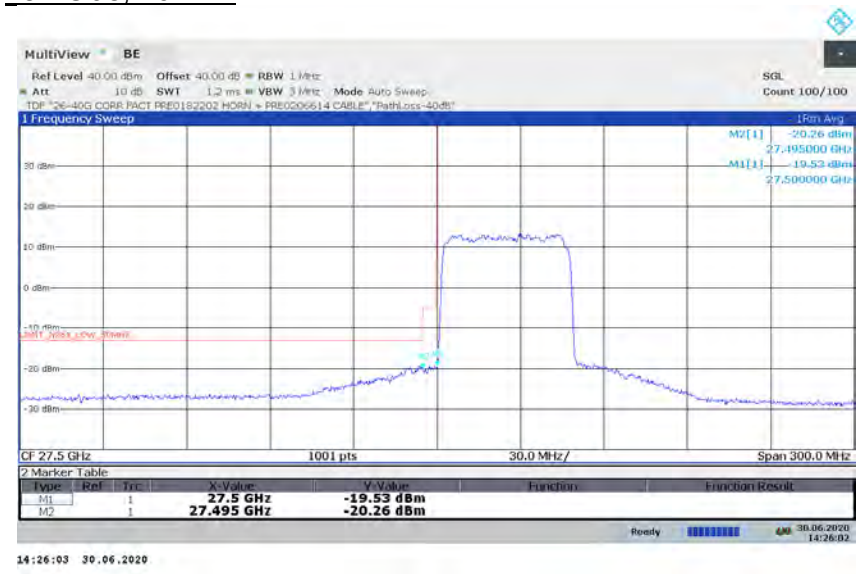
8.3.5. BAND EDGE RESULTS n261 SISO-DUAL 1CC

ANT M1, 50 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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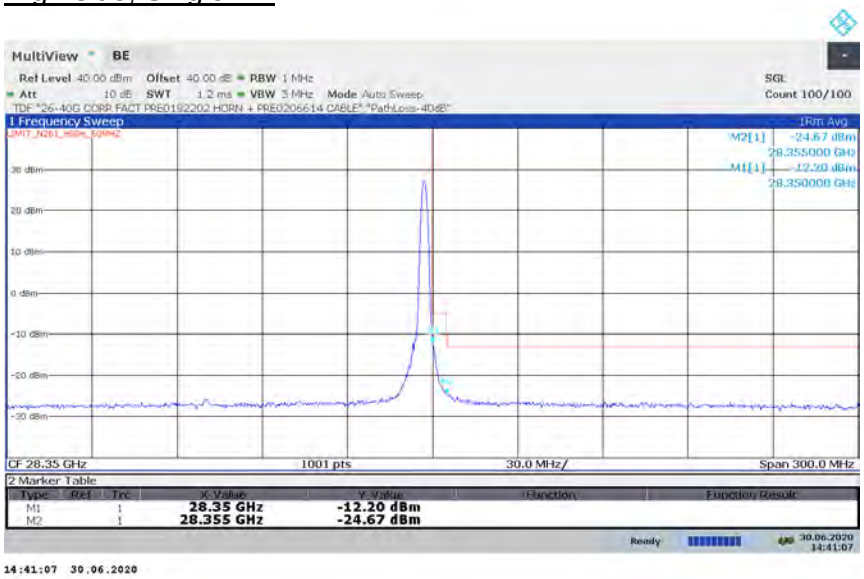
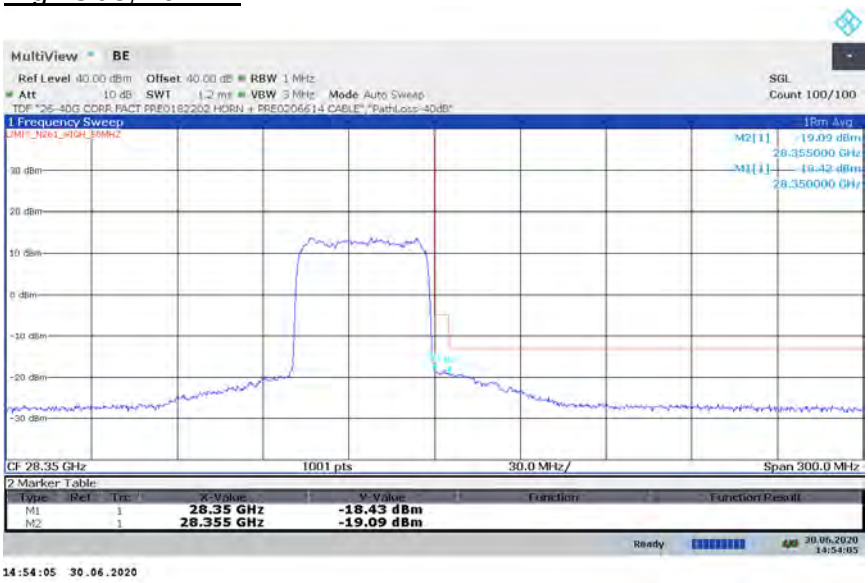
ANT M1, 50 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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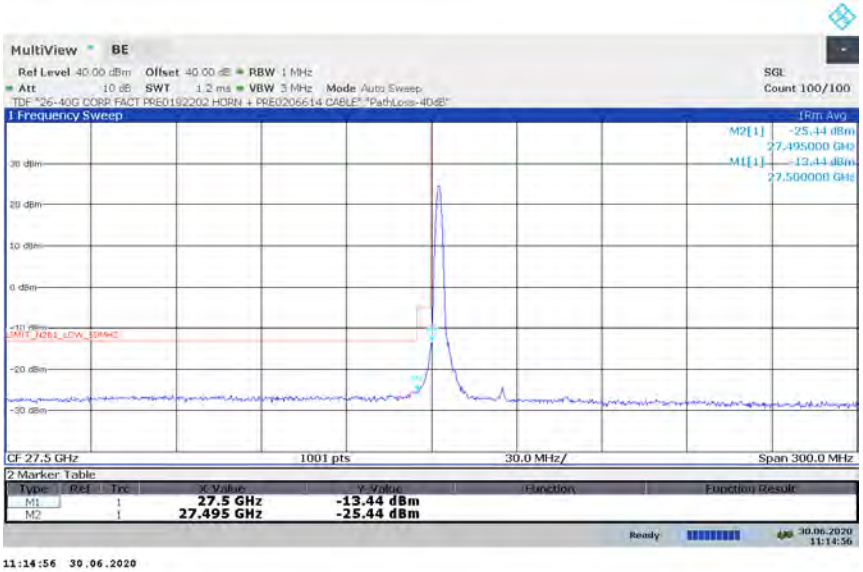
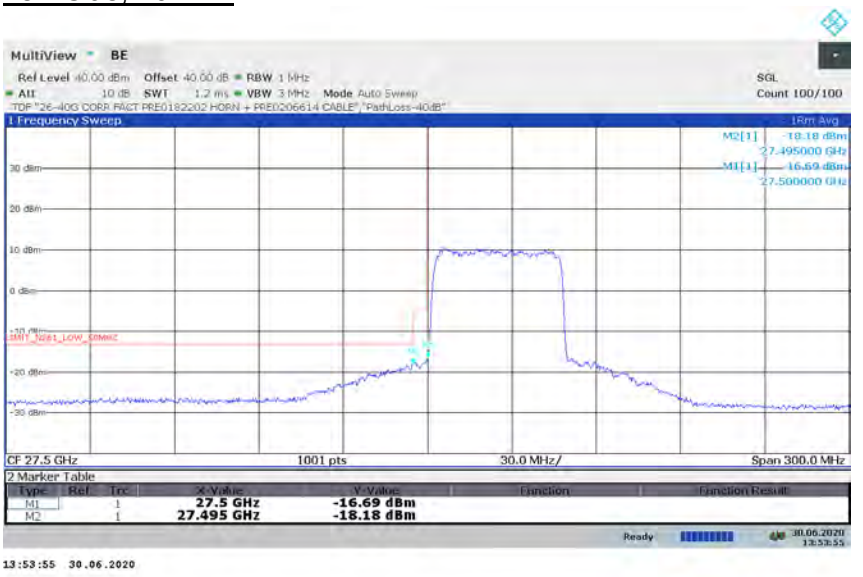
ANT M2, 50 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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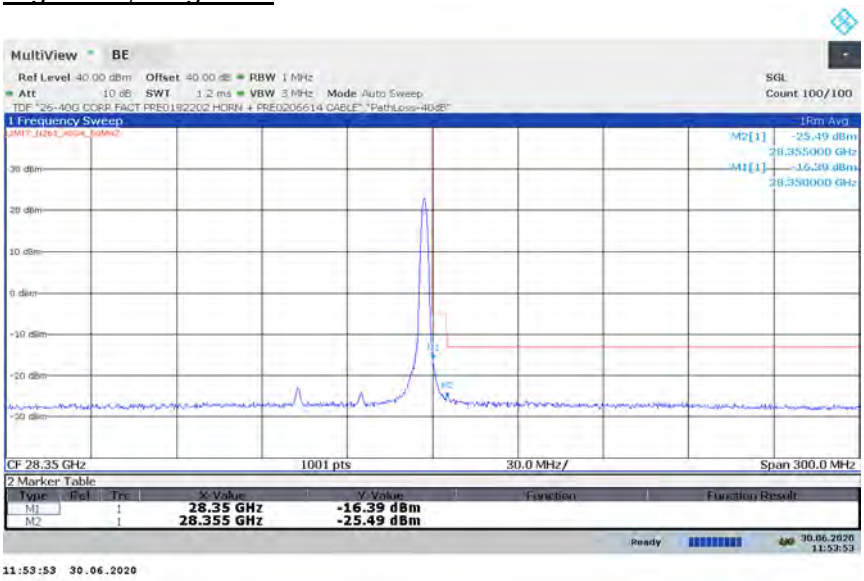
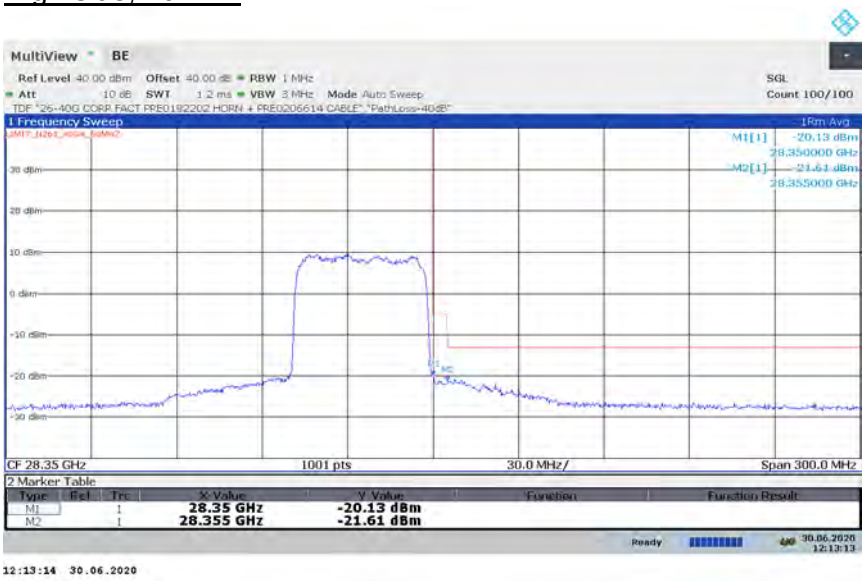
ANT M2, 50 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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ANT M1 & M2, 50 MHz, SISO-DUAL, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-11.35	-5	-6.35
M1	50	L	1/0	27.495	-25.33	-13	-12.33
M2	50	L	1/0	27.5	-13.44	-5	-8.44
M2	50	L	1/0	27.495	-25.44	-13	-12.44
M1	50	L	32/0	27.5	-19.53	-5	-14.53
M1	50	L	32/0	27.495	-20.26	-13	-7.26
M2	50	L	32/0	27.5	-16.69	-5	-11.69
M2	50	L	32/0	27.495	-18.18	-13	-5.18
M1	50	H	1/32	28.35	-12.20	-5	-7.20
M1	50	H	1/32	28.355	-24.67	-13	-11.67
M2	50	H	1/32	28.35	-16.39	-5	-11.39
M2	50	H	1/32	28.355	-25.49	-13	-12.49
M1	50	H	32/0	28.35	-18.43	-5	-13.43
M1	50	H	32/0	28.355	-19.09	-13	-6.09
M2	50	H	32/0	28.35	-20.13	-5	-15.13
M2	50	H	32/0	28.355	-21.61	-13	-8.61

ANT M1 & M2, 50 MHz, SISO-DUAL, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-12.42	-5	-7.42
M1	50	L	1/0	27.495	-25.76	-13	-12.76
M2	50	L	1/0	27.5	-13.68	-5	-8.68
M2	50	L	1/0	27.495	-25.92	-13	-12.92
M1	50	L	32/0	27.5	-24.27	-5	-19.27
M1	50	L	32/0	27.495	-26.77	-13	-13.77
M2	50	L	32/0	27.5	-21.49	-5	-16.49
M2	50	L	32/0	27.495	-23.90	-13	-10.90
M1	50	H	1/32	28.35	-11.09	-5	-6.09
M1	50	H	1/32	28.355	-26.18	-13	-13.18
M2	50	H	1/32	28.35	-15.57	-5	-10.57
M2	50	H	1/32	28.355	-26.85	-13	-13.85
M1	50	H	32/0	28.35	-21.70	-5	-16.70
M1	50	H	32/0	28.355	-25.41	-13	-12.41
M2	50	H	32/0	28.35	-26.64	-5	-21.64
M2	50	H	32/0	28.355	-26.95	-13	-13.95

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ANT M1 & M2, 50 MHz, SISO-DUAL, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-13.11	-5	-8.11
M1	50	L	1/0	27.495	-25.67	-13	-12.67
M2	50	L	1/0	27.5	-16.51	-5	-11.51
M2	50	L	1/0	27.495	-26.67	-13	-13.67
M1	50	L	32/0	27.5	-21.38	-5	-16.38
M1	50	L	32/0	27.495	-21.85	-13	-8.85
M2	50	L	32/0	27.5	-20.51	-5	-15.51
M2	50	L	32/0	27.495	-22.67	-13	-9.67
M1	50	H	1/32	28.35	-13.61	-5	-8.61
M1	50	H	1/32	28.355	-24.60	-13	-11.60
M2	50	H	1/32	28.35	-18.29	-5	-13.29
M2	50	H	1/32	28.355	-26.24	-13	-13.24
M1	50	H	32/0	28.35	-21.43	-5	-16.43
M1	50	H	32/0	28.355	-22.87	-13	-9.87
M2	50	H	32/0	28.35	-22.39	-5	-17.39
M2	50	H	32/0	28.355	-23.99	-13	-10.99

ANT M1 & M2, 50 MHz, SISO-DUAL, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-14.46	-5	-9.46
M1	50	L	1/0	27.495	-25.99	-13	-12.99
M2	50	L	1/0	27.5	-18.03	-5	-13.03
M2	50	L	1/0	27.495	-26.25	-13	-13.25
M1	50	L	32/0	27.5	-22.26	-5	-17.26
M1	50	L	32/0	27.495	-23.53	-13	-10.53
M2	50	L	32/0	27.5	-23.41	-5	-18.41
M2	50	L	32/0	27.495	-24.52	-13	-11.52
M1	50	H	1/32	28.35	-16.27	-5	-11.27
M1	50	H	1/32	28.355	-25.70	-13	-12.70
M2	50	H	1/32	28.35	-19.51	-5	-14.51
M2	50	H	1/32	28.355	-25.98	-13	-12.98
M1	50	H	32/0	28.35	-22.90	-5	-17.90
M1	50	H	32/0	28.355	-24.77	-13	-11.77
M2	50	H	32/0	28.35	-23.64	-5	-18.64
M2	50	H	32/0	28.355	-24.45	-13	-11.45

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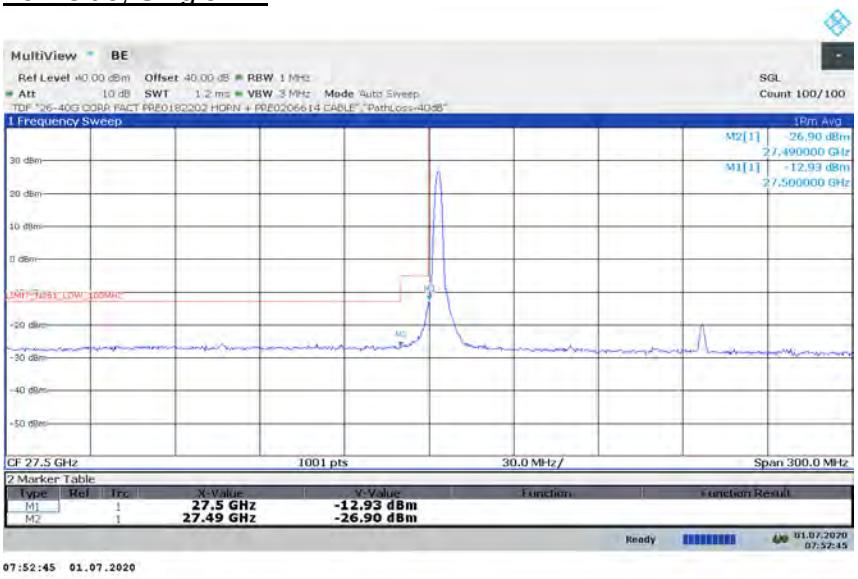
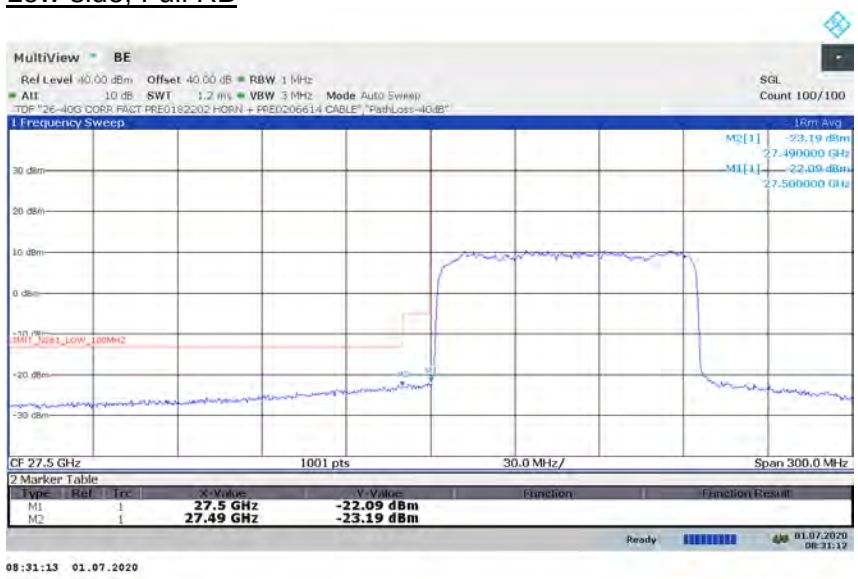
ANT M1, 100 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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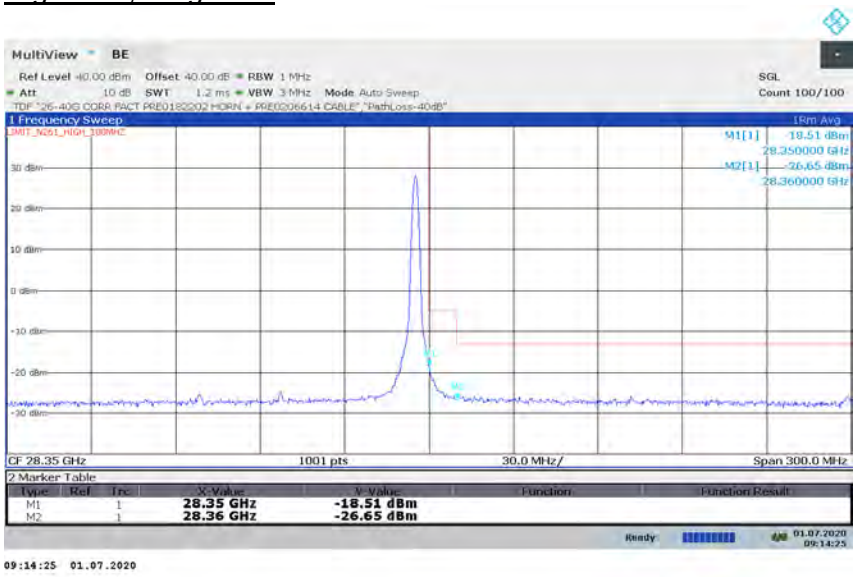
ANT M1, 100 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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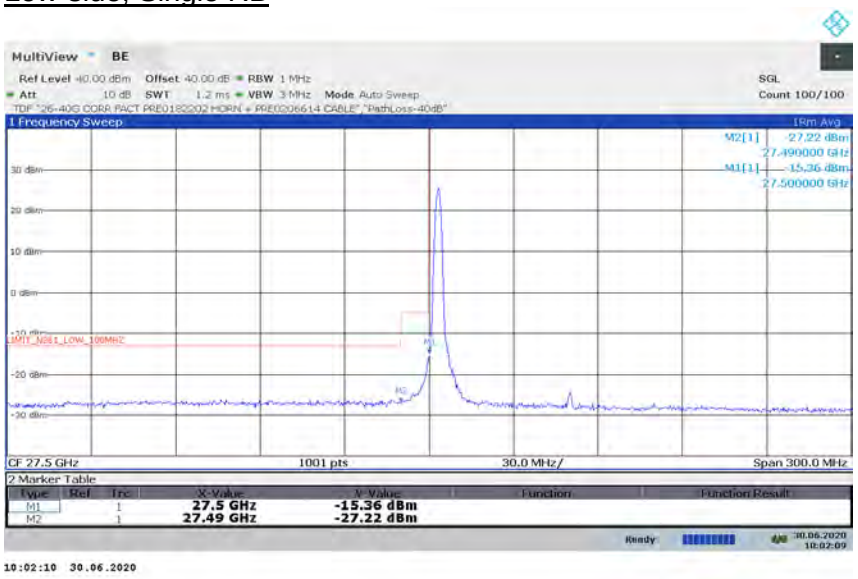
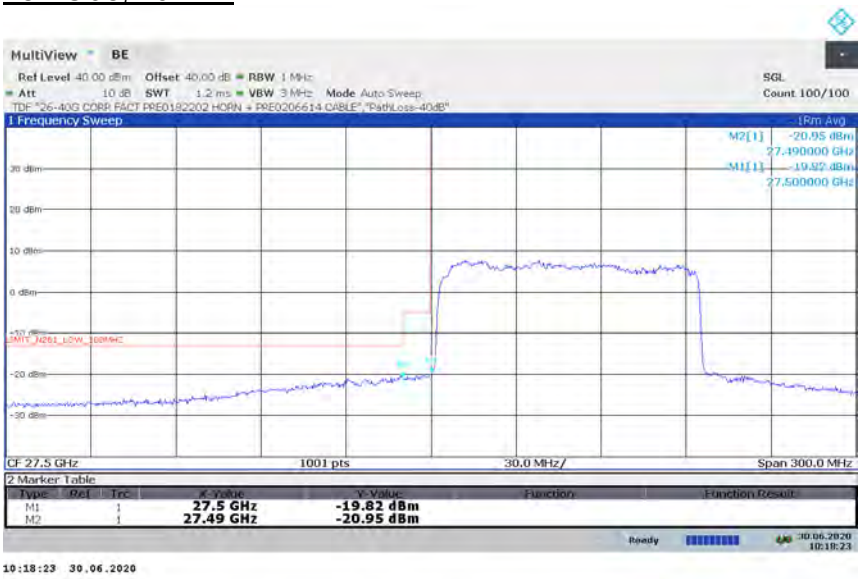
ANT M2, 100 MHz, SISO-DUAL, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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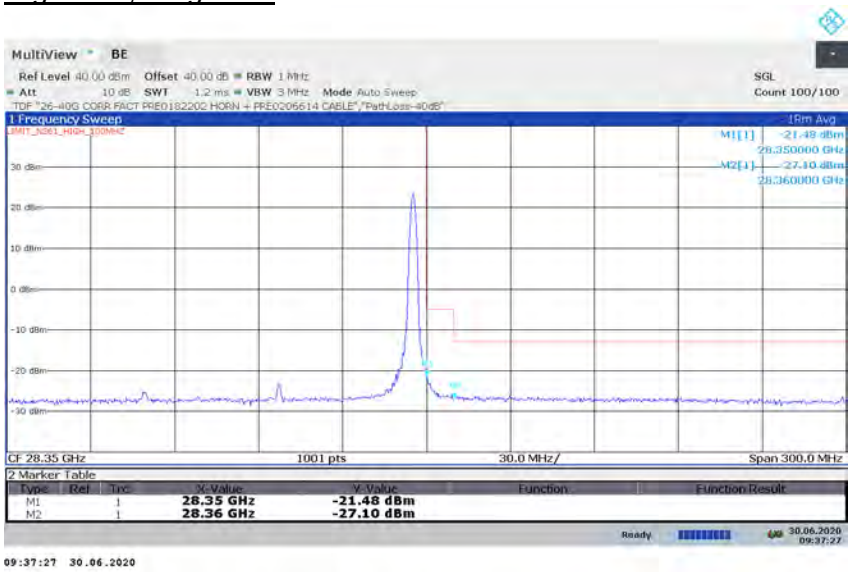
ANT M2, 100 MHz, SISO-DUAL, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-12.93	-5	-7.93
M1	100	L	1/0	27.49	-26.90	-13	-13.90
M2	100	L	1/0	27.5	-15.36	-5	-10.36
M2	100	L	1/0	27.49	-27.22	-13	-14.22
M1	100	L	64/0	27.5	-22.09	-5	-17.09
M1	100	L	64/0	27.49	-23.19	-13	-10.19
M2	100	L	64/0	27.5	-19.82	-5	-14.82
M2	100	L	64/0	27.49	-20.95	-13	-7.95
M1	100	H	1/64	28.35	-18.51	-5	-13.51
M1	100	H	1/64	28.36	-26.65	-13	-13.65
M2	100	H	1/64	28.35	-21.48	-5	-16.48
M2	100	H	1/64	28.36	-27.10	-13	-14.10
M1	100	H	64/0	28.35	-21.75	-5	-16.75
M1	100	H	64/0	28.36	-22.27	-13	-9.27
M2	100	H	64/0	28.35	-22.96	-5	-17.96
M2	100	H	64/0	28.36	-23.64	-13	-10.64

ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-10.32	-5	-5.32
M1	100	L	1/0	27.49	-27.14	-13	-14.14
M2	100	L	1/0	27.5	-12.16	-5	-7.16
M2	100	L	1/0	27.49	-26.60	-13	-13.60
M1	100	L	64/0	27.5	-23.23	-5	-18.23
M1	100	L	64/0	27.49	-25.80	-13	-12.80
M2	100	L	64/0	27.5	-21.15	-5	-16.15
M2	100	L	64/0	27.49	-24.67	-13	-11.67
M1	100	H	1/64	28.35	-17.41	-5	-12.41
M1	100	H	1/64	28.36	-27.40	-13	-14.40
M2	100	H	1/64	28.35	-21.84	-5	-16.84
M2	100	H	1/64	28.36	-27.52	-13	-14.52
M1	100	H	64/0	28.35	-24.91	-5	-19.91
M1	100	H	64/0	28.36	-26.48	-13	-13.48
M2	100	H	64/0	28.35	-26.66	-5	-21.66
M2	100	H	64/0	28.36	-27.29	-13	-14.29

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ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-13.51	-5	-8.51
M1	100	L	1/0	27.49	-26.61	-13	-13.61
M2	100	L	1/0	27.5	-17.37	-5	-12.37
M2	100	L	1/0	27.49	-27.20	-13	-14.20
M1	100	L	64/0	27.5	-23.66	-5	-18.66
M1	100	L	64/0	27.49	-24.24	-13	-11.24
M2	100	L	64/0	27.5	-22.67	-5	-17.67
M2	100	L	64/0	27.49	-23.57	-13	-10.57
M1	100	H	1/64	28.35	-20.71	-5	-15.71
M1	100	H	1/64	28.36	-26.94	-13	-13.94
M2	100	H	1/64	28.35	-23.23	-5	-18.23
M2	100	H	1/64	28.36	-27.12	-13	-14.12
M1	100	H	64/0	28.35	-23.93	-5	-18.93
M1	100	H	64/0	28.36	-24.14	-13	-11.14
M2	100	H	64/0	28.35	-24.67	-5	-19.67
M2	100	H	64/0	28.36	-25.05	-13	-12.05

ANT M1 & M2, 100 MHz, SISO-DUAL, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-15.67	-5	-10.67
M1	100	L	1/0	27.49	-27.04	-13	-14.04
M2	100	L	1/0	27.5	-19.63	-5	-14.63
M2	100	L	1/0	27.49	-27.13	-13	-14.13
M1	100	L	64/0	27.5	-24.60	-5	-19.60
M1	100	L	64/0	27.49	-25.31	-13	-12.31
M2	100	L	64/0	27.5	-24.72	-5	-19.72
M2	100	L	64/0	27.49	-25.08	-13	-12.08
M1	100	H	1/64	28.35	-21.59	-5	-16.59
M1	100	H	1/64	28.36	-26.88	-13	-13.88
M2	100	H	1/64	28.35	-24.72	-5	-19.72
M2	100	H	1/64	28.36	-27.10	-13	-14.10
M1	100	H	64/0	28.35	-25.79	-5	-20.79
M1	100	H	64/0	28.36	-25.92	-13	-12.92
M2	100	H	64/0	28.35	-25.03	-5	-20.03
M2	100	H	64/0	28.36	-25.21	-13	-12.21

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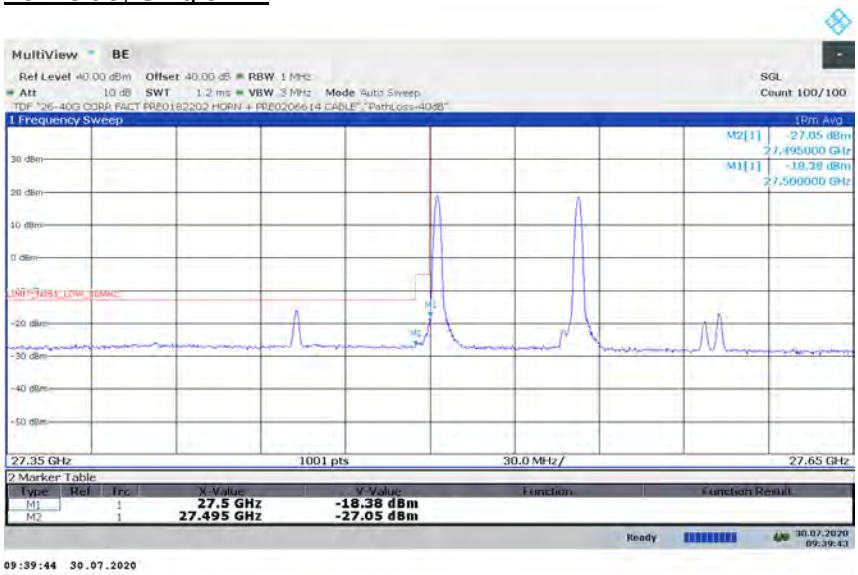
8.3.6. BAND EDGE RESULTS n261 SISO-DUAL 2CC

ANT M1, 50 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB



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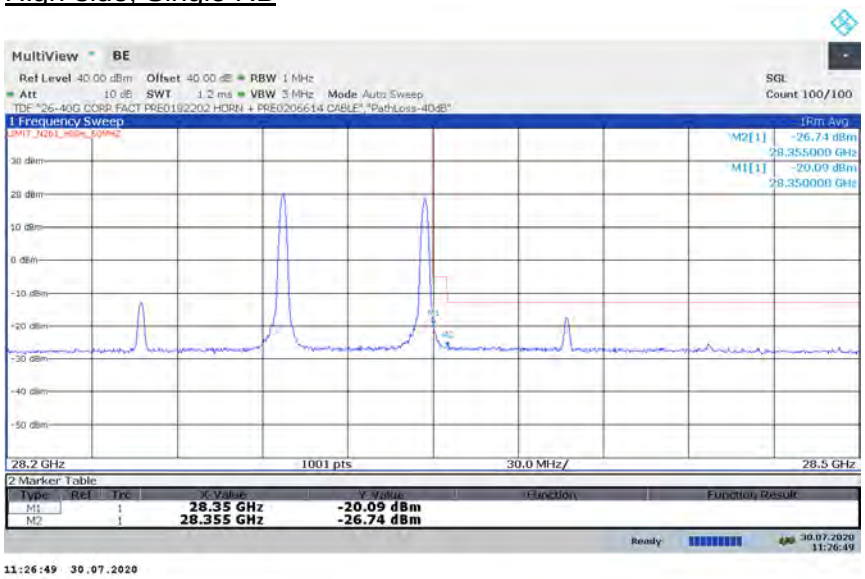
ANT M1, 50 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB



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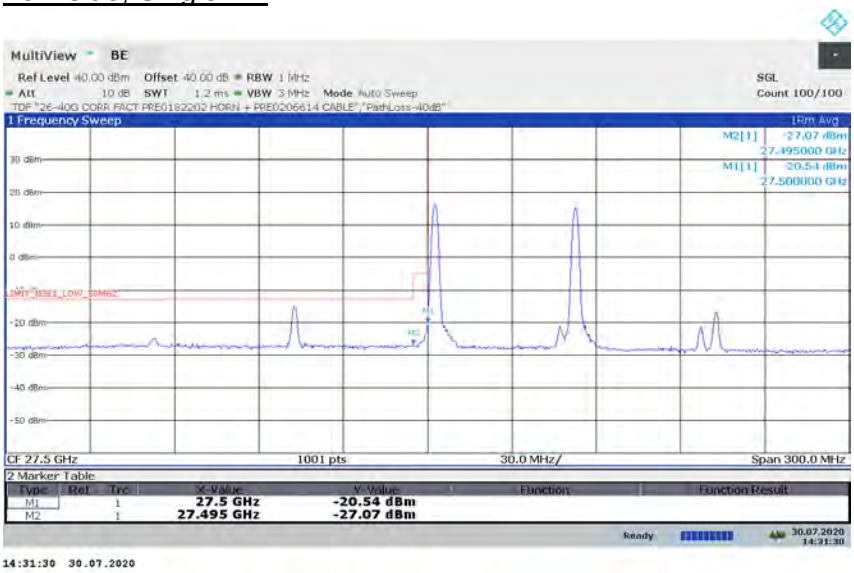
ANT M2, 50 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB



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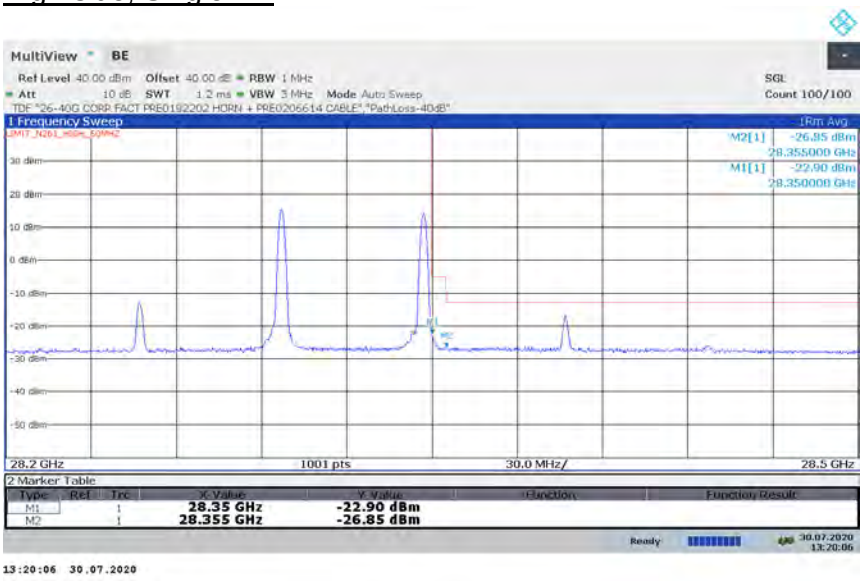
ANT M2, 50 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB



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ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-18.38	-5	-13.38
M1	50	L	1/0	27.495	-27.05	-13	-14.05
M2	50	L	1/0	27.5	-20.54	-5	-15.54
M2	50	L	1/0	27.495	-27.07	-13	-14.07
M1	50	H	1/32	28.35	-20.09	-5	-15.09
M1	50	H	1/32	28.355	-26.74	-13	-13.74
M2	50	H	1/32	28.35	-22.90	-5	-17.90
M2	50	H	1/32	28.355	-26.85	-13	-13.85

ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-18.30	-5	-13.30
M1	50	L	1/0	27.495	-21.92	-13	-8.92
M2	50	L	1/0	27.5	-19.25	-5	-14.25
M2	50	L	1/0	27.495	-21.10	-13	-8.10
M1	50	H	1/32	28.35	-19.90	-5	-14.90
M1	50	H	1/32	28.355	-21.94	-13	-8.94
M2	50	H	1/32	28.35	-20.36	-5	-15.36
M2	50	H	1/32	28.355	-21.91	-13	-8.91

ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-19.87	-5	-14.87
M1	50	L	1/0	27.495	-26.44	-13	-13.44
M2	50	L	1/0	27.5	-22.49	-5	-17.49
M2	50	L	1/0	27.495	-27.47	-13	-14.47
M1	50	H	1/32	28.35	-22.01	-5	-17.01
M1	50	H	1/32	28.355	-26.72	-13	-13.72
M2	50	H	1/32	28.35	-23.72	-5	-18.72
M2	50	H	1/32	28.355	-27.19	-13	-14.19

ANT M1 & M2, 50 MHz, SISO-DUAL, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-23.02	-5	-18.02
M1	50	L	1/0	27.495	-28.04	-13	-15.04
M2	50	L	1/0	27.5	-23.82	-5	-18.82
M2	50	L	1/0	27.495	-27.20	-13	-14.20
M1	50	H	1/32	28.35	-23.22	-5	-18.22
M1	50	H	1/32	28.355	-26.74	-13	-13.74
M2	50	H	1/32	28.35	-25.86	-5	-20.86
M2	50	H	1/32	28.355	-26.42	-13	-13.42

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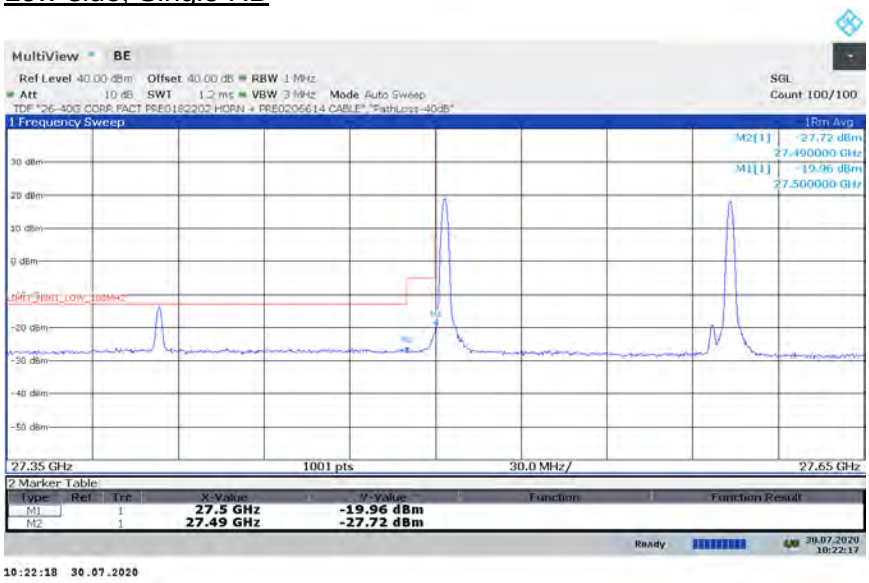
ANT M1, 100 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB



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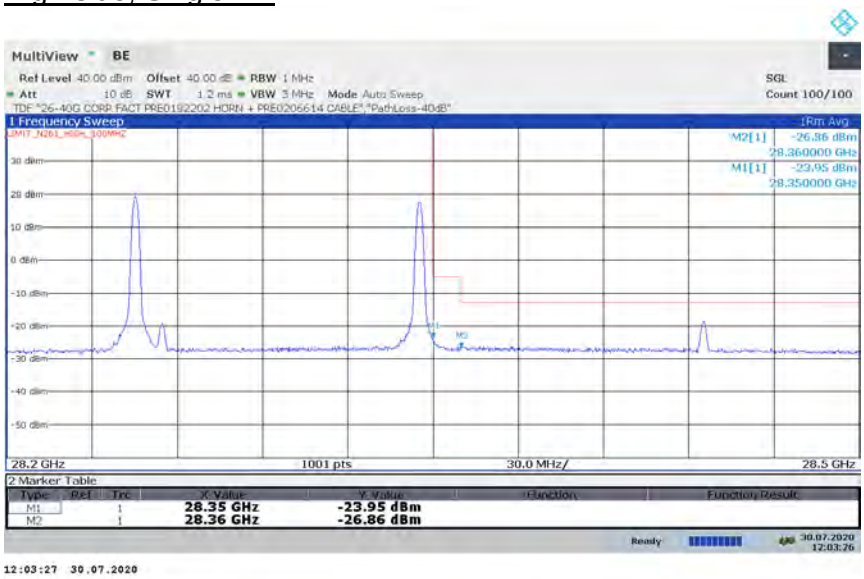
ANT M1, 100 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB



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ANT M2, 100 MHz, SISO-DUAL, 2CC, QPSK

Low-side, Single RB

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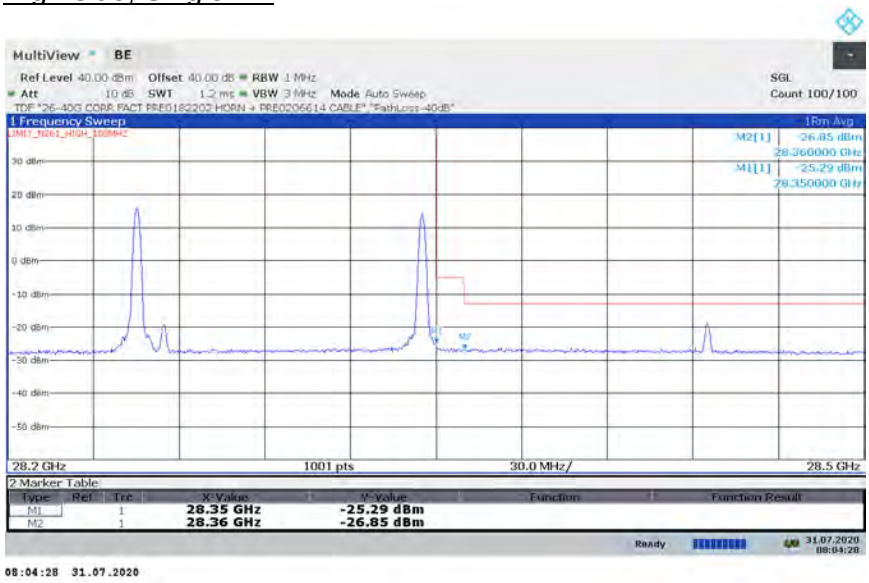
ANT M2, 100 MHz, SISO-DUAL, 2CC, QPSK

High-side, Single RB



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ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.96	-5	-14.96
M1	100	L	1/0	27.49	-27.72	-13	-14.72
M2	100	L	1/0	27.5	-20.93	-5	-15.93
M2	100	L	1/0	27.49	-27.41	-13	-14.41
M1	100	H	1/64	28.35	-23.95	-5	-18.95
M1	100	H	1/64	28.36	-26.86	-13	-13.86
M2	100	H	1/64	28.35	-25.29	-5	-20.29
M2	100	H	1/64	28.36	-26.85	-13	-13.85

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.68	-5	-14.68
M1	100	L	1/0	27.49	-21.99	-13	-8.99
M2	100	L	1/0	27.5	-19.66	-5	-14.66
M2	100	L	1/0	27.49	-21.77	-13	-8.77
M1	100	H	1/64	28.35	-21.50	-5	-16.50
M1	100	H	1/64	28.36	-22.64	-13	-9.64
M2	100	H	1/64	28.35	-21.76	-5	-16.76
M2	100	H	1/64	28.36	-22.42	-13	-9.42

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-21.56	-5	-16.56
M1	100	L	1/0	27.49	-26.93	-13	-13.93
M2	100	L	1/0	27.5	-23.16	-5	-18.16
M2	100	L	1/0	27.49	-27.16	-13	-14.16
M1	100	H	1/64	28.35	-25.11	-5	-20.11
M1	100	H	1/64	28.36	-27.21	-13	-14.21
M2	100	H	1/64	28.35	-26.00	-5	-21.00
M2	100	H	1/64	28.36	-27.28	-13	-14.28

ANT M1 & M2, 100 MHz, SISO-DUAL, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-24.31	-5	-19.31
M1	100	L	1/0	27.49	-26.86	-13	-13.86
M2	100	L	1/0	27.5	-25.49	-5	-20.49
M2	100	L	1/0	27.49	-26.69	-13	-13.69
M1	100	H	1/64	28.35	-26.87	-5	-21.87
M1	100	H	1/64	28.36	-26.75	-13	-13.75
M2	100	H	1/64	28.35	-26.60	-5	-21.60
M2	100	H	1/64	28.36	-26.96	-13	-13.96

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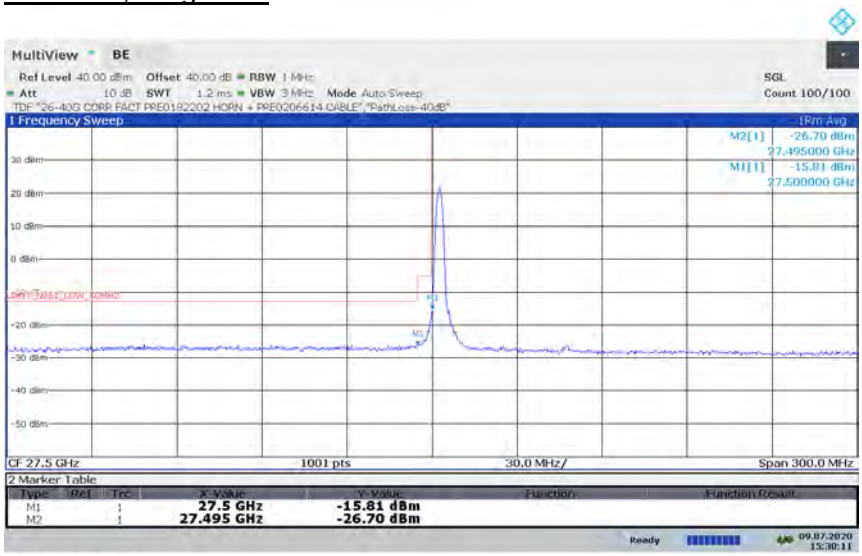
8.3.7. BAND EDGE RESULTS n261 MIMO 1CC

ANT M1, 50 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB

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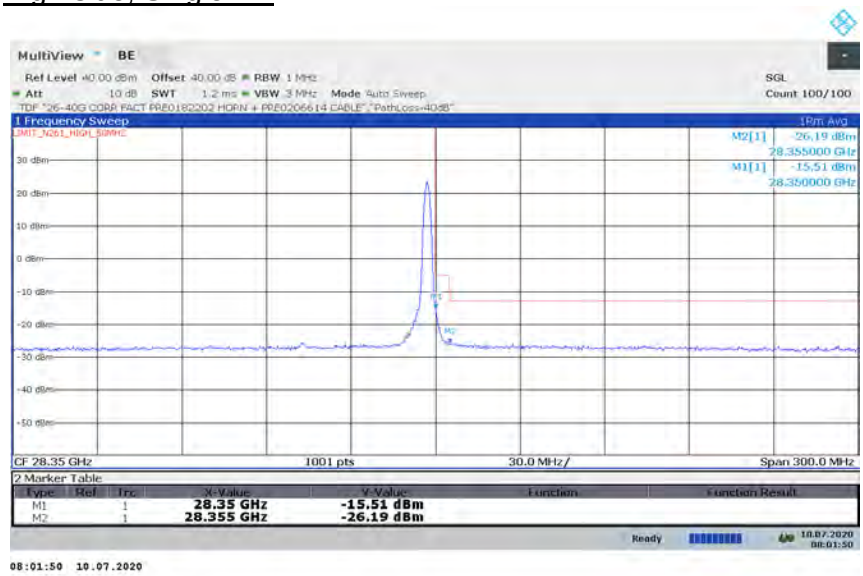
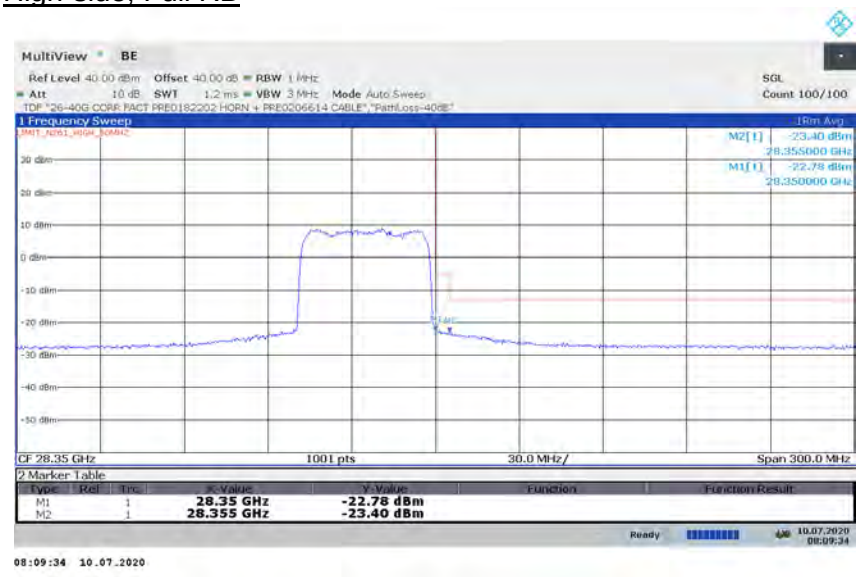
ANT M1, 50 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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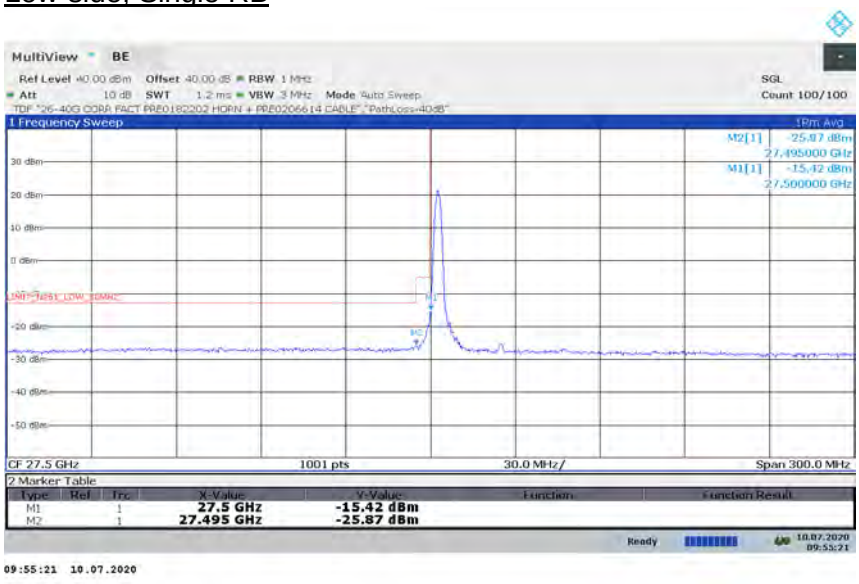
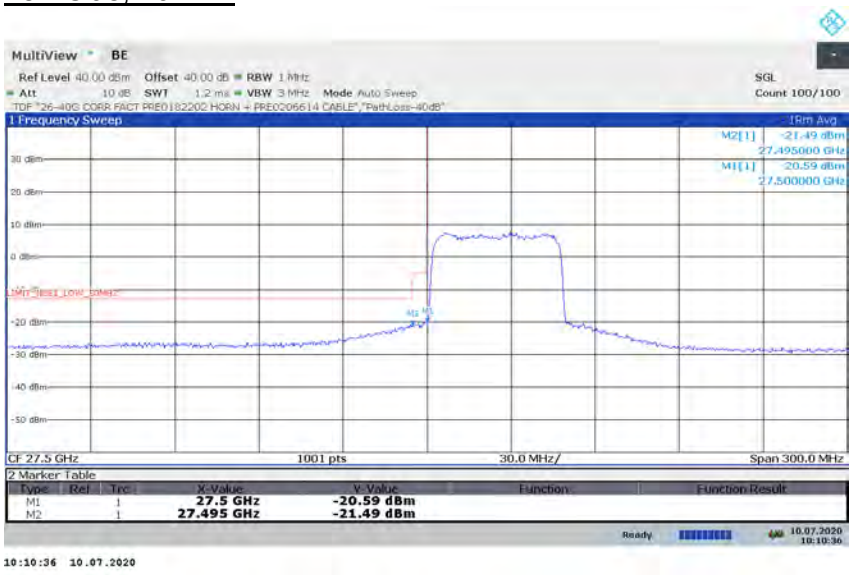
ANT M2, 50 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB



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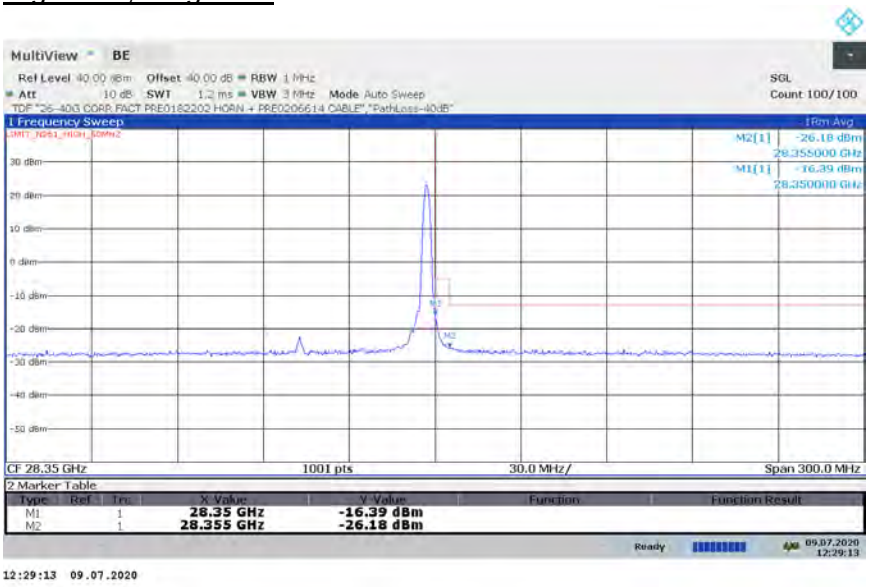
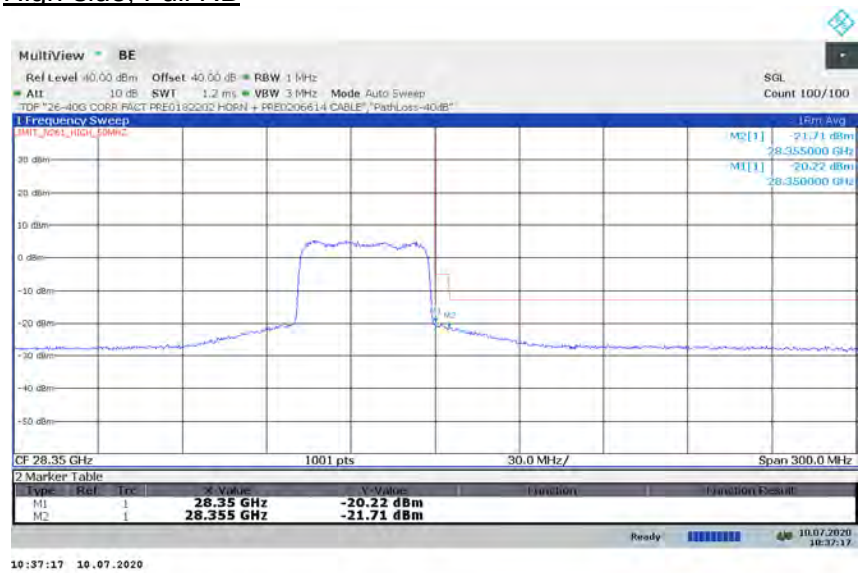
ANT M2, 50 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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ANT M1 & M2, 50 MHz, MIMO, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-15.81	-5	-10.81
M1	50	L	1/0	27.495	-26.70	-13	-13.70
M2	50	L	1/0	27.5	-15.24	-5	-10.24
M2	50	L	1/0	27.495	-25.87	-13	-12.87
M1	50	L	32/0	27.5	-22.25	-5	-17.25
M1	50	L	32/0	27.495	-23.47	-13	-10.47
M2	50	L	32/0	27.5	-20.59	-5	-15.59
M2	50	L	32/0	27.495	-21.49	-13	-8.49
M1	50	H	1/32	28.35	-15.51	-5	-10.51
M1	50	H	1/32	28.355	-26.19	-13	-13.19
M2	50	H	1/32	28.35	-16.39	-5	-11.39
M2	50	H	1/32	28.355	-26.18	-13	-13.18
M1	50	H	32/0	28.35	-22.78	-5	-17.78
M1	50	H	32/0	28.355	-23.40	-13	-10.40
M2	50	H	32/0	28.35	-20.22	-5	-15.22
M2	50	H	32/0	28.355	-21.71	-13	-8.71

ANT M1 & M2, 50 MHz, MIMO, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-17.98	-5	-12.98
M1	50	L	1/0	27.495	-27.04	-13	-14.04
M2	50	L	1/0	27.5	-15.77	-5	-10.77
M2	50	L	1/0	27.495	-26.41	-13	-13.41
M1	50	L	32/0	27.5	-24.25	-5	-19.25
M1	50	L	32/0	27.495	-25.30	-13	-12.30
M2	50	L	32/0	27.5	-23.04	-5	-18.04
M2	50	L	32/0	27.495	-23.97	-13	-10.97
M1	50	H	1/32	28.35	-19.92	-5	-14.92
M1	50	H	1/32	28.355	-27.09	-13	-14.09
M2	50	H	1/32	28.35	-19.08	-5	-14.08
M2	50	H	1/32	28.355	-27.58	-13	-14.58
M1	50	H	32/0	28.35	-24.80	-5	-19.80
M1	50	H	32/0	28.355	-25.65	-13	-12.65
M2	50	H	32/0	28.35	-23.93	-5	-18.93
M2	50	H	32/0	28.355	-25.27	-13	-12.27

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ANT M1 & M2, 50 MHz, MIMO, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-17.01	-5	-12.01
M1	50	L	1/0	27.495	-26.03	-13	-13.03
M2	50	L	1/0	27.5	-17.66	-5	-12.66
M2	50	L	1/0	27.495	-26.61	-13	-13.61
M1	50	L	32/0	27.5	-23.26	-5	-18.26
M1	50	L	32/0	27.495	-23.95	-13	-10.95
M2	50	L	32/0	27.5	-22.32	-5	-17.32
M2	50	L	32/0	27.495	-23.85	-13	-10.85
M1	50	H	1/32	28.35	-18.40	-5	-13.40
M1	50	H	1/32	28.355	-27.02	-13	-14.02
M2	50	H	1/32	28.35	-19.47	-5	-14.47
M2	50	H	1/32	28.355	-26.35	-13	-13.35
M1	50	H	32/0	28.35	-23.60	-5	-18.60
M1	50	H	32/0	28.355	-24.52	-13	-11.52
M2	50	H	32/0	28.35	-22.04	-5	-17.04
M2	50	H	32/0	28.355	-23.29	-13	-10.29

ANT M1 & M2, 50 MHz, MIMO, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-19.59	-5	-14.59
M1	50	L	1/0	27.495	-27.07	-13	-14.07
M2	50	L	1/0	27.5	-20.77	-5	-15.77
M2	50	L	1/0	27.495	-27.25	-13	-14.25
M1	50	L	32/0	27.5	-24.90	-5	-19.90
M1	50	L	32/0	27.495	-25.44	-13	-12.44
M2	50	L	32/0	27.5	-23.75	-5	-18.75
M2	50	L	32/0	27.495	-24.84	-13	-11.84
M1	50	H	1/32	28.35	-20.42	-5	-15.42
M1	50	H	1/32	28.355	-26.89	-13	-13.89
M2	50	H	1/32	28.35	-22.09	-5	-17.09
M2	50	H	1/32	28.355	-26.73	-13	-13.73
M1	50	H	32/0	28.35	-25.65	-5	-20.65
M1	50	H	32/0	28.355	-25.78	-13	-12.78
M2	50	H	32/0	28.35	-23.85	-5	-18.85
M2	50	H	32/0	28.355	-25.19	-13	-12.19

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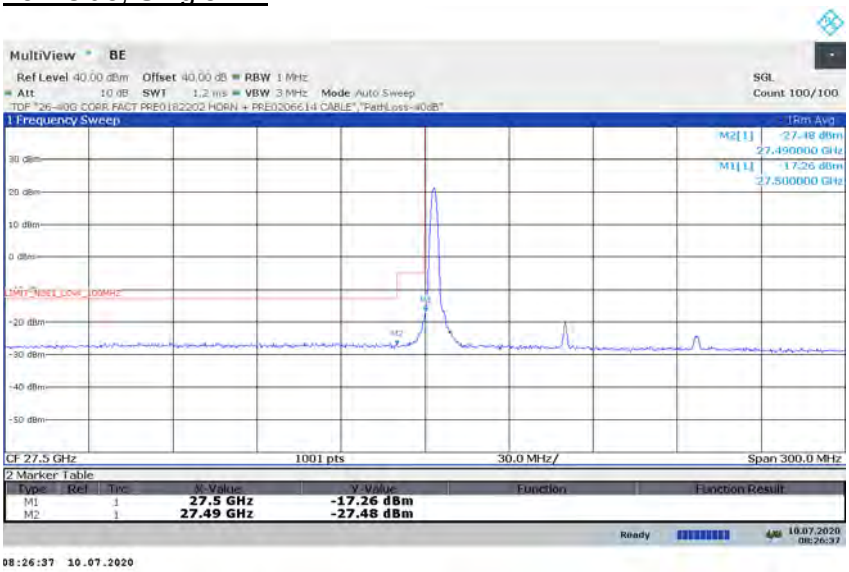
ANT M1, 100 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB

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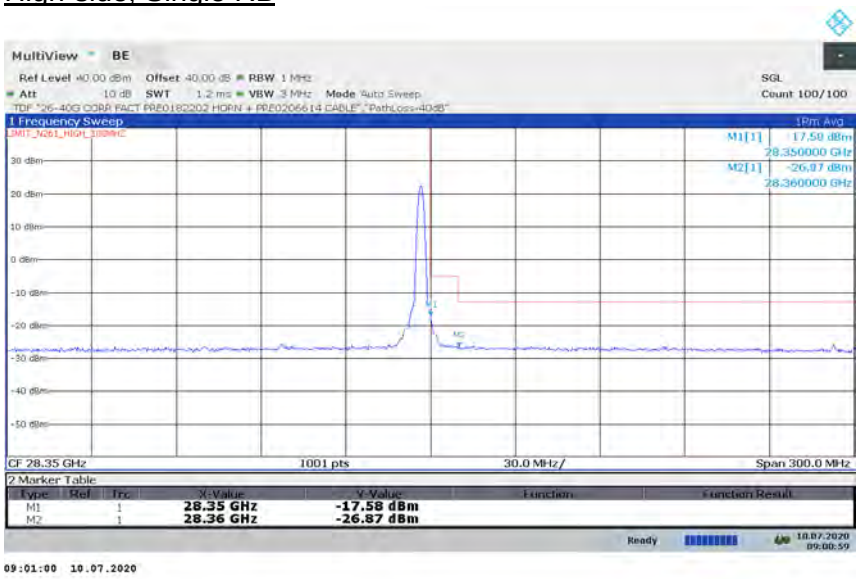
ANT M1, 100 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB

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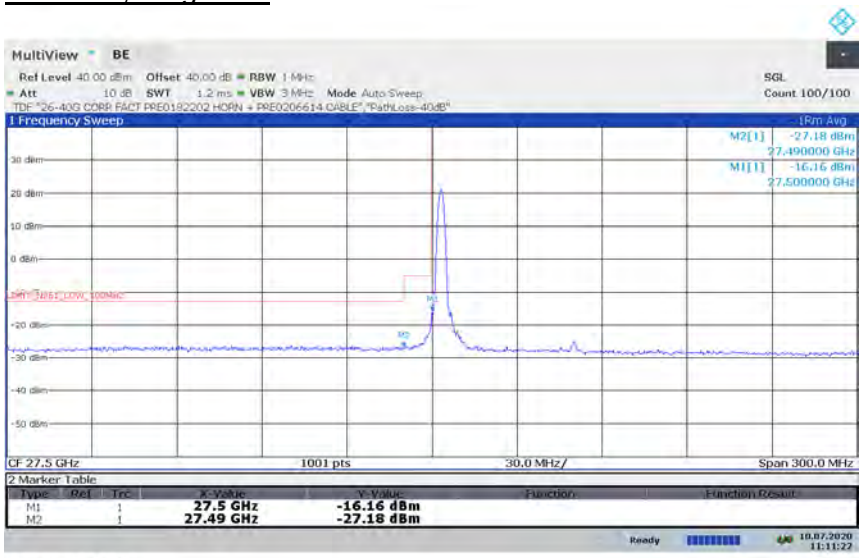
ANT M2, 100 MHz, MIMO, 1CC, QPSK

Low-side, Single RB



Low-side, Full RB

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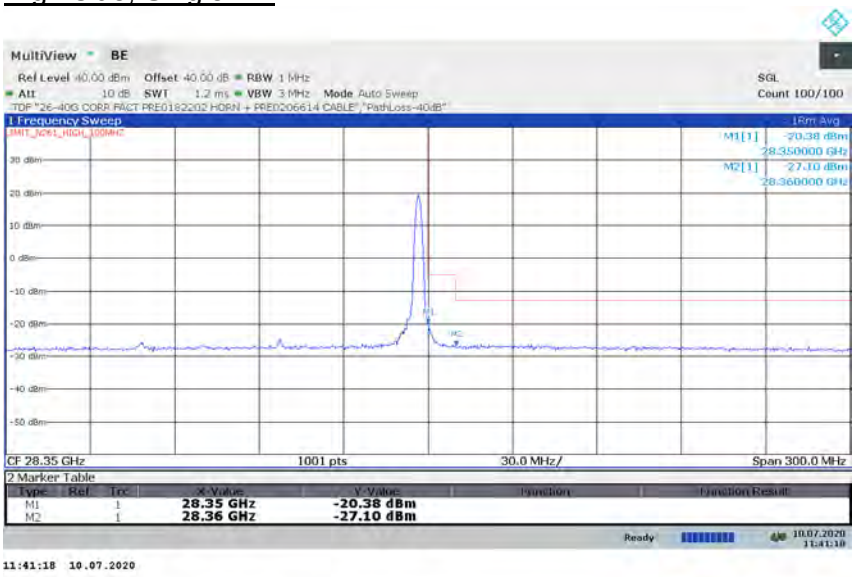
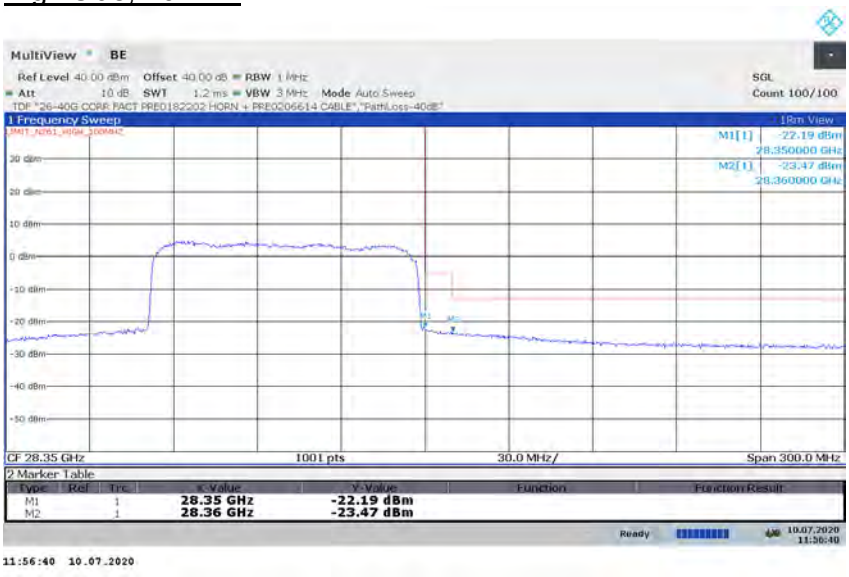
ANT M2, 100 MHz, MIMO, 1CC, QPSK

High-side, Single RB



High-side, Full RB



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ANT M1 & M2, 100 MHz, MIMO, 1CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-17.26	-5	-12.26
M1	100	L	1/0	27.49	-27.48	-13	-14.48
M2	100	L	1/0	27.5	-16.16	-5	-11.16
M2	100	L	1/0	27.49	-27.18	-13	-14.18
M1	100	L	66/0	27.5	-24.08	-5	-19.08
M1	100	L	66/0	27.49	-25.34	-13	-12.34
M2	100	L	66/0	27.5	-22.77	-5	-17.77
M2	100	L	66/0	27.49	-23.35	-13	-10.35
M1	100	H	1/66	28.35	-17.58	-5	-12.58
M1	100	H	1/66	28.36	-26.87	-13	-13.87
M2	100	H	1/66	28.35	-20.38	-5	-15.38
M2	100	H	1/66	28.36	-27.10	-13	-14.10
M1	100	H	66/0	28.35	-24.43	-5	-19.43
M1	100	H	66/0	28.36	-25.33	-13	-12.33
M2	100	H	66/0	28.35	-22.19	-5	-17.19
M2	100	H	66/0	28.36	-23.47	-13	-10.47

ANT M1 & M2, 100 MHz, MIMO, 1CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-17.64	-5	-12.64
M1	100	L	1/0	27.49	-27.46	-13	-14.46
M2	100	L	1/0	27.5	-16.74	-5	-11.74
M2	100	L	1/0	27.49	-26.98	-13	-13.98
M1	100	L	66/0	27.5	-25.54	-5	-20.54
M1	100	L	66/0	27.49	-25.92	-13	-12.92
M2	100	L	66/0	27.5	-25.50	-5	-20.50
M2	100	L	66/0	27.49	-25.69	-13	-12.69
M1	100	H	1/66	28.35	-21.62	-5	-16.62
M1	100	H	1/66	28.36	-27.65	-13	-14.65
M2	100	H	1/66	28.35	-23.96	-5	-18.96
M2	100	H	1/66	28.36	-28.17	-13	-15.17
M1	100	H	66/0	28.35	-26.16	-5	-21.16
M1	100	H	66/0	28.36	-26.92	-13	-13.92
M2	100	H	66/0	28.35	-26.66	-5	-21.66
M2	100	H	66/0	28.36	-26.77	-13	-13.77

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ANT M1 & M2, 100 MHz, MIMO, 1CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.47	-5	-14.47
M1	100	L	1/0	27.49	-27.95	-13	-14.95
M2	100	L	1/0	27.5	-19.64	-5	-14.64
M2	100	L	1/0	27.49	-26.74	-13	-13.74
M1	100	L	66/0	27.5	-25.69	-5	-20.69
M1	100	L	66/0	27.49	-25.84	-13	-12.84
M2	100	L	66/0	27.5	-24.24	-5	-19.24
M2	100	L	66/0	27.49	-24.73	-13	-11.73
M1	100	H	1/66	28.35	-18.54	-5	-13.54
M1	100	H	1/66	28.36	-26.81	-13	-13.81
M2	100	H	1/66	28.35	-21.17	-5	-16.17
M2	100	H	1/66	28.36	-26.95	-13	-13.95
M1	100	H	66/0	28.35	-25.23	-5	-20.23
M1	100	H	66/0	28.36	-25.20	-13	-12.20
M2	100	H	66/0	28.35	-24.32	-5	-19.32
M2	100	H	66/0	28.36	-25.31	-13	-12.31

ANT M1 & M2, 100 MHz, MIMO, 1CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-21.15	-5	-16.15
M1	100	L	1/0	27.49	-27.40	-13	-14.40
M2	100	L	1/0	27.5	-21.45	-5	-16.45
M2	100	L	1/0	27.49	-27.66	-13	-14.66
M1	100	L	66/0	27.5	-26.13	-5	-21.13
M1	100	L	66/0	27.49	-26.52	-13	-13.52
M2	100	L	66/0	27.5	-25.89	-5	-20.89
M2	100	L	66/0	27.49	-26.26	-13	-13.26
M1	100	H	1/66	28.35	-22.04	-5	-17.04
M1	100	H	1/66	28.36	-27.02	-13	-14.02
M2	100	H	1/66	28.35	-22.66	-5	-17.66
M2	100	H	1/66	28.36	-27.33	-13	-14.33
M1	100	H	66/0	28.35	-26.06	-5	-21.06
M1	100	H	66/0	28.36	-26.35	-13	-13.35
M2	100	H	66/0	28.35	-25.77	-5	-20.77
M2	100	H	66/0	28.36	-25.90	-13	-12.90

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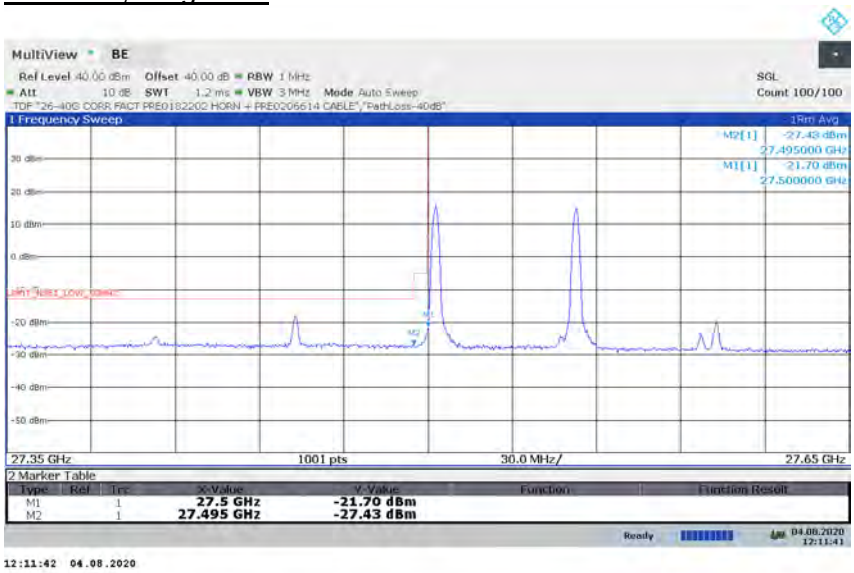
8.3.8. BAND EDGE RESULTS n261 MIMO 2CC

ANT M1, 50 MHz, MIMO, 2CC, QPSK

Low-side, Single RB



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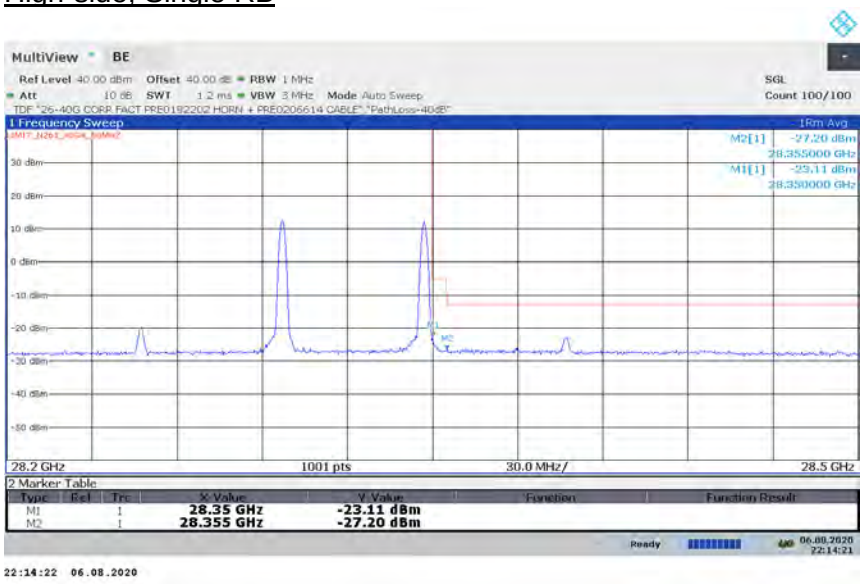
ANT M1, 50 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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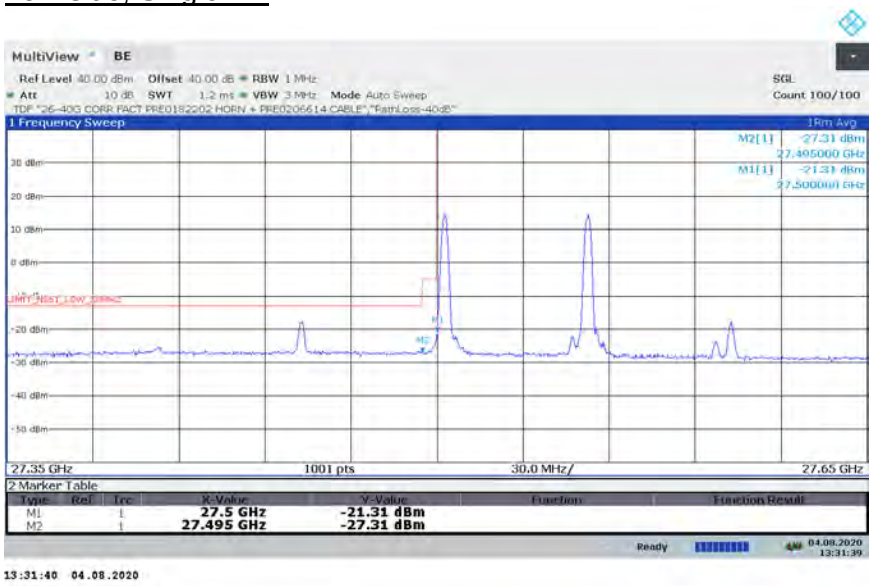
ANT M2, 50 MHz, MIMO, 2CC, QPSK

Low-side, Single RB



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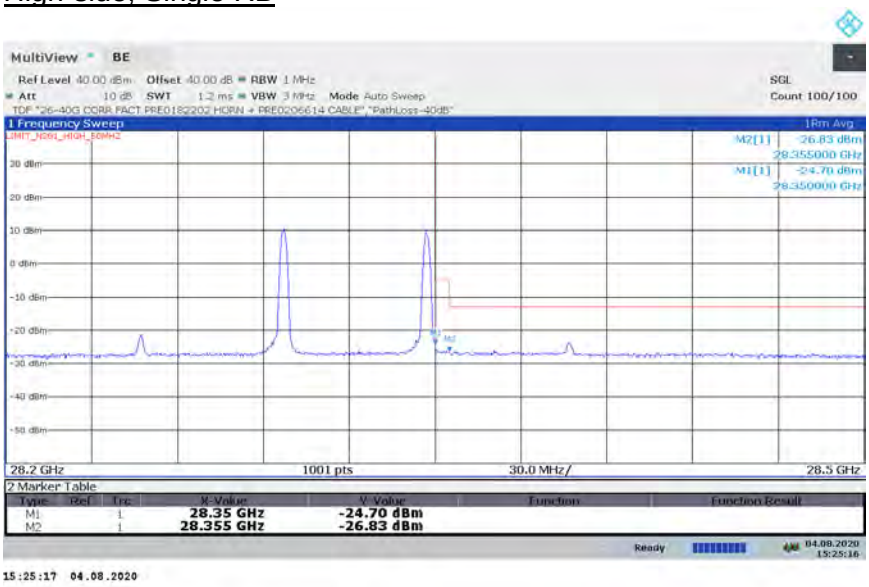
ANT M2, 50 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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ANT M1 & M2, 50 MHz, MIMO, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-21.70	-5	-16.70
M1	50	L	1/0	27.495	-27.43	-13	-14.43
M2	50	L	1/0	27.5	-21.31	-5	-16.31
M2	50	L	1/0	27.495	-27.31	-13	-14.31
M1	50	H	1/32	28.35	-23.11	-5	-18.11
M1	50	H	1/32	28.355	-27.20	-13	-14.20
M2	50	H	1/32	28.35	-24.70	-5	-19.70
M2	50	H	1/32	28.355	-26.83	-13	-13.83

ANT M1 & M2, 50 MHz, MIMO, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-19.75	-5	-14.75
M1	50	L	1/0	27.495	-21.96	-13	-8.96
M2	50	L	1/0	27.5	-19.84	-5	-14.84
M2	50	L	1/0	27.495	-21.46	-13	-8.46
M1	50	H	1/32	28.35	-21.38	-5	-16.38
M1	50	H	1/32	28.355	-22.87	-13	-9.87
M2	50	H	1/32	28.35	-21.13	-5	-16.13
M2	50	H	1/32	28.355	-22.48	-13	-9.48

ANT M1 & M2, 50 MHz, MIMO, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-22.48	-5	-17.48
M1	50	L	1/0	27.495	-26.99	-13	-13.99
M2	50	L	1/0	27.5	-22.70	-5	-17.70
M2	50	L	1/0	27.495	-27.69	-13	-14.69
M1	50	H	1/32	28.35	-24.95	-5	-19.95
M1	50	H	1/32	28.355	-27.04	-13	-14.04
M2	50	H	1/32	28.35	-25.87	-5	-20.87
M2	50	H	1/32	28.355	-27.26	-13	-14.26

ANT M1 & M2, 50 MHz, MIMO, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	50	L	1/0	27.5	-24.14	-5	-19.14
M1	50	L	1/0	27.495	-27.98	-13	-14.98
M2	50	L	1/0	27.5	-24.13	-5	-19.13
M2	50	L	1/0	27.495	-27.08	-13	-14.08
M1	50	H	1/32	28.35	-25.27	-5	-20.27
M1	50	H	1/32	28.355	-26.85	-13	-13.85
M2	50	H	1/32	28.35	-27.01	-5	-22.01
M2	50	H	1/32	28.355	-26.83	-13	-13.83

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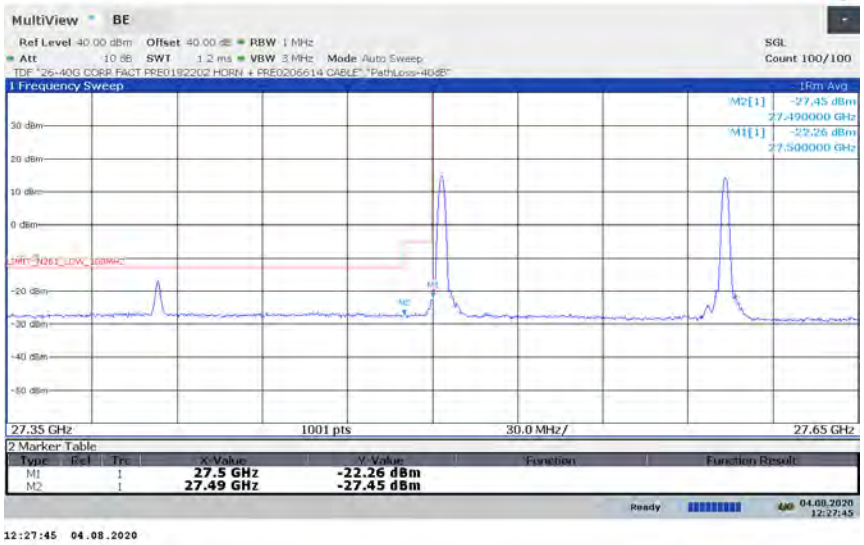
ANT M1, 100 MHz, MIMO, 2CC, QPSK

Low-side, Single RB



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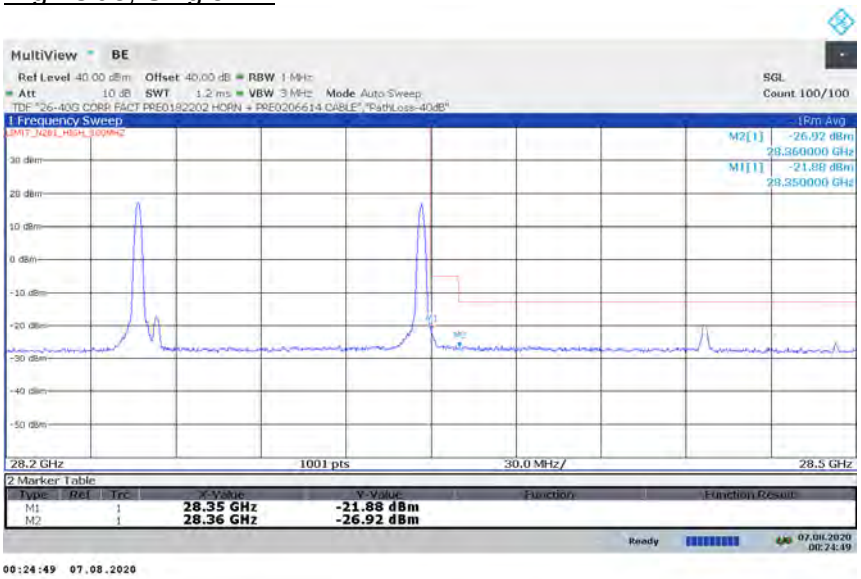
ANT M1, 100 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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ANT M2, 100 MHz, MIMO, 2CC, QPSK

Low-side, Single RB

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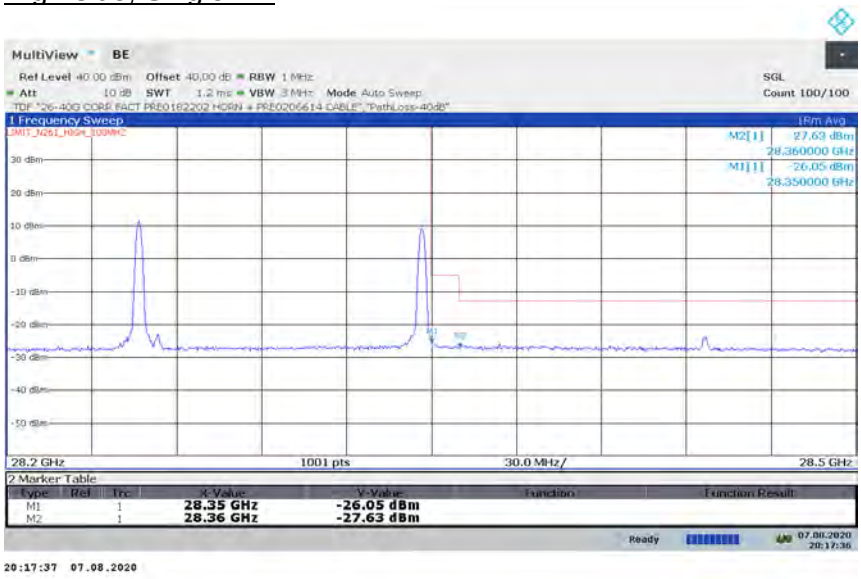
ANT M2, 100 MHz, MIMO, 2CC, QPSK

High-side, Single RB



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ANT M1 & M2, 100 MHz, MIMO, 2CC, QPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-22.26	-5	-17.26
M1	100	L	1/0	27.49	-27.45	-13	-14.45
M2	100	L	1/0	27.5	-22.81	-5	-17.81
M2	100	L	1/0	27.49	-27.21	-13	-14.21
M1	100	H	1/66	28.35	-21.88	-5	-16.88
M1	100	H	1/66	28.36	-26.92	-13	-13.92
M2	100	H	1/66	28.35	-26.05	-5	-21.05
M2	100	H	1/66	28.36	-27.63	-13	-14.63

ANT M1 & M2, 100 MHz, MIMO, 2CC, BPSK

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-19.67	-5	-14.67
M1	100	L	1/0	27.49	-21.87	-13	-8.87
M2	100	L	1/0	27.5	-20.38	-5	-15.38
M2	100	L	1/0	27.49	-21.39	-13	-8.39
M1	100	H	1/66	28.35	-22.12	-5	-17.12
M1	100	H	1/66	28.36	-22.64	-13	-9.64
M2	100	H	1/66	28.35	-21.73	-5	-16.73
M2	100	H	1/66	28.36	-22.23	-13	-9.23

ANT M1 & M2, 100 MHz, MIMO, 2CC, 16QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-23.42	-5	-18.42
M1	100	L	1/0	27.49	-26.88	-13	-13.88
M2	100	L	1/0	27.5	-24.55	-5	-19.55
M2	100	L	1/0	27.49	-27.23	-13	-14.23
M1	100	H	1/66	28.35	-24.30	-5	-19.30
M1	100	H	1/66	28.36	-26.90	-13	-13.90
M2	100	H	1/66	28.35	-26.11	-5	-21.11
M2	100	H	1/66	28.36	-26.90	-13	-13.90

ANT M1 & M2, 100 MHz, MIMO, 2CC, 64QAM

Antenna	BW	Channel	RB	Freq.	Avg EIRP	Avg TRP Limit	Margin
	(MHz)		(Size Offset)	(GHz)	(dBm)	(dBm)	(dB)
M1	100	L	1/0	27.5	-23.43	-5	-18.43
M1	100	L	1/0	27.49	-27.36	-13	-14.36
M2	100	L	1/0	27.5	-23.99	-5	-18.99
M2	100	L	1/0	27.49	-27.09	-13	-14.09
M1	100	H	1/66	28.35	-26.13	-5	-21.13
M1	100	H	1/66	28.36	-26.92	-13	-13.92
M2	100	H	1/66	28.35	-26.89	-5	-21.89
M2	100	H	1/66	28.36	-27.40	-13	-14.40

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8.4. RADIATED SPURIOUS EMISSIONS

RULE PART(S)

FCC: §2.1051, §30.203

LIMIT

30.203 - (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13 dBm/MHz or lower.

TEST PROCEDURE

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.4.2 and Section 4.4.3. ANSI C63.26-2015 Clause 5.5.4 and Annex C.5.2.

All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits to demonstrate compliance.

RSE was investigated from 30 MHz – 100 GHz on n261 band and 30 MHz – 200 GHz on n260 band.

Plots below 18 GHz are corrected field strength levels, measured at 3 meter test distance. The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: EIRP (dBm) = E (dBµV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m. The field strength E is calculated E (dBµV/m) = Spectrum Analyzer Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + 107. All appropriate Antenna Factor and Cable Loss have been applied in the spectrum analyzer for each measurement.

RSEs above 18 GHz were measured at the appropriate far field distances listed on Section 5 on this report (FAR-FIELD DISTANCE AND MEASUREMENT DISTANCE). Then, the EIRP of RSE was calculated using the equations on ANSI C63.26-2015 Annex C.5.2, as described on Sections 8.2 and 8.3.

RSEs from 18 – 50 GHz were measured using a spectrum analyzer or EMI receiver with an internal preamplifier when applicable. Emissions above 50 GHz were measured using a harmonic mixer with spectrum analyzer, while an external LNA was used when applicable.

RSEs from 1 – 200 GHz were measured at 1.5 meters height.

All RSEs were measured for the configuration with the highest EIRP (SISO-Dual antenna configuration with QPSK modulation and a single RB) as representing the worst case. Preliminary radiated emissions tests on the low, middle and high channels indicated that the worst case radiated spurious emissions were on the channel with the highest power and so only the test data for that channel is included in this report.

As the single RB with 1CC mode has the highest power and is the same for all channel bandwidths, therefore the single RB with 1CC for the narrowest channel bandwidth was used as the worst case for purposes of RSE measurements.

The following worst case EIRP 1CC modes were used at tests at the pre-determined worst case y-axis (portrait) orientation:

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n260 band:
Ant M1: SISO-Dual_QPSK_100 MHz_High CH, RB Offset 1/32 (1RB_M)
Ant M2: SISO-Dual_QPSK_50 MHz_Mid CH, RB Offset 1/15 (1RB_M)

n261 band:
Ant M1: SISO-Dual_QPSK_100 MHz_High CH, RB Offset 1/32 (1RB_M)
Ant M2: SISO-Dual_QPSK_50 MHz_Mid CH, RB Offset 1/15 (1RB_M)

In addition, the 2CC multi-carrier operations were verified for IMD product at the near upper and lower band edge regions. The measurements were made with the single RB active in each channel and plots showing the IMD product are provided. Both (50 MHz + 50 MHz) and (100 MHz + 100 MHz) channel bandwidths are tested and the signal level of the IMD products are similar for both modes. The test data for the worst case IMD emissions are reported.

Where the measured EIRP value is within 2 dB of the limit, a TRP measurement is made, otherwise the EIRP value is compared with the §30.203 TRP limits to demonstrate compliance.

For simultaneous transmission of multiple channels in the UWB, Wi-Fi bands, 5G FR2 bands and BT band, no noticeable new emission was found.

RESULTS

See the following pages.

TESTED BY:

Below 18 GHz Test Site: Chamber B

Above 18 GHz:
Employee IDs: 19296 & 19459, n261 band, Chamber 1
Employee IDs: 19470 & 19437, n260 band, Chamber 2

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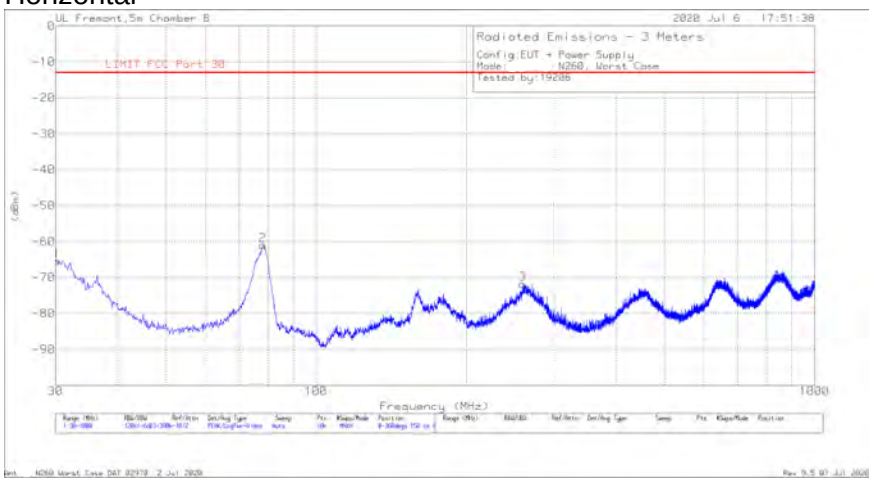
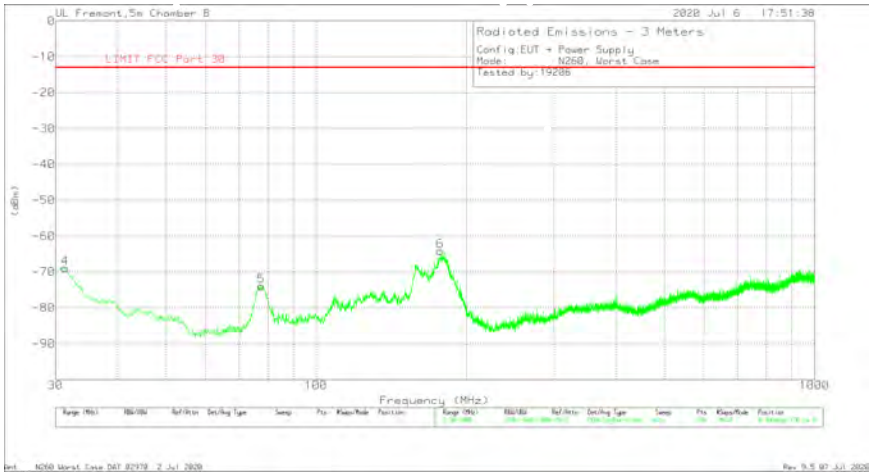
8.4.1. RADIATED EMISSIONS 30 MHz - 1 GHz n260

30MHz-1000MHz – N260, ANT M1

Horizontal



Vertical



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.194	-77.87	Pk	26.9	-31.4	17	-65.37	-13	-52.37	0-360	150	H
4	31.358	-69.09	Pk	26	-31.4	5.6	-68.89	-13	-55.89	0-360	150	V
5	77.53	-68.13	Pk	13.6	-30.9	11.5	-73.93	-13	-60.93	0-360	150	V
2	78.209	-52.19	Pk	13.6	-30.9	8.5	-60.99	-13	-47.99	0-360	150	H
6	177.537	-61.4	Pk	17.2	-30.2	10.3	-64.1	-13	-51.1	0-360	150	V
3	259.502	-75.59	Pk	17.9	-29.8	15.7	-71.79	-13	-58.79	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

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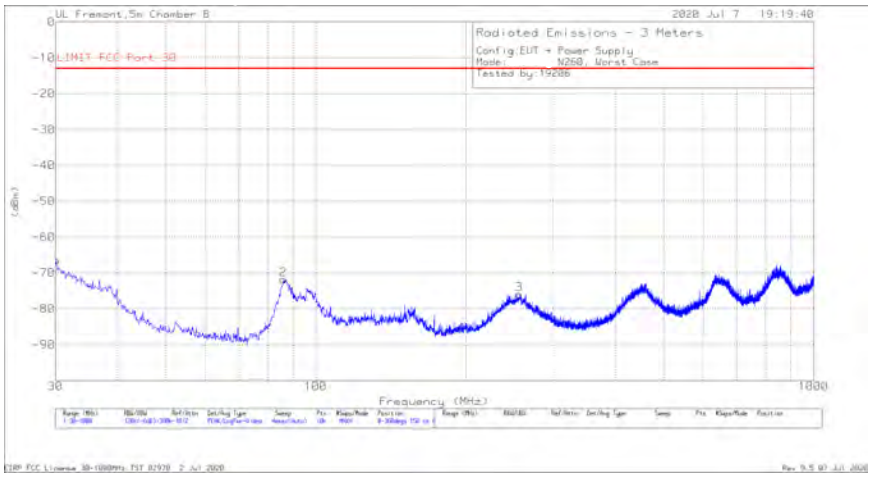
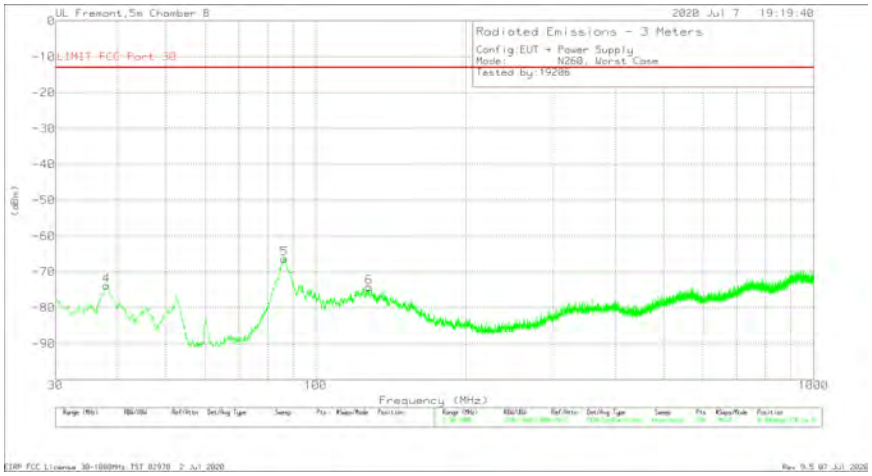
30MHz-1000MHz – N260,ANT M2

Horizontal



Vertical



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.097	-79.24	Pk	27	-31.4	17.1	-66.54	-13	-53.54	0-360	150	H
4	37.954	-68.76	Pk	21.2	-31.3	5.1	-73.76	-13	-60.76	0-360	150	V
2	86.066	-63.79	Pk	13.2	-30.8	9.6	-71.79	-13	-58.79	0-360	150	H
5	86.454	-63.42	Pk	13.2	-30.8	14.8	-66.22	-13	-53.22	0-360	150	V
6	127.873	-78.41	Pk	19.6	-30.4	15	-74.21	-13	-61.21	0-360	150	V
3	256.01	-79.83	Pk	17.5	-29.8	16.2	-75.93	-13	-62.93	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

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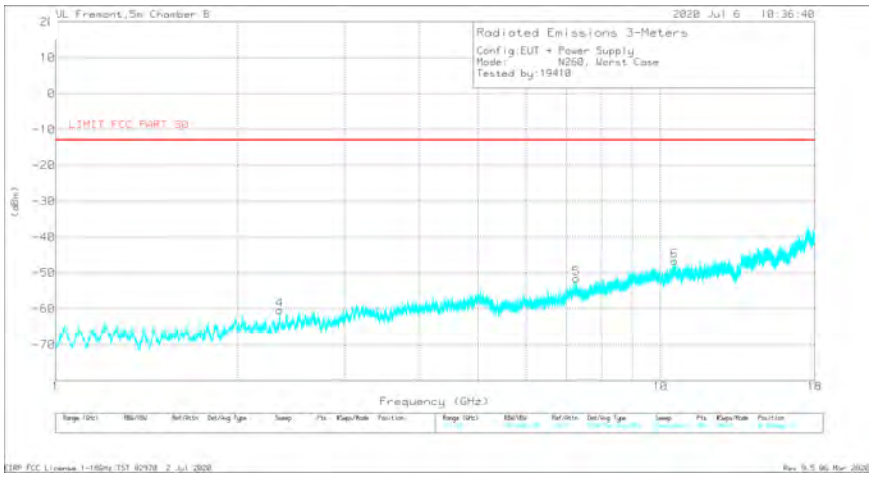
8.4.2. RADIATED EMISSIONS 1-18 GHz n260

1GHz – 18GHz – N260, ANT M1

Horizontal

Vertical



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2.34902	-68.44	Pk	28	-29.5	9.6	-60.34	-13	-47.34	0-360	150	V
1	3.25346	-69	Pk	31.3	-28.3	10.3	-55.7	-13	-42.7	0-360	150	H
2	5.51798	-70.86	Pk	33.2	-26	8.7	-54.96	-13	-41.96	0-360	150	H
5	7.27332	-72.8	Pk	37.2	-23.3	7.4	-51.5	-13	-38.5	0-360	150	V
6	10.54513	-75.05	Pk	39.6	-19.7	8.5	-46.65	-13	-33.65	0-360	150	V
3	15.7593	-73.4	Pk	41	-20.2	10.8	-41.8	-13	-28.8	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

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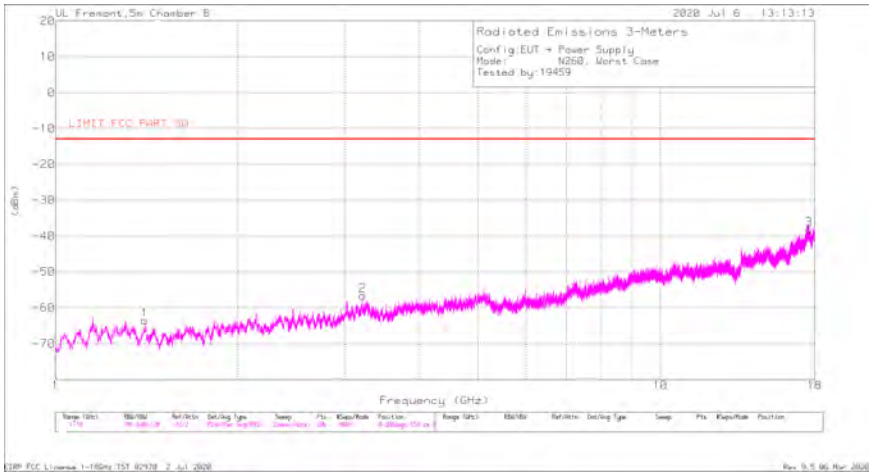
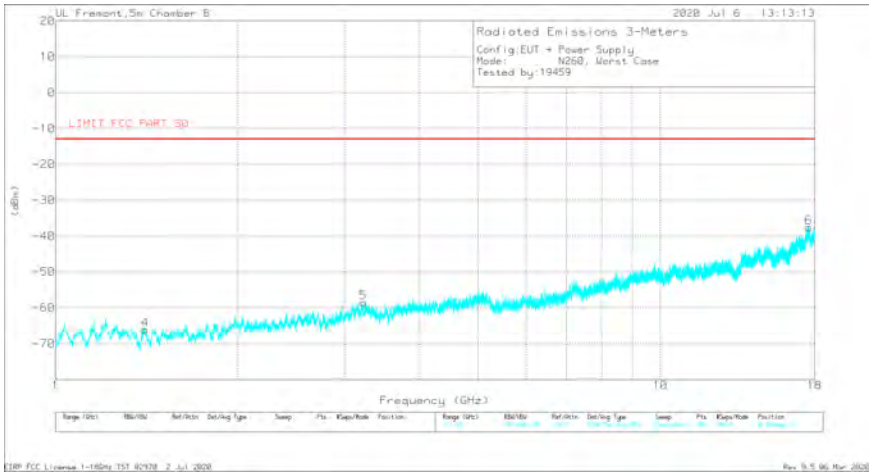
1GHz – 18GHz – N260, ANT M2

Horizontal



Vertical



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.40462	-68.41	Pk	25.4	-30.8	10.3	-63.51	-13	-50.51	0-360	150	H
4	1.40717	-70.5	Pk	25.4	-30.8	9.8	-66.1	-13	-53.1	0-360	150	V
2	3.22031	-69.28	Pk	31.3	-28.3	9.7	-56.58	-13	-43.58	0-360	150	H
5	3.22626	-70.67	Pk	31.3	-28.3	9.1	-58.57	-13	-45.57	0-360	150	V
6	17.59454	-76.13	Pk	43.1	-16.1	11.5	-37.63	-13	-24.63	0-360	150	V
3	17.63194	-75.52	Pk	42.9	-16.9	11.4	-38.12	-13	-25.12	0-360	150	H

EIRP FCC License 1-18GHz.TST 02970 2 Jul 2020
Rev 9.5 06 Mar 2020

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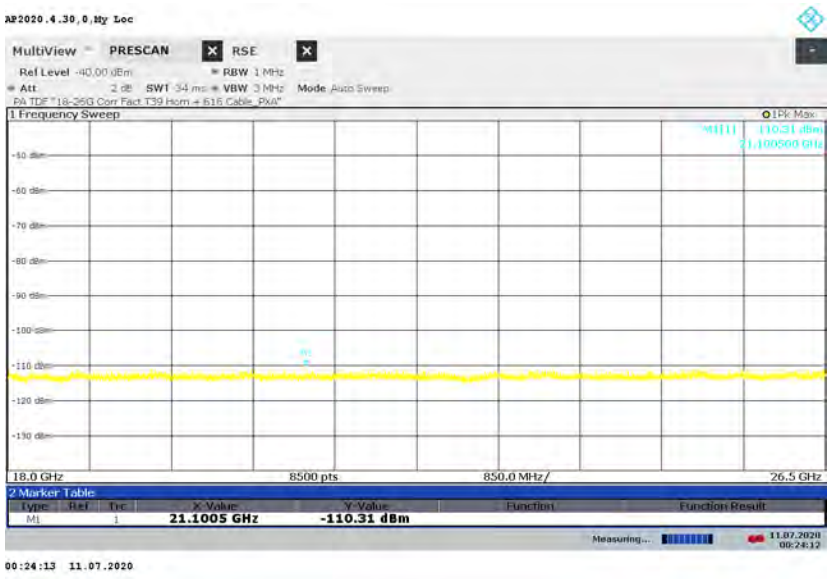
8.4.3. RADIATED EMISSIONS 18-26.5 GHz n260

18-26.5 GHz – N260, ANT M1
Horizontal



18-26.5 GHz – N260, ANT M1
Vertical

No Emission using Peak Detection.

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18-26.5 GHz – N260, ANT M2
Horizontal

18-26.5 GHz – N260, ANT M2
Vertical

No Emission using Peak Detection.

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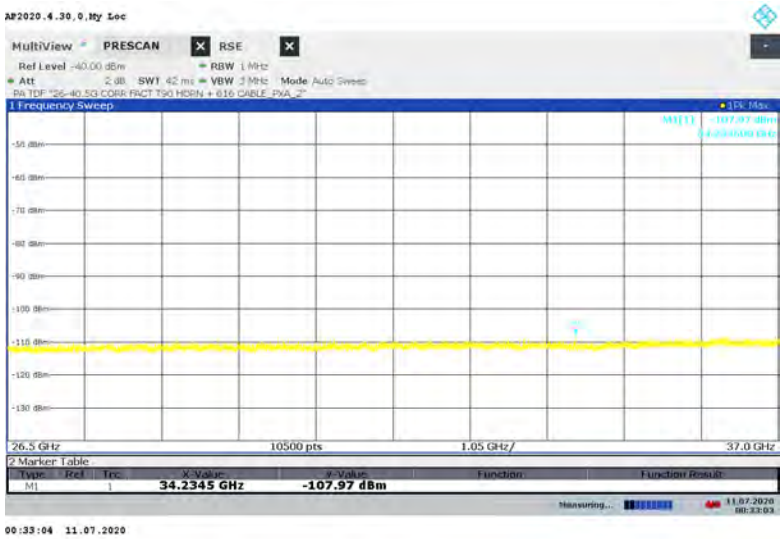
8.4.4. RADIATED EMISSIONS 26.5-40 GHz n260

Note: 37-40 GHz covered by Fundamental and BE measurements.

26.5-37 GHz – N260 ANT M1
Horizontal

26.5-37 GHz – N260 ANT M1
Vertical



No Emission using Peak Detection.

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26.5-37 GHz – N260 ANT M2
Horizontal

26.5-37 GHz – N260 ANT M2
Vertical

No Emission using Peak Detection.

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8.4.5. RADIATED EMISSIONS 40-50 GHz n260

40-45 GHz – n260 ANT M1
Horizontal

40-45 GHz – n260 ANT M1
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

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45-50 GHz – n260 ANT M1
Horizontal

45-50 GHz – n260 ANT M1
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

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40-45 GHz – n260 ANT M2
Horizontal

40-45 GHz – n260 ANT M2
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

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45-50 GHz – n260 ANT M2
Horizontal

45-50 GHz – n260 ANT M2
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

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40-50 GHz n260

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	40.49942	3	H	-122.29	-48.16	-13	-35.16
M1	40.49942	3	V	-122.7	-48.57	-13	-35.57
M1	40.102751	3	H	-126.57	-52.53	-13	-39.53
M1	40.102751	3	V	-126.19	-52.15	-13	-39.15
M1	40.256249	3	H	-118.28	-44.20	-13	-31.20
M1	40.256059	3	V	-116.44	-42.36	-13	-29.36
M2	44.08296	3	H	-120.49	-45.62	-13	-32.62
M2	44.08296	3	V	-117.27	-42.40	-13	-29.40
M2	42.02548	3	H	-139.88	-65.43	-13	-52.43
M2	42.02548	3	V	-130.73	-56.28	-13	-43.28

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8.4.6. RADIATED EMISSIONS 50-75 GHz n260

50-75 GHz – N260 ANT M1
Horizontal

50-75 GHz – – N260 ANT M1
Vertical

No Emission using Peak Detection.

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50-75 GHz – N260 ANT M2
Horizontal

50-75 GHz – N260 ANT M2
Vertical

No Emission using Peak Detection.

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8.4.7. RADIATED EMISSIONS 75-110 GHz n260

75-110 GHz – N260, ANT M1
Horizontal

75-110 GHz – N260, ANT M1
Vertical

No Emission using Peak Detection.

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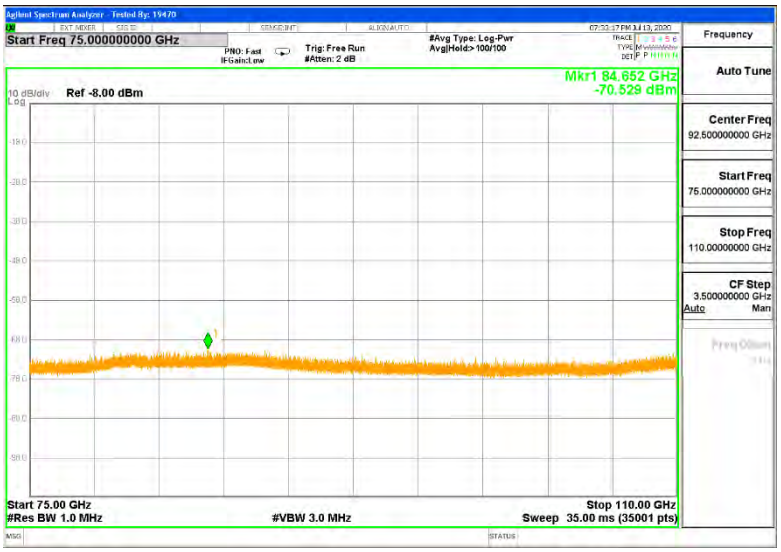
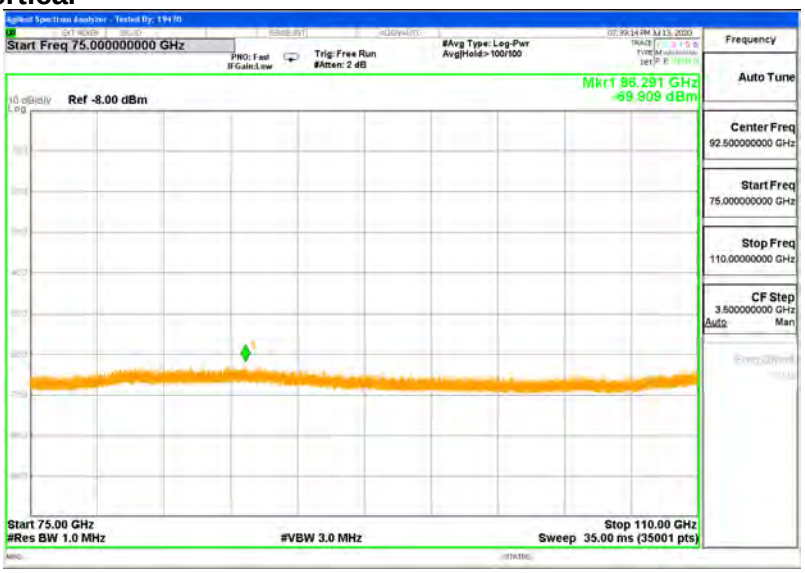
75-110 GHz – N260, ANT M2
Horizontal



75-110 GHz – N260, ANT M2
Vertical



No Emission using Peak Detection.

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8.4.8. RADIATED EMISSIONS 110-170 GHz n260

110-170 GHz – N260, ANT M1
Horizontal

110-170 GHz – N260, ANT M1
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

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110-170 GHz N260, ANT M2
Horizontal

110-170 GHz N260, ANT M2
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

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110-170 GHz n260

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	119.84687	1	H	-56.967	-27.89	-13	-14.89
M1	119.84687	1	V	-61.96	-32.88	-13	-19.88
M2	115.56526	1	H	-55.081	-26.34	-13	-13.34
M2	115.56526	1	V	-49.326	-20.58	-13	-7.58

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8.4.9. RADIATED EMISSIONS 170-200 GHz n260

170-200 GHz – N260, ANT M1
Horizontal

170-200 GHz – N260, ANT M1
Vertical

No Emission using Peak Detection.

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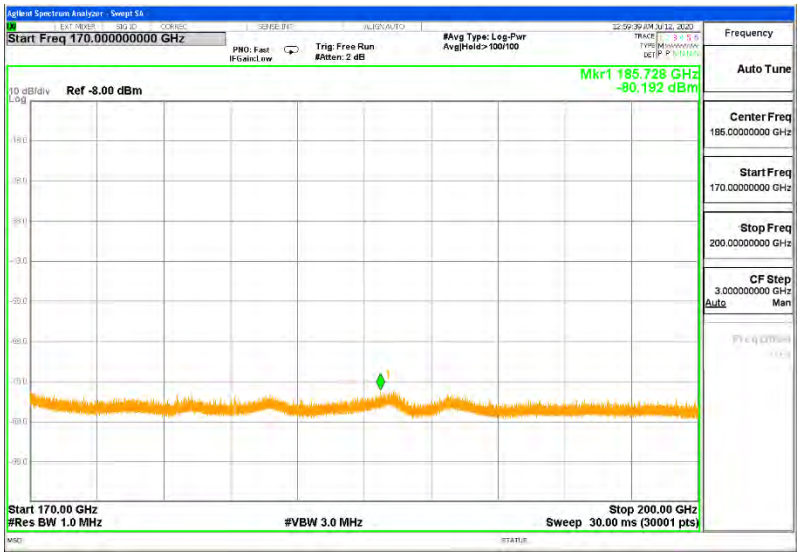
170-200 GHz – N260, ANT M2
Horizontal

170-200 GHz – N260, ANT M2
Vertical



No Emission using Peak Detection.

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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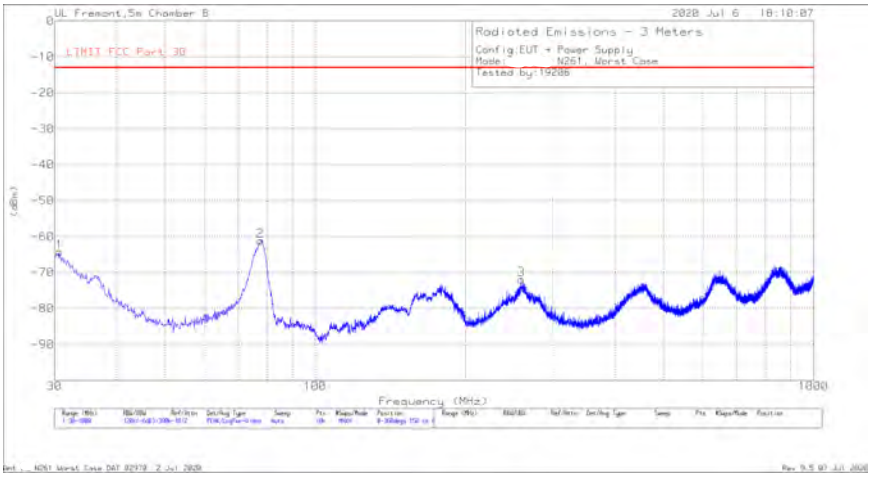
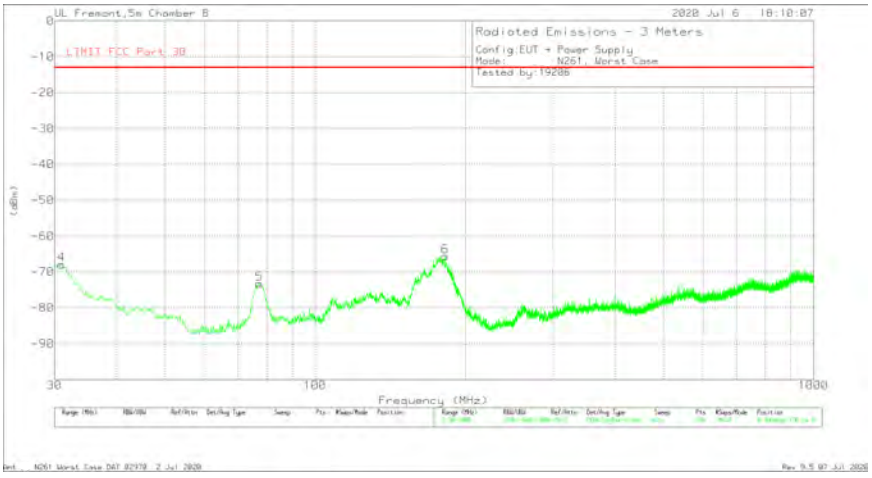
8.4.10. RADIATED EMISSIONS 30 MHz - 1 GHz n261

30MHz-1000MHz – N261, ANT M1

Horizontal



Vertical



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.679	-76.21	Pk	26.6	-31.4	16.8	-64.21	-13	-51.21	0-360	150	H
4	30.97	-68.61	Pk	26.3	-31.4	5.8	-67.91	-13	-54.91	0-360	150	V
5	77.239	-67.44	Pk	13.6	-30.9	11.4	-73.34	-13	-60.34	0-360	150	V
2	77.724	-52.31	Pk	13.6	-30.9	8.5	-61.11	-13	-48.11	0-360	150	H
6	182.387	-62.35	Pk	17	-30.2	9.9	-65.65	-13	-52.65	0-360	150	V
3	259.017	-75.77	Pk	17.8	-29.8	15.9	-71.87	-13	-58.87	0-360	150	H

Pk - Peak detector
Rev 9.5 06 Mar 2020

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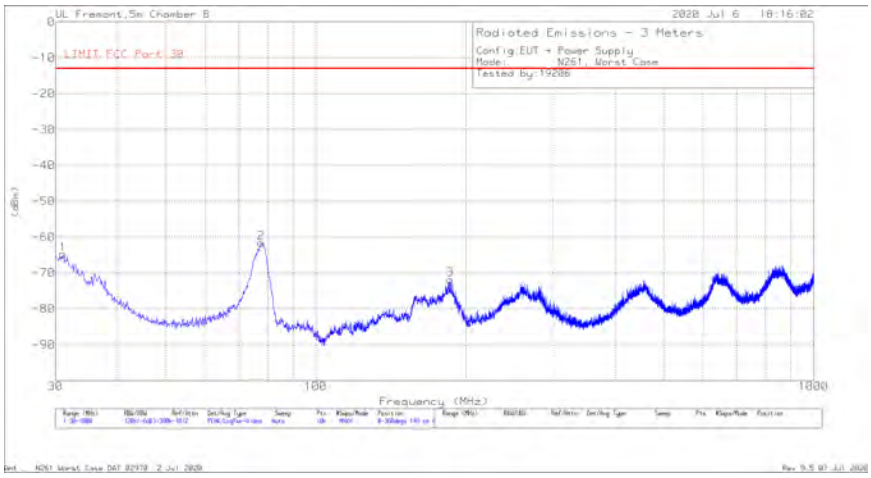
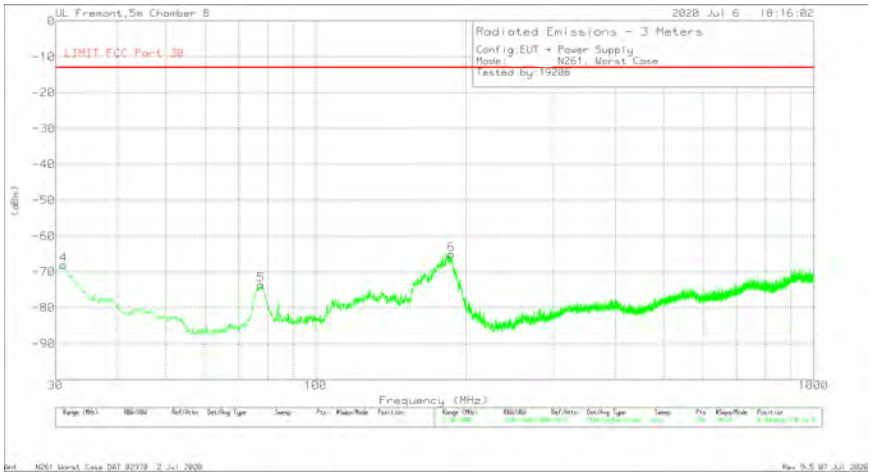
30MHz-1000MHz – N261,ANT M2

Horizontal



Vertical



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBm)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.067	-76.39	Pk	26.3	-31.4	16.7	-64.79	-13	-51.79	0-360	149	H
4	31.164	-68.56	Pk	26.2	-31.4	5.7	-68.06	-13	-55.06	0-360	150	V
5	77.53	-67.73	Pk	13.6	-30.9	11.5	-73.53	-13	-60.53	0-360	150	V
2	77.724	-52.81	Pk	13.6	-30.9	8.5	-61.61	-13	-48.61	0-360	149	H
3	185.976	-66.81	Pk	17	-30.1	8.1	-71.81	-13	-58.81	0-360	149	H
6	187.237	-61.54	Pk	17	-30.1	9.6	-65.04	-13	-52.04	0-360	150	V

Pk - Peak detector
Rev 9.5 06 Mar 2020

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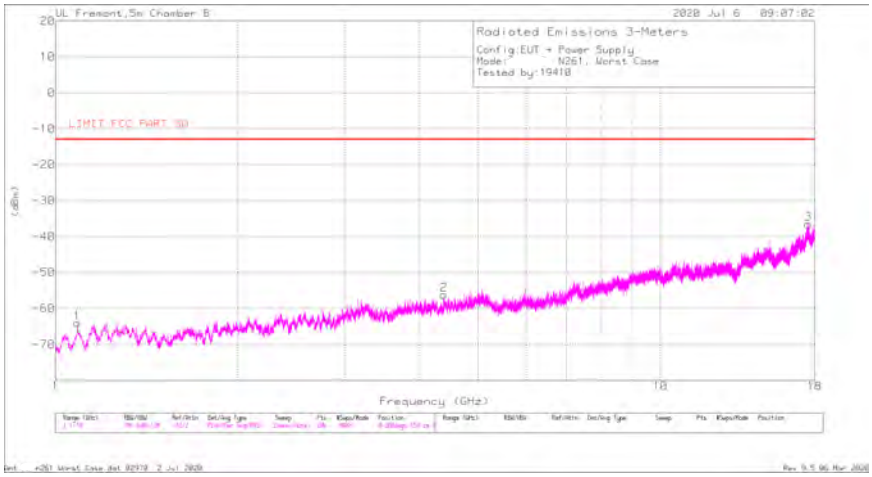
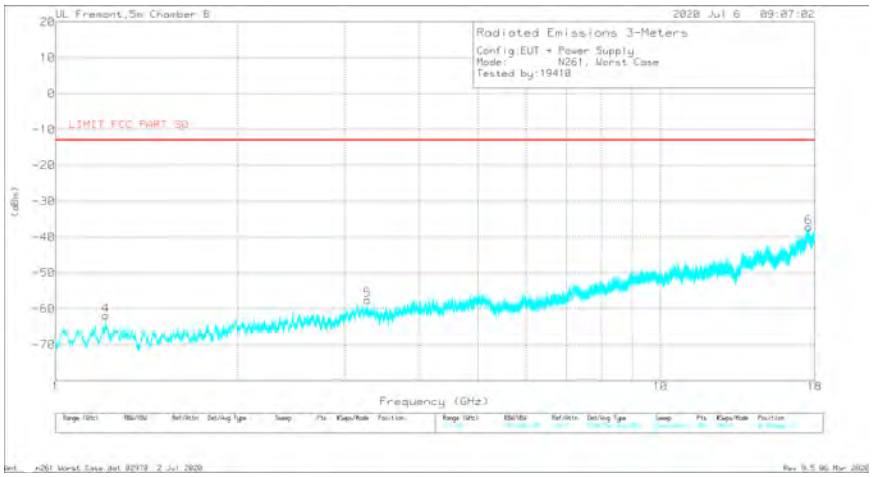
8.4.11. RADIATED EMISSIONS 1-18 GHz n261

1GHz – 18GHz – N261, ANT M1

Horizontal



Vertical



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.08585	-66.68	Pk	24.6	-31.4	9.5	-63.98	-13	-50.98	0-360	150	H
4	1.21039	-66.92	Pk	25.1	-31.1	11.1	-61.82	-13	-48.82	0-360	150	V
5	3.28067	-69.91	Pk	31.4	-28.1	9	-57.61	-13	-44.61	0-360	150	V
2	4.38317	-69.96	Pk	32	-27	8.8	-56.16	-13	-43.16	0-360	150	H
3	17.58264	-75.44	Pk	43	-15.8	11.7	-36.54	-13	-23.54	0-360	150	H
6	17.58944	-75.74	Pk	43	-16	11.5	-37.24	-13	-24.24	0-360	150	V

Pk - Peak detector
Rev 9.5 06 Mar 2020

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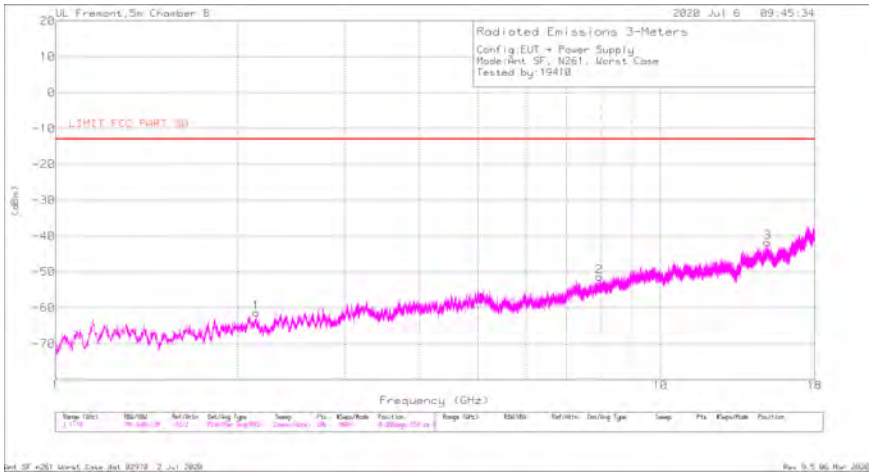
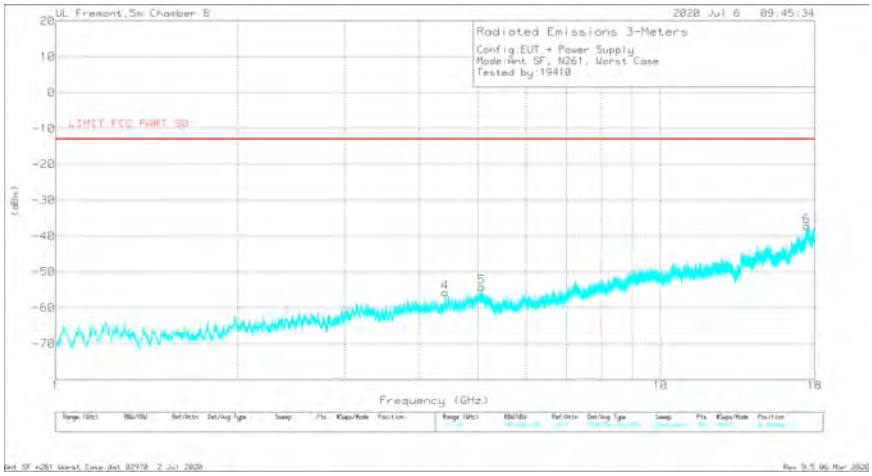
1GHz – 18GHz – N261, ANT M2

Horizontal



Vertical



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T962 (dB/m)	Amp/Cbl (dB)	Cbl (dB)	Corrected Reading (dBm)	LIMIT FCC Part 30 (dBm/MHz)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.14586	-69.55	Pk	26.9	-29.6	10.9	-61.35	-13	-48.35	0-360	150	H
4	4.40867	-70.92	Pk	32	-26.9	10.1	-55.72	-13	-42.72	0-360	150	V
5	5.06576	-70.5	Pk	33.8	-26.2	8.7	-54.2	-13	-41.2	0-360	150	V
2	7.92955	-74.21	Pk	37.2	-22.7	8.4	-51.31	-13	-38.31	0-360	150	H
3	15.04186	-73.9	Pk	42.1	-21.1	11.1	-41.8	-13	-28.8	0-360	150	H
6	17.47043	-74.79	Pk	42.8	-17.2	12	-37.19	-13	-24.19	0-360	150	V

Pk - Peak detector
Rev 9.5 06 Mar 2020

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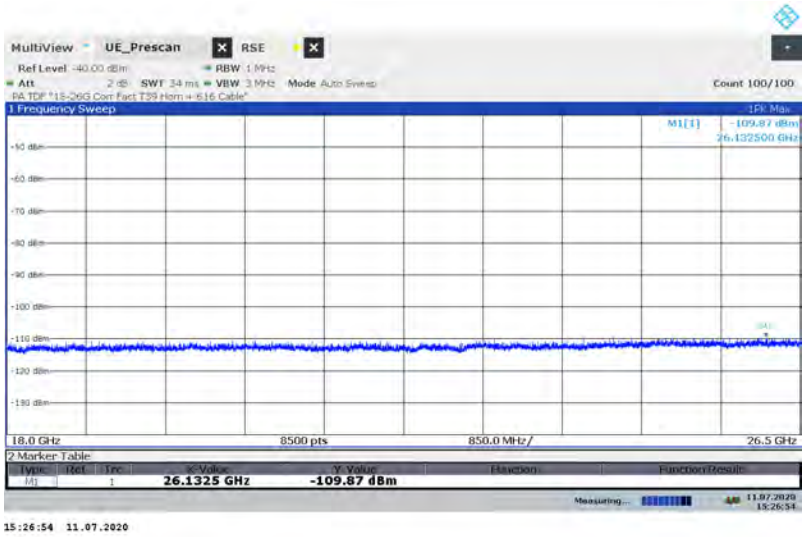
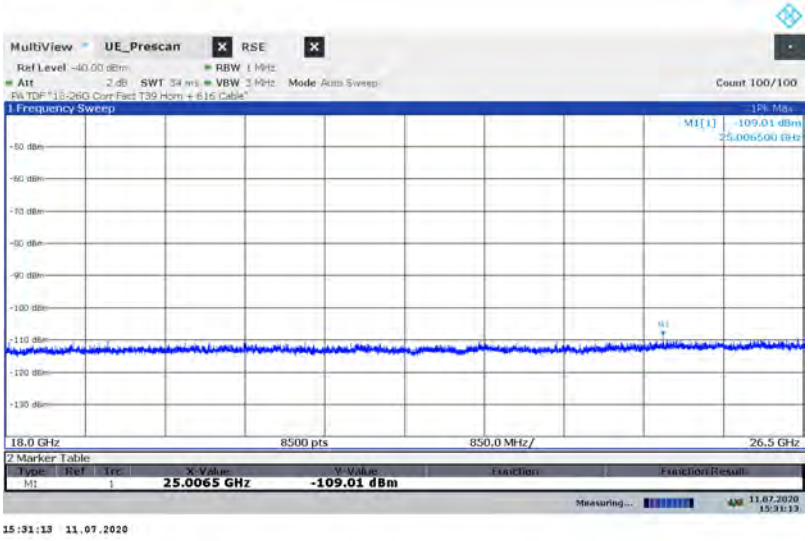
8.4.12. RADIATED EMISSIONS 18-26.5 GHz n261

18-26.5 GHz – N261, ANT M1
Horizontal



18-26.5 GHz – N261, ANT M1
Vertical



No Emission using Peak Detection.

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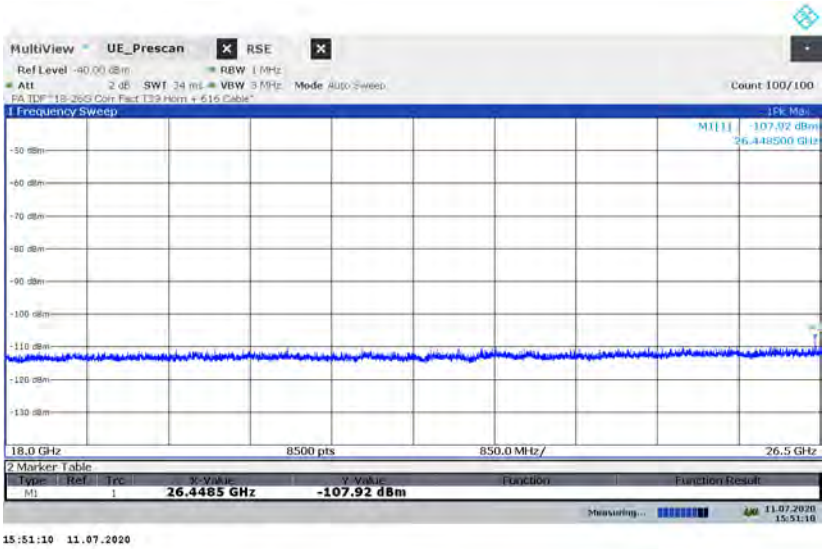
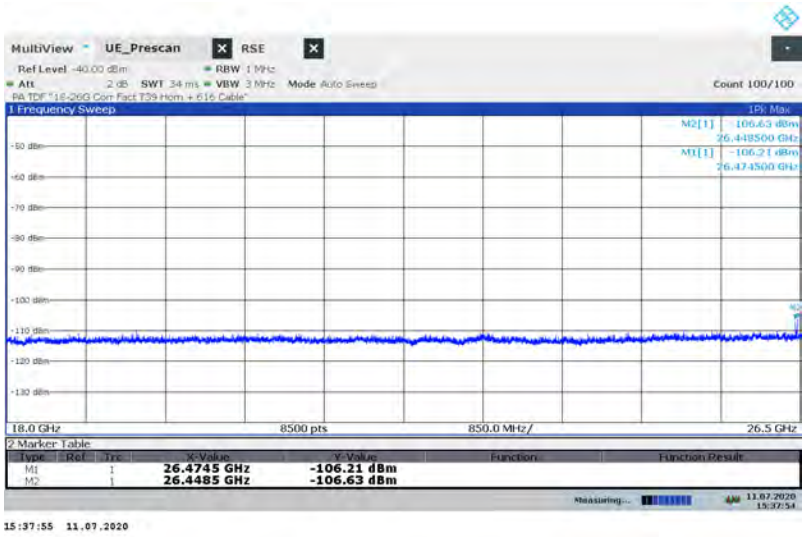
18-26.5 GHz – N261, ANT M2
Horizontal



18-26.5 GHz – N261, ANT M2
Vertical



Emission detected using Peak Detection. Avg EIRP was measured.

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18-26.5 GHz n261

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
		(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M2	26.4485	3	H	-113.34	-42.91	-13	-29.91
M2	26.47411	3	V	-113.53	-43.09	-13	-30.09
M2	26.44852	3	V	-115.36	-44.93	-13	-31.93

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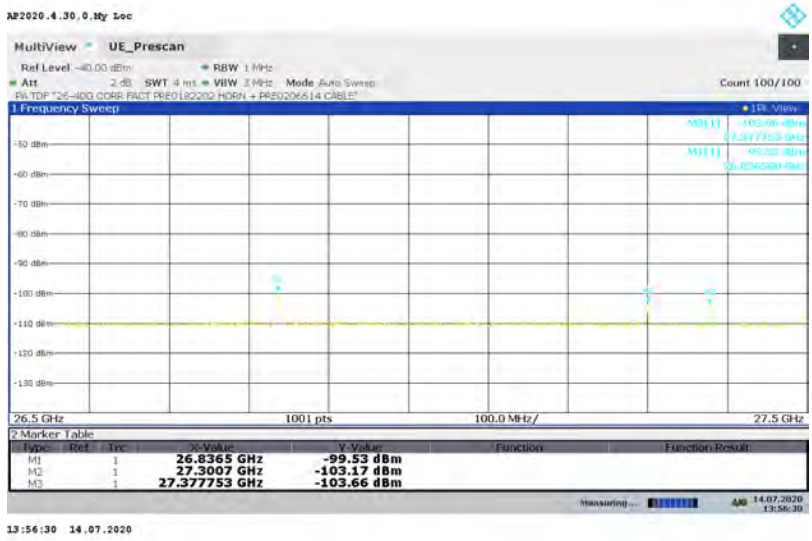
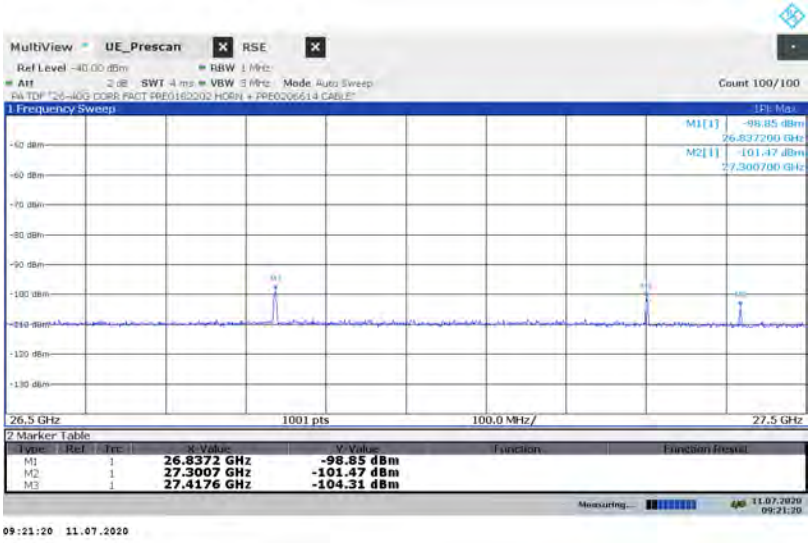
8.4.13. RADIATED EMISSIONS 26.5-27.5 GHz n261

Note: 27.5-28.35 GHz covered by Fundamental and BE measurements.

26.5-27.5 GHz – N261 ANT M1, 1CC
Horizontal



26.5-27.5 GHz – N261 ANT M1, 1CC
Vertical



Emission detected using Peak Detection. Avg EIRP was measured.

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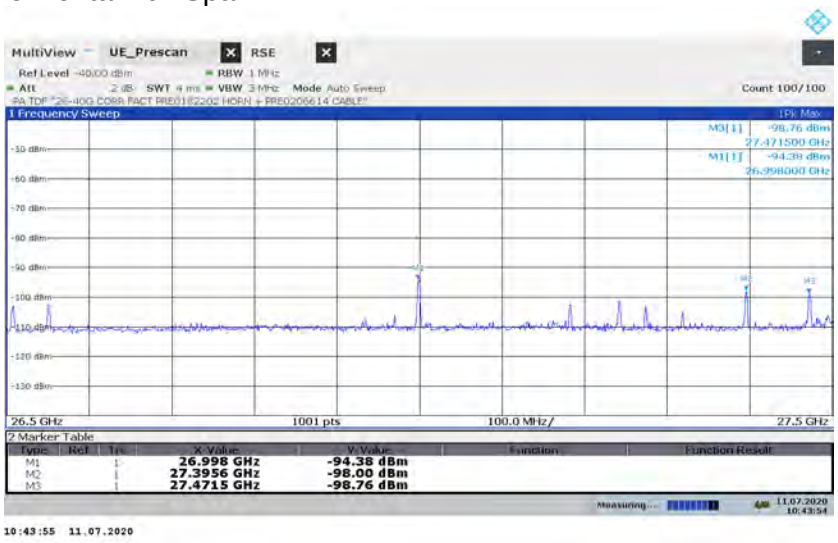
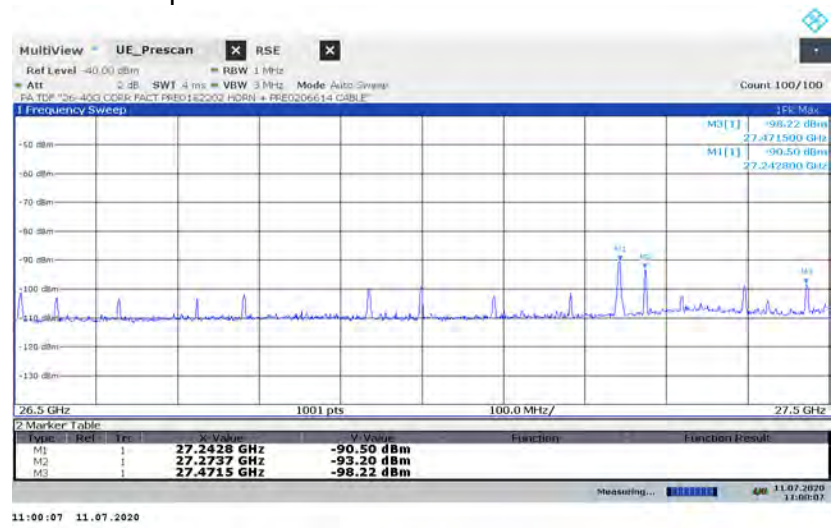
26.5-27.5 GHz – N261 ANT M2, 1CC
Horizontal Full Span



26.5-27.5 GHz – N261 ANT M2, 1CC
Vertical Full Span



Emission detected using Peak Detection. Avg EIRP was measured.

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26.5-27.5 GHz n261

EIRP RESULTS, 1CC

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
		(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	26.83616	3	H	-111.59	-41.04	-13.00	-28.04
M1	26.836291	3	V	-107.74	-37.19	-13.00	-24.19
M1	27.30049	3	H	-106.22	-35.52	-13.00	-22.52
M1	27.30054	3	V	-103.23	-32.53	-13.00	-19.53
M1	27.37741	3	H	-108.91	-38.18	-13.00	-25.18
M1	27.41744	3	V	-106.44	-35.70	-13.00	-22.70
M2	26.998829	3	H	-97.51	-26.90	-13.00	-13.90
M2	27.242031	3	V	-93.86	-23.18	-13.00	-10.18
M2	27.39549	3	H	-102.49	-31.76	-13.00	-18.76
M2	27.27399	3	V	-109.79	-39.10	-13.00	-26.10
M2	27.472419	3	H	-102.95	-32.19	-13.00	-19.19
M2	27.472539	3	V	-103.77	-33.01	-13.00	-20.01

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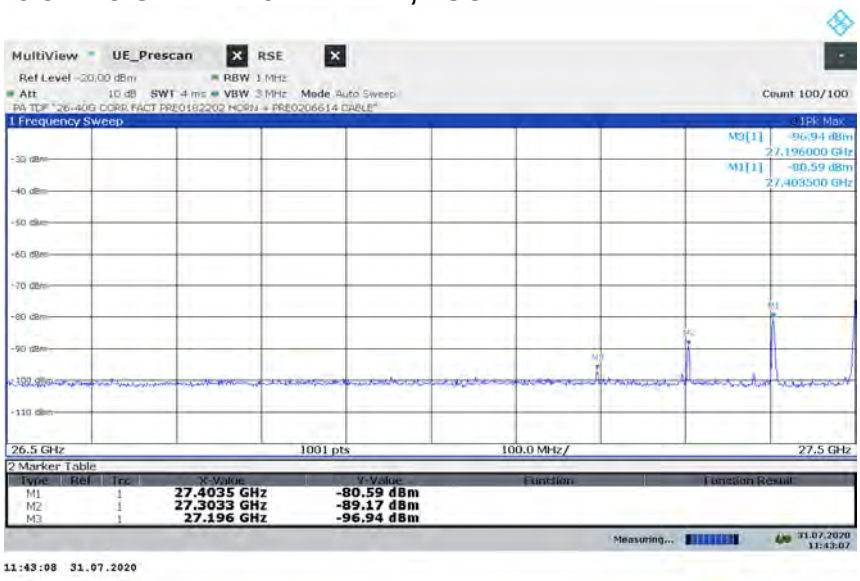
26.5-27.5 GHz – N261 ANT M1, 2CC



Emissions detected using Peak Detection. Avg EIRP was measured.

EIRP RESULTS, 2CC

Worst case configuration:
SISO-DUAL_QPSK_(100 MHz + 100 MHz)_Low CH_RB Offset 1/0 (1RB-L)

Highest emission in this band was investigated.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	27.4033	3	V	-86.68	-15.94	-13	-2.94

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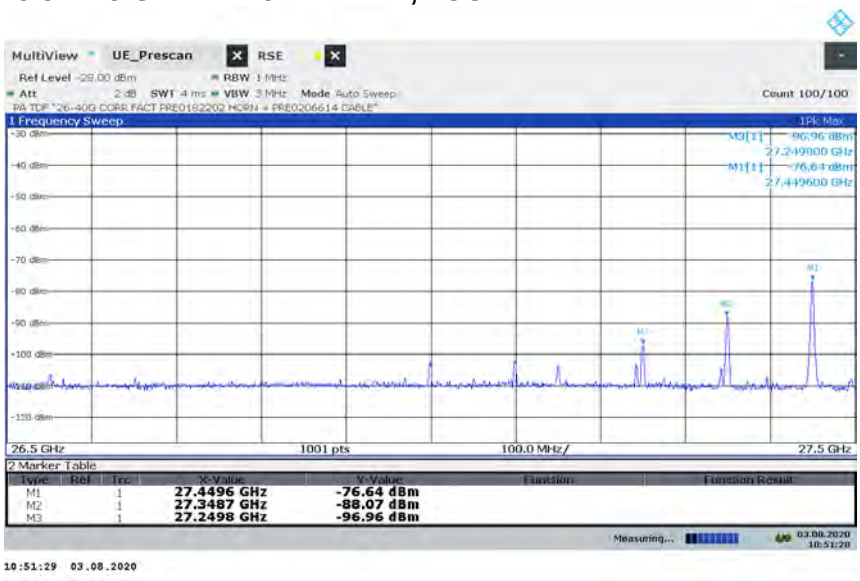
26.5-27.5 GHz – N261 ANT M2, 2CC



Emissions detected using Peak Detection. Avg EIRP and TRP were measured.

EIRP RESULTS, 2CC

Worst case configuration:
SISO-DUAL_QPSK_(100 MHz + 100 MHz)_Low CH_RB Offset 1/15 (1RB-M)

Highest emission in this band was investigated.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	Meas. TRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
M2	27.4496	3	V	-84.54	-13.79	-	-13	-0.79
M2	27.4496	3	-	-	-	-20.02	-13	-7.02

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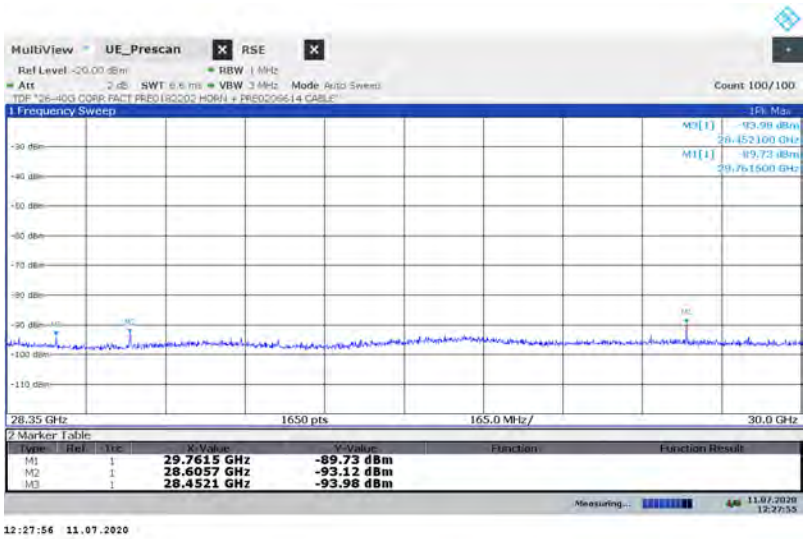
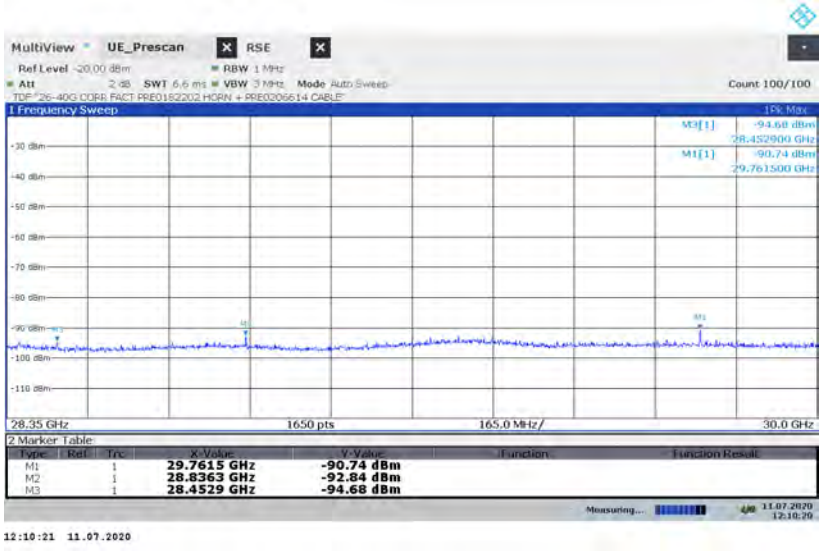
8.4.14. RADIATED EMISSIONS 28.35-30 GHz n261

Note: 27.5-28.35 GHz covered by Fundamental and BE measurements.

28.35-30 GHz – N261 ANT M1
Horizontal



28.35-30 GHz – N261 ANT M1
Vertical



Emissions detected using Peak Detection. Avg EIRP was measured.

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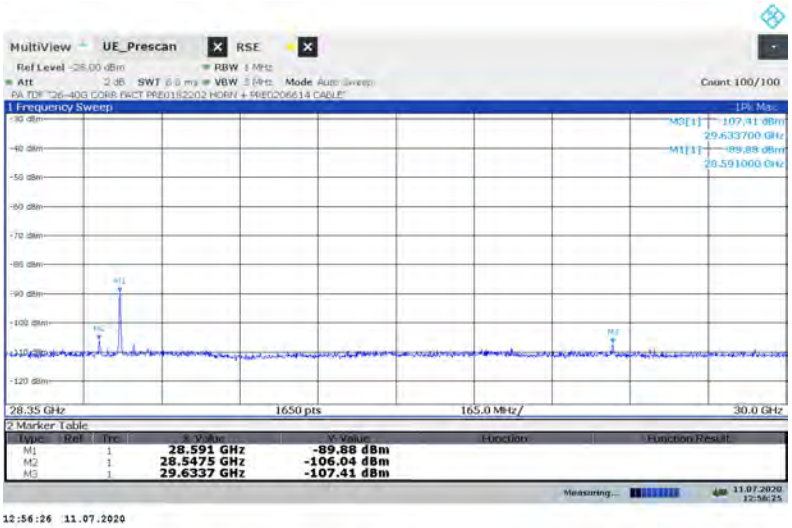
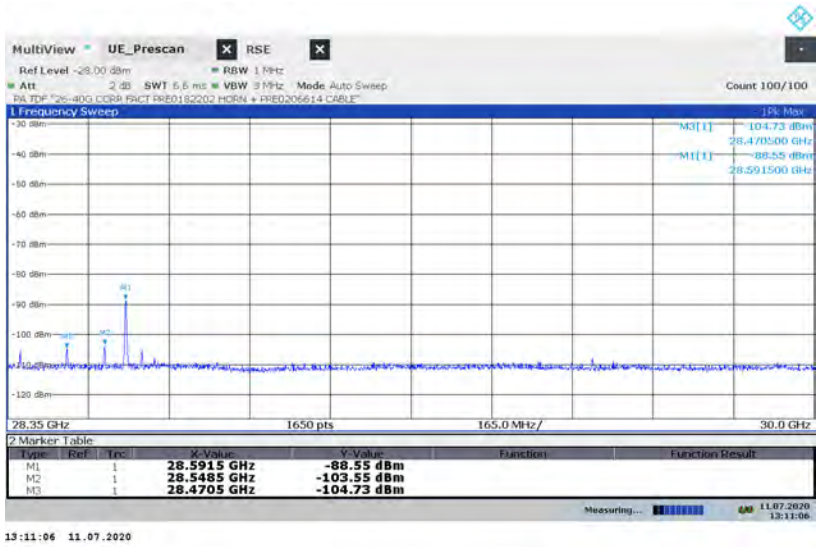
28.35-30 GHz – N261 ANT M2
Horizontal



28.35-30 GHz – N261 ANT M2
Vertical



Emissions detected using Peak Detection. Avg EIRP was measured.

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28.35-30 GHz n261

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
M1	29.7616	3	H	-92.99	-21.54	-13	-8.54
M1	29.7615	3	V	-92.29	-20.84	-13	-7.84
M1	28.6063	3	H	-100.63	-29.52	-13	-16.52
M1	28.8367	3	V	-99.01	-27.83	-13	-14.83
M1	28.4525	3	H	-101.82	-30.76	-13	-17.76
M1	28.4525	3	V	-101.56	-30.50	-13	-17.50
M2	28.5914	3	H	-93.1	-22.00	-13	-9.00
M2	28.5913	3	V	-92.8	-21.70	-13	-8.70
M2	28.5475	3	H	-114.24	-43.15	-13	-30.15
M2	28.5480	3	V	-113.44	-42.35	-13	-29.35
M2	29.6336	3	H	-118.15	-46.73	-13	-33.73
M2	28.4710	3	V	-110.51	-39.44	-13	-26.44

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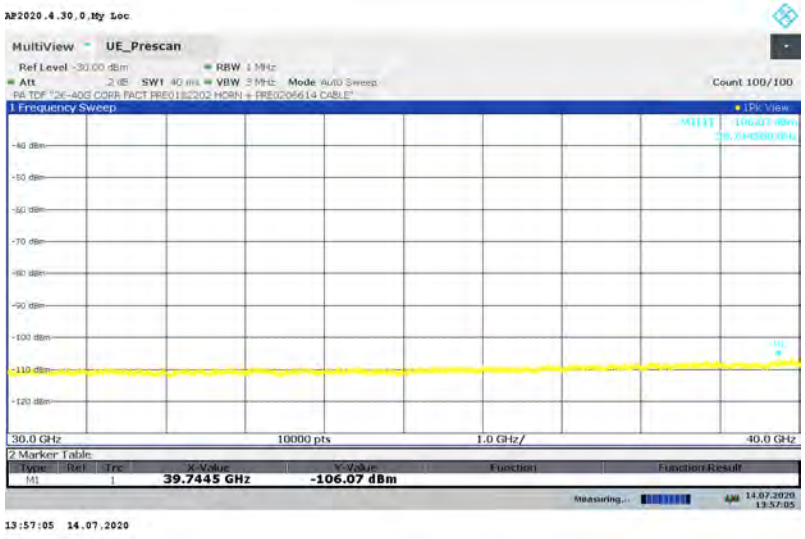
8.4.15. RADIATED EMISSIONS 30-40 GHz n261

30-40 GHz – N261 ANT M1
Horizontal Full Span



30-40 GHz – N261 ANT M1
Vertical Full Span

No Emission using Peak Detection.

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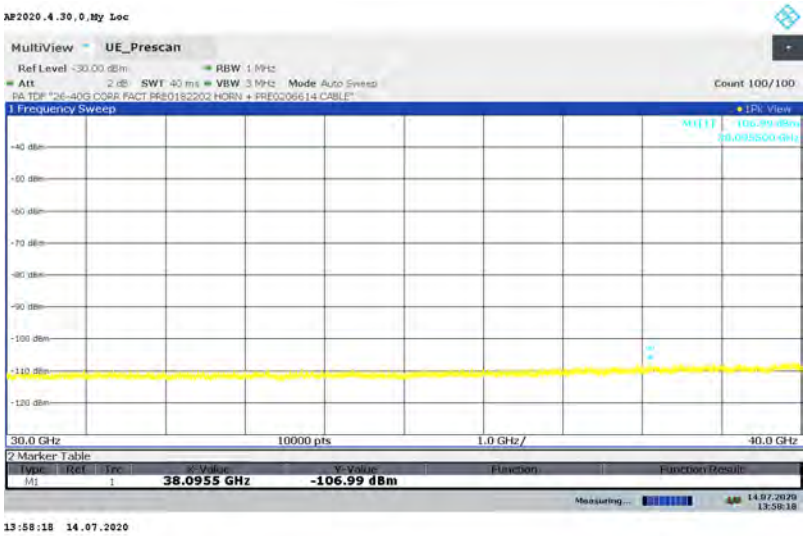
30-40 GHz – N261 ANT M2
Horizontal



30-40 GHz – N261 ANT M2
Vertical Full

No Emission using Peak Detection.

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8.4.16. RADIATED EMISSIONS 40-50 GHz n261

40-50 GHz – n261 ANT M1
Horizontal

40-50 GHz – n261 ANT M1
Vertical

No Emission using Peak Detection.

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40-50 GHz – n261 ANT M2
Horizontal

40-50 GHz – n261 ANT M2
Vertical

No Emission using Peak Detection.

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8.4.17. RADIATED EMISSIONS 50-75 GHz n261

50-75 GHz – N261 ANT M1
Horizontal

50-75 GHz – N261 ANT M1
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

50-75 GHz – N261 ANT M2
Horizontal

50-75 GHz – N261 ANT M2
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured.

UL VERIFICATION SERVICES INC FORM NO: CCSUP4701I
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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50-75 GHz n261

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	56.59773	1.5	V	-75.406	-27.29	-13	-14.29
M1	56.59779	1.5	H	-76.977	-28.86	-13	-15.86
M2	55.09826	1.5	H	-76.633	-28.65	-13	-15.65
M2	55.09804	1.5	V	-70.525	-22.54	-13	-9.54

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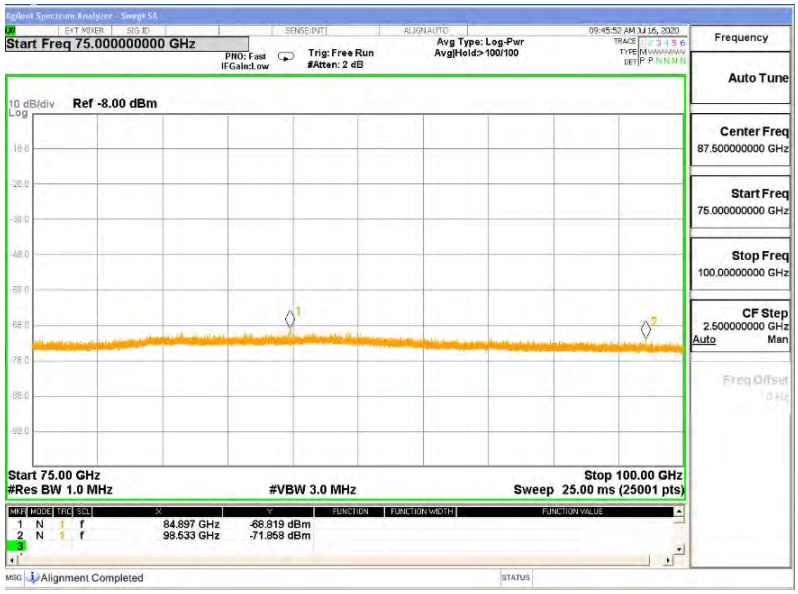
8.4.18. RADIATED EMISSIONS 75-100 GHz n261

75-100 GHz – N261, ANT M1
Horizontal



75-100 GHz – N261, ANT M1
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured

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75-100 GHz – N261, ANT M2
Vertical

75-100 GHz – N261, ANT M2
Vertical

Emissions detected using Peak Detection. Avg EIRP was measured

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75-100 GHz n261

EIRP Results

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Meas. Power	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dBm)	(dB)
M1	84.90	1	H	-74.913	-26.90	-13	-13.90
M1	84.90	1	V	-72.161	-24.15	-13	-11.15
M2	82.65	1	H	-69.165	-21.28	-13	-8.28
M2	82.65	1	V	-72.092	-24.21	-13	-11.21

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8.5. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055

LIMIT

For reporting purposes only

TEST PROCEDURES

KDB 842590 D01 Upper Microwave Flexible Use Service v01 Section 4.5
ANSI C63.26-2015 Section 5.6

Test procedures for temperature variation:

a. Position the EUT in temperature/humidity chamber with power off.
b. Set chamber temperature to -30°C and stabilize the EUT for at least 30 minutes.
c. Record maximum change in frequency within one minute after powering the EUT.
d. Increase chamber temperature at 10°C intervals from -30°C to 50°C. Record maximum change in frequency at each temperature.
e. A period of at least 30 minutes is provided to allow stabilization of the equipment at each temperature level.

- Temp. = −30°C to +50°C

Test procedures for voltage variation:

a. Position the EUT in temperature/humidity chamber with power off.
b. Set chamber temperature to 20°C.
c. Record maximum frequency change within one minute after powering the EUT.
d. The primary supply voltage is varied from 85% to 115% of the nominal value for hand-carried, battery-powered equipment. primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

- Voltage = (85% - 115%)
  Nominal: 3.8 VDC; Low: 3.23 VDC; High: 4.37 VDC.

The measurements were performed with the CW signal of the center frequency of n260 on antenna M2 and n261 bands on antenna M1, to represent Chipset 2 and Chipset 1 respectively.

RESULTS

See the following page.

TESTED BY:

Employee ID: 19459

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RESULTS

			Antenna M2 _N260	
Input Voltage	Environment	Freqency	Frequency	Delta
	Temperature (ºC)	(Hz)	(MHz)	(kHz)
Normal	50	38504758114	38504.7581140	-45.808
Normal	40	38504690028	38504.6900280	-113.894
Normal	30	38504723703	38504.7237030	-80.219
Normal	***20***	***38504803922***	38504.8039220	***Reference***
Normal	10	38505039381	38505.0393810	235.459
Normal	0	38505017246	38505.0172460	213.324
Normal	-10	38505109240	38505.1092400	305.318
Normal	-20	38505116416	38505.1164160	312.494
Normal	-30	38505101603	38505.1016030	297.681
115%	20	38504792255	38504.7922550	-11.667
85%	20	38504787692	38504.7876920	-16.230

			Antenna M1 _N261	
Input Voltage	Environment	Freqency	Frequency	Delta
	Temperature (ºC)	(Hz)	(MHz)	(kHz)
Normal	50	27929998360	27929.9983600	118.384
Normal	40	27929821899	27929.8218990	-58.077
Normal	30	27929832336	27929.8323360	-47.640
Normal	***20***	***27929879976***	27929.8799760	***Reference***
Normal	10	27929948231	27929.9482310	68.255
Normal	0	27930056771	27930.0567710	176.795
Normal	-10	27930109930	27930.1099300	229.954
Normal	-20	27930151809	27930.1518090	271.833
Normal	-30	27930157330	27930.1573300	277.354
115%	20	27929848684	27929.8486840	-31.292
85%	20	27929858728	27929.8587280	-21.248

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9. SETUP PHOTOS

Please refer to 13179116-EP20V1 for setup photos.

END OF REPORT

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APPENDIX A

1. 50-80 GHz Keysight M1970V

KEYSIGHT TECHNOLOGIES

Keysight Technologies Malaysia Sdn Bhd (463532-M)
Bayan Lepas Free Industrial Zone
11900 Penang, Malaysia
Keysight Approved Calibration provider #71456

5962-0476

Certificate Of Calibration

Certificate No: M1970VMY51390830201908 20

Manufacturer: Keysight Technologies
Model No: M1970V
Options Installed With Specifications: 002

Description: Waveguide Harmonic Mixer
Serial No: MY51390830

Customer Asset:
Customer:
UL LLC
47173 Benicia St
FREMONT CA 94538-7366
UNITED STATES

Location of Calibration:
Plot 44, Bayan Lepas Industrial Park IV
11900 Penang
Malaysia

Date of Calibration: 20-AUG-2019
Temperature: (23 ± 3)°C
Procedure: MTA-T0264

Received Date: 20-AUG-2019
Humidity: (20 to 70) % RH

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures in compliance with a quality management system registered to ISO 9001:2015.

As Received Conditions: Initial testing found the equipment to be IN SPECIFICATION at the points tested.

Action Taken: No corrective actions were necessary.

As Shipped Conditions: At the completion of calibration, measured values were IN SPECIFICATION at the parameters tested.

Remarks or special requirements:

Notes:
1. This calibration report may refer to equipment manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies, Inc.
2. The test limits stated in the calibration report correspond to the published specifications of the equipment, at the points tested.
3. The documented test results relate to the equipment tested only.
4. This calibration report shall not be reproduced, except in full.

Traceability Information: Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.

Keysight Provider #71456

	DD	MM	YY	BY
CAL	20	08	19	MP
DUE				

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Page 1 of 2

KEYSIGHT TECHNOLOGIES

Keysight Technologies Malaysia Sdn Bhd (463532-M)
Bayan Lepas Free Industrial Zone
11900 Penang, Malaysia
Keysight Approved Calibration provider #71456

5962-0476

Certificate Of Calibration

Certificate No: M1970VMY51390830201908 20

Calibration Equipment Used:

Model Number	Model Description	*Date used: Date equipment used in this Calibration* Equipment ID	Used Date	Cal Due Date
N9030A	PXA Signal Analyzer	SC7366	20-AUG-2019	24-DEC-2019
E8257D	Signal Source	SC7574	20-AUG-2019	18-JUN-2020
E4419B	EPM Series Power Meter	SC7603	20-AUG-2019	02-OCT-2019
E8257D	Signal Source	SC7612	20-AUG-2019	26-MAR-2020
N5484A	Power Sensor	SA7754	20-AUG-2019	18-JUL-2020
N5484A	Power Sensor	SC7596	20-AUG-2019	12-SEP-2019

Print Date: 20 Aug 2019

Khairul Razmi Bin Zayzan
Quality Manager
Keysight Calibration Provider #71456

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Page 2 of 2

Equipment used before Calibration due date.

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2. 75-110 GHz Keysight M1970W

KEYSIGHT TECHNOLOGIES

Keysight Technologies Malaysia Sdn Bhd (463532-M)
Bayan Lepas Free Industrial Zone
11900 Penang, Malaysia
Keysight Approved Calibration provider #71456

5962-0476

Certificate Of Calibration

Certificate No: M1970WMY5143078420190820

Manufacturer: Keysight Technologies
Model No: M1970W
Options Installed With Specifications: N/A

Description: Waveguide Harmonic Mixer
Serial No: MY51430784

Customer Asset:
Customer:
UL LLC
47173 Benicia St
FREMONT CA 94538-7366
UNITED STATES

Location of Calibration:
Plot 44, Bayan Lepas Industrial Park IV
11900 Penang
Malaysia

Date of Calibration: 20-AUG-2019
Temperature: (23 ± 3)°C
Procedure: MTA-T0264

Received Date: 20-AUG-2019
Humidity: (20 to 70) % RH

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures in compliance with a quality management system registered to ISO 9001:2015.

As Received Conditions: Initial testing found the equipment to be IN SPECIFICATION at the points tested.

Action Taken: No corrective actions were necessary.

As Shipped Conditions: At the completion of calibration, measured values were IN SPECIFICATION at the parameters tested.

Remarks or special requirements:

Notes:
1. This calibration report may refer to equipment manufactured by HP, Agilent and Keysight as being manufactured by Keysight Technologies, Inc.
2. The test limits stated in the calibration report correspond to the published specifications of the equipment, at the points tested.
3. The documented test results relate to the equipment tested only.
4. This calibration report shall not be reproduced, except in full.

Traceability Information: Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.

Keysight Provider #71456

	DD	MM	YY	BY
CAL	20	08	19	HP
DOC				

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Page 1 of 2

KEYSIGHT TECHNOLOGIES

Keysight Technologies Malaysia Sdn Bhd (463532-M)
Bayan Lepas Free Industrial Zone
11900 Penang, Malaysia
Keysight Approved Calibration provider #71456

5962-0476

Certificate Of Calibration

Certificate No: M1970WMY5143078420190820

Calibration Equipment Used:

Model Number	Model Description	Equipment ID	Used Date	Cal Due Date
N9030A	PXA Signal Analyzer	PD7969	20-AUG-2019	26-DEC-2019
E8257D	Signal Source	PC7874	20-AUG-2019	18-JUN-2020
E4419B	EPM Series Power Meter	PD7600	20-AUG-2019	02-OCT-2019
E8257D	Signal Source	PD7613	20-AUG-2019	26-MAR-2020
W8486A	Power Sensor	PC7596	20-AUG-2019	12-SEP-2019

Date used: Date equipment used in this Calibration

Print Date: 21 Aug 2019

Khairul Razmi Bin Zayzan
Quality Manager
Keysight Calibration Provider #71456

cert form rev k

Page 2 of 2

Equipment used before Calibration due date.

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47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888
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3. 110-170 GHz VDI WR6.5SAX

Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: UL LLC
47173 Benicia Street
Fremont, CA 94538
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 201155 **Today's Date:** 04/07/20
Shipping Date: 04/07/20 **PO Number:** 7862016203

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR6.5SAX WR6.5SAX / SN: SAX 624	20075D-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature
Virginia Diodes, Inc

Page 1 of 1

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4. 170-260 GHz VDI WR4.3SAX

Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902
Phone: 434-297-3257
Fax: 434-297-3258

Certificate of Conformance

To: UL LLC
47173 Benicia Street
Fremont, CA 94538
United States

From: Virginia Diodes, Inc
979 2nd St. SE
Suite 309
Charlottesville, VA 22902

Packing List No: 201728 **Today's Date:** 05/28/20
Shipping Date: 05/22/20 **PO Number:** 7862016682

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	VDIWR4.3SAX WR15SAX / SN: SAX 651	20141E-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature
Virginia Diodes, Inc

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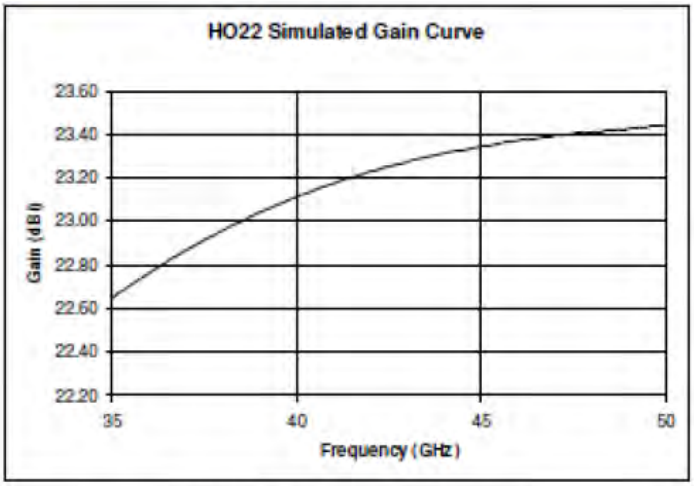
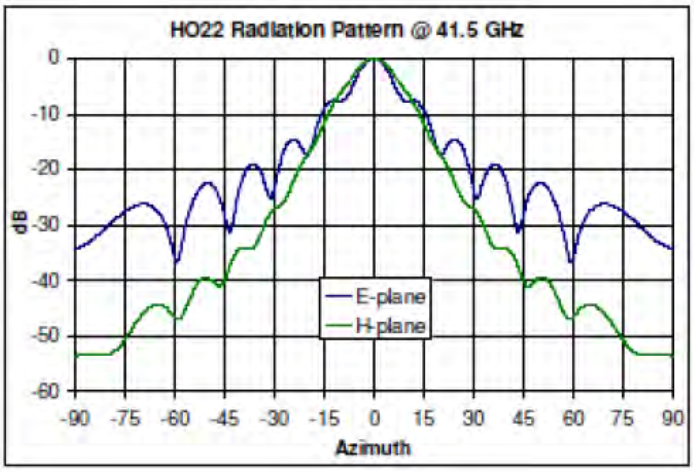
5. 35-50 GHz CMI HO22R HORN ANTENNA





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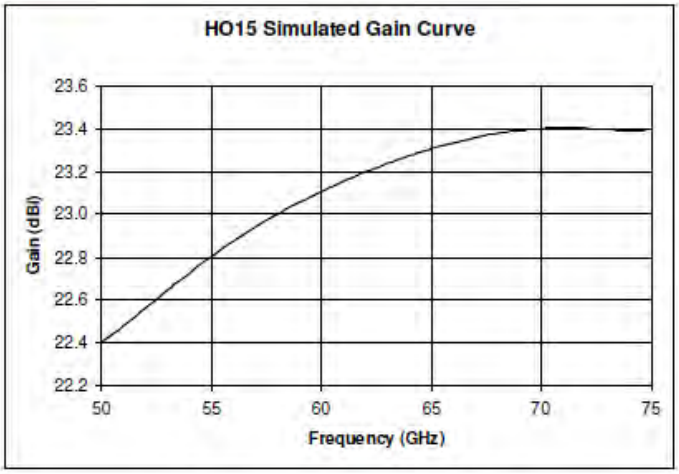
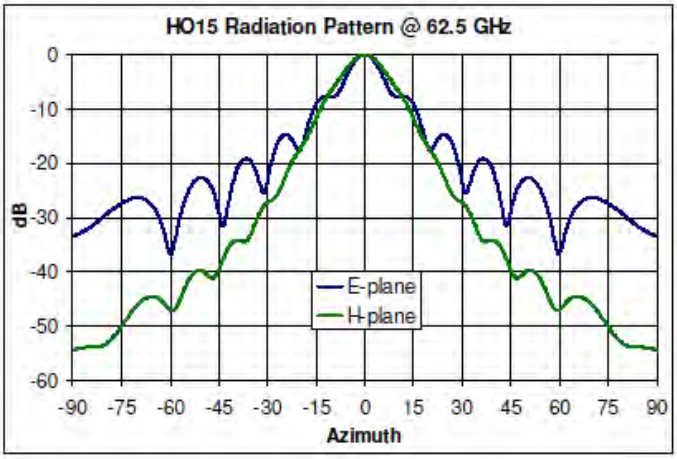
6. 50-75 GHz CMI HO15R HORN ANTENNA

custom microwave inc.
24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com





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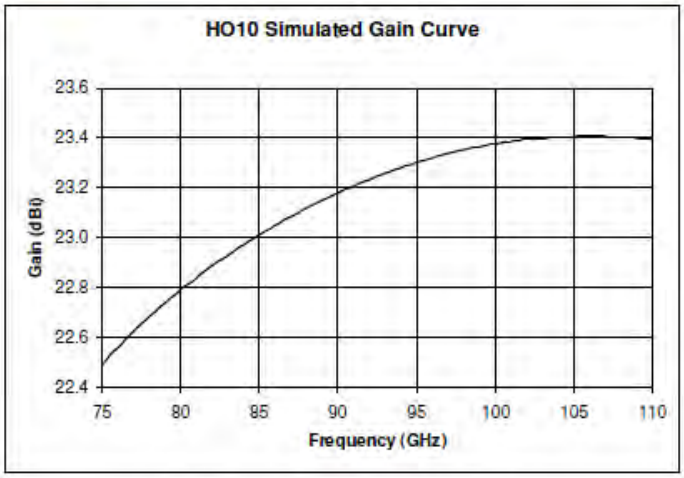
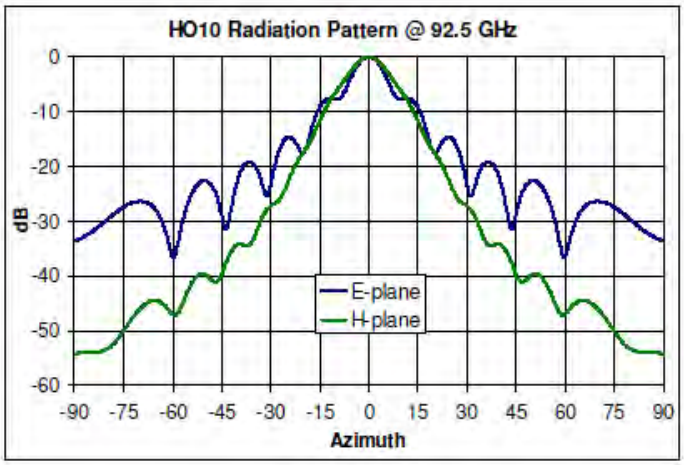
7. 75-110 GHz CMI HO10R HORN ANTENNA

custom microwave inc.
24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com





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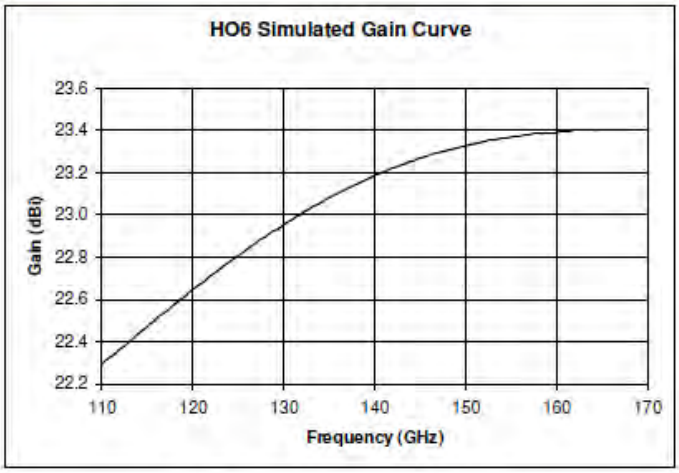
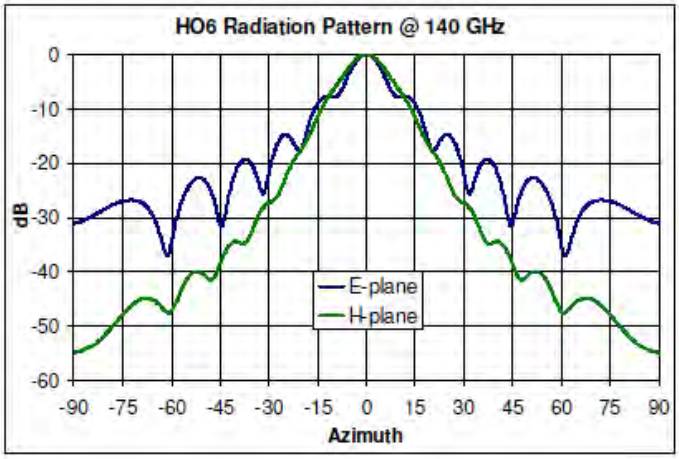
8. 110-170 GHz CMI HO6R HORN ANTENNA

custom microwave inc.
24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com





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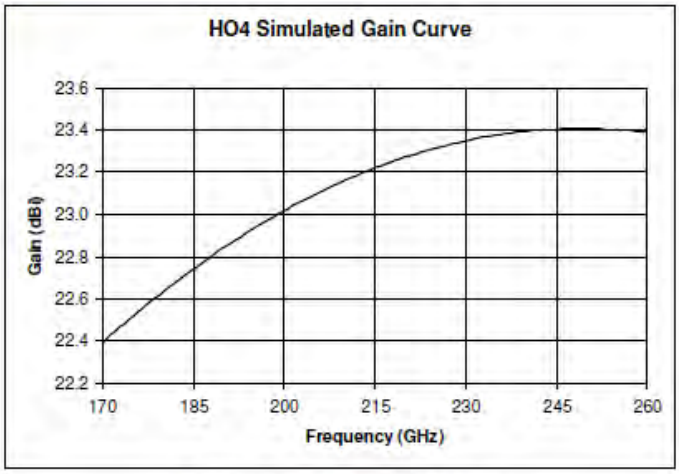
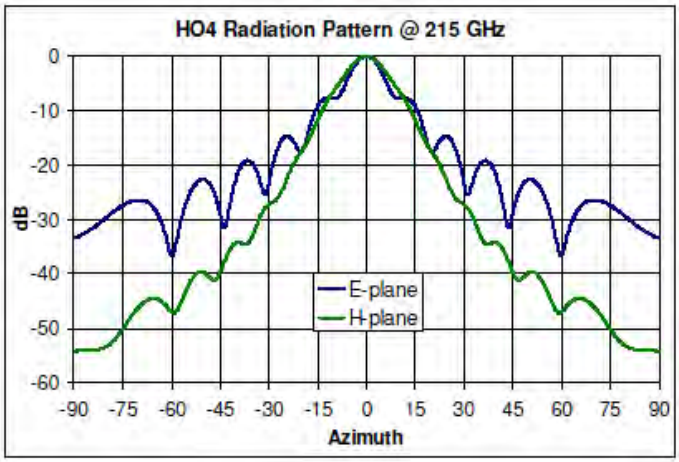
9. 170-260 GHz CMI HO4R HORN ANTENNA

custom microwave inc.
24 Boston Court
Longmont, CO 80501
303 651-0707(P)
303 651-0706(F)
www.custommicrowave.com





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