TEST REPORT

Reference No......	:	WTX24X11256034W003
FCC ID.....	:	2BOTS-UA60
Applicant.....	:	Runione Tech Co., Ltd
Address.....	:	Building D, 3rd Floor, No.599 Gaojing Road,Qingpu District, Shanghai, China
Manufacturer.....	:	The same as Applicant
Address.....	:	The same as Applicant
Product Name.....	:	Rugged handheld
Model No......	:	UA60
Standards.....	:	FCC Part 22, FCC Part 24, FCC Part 27
Date of Receipt sample.....	:	2024-11-04
Date of Test.....	:	2024-11-04 to 2025-03-30; 2025-04-05 to 2025-04-08
Date of Issue.....	:	2025-04-09
Test Report Form No......	:	WTX_Part 22_Part 27W
Test Result.....	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:
Waltek Testing Group (Shenzhen) Co., Ltd.
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Tested by:

Mike Shi/Project Engineer

Approved by:

Jason Su/Manager

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Report version

Version No.	Date of issue	Description
Rev.00	2025-04-09	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT:	
Product Name:	Rugged handheld
Trade Name:	/
Model No.:	UA60
Adding Model(s):	/
Rated Voltage:	DC3.8V
Battery:	8000mAh
Adapter Model:	/
The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT:	
5G	
Support Networks:	5G NR
Support Band:	n2, n5, n41, n66, n71, n77, n78
EN-DC Mode	DC_2A_n41A, DC_12A_n77A, DC_5A_n78A,
Uplink Frequency:	5G NR n2: 1850-1910MHz 5G NR n5: 824-849MHz, 5G NR n41: 2496-2690MHz, 5G NR n66: 1710-1780MHz, 5G NR n71: 663-698MHz 5G NR n77: 3450-3550MHz 5G NR n77: 3700-3980MHz 5G NR n78: 3450-3550MHz 5G NR n78: 3700-3800MHz
Downlink Frequency:	5G NR n2: 1930-1990MHz 5G NR n5: 869-894MHz, 5G NR n41: 2496-2690MHz, 5G NR n66: 2110-2200MHz, 5G NR n71: 617-622MHz 5G NR n77: 3450-3550MHz 5G NR n77: 3700-3980MHz 5G NR n78: 3450-3550MHz 5G NR n78: 3700-3800MHz
RF Output Power:	5G NR n2: 23.11dBm, 5G NR n5: 22.85dBm, 5G NR n41: 25.92dBm 5G NR n66: 23.60dBm 5G NR n71: 22.91dBm 5G NR n77(3450-3550MHz): 25.66dBm 5G NR n77(3700-3980MHz): 25.56dBm 5G NR n78(3450-3550MHz): 25.53dBm 5G NR n78(3700-3800MHz): 25.92dBm DC_2A_n41A: 25.02dBm DC_12A_n77A(3450-3550MHz): 24.81dBm DC_12A_n77A(3700-3980MHz): 24.99dBm DC_5A_n78(3450-3550MHz): 25.26dBm DC_5A_n78A(3700-3800MHz): 26.03dBm
Type of Emission:	5G NR n2: 17M9G7D, 17M9W7D 5G NR n5: 17M9G7D, 17M9W7D 5G NR n41: 96M7G7D, 96M7W7D 5G NR n66: 28M6G7D, 26M6W7D 5G NR n71: 17M9G7D, 17M8W7D

	5G NR n77(3450-3550MHz): 96M6G7D, 96M3W7D 5G NR n77(3700-3980MHz): 96M6G7D, 96M6W7D 5G NR n78(3450-3550MHz): 96M5G7D, 96M5W7D 5G NR n78(3700-3980MHz): 96M5G7D, 96M2W7D DC_2A_n41A: 96M8G7D, 96M7W7D DC_12A_n77A(3450-3550MHz): 96M6G7D, 96M2W7D DC_12A_n77A(3700-3980MHz): 96M3G7D, 96M6W7D DC_5A_n78(3450-3550MHz): 96M2G7D, 96M3W7D DC_5A_n78A(3700-3800MHz): 96M4G7D, 96M5W7D
Type of Modulation:	DFT-s-OFDM: PI/2 BPSK QPSK / 16QAM / 64QAM / 256QAM CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM
Antenna Type:	FPC Antenna
Antenna Gain:	5G NR n2: 1.05dBi 5G NR n5: 0.33dBi 5G NR n41: 1.44dBi 5G NR n66:1.18dBi 5G NR n71:0.12dBi 5G NR n77:1.61dBi 5G NR n78: 1.61dBi
Note The Antenna Gain is provided by the customer and can affect the validity of results.	

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 2: Frequency Alloca-Tions and Radio Treaty Mat-Ters; General Rules and Reg-Ulations.
FCC Rules Part 22: Private Land Mobile Radio Services.
FCC Rules Part 24: Public Mobile Services.
FCC Rules Part 27: Miscellaneous Wireless Communications Services.
TIA/EIA 603 E March 2016: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.
KDB 971168 D01 Power Meas License Digital Systems v03r01: Measurement Guidance for Certification of Licensed Digital Transmitters.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with TIA/EIA 603 E/ KDB 971168/ ANSI C63.26
The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

Address of the test laboratory
Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.
Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990
Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is mai ntained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A
The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A and the CAB identifier is CN0057.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	5G SA N2	Low, Middle, High Channels
TM2	5G SA N5	Low, Middle, High Channels
TM3	5G SA N41	Low, Middle, High Channels
TM4	5G SA N66	Low, Middle, High Channels
TM5	5G SA N71	Low, Middle, High Channels
TM6	5G SA N77-3450-3550	Low, Middle, High Channels
TM7	5G SA N77-3700-3980	Low, Middle, High Channels
TM8	5G SA N78-3450-3550	Low, Middle, High Channels
TM9	5G SA N78-3700-3800	Low, Middle, High Channels
TM10	5G NSA DC_2A_n41A	Low, Middle, High Channels
TM11	5G NSA DC_5A_n78A-3450-3550	Low, Middle, High Channels
TM12	5G NSA DC_5A_n78A-3700-3800	Low, Middle, High Channels
TM13	5G NSA DC_12A_n77A-3450-3550	Low, Middle, High Channels
TM14	5G NSA DC_12A_n77A-3700-3980	Low, Middle, High Channels

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~75 %
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Type-C Cable	1.0	Shielded	With Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Computer	Lenovo	L13 Yoga	/
Adapter	/	MDY-08-EH	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	0.57dB
Occupied Bandwidth	Conducted	0.015MHz
Frequency Stability	Conducted	2.3%
Transmitter Spurious Emissions	Conducted	0.42dB
Transmitter Spurious Emissions	Radiated	30-200MHz, 4.52dB
		0.2-1GHz 5.56dB
		1-6GHz, 3.84dB
		6-18GHz, 3.92dB

1.7 Test Equipment List and Details

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1041A 1001	Communication Tester	Rohde & Schwarz	CMW500	148650	2024-02-24	2025-02-23
WTXE1022A 1002	GSM Tester	Rohde & Schwarz	CMU200	114403	2024-02-27	2025-02-26
WTXE1091A 1001	UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY57450525	2024-02-27	2025-02-26
WTXE1005A 1005	Spectrum Analyzer	Agilent	N9020A	US47140102	2024-03-19	2025-03-18
WTXE1084A 1001	Spectrum Analyzer	Agilent	N9020A	MY54320548	2024-02-24	2025-02-23
WTXE1044A 1001	Signal Generator	Agilent	83752A	3610A01453	2024-02-24	2025-02-23
WTXE1045A 1001	Vector Signal Generator	Agilent	N5182A	MY47070202	2024-02-24	2025-02-23
WTXE1018A 1001	Power Divider	Weinschel	1506A	PM204	2024-02-29	2025-02-28
WTXE1088A 1001-2	EXA Signal Analyzer	KEYSIGHT	N9010B	MY59070494	2024-02-24	2025-02-23
WTXE1092A 1001-2	Band Reject Filter Group	Tonscend	JS0806-F	2018060319	2024-03-23	2025-03-22
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2024-02-24	2025-02-23
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2024-07-03	2025-01-03
					2025-01-03	2025-07-02
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2024-02-24	2025-02-23
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2024-03-19	2025-03-18
WTXE1007A 1001	Amplifier	HP	8447F	2805A03475	2024-02-24	2025-02-23
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2024-02-24	2025-02-23
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14

1032-2						
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2024-02-24	2025-02-23
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2024-03-19	2025-03-18
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	2002	2024-02-27	2025-02-26
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2024-02-26	2025-02-25
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2024-02-27	2025-02-26
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A10457	2024-02-24	2025-02-23
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2024-02-24	2025-02-23
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2024-07-03	2025-07-02
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1010A	Trilog	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17

1013-1	Broadband Antenna					
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2024-02-24	2025-02-23
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
☒ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2024-02-27	2025-02-26
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1041A 1001	Communication Tester	Rohde & Schwarz	CMW500	148650	2025-02-23	2026-02-22
WTXE1022A 1002	GSM Tester	Rohde & Schwarz	CMU200	114403	2025-02-23	2026-02-22
WTXE1091A 1001	UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY574505 25	2025-02-23	2026-02-22
WTXE1005A 1005	Spectrum Analyzer	Agilent	N9020A	US471401 02	2025-02-23	2026-02-22
WTXE1084A 1001	Spectrum Analyzer	Agilent	N9020A	MY543205 48	2025-02-23	2026-02-22
WTXE1044A 1001	Signal Generator	Agilent	83752A	3610A014 53	2025-02-23	2026-02-22
WTXE1045A 1001	Vector Signal Generator	Agilent	N5182A	MY470702 02	2025-02-23	2026-02-22
WTXE1018A 1001	Power Divider	Weinschel	1506A	PM204	2025-02-23	2026-02-22
WTXE1088A 1001-2	EXA Signal Analyzer	KEYSIGHT	N9010B	MY590704 94	2025-02-23	2026-02-22
WTXE1092A 1001-2	Band Reject Filter Group	Tonscend	JS0806-F	20180603 19	2025-02-23	2026-02-22
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2025-02-23	2026-02-22
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2025-02-23	2026-02-22
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1007A 1001	Amplifier	HP	8447F	2805A034 75	2025-02-23	2026-02-22
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2025-02-23	2026-02-22
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22

1032-2						
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	2002	2025-02-23	2026-02-22
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2025-02-23	2026-02-22
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2025-02-23	2026-02-22
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A10457	2025-02-23	2026-02-22
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2025-02-23	2026-02-22
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2025-02-23	2026-02-22
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
WTXE1010A	Trilog	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17

1013-1	Broadband Antenna					
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2025-02-23	2026-02-22
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☒ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2025-02-23	2026-02-22
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22

Software List			
Description	**Manufacturer**	**Model**	**Version**
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
5G NR Test Ssystem	Tonscend	TS-1120	V2.4.0

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§2.1046, §22.913(a)(2), §24.232(c), §27.50(b)(10), §27.50(c)(10), §27.50(d)(4), §27.50(h)(2)	RF Output Power	Compliant
§24.232(d), §27.50(d)(5)	Peak-to-average Ratio (PAR) of Transmitter	Compliant
§22.917(b), §27.53, §2.1049	Emission Bandwidth	Compliant
§2.1053, §22.917(a), §24.238(a), §27.53(c)(2), §27.53(g), §27.53(h) §27.53(m)(4)	Spurious Emissions at Antenna Terminal	Compliant
§2.1053, §22.917(a), §24.238(a), §27.53(c)(2), §27.53(g), §27.53(h) §27.53(m)(4)	Spurious Radiation Emissions	Compliant
§2.1051, §22.917(a), §24.238(a), §27.53(c)(2), §27.53(g), §27.53(h), §27.53(m)(4)	Out of Band Emissions	Compliant
§2.1055, §22.355, §24.235, §27.54	Frequency Stability	Compliant

3. RF Output Power

3.1 Standard Applicable

According to §22.913(a)(2), the ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

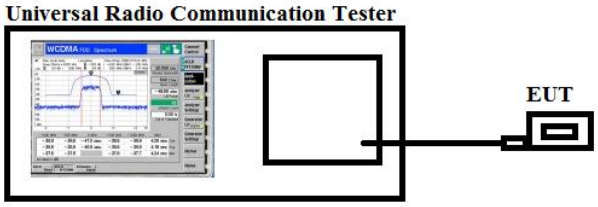
According to §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755MHz band and mobile and portable stations operating in the 1695-1710MHz and 1755-1780MHz bands are limited to 1 watt EIRP.

According to §27.50(c)(10), portable stations (hand-held devices) in the 698-746 MHz band are limited to 3 watts ERP.

3.2 Test Procedure

- Conducted output power test method:



- Radiated power test method:

1. The setup of EUT is according with per ANSI/TIA Standard 603E and ANSI C63.26 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.

4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

3.3 Summary of Test Results/Plots

Note: The test was conducted using the radiation method, and the data was only showed the

maximum polar: Horizontal

Max. Radiated Power:

5G SA n2

Channel Bandwidth: 5MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.36	PASS
	MCH	20.57	PASS
	HCH	20.94	PASS
DFT-16QAM	LCH	20.61	PASS
	MCH	20.81	PASS
	HCH	20.55	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.05	PASS
	MCH	21.01	PASS
	HCH	20.12	PASS
DFT-16QAM	LCH	20.32	PASS
	MCH	19.94	PASS
	HCH	20.02	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.40	PASS
	MCH	21.04	PASS
	HCH	20.76	PASS
DFT-16QAM	LCH	21.13	PASS
	MCH	20.65	PASS
	HCH	20.77	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.99	PASS
	MCH	20.28	PASS
	HCH	20.95	PASS
DFT-16QAM	LCH	20.29	PASS
	MCH	20.50	PASS
	HCH	20.76	PASS

5G SA n5

Channel Bandwidth: 5MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.39	PASS
	MCH	20.73	PASS
	HCH	20.77	PASS
DFT-16QAM	LCH	20.35	PASS
	MCH	20.79	PASS
	HCH	20.23	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.16	PASS
	MCH	20.73	PASS
	HCH	20.23	PASS
DFT-16QAM	LCH	20.53	PASS
	MCH	20.05	PASS
	HCH	20.34	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.51	PASS
	MCH	20.78	PASS
	HCH	21.13	PASS
DFT-16QAM	LCH	20.68	PASS
	MCH	20.70	PASS
	HCH	20.94	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.19	PASS
	MCH	20.41	PASS
	HCH	21.04	PASS
DFT-16QAM	LCH	20.37	PASS
	MCH	20.68	PASS
	HCH	20.73	PASS

5G SA n41

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.65	PASS
	MCH	22.61	PASS
	HCH	22.99	PASS
DFT-16QAM	LCH	22.51	PASS
	MCH	23.09	PASS
	HCH	22.24	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.05	PASS
	MCH	22.74	PASS
	HCH	22.35	PASS
DFT-16QAM	LCH	22.51	PASS
	MCH	21.99	PASS
	HCH	22.09	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.65	PASS
	MCH	22.96	PASS
	HCH	22.83	PASS
DFT-16QAM	LCH	23.10	PASS
	MCH	22.86	PASS
	HCH	22.91	PASS
Channel Bandwidth: 50MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.03	PASS
	MCH	22.31	PASS
	HCH	22.86	PASS
DFT-16QAM	LCH	22.45	PASS
	MCH	22.81	PASS
	HCH	22.87	PASS
Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.33	PASS

	MCH	22.73	PASS
	HCH	22.79	PASS
DFT-16QAM	LCH	22.34	PASS
	MCH	22.73	PASS
	HCH	22.65	PASS
Channel Bandwidth: 70MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.85	PASS
	MCH	22.60	PASS
	HCH	21.92	PASS
DFT-16QAM	LCH	22.51	PASS
	MCH	22.06	PASS
	HCH	22.03	PASS
Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.41	PASS
	MCH	23.14	PASS
	HCH	22.96	PASS
DFT-16QAM	LCH	22.68	PASS
	MCH	22.96	PASS
	HCH	22.96	PASS
Channel Bandwidth: 90MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.74	PASS
	MCH	22.18	PASS
	HCH	22.67	PASS
DFT-16QAM	LCH	22.26	PASS
	MCH	22.49	PASS
	HCH	22.56	PASS
Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.26	PASS
	MCH	22.37	PASS
	HCH	23.06	PASS
DFT-16QAM	LCH	22.74	PASS
	MCH	22.78	PASS
	HCH	22.33	PASS

5G SA n66

Channel Bandwidth: 5MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.37	PASS
	MCH	20.42	PASS
	HCH	20.96	PASS
DFT-16QAM	LCH	20.63	PASS
	MCH	20.75	PASS
	HCH	20.65	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.07	PASS
	MCH	20.90	PASS
	HCH	20.03	PASS
DFT-16QAM	LCH	20.53	PASS
	MCH	19.88	PASS
	HCH	20.29	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.64	PASS
	MCH	20.97	PASS
	HCH	21.04	PASS
DFT-16QAM	LCH	20.69	PASS
	MCH	20.64	PASS
	HCH	20.62	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.03	PASS
	MCH	20.48	PASS
	HCH	20.80	PASS
DFT-16QAM	LCH	20.21	PASS
	MCH	20.87	PASS
	HCH	20.67	PASS

Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.79	PASS
	MCH	20.46	PASS
	HCH	20.70	PASS
DFT-16QAM	LCH	20.61	PASS
	MCH	20.63	PASS
	HCH	20.76	PASS

5G SA n71

Channel Bandwidth: 5MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.65	PASS
	MCH	20.74	PASS
	HCH	21.05	PASS
DFT-16QAM	LCH	20.52	PASS
	MCH	21.09	PASS
	HCH	20.44	PASS
Channel Bandwidth: 10MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.15	PASS
	MCH	20.78	PASS
	HCH	20.12	PASS
DFT-16QAM	LCH	20.43	PASS
	MCH	20.09	PASS
	HCH	20.33	PASS
Channel Bandwidth: 15MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.72	PASS
	MCH	20.85	PASS
	HCH	20.69	PASS
DFT-16QAM	LCH	20.65	PASS
	MCH	20.67	PASS
	HCH	20.64	PASS
Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	20.90	PASS
	MCH	20.43	PASS
	HCH	20.81	PASS
DFT-16QAM	LCH	20.30	PASS
	MCH	20.69	PASS
	HCH	21.04	PASS

5G SA n77_3450-3550MHz

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.67	PASS
	MCH	22.80	PASS
	HCH	22.72	PASS
DFT-16QAM	LCH	22.50	PASS
	MCH	23.05	PASS
	HCH	22.47	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.06	PASS
	MCH	23.03	PASS
	HCH	22.27	PASS
DFT-16QAM	LCH	22.67	PASS
	MCH	22.03	PASS
	HCH	22.34	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.59	PASS
	MCH	22.75	PASS
	HCH	22.83	PASS
DFT-16QAM	LCH	23.09	PASS
	MCH	22.88	PASS
	HCH	22.91	PASS
Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.26	PASS
	MCH	22.84	PASS
	HCH	23.05	PASS
DFT-16QAM	LCH	22.49	PASS
	MCH	22.98	PASS
	HCH	22.44	PASS

Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.58	PASS
	MCH	22.83	PASS
	HCH	23.01	PASS
DFT-16QAM	LCH	22.75	PASS
	MCH	22.75	PASS
	HCH	22.56	PASS
Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.60	PASS
	MCH	22.40	PASS
	HCH	22.99	PASS
DFT-16QAM	LCH	22.71	PASS
	MCH	22.73	PASS
	HCH	22.50	PASS

5G SA n77_3700-3980MHz

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.62	PASS
	MCH	22.54	PASS
	HCH	22.83	PASS
DFT-16QAM	LCH	22.68	PASS
	MCH	22.99	PASS
	HCH	22.35	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.78	PASS
	MCH	22.71	PASS
	HCH	22.11	PASS
DFT-16QAM	LCH	22.23	PASS
	MCH	21.79	PASS
	HCH	22.20	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.61	PASS
	MCH	23.02	PASS
	HCH	22.83	PASS
DFT-16QAM	LCH	22.75	PASS
	MCH	23.04	PASS
	HCH	22.82	PASS
Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.51	PASS
	MCH	22.80	PASS
	HCH	22.79	PASS
DFT-16QAM	LCH	22.35	PASS
	MCH	22.79	PASS
	HCH	22.33	PASS

Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.52	PASS
	MCH	22.94	PASS
	HCH	23.03	PASS
DFT-16QAM	LCH	22.68	PASS
	MCH	22.69	PASS
	HCH	22.59	PASS
Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.70	PASS
	MCH	22.64	PASS
	HCH	22.95	PASS
DFT-16QAM	LCH	22.66	PASS
	MCH	22.97	PASS
	HCH	22.62	PASS

5G SA n78_3450-3550MHz

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.31	PASS
	MCH	22.70	PASS
	HCH	22.76	PASS
DFT-16QAM	LCH	22.62	PASS
	MCH	23.14	PASS
	HCH	22.44	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.89	PASS
	MCH	22.94	PASS
	HCH	22.07	PASS
DFT-16QAM	LCH	22.40	PASS
	MCH	22.25	PASS
	HCH	22.28	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.42	PASS
	MCH	23.07	PASS
	HCH	22.94	PASS
DFT-16QAM	LCH	22.97	PASS
	MCH	22.78	PASS
	HCH	22.68	PASS
Channel Bandwidth: 50MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.97	PASS
	MCH	22.49	PASS
	HCH	22.97	PASS
DFT-16QAM	LCH	22.65	PASS
	MCH	22.65	PASS
	HCH	23.02	PASS

Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.73	PASS
	MCH	22.41	PASS
	HCH	22.96	PASS
DFT-16QAM	LCH	22.31	PASS
	MCH	22.91	PASS
	HCH	22.36	PASS
Channel Bandwidth: 70MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.16	PASS
	MCH	22.97	PASS
	HCH	22.41	PASS
DFT-16QAM	LCH	22.65	PASS
	MCH	22.16	PASS
	HCH	22.15	PASS
Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.77	PASS
	MCH	22.82	PASS
	HCH	22.68	PASS
DFT-16QAM	LCH	22.83	PASS
	MCH	23.13	PASS
	HCH	22.71	PASS
Channel Bandwidth: 90MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.14	PASS
	MCH	22.18	PASS
	HCH	22.64	PASS
DFT-16QAM	LCH	22.21	PASS
	MCH	22.38	PASS
	HCH	22.62	PASS

Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.47	PASS
	MCH	22.60	PASS
	HCH	22.97	PASS
DFT-16QAM	LCH	22.75	PASS
	MCH	23.08	PASS
	HCH	22.64	PASS

5G SA n78_3700-3800MHz

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.26	PASS
	MCH	22.68	PASS
	HCH	23.01	PASS
DFT-16QAM	LCH	22.31	PASS
	MCH	22.94	PASS
	HCH	22.43	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.83	PASS
	MCH	22.90	PASS
	HCH	21.98	PASS
DFT-16QAM	LCH	22.52	PASS
	MCH	22.20	PASS
	HCH	22.30	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.65	PASS
	MCH	22.85	PASS
	HCH	23.04	PASS
DFT-16QAM	LCH	22.66	PASS
	MCH	22.74	PASS
	HCH	23.01	PASS
Channel Bandwidth: 50MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.11	PASS
	MCH	22.47	PASS
	HCH	22.74	PASS
DFT-16QAM	LCH	22.27	PASS
	MCH	22.38	PASS
	HCH	22.81	PASS

Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.56	PASS
	MCH	22.76	PASS
	HCH	22.73	PASS
DFT-16QAM	LCH	22.77	PASS
	MCH	22.97	PASS
	HCH	22.71	PASS
Channel Bandwidth: 70MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.81	PASS
	MCH	22.79	PASS
	HCH	22.20	PASS
DFT-16QAM	LCH	22.45	PASS
	MCH	22.01	PASS
	HCH	21.91	PASS
Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.68	PASS
	MCH	23.01	PASS
	HCH	22.73	PASS
DFT-16QAM	LCH	22.90	PASS
	MCH	23.02	PASS
	HCH	22.66	PASS
Channel Bandwidth: 90MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.82	PASS
	MCH	22.15	PASS
	HCH	23.04	PASS
DFT-16QAM	LCH	22.28	PASS
	MCH	22.41	PASS
	HCH	22.93	PASS

Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.43	PASS
	MCH	22.41	PASS
	HCH	22.77	PASS
DFT-16QAM	LCH	22.71	PASS
	MCH	23.12	PASS
	HCH	22.40	PASS

5G NSA DC_2A_n41A

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.49	PASS
	MCH	22.65	PASS
	HCH	22.76	PASS
DFT-16QAM	LCH	22.48	PASS
	MCH	23.02	PASS
	HCH	22.47	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.86	PASS
	MCH	22.96	PASS
	HCH	22.21	PASS
DFT-16QAM	LCH	22.69	PASS
	MCH	22.21	PASS
	HCH	22.31	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.66	PASS
	MCH	22.73	PASS
	HCH	22.91	PASS
DFT-16QAM	LCH	23.14	PASS
	MCH	22.95	PASS
	HCH	22.69	PASS
Channel Bandwidth: 50MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.17	PASS
	MCH	22.29	PASS
	HCH	22.63	PASS
DFT-16QAM	LCH	22.45	PASS
	MCH	22.88	PASS
	HCH	22.74	PASS

Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.54	PASS
	MCH	22.63	PASS
	HCH	22.62	PASS
DFT-16QAM	LCH	22.14	PASS
	MCH	22.76	PASS
	HCH	22.45	PASS
Channel Bandwidth: 70MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.06	PASS
	MCH	22.67	PASS
	HCH	21.89	PASS
DFT-16QAM	LCH	22.30	PASS
	MCH	22.11	PASS
	HCH	22.15	PASS
Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.29	PASS
	MCH	22.98	PASS
	HCH	22.72	PASS
DFT-16QAM	LCH	22.93	PASS
	MCH	23.12	PASS
	HCH	23.20	PASS
Channel Bandwidth: 90MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.64	PASS
	MCH	22.13	PASS
	HCH	22.77	PASS
DFT-16QAM	LCH	22.33	PASS
	MCH	22.29	PASS
	HCH	22.51	PASS

Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.29	PASS
	MCH	22.61	PASS
	HCH	23.08	PASS
DFT-16QAM	LCH	22.65	PASS
	MCH	22.63	PASS
	HCH	22.31	PASS

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Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.54	PASS
	MCH	22.89	PASS
	HCH	22.97	PASS
DFT-16QAM	LCH	22.73	PASS
	MCH	23.36	PASS
	HCH	22.50	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.99	PASS
	MCH	23.14	PASS
	HCH	22.09	PASS
DFT-16QAM	LCH	22.27	PASS
	MCH	22.22	PASS
	HCH	22.14	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.28	PASS
	MCH	23.00	PASS
	HCH	23.12	PASS
DFT-16QAM	LCH	23.17	PASS
	MCH	22.94	PASS
	HCH	22.70	PASS
Channel Bandwidth: 50MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.09	PASS
	MCH	22.71	PASS
	HCH	23.08	PASS
DFT-16QAM	LCH	22.41	PASS
	MCH	22.85	PASS
	HCH	23.04	PASS

Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.68	PASS
	MCH	22.25	PASS
	HCH	22.98	PASS
DFT-16QAM	LCH	22.52	PASS
	MCH	23.00	PASS
	HCH	22.48	PASS
Channel Bandwidth: 70MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.07	PASS
	MCH	22.97	PASS
	HCH	22.62	PASS
DFT-16QAM	LCH	22.72	PASS
	MCH	22.28	PASS
	HCH	22.14	PASS
Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.92	PASS
	MCH	22.68	PASS
	HCH	22.44	PASS
DFT-16QAM	LCH	22.95	PASS
	MCH	23.26	PASS
	HCH	22.90	PASS
Channel Bandwidth: 90MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.35	PASS
	MCH	22.31	PASS
	HCH	22.58	PASS
DFT-16QAM	LCH	22.25	PASS
	MCH	22.33	PASS
	HCH	22.78	PASS

Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.62	PASS
	MCH	22.52	PASS
	HCH	23.20	PASS
DFT-16QAM	LCH	22.94	PASS
	MCH	23.03	PASS
	HCH	22.76	PASS

5G NSA DC_5A_n78A-3700-3800

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.34	PASS
	MCH	22.88	PASS
	HCH	22.85	PASS
DFT-16QAM	LCH	22.29	PASS
	MCH	23.10	PASS
	HCH	22.50	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.93	PASS
	MCH	22.81	PASS
	HCH	22.15	PASS
DFT-16QAM	LCH	22.47	PASS
	MCH	22.42	PASS
	HCH	22.37	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.45	PASS
	MCH	22.67	PASS
	HCH	23.04	PASS
DFT-16QAM	LCH	22.90	PASS
	MCH	22.65	PASS
	HCH	22.83	PASS
Channel Bandwidth: 50MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.97	PASS
	MCH	22.37	PASS
	HCH	22.54	PASS
DFT-16QAM	LCH	22.20	PASS
	MCH	22.47	PASS
	HCH	22.76	PASS

Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.43	PASS
	MCH	22.63	PASS
	HCH	22.82	PASS
DFT-16QAM	LCH	22.59	PASS
	MCH	22.78	PASS
	HCH	22.79	PASS
Channel Bandwidth: 70MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.88	PASS
	MCH	22.77	PASS
	HCH	22.35	PASS
DFT-16QAM	LCH	22.24	PASS
	MCH	22.15	PASS
	HCH	22.06	PASS
Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.73	PASS
	MCH	23.05	PASS
	HCH	22.97	PASS
DFT-16QAM	LCH	22.75	PASS
	MCH	23.17	PASS
	HCH	22.43	PASS
Channel Bandwidth: 90MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	23.00	PASS
	MCH	22.23	PASS
	HCH	22.90	PASS
DFT-16QAM	LCH	22.24	PASS
	MCH	22.42	PASS
	HCH	22.96	PASS

Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.60	PASS
	MCH	22.57	PASS
	HCH	22.68	PASS
DFT-16QAM	LCH	22.55	PASS
	MCH	23.04	PASS
	HCH	22.43	PASS

5G NSA DC_12A_n77A-3450-3550

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.44	PASS
	MCH	22.57	PASS
	HCH	22.65	PASS
DFT-16QAM	LCH	22.64	PASS
	MCH	23.11	PASS
	HCH	22.32	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.94	PASS
	MCH	23.11	PASS
	HCH	22.47	PASS
DFT-16QAM	LCH	22.90	PASS
	MCH	22.26	PASS
	HCH	22.49	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.51	PASS
	MCH	22.74	PASS
	HCH	22.76	PASS
DFT-16QAM	LCH	22.87	PASS
	MCH	23.00	PASS
	HCH	23.07	PASS
Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.29	PASS
	MCH	22.64	PASS
	HCH	22.95	PASS
DFT-16QAM	LCH	22.35	PASS
	MCH	22.75	PASS
	HCH	22.30	PASS

Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.58	PASS
	MCH	22.78	PASS
	HCH	23.07	PASS
DFT-16QAM	LCH	22.55	PASS
	MCH	22.81	PASS
	HCH	22.43	PASS
Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.51	PASS
	MCH	22.35	PASS
	HCH	23.16	PASS
DFT-16QAM	LCH	22.85	PASS
	MCH	22.86	PASS
	HCH	22.51	PASS

5G NSA DC_12A_n77A-3700-3980

Channel Bandwidth: 20MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.61	PASS
	MCH	22.52	PASS
	HCH	22.77	PASS
DFT-16QAM	LCH	22.77	PASS
	MCH	22.86	PASS
	HCH	22.42	PASS
Channel Bandwidth: 30MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	21.96	PASS
	MCH	22.86	PASS
	HCH	21.96	PASS
DFT-16QAM	LCH	22.40	PASS
	MCH	21.66	PASS
	HCH	22.41	PASS
Channel Bandwidth: 40MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.57	PASS
	MCH	22.99	PASS
	HCH	22.91	PASS
DFT-16QAM	LCH	22.59	PASS
	MCH	22.87	PASS
	HCH	22.82	PASS
Channel Bandwidth: 60MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.41	PASS
	MCH	22.61	PASS
	HCH	22.69	PASS
DFT-16QAM	LCH	22.21	PASS
	MCH	22.82	PASS
	HCH	22.13	PASS

Channel Bandwidth: 80MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.43	PASS
	MCH	22.93	PASS
	HCH	23.15	PASS
DFT-16QAM	LCH	22.88	PASS
	MCH	22.84	PASS
	HCH	22.64	PASS
Channel Bandwidth: 100MHz			
Modulation	Channel	E.r.p [dBm]	Verdict
DFT-QPSK	LCH	22.90	PASS
	MCH	22.48	PASS
	HCH	23.03	PASS
DFT-16QAM	LCH	22.67	PASS
	MCH	22.96	PASS
	HCH	22.79	PASS

Max. Conducted Output Power

Please refer to Appendix A: Average Power Output Data
Test result: Pass

4. Peak-to-average Ratio (PAR) of Transmitter

4.1 Standard Applicable

According to §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51, in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

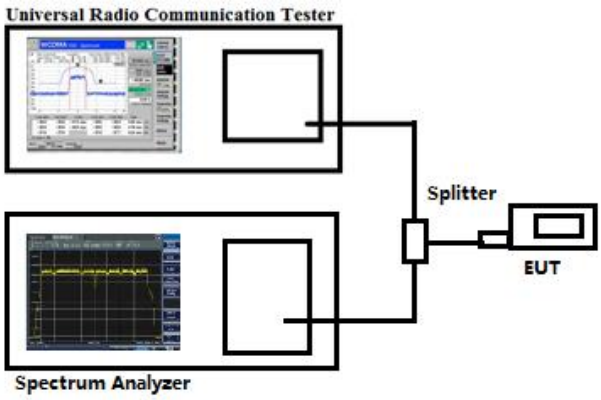
According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

4.2 Test Procedure

According with KDB 971168

1. The signal analyzer' s CCDF measurement profile is enabled.
2. Frequency = carrier center frequency.
3. Measurement BW > Emission bandwidth of signal.
4. The signal analyzer was set to collect one million samples to generate the CCDF curve.
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal " RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the " on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power.

Test Configuration for the emission bandwidth testing:



4.3 Summary of Test Results

Please refer to Appendix B: Peak-to-Average Ratio

Test result: Pass

5. Emission Bandwidth

5.1 Standard Applicable

According to §22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

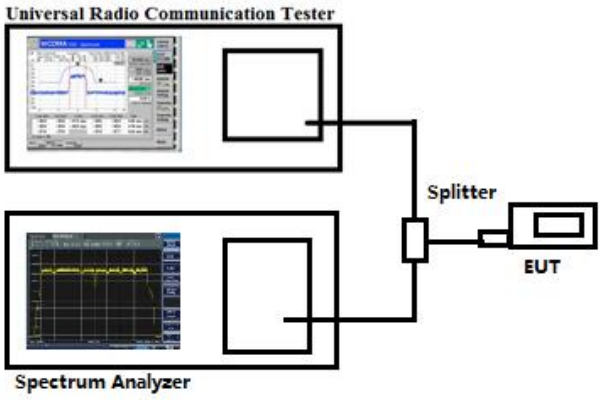
According to §24.238(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

According to §27.53, the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

5.2 Test Procedure

According to §22.917(b), the emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

Test Configuration for the emission bandwidth testing:



5.3 Summary of Test Results/Plots

Please refer to Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test result: Pass

6. Out of Band Emissions at Antenna Terminal

6.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §27.53(h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

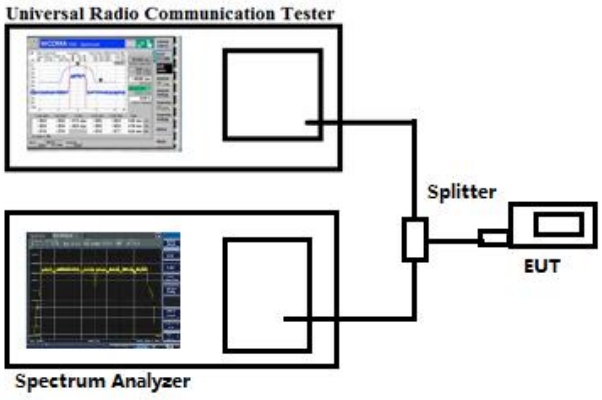
According to §27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

According to §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5MHz.

6.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10th harmonic.

Test Configuration for the out of band emissions testing:



6.3 Summary of Test Results/Plots

Please refer to Appendix D & E: Band Edge & Conducted Spurious Emission

Test result: Pass

7. Spurious Radiated Emissions

7.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §27.53(h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

According to §27.53(g) the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

7.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA-603-E and ANSI C63.4-2014 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious attenuation limit in dB =43+10 Log_{10} (power out in Watts)

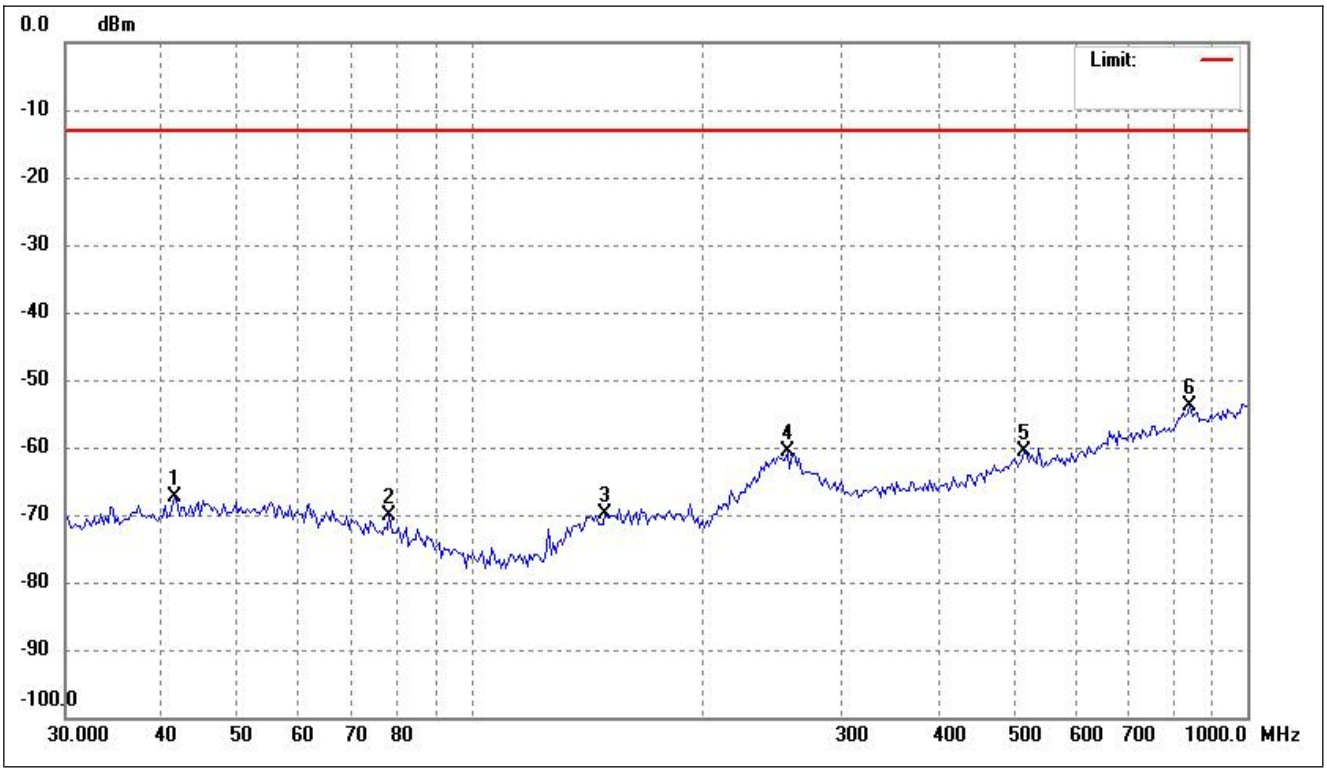
7.3 Summary of Test Results/Plots

Note: 1. this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

2. All test modes (different bandwidth and different modulation) are performed, but only the worst case is recorded in this report.

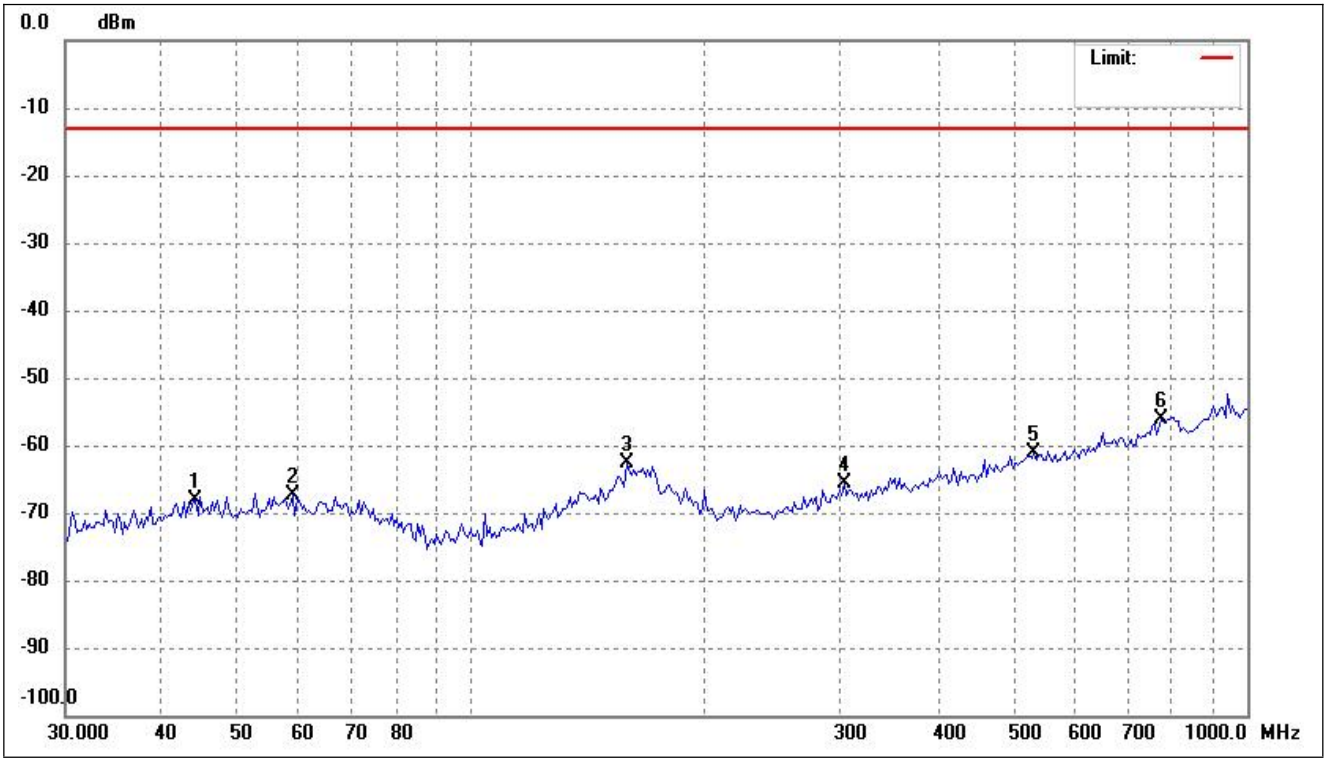
➢ Spurious Emissions Below 1GHz

Test Mode	5G NR n2	Polarity:	Horizontal



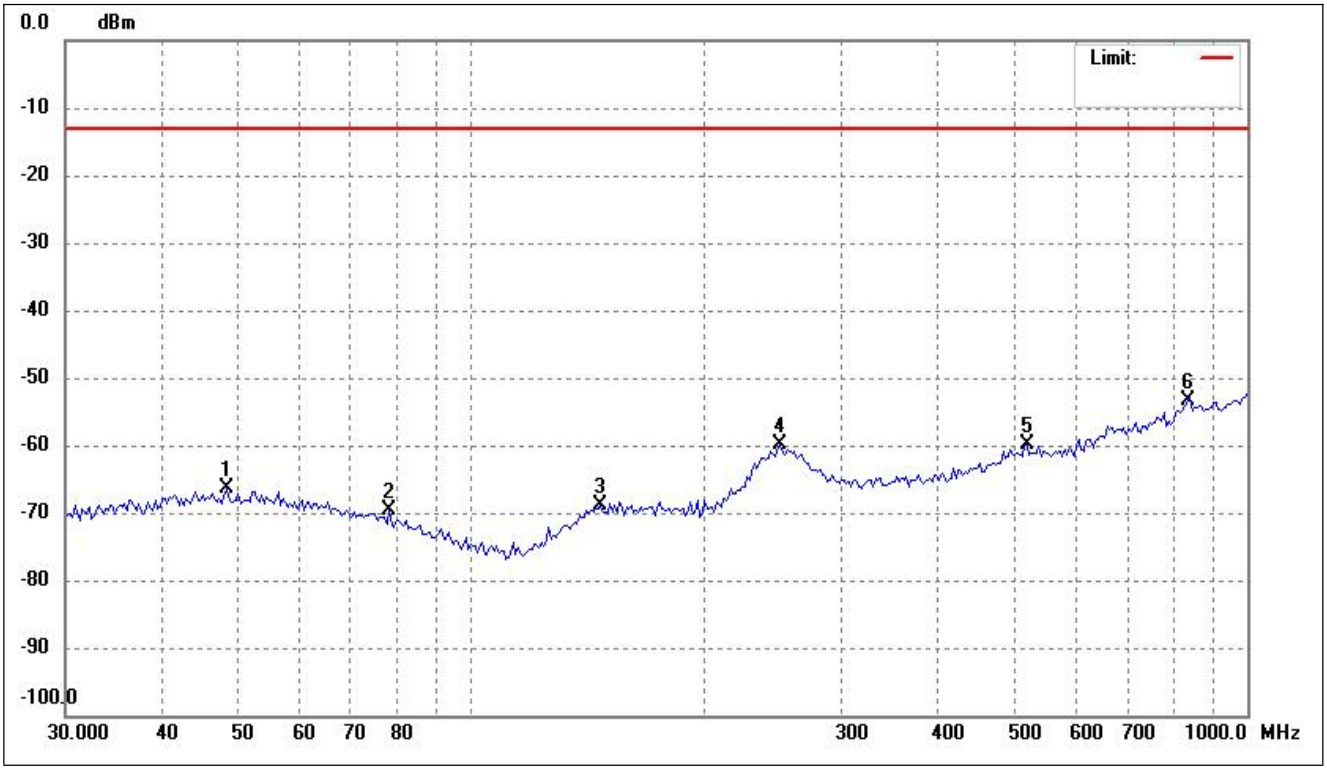
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	41.4483	-70.07	2.69	-67.38	-13.00	-54.38	ERP
2	78.5645	-69.63	-0.43	-70.06	-13.00	-57.06	ERP
3	148.9175	-70.72	0.75	-69.97	-13.00	-56.97	ERP
4	255.8226	-68.76	8.07	-60.69	-13.00	-47.69	ERP
5	516.5651	-68.01	7.44	-60.57	-13.00	-47.57	ERP
6	844.8028	-67.62	13.63	-53.99	-13.00	-40.99	ERP

Test Mode	5G NR n2	Polarity:	Vertical



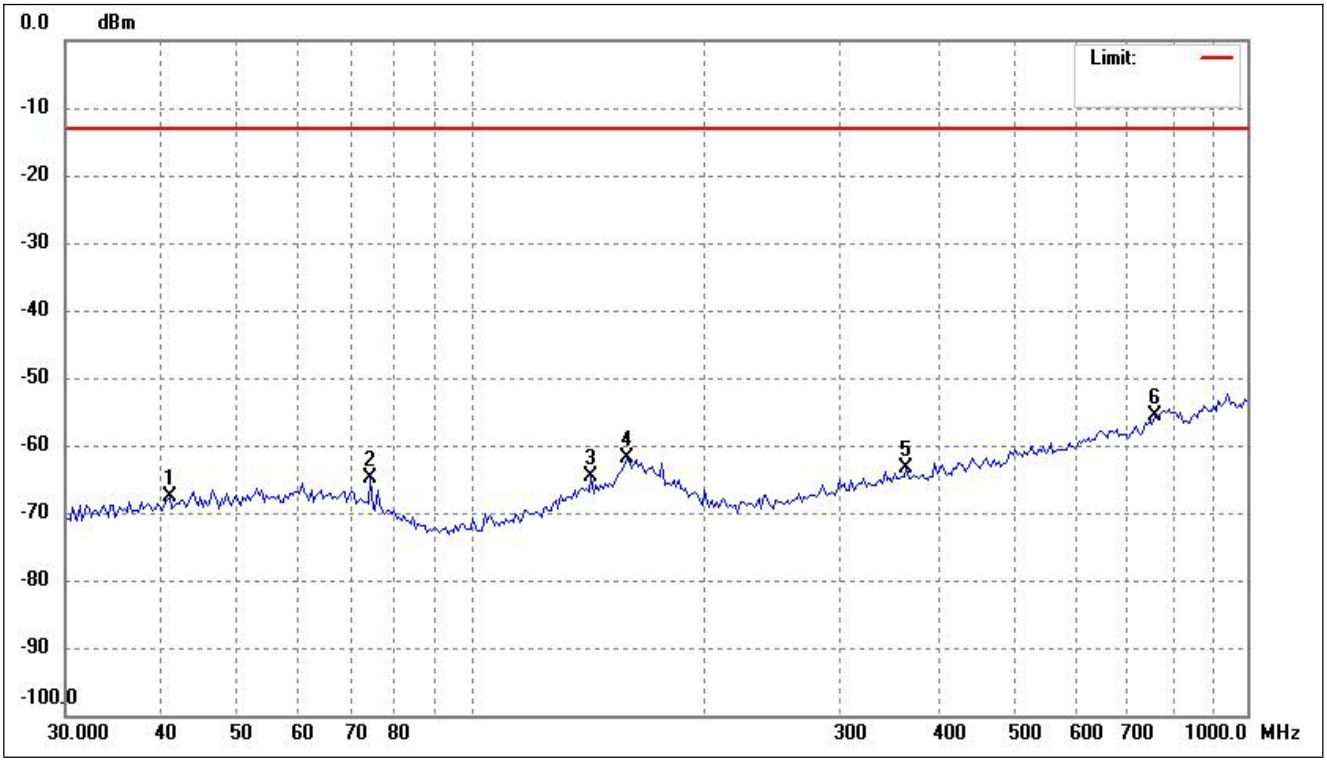
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	43.8452	-71.04	2.92	-68.12	-13.00	-55.12	ERP
2	58.8979	-70.68	3.32	-67.36	-13.00	-54.36	ERP
3	158.6399	-69.99	7.39	-62.60	-13.00	-49.60	ERP
4	302.8193	-69.00	3.37	-65.63	-13.00	-52.63	ERP
5	531.2910	-68.80	7.69	-61.11	-13.00	-48.11	ERP
6	776.4849	-68.06	12.06	-56.00	-13.00	-43.00	ERP

Test Mode	5G NR n5	Polarity:	Horizontal



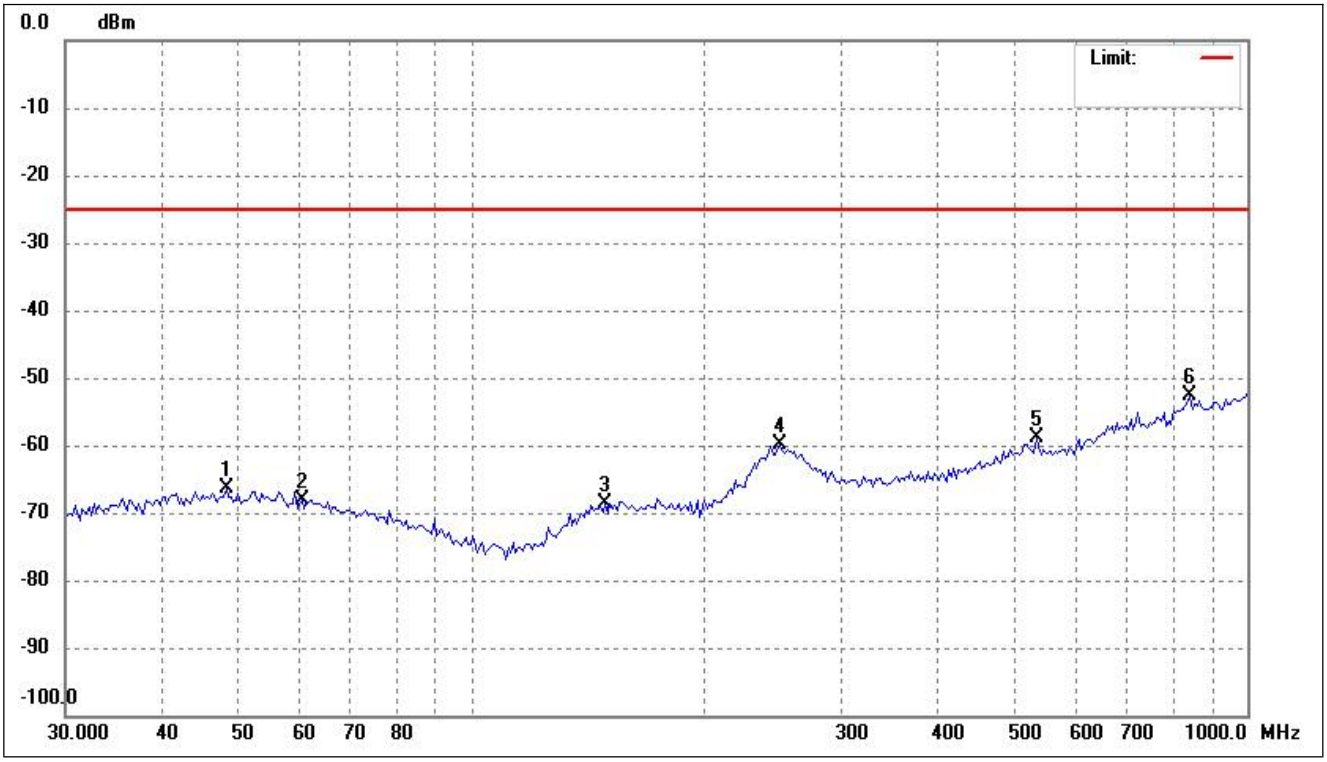
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	48.3780	-69.83	3.35	-66.48	-13.00	-53.48	ERP
2	78.5645	-69.19	-0.43	-69.62	-13.00	-56.62	ERP
3	146.8392	-69.41	0.50	-68.91	-13.00	-55.91	ERP
4	250.4859	-68.36	8.51	-59.85	-13.00	-46.85	ERP
5	520.2079	-67.32	7.47	-59.85	-13.00	-46.85	ERP
6	838.8870	-66.83	13.50	-53.33	-13.00	-40.33	ERP

Test Mode	5G NR n5	Polarity:	Vertical



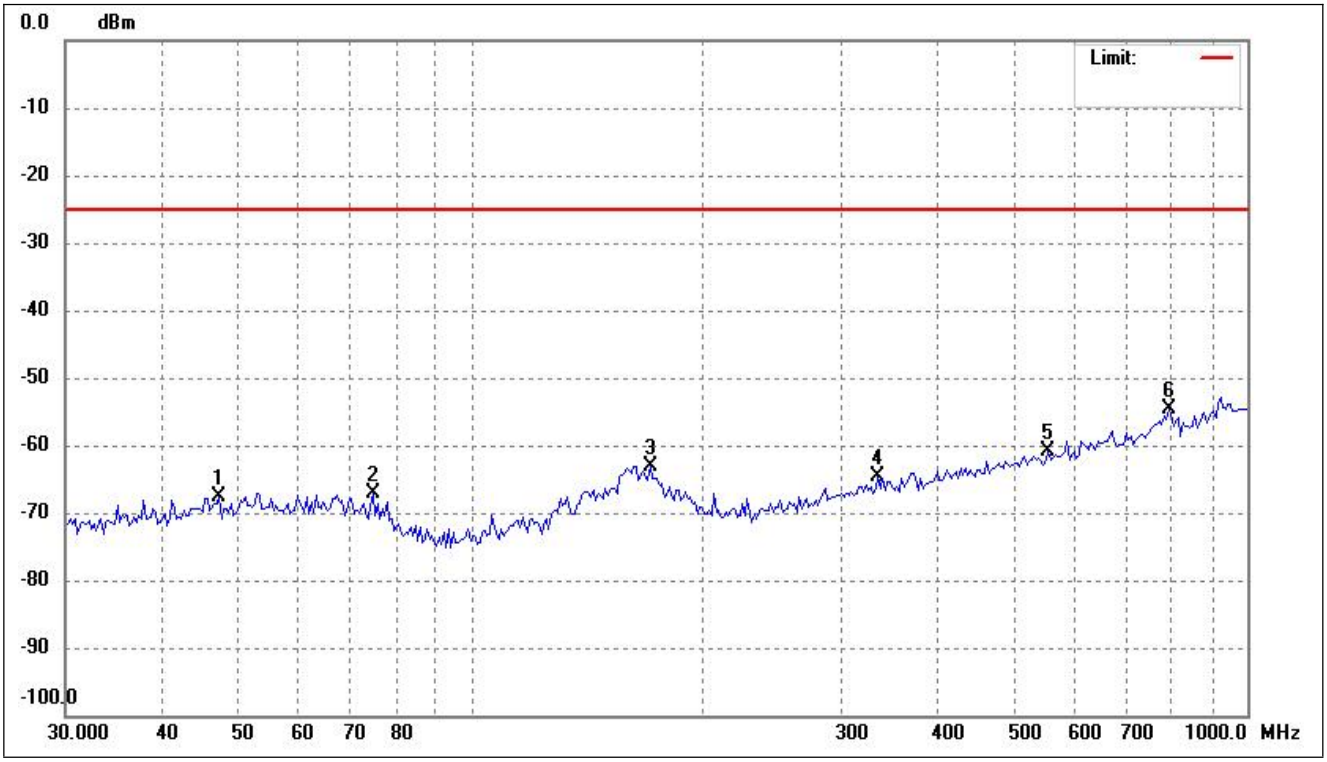
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	40.8699	-70.13	2.63	-67.50	-13.00	-54.50	ERP
2	74.2696	-66.76	1.94	-64.82	-13.00	-51.82	ERP
3	142.7692	-68.26	3.64	-64.62	-13.00	-51.62	ERP
4	158.6399	-69.32	7.39	-61.93	-13.00	-48.93	ERP
5	363.5231	-67.93	4.62	-63.31	-13.00	-50.31	ERP
6	760.2867	-67.36	11.64	-55.72	-13.00	-42.72	ERP

Test Mode	5G NR n41	Polarity:	Horizontal



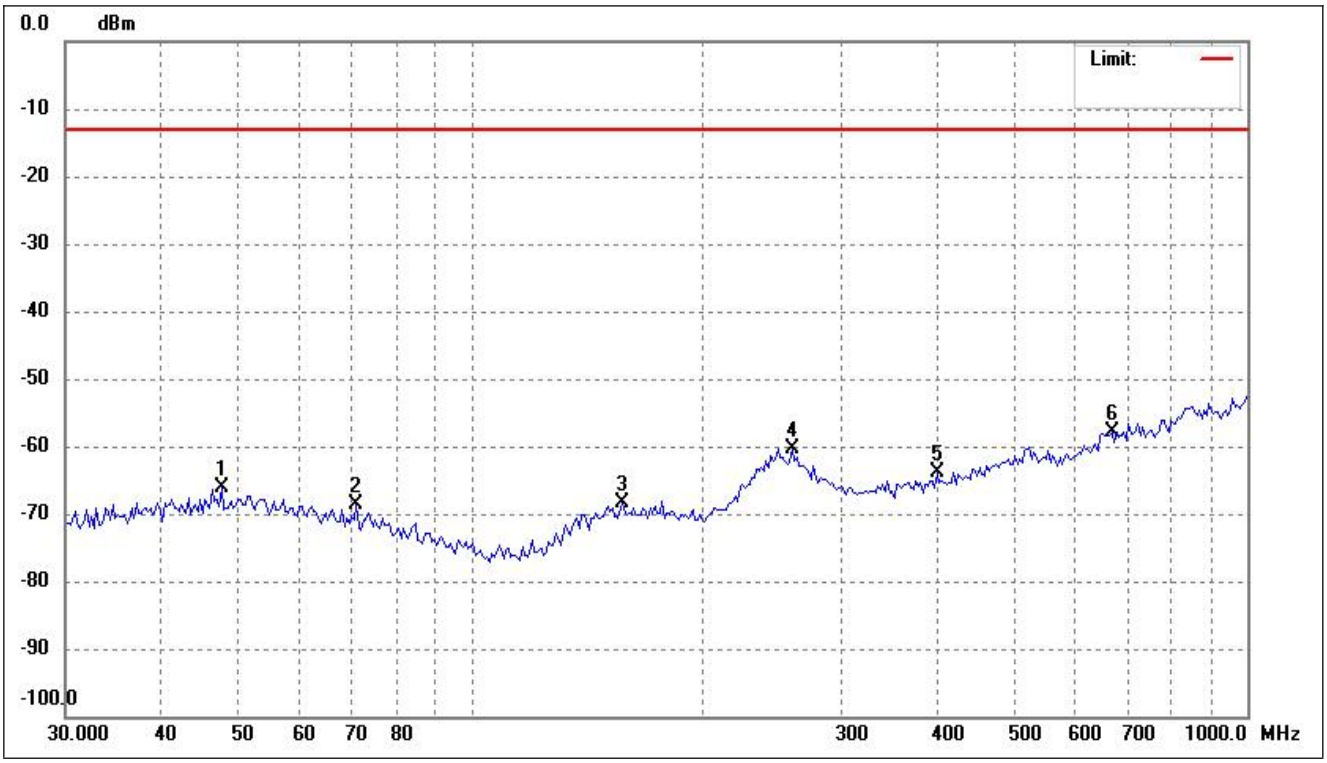
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	48.3780	-69.83	3.35	-66.48	-25.00	-41.48	ERP
2	60.5769	-70.43	2.21	-68.22	-25.00	-43.22	ERP
3	148.9175	-69.35	0.75	-68.60	-25.00	-43.60	ERP
4	250.4859	-68.36	8.51	-59.85	-25.00	-34.85	ERP
5	535.0377	-66.46	7.61	-58.85	-25.00	-33.85	ERP
6	844.8028	-66.37	13.63	-52.74	-25.00	-27.74	ERP

Test Mode	5G NR n41	Polarity:	Vertical



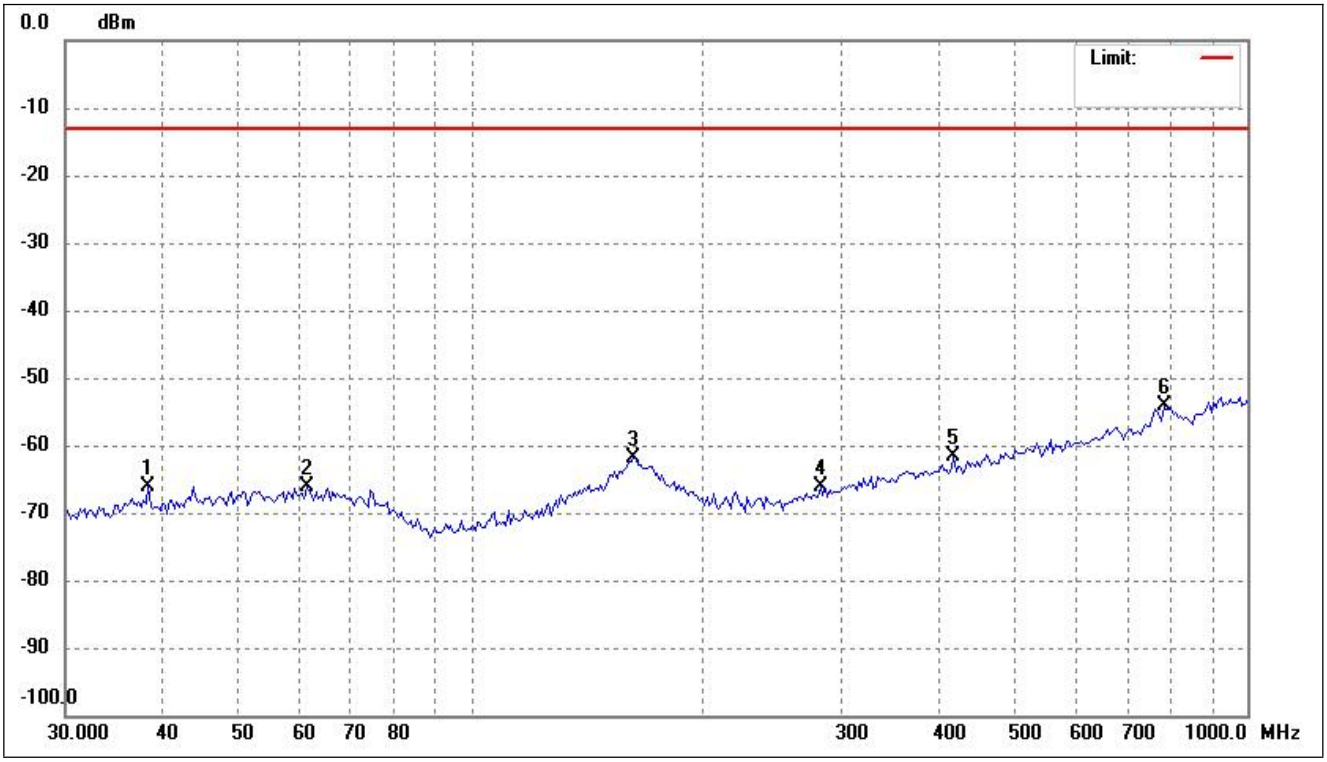
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	47.3688	-70.93	3.25	-67.68	-25.00	-42.68	ERP
2	74.7934	-68.86	1.80	-67.06	-25.00	-42.06	ERP
3	170.1888	-69.15	6.14	-63.01	-25.00	-38.01	ERP
4	334.1255	-68.70	4.01	-64.69	-25.00	-39.69	ERP
5	554.1708	-68.86	8.07	-60.79	-25.00	-35.79	ERP
6	793.0281	-67.15	12.48	-54.67	-25.00	-29.67	ERP

Test Mode	5G NR n66	Polarity:	Horizontal



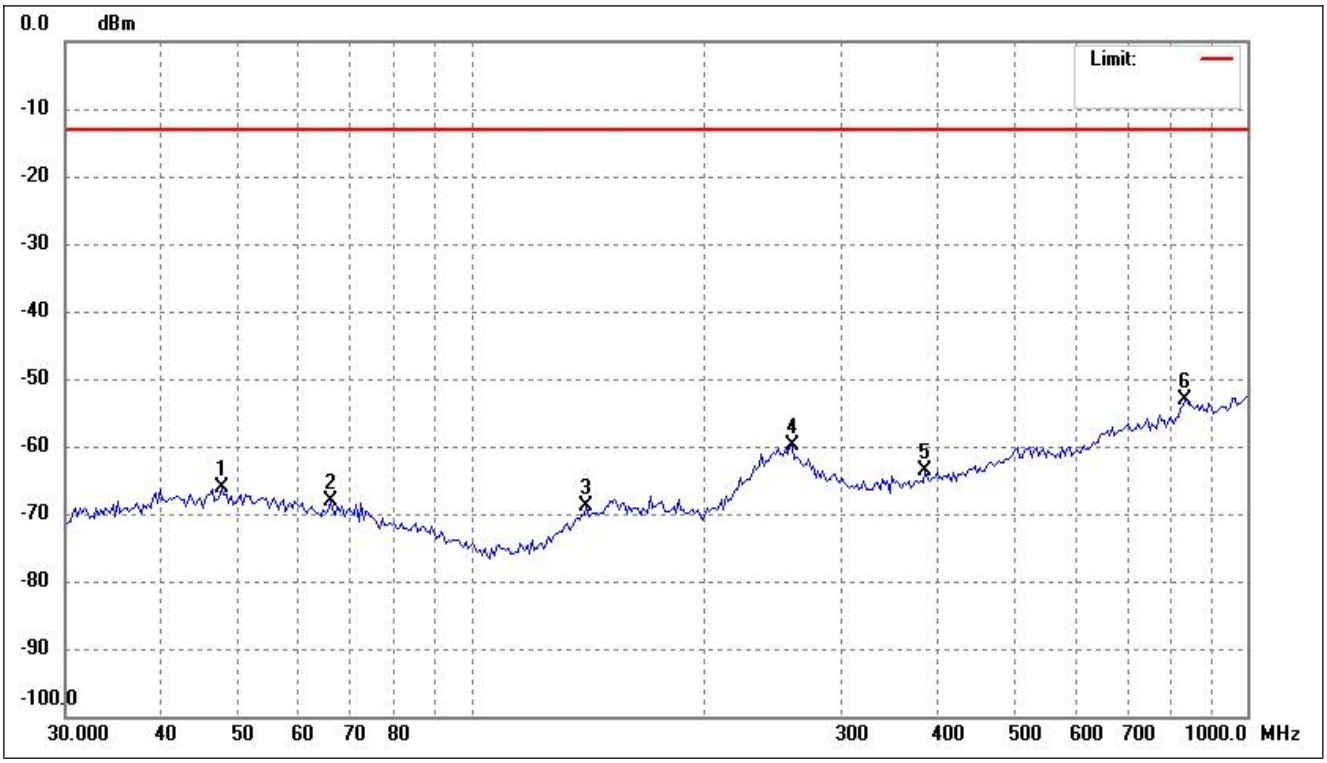
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	47.7028	-69.31	3.28	-66.03	-13.00	-53.03	ERP
2	71.2033	-69.46	0.86	-68.60	-13.00	-55.60	ERP
3	156.4259	-69.20	0.94	-68.26	-13.00	-55.26	ERP
4	259.4434	-68.01	7.76	-60.25	-13.00	-47.25	ERP
5	398.2962	-68.52	4.64	-63.88	-13.00	-50.88	ERP
6	669.9523	-68.02	10.15	-57.87	-13.00	-44.87	ERP

Test Mode	5G NR n66	Polarity:	Vertical



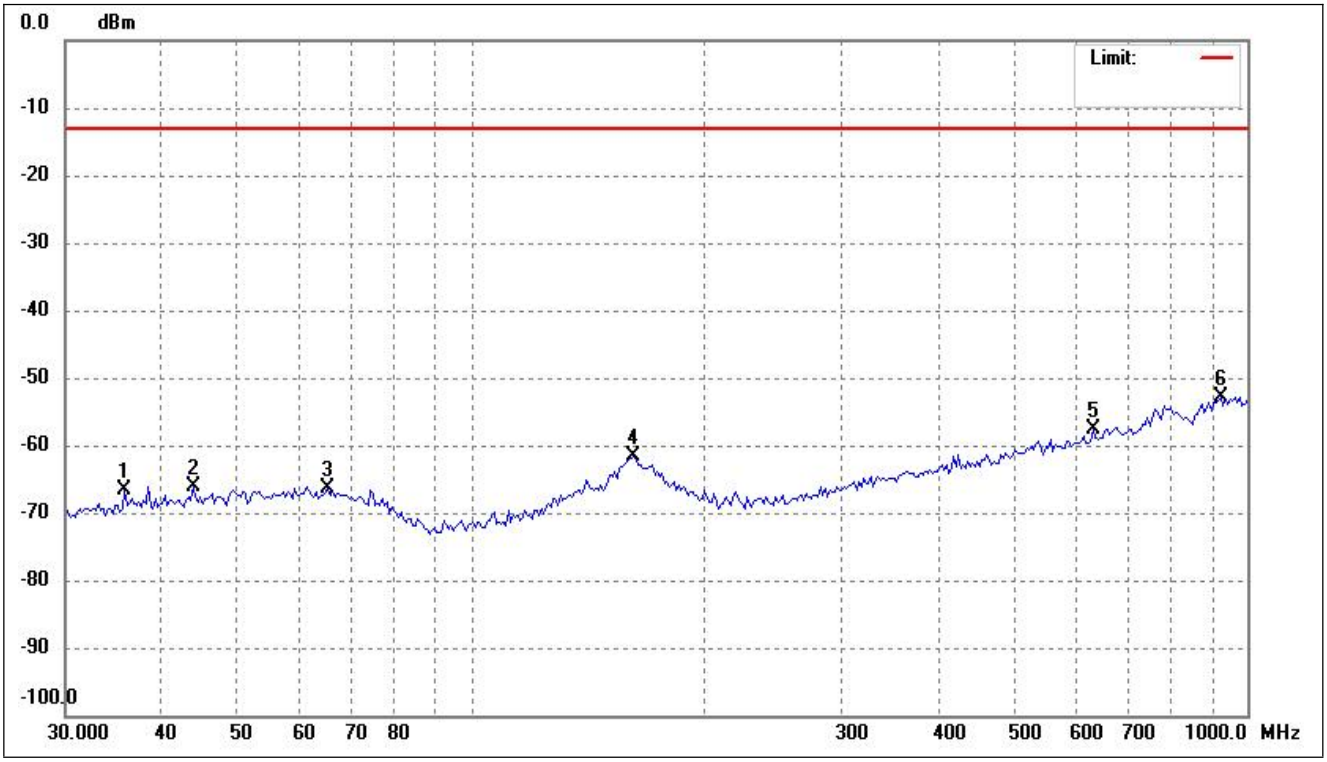
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	38.3651	-68.56	2.39	-66.17	-13.00	-53.17	ERP
2	61.4343	-69.43	3.27	-66.16	-13.00	-53.16	ERP
3	162.0197	-69.47	7.57	-61.90	-13.00	-48.90	ERP
4	282.2702	-68.58	2.44	-66.14	-13.00	-53.14	ERP
5	418.3784	-67.36	5.70	-61.66	-13.00	-48.66	ERP
6	781.9606	-66.25	12.20	-54.05	-13.00	-41.05	ERP

Test Mode	5G NR n71	Polarity:	Horizontal



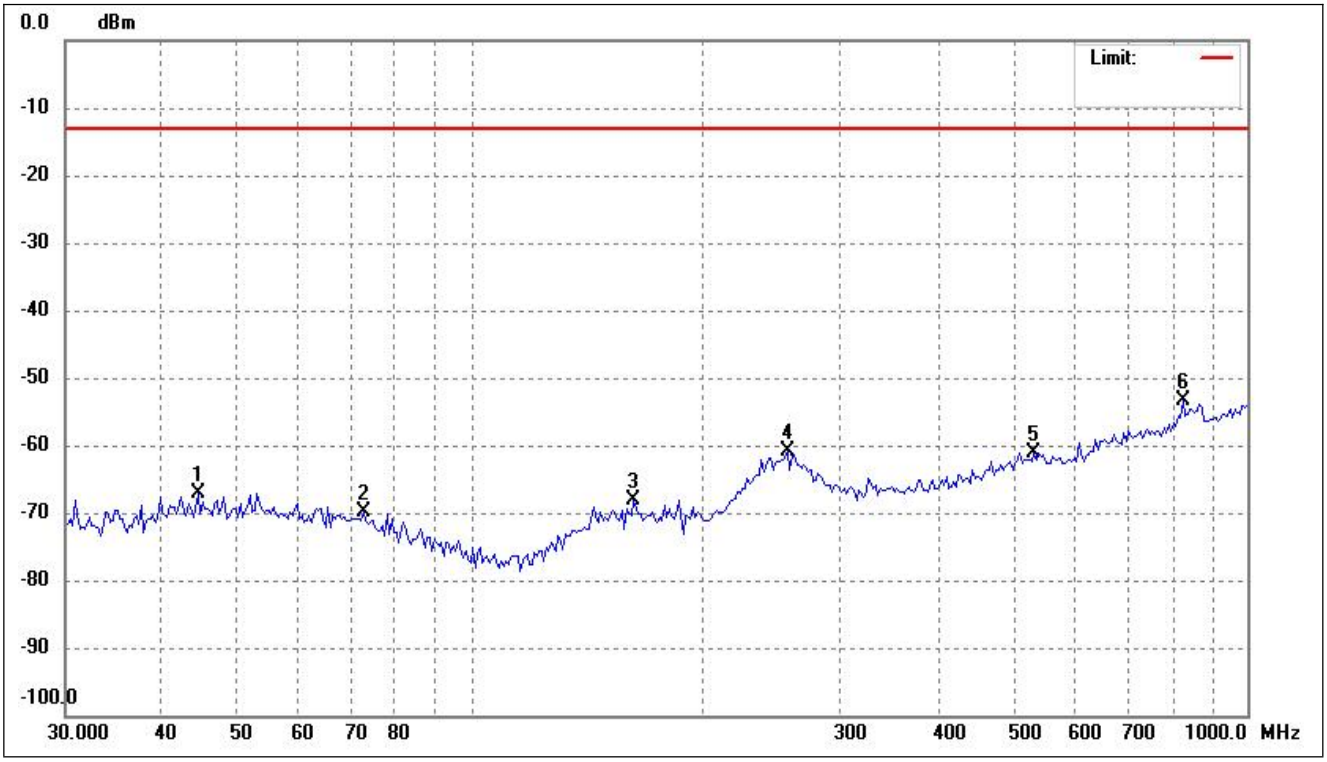
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	47.7028	-69.31	3.28	-66.03	-13.00	-53.03	ERP
2	65.9067	-69.69	1.57	-68.12	-13.00	-55.12	ERP
3	140.7767	-68.69	-0.23	-68.92	-13.00	-55.92	ERP
4	259.4434	-67.54	7.76	-59.78	-13.00	-46.78	ERP
5	384.5447	-68.29	4.60	-63.69	-13.00	-50.69	ERP
6	833.0127	-66.53	13.37	-53.16	-13.00	-40.16	ERP

Test Mode	5G NR n71	Polarity:	Vertical



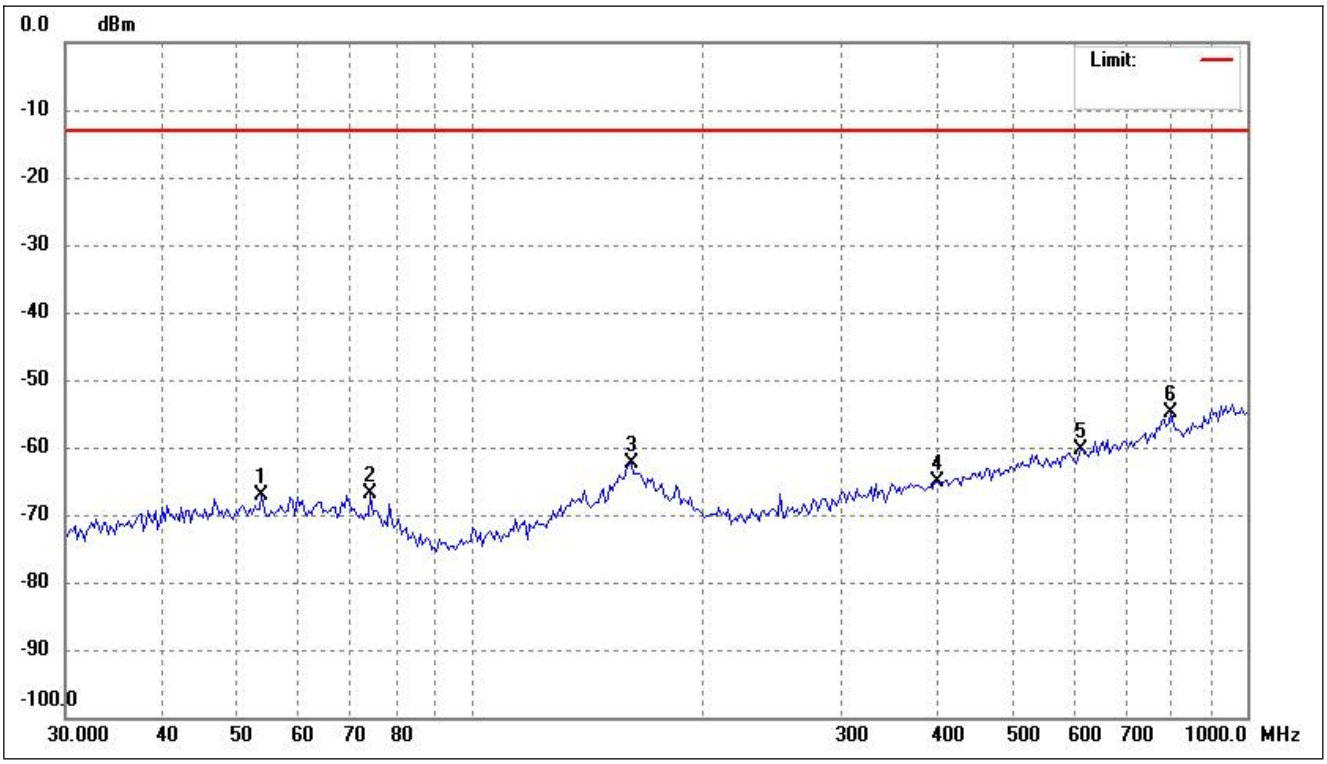
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	35.7617	-68.83	2.15	-66.68	-13.00	-53.68	ERP
2	43.8452	-69.14	2.92	-66.22	-13.00	-53.22	ERP
3	65.4452	-69.66	3.18	-66.48	-13.00	-53.48	ERP
4	162.0197	-69.22	7.57	-61.65	-13.00	-48.65	ERP
5	633.3285	-66.90	9.25	-57.65	-13.00	-44.65	ERP
6	925.6132	-65.37	12.44	-52.93	-13.00	-39.93	ERP

Test Mode	5G NR n77 (3450-3550MHz)	Polarity:	Horizontal



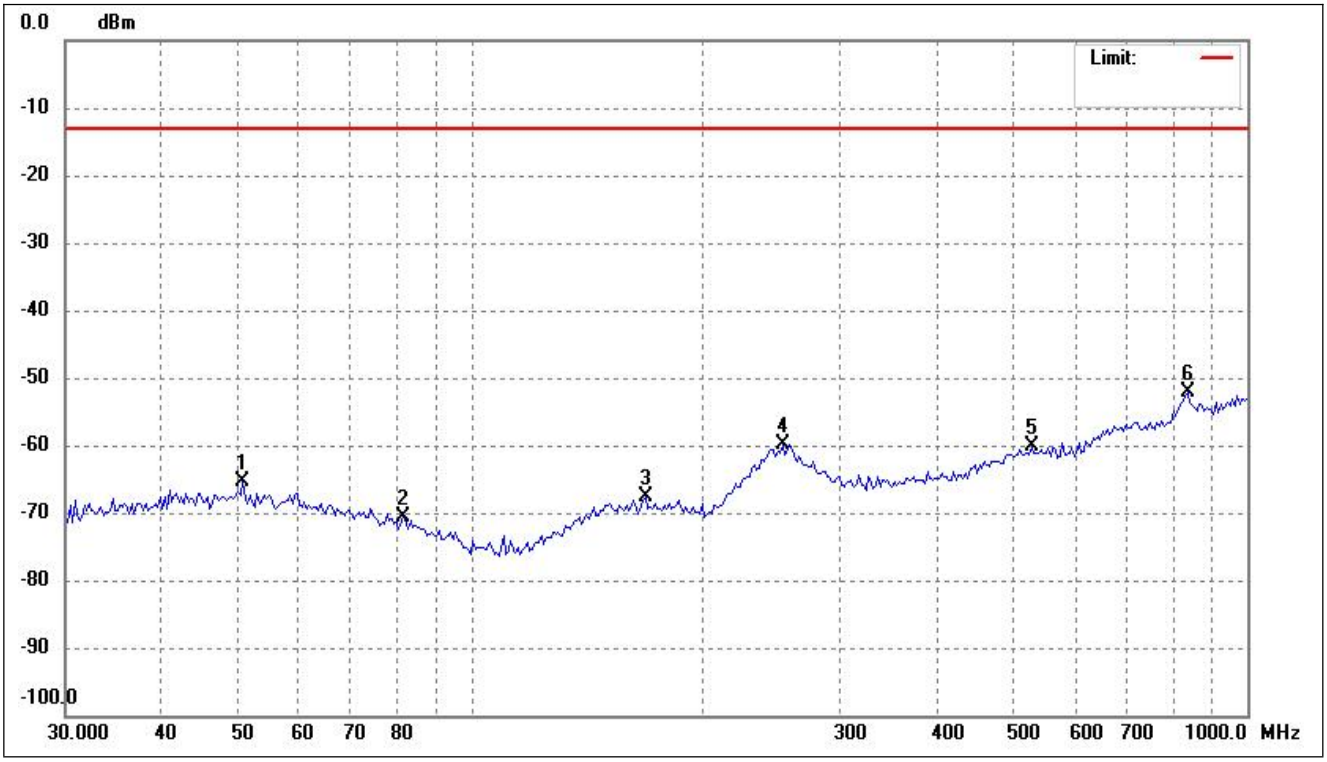
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	44.4657	-70.17	2.97	-67.20	-13.00	-54.20	ERP
2	72.7203	-70.52	0.59	-69.93	-13.00	-56.93	ERP
3	162.0197	-69.09	0.98	-68.11	-13.00	-55.11	ERP
4	255.8226	-69.03	8.07	-60.96	-13.00	-47.96	ERP
5	531.2910	-68.64	7.57	-61.07	-13.00	-48.07	ERP
6	827.1795	-66.68	13.24	-53.44	-13.00	-40.44	ERP

Test Mode	5G NR n77 (3450-3550MHz)	Polarity:	Vertical



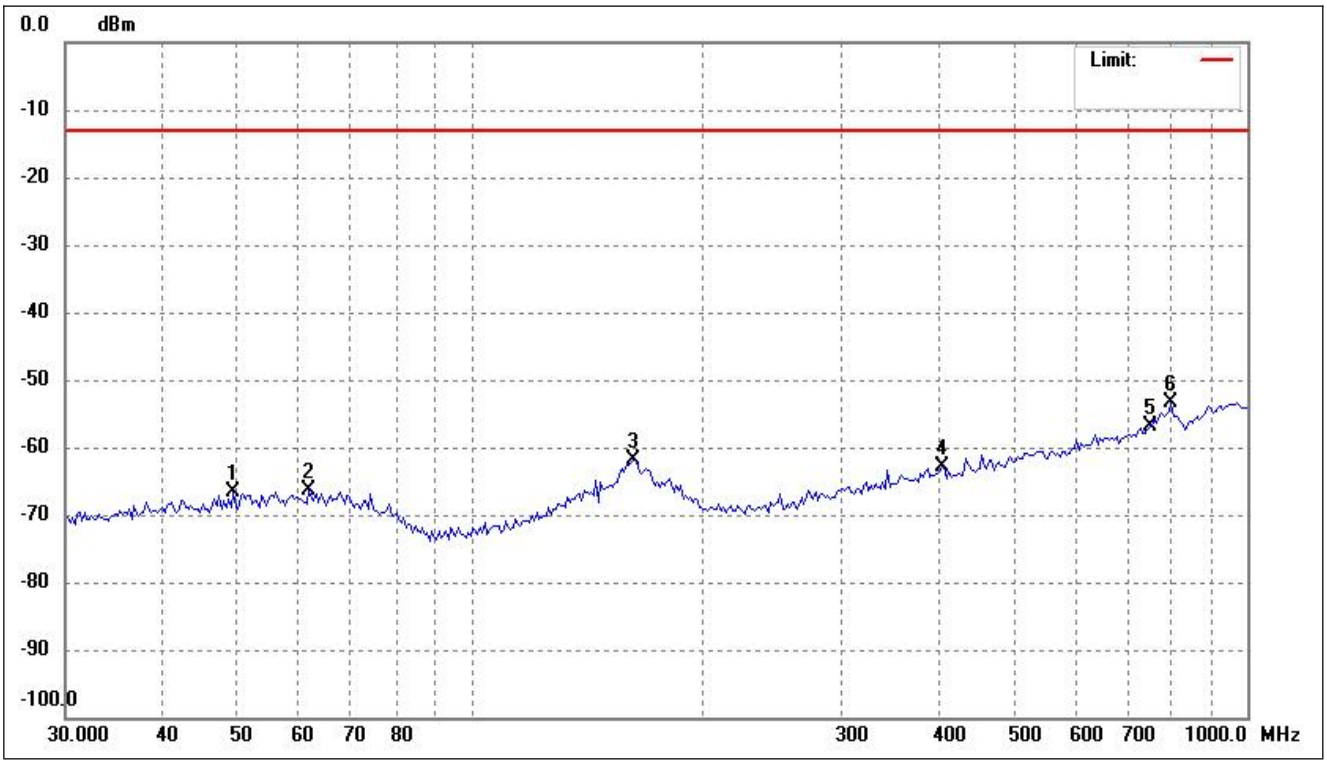
No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	53.7559	-70.58	3.42	-67.16	-13.00	-54.16	ERP
2	74.2696	-68.92	1.94	-66.98	-13.00	-53.98	ERP
3	160.8852	-70.18	7.77	-62.41	-13.00	-49.41	ERP
4	398.2962	-70.33	5.33	-65.00	-13.00	-52.00	ERP
5	611.4623	-69.25	8.97	-60.28	-13.00	-47.28	ERP
6	798.6205	-67.54	12.62	-54.92	-13.00	-41.92	ERP

Test Mode	5G NR n77 (3700-3800MHz)	Polarity:	Horizontal



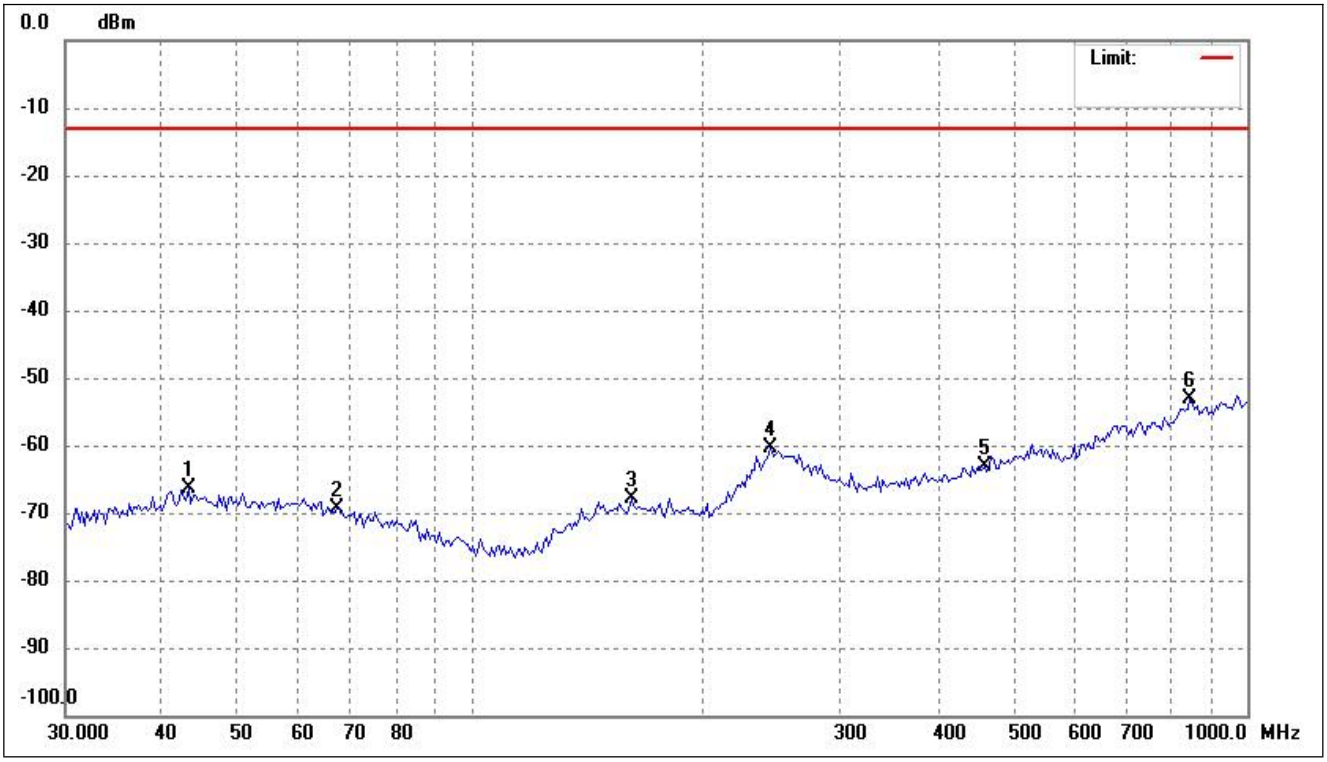
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	50.8172	-68.82	3.40	-65.42	-13.00	-52.42	ERP
2	81.9478	-69.66	-1.03	-70.69	-13.00	-57.69	ERP
3	167.8136	-68.53	0.98	-67.55	-13.00	-54.55	ERP
4	252.2523	-68.16	8.36	-59.80	-13.00	-46.80	ERP
5	527.5707	-67.74	7.54	-60.20	-13.00	-47.20	ERP
6	838.8870	-65.59	13.50	-52.09	-13.00	-39.09	ERP

Test Mode	5G NR n77 (3700-3800MHz)	Polarity:	Vertical



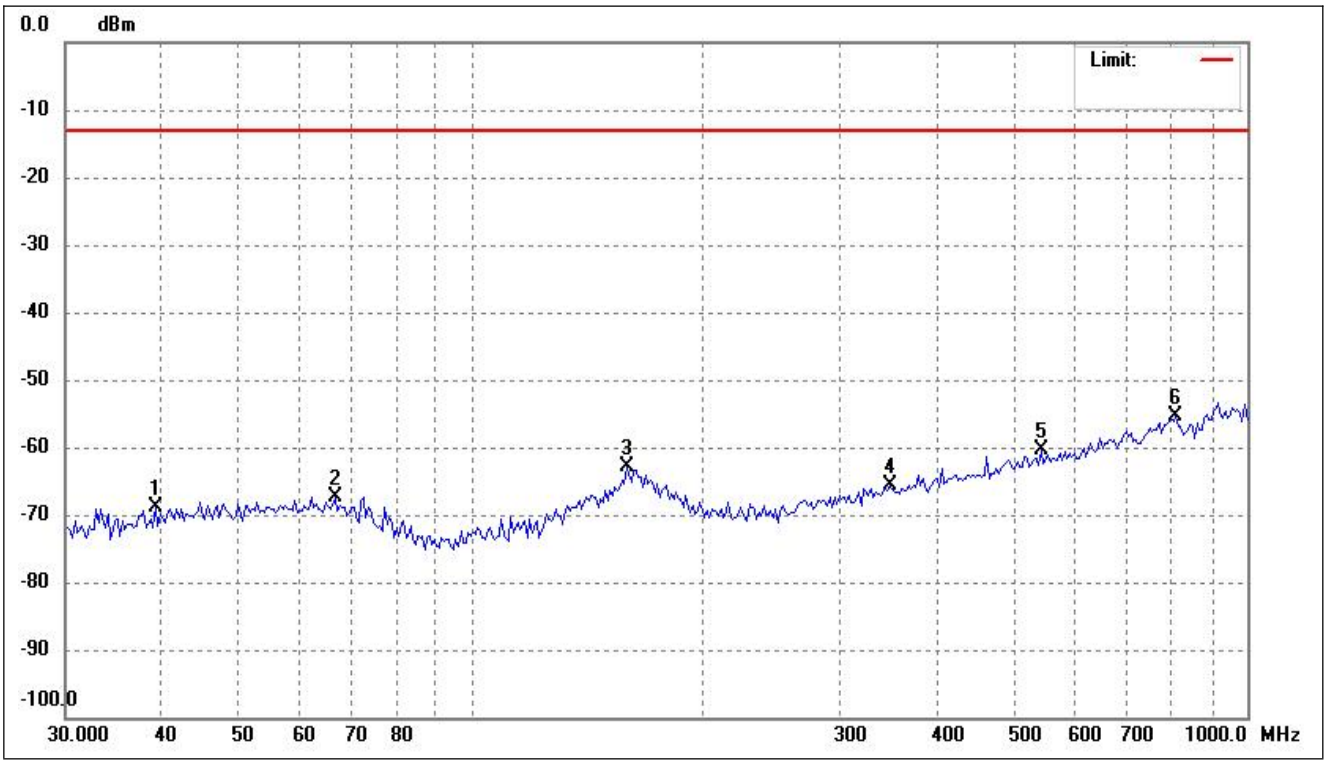
No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	49.4087	-70.18	3.44	-66.74	-13.00	-53.74	ERP
2	61.8676	-69.51	3.26	-66.25	-13.00	-53.25	ERP
3	162.0197	-69.35	7.57	-61.78	-13.00	-48.78	ERP
4	403.9335	-68.30	5.44	-62.86	-13.00	-49.86	ERP
5	749.6761	-68.33	11.37	-56.96	-13.00	-43.96	ERP
6	798.6205	-65.96	12.62	-53.34	-13.00	-40.34	ERP

Test Mode	5G NR n78 (3450-3550MHz)	Polarity:	Horizontal



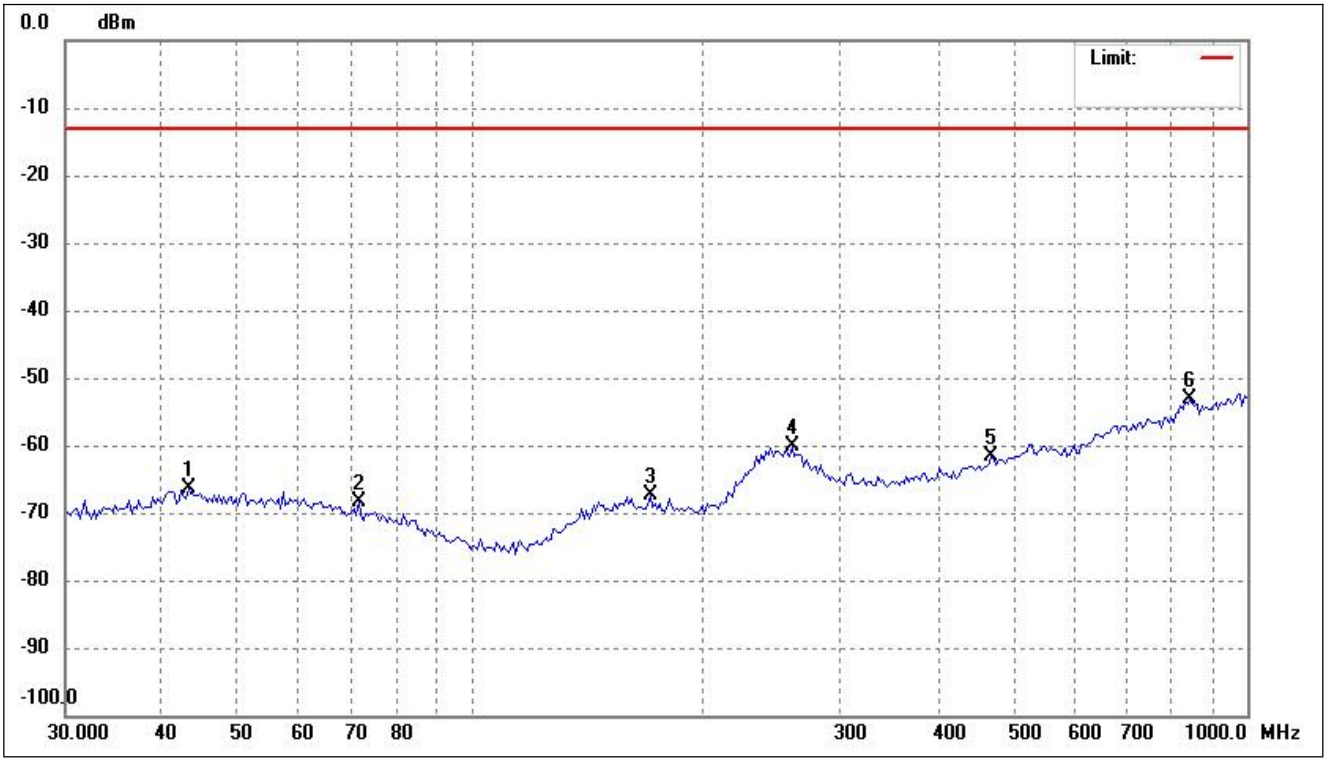
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	43.2333	-69.30	2.86	-66.44	-13.00	-53.44	ERP
2	67.3109	-70.74	1.40	-69.34	-13.00	-56.34	ERP
3	160.8852	-68.84	0.98	-67.86	-13.00	-54.86	ERP
4	243.5431	-67.80	7.44	-60.36	-13.00	-47.36	ERP
5	458.3987	-69.25	6.19	-63.06	-13.00	-50.06	ERP
6	844.8028	-66.80	13.63	-53.17	-13.00	-40.17	ERP

Test Mode	5G NR n78 (3450-3550MHz)	Polarity:	Vertical



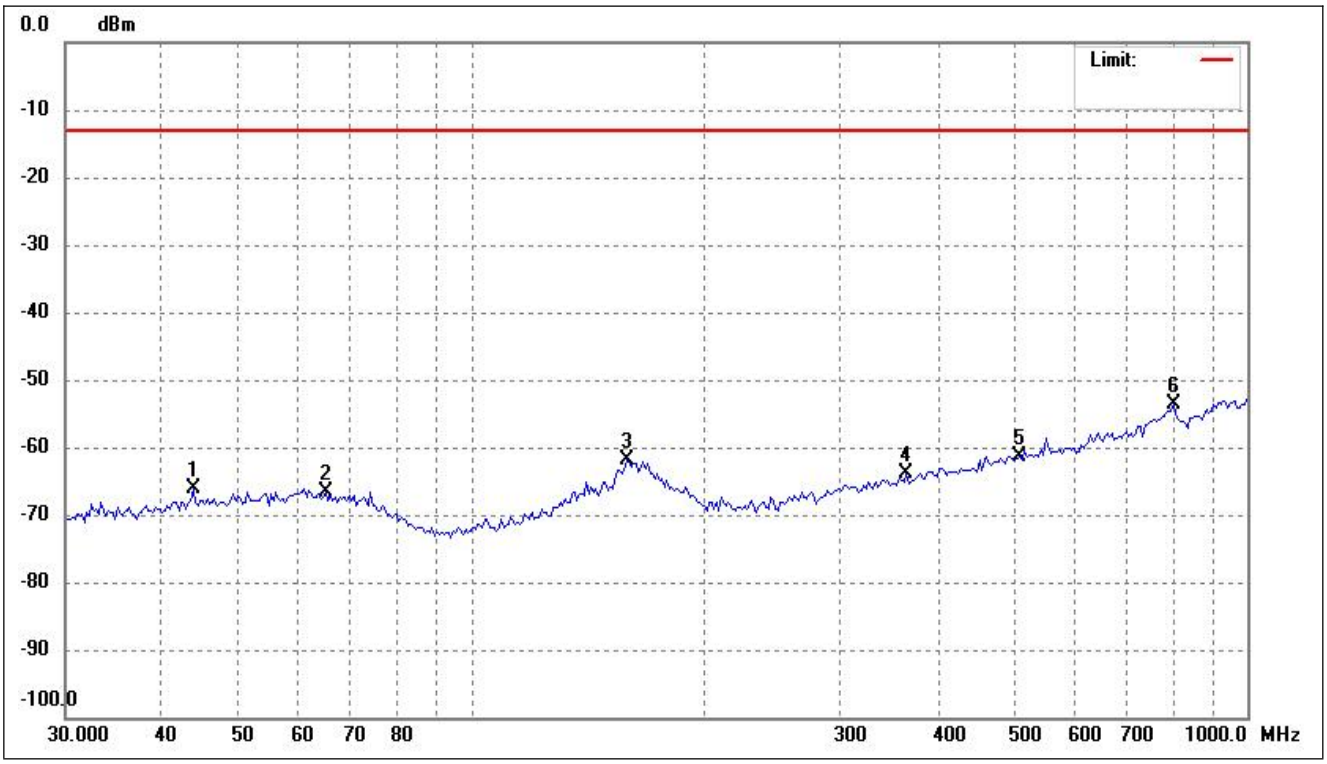
No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	39.1825	-71.25	2.47	-68.78	-13.00	-55.78	ERP
2	66.8395	-70.56	3.15	-67.41	-13.00	-54.41	ERP
3	158.6399	-70.23	7.39	-62.84	-13.00	-49.84	ERP
4	346.0740	-69.80	4.26	-65.54	-13.00	-52.54	ERP
5	542.6104	-68.27	7.88	-60.39	-13.00	-47.39	ERP
6	809.9238	-67.58	12.13	-55.45	-13.00	-42.45	ERP

Test Mode	5G NR n78 (3700-3800MHz)	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	43.2333	-69.30	2.86	-66.44	-13.00	-53.44	ERP
2	71.7054	-69.11	0.77	-68.34	-13.00	-55.34	ERP
3	170.1888	-68.28	0.98	-67.30	-13.00	-54.30	ERP
4	259.4434	-67.82	7.76	-60.06	-13.00	-47.06	ERP
5	468.1651	-68.02	6.45	-61.57	-13.00	-48.57	ERP
6	844.8028	-66.80	13.63	-53.17	-13.00	-40.17	ERP

Test Mode	5G NR n78 (3700-3800MHz)	Polarity:	Vertical



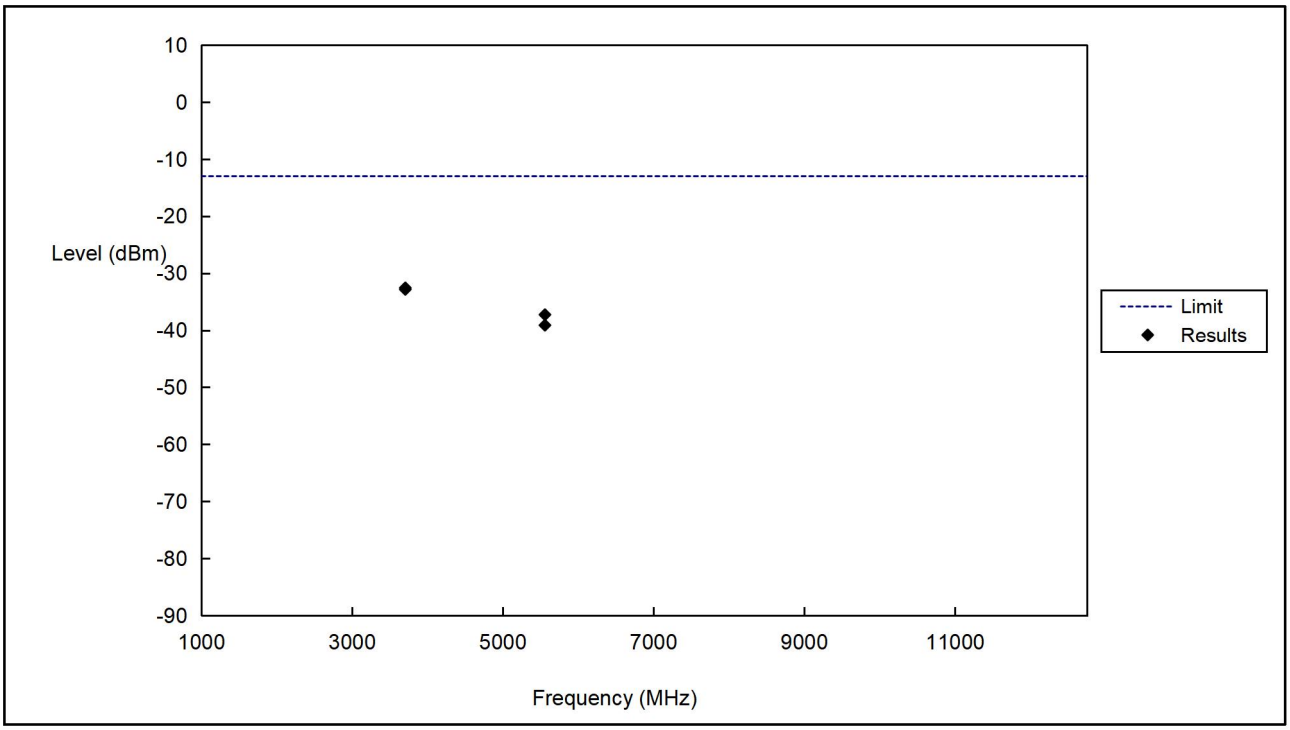
No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	43.8452	-69.04	2.92	-66.12	-13.00	-53.12	ERP
2	64.9869	-69.69	3.19	-66.50	-13.00	-53.50	ERP
3	158.6399	-69.15	7.39	-61.76	-13.00	-48.76	ERP
4	363.5231	-68.39	4.62	-63.77	-13.00	-50.77	ERP
5	509.3559	-68.64	7.33	-61.31	-13.00	-48.31	ERP
6	804.2523	-65.96	12.43	-53.53	-13.00	-40.53	ERP

Note: Margin= (Reading+ Correct)- Limit

➢ Spurious Emissions Above 1GHz

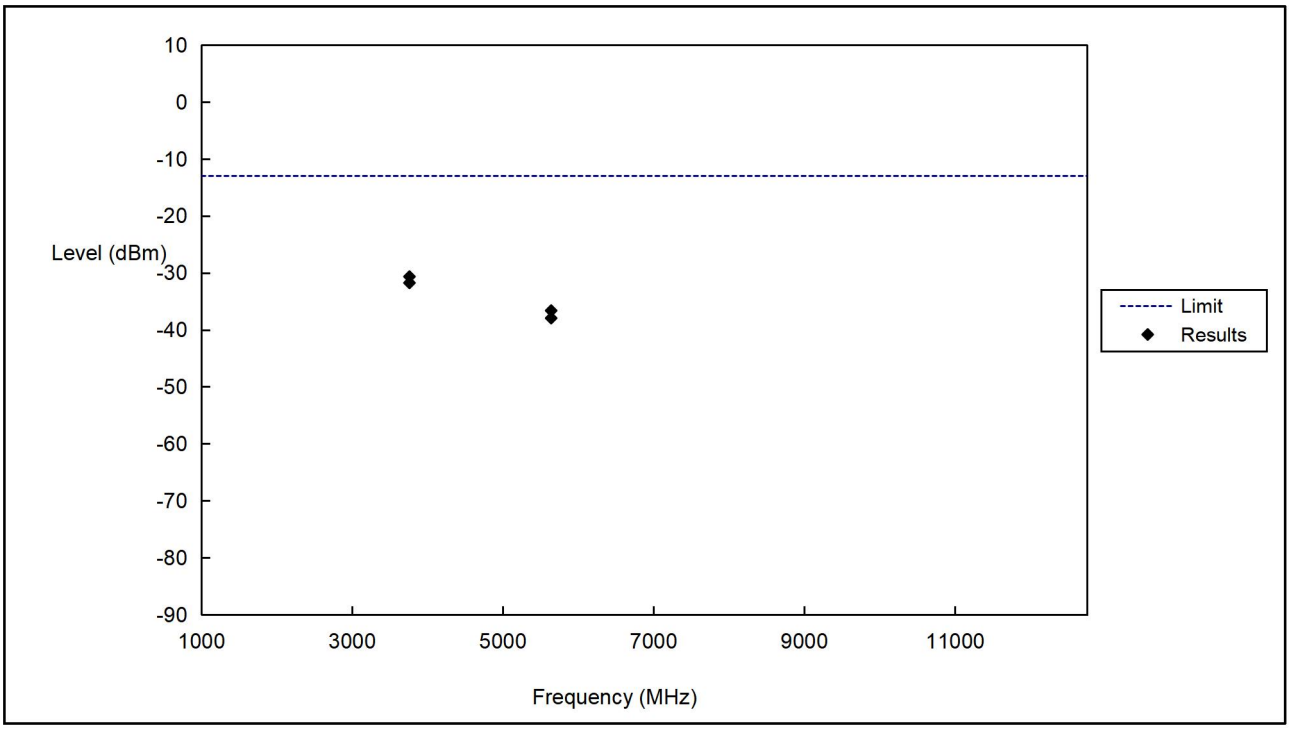
For FDD_SA n2 Mode

Low Channel



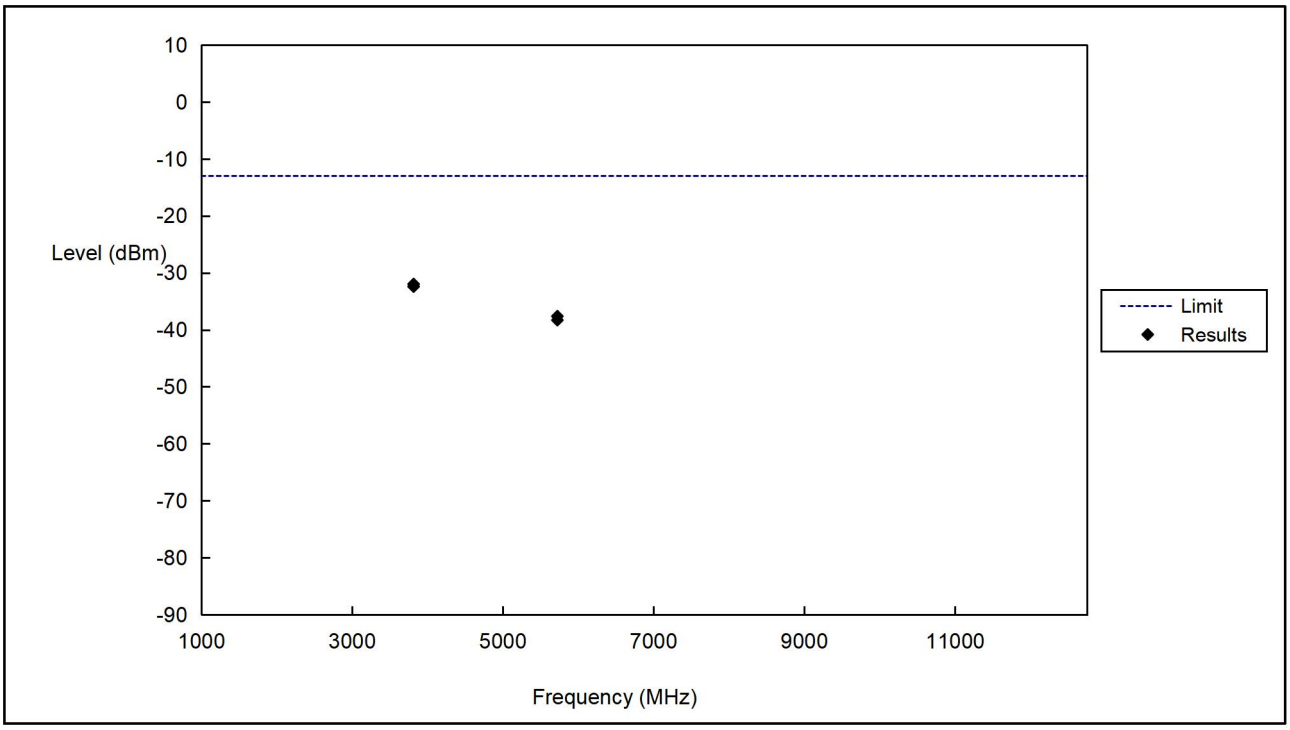
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	3705.00	-32.58	-13	-19.58	H	RMS
2	5557.50	-37.28	-13	-24.28	H	RMS
1	3705.00	-32.85	-13	-19.85	V	RMS
2	5557.50	-39.13	-13	-26.13	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	3760.00	-30.67	-13	-17.67	H	RMS
2	5640.00	-36.64	-13	-23.64	H	RMS
1	3760.00	-31.77	-13	-18.77	V	RMS
2	5640.00	-37.96	-13	-24.96	V	RMS

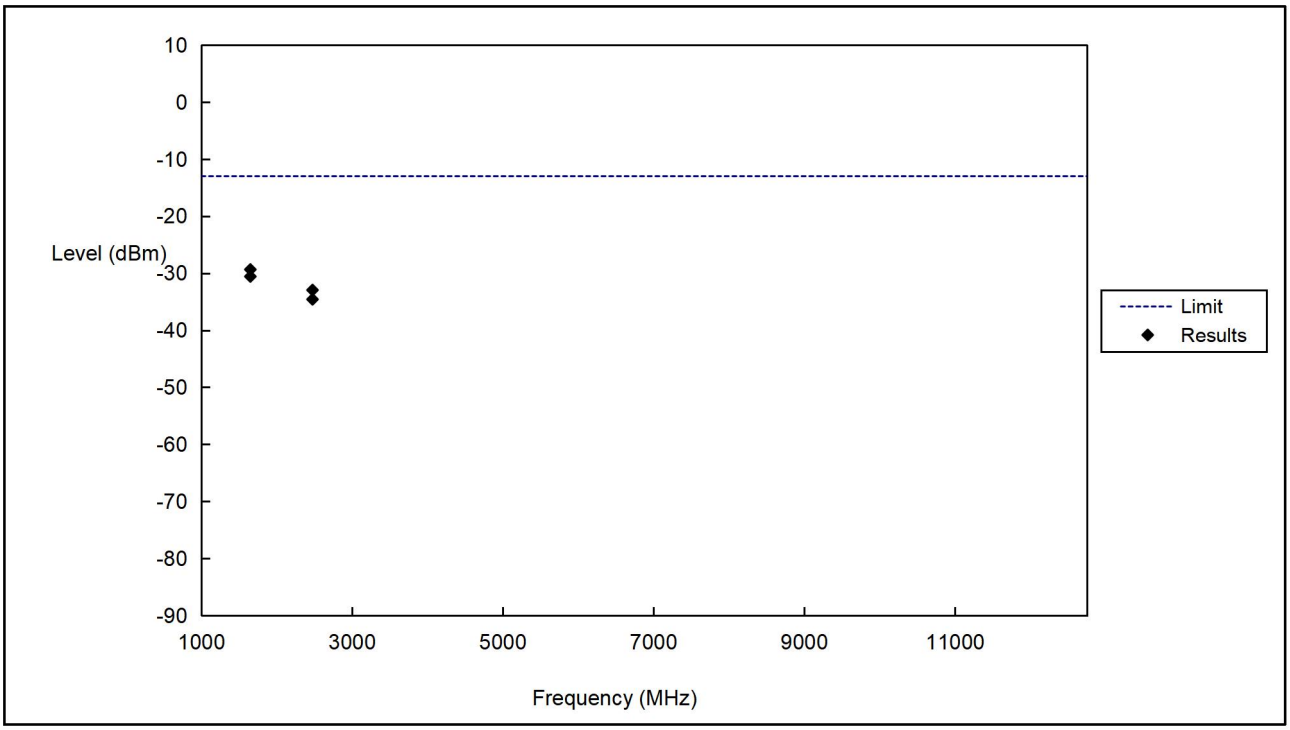
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	3815.00	-31.98	-13	-18.98	H	RMS
2	5722.50	-37.63	-13	-24.63	H	RMS
1	3815.00	-32.42	-13	-19.42	V	RMS
2	5722.50	-38.31	-13	-25.31	V	RMS

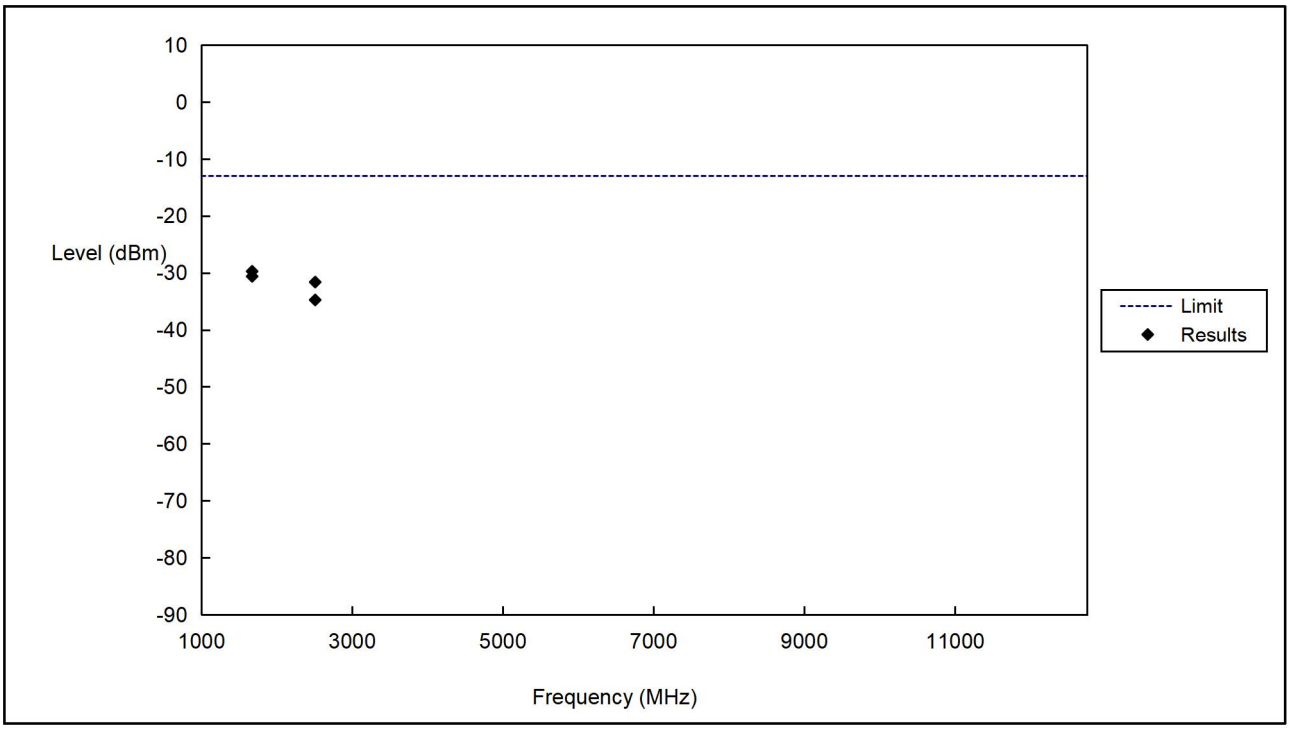
For FDD_SA n 5 Mode

Low Channel



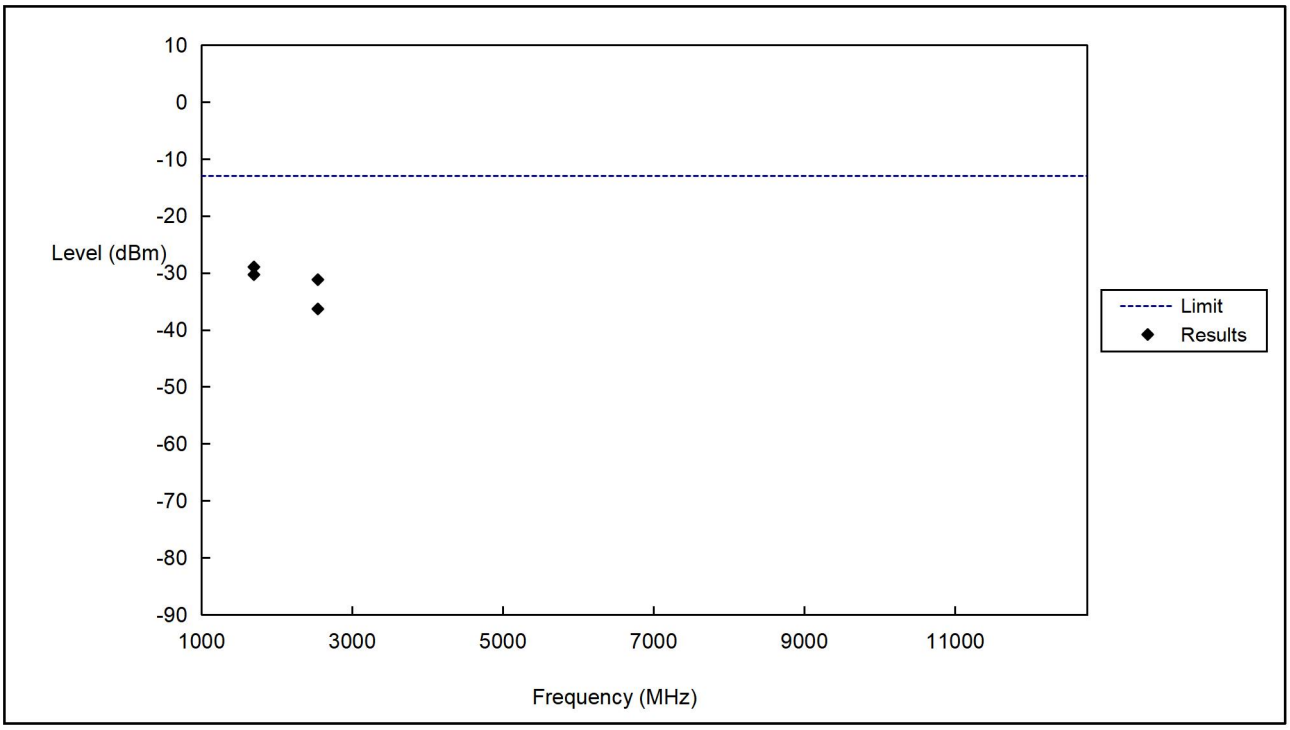
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	1649.40	-29.36	-13	-16.36	H	RMS
2	2474.10	-34.59	-13	-21.59	H	RMS
1	1649.40	-30.58	-13	-17.58	V	RMS
2	2474.10	-32.96	-13	-19.96	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	1673.00	-30.63	-13	-17.63	H	RMS
2	2509.50	-34.77	-13	-21.77	H	RMS
1	1673.00	-29.74	-13	-16.74	V	RMS
2	2509.50	-31.63	-13	-18.63	V	RMS

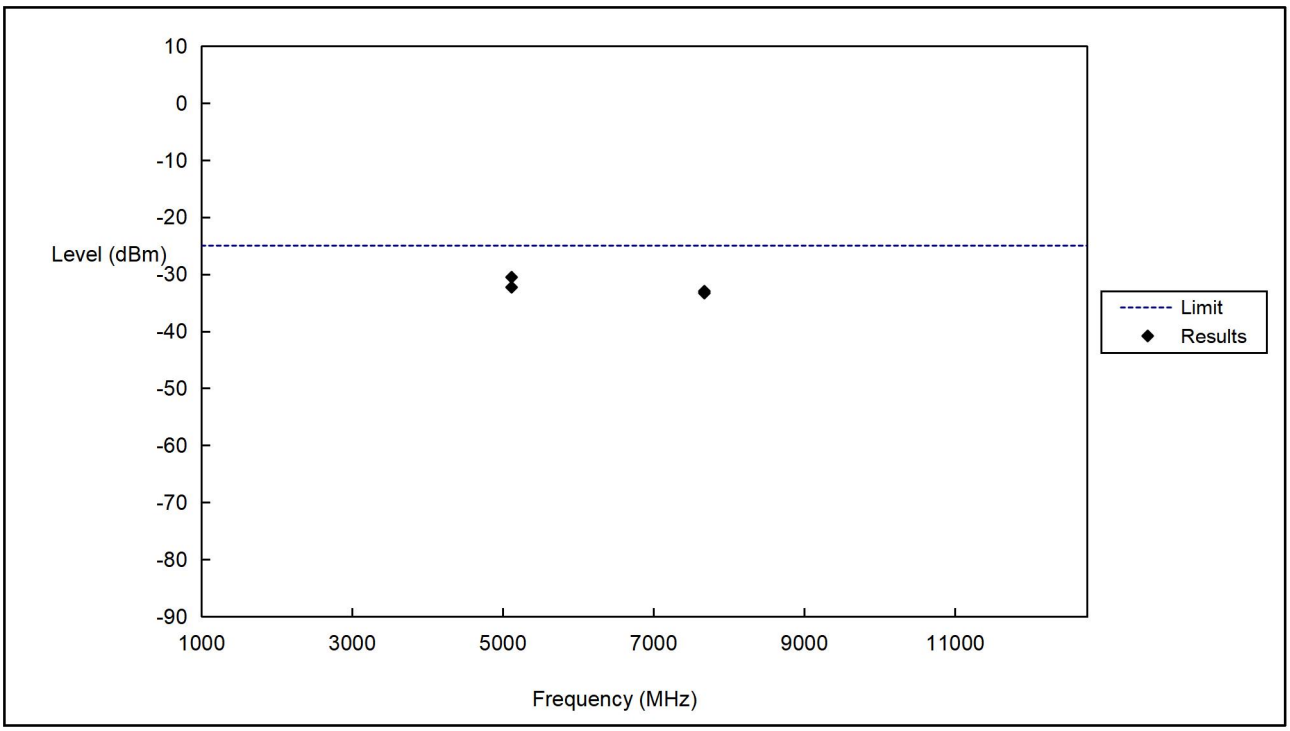
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	1696.60	-28.98	-13	-15.98	H	RMS
2	2544.90	-36.35	-13	-23.35	H	RMS
1	1696.60	-30.33	-13	-17.33	V	RMS
2	2544.90	-31.21	-13	-18.21	V	RMS

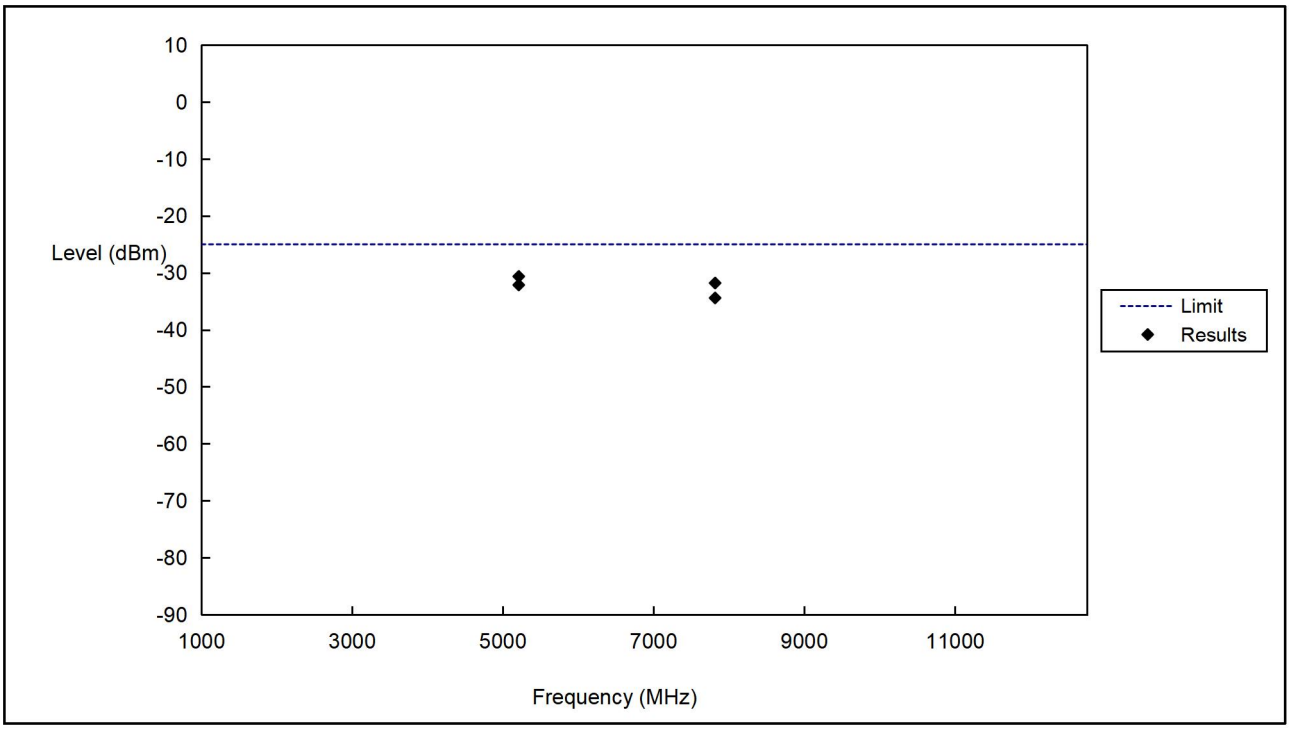
For TDD_SA n 41 Mode

Low Channel



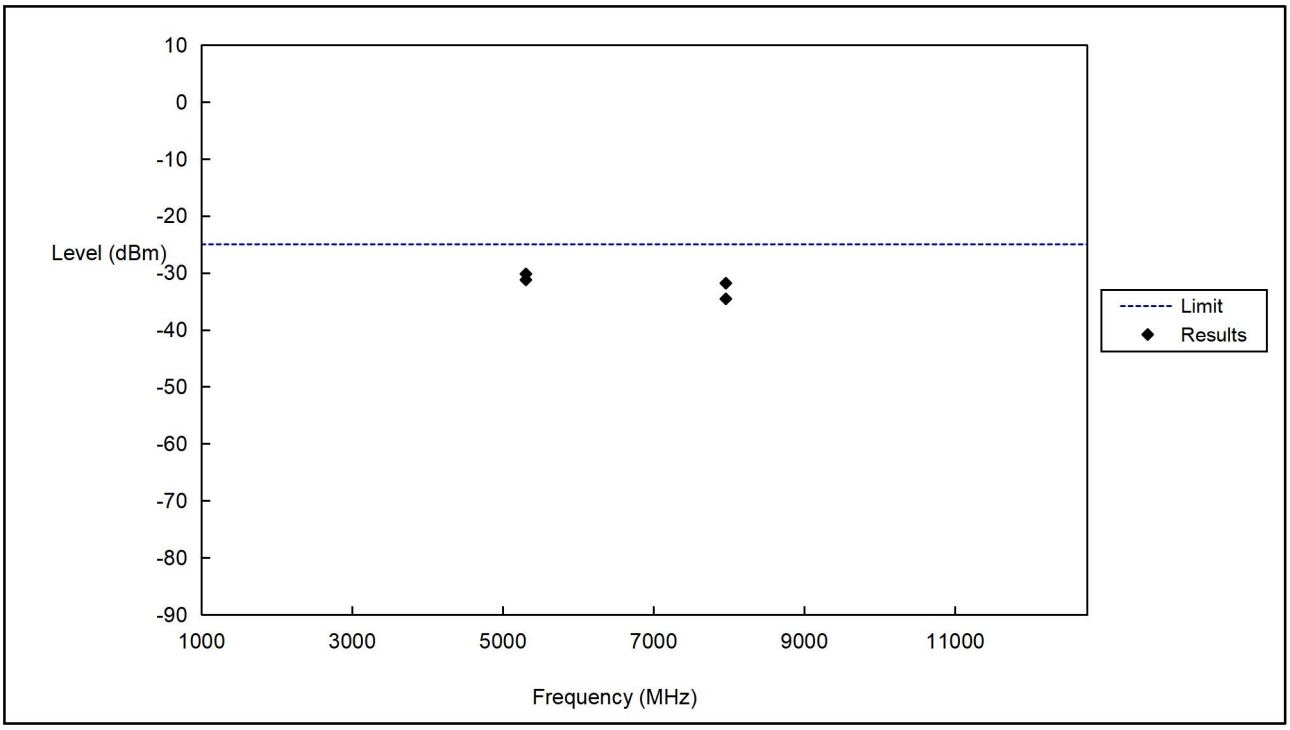
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	5115.00	-30.54	-25	-5.54	H	RMS
2	7672.50	-32.99	-25	-7.99	H	RMS
1	5115.00	-32.30	-25	-7.30	V	RMS
2	7672.50	-33.32	-25	-8.32	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	5210.00	-30.64	-25	-5.64	H	RMS
2	7815.00	-31.80	-25	-6.80	H	RMS
1	5210.00	-32.14	-25	-7.14	V	RMS
2	7815.00	-34.42	-25	-9.42	V	RMS

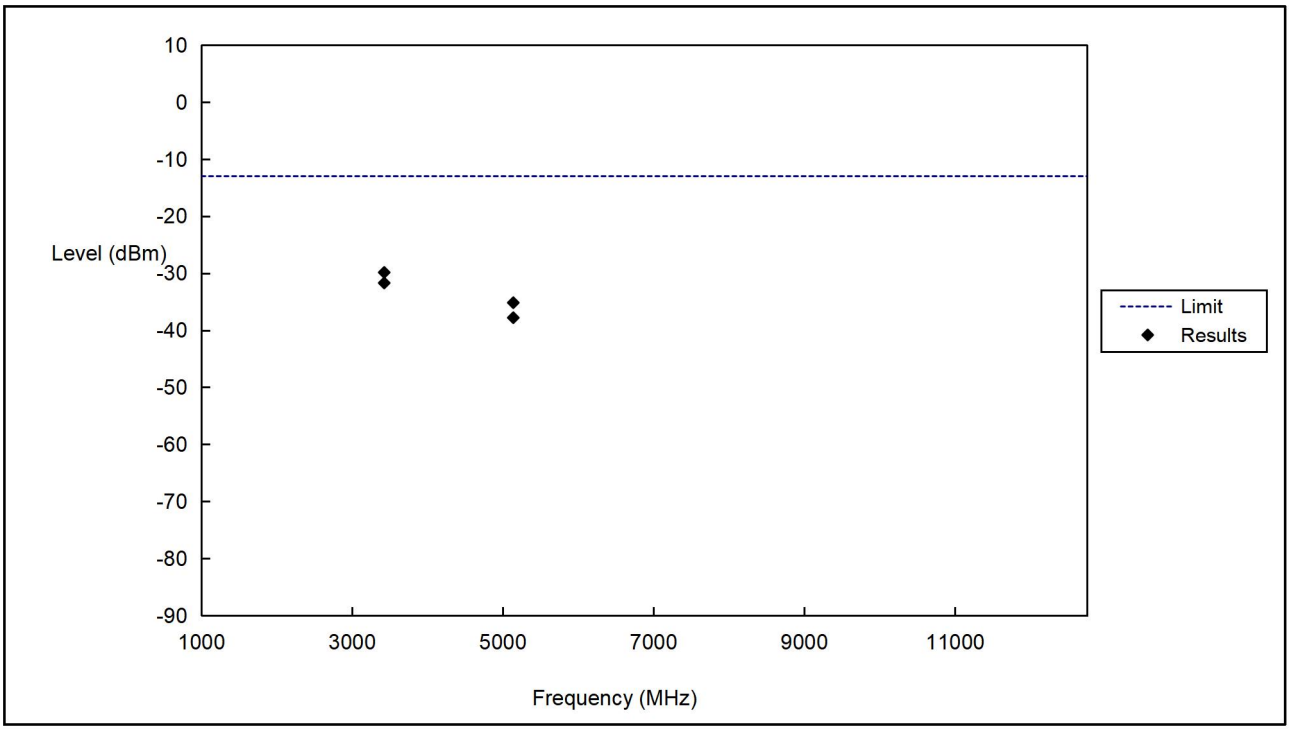
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	5305.00	-30.20	-25	-5.20	H	RMS
2	7957.50	-31.83	-25	-6.83	H	RMS
1	5305.00	-31.25	-25	-6.25	V	RMS
2	7957.50	-34.58	-25	-9.58	V	RMS

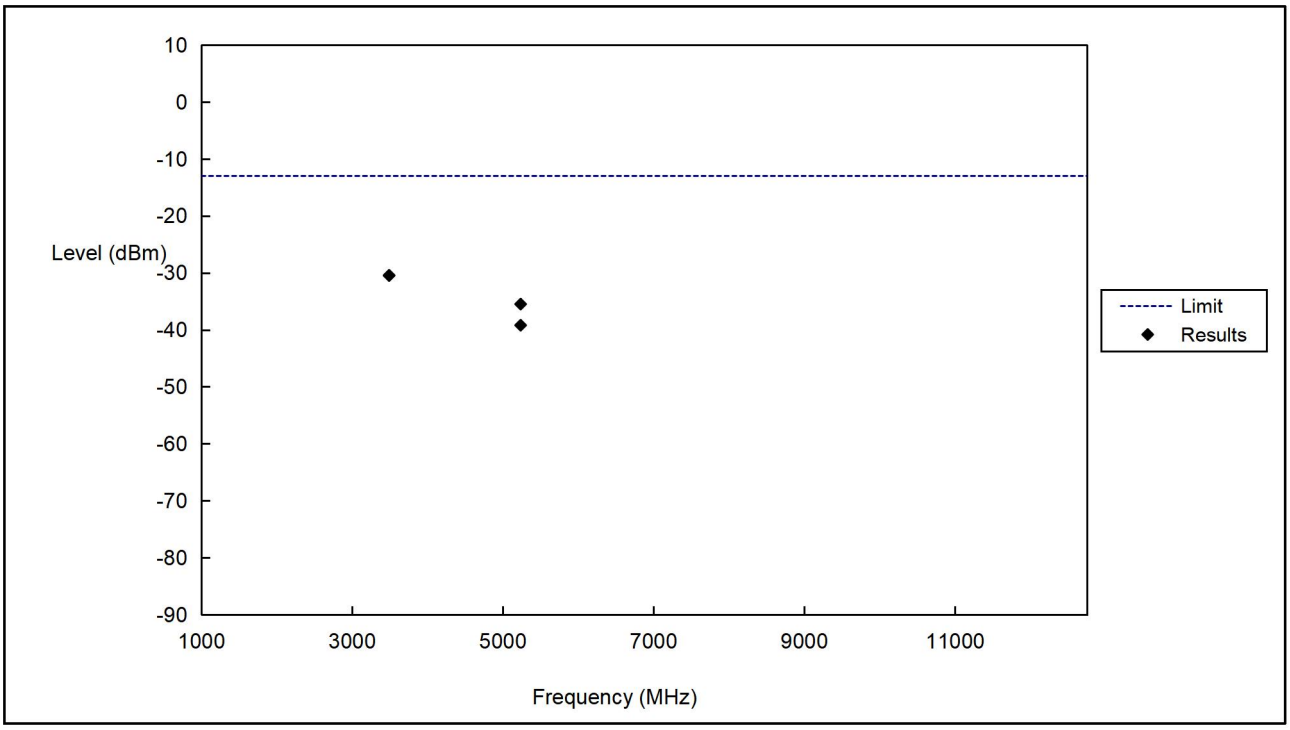
For FDD_SA n66 Mode

Low Channel



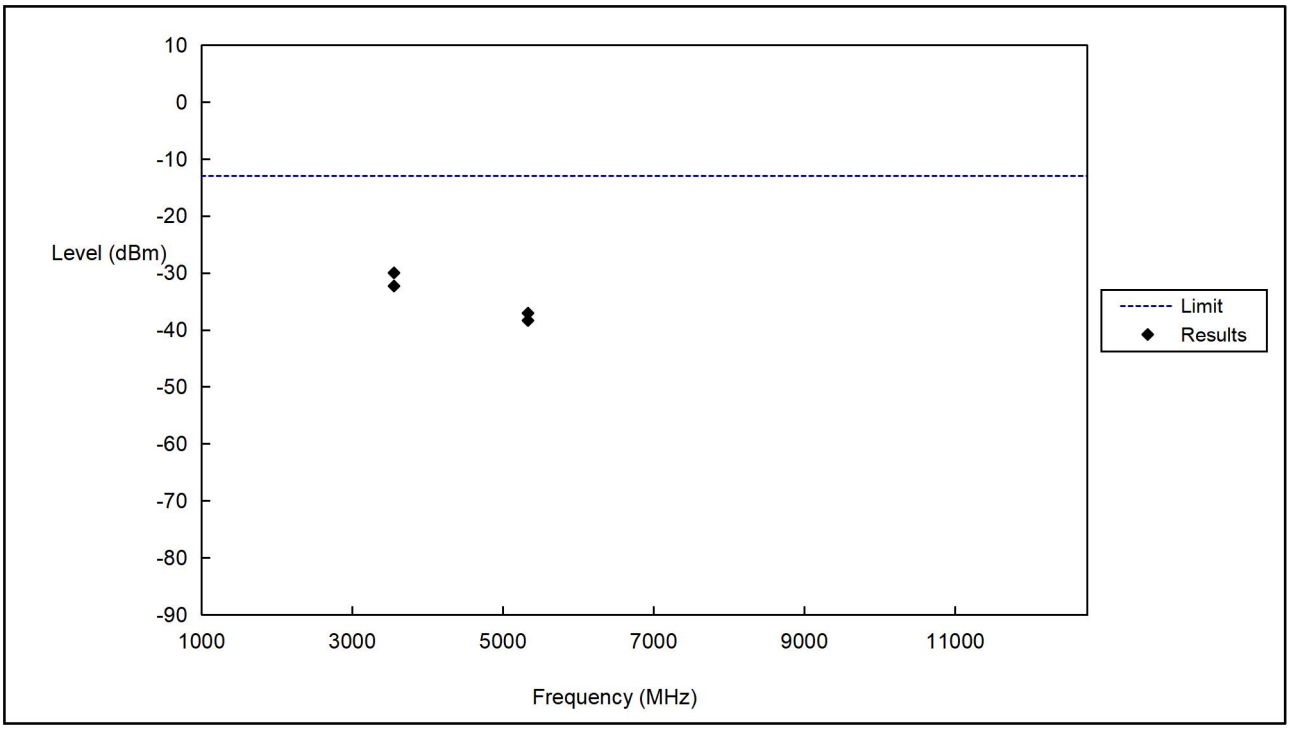
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	3425.00	-31.72	-13	-18.72	H	RMS
2	5137.50	-37.81	-13	-24.81	H	RMS
1	3425.00	-29.87	-13	-16.87	V	RMS
2	5137.50	-35.18	-13	-22.18	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	3490.00	-30.48	-13	-17.48	H	RMS
2	5235.00	-39.21	-13	-26.21	H	RMS
1	3490.00	-30.45	-13	-17.45	V	RMS
2	5235.00	-35.50	-13	-22.50	V	RMS

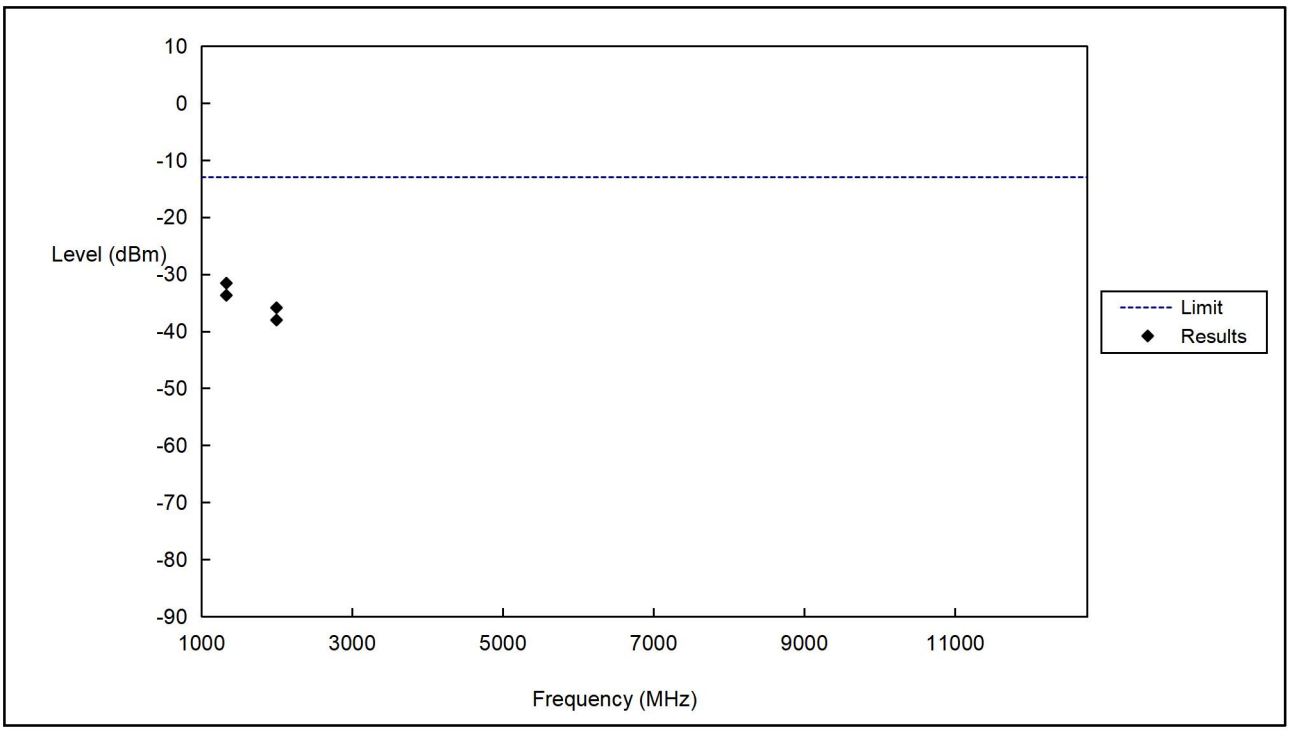
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	3555.00	-32.33	-13	-19.33	H	RMS
2	5332.50	-38.38	-13	-25.38	H	RMS
1	3555.00	-30.02	-13	-17.02	V	RMS
2	5332.50	-37.09	-13	-24.09	V	RMS

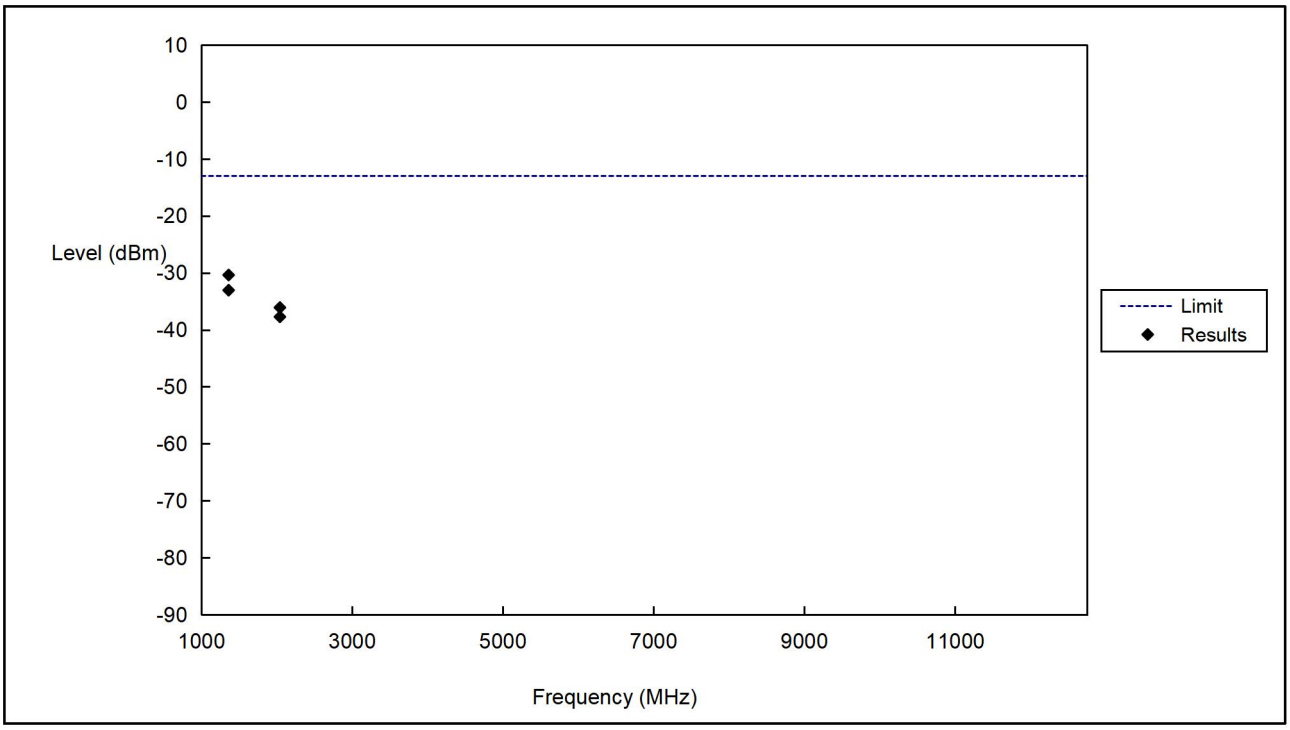
For FDD_SA n71 Mode

Low Channel



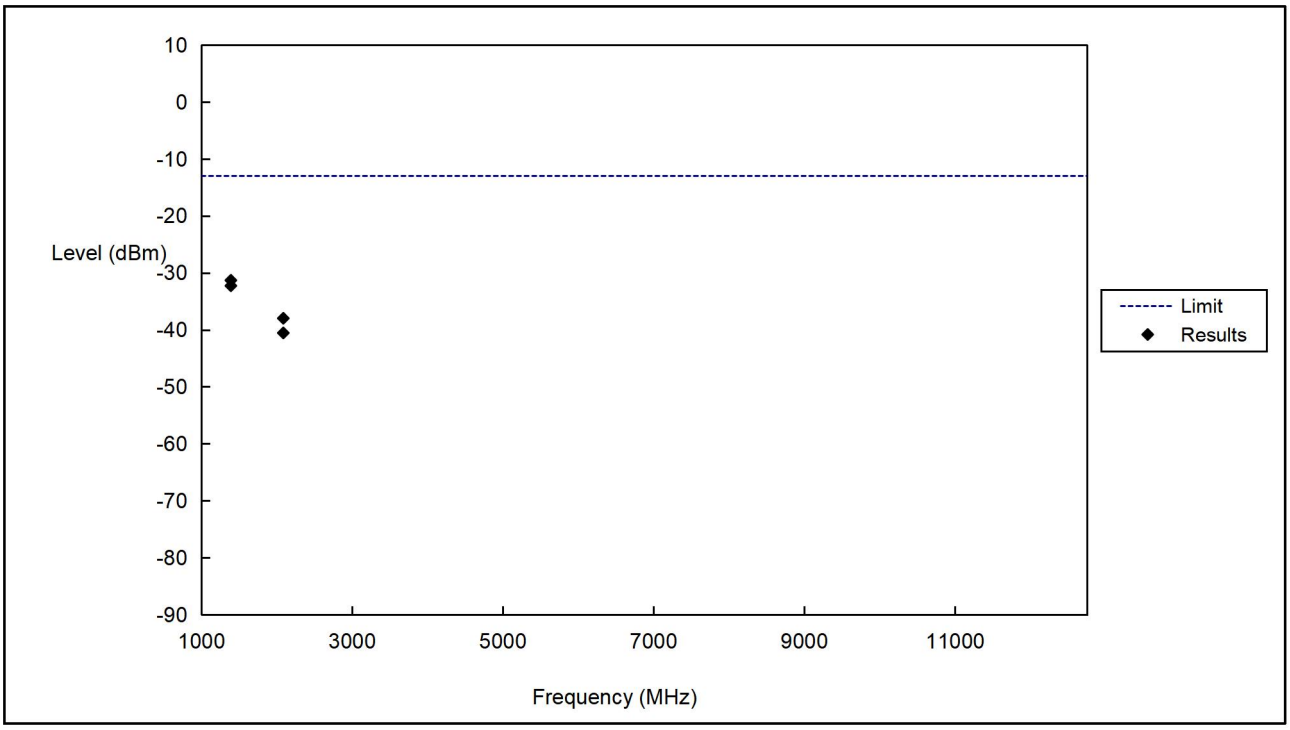
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	1331.00	-33.71	-13	-20.71	H	RMS
2	1996.50	-38.05	-13	-25.05	H	RMS
1	1331.00	-31.58	-13	-18.58	V	RMS
2	1996.50	-35.89	-13	-22.89	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	1361.00	-33.06	-13	-20.06	H	RMS
2	2041.50	-37.73	-13	-24.73	H	RMS
1	1361.00	-30.39	-13	-17.39	V	RMS
2	2041.50	-36.10	-13	-23.10	V	RMS

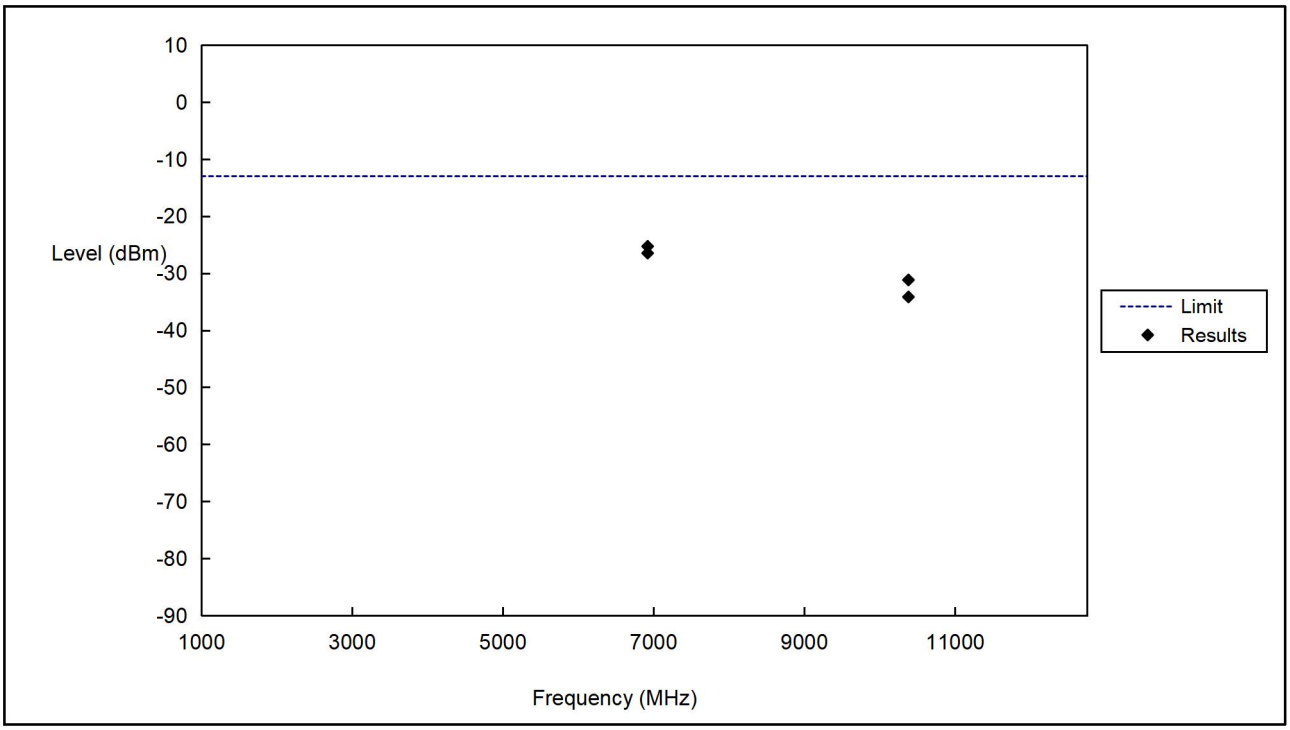
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	1391.00	-32.28	-13	-19.28	H	RMS
2	2086.50	-40.56	-13	-27.56	H	RMS
1	1391.00	-31.32	-13	-18.32	V	RMS
2	2086.50	-37.99	-13	-24.99	V	RMS

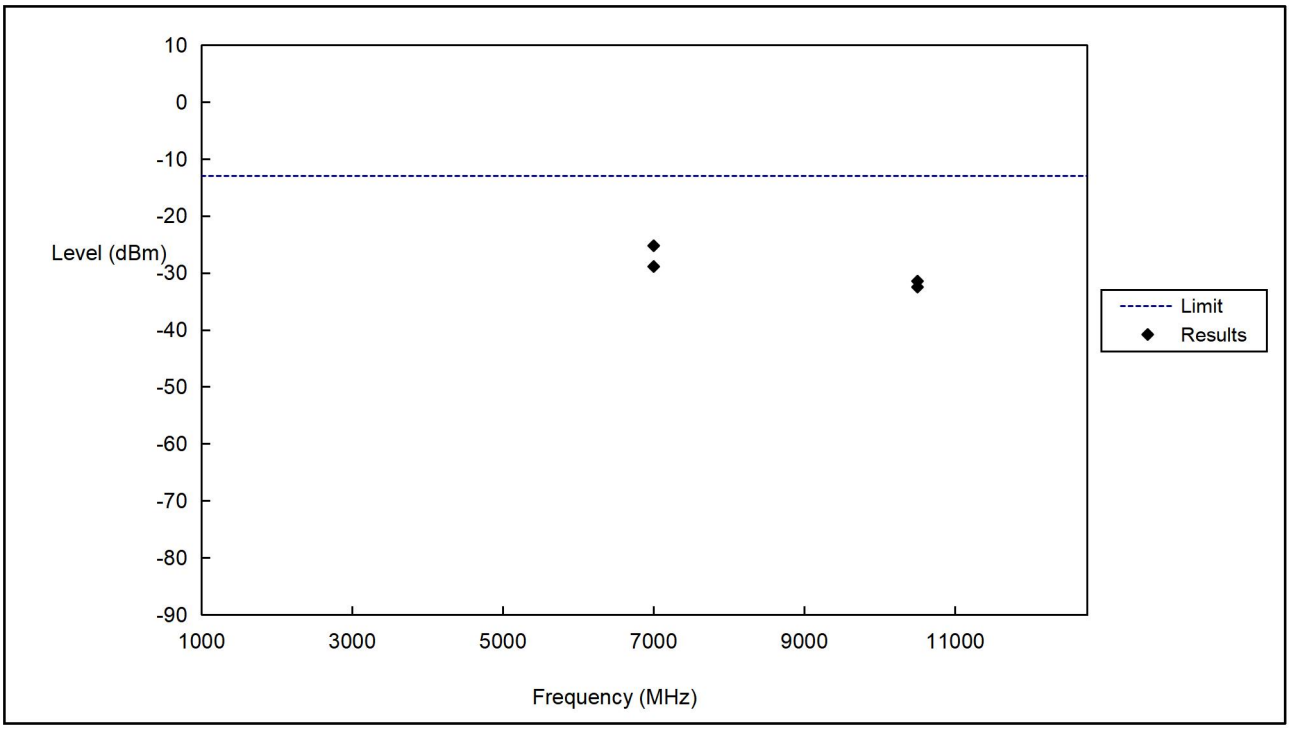
For TDD_SA N77_3450-3550MHz Mode

Low Channel



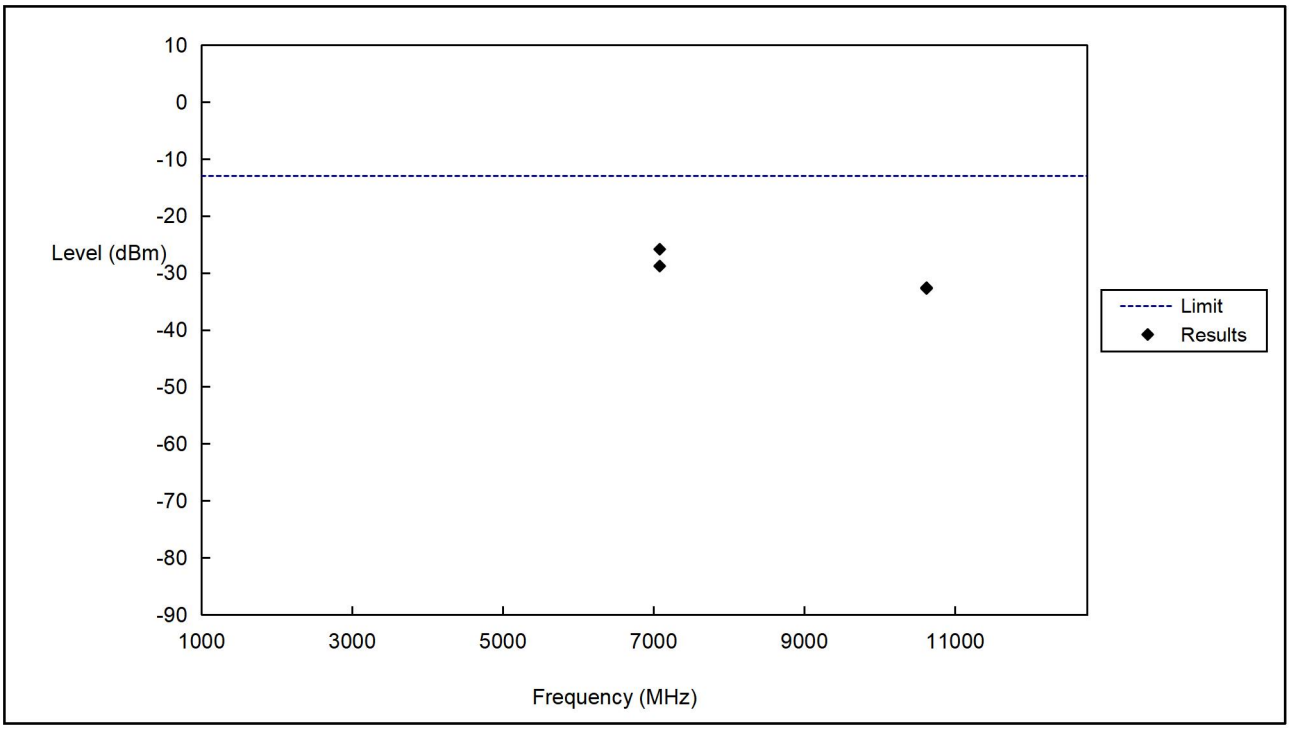
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	6919.98	-25.30	-13	-12.30	H	RMS
2	10379.97	-34.17	-13	-21.17	H	RMS
1	6919.98	-26.49	-13	-13.49	V	RMS
2	10379.97	-31.19	-13	-18.19	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7000.02	-25.25	-13	-12.25	H	RMS
2	10500.03	-31.47	-13	-18.47	H	RMS
1	7000.02	-28.90	-13	-15.90	V	RMS
2	10500.03	-32.51	-13	-19.51	V	RMS

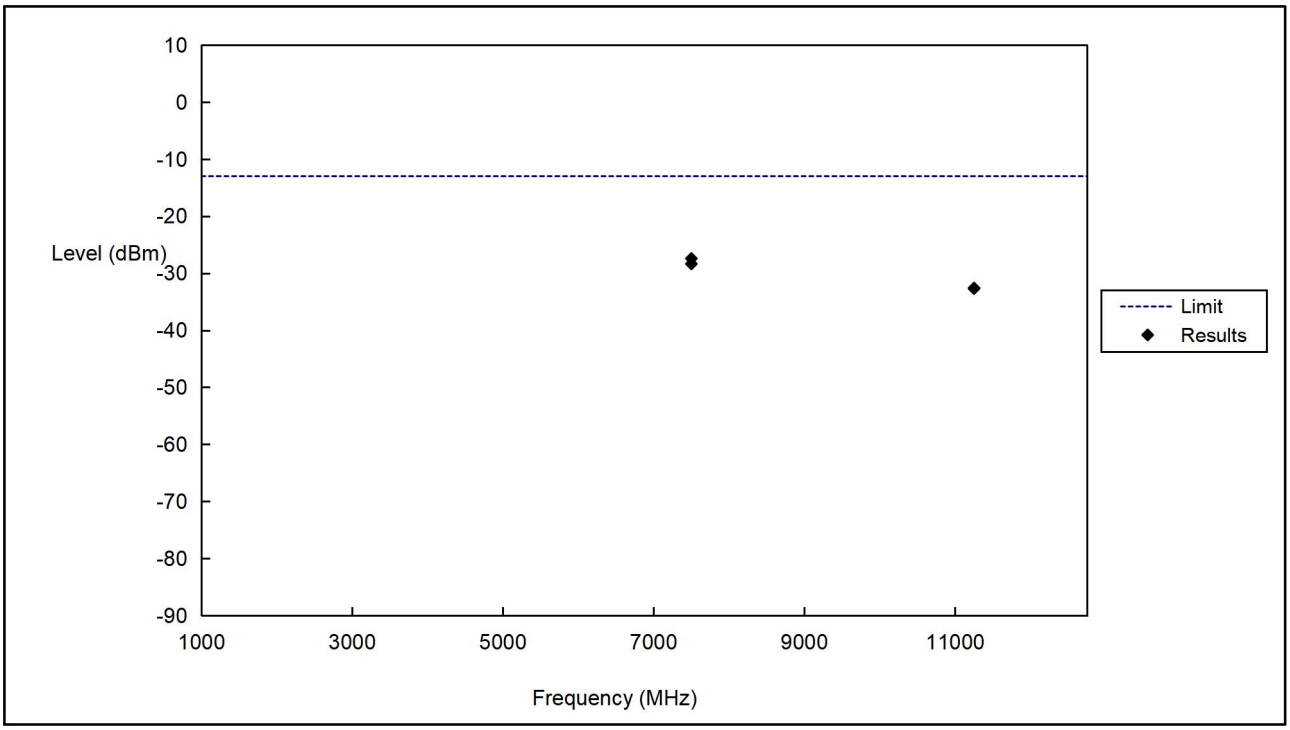
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7080.00	-25.87	-13	-12.87	H	RMS
2	10620.00	-32.76	-13	-19.76	H	RMS
1	7080.00	-28.82	-13	-15.82	V	RMS
2	10620.00	-32.62	-13	-19.62	V	RMS

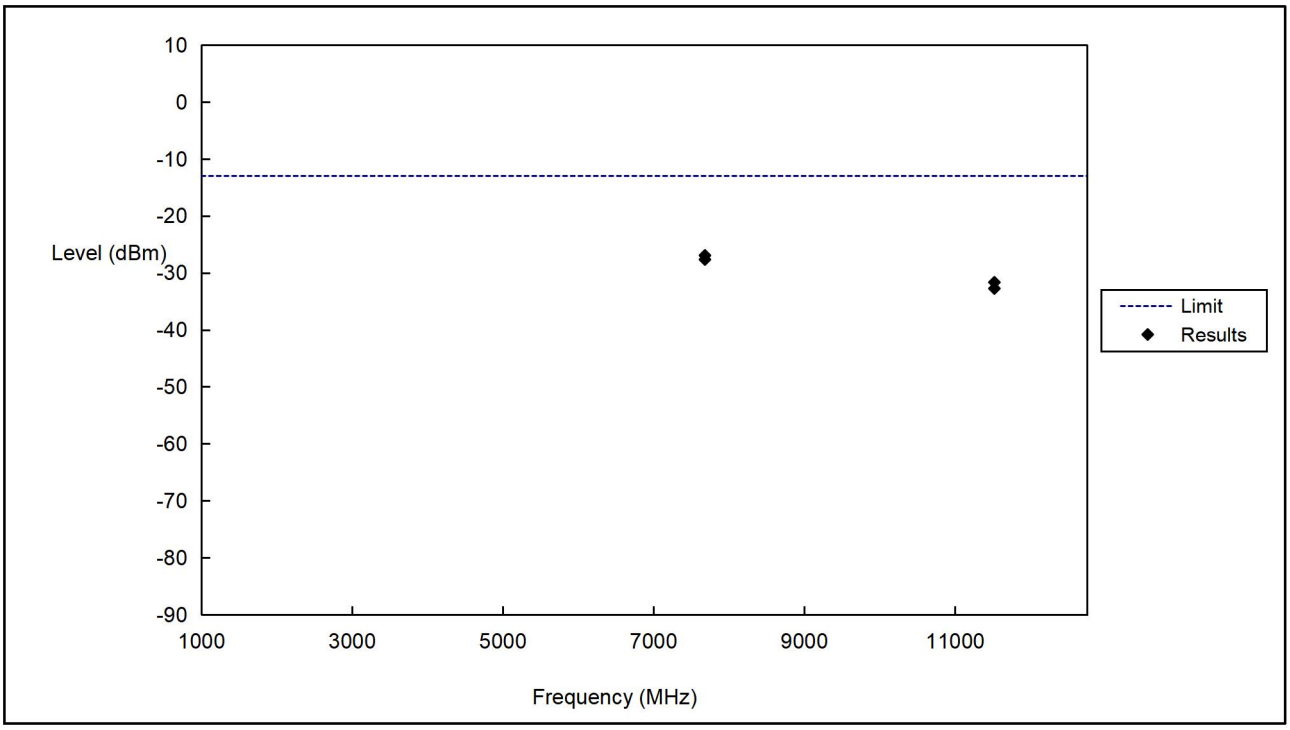
For TDD_SA N77_3700-3980MHz Mode

Low Channel



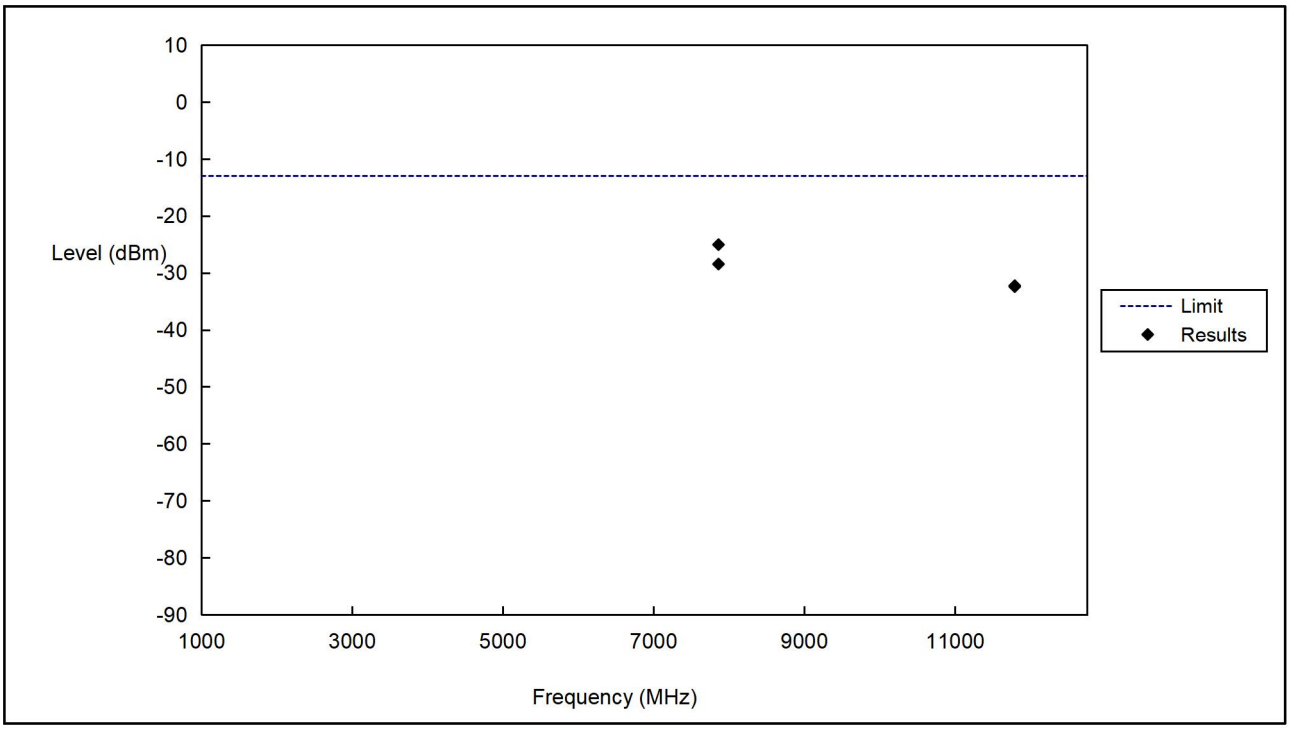
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7500.00	-27.43	-13	-14.43	H	RMS
2	11250.00	-32.70	-13	-19.70	H	RMS
1	7500.00	-28.37	-13	-15.37	V	RMS
2	11250.00	-32.61	-13	-19.61	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7680.00	-27.67	-13	-14.67	H	RMS
2	11520.00	-32.76	-13	-19.76	H	RMS
1	7680.00	-26.95	-13	-13.95	V	RMS
2	11520.00	-31.67	-13	-18.67	V	RMS

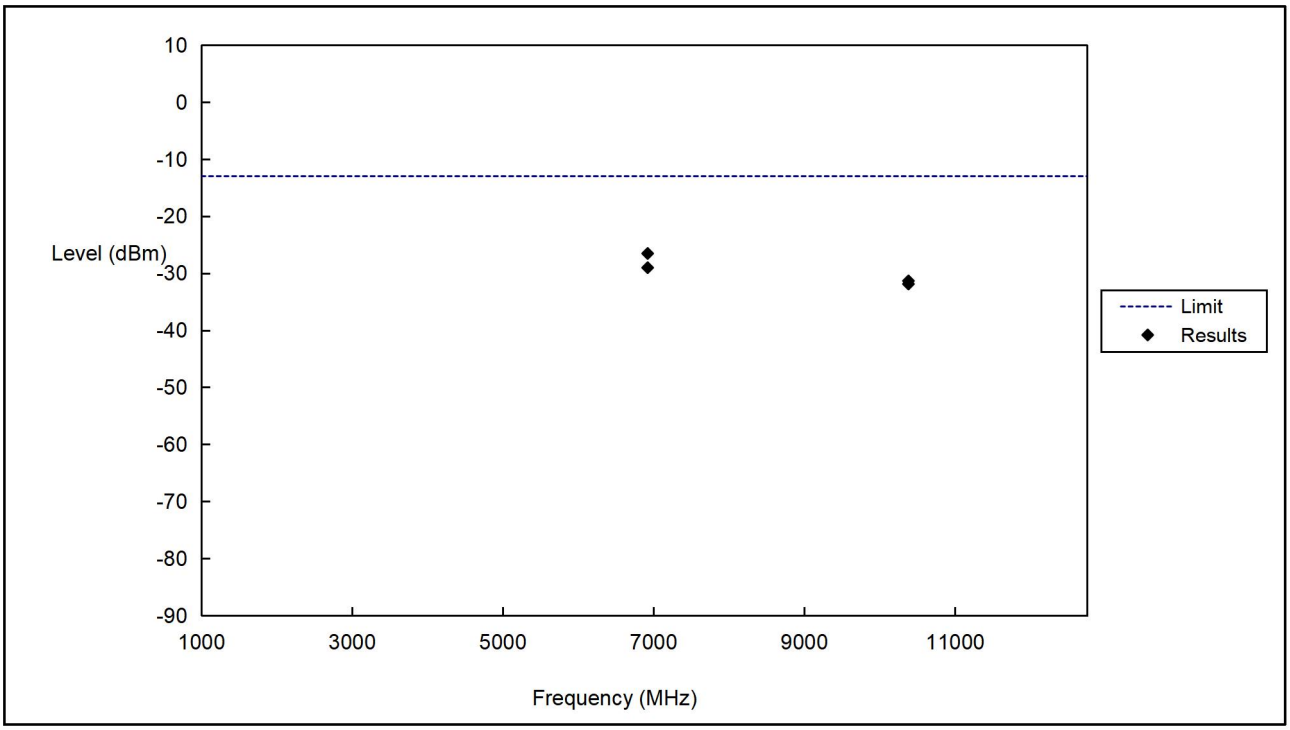
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7860.00	-25.06	-13	-12.06	H	RMS
2	11790.00	-32.43	-13	-19.43	H	RMS
1	7860.00	-28.47	-13	-15.47	V	RMS
2	11790.00	-32.27	-13	-19.27	V	RMS

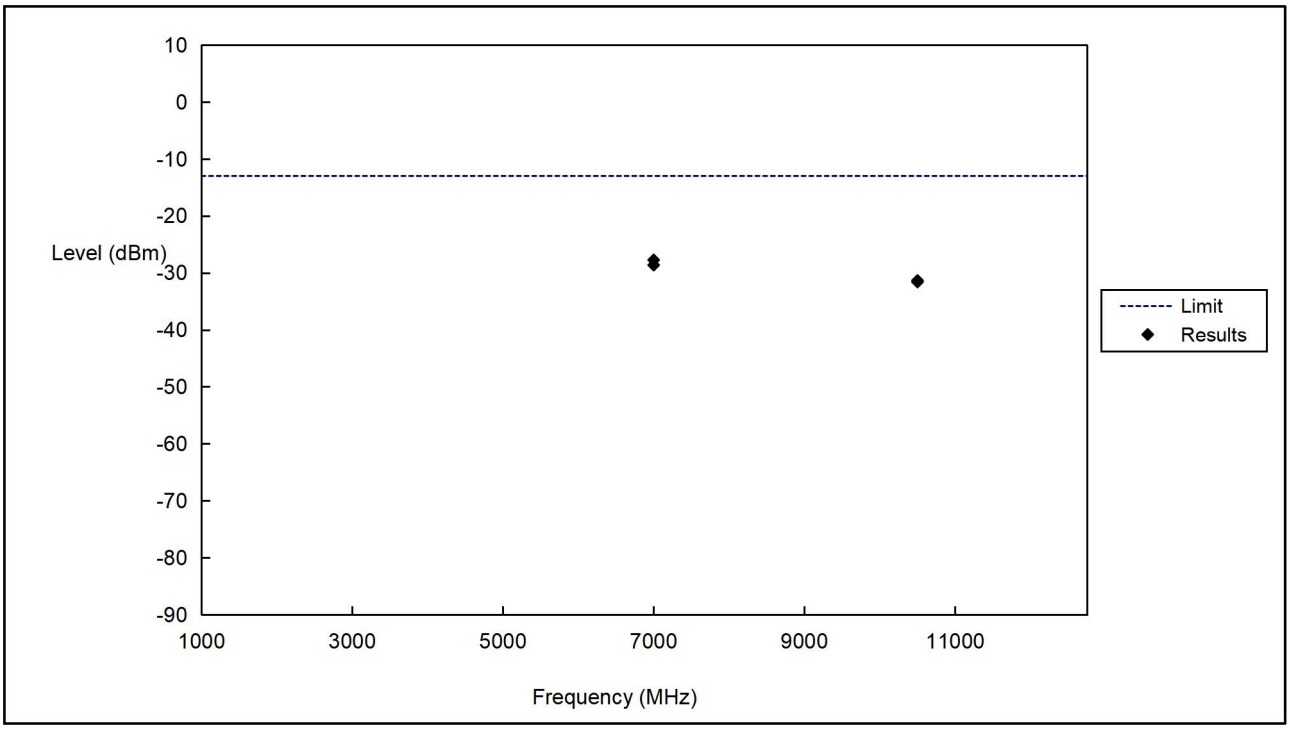
For TDD_SA N78_3450-3550MHz Mode

Low Channel



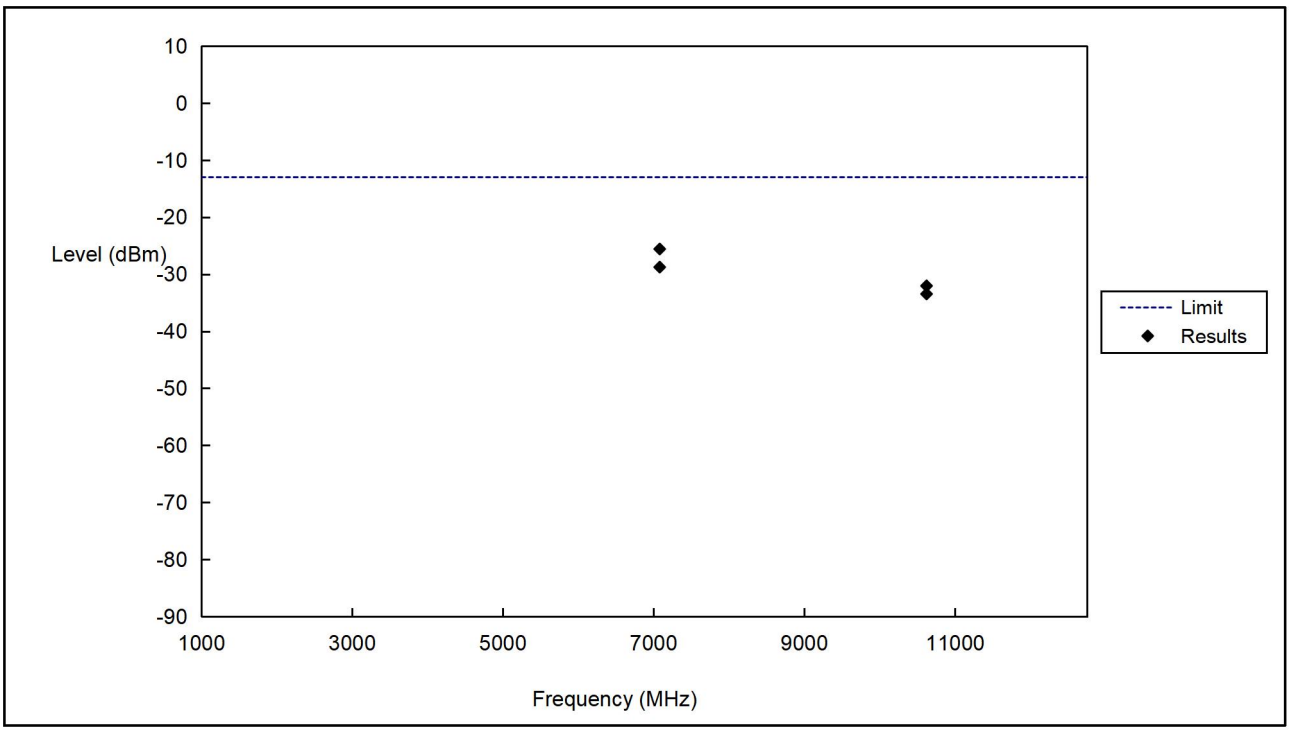
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	6919.98	-26.55	-13	-13.55	H	RMS
2	10379.97	-31.36	-13	-18.36	H	RMS
1	6919.98	-29.04	-13	-16.04	V	RMS
2	10379.97	-31.90	-13	-18.90	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7000.02	-27.75	-13	-14.75	H	RMS
2	10500.03	-31.61	-13	-18.61	H	RMS
1	7000.02	-28.65	-13	-15.65	V	RMS
2	10500.03	-31.35	-13	-18.35	V	RMS

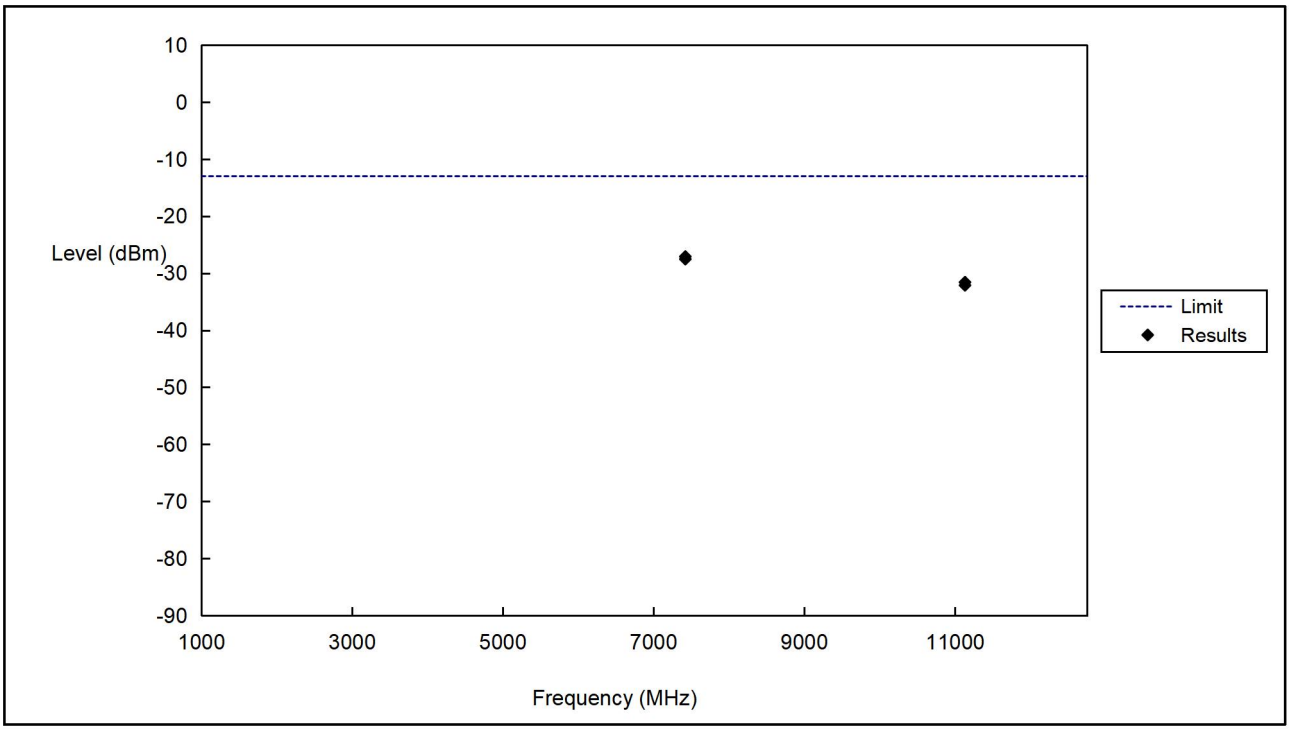
High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7080.00	-25.59	-13	-12.59	H	RMS
2	10620.00	-33.47	-13	-20.47	H	RMS
1	7080.00	-28.77	-13	-15.77	V	RMS
2	10620.00	-32.05	-13	-19.05	V	RMS

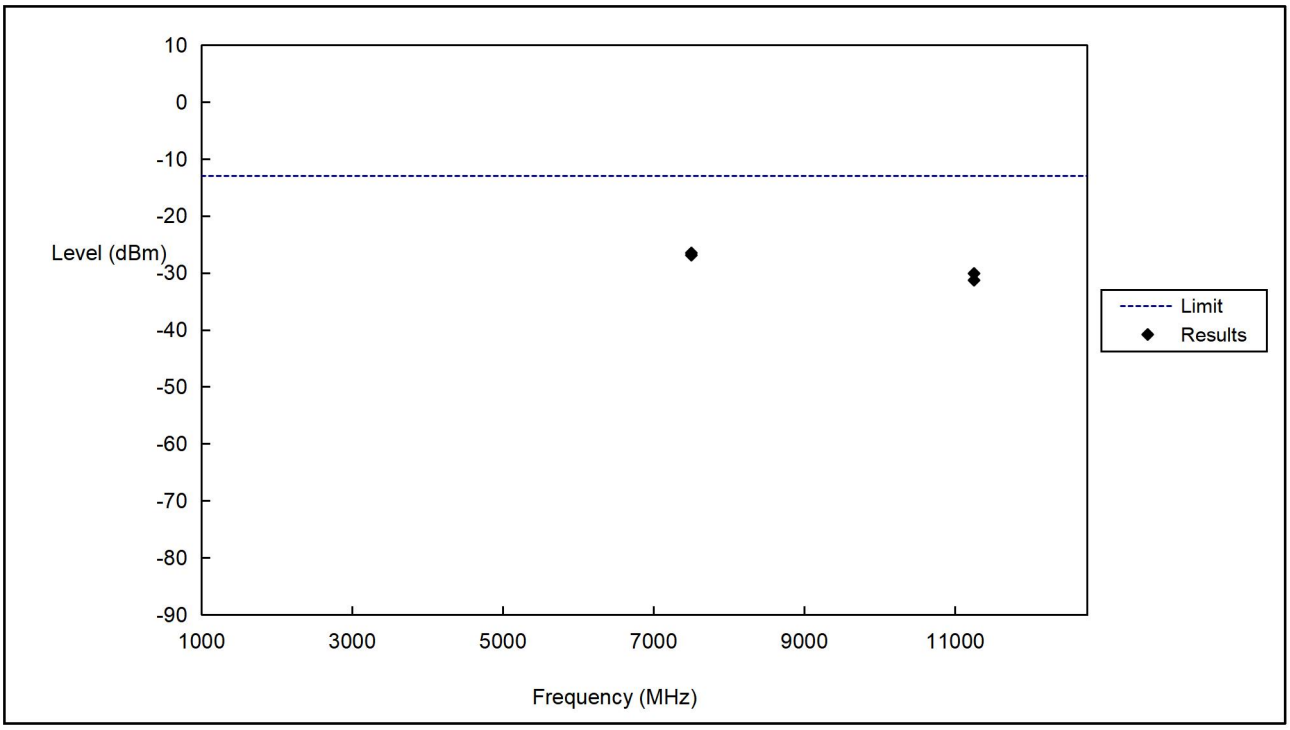
For TDD_SA N78_3700-3800MHz Mode

Low Channel



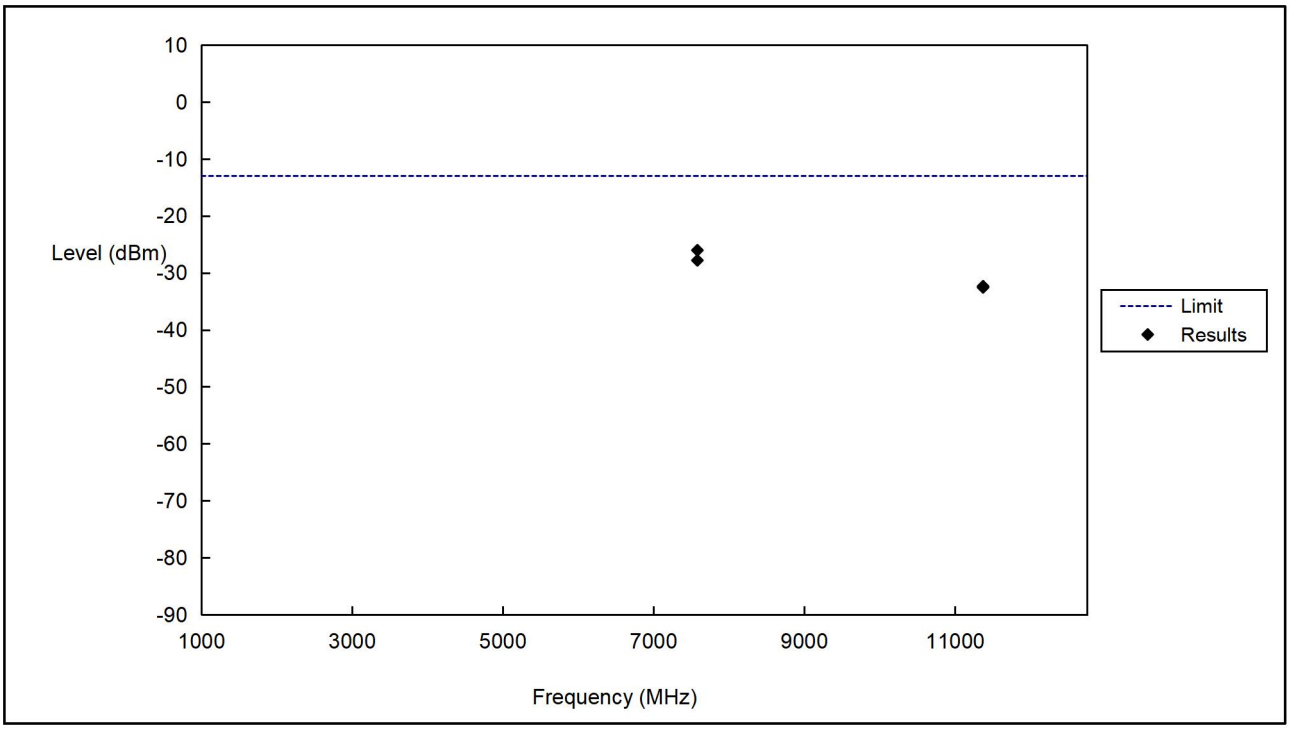
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7420.02	-27.09	-13	-14.09	H	RMS
2	11130.03	-32.13	-13	-19.13	H	RMS
1	7420.02	-27.54	-13	-14.54	V	RMS
2	11130.03	-31.59	-13	-18.59	V	RMS

Middle Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7500.00	-26.52	-13	-13.52	H	RMS
2	11250.00	-31.31	-13	-18.31	H	RMS
1	7500.00	-26.91	-13	-13.91	V	RMS
2	11250.00	-30.12	-13	-17.12	V	RMS

High Channel



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	7579.98	-26.04	-13	-13.04	H	RMS
2	11369.97	-32.57	-13	-19.57	H	RMS
1	7579.98	-27.82	-13	-14.82	V	RMS
2	11369.97	-32.36	-13	-19.36	V	RMS

Note: Result=Reading+ Correct, Margin= Result- Limit

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

8. Frequency Stability

8.1 Standard Applicable

According to §22.355, §24.235, §27.54 the limit is 2.5ppm.

8.2 Test Procedure

According to §2.1055, the following test procedure was performed.
The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.
The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode.

8.3 Summary of Test Results/Plots

Please refer to Appendix F: Frequency Stability

Test result: Pass

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

******* END OF REPORT *******