TEST REPORT

Applicant Name:	Shenzhen Hollyland Technology Co., Ltd
Address:	8F, Building 5D, Skyworth Innovation Valley, Tangtou Road, Shiyan Street, Baoan District, Shenzhen, 518055 China
Report Number:	2501T45782E-RF-00B
FCC ID:	2ADZC-5721R

Test Standard (s)

FCC PART 15D

Sample Description

Product Type:	Full-Duplex Wireless Intercom System
Model No.:	Solidcom BPK01
Multiple Model(s) No.:	Solidcom H1
Trade Mark:	HOLLYLAND, HOLLYVIEW
Date Received:	2025/05/28
Issue Date:	2025/07/10

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Ekko Wu
RF Engineer

Approved By:

Nancy Wang
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501T45782E-RF-00B	Original Report	2025/07/10

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Full-Duplex Wireless Intercom System
Tested Model	Solidcom BPK01
Multiple Model(s)	Solidcom H1
Frequency Range	1921.536-1928.448MHz
Maximum conducted peak output power	19.67dBm
Modulation Technique	GFSK
Antenna Specification[#]	ANT 1& ANT 2:1dBi (It is provided by the applicant)
Voltage Range	DC 3.8V from battery or DC 5V from USB-C port/ Charging contacts
Sample serial number	33NI-1 for Conducted and Radiated Emissions Test 33NI-2 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A
Note: The Multiple models are electrically identical with the test model except for model name and sales channel. Please refer to the declaration letter[#] for more detail, which was provided by manufacturer.	

Objective

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart D, section 15.207, 15.315, 15.317, 15.319 and 15.323 rules. The EMI measurements were performed according to the measurement procedure described in ANSI C63.17 – 2013.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF Frequency		56.6Hz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.60dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	0.009MHz~30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured to testing mode which is provided by the manufacturer.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

"XCOM V2.0#" software was used to the EUT tested.

Local Support Equipment List and Details

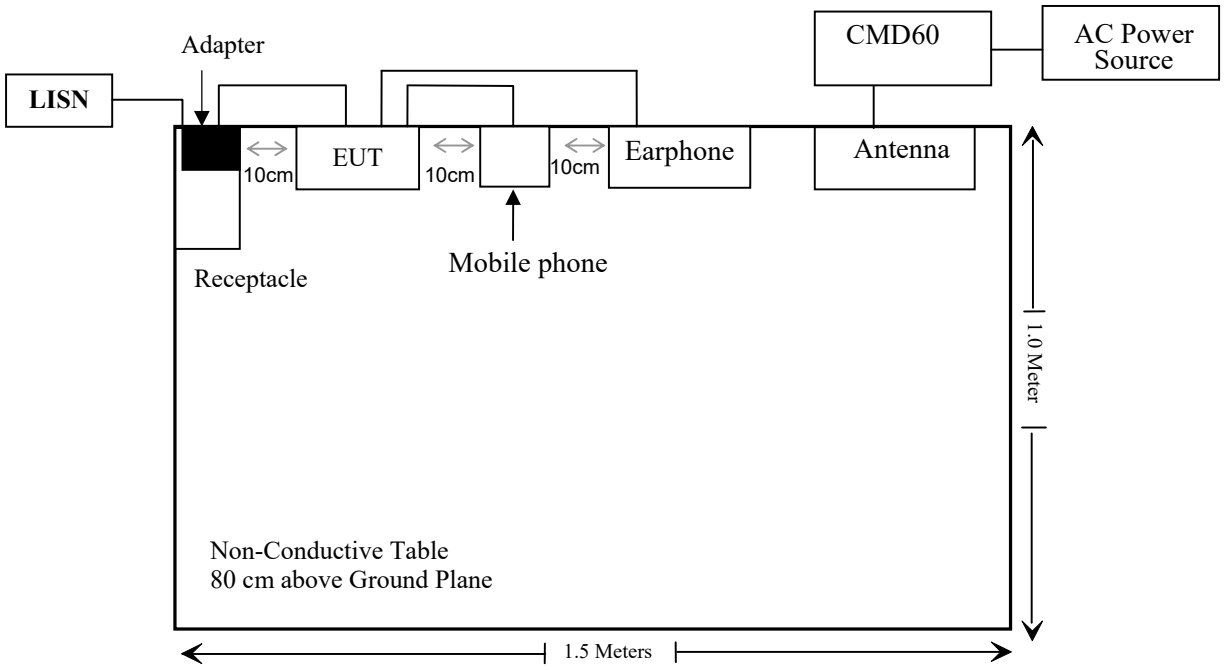
Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Digital Radio Communication Tester	CMD60	830553/018
OUPU	Receptacle	PDU-OP1606K	6971041358020
Redmi	Mobile phone	M2012K10C	Unknown
Huajin	Adapter	HJ-0501000E1-US	Unknown
Hollyland	Earphone	Unknown	Unknown

External I/O Cable

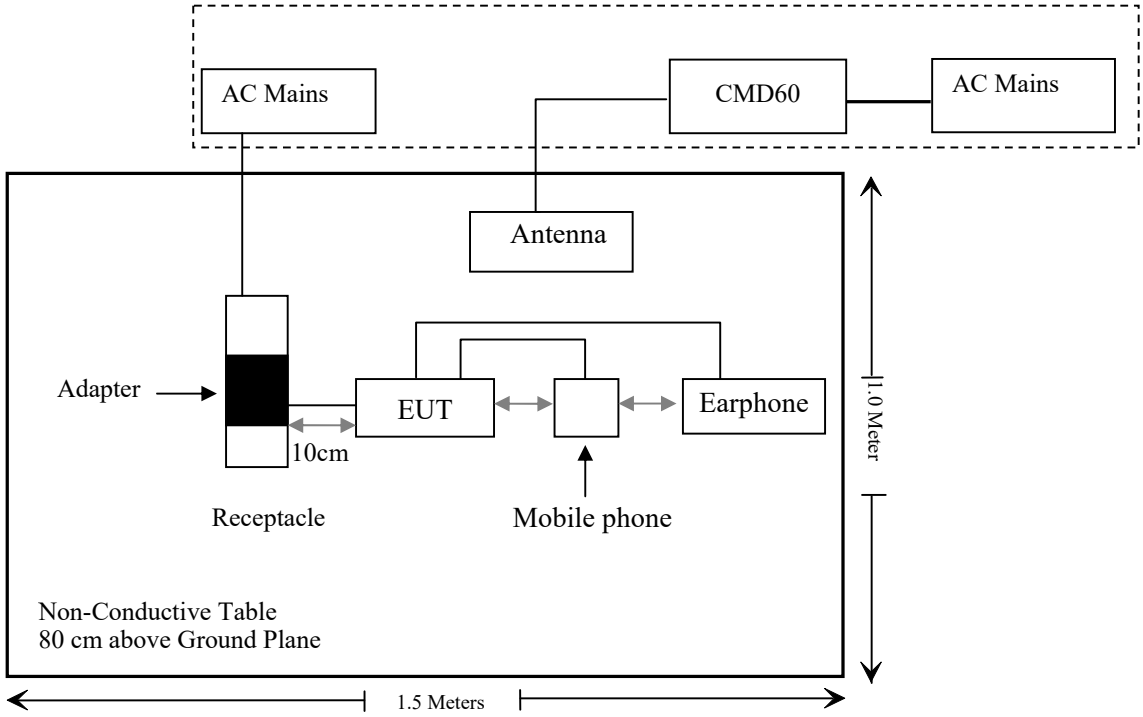
Cable Description	Length (m)	From Port	To
Unshielded Detachable AC cable	0.5	AC Power Source	CMD60
Un-shielded Un-detachable AC cable	1.2	Receptacle	LISN/AC Mains
Un-shielded Detachable USB cable	0.5	Adapter	EUT
Un-shielded Detachable Audio Cable	1.0	EUT	Mobile phone
Un-shielded Un-Detachable Audio Cable	1.0	EUT	Earphone

Block Diagram of Test Setup

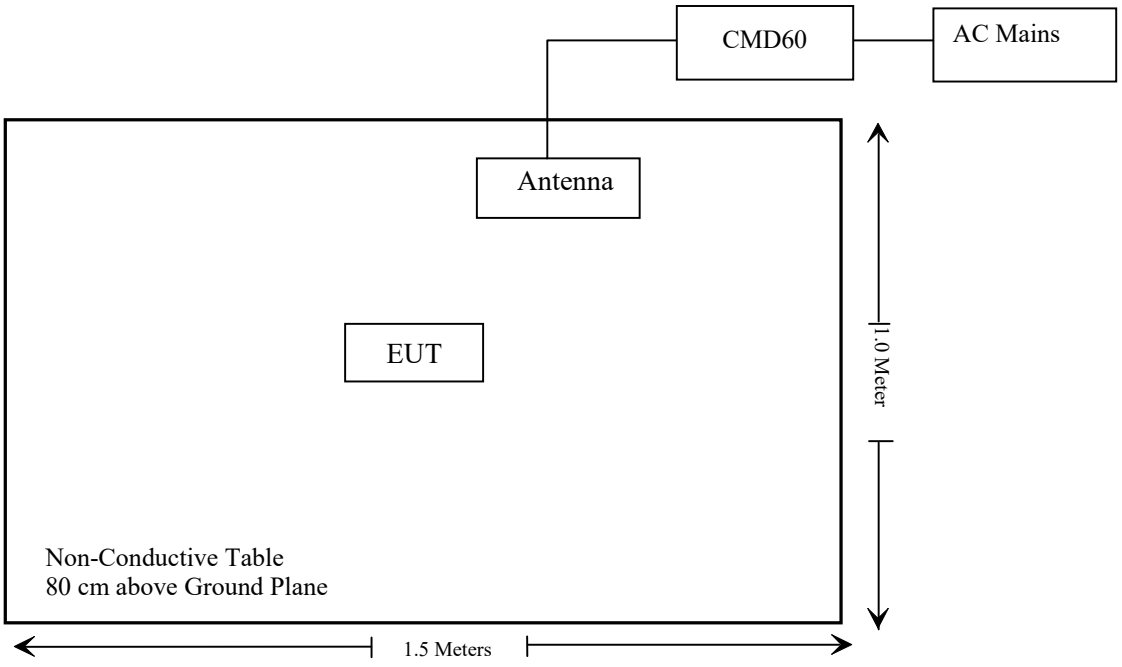
For Conducted Emission:



For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §1.1307 & §2.1093	RF Exposure	Compliant
§ 15.317, § 15.203	Antenna Requirement	Compliant
§ 15.315, § 15.207	Conducted Emission	Compliant
§15.205, §15.209, § 15.319 (g)	Radiated Emissions	Compliant
§ 15.323 (a)	Emission Bandwidth	Compliant
§ 15.319 (c)	Peak Transmit Power	Compliant
§ 15.319 (d)	Power Spectral Density	Compliant
§ 15.323 (d)	Emission Inside and Outside the sub-band	Compliant
§ 15.323 (f)	Frequency Stability	Compliant
§ 15.323 (c)(e) § 15.319 (f)	Specific Requirements for UPCS	Compliant

Note: EUT have two antennas, which cannot transmit at the same time. According to the output power test, ANT 2 was the higher output power which was chosen for the full test.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/12/04	2025/12/03
Rohde & Schwarz	LISN	ENV216	101613	2024/12/04	2025/12/03
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2025/04/29	2026/04/28
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2025/04/29	2026/04/28
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310 N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Unknown	Cable	2Y194	0735	2024/12/04	2025/12/03
Unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
A.H.System	Pre-amplifier	PAM-1840VH	190	2025/04/29	2026/04/28
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/12/18	2025/12/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2024/12/04	2025/12/03
BACL	Temperature & Humidity Chamber	BTH-150-40	30145	2024/12/06	2025/12/05
Rohde & Schwarz	Digital Radio Communication Tester	CMD60	830553/018	2025/04/29	2026/04/28
Keysight	MXG Vector Signal Generator	N5182B	MY53051503	2024/12/04	2025/12/03
Agilent	Signal Generator	N5183A	MY50140588	2024/09/13	2025/09/12
WEINSCHEL	3dB Attenuator	Unknown	F-03-EM220	2024/06/27	2025/06/26
Unknown	10dB Attenuator	Unknown	F-03-EM065	2024/06/27	2025/06/26
HP	Power Splitter	11667A	1610A	2024/06/27	2025/06/26
Unknown	RF Cable	65475	01670515	2024/06/27	2025/06/26

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307 & §2.1093 - RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: 2501T45782E-SA.

§ 15.317, § 15.203 ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Antenna Connector Construction

The EUT has two internal antennas which were permanently attached and the antenna gain is 1dBi[#], fulfill the requirement of this section. Please refer to the EUT photos.

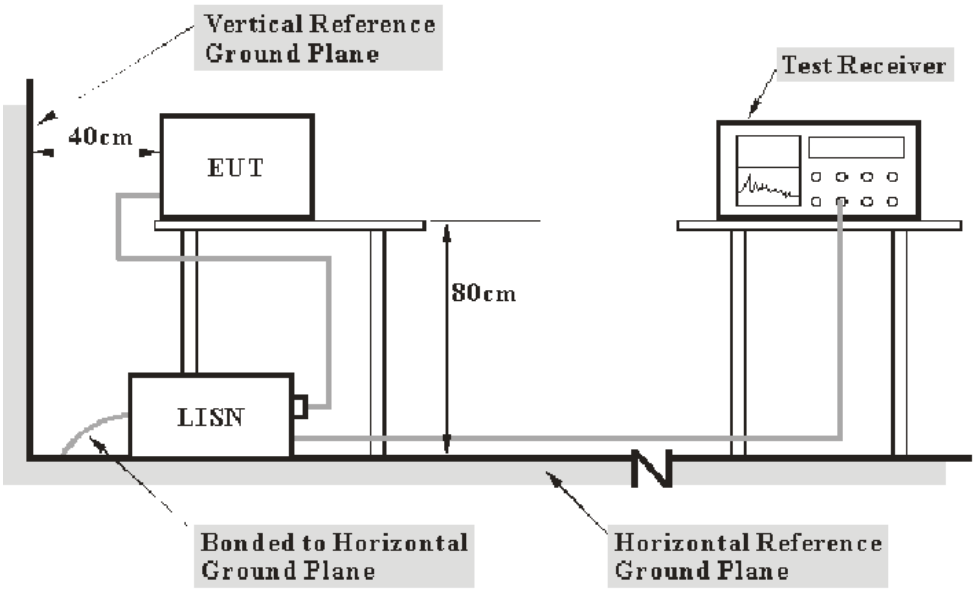
Result: Compliant

FCC§15.315 & §15.207 - CONDUCTED EMISSIONS

Applicable Standard

FCC§15.315, an unlicensed PCS device that is designed to be connected to the public utility (AC) power line must meet the limits specified in §15.207.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC 15.315 and FCC 15.207 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

The "**Over limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit
Level = Read Level + Factor

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

Test Data

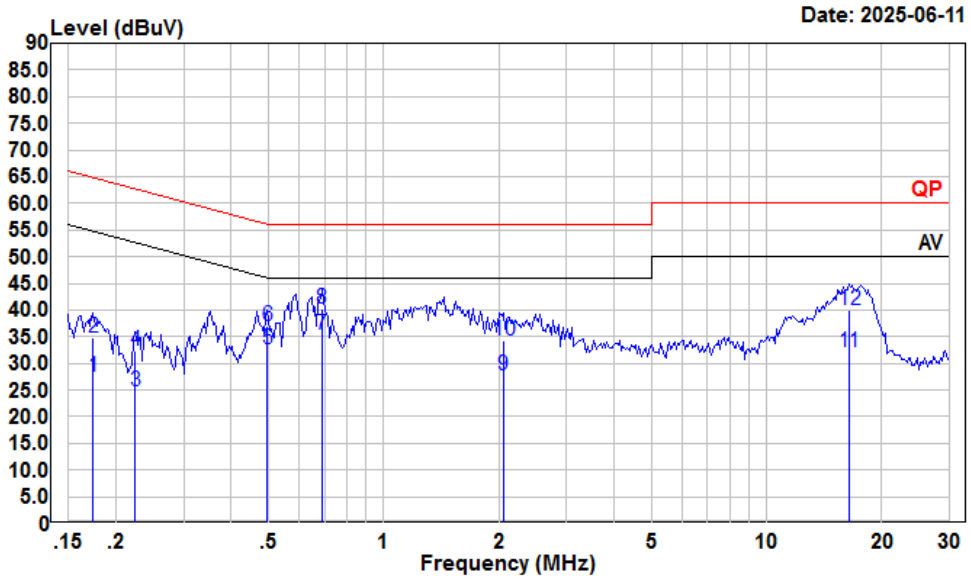
Environmental Conditions

Temperature:	25.2 ℃
Relative Humidity:	64 %
ATM Pressure:	99.9 kPa

The testing was performed by Macy Shi on 2025-06-11.

Test mode: Transmitting (Maximum output power mode, ANT 2 Low channel)

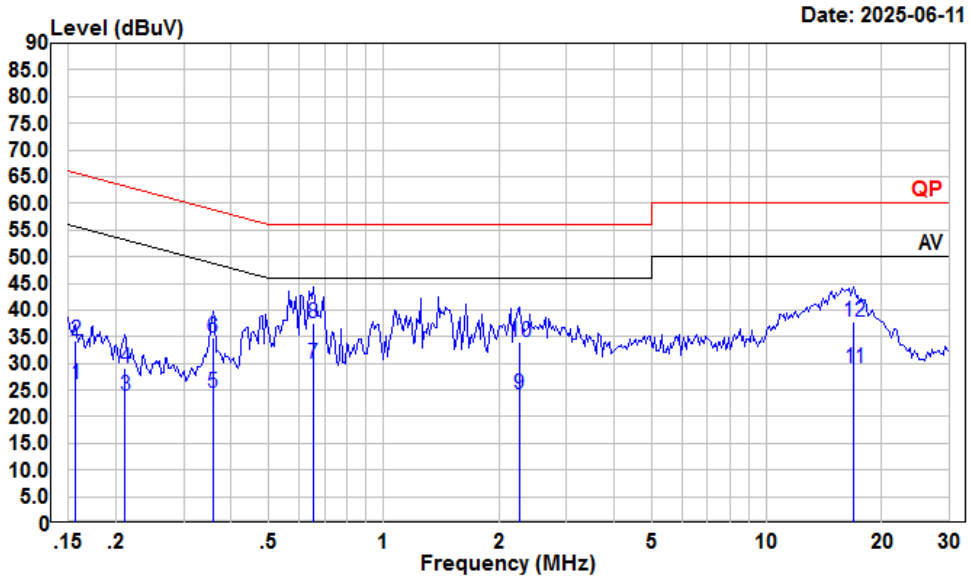
AC 120V/60 Hz, Line



Condition: Line
Project : 2501T45782E-RF
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.174	6.68	27.42	10.55	10.19	54.77	-27.35	Average
2	0.174	14.01	34.75	10.55	10.19	64.77	-30.02	QP
3	0.224	3.98	24.84	10.67	10.19	52.66	-27.82	Average
4	0.224	11.57	32.43	10.67	10.19	62.66	-30.23	QP
5	0.497	11.93	32.61	10.50	10.18	46.05	-13.44	Average
6	0.497	16.22	36.90	10.50	10.18	56.05	-19.15	QP
7	0.690	14.23	35.34	10.88	10.23	46.00	-10.66	Average
8	0.690	19.18	40.29	10.88	10.23	56.00	-15.71	QP
9	2.055	6.51	27.83	11.09	10.23	46.00	-18.17	Average
10	2.055	12.88	34.20	11.09	10.23	56.00	-21.80	QP
11	16.398	11.44	32.22	10.52	10.26	50.00	-17.78	Average
12	16.398	19.08	39.86	10.52	10.26	60.00	-20.14	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : 2501T45782E-RF
tester : Macy.shi Note:Transmitting
Setting : RBW:9kHz

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.156	5.59	26.22	10.46	10.17	55.65	-29.43	Average
2	0.156	13.68	34.31	10.46	10.17	65.65	-31.34	QP
3	0.211	2.85	23.82	10.78	10.19	53.18	-29.36	Average
4	0.211	8.26	29.23	10.78	10.19	63.18	-33.95	QP
5	0.358	3.75	24.55	10.61	10.19	48.78	-24.23	Average
6	0.358	14.11	34.91	10.61	10.19	58.78	-23.87	QP
7	0.654	9.21	30.02	10.58	10.23	46.00	-15.98	Average
8	0.654	16.80	37.61	10.58	10.23	56.00	-18.39	QP
9	2.261	3.25	24.24	10.75	10.24	46.00	-21.76	Average
10	2.261	12.92	33.91	10.75	10.24	56.00	-22.09	QP
11	16.928	8.24	29.14	10.64	10.26	50.00	-20.86	Average
12	16.928	16.91	37.81	10.64	10.26	60.00	-22.19	QP

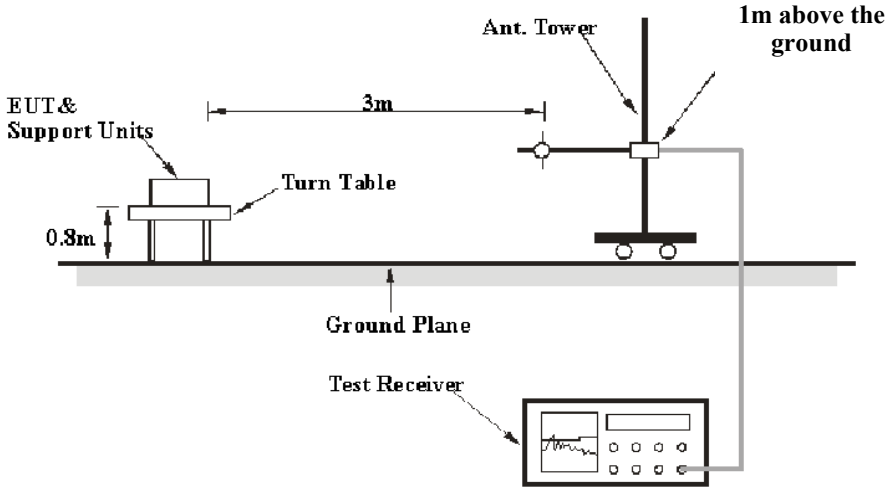
FCC §15.205, §15.209 & §15.319 (g) - RADIATED EMISSIONS

Applicable Standard

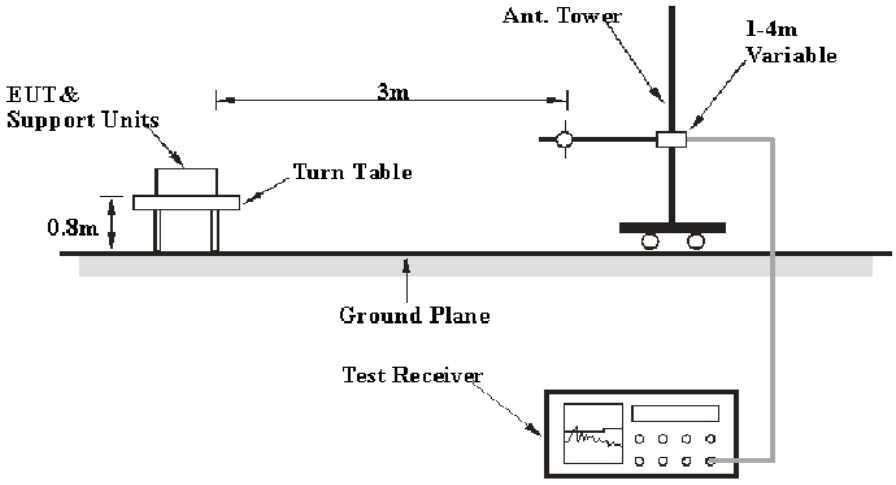
FCC §15.205; §15.209; §15.319 (g)

EUT Setup

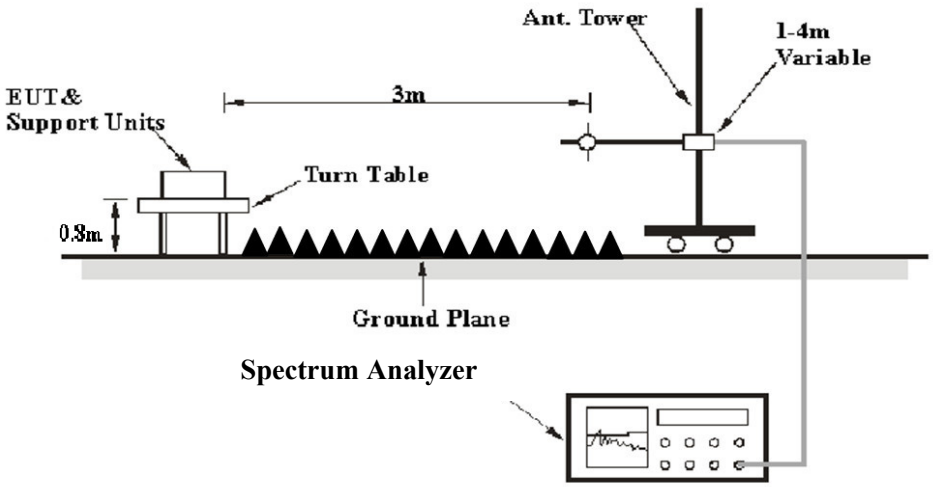
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.17-2013. The specification used was the FCC 15.209 and FCC 15.319 (g) limits.

EMI Test Receiver & Spectrum Analyzer Setup

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP	QP
	300 Hz	1 kHz	/	PK	PK
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP	QP
	100 kHz	300 kHz	/	PK	PK
Above 1 GHz	Fundament al &Harmonics				
	1MHz	3 MHz	/	PK	PK
	Average Emission Level=Peak Emission Level+20*log(Duty cycle)				
	Other Emissions				
	1MHz	3 MHz	/	PK	PK
	1MHz	≥10 Hz	/	PK	Average

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

All emissions under the average limit and under the noise floor have not recorded in the report.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level/Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

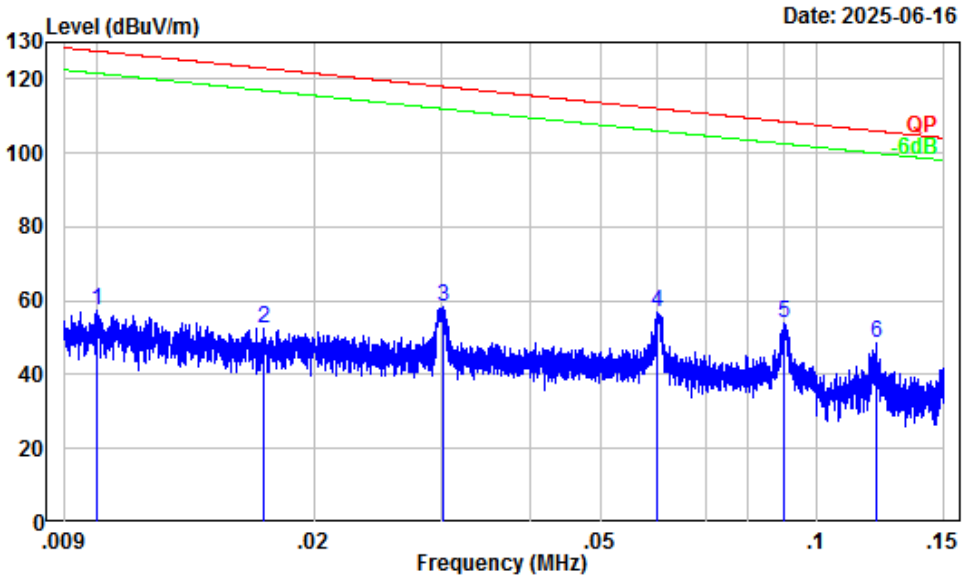
Temperature:	21.3~24.8 ℃
Relative Humidity:	50~5 %
ATM Pressure:	100.5 kPa

The testing was performed by Anson Su on 2025-06-16 for below 1GHz and Wing K Ji on 2025-06-10 for above 1GHz.

Test mode: Transmitting

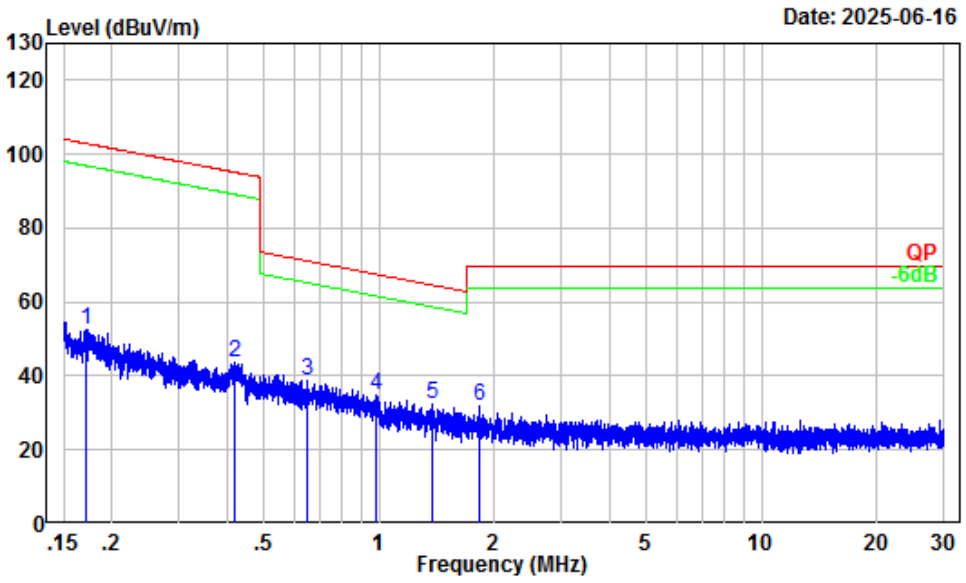
Note:
1. For the radiated spurious emission below 1GHz, When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.
2. After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded.

9 kHz-30MHz: (Maximum output power mode, ANT 2 Low channel; *worst case, parallel)*



Site : Chamber A
Condition : 3m
Project Number : 2501T45782E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.010	32.30	24.89	57.19	127.61	-70.42	Peak
2	0.017	30.97	21.65	52.62	122.98	-70.36	Peak
3	0.030	28.48	30.02	58.50	118.01	-59.51	Peak
4	0.060	25.39	31.42	56.81	112.03	-55.22	Peak
5	0.090	22.69	31.41	54.10	108.51	-54.41	Peak
6	0.121	20.77	27.78	48.55	105.96	-57.41	Peak

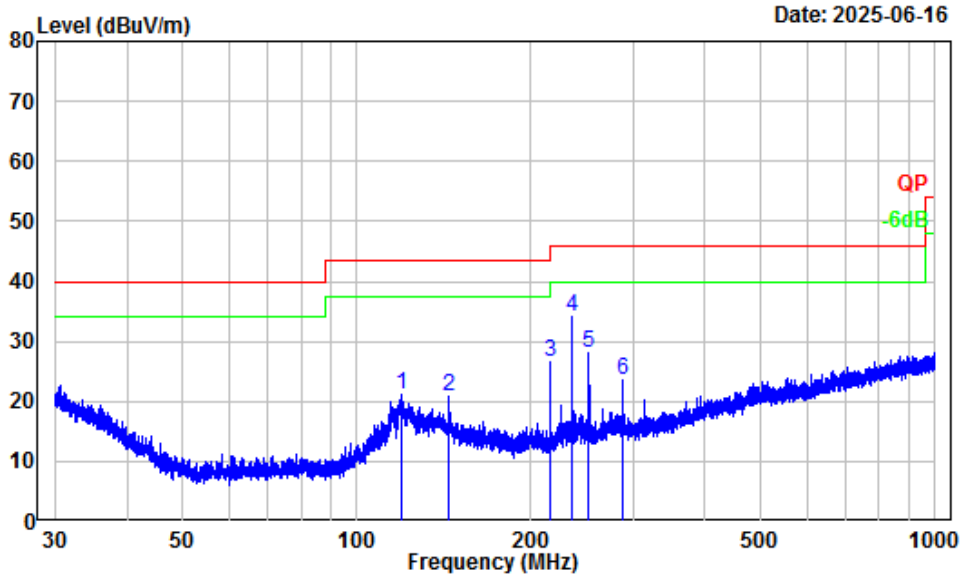


Site : Chamber A
Condition : 3m
Project Number : 2501T45782E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.171	17.83	34.66	52.49	102.96	-50.47	Peak
2	0.418	7.95	35.83	43.78	95.18	-51.40	Peak
3	0.647	4.59	34.40	38.99	71.34	-32.35	Peak
4	0.987	1.30	33.73	35.03	67.59	-32.56	Peak
5	1.379	0.14	32.06	32.20	64.62	-32.42	Peak
6	1.837	-1.14	33.07	31.93	69.54	-37.61	Peak

30MHz-1GHz: (Maximum output power mode, ANT 2 Low channel*)*

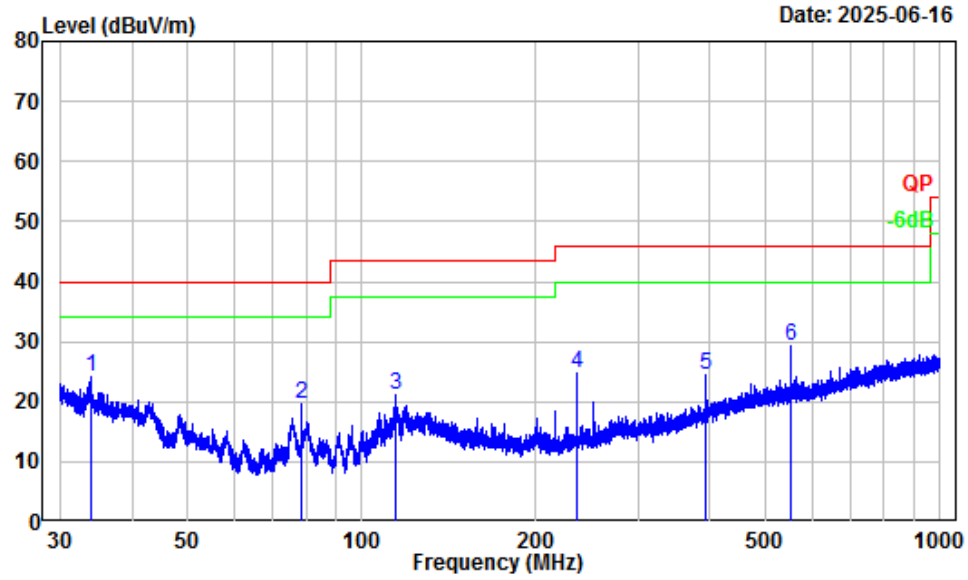
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501T45782E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	119.28	-11.53	32.60	21.07	43.50	-22.43	Peak
2	144.02	-12.18	32.96	20.78	43.50	-22.72	Peak
3	216.02	-14.20	40.86	26.66	46.00	-19.34	Peak
4	235.92	-13.50	47.69	34.19	46.00	-11.81	Peak
5	252.06	-13.08	41.10	28.02	46.00	-17.98	Peak
6	287.99	-11.22	34.84	23.62	46.00	-22.38	Peak

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2501T45782E-RF
Test Mode : Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Anson Su

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	33.89	-8.20	32.26	24.06	40.00	-15.94	Peak
2	78.62	-17.87	37.60	19.73	40.00	-20.27	Peak
3	114.56	-12.22	33.21	20.99	43.50	-22.51	Peak
4	235.92	-13.50	38.23	24.73	46.00	-21.27	Peak
5	393.30	-8.72	33.08	24.36	46.00	-21.64	Peak
6	550.71	-5.41	34.56	29.15	46.00	-16.85	Peak

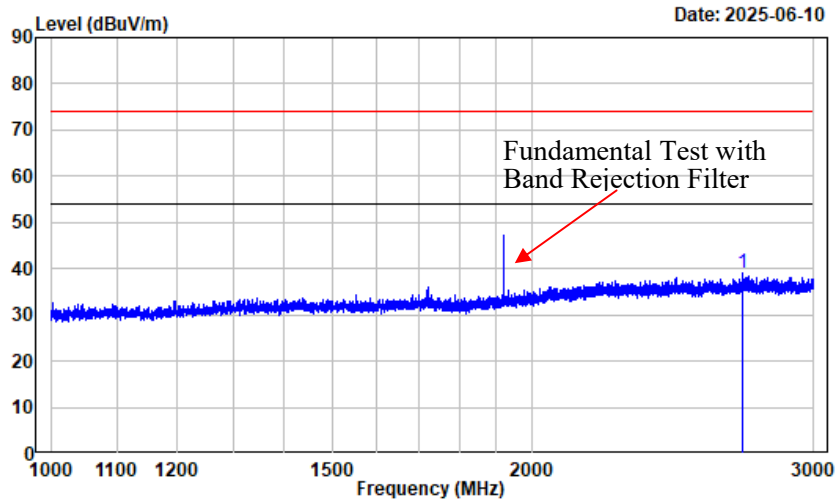
Above 1GHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/AV					
ANT1							
Low Channel							
1921.54	124.99	PK	H	-13.26	111.73	/	/
1921.54	125.45	PK	V	-13.26	112.19	/	/
3843.07	53.13	PK	H	-9.96	43.17	74	-30.83
3843.07	51.73	PK	V	-9.96	41.77	74	-32.23
Middle Channel							
1924.99	125.03	PK	H	-13.24	111.79	/	/
1924.99	126.24	PK	V	-13.24	113.00	/	/
3849.98	51.88	PK	H	-9.97	41.91	74	-32.09
3849.98	51.51	PK	V	-9.97	41.54	74	-32.46
High Channel							
1928.45	124.85	PK	H	-13.21	111.64	/	/
1928.45	125.58	PK	V	-13.21	112.37	/	/
3856.90	51.64	PK	H	-9.95	41.69	74	-32.31
3856.90	51.10	PK	V	-9.95	41.15	74	-32.85
ANT2							
Low Channel							
1921.54	128.19	PK	H	-13.26	114.93	/	/
1921.54	119.05	PK	V	-13.26	105.79	/	/
3843.07	53.08	PK	H	-9.96	43.12	74	-30.88
3843.07	51.04	PK	V	-9.96	41.08	74	-32.92
Middle Channel							
1924.99	128.56	PK	H	-13.24	115.32	/	/
1924.99	119.01	PK	V	-13.24	105.77	/	/
3849.98	52.45	PK	H	-9.97	42.48	74	-31.52
3849.98	51.41	PK	V	-9.97	41.44	74	-32.56
High Channel							
1928.45	127.94	PK	H	-13.21	114.73	/	/
1928.45	118.69	PK	V	-13.21	105.48	/	/
3856.90	52.56	PK	H	-9.95	42.61	74	-31.39
3856.90	51.13	PK	V	-9.95	41.18	74	-32.82

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected. Amplitude – Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak values were recorded.

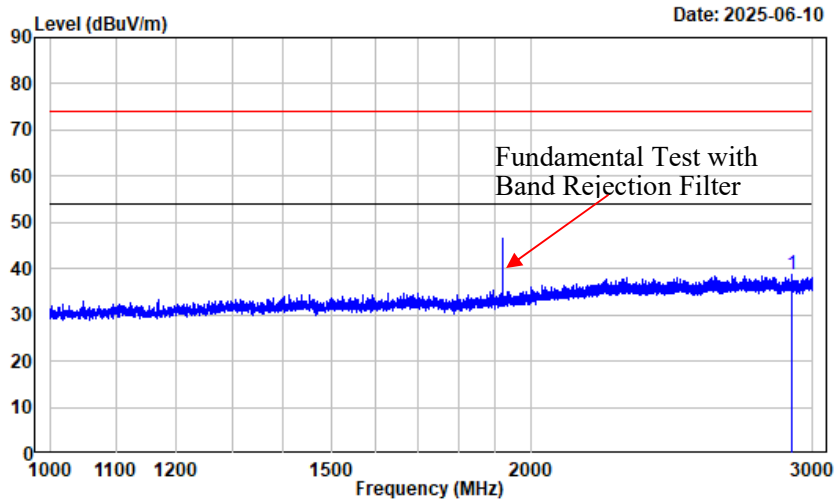
Listed with the worst harmonic margin test plot:

ANT 1

Horizontal	
1-3GHz	

```
Condition        : Horizontal
Project No.      : 2501T45782E-RF
Tester           : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note             : ANT1_1921.536
```

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2709.464	-10.54	49.58	39.04	74.00	-34.96	Peak

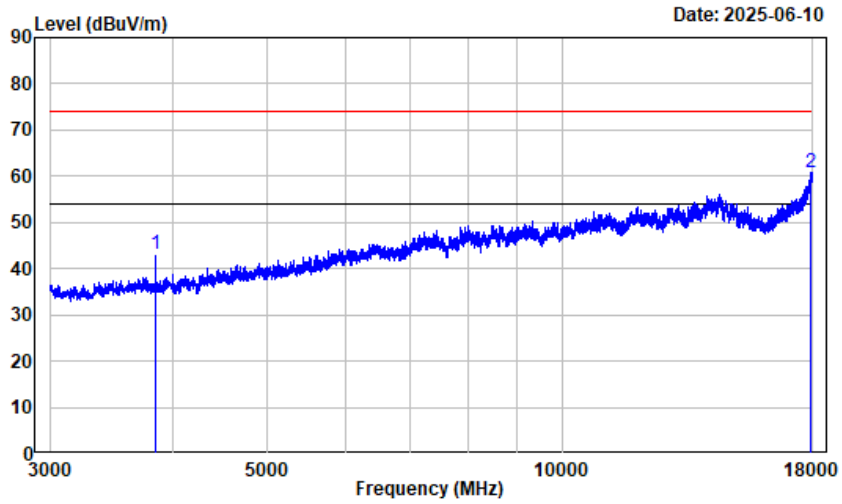
Vertical	
1-3GHz	

Condition : Vertical
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT1_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2912.739	-10.66	49.32	38.66	74.00	-35.34	Peak

Horizontal_ Peak

3-18GHz

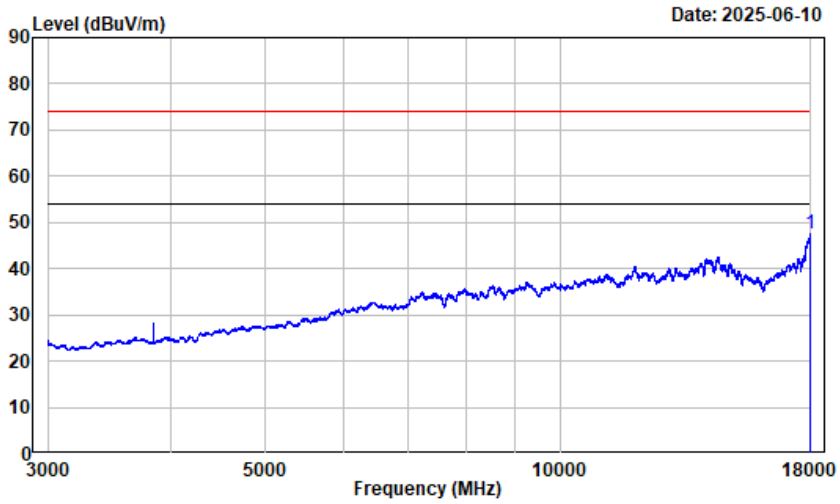


Condition : Horizontal
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT1_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3843.070	-9.96	53.13	43.17	74.00	-30.83	Peak
2	17923.120	12.81	48.09	60.90	74.00	-13.10	Peak

Horizontal_ Average

3-18GHz

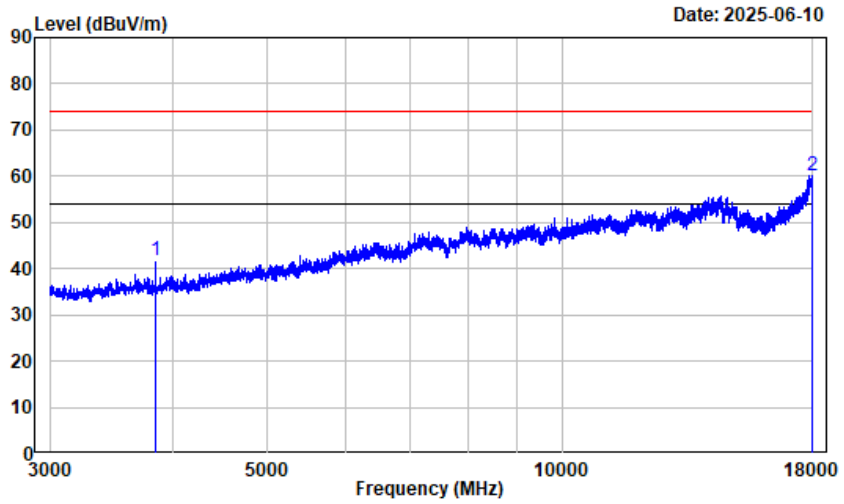


Condition : Horizontal
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : ANT1_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17992.500	13.17	34.29	47.46	54.00	-6.54	Average

Vertical_ Peak

3-18GHz

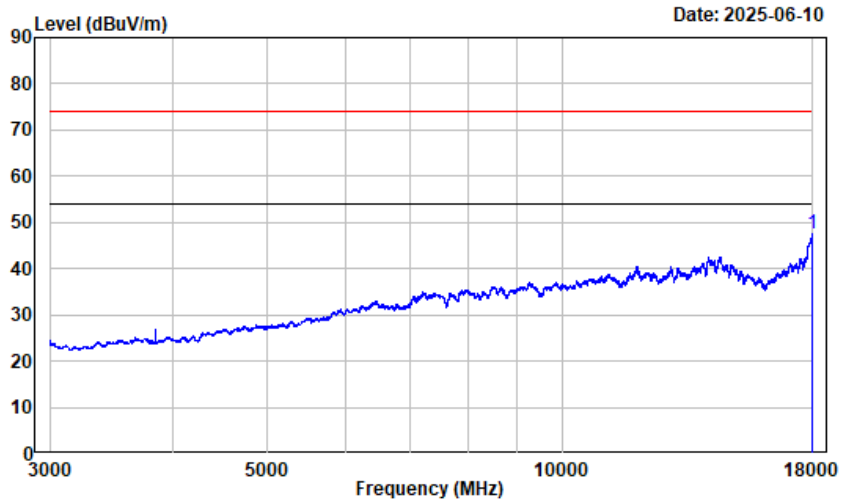


Condition : Vertical
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT1_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3843.070	-9.96	51.73	41.77	74.00	-32.23	Peak
2	17998.130	13.19	47.01	60.20	74.00	-13.80	Peak

Vertical_ Average

3-18GHz

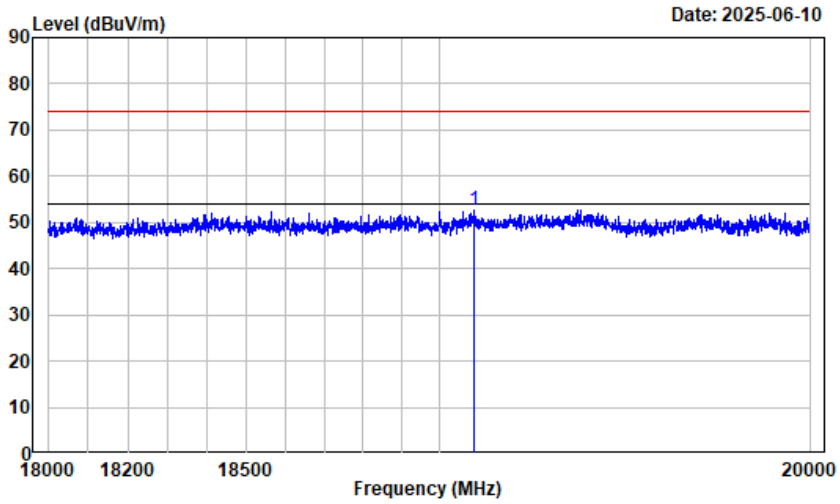


Condition : Vertical
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : ANT1_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17996.250	13.18	34.35	47.53	54.00	-6.47	Average

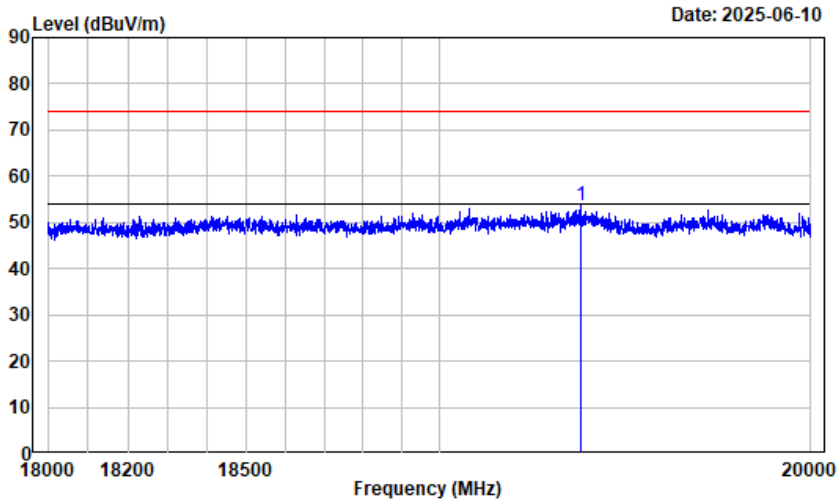
Horizontal

18-20GHz



Condition : Horizontal
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT1_1921.536

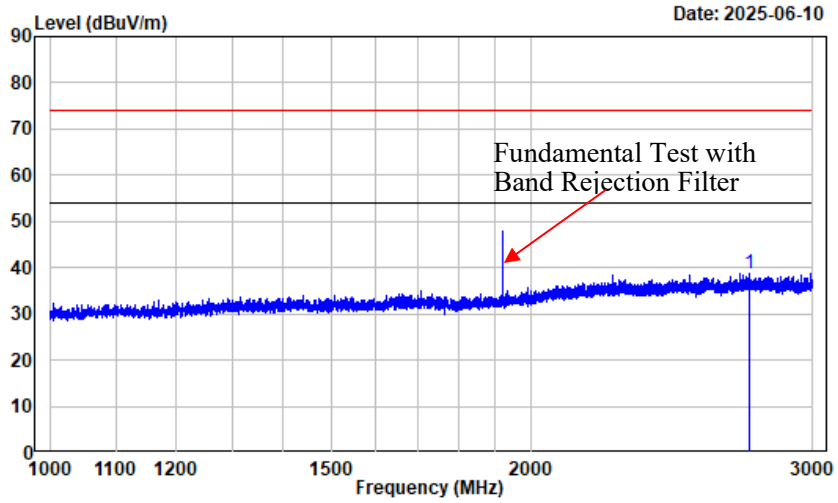
	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	19093.010	15.31	37.31	52.62	74.00	-21.38	peak

Vertical	
18-20GHz	 Condition : Vertical Project No. : 2501T45782E-RF Tester : Wing K Ji Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak Note : ANT1_1921.536 Freq / Factor / Read Level / Limit Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 19373.920 15.43 38.09 53.52 74.00 -20.48 peak

ANT 2

Horizontal

1-3GHz

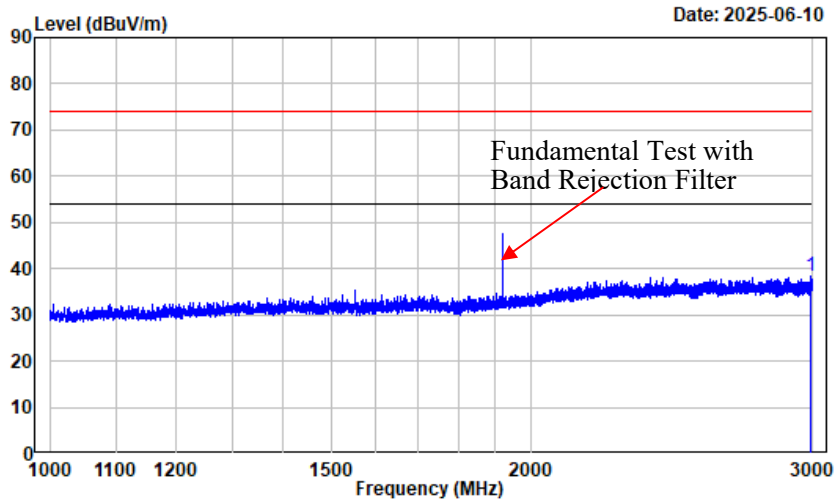



```
Condition        : Horizontal
Project No.      : 2501T45782E-RF
Tester           : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note             : ANT2_1921.536
```

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2740.468	-10.62	49.45	38.83	74.00	-35.17	Peak

Vertical

1-3GHz

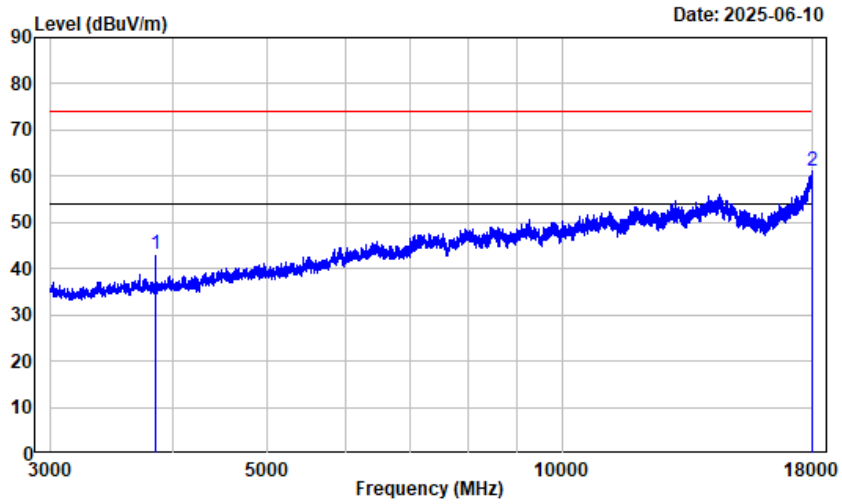



```
Condition         : Vertical
Project No.       : 2501T45782E-RF
Tester            : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note              : ANT2_1921.536
```

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2994.499	-10.16	48.43	38.27	74.00	-35.73	Peak

Horizontal_ Peak

3-18GHz

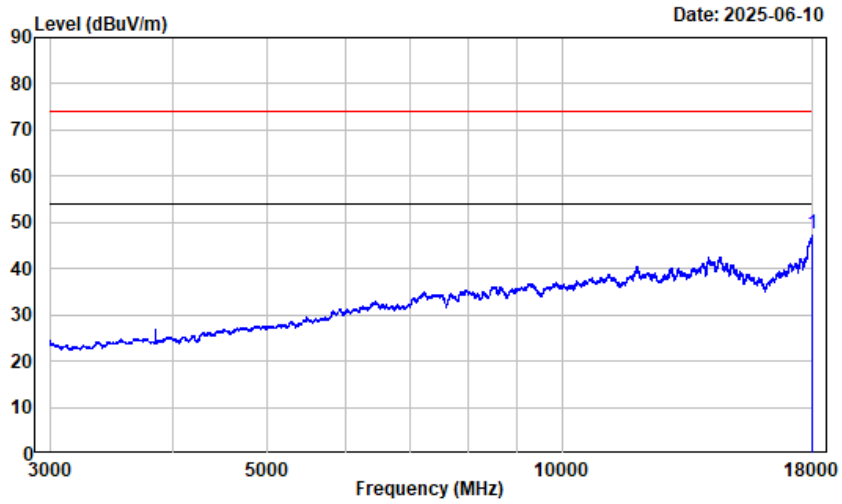


Condition : Horizontal
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT2_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3843.070	-9.96	53.08	43.12	74.00	-30.88	Peak
2	17986.870	13.13	48.13	61.26	74.00	-12.74	Peak

Horizontal_ Average

3-18GHz

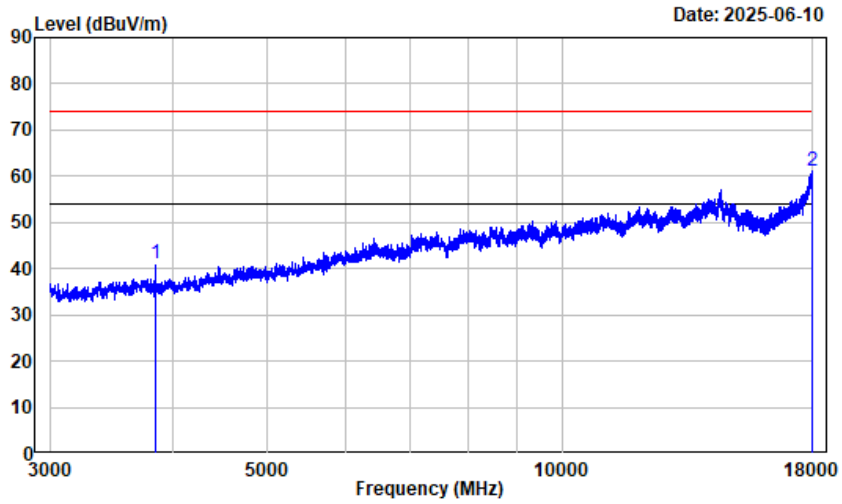


Condition : Horizontal
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : ANT2_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17998.130	13.19	34.50	47.69	54.00	-6.31	Average

Vertical_ Peak

3-18GHz

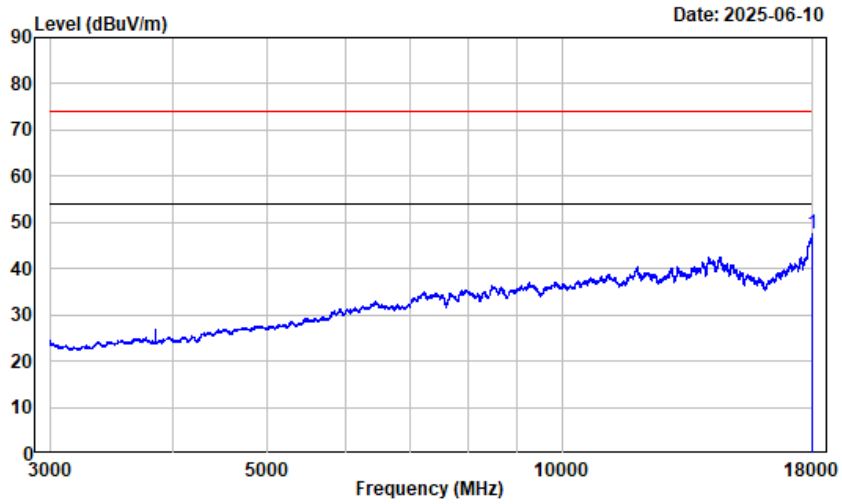


Condition : Vertical
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT2_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3843.070	-9.96	51.04	41.08	74.00	-32.92	Peak
2	17988.750	13.14	47.94	61.08	74.00	-12.92	Peak

Vertical_ Average

3-18GHz

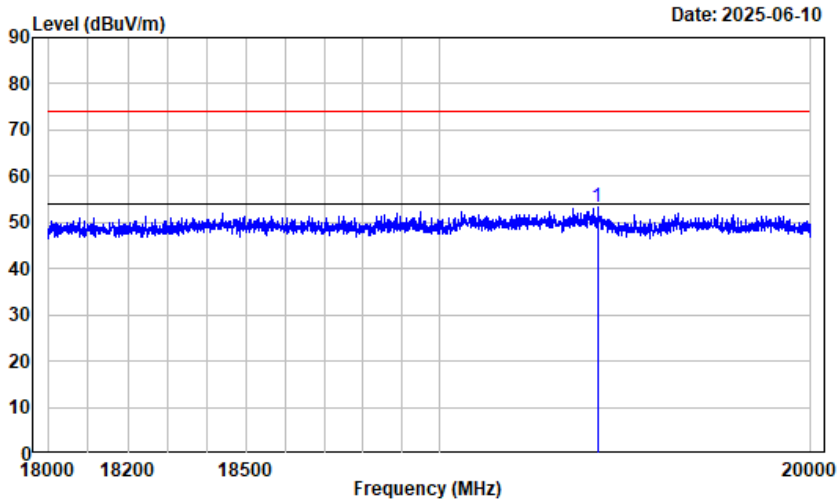


Condition : Vertical
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : ANT2_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17996.250	13.18	34.38	47.56	54.00	-6.44	Average

Horizontal

18-20GHz

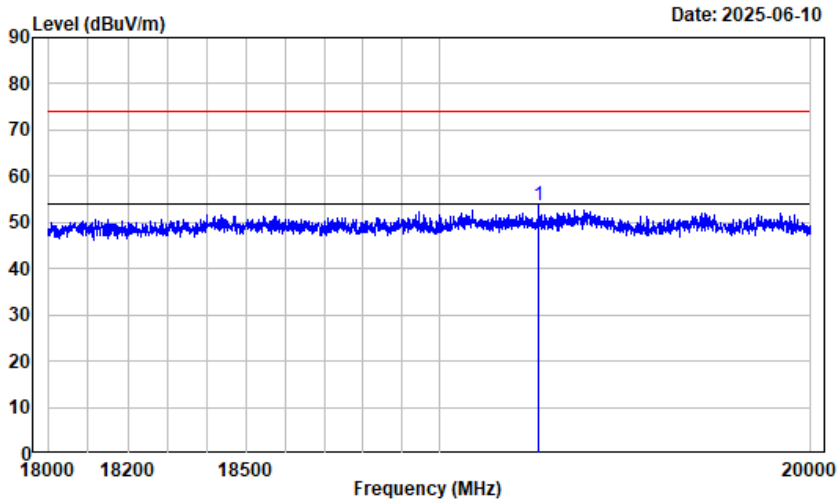


Condition : Horizontal
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT2_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	19419.430	15.44	37.84	53.28	74.00	-20.72	peak

Vertical

18-20GHz



Condition : Vertical
Project No. : 2501T45782E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : ANT2_1921.536

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	19263.660	15.40	38.19	53.59	74.00	-20.41	peak

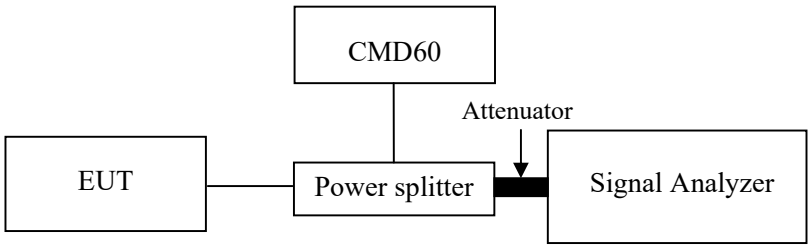
FCC§15.323 (a) - EMISSION BANDWIDTH

Applicable Standard

Operation shall be contained within the 1920–1930 MHz band. The emission bandwidth shall be less than 2.5 MHz and greater than 50 kHz.

The emission bandwidth is measured in accordance with ANSI C63.17 sub-clause 6.1.3 using the setup below:

Test Setup 1:



The width, in Hz, of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that is 26 dB down relative to the maximum level of the modulated carrier. It is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1% of the emission band-width of the device under measurement. [Extraction from 47 CFR 15, subpart D, 15.303 (C)].

Test Procedure

Using the manufacturer's information on occupied bandwidth set the spectrum analyzer as follows:

Resolution bandwidth	1.0% of the emission bandwidth (as close as possible)
Video bandwidth	>3 times the resolution bandwidth
Number of sweeps	sufficient to stability the trace
Detection mode	peak detection with maximum hold

Test Data

Environmental Conditions

Temperature:	23.5 ℃
Relative Humidity:	50 %
ATM Pressure:	99.9 kPa

The testing was performed by Rainbow Zhu on 2025-06-07.

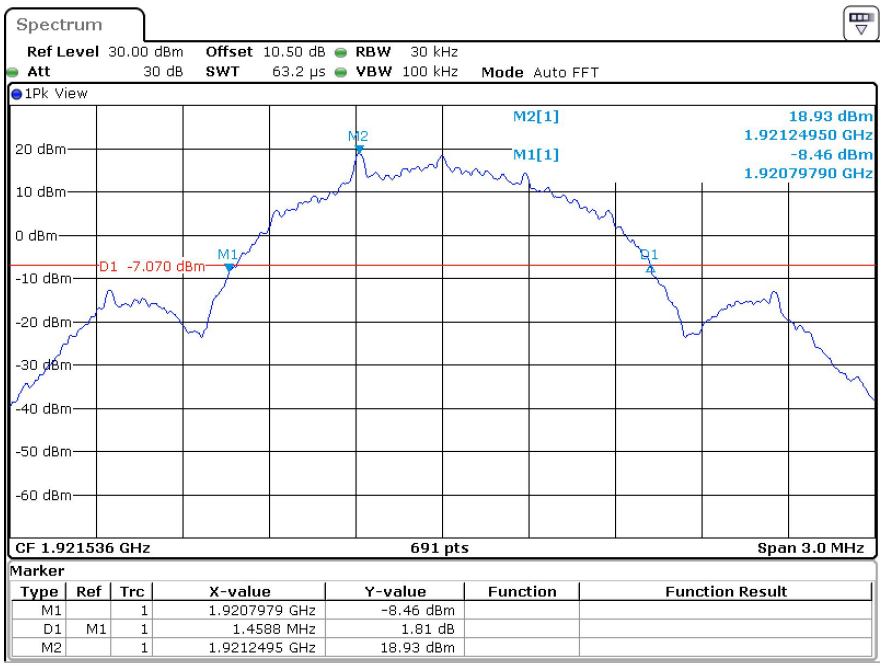
Test mode: Transmitting

Test Result: Compliant. *Please refer to the following table and plots.*

Channel	Center Frequency (MHz)	99% Emission Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	Limit
Low	1921.536	1.177	1.459	50 kHz ~ 2.5 MHz
Middle	1924.992	1.181	1.463	50 kHz ~ 2.5 MHz
High	1928.448	1.172	1.454	50 kHz ~ 2.5 MHz

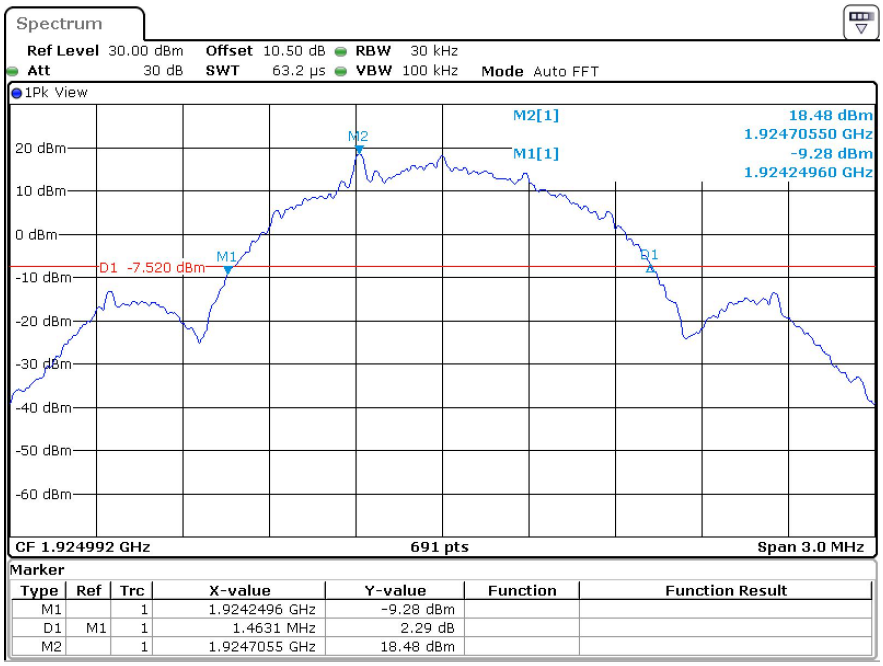
26 dB Emission Bandwidth

Low Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu
Date: 7.JUN.2025 19:22:15

Middle Channel



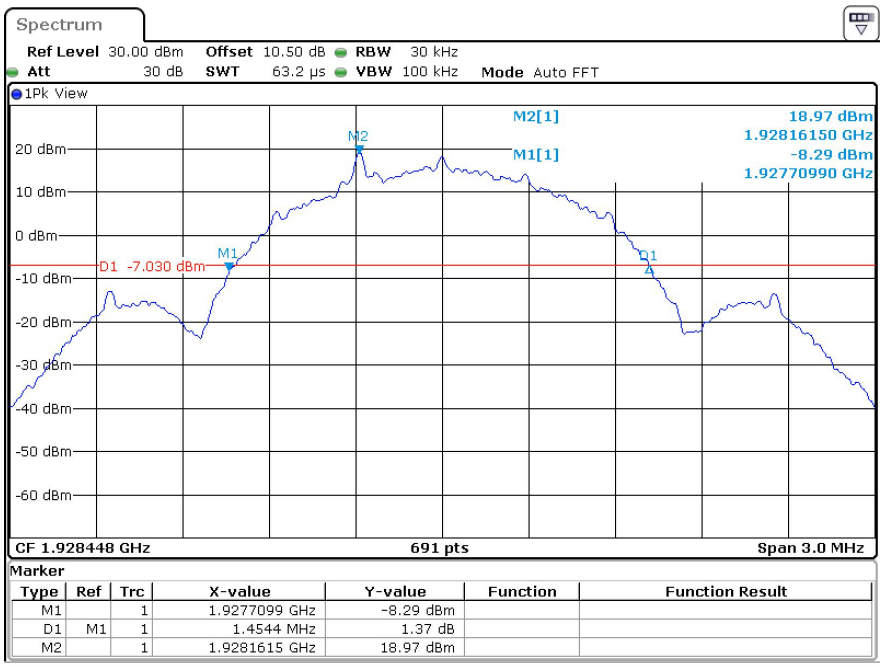
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9242496 GHz	-9.28 dBm		
D1	M1	1	1.4631 MHz	2.29 dB		
M2		1	1.9247055 GHz	18.48 dBm		

ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 19:19:00

High Channel



Marker

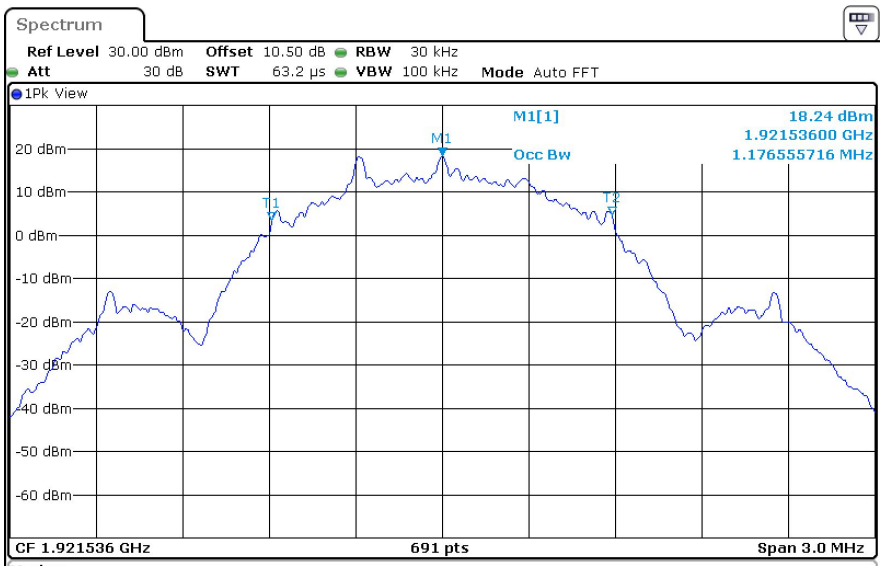
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9277099 GHz	-8.29 dBm		
D1	M1	1	1.4544 MHz	1.37 dB		
M2		1	1.9281615 GHz	18.97 dBm		

ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 19:15:57

99% Emission Bandwidth

Low Channel



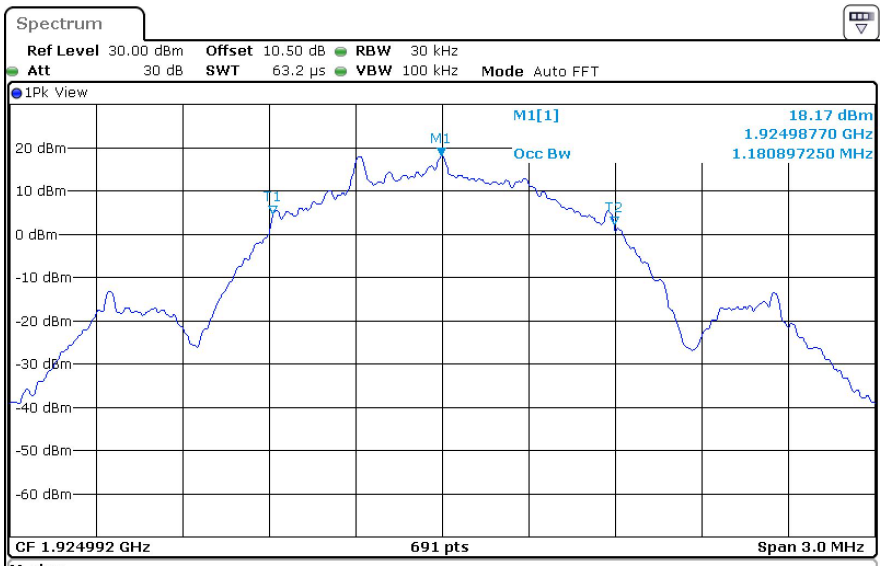
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.921536 GHz	18.24 dBm		
T1		1	1.92094555 GHz	3.45 dBm	Occ Bw	1.176555716 MHz
T2		1	1.92212211 GHz	4.60 dBm		

ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 19:36:14

Middle Channel



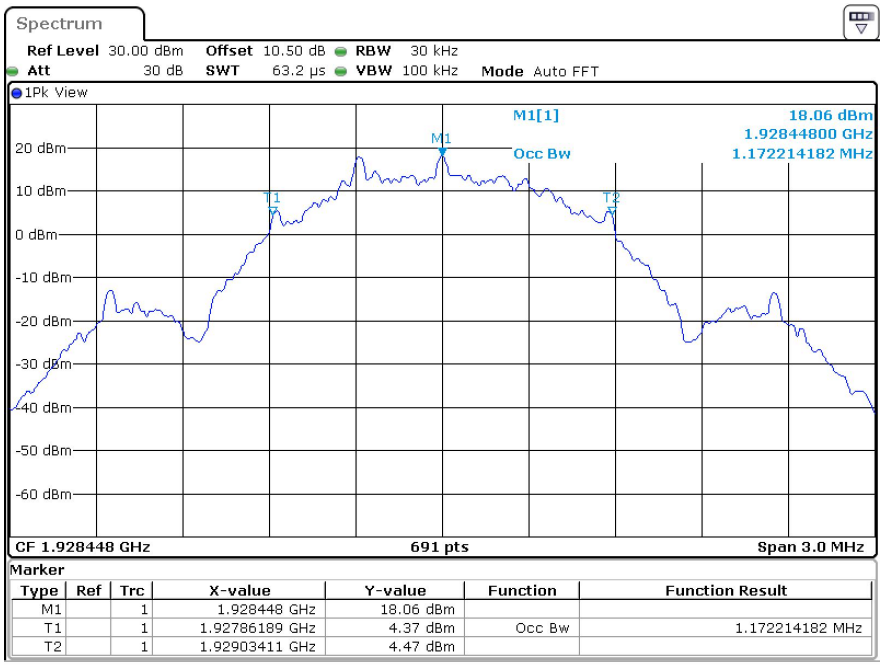
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.9249877 GHz	18.17 dBm		
T1		1	1.92440589 GHz	4.56 dBm	Occ Bw	1.18089725 MHz
T2		1	1.92558679 GHz	2.22 dBm		

ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 19:34:26

High Channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.928448 GHz	18.06 dBm		
T1		1	1.92786189 GHz	4.37 dBm	Occ Bw	1.172214182 MHz
T2		1	1.92903411 GHz	4.47 dBm		

ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 19:32:31

FCC§15.319 (c) - PEAK TRANSMIT POWER

Applicable Standard

The peak power output as measured over an interval of time equal to the frame rate or transmission burst of the device under all conditions of modulation. Usually this parameter is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used[47 CFR 15, subpart D, 15.303].

The peak transmit power is according to ANSI C63.17-2013 §6.1.2

Per FCC Part15.319 (c) Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in hertz. Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

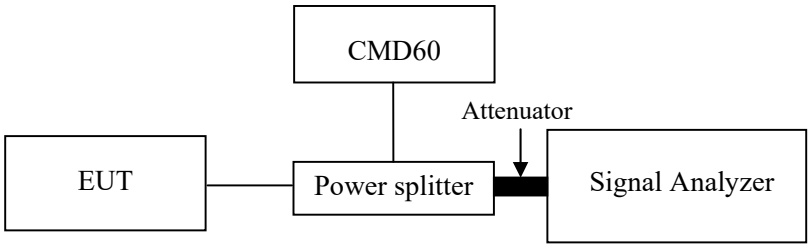
Per FCC Part15.319 (e), the peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

Calculation of Peak Transmit Power Limit:
Peak Transmit Power Limit = $100\mu W \times (EBW)^{1/2}$
EBW is the transmit emission bandwidth in Hz determined in the other test item:

Test Procedure

Using the manufacturer's information on occupied bandwidth set the spectrum analyzer as follows:

RBW	≥ Emission bandwidth
Video bandwidth	≥ RBW
Span	Zero
Center frequency	Nominal center frequency of channels
Amplitude scale	Log (linear may be used if analyzer has sufficient linear dynamic range and accuracy)
Detection	Peak detection
Trigger	Video
Sweep rate	Sufficiently rapid to permit the transmit pulse to be resolved accurately



Test Data

Environmental Conditions

Temperature:	23.5 ℃
Relative Humidity:	50 %
ATM Pressure:	99.9 kPa

The testing was performed by Rainbow Zhu on 2025-06-07.

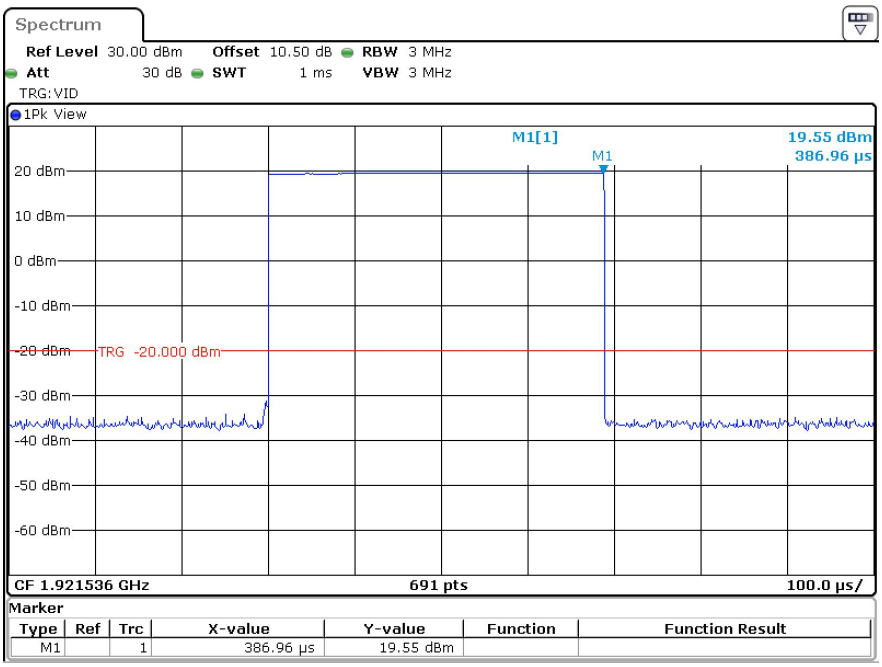
Test mode: Transmitting

Test Result: Compliant. *Please refer to the following table and plots.*

Antenna	Channel	Frequency (MHz)	Peak Transmit Power (dBm)	Limit (dBm)
ANT1	Low	1921.536	19.55	20.82
	Middle	1924.992	19.48	20.83
	High	1928.448	19.40	20.81
ANT2	Low	1921.536	19.67	20.82
	Middle	1924.992	19.59	20.83
	High	1928.448	19.48	20.81
Note: Peak Transmit Power Limit = $100(EBW)^{1/2}$ μW				

ANT1

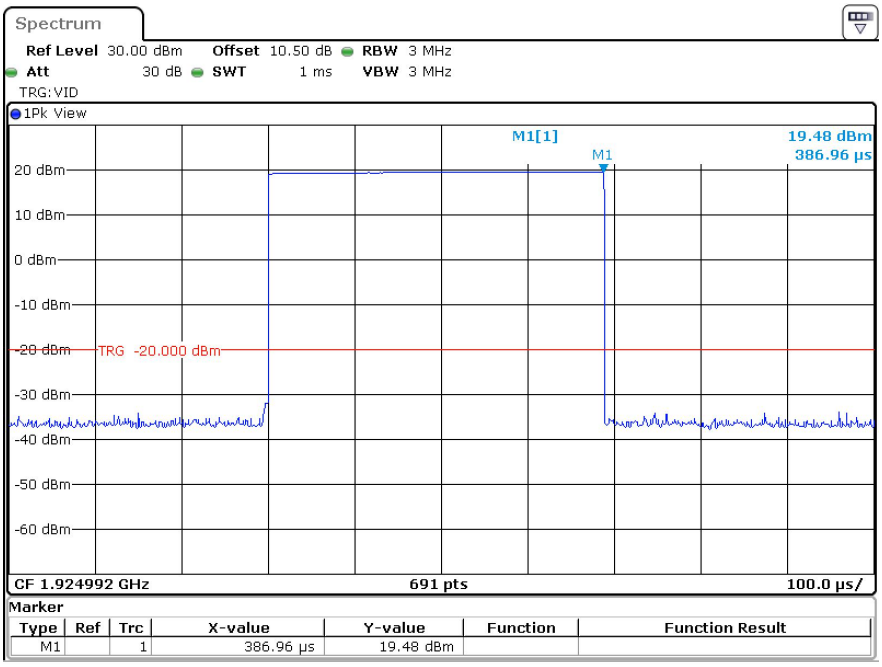
Low Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 11:15:13

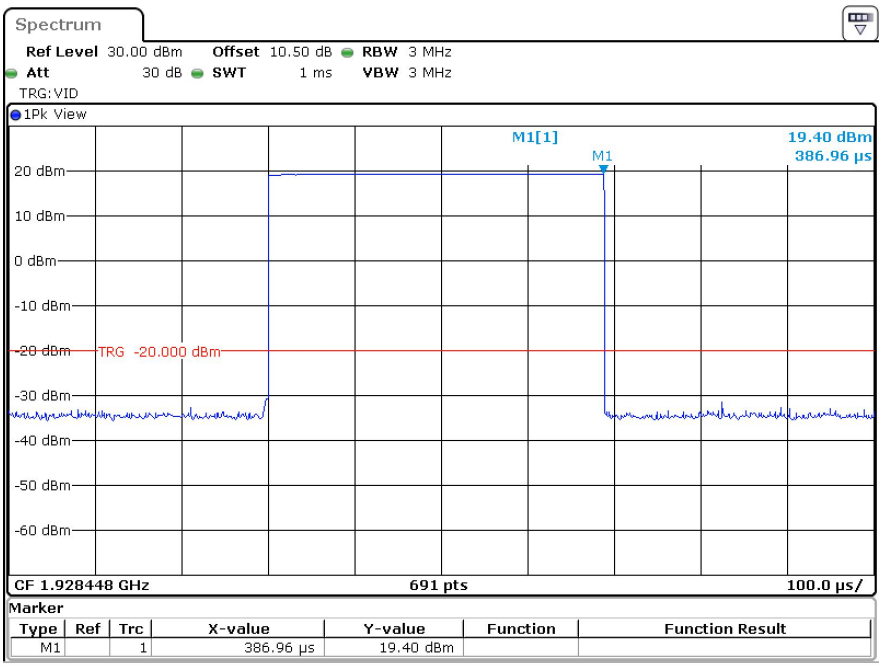
Middle Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 11:14:02

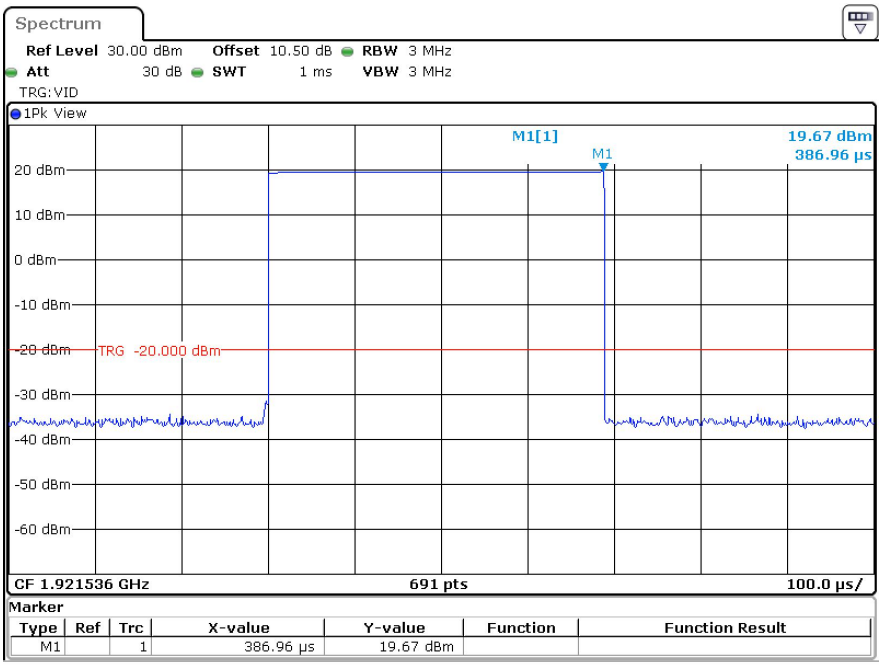
High Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu
Date: 7.JUN.2025 11:12:48

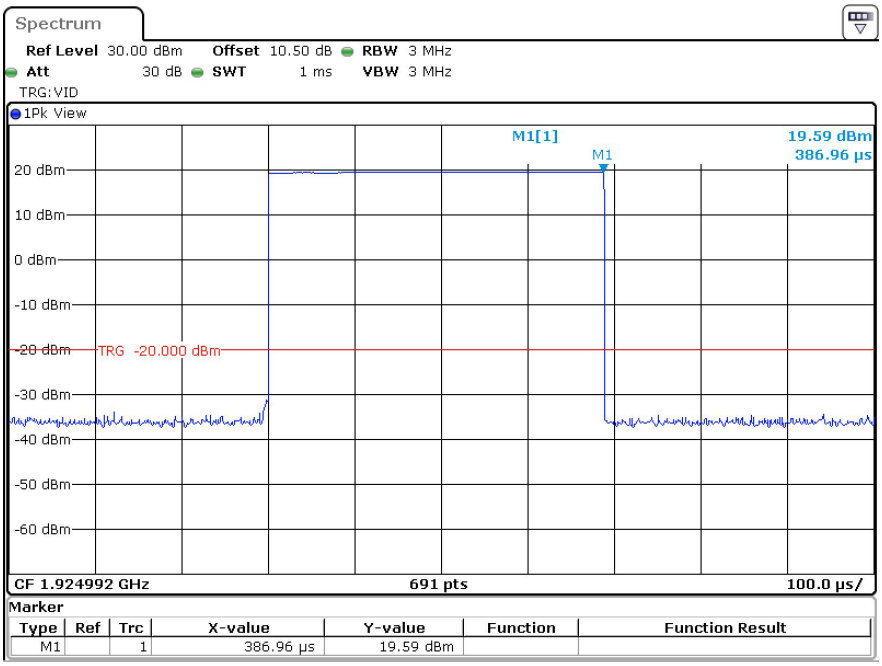
ANT2

Low Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu
Date: 7.JUN.2025 11:23:34

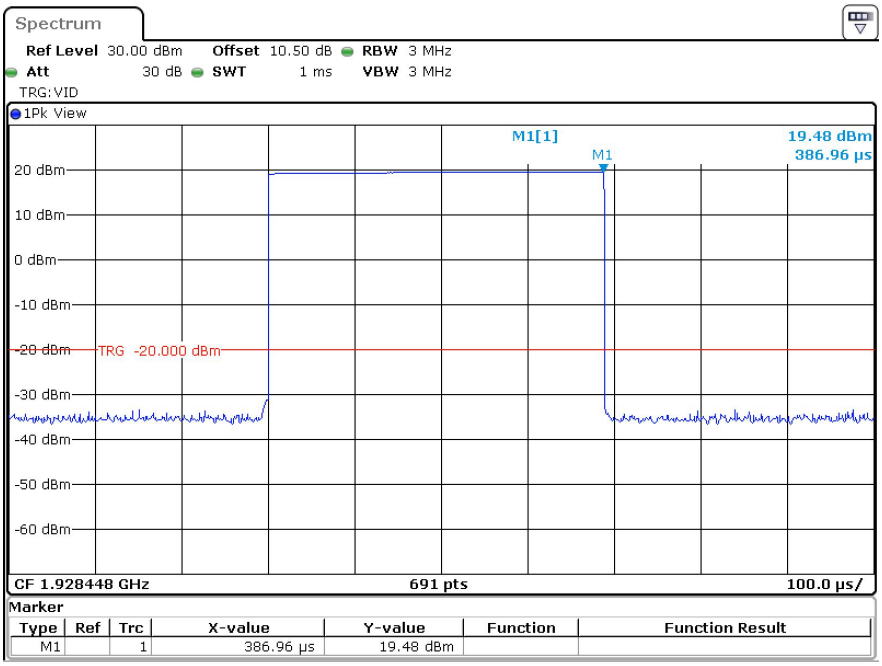
Middle Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 11:22:36

High Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 11:20:18

FCC§15.319 (d) - POWER SPECTRAL DENSITY

Applicable Standard

The average pulse energy in a 3 kHz bandwidth is divided by the pulse duration.

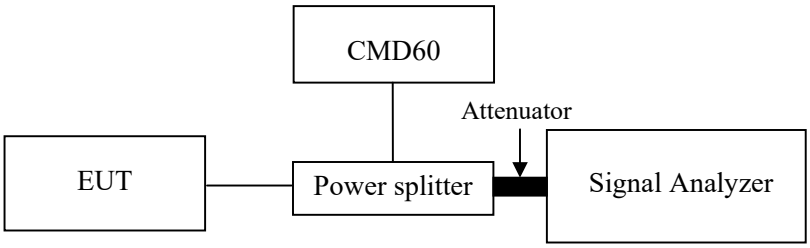
The power spectral density shall not exceed 3mW in any 3 kHz bandwidth as measured with a spectrum analyzer having a resolution bandwidth of 3 kHz.

The power spectral density is measured in accordance with ANSI C63.17.2013 Clause 6.1.5.

Test Procedure

Using the manufacturer's information on occupied bandwidth set the spectrum analyzer as follows:

RBW	3 kHz
Video bandwidth	≥ 3 × RBW
Span	Zero span at frequency with the maximum level (frequency determined in 6.1.3 if the same type of signal (continuous versus burst) was used in 6.1.3)
Center frequency	Spectral peak as determined in 6.1.3
Sweep time	For burst signals, sufficient to include essentially all of the maximum length burst at the output of a 3 kHz filter (e.g., maximum input burst duration plus 600 μs). For continuous signals, 20 ms.
Amplitude scale	Log power
Detection	Sample detection and averaged for a minimum of 100 sweeps
Trigger	External or internal



Test Data

Environmental Conditions

Temperature:	23.5 ℃
Relative Humidity:	50 %
ATM Pressure:	99.9 kPa

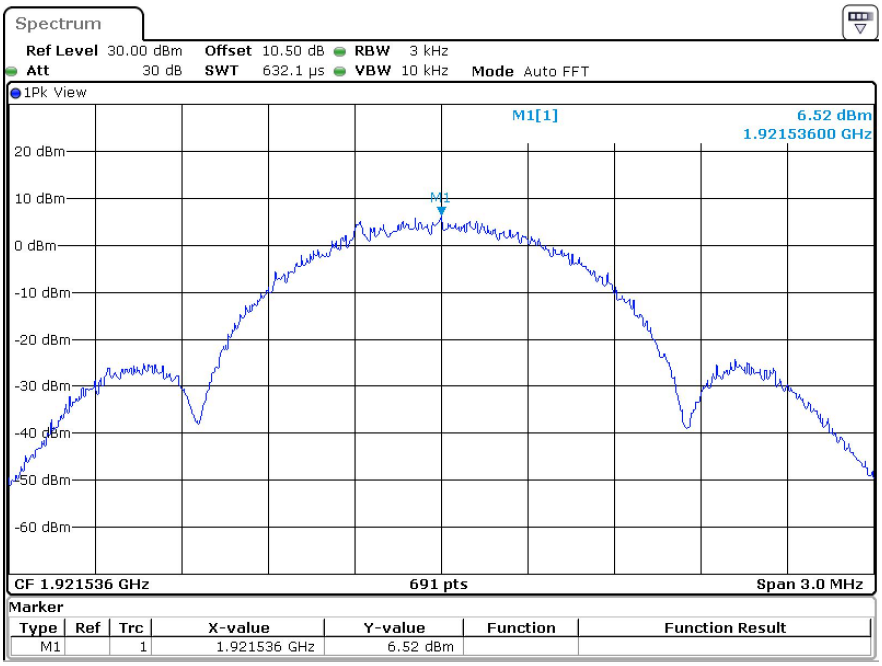
The testing was performed by Rainbow Zhu on 2025-06-07.

Test mode: Transmitting

Test Result: Compliant. *Please refer to following table and plots*

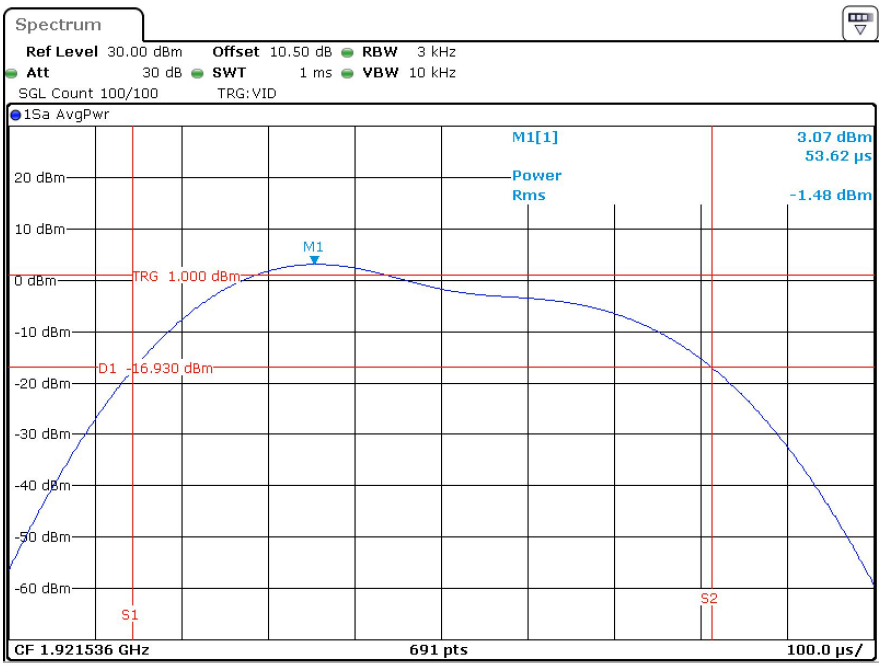
Channel	Frequency (MHz)	Power Spectral Density		Limit (mW/3kHz)
		(dBm/3kHz)	(mW/3kHz)	
Low	1921.536	-1.48	0.711	3
Middle	1924.992	-1.66	0.682	3
High	1928.448	-1.43	0.719	3

Low Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

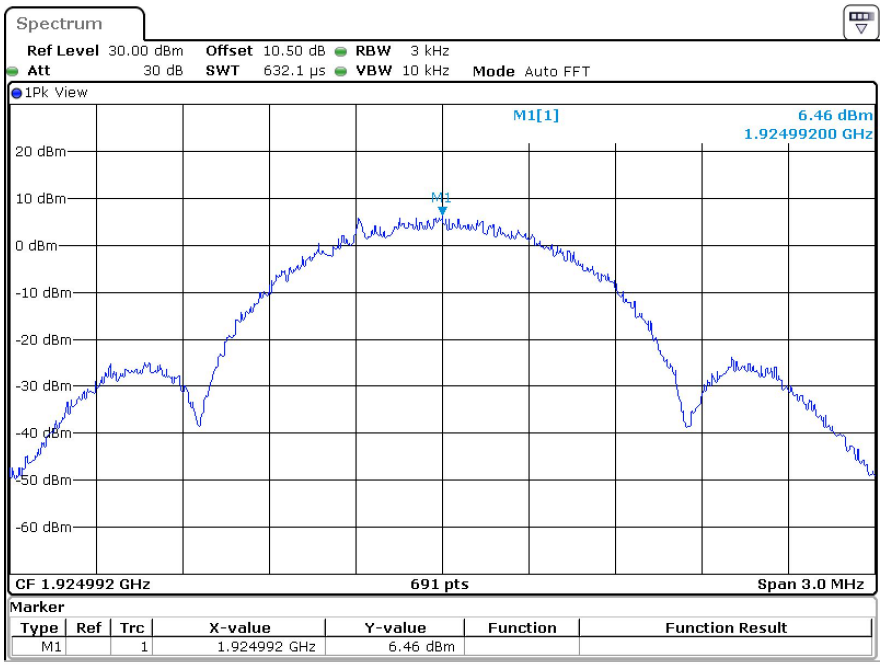
Date: 7.JUN.2025 20:00:11



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

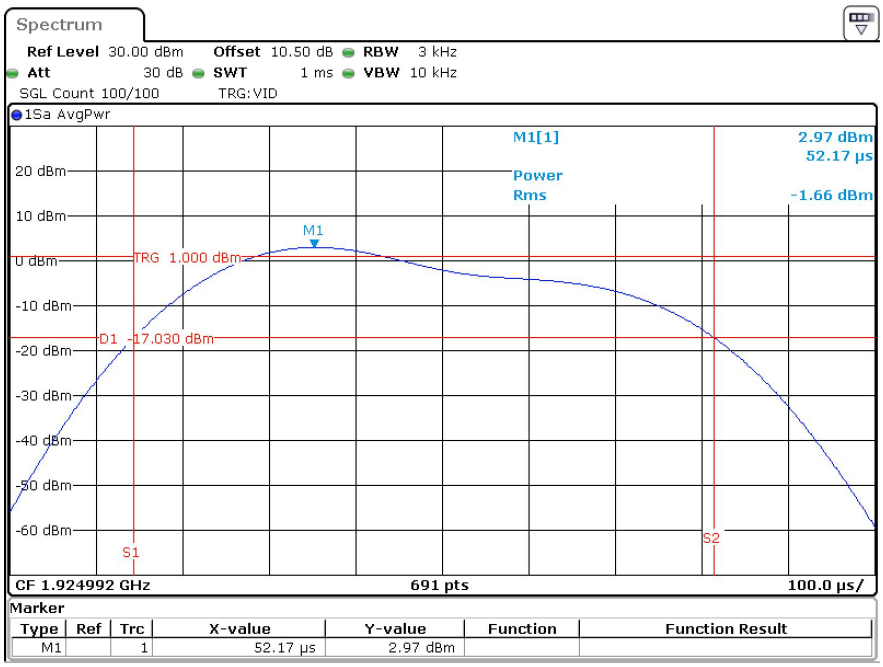
Date: 7.JUN.2025 20:04:49

Middle Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

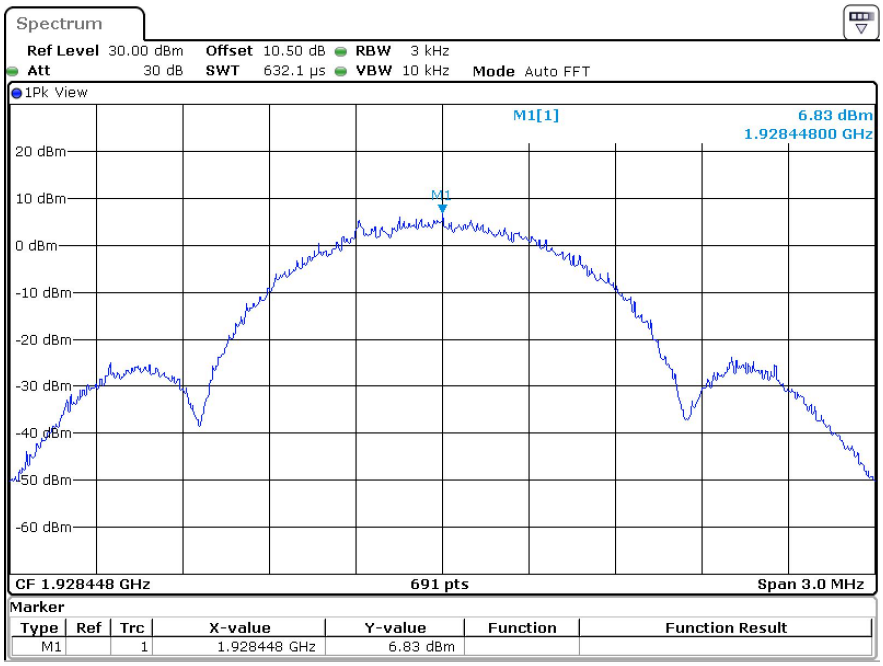
Date: 7.JUN.2025 19:54:04



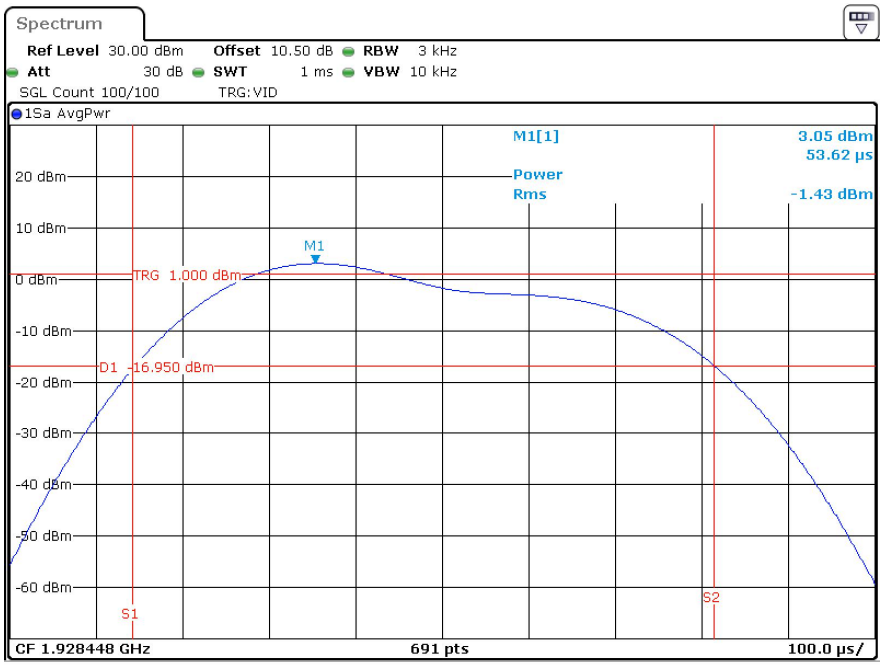
ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 7.JUN.2025 19:57:38

High Channel



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu
Date: 7.JUN.2025 19:45:27



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu
Date: 7.JUN.2025 19:51:35

FCC§15.323 (d) - EMISSION INSIDE AND OUTSIDE THE SUB-BAND

Applicable Standard

Emissions inside the sub-band must comply with the following emission mask:

1. In the bands between 1B and 2B measured from the center of the emission bandwidth the total power emitted by the device shall be at least 30 dB below the transmit power permitted for that device;
2. in the bands between 2B and 3B measured from the center of the emission bandwidth the total power emitted by an intentional radiator shall be at least 50 dB below the transmit power permitted for that radiator;
3. in the bands between 3B and the sub-band edge the total power emitted by an intentional radiator in the measurement bandwidth shall be at least 60 dB below the transmit power permitted for that radiator.

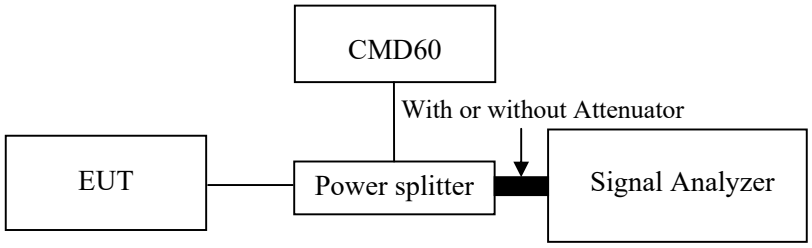
   Where B = emission bandwidth

Emission Outside the sub-band shall be attenuated below a reference power of 112 mw (20.5 dBm) as follows:

1. 30 dB between the sub-band and 1.25 MHz above or below the sub-band;
2. 50 dB between 1.25 and 2.5 MHz above or below the sub-band;
3. 60 dB at 2.5 MHz or greater above or below the sub-band.

Test Procedure

According to ANSI C63.17-2013 Clause 6.1.6.



Test Data

Environmental Conditions

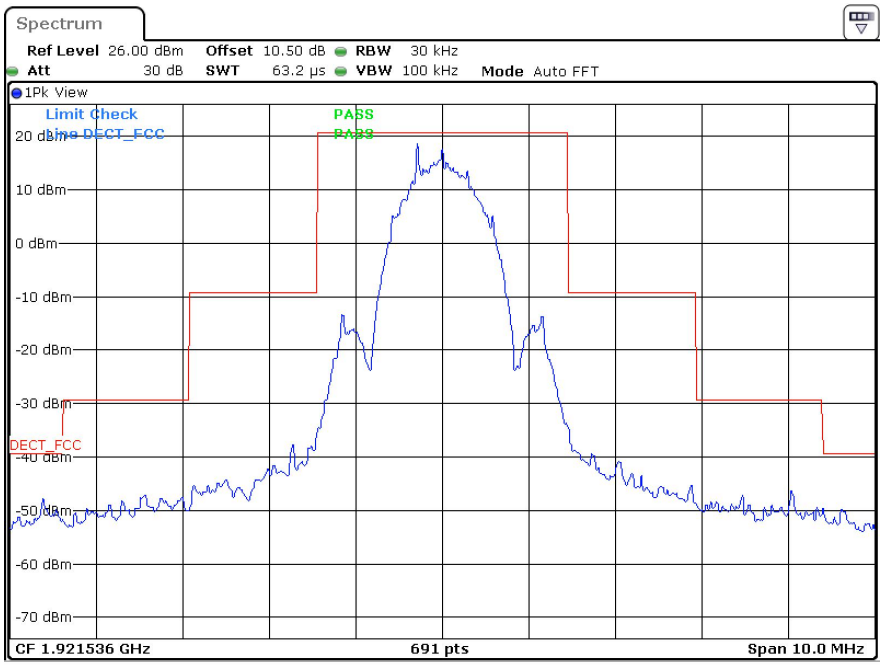
Temperature:	25.4 ℃
Relative Humidity:	54 %
ATM Pressure:	100.0 kPa

The testing was performed by Rainbow Zhu on 2025-06-09.

Test mode: Transmitting

Test Result: Compliant. *Please refer to following plots*

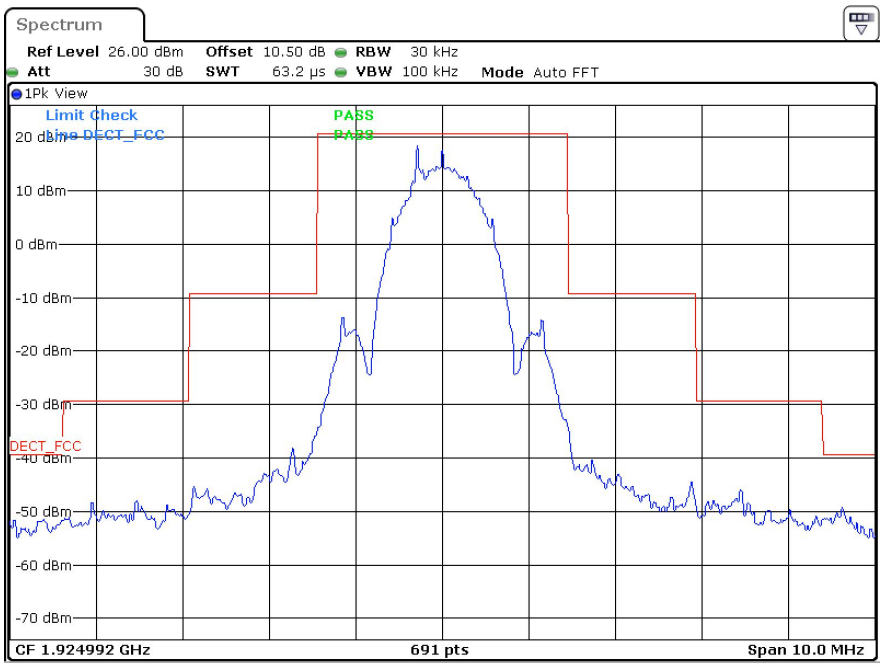
Low Channel (Unwanted Emission inside the Sub-band)



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 9.JUN.2025 11:30:46

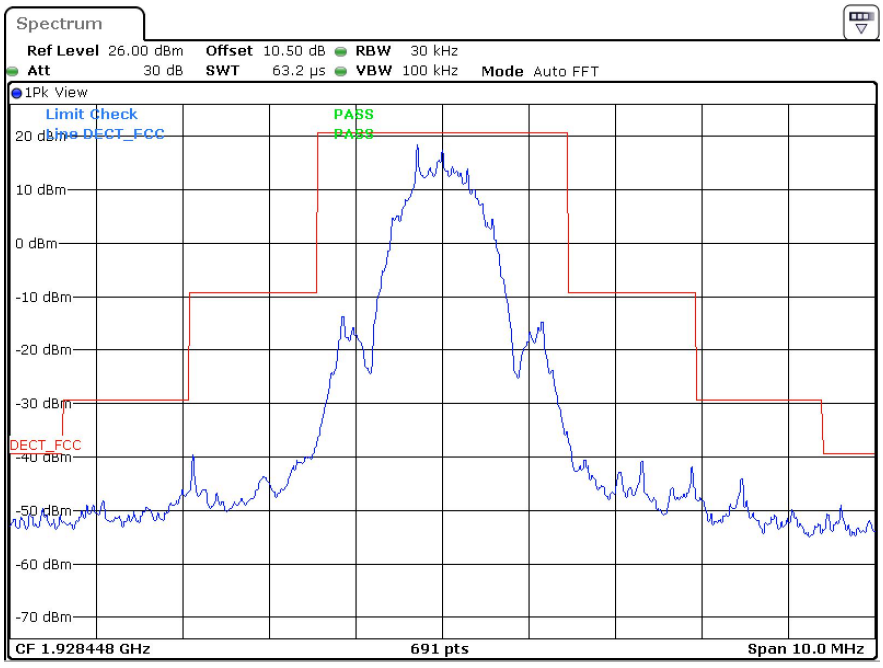
Middle Channel (Unwanted Emission inside the Sub-band)



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 9.JUN.2025 11:27:35

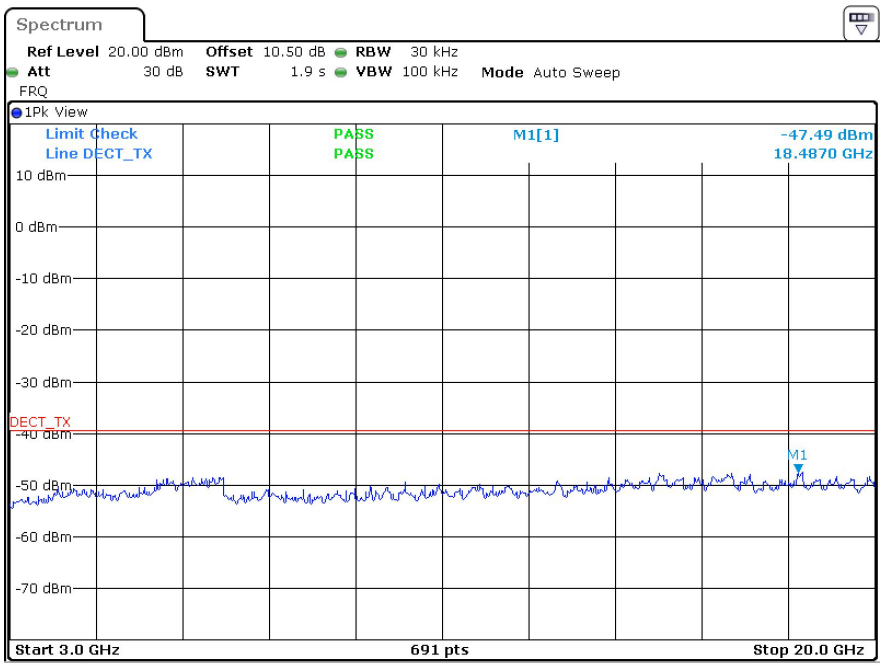
High Channel (Unwanted Emission inside the Sub-band)



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 9.JUN.2025 11:25:32

Low Channel (Unwanted Emission outside the Sub-band)



ProjectNo.:2501T45782E-RF-PP Tester:Rainbow Zhu

Date: 9.JUN.2025 11:06:49