MOTOROLA SOLUTIONS

CERTIFICATE 2518.08

SAMM 825

MOTOROLA PENANG ADV. COMM. LABORATORY
Motorola Solutions Malaysia Sdn Bhd,
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Mukim 12 S.W.D, 11900 Bayan Lepas,
Penang, Malaysia.

FCC / ISED TEST REPORT
Report Revision : Rev.C

Date/s Tested	:	04-February-2026 - 06-July-2026
Report Issue Date	:	30-March-2026
Manufacturer/Location	:	Motorola Solutions Malaysia Sdn Bhd
Manufacturer Address	:	Motorola Solutions Malaysia Sdn Bhd, Plot 2A, Medan Bayan Lepas Mukim 12, S.W.D 11900 Bayan Lepas, Penang, Malaysia
Requestor	:	Ooi VernYin
Product Type	:	Hand-held
Product Marketing Name (PMN)	:	TLK 200
Hardware Version Identification Number (HVIN)	:	HK2300A
Frequency Band	:	Refer to section 1.4
Max RF Output Power	:	281.84Mw
Applicant Name	:	Motorola Solutions Inc
Applicant Address	:	Plot 2A, Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia
FCC Registrations	:	461337
ISED Registrations	:	MY0001
Firmware Version Identification Number(FVIN)	:	D01.00.01 (BP), D01.06.08 (AP)

The equipment was tested accordance to the requirement listed below:

(LTE Band 13) **FCC 47 CFR Part 2 / 27** **ISED RSS-GEN (Issue 5), Amendment 1 (Mar 2019), Amendment 2 (Feb 2021)** **RSS-130 (Issue 2)**	**PASS**

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Prepared By:

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Approve Signatory:

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Responsible Engineer

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REVISION HISTORY

Revision History	Description	Date	Originator
Rev. A	Initial Report	30-March-2026	Nur Amanina
Rev. B	Change of PMN from Scorpio-NA to TLK 200	07-April-2026	Nur Amanina
Rev. C	1.Update Detector =average at Section 1.11. 2.Update justification note at Section 1.12. 3.Update Section 1.14.3 test data. 4.Update test end 24-June-2026 at front page. 5.Update equipment list Radiated Spurious Emission. 6.Update Section 1.6.2 ISED limit.	30-June-2026	Nur Amanina

1.0. Summary of Test Results

FCC Clause	ISED Clause	Test Item	Results	Remarks	Serial Number Tested
2.1046 27.50(b)(12)	RSS-Gen 6.12 RSS-130 4.6	Conducted RF Output Power	Pass	Meet the requirement of limit	64222BY0126
-	RSS-130 4.6	Peak-to-Average Power Ratio	Pass	Meet the requirement of limit	64222BY0126
2.1049	RSS-Gen 6.7	Occupied Bandwidth (26dBc, 99%)	Pass	Meet the requirement of limit	64222BY0126
2.1055 27.54	RSS-130 4.5	Frequency Stability	Pass	Meet the requirement of limit	64222BY0126
2.1051 27.53(c)	RSS-Gen 6.13 RSS-130 4.7	Band Edge/Emission Mask Conducted Spurious Emission	Pass	Meet the requirement of limit	64222BY0126
2.1051 27.53(c)(2)	RSS-Gen 6.13 RSS-130 4.7	Conducted Spurious Emissions	Pass	Meet the requirement of limit	64222BY0126
2.1053 27.53(c)(2)	RSS-130 4.7	Radiated Spurious Emission	Pass	-52.12 dBm (Margin: 39.12 dB, Noise Floor)	64222BY0124
2.1049 27.50(b)(10)	RSS-130 4.6	Effective Radiated Power (ERP)	Pass	Meet the requirement of limit	64222BY0126
27.53(f)	RSS – 130 4.7.2 (b)	GNSS (EIRP for 1599 – 1610MHz)	Pass	Meet the requirement of limit	64222BY0126

1.1. Measurement Uncertainty

Measurement	Frequency	Expended Uncertainty (k=1.96) (±dB)
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	4.03
	200MHz ~ 1000MHz	4.03
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	4.03
	18GHz ~ 25GHz	4.03

1.2. Equipment List

DESCRIPTION	MODEL	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
BROADBAND ATE 1 (RF CONDUCTED TESTS)				
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	172589	06-Nov-25	05-Nov-26
SIGNAL ANALYZER	FSV40	101431	07-Aug-25	06-Aug-26
CHAMBER	SH-641	92003150	09-Sep-25	09-Sep-26
POWER SUPPLY	6652A	3640A02941	20-Jan-26	20-Jan-27
TEST SOFTWARE	R&S CMWrun			
VERSION	V.1.9.8			
RADIATED SPURIOUS EMISSION (EMC CHAMBER 1)				
DRG HORN FREQ.	SAS-571	719	31-Oct-25	31-Oct-26
DRG HORN FREQ.	SAS-571	1027	21-Jul-25	21-Jul-26
DC POWER SUPPLY	N7977A	MY54420118	16-Apr-25	16-Apr-26
SIGNAL GENERATOR	SMB 100A	180683	20-Dec-24	20-Dec-27
EMI TEST RECEIVER	ESW44	101731	11-Aug-25	10-Aug-26
5M SEMI-ANECHOIC CHAMBER	S800-HX	J2308	Not Required	Not Required
BILOG ANTENNA	CBL 6112D	55546	30-Jun-25	30-Jun-26
BILOG ANTENNA	CBL6112D	30991	18-Mar-25	18-Mar-26
DATA LOGGER THERMOHYGROMETER	SDL500	A.016785	16-Jul-25	16-Jul-26
SYSTEM CONTROLLER	SC104V	050806-1	Not Required	Not Required
TURNTABLE FLUSH MOUNT 2M	FM2011	FM2011-001	Not Required	Not Required
ANTENNA POSITIONING TOWER	TLT2	090308-5	Not Required	Not Required
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170255	02-Apr-25	02-Apr-26
PREAMPLIFIER 18-40GHZ	JS44-18004000-33-8P	2034566	Not Required	Not Required
PREAMPLIFIER 1-18GHZ	EMC0518A45SE	981005	19-Sep-25	18-Sep-26
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	153174	11-Jul-25	11-Jul-26
PREAMPLIFIER	PAM-0118P	361	29-Sep-23	29-Sep-26
LOOP ANTENNA	6502	00203479	02-Apr-25	02-Apr-26
TEST SOFTWARE	EMC.FCC.IC.RE.v1.8.1			
VERSION	1.8.1			

DESCRIPTION	MODEL	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
RADIATED SPURIOUS EMISSION (EMC CHAMBER 1) EIRP in RNSS band				
DRG HORN FREQ.	SAS-571	719	31-Oct-25	31-Oct-26
DRG HORN FREQ.	SAS-571	1143	05-May-26	05-May-27
DC Power Supply	6031A	3313A02730	06-Oct-25	06-Oct-26
SIGNAL GENERATOR	SMB 100A	180683	20-Dec-24	20-Dec-27
EMI TEST RECEIVER	ESW44	101731	11-Aug-25	10-Aug-26
5m SEMI-ANECHOIC CHAMBER	S800-HX	J2308	Not Required	Not Required
BILOG ANTENNA	CBL6112D	30991	14-Apr-26	14-Apr-27
BILOG ANTENNA	CBL6112B	2964	06-Nov-25	06-Nov-26
DATA LOGGER THERMOHYGROMETER	SDL500	A.016785	16-Jul-25	16-Jul-26
SYSTEM CONTROLLER	SC104V	050806-1	Not Required	Not Required
TURNTABLE FLUSH MOUNT 2M	FM2011	FM2011-001	Not Required	Not Required
ANTENNA POSITIONING TOWER	TLT2	090308-5	Not Required	Not Required
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	30-Sep-25	30-Sep-26
PREAMPLIFIER 18-40GHz	JS44-18004000-33-8P	2034566	Not Required	Not Required
PREAMPLIFIER 1-18GHz	EMC0518A45SE	981005	19-Sep-25	18-Sep-26
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	153174	11-Jul-25	11-Jul-26
PREAMPLIFIER	PAM-0118P	361	29-Sep-23	29-Sep-26
LOOP ANTENNA	6502	00208416	06-Nov-25	06-Nov-26
TEST SOFTWARE	EMC.SAC.RE.v1.8.3			
VERSION	1.8.3			

1.3. General Information

General Description of EUT

Product	TLK 200			
Brand	Motorola Solutions			
Test Model	HK2300A			
Power Supply Rating	3.8 Vdc			
Mode of Operation	LTE Band 13			
Modulation Type	QPSK, 16QAM			
Operating Frequency	LTE Band 13	Channel Bandwidth 5MHz	779.5MHz~784.5MHz	
		Channel Bandwidth 10MHz	782MHz	
Max. Conducted RF Output Power	LTE Band 13 QPSK	Channel Bandwidth 5MHz	**23.68dBm (0.23W)**	
		Channel Bandwidth 10MHz	23.53dBm (0.23W)	
	LTE Band 13 16QAM	Channel Bandwidth 5MHz	22.47dBm (0.18W)	
		Channel Bandwidth 10MHz	**22.89dBm (0.19W)**	
Emission Designator	LTE Band 13		**QPSK**	**16QAM**
		Channel Bandwidth 5MHz	4M47G7D	4M47D7W
		Channel Bandwidth 10MHz	8M89G7D	8M91D7W
Antenna Type	LTE Band 13	Stubby, Antenna LTE Low Band 777 – 787MHz (1dBi)		
SW Version	D01.00.01 (BP), D01.06.08 (AP)			
HW Version	P2			

Note:
1. The EUT contains following accessory devices and data cable.

Item	Brand	Model or P/N	Specification
Li-Ion Battery	MOTOROLA	PMNN4578A	BATTERY PACK, BATTERY PACK, BATT LIION 2500T

Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.
The following support units or accessories were used to form a representative test configuration during the tests.

NO.	Product	Brand	Model No.	Serial No.	FCC ID
1	Wideband Radio Communication Tester	R&S	CMW500	172589	NA

NO.	Signal Cable Description of The above Support Units
1	NA

Note:
1. All power cords of the above support units are non-shielded.
2. Item 1 acted as a communication partner to transfer data.

EUT Operating Conditions
The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

General Description of Applied Standards
The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

KDB 971168 D01 Power Meas License Digital Systems v03r01
KDB 971168 D02 Misc OOBE License Digital Systems v02r02
ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

1.4. Channel Number and Frequency Info

Band	Bandwidth supported	Available Channel Number	Test Channel Number			Test Channel Frequency (MHz)		
			Low Channel	Mid Channel	High Channel	Low Channel	Mid Channel	High Channel
LTE Band 13	5 MHz	23205 ~ 23255	23205	23230	23255	779.5	782	784.5
	10 MHz	23230	-	23230	-	-	782	-

1.5. Test Mode Applicability and Tested Channel Detail

Pre-scan also have been conducted with the accessory devices listed in section table 1.3, only the worst case radiated emission results of the combination test configuration is reported in this report.
The following channel(s) was (were) selected for the final test as listed below:

LTE Band 13

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Uplink Modulation	Mode
Conducted RF Output Power	23025 ~ 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	As per table 1.6.3
	23025 ~ 23255	23230	10 MHz		
Peak to Average Power Ratio	23025 ~ 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	23025 ~ 23255	23230	10 MHz		50 RB / 0 RB Offset
Occupied Bandwidth	23025 ~ 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	23025 ~ 23255	23230	10 MHz		50 RB / 0 RB Offset
Frequency Stability	23025 ~ 23255	23205, 23255	5 MHz	QPSK	25 RB / 0 RB Offset
	23025 ~ 23255	23230	10 MHz		50 RB / 0 RB Offset
Band Edge / Emission Mask Conducted Spurious Emission	23025 ~ 23255	23205, 23255	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
	23025 ~ 23255	23230	10 MHz		1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
Conducted Spurious Emission	23025 ~ 23255	23205, 23230, 23255	5 MHz	QPSK	1 RB / 13 RB Offset
	23025 ~ 23255	23230	10 MHz		1 RB / 25 RB Offset
Radiated Spurious Emission	23025 ~ 23255	23205	5 MHz	QPSK	1 RB / 13 RB Offset
	23025 ~ 23255	23230	5 MHz		1 RB / 13 RB Offset
	23025 ~ 23255	23255	5 MHz		1 RB / 13 RB Offset
GNSS (EIRP for 1599 – 1610MHz)	23025 ~ 23255	23205	5 MHz	QPSK	1 RB / 24 RB Offset
		23255			1 RB / 13 RB Offset
Effective Radiated Power (ERP)	23025 ~ 23255	23205, 23230, 23255	5 MHz	QPSK, 16QAM	As per table 1.6.4
	23025 ~ 23255	23230	10 MHz		

NOTE:

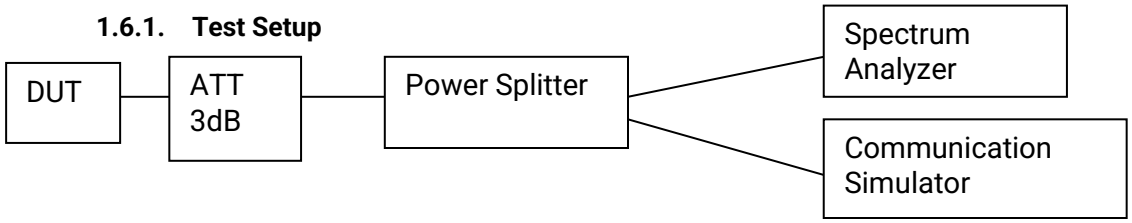
1. The Conducted RF Output Power for QPSK and 16QAM, measured value of QPSK mode is higher than 16QAM mode. Therefore, only Conducted Spurious Emission, Radiated Emission and GNSS (EIRP for 1599 – 1610MHz) had been tested under QPSK modes.
2. Band Edge was performed with 1 and full Resource Block at the lowest and highest operating frequency band.
3. The Equivalent Radiated Power (ERP) was calculated from Conducted RF Output Power results in QPSK and 16QAM modulation.
4. Peak to Average and Occupied Bandwidth were performed with full Resource Block which is the worst case.
5. Frequency stability was performed with full Resource Block in QPSK modulation.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
Conducted RF Output Power	25ºC, 50% RH	3.8 Vdc	Nur Amanina
Peak-to-Average Power Ratio	25ºC, 50% RH	3.8 Vdc	Nur Amanina
Occupied Bandwidth	25ºC, 50% RH	3.8 Vdc	Nur Amanina
Frequency Stability	-30ºC ~ 60ºC	3.8 Vdc	Nur Amanina
Band Edge Conducted Spurious Emission	25ºC, 50% RH	3.8 Vdc	Nur Amanina
Conducted Spurious Emission	25ºC, 50% RH	3.8 Vdc	Nur Amanina
Radiated Spurious Emission	23.5ºC, 68.8% RH	3.8 Vdc	Qawiman & Rezza
Effective Radiated Power (ERP)	25ºC, 50% RH	3.8 Vdc	Nur Amanina

1.6. Conducted RF Output Power

1.6.1. Test Setup



1. The DUT transmitter output port was connected to communication simulator with above setup.
2. Path loss for the measurement included.
3. Set DUT to transmit maximum power through communication simulator
4. All the measurement was done at low, mid, high channel for each band and different modulation.
5. Record the average power into the test report.

1.6.2. Test Limits

FCC: Portable stations (hand-held devices) transmitting in the 776-788 MHz band is limited to 3 watts ERP.

ISED: The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

1.6.3. Conducted RF Output Power – LTE Band 13 (777-787MHz)

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			23205	23230	23255	23205	23230	23255
			779.5MHz	782 MHz	784.5 MHz	779.5 MHz	782 MHz	784.5 MHz
Band 13 / 5MHz	**1**	**0**	23.29	23.44	23.22	22.05	22.16	22.27
	1	**13**	23.35	**23.68**	23.53	22.06	**22.47**	22.33
	1	**24**	23.25	23.32	23.30	21.97	22.10	22.36
	12	**0**	22.60	22.57	22.58	21.28	21.41	21.35
	12	**6**	22.66	22.59	22.59	21.31	21.42	21.34
	12	**13**	22.56	22.54	22.54	21.32	21.24	21.35
	25	**0**	22.54	22.62	22.52	21.48	21.44	21.60

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			23205	23230	23255	23205	23230	23255
			779.5 MHz	782 MHz	784.5 MHz	779.5 MHz	782 MHz	784.5 MHz
Band 13 / 10MHz	**1**	**0**		23.32			22.64	
	1	**25**		**23.53**			**22.89**	
	1	**49**		23.33			22.77	
	25	**0**		22.39			21.49	
	25	**13**		22.48			21.50	
	25	**25**		22.45			21.47	
	50	**0**		22.41			21.53	

1.6.4. Effective Radiated Power – LTE Band 13 (777-787 MHz)

ERP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			23205	23230	23255	23205	23230	23255
			779.5MHz	782 MHz	784.5 MHz	779.5 MHz	782 MHz	784.5 MHz
Band 13 / 5MHz	**1**	**0**	22.14	22.29	22.07	20.90	21.01	21.12
	1	**13**	22.20	**22.53**	22.38	20.91	**21.32**	21.18
	1	**24**	22.10	22.17	22.15	20.82	20.95	21.21
	12	**0**	21.45	21.42	21.43	20.13	20.26	20.20
	12	**6**	21.51	21.44	21.44	20.16	20.27	20.19
	12	**13**	21.41	21.39	21.39	20.17	20.09	20.20
	25	**0**	21.39	21.47	21.37	20.33	20.29	20.45

ERP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
				23230			23230	
				782 MHz			782 MHz	
Band 13 / 10MHz	**1**	**0**		22.17			21.49	
	1	**25**		**22.38**			**21.74**	
	1	**49**		22.18			21.62	
	25	**0**		21.24			20.34	
	25	**13**		21.33			20.35	
	25	**25**		21.30			20.32	
	50	**0**		21.26			20.38	

The maximum ERP/EIRP from the measured RF output power is given in Equation as follows:

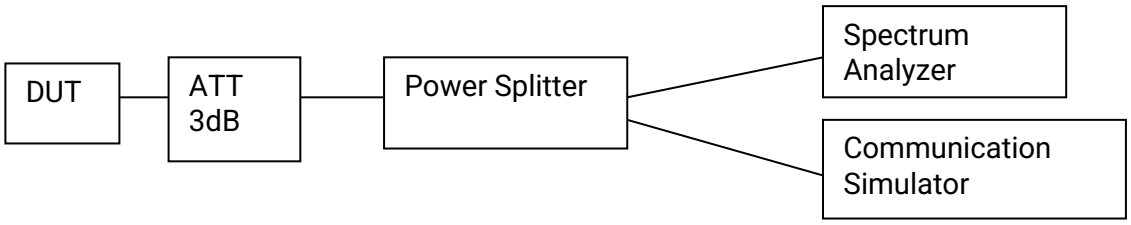
EIRP =**PMeas** +**GT**
ERP = **EIRP –2.15**

Where, ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (Expressed in the same units as PMeas, e.g., dBm)

PMeas measured transmitter output power, in dBm
GT gain of the transmitting antenna, in dBi (EIRP)

1.7. Peak-to-Average Power Ratio

1.7.1. Test Setup



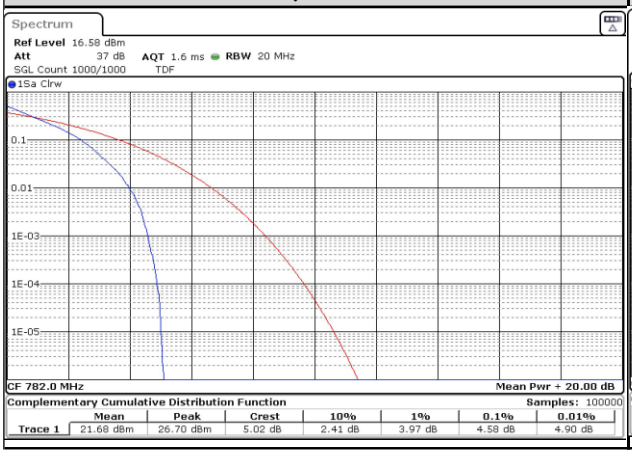
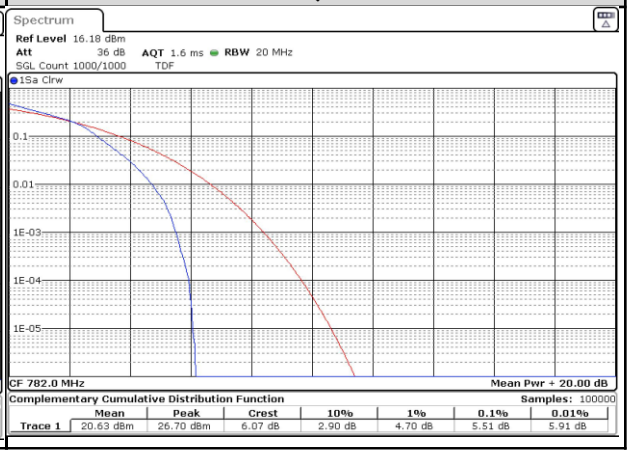
1. The DUT transmitter output port was connected to communication simulator with above setup.
2. Path loss for the measurement included.
3. Set DUT to transmit maximum power through communication simulator
4. Set the CCDF (Complementary Cumulative Distribution Function) option in the spectrum analyzer.
5. Spectrum Analyzer setting, RBW = 20MHz.
6. Recorded the maximum PAR level associated with a probability of 0.1% as Peak to Average Ratio.
7. All the measurement was done at low, mid, high channel for each band and different modulation.

1.7.2. Test Limit

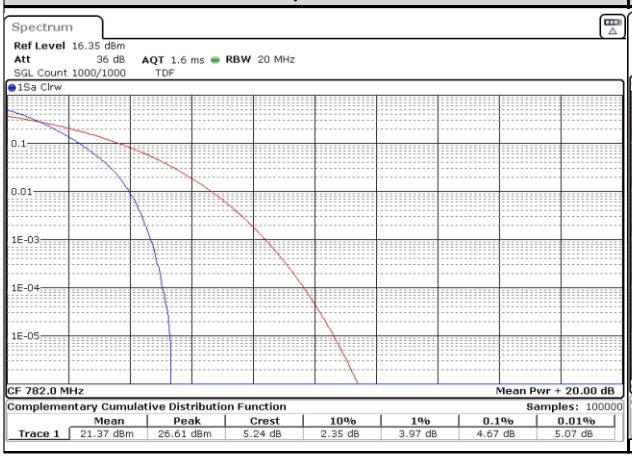
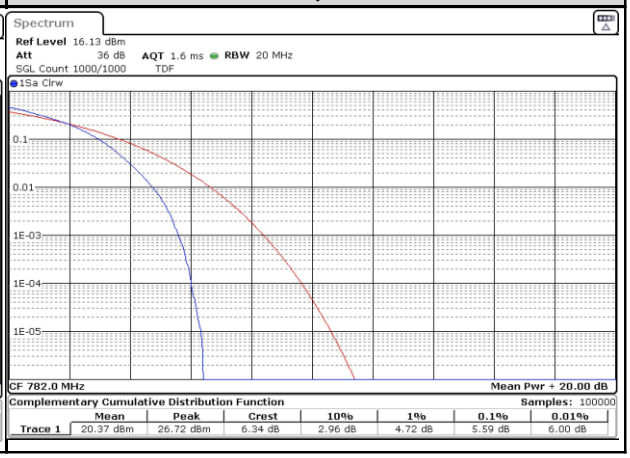
The peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

1.7.3. Peak-to-Average Power Ratio – LTE Band 13 (777-787MHz)

LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 13/5MHz/25/0	Low CH 23205	779.5 MHz	4.493	5.275
	Mid CH 23230	782 MHz	**4.580**	**5.507**
	High CH 23255	784.5 MHz	4.435	5.304

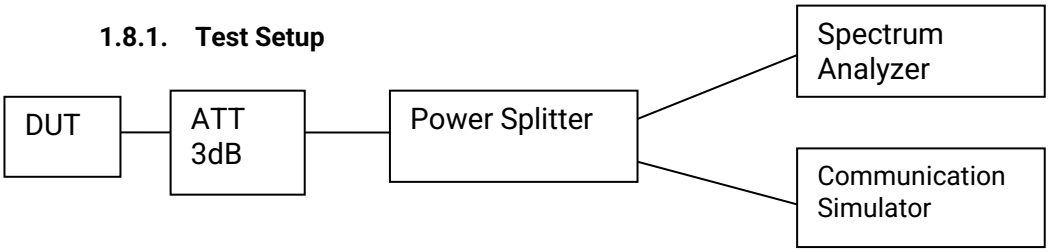
Spectrum Plot of Worst Value	
QPSK	16QAM
	

LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 13/10MHz/50/0	Low CH			
	Mid CH 23230	782 MHz	4.667	5.594
	High CH			

Spectrum Plot of Worst Value	
QPSK	16QAM
	

1.8. Occupied Bandwidth

1.8.1. Test Setup



1) The DUT transmitter output port was connected to communication simulator with above setup.
2) Path loss for the measurement included.
3) For LTE measurement, set DUT to transmit maximum power & full RB size through communication simulator.
4) For LTE measurement, set DUT to transmit maximum power through communication simulator.
5) Spectrum Analyzer setting, RBW is 1% of OBW and VBW is 3 times of RBW.
6) Measure & record -26dBc and 99% occupied bandwidth (BW).
7) All the measurement was done at low, mid, high channel for each band and different modulation.

1.8.2. Test Limit

For measurement 99% of occupied bandwidth that is required by FCC 2.1049 and RSS Gen 6.7.

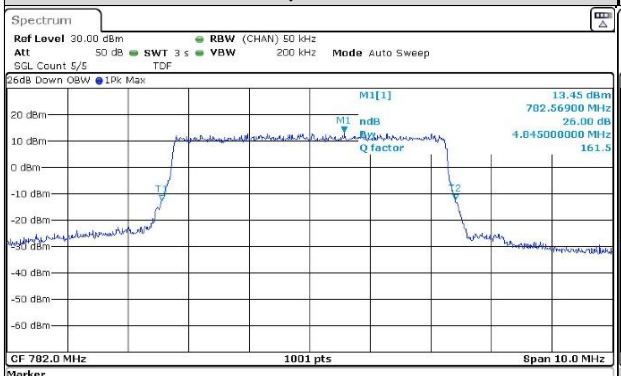
1.8.3. Occupied Bandwidth – LTE Band 13 (777-787MHz)

LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 13/5MHz/25/0	Low CH 23205	779.5 MHz	4.745	4.765
	Mid CH 23230	782 MHz	**4.845**	**4.835**
	High CH 23255	784.5 MHz	4.785	4.456

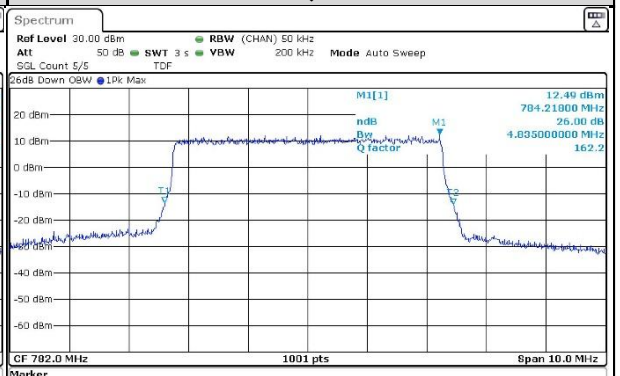
Spectrum Plot of Worst Value

-26 dBC Bandwidth

QPSK



16QAM

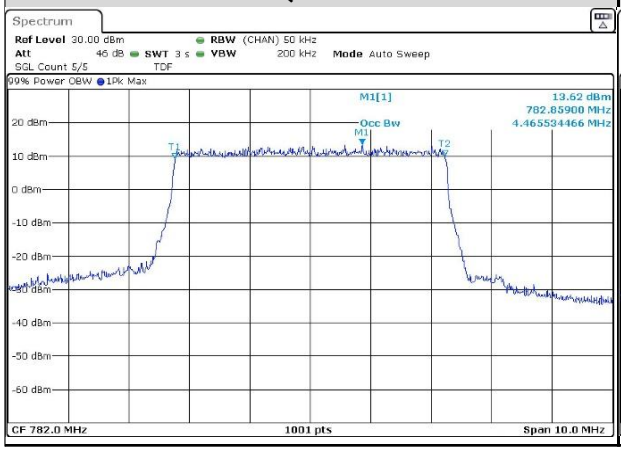


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 13/5MHz/25/0	Low CH 23205	779.5 MHz	4.436	4.446
	Mid CH 23230	782 MHz	**4.466**	**4.466**
	High CH 23255	784.5 MHz	4.466	4.456

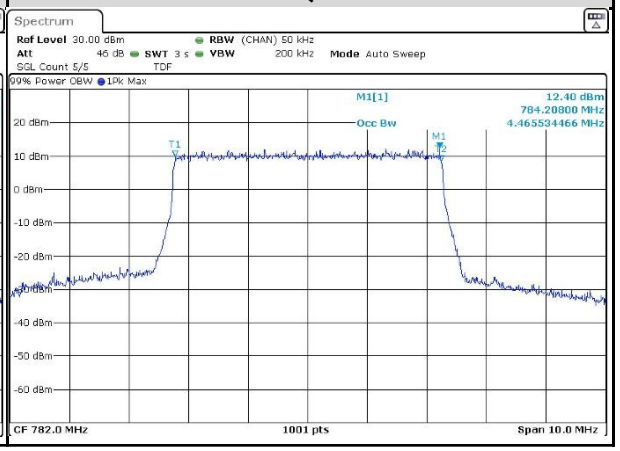
Spectrum Plot of Worst Value

99% Occupied Bandwidth

QPSK

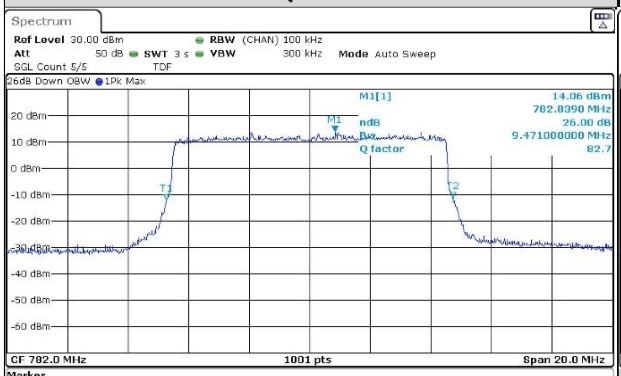


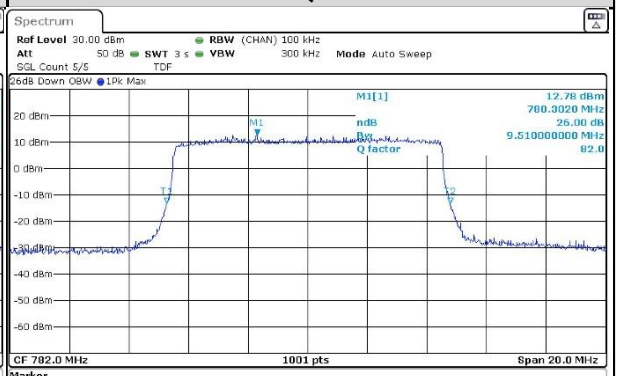
16QAM



LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 13/10MHz/50/0	Low CH			
	Mid CH 23230	782 MHz	9.471	9.51
	High CH			

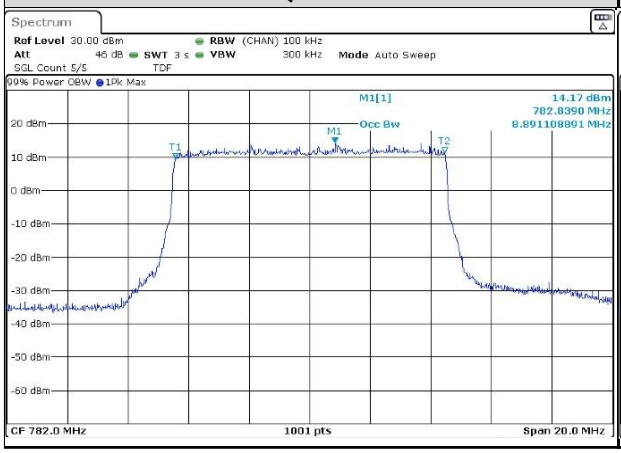
Spectrum Plot of Worst Value	
-26 dBC Bandwidth	
QPSK	16QAM

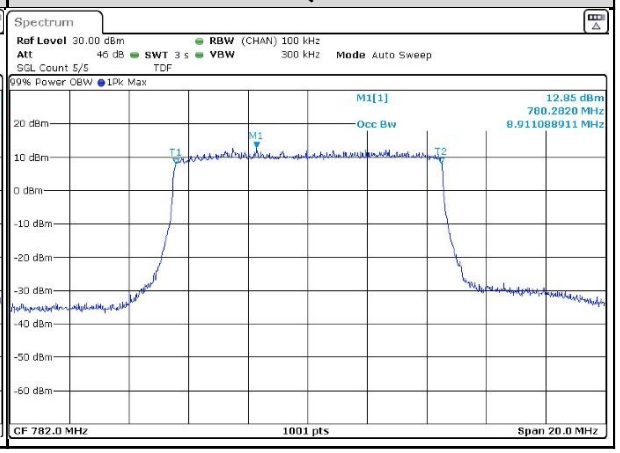




LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 13/10MHz/50/0	Low CH			
	Mid CH 23230	782 MHz	8.891	8.911
	High CH			

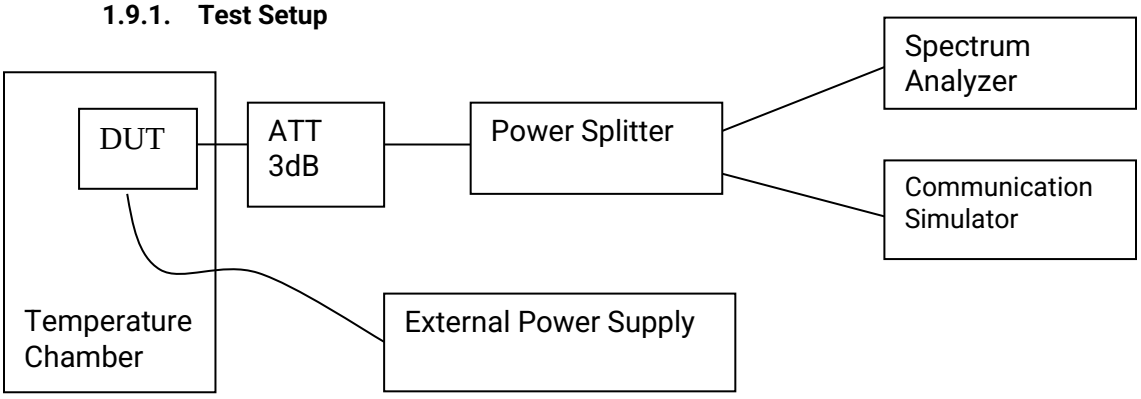
Spectrum Plot of Worst Value	
99% Occupied Bandwidth	
QPSK	16QAM





1.9. Frequency Stability

1.9.1. Test Setup



1) The DUT is placed in the temperature chamber and DUT is power up by external power supply to control the DC input voltage.
2) The temperature chamber could control the temperature and humidity and external power supply could control the test voltage range from minimum to maximum operating voltage.
3) Measured frequency error from the communication simulator by vary below step :
   i. Vary temperature of the temperature chamber from -30 ~ 60 deg C (10 deg C / Step) and set external supply voltage constant at nominal voltage.
   ii. Vary external supply voltage from minimum to maximum operation voltage support by DUT and set temperature chamber constant at room temp.
4) All the measurement was done at mid channel for each band.

1.9.2. Test Limit

As per manufacturer declared product operating at -30 to 60 deg C with spec of +/- 0.1ppm.

1.9.3. Frequency Stability – LTE Band 13 (777-787MHz)

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 5 MHz			
		Low Channel		High Channel	
		779.5MHz		784.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 13	**60**	779.500001	0.007317	784.500005	0.005753
	50	779.500008	-0.004333	784.500008	0.008437
	40	779.500098	0.004980	784.500005	0.005397
	30	779.500008	-0.004566	784.500007	0.005529
	20	779.500005	0.005165	784.500007	0.004993
	10	779.500001	0.006714	784.500005	0.007303
	0	779.500005	0.009129	784.500008	0.009759
	-10	779.500004	0.004976	784.500005	0.006192
	-20	779.500001	0.007392	784.500001	0.007285
	-30	779.500001	0.005679	784.500005	0.006257

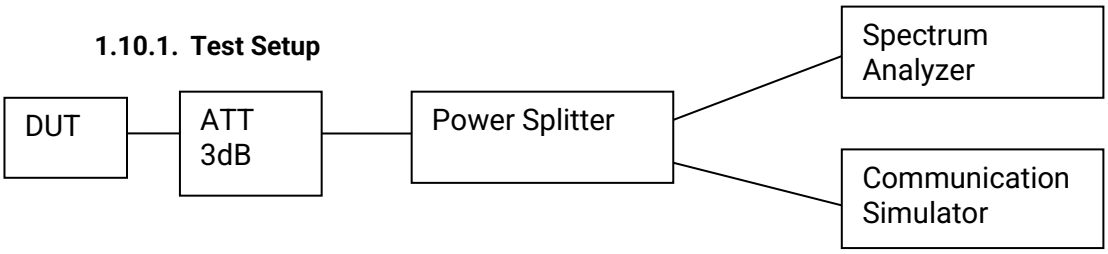
Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 5 MHz			
		Low Channel		High Channel	
		779.5MHz		784.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 13	**4.3**	779.500007	-0.004701	784.500005	0.005018
	3.8	779.500004	0.007163	784.500007	0.006709
	3.5	779.500009	0.006736	784.500001	0.006581

Band	Temp (Deg C)		
		Channel Bandwidth: 10 MHz	
		Mid Channel	
		782MHz	
		Frequency (MHz)	Frequency Error (ppm)
LTE Band 13	**60**	782.000012	0.005263
	50	782.000019	0.005141
	40	782.000018	0.005750
	30	782.000011	0.005187
	20	782.000012	0.005897
	10	782.000016	0.004329
	0	782.000018	0.007521
	-10	782.000012	0.005057
	-20	782.000011	0.006755
	-30	782.000012	0.005217

Band	Voltage (V)		
		Frequency Error VS Voltage	
		Channel Bandwidth: 10 MHz	
		Mid Channel	
		782MHz	
		Frequency (MHz)	Frequency Error (ppm)
LTE Band 13	**4.3**	782.000018	0.004471
	3.8	782.000011	0.006009
	3.5	782.000012	-0.004917

1.10. Band Edge Conducted Spurious Emission

1.10.1. Test Setup



1) The DUT transmitter output port was connected to communication simulator with above setup.
2) Path loss for the measurement included.
3) Set DUT to transmit maximum power through communication simulator.
4) The band edges of lowest and highest channels with the highest RF powers were measured.
5) On frequency outside the 776-788 MHz band, the instrumentation employed a resolution bandwidth of 100 kHz. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz is employed.
6) Record the maximum trace plot into the test report.

1.10.2. Test Limit

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

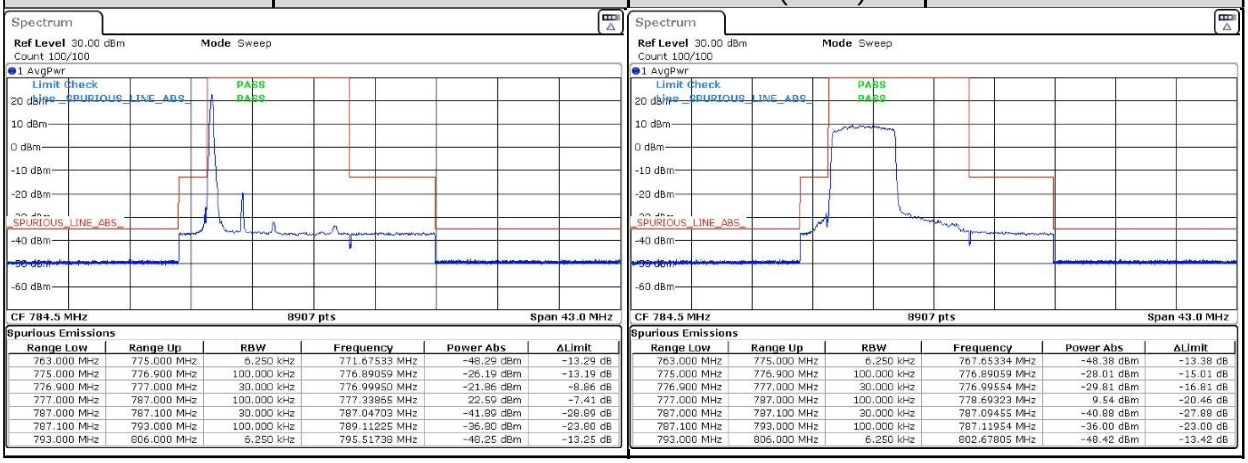
(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (1) and (2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

1.10.3. Band Edge / Emission Mask Conducted Spurious Emission – LTE Band 13 (777-787MHz)

5MHz

Band 13, 5MHz QPSK, Low CH 23205			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



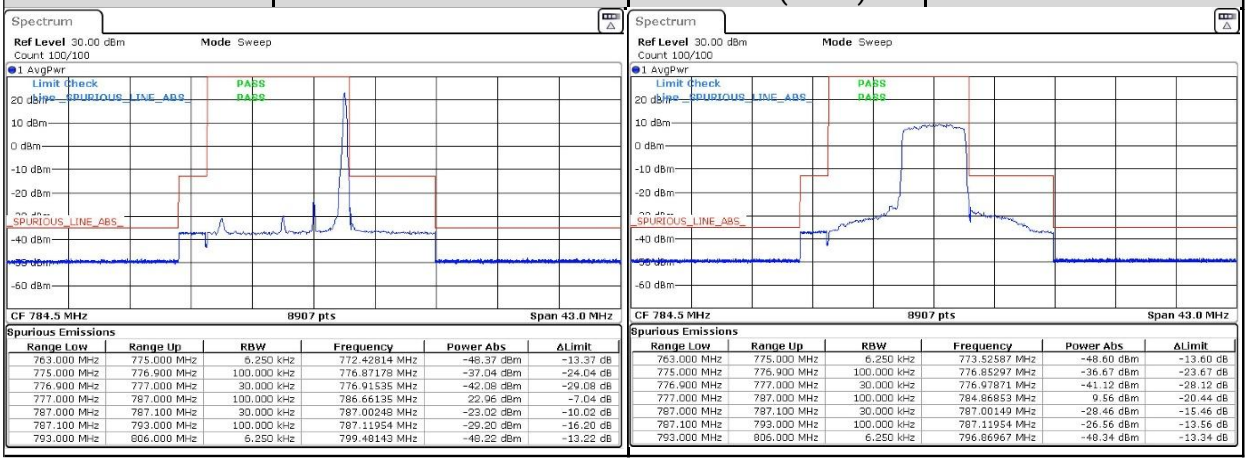
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	771.67533 MHz	-48.29 dBm	-13.29 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-26.19 dBm	-13.19 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99950 MHz	-21.86 dBm	-8.86 dB
777.000 MHz	787.000 MHz	100.000 kHz	777.33855 MHz	22.59 dBm	-7.41 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.04703 MHz	-41.89 dBm	-28.89 dB
787.100 MHz	793.000 MHz	100.000 kHz	789.11225 MHz	-36.80 dBm	-23.80 dB
793.000 MHz	806.000 MHz	6.250 kHz	795.51738 MHz	-48.25 dBm	-13.25 dB

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	767.65334 MHz	-48.38 dBm	-13.38 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-28.01 dBm	-15.01 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99554 MHz	-29.81 dBm	-16.81 dB
777.000 MHz	787.000 MHz	100.000 kHz	778.69223 MHz	9.54 dBm	-20.46 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.09455 MHz	-40.88 dBm	-27.88 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-36.00 dBm	-23.00 dB
793.000 MHz	806.000 MHz	6.250 kHz	802.67805 MHz	-48.42 dBm	-13.42 dB

Band 13, 5MHz QPSK, High CH 23255			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0



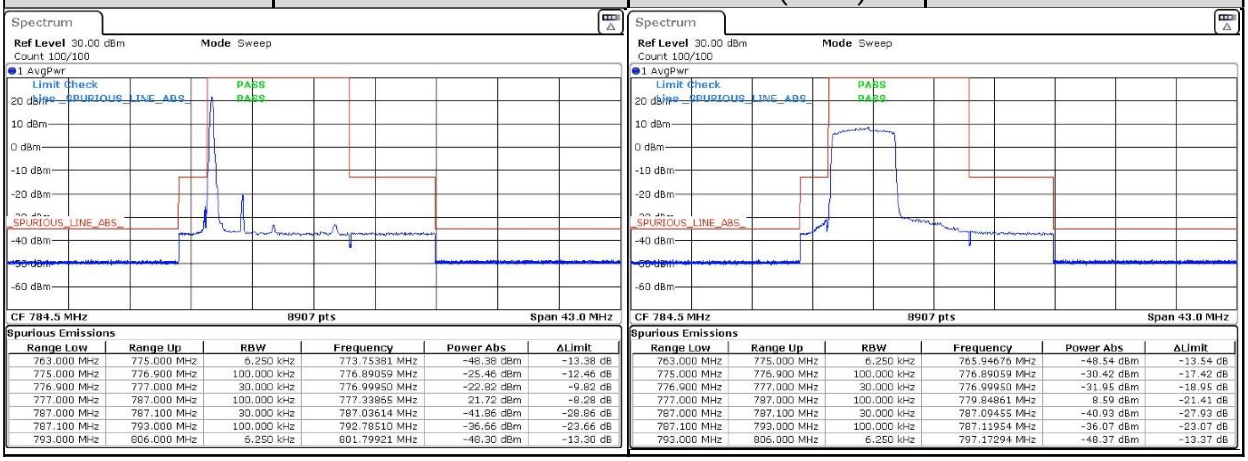
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	772.42814 MHz	-48.37 dBm	-13.37 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.87178 MHz	-37.04 dBm	-24.04 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.91535 MHz	-42.08 dBm	-29.08 dB
777.000 MHz	787.000 MHz	100.000 kHz	786.66135 MHz	22.96 dBm	-7.04 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00248 MHz	-23.02 dBm	-10.02 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-29.20 dBm	-16.20 dB
793.000 MHz	806.000 MHz	6.250 kHz	799.48143 MHz	-48.22 dBm	-13.22 dB

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	773.52587 MHz	-48.60 dBm	-13.60 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.85297 MHz	-36.67 dBm	-23.67 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.97871 MHz	-41.12 dBm	-28.12 dB
777.000 MHz	787.000 MHz	100.000 kHz	784.86853 MHz	9.56 dBm	-20.44 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00149 MHz	-28.46 dBm	-15.46 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-26.56 dBm	-13.56 dB
793.000 MHz	806.000 MHz	6.250 kHz	796.86967 MHz	-48.34 dBm	-13.34 dB

Band 13, 5MHz 16-QAM, Low CH 23205			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



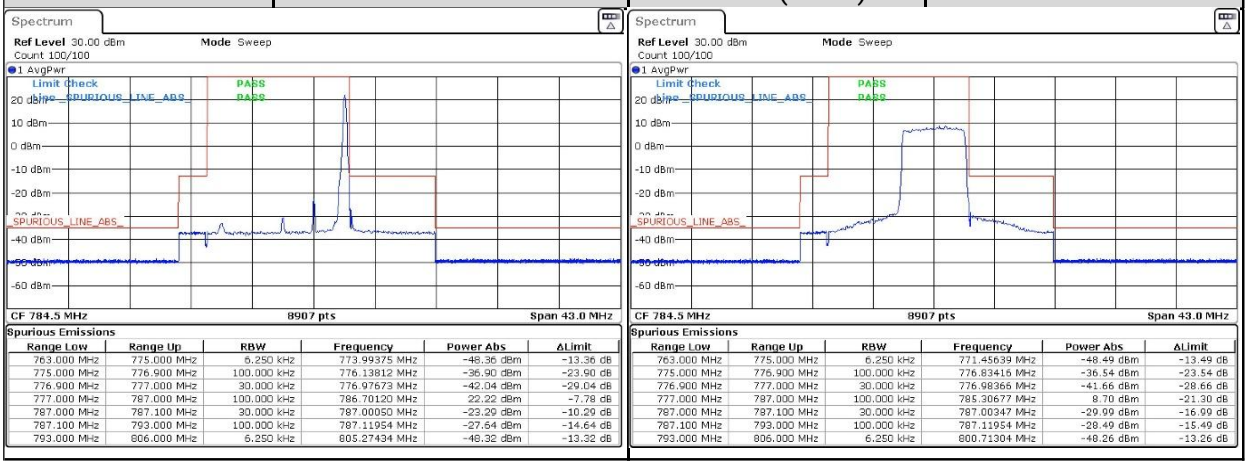
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	773.75381 MHz	-48.38 dBm	-13.38 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-25.46 dBm	-12.46 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99950 MHz	-22.82 dBm	-9.82 dB
777.000 MHz	787.000 MHz	100.000 kHz	777.33865 MHz	21.72 dBm	-8.28 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.03614 MHz	-41.86 dBm	-28.86 dB
787.100 MHz	793.000 MHz	100.000 kHz	792.78510 MHz	-36.66 dBm	-23.66 dB
793.000 MHz	806.000 MHz	6.250 kHz	801.79921 MHz	-48.30 dBm	-13.30 dB

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	765.94676 MHz	-48.54 dBm	-13.54 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-30.42 dBm	-17.42 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99950 MHz	-31.95 dBm	-18.95 dB
777.000 MHz	787.000 MHz	100.000 kHz	779.84861 MHz	8.59 dBm	-21.41 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.09455 MHz	-40.93 dBm	-27.93 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-36.07 dBm	-23.07 dB
793.000 MHz	806.000 MHz	6.250 kHz	797.17294 MHz	-48.37 dBm	-13.37 dB

Band 13, 5MHz 16-QAM, High CH 23255			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0



Spurious Emissions

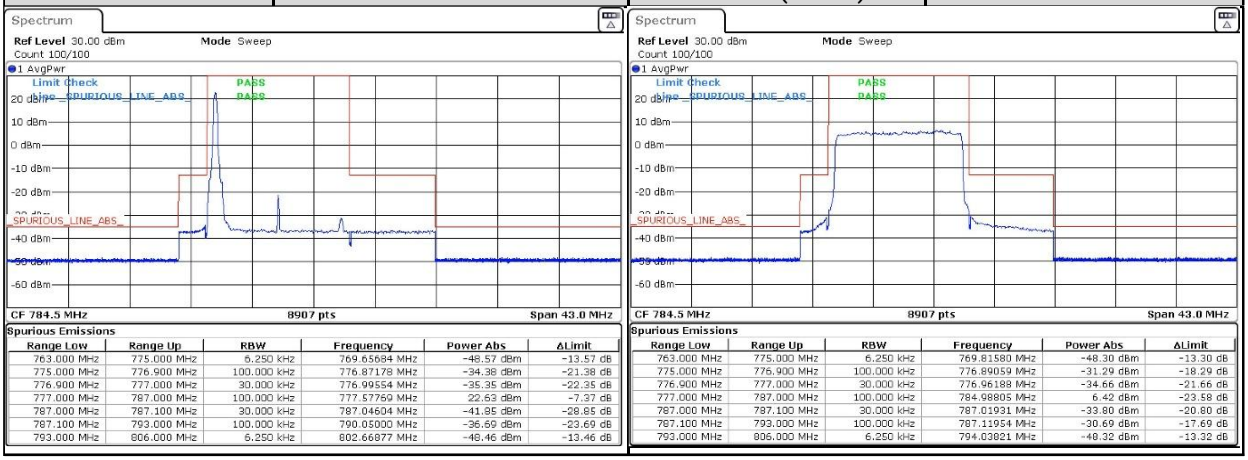
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	773.99375 MHz	-48.36 dBm	-13.36 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.13812 MHz	-36.90 dBm	-23.90 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.97673 MHz	-42.04 dBm	-29.04 dB
777.000 MHz	787.000 MHz	100.000 kHz	786.70120 MHz	22.22 dBm	-7.78 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00050 MHz	-23.29 dBm	-10.29 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-27.64 dBm	-14.64 dB
793.000 MHz	806.000 MHz	6.250 kHz	805.27434 MHz	-48.32 dBm	-13.32 dB

Spurious Emissions

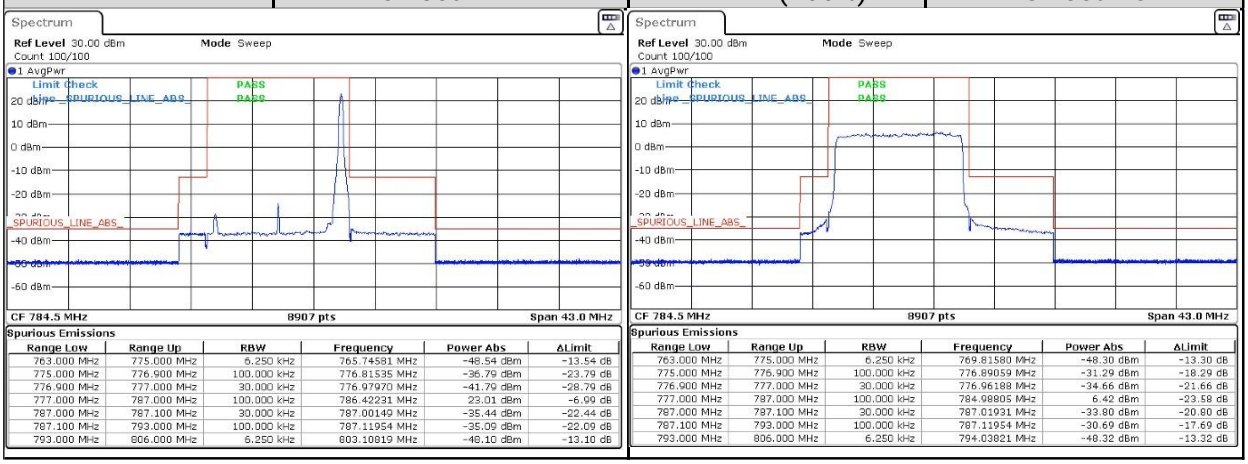
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	771.45639 MHz	-48.49 dBm	-13.49 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.83416 MHz	-36.54 dBm	-23.54 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.98366 MHz	-41.66 dBm	-28.66 dB
777.000 MHz	787.000 MHz	100.000 kHz	785.30677 MHz	8.70 dBm	-21.30 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00347 MHz	-29.99 dBm	-16.99 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-28.49 dBm	-15.49 dB
793.000 MHz	806.000 MHz	6.250 kHz	800.71304 MHz	-48.26 dBm	-13.26 dB

10MHz

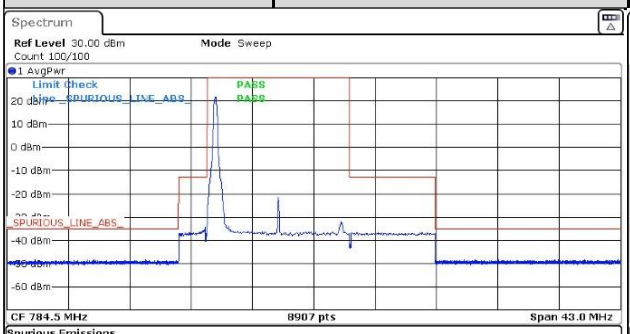
Band 13, 10MHz QPSK, Low CH 23230			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



Band 13, 10MHz QPSK, High CH 23230			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0

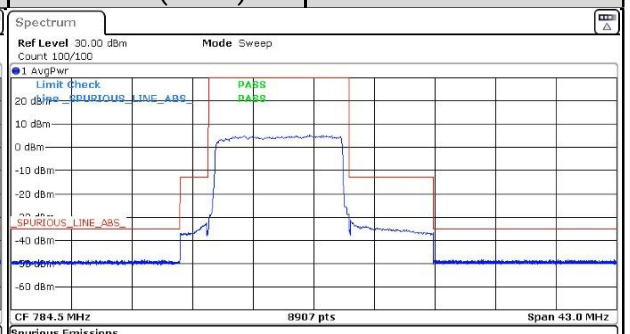


Band 13, 10MHz 16-QAM, Low CH 23230			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



Spurious Emissions

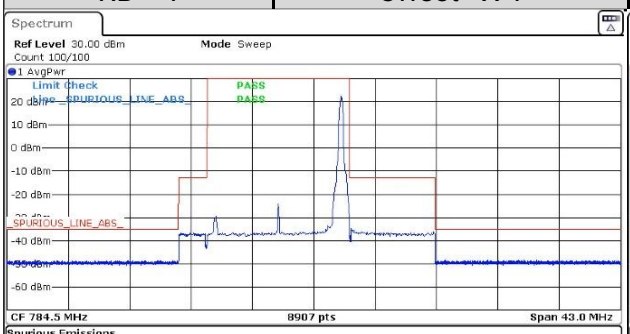
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	768.58610 MHz	-48.43 dBm	-13.43 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-34.37 dBm	-21.37 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99752 MHz	-33.66 dBm	-20.66 dB
777.000 MHz	787.000 MHz	100.000 kHz	777.57759 MHz	21.69 dBm	-8.31 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.05990 MHz	-41.83 dBm	-28.83 dB
787.100 MHz	793.000 MHz	100.000 kHz	791.80642 MHz	-36.66 dBm	-23.66 dB
793.000 MHz	806.000 MHz	6.250 kHz	801.65377 MHz	-48.34 dBm	-13.34 dB



Spurious Emissions

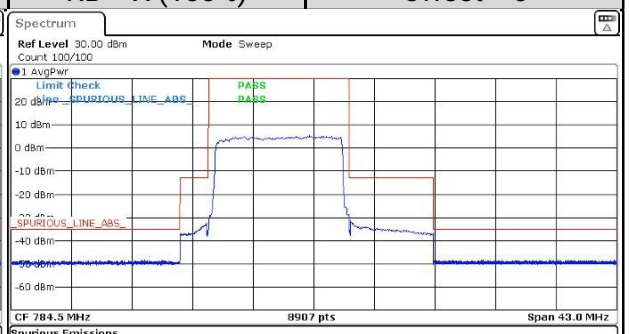
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	772.25719 MHz	-48.37 dBm	-13.37 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-32.48 dBm	-19.48 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99455 MHz	-35.53 dBm	-22.53 dB
777.000 MHz	787.000 MHz	100.000 kHz	784.19124 MHz	5.25 dBm	-24.75 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00347 MHz	-34.14 dBm	-21.14 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-31.53 dBm	-18.53 dB
793.000 MHz	806.000 MHz	6.250 kHz	797.86301 MHz	-48.43 dBm	-13.43 dB

Band 13, 10MHz 16-QAM, High CH 23230			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	770.29858 MHz	-48.62 dBm	-13.62 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.06287 MHz	-36.94 dBm	-23.94 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.92723 MHz	-41.86 dBm	-28.86 dB
777.000 MHz	787.000 MHz	100.000 kHz	786.42231 MHz	22.48 dBm	-7.52 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00545 MHz	-34.80 dBm	-21.80 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-34.75 dBm	-21.75 dB
793.000 MHz	806.000 MHz	6.250 kHz	799.22768 MHz	-48.38 dBm	-13.38 dB

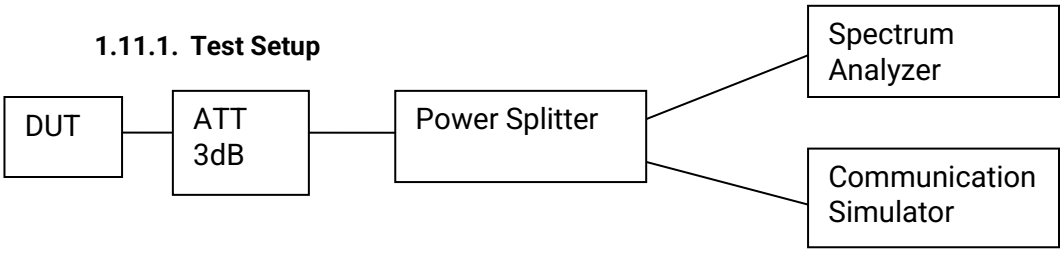


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	772.25719 MHz	-48.37 dBm	-13.37 dB
775.000 MHz	776.900 MHz	100.000 kHz	776.89059 MHz	-32.48 dBm	-19.48 dB
776.900 MHz	777.000 MHz	30.000 kHz	776.99455 MHz	-35.53 dBm	-22.53 dB
777.000 MHz	787.000 MHz	100.000 kHz	784.19124 MHz	5.25 dBm	-24.75 dB
787.000 MHz	787.100 MHz	30.000 kHz	787.00347 MHz	-34.14 dBm	-21.14 dB
787.100 MHz	793.000 MHz	100.000 kHz	787.11954 MHz	-31.53 dBm	-18.53 dB
793.000 MHz	806.000 MHz	6.250 kHz	797.86301 MHz	-48.43 dBm	-13.43 dB

1.11. Conducted Spurious Emission

1.11.1. Test Setup



1) The DUT transmitter output port was connected to communication simulator with above setup.
2) Path loss for the measurement included.
3) Set DUT to transmit maximum power through communication simulator.
4) Spectrum Analyzer setting, RBW = 1 MHz, VBW = 3 MHz. Detector =average.
5) The spurious emission of lowest, middle and highest channels with the highest RF powers were measured.
6) Record the maximum trace plot into the test report.

1.11.2. Test Limit

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (1) and (2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

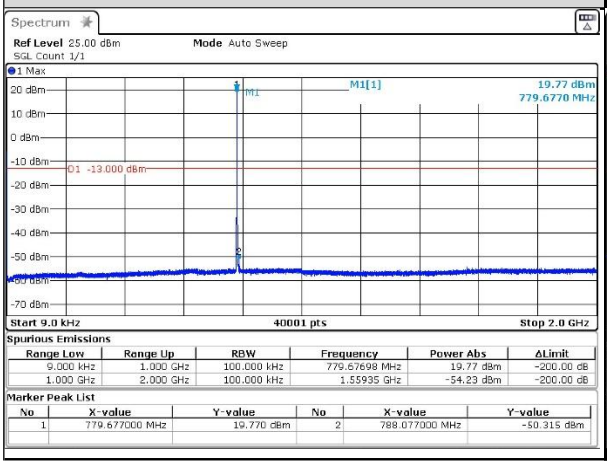
1.11.3. Conducted Spurious Emissions – LTE Band 13 (777-787MHz)

5MHz

QPSK - Low Freq (779.5 MHz)

RB Size =1, RB Offset = 13

9kHz ~ 2GHz



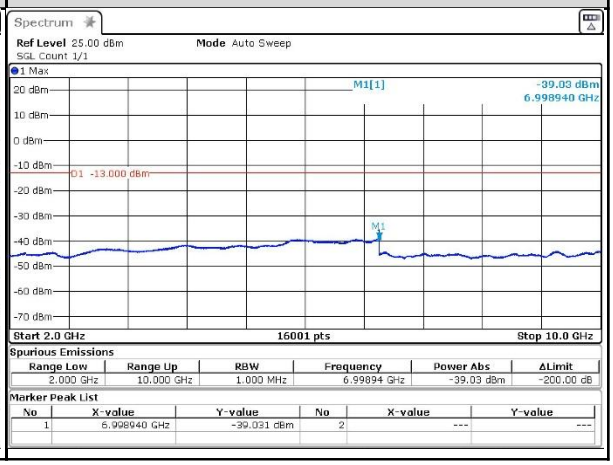
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	1.000 GHz	100.000 kHz	779.67698 MHz	19.77 dBm	-200.00 dB
1.000 GHz	2.000 GHz	100.000 kHz	1.55935 GHz	-54.23 dBm	-200.00 dB

Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	779.677000 MHz	19.770 dBm	2	788.077000 MHz	-50.315 dBm

2GHz ~ 10GHz



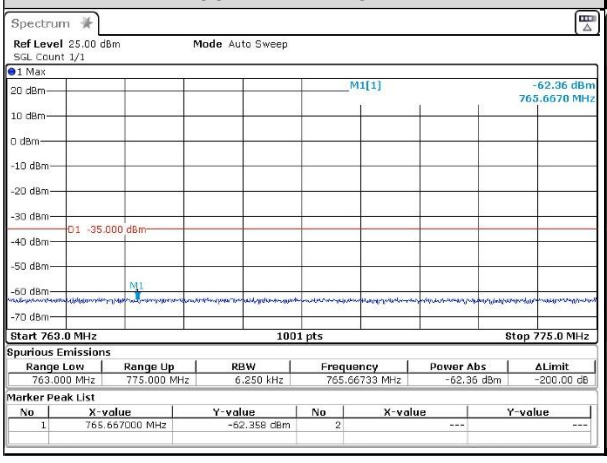
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.000 GHz	10.000 GHz	1.000 MHz	6.99894 GHz	-39.03 dBm	-200.00 dB

Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	6.998940 GHz	-39.031 dBm	2	---	---

763MHz ~ 775MHz



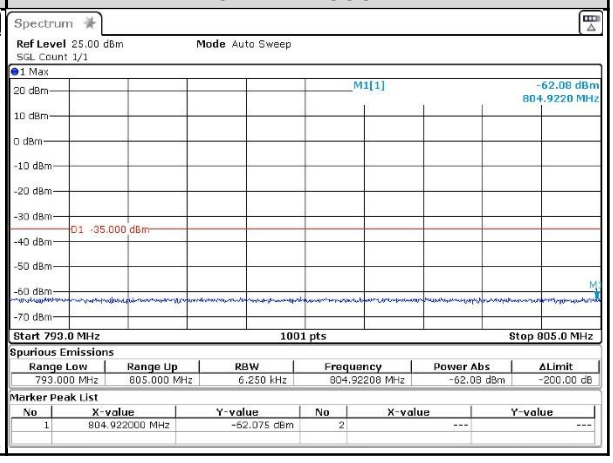
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	765.66733 MHz	-62.36 dBm	-200.00 dB

Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	765.667000 MHz	-52.358 dBm	2	---	---

793MHz ~ 805MHz



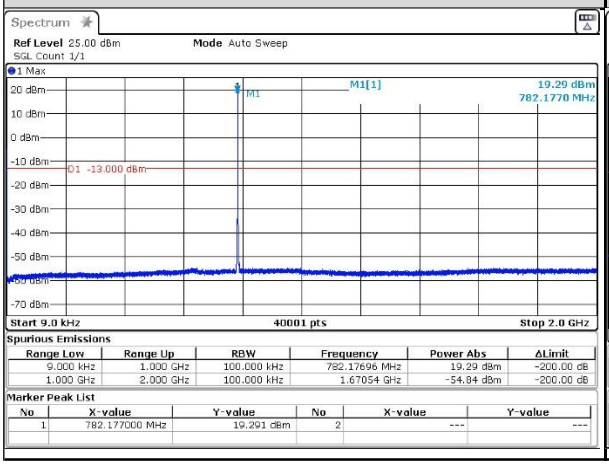
Spurious Emissions

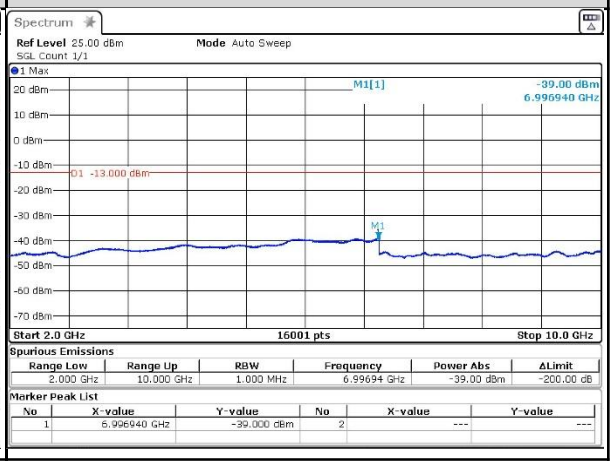
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
793.000 MHz	805.000 MHz	6.250 kHz	804.92208 MHz	-62.08 dBm	-200.00 dB

Marker Peak List

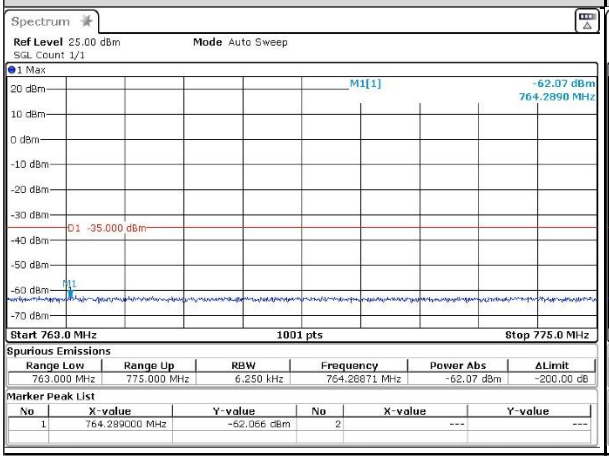
No	X-value	Y-value	No	X-value	Y-value
1	804.922000 MHz	-52.075 dBm	2	---	---

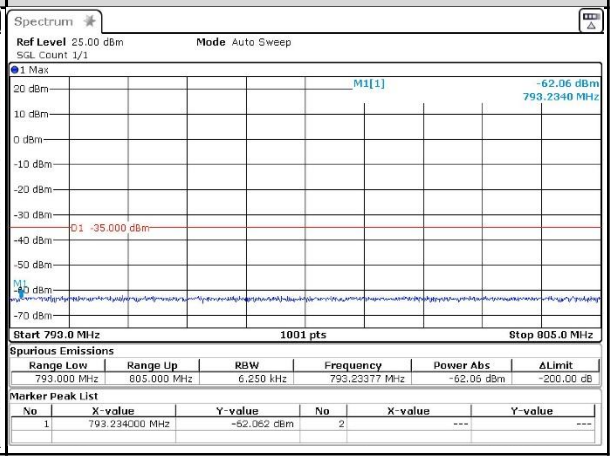
QPSK - Mid Freq (782 MHz)	
RB Size =1, RB Offset = 13	
9kHz ~ 2GHz	2GHz ~ 10GHz





763MHz ~ 775MHz	793MHz ~ 805MHz

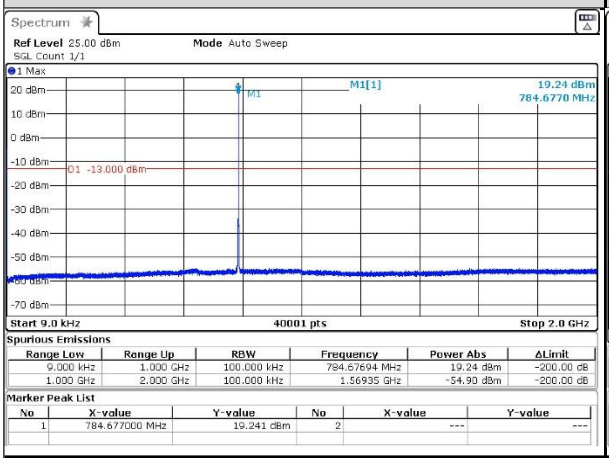




QPSK - High Freq (784.5 MHz)

RB Size =1, RB Offset = 13

9kHz ~ 2GHz



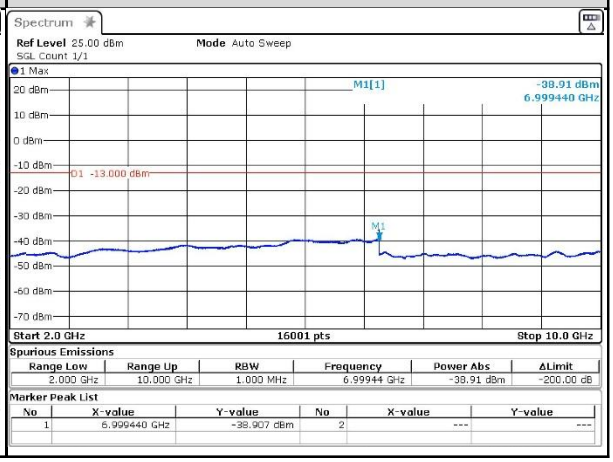
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	1.000 GHz	100.000 kHz	784.67694 MHz	19.24 dBm	-200.00 dB
1.000 GHz	2.000 GHz	100.000 kHz	1.56935 GHz	-54.90 dBm	-200.00 dB

Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	784.677000 MHz	19.241 dBm	2	---	---

2GHz ~ 10GHz



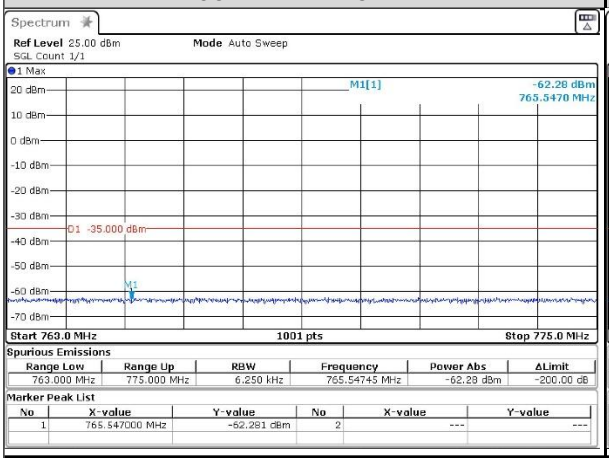
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.000 GHz	10.000 GHz	1.000 MHz	6.99944 GHz	-38.91 dBm	-200.00 dB

Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	6.999440 GHz	-38.907 dBm	2	---	---

763MHz ~ 775MHz



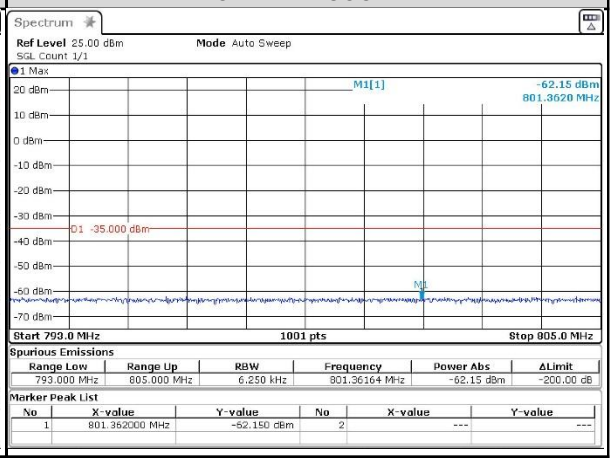
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
763.000 MHz	775.000 MHz	6.250 kHz	765.54745 MHz	-62.28 dBm	-200.00 dB

Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	765.547000 MHz	-62.281 dBm	2	---	---

793MHz ~ 805MHz



Spurious Emissions

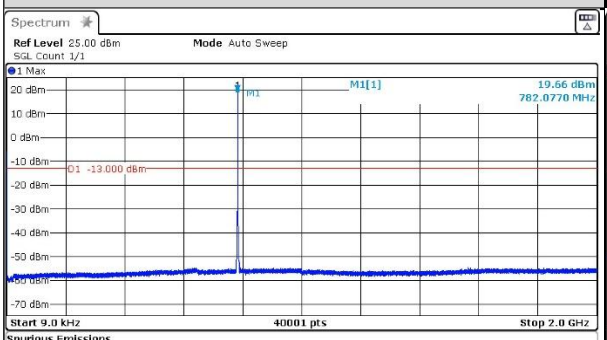
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
793.000 MHz	805.000 MHz	6.250 kHz	801.36164 MHz	-62.15 dBm	-200.00 dB

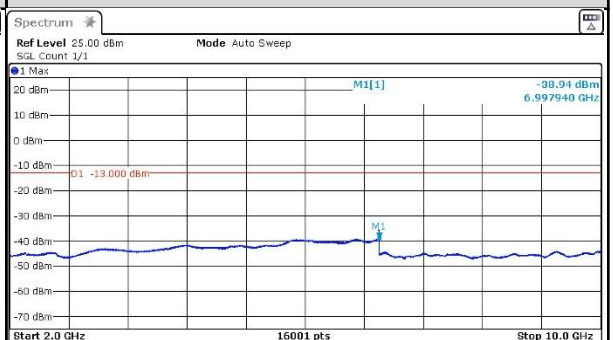
Marker Peak List

No	X-value	Y-value	No	X-value	Y-value
1	801.362000 MHz	-62.150 dBm	2	---	---

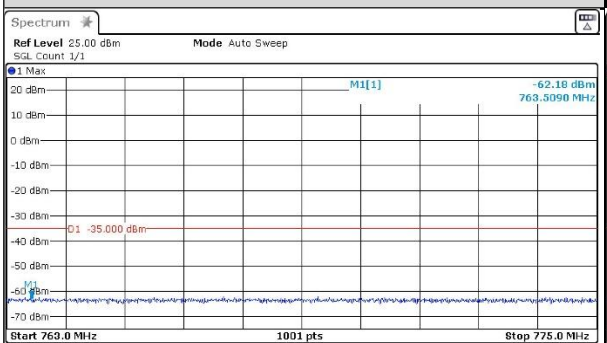
10MHz

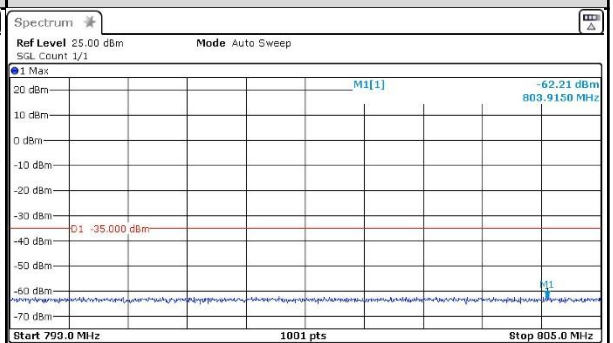
QPSK - Mid Freq (782 MHz)	
RB Size =1, RB Offset = 25	
9kHz ~ 2GHz	2GHz ~ 10GHz





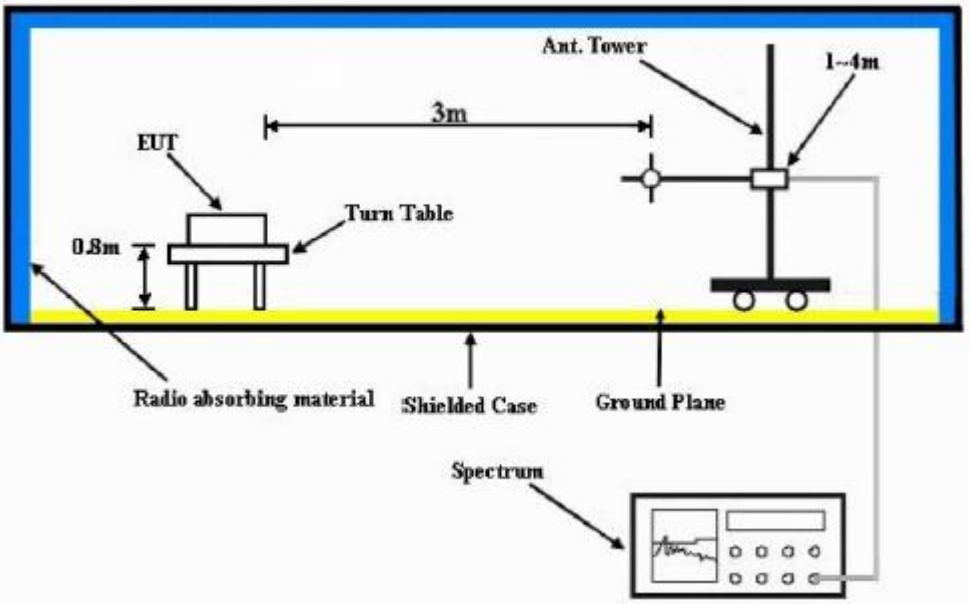
763MHz ~ 775MHz	793MHz ~ 805MHz





1.12. Radiated Spurious Emission

1.12.1. Test Setup



1) The spectrum setting for scanning Radiated Emission below 1 GHz is RBW = 100 kHz, VBW = 300 kHz and above 1 GHz is RBW = 1MHz, VBW = 3MHz. Detector mode is positive peak.
2) In the semi-anechoic chamber, setup as illustrated above the EUT placed on the Turn Table at 0.8m height for below 1Ghz measurement and at 1.5m height for above 1GHz measurement, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
3) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
4) Final Radiated Spurious Emission = "Read Value" + Measured substitution value.

Note: Radiated Spurious Emissions were evaluated on a single worst-case channel bandwidth, selected based on the highest conducted output power. This approach is justified because full scan data across all supported bandwidths demonstrated consistent compliance and identical harmonic profiles during conducted emission testing

1.12.2. Test Limit

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (1) and (2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

1.12.3. Radiated Spurious Emission – LTE Band 13 (777-787MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	779.5000	**Power :**	0.28 Watt/MAX
Plane :	X-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

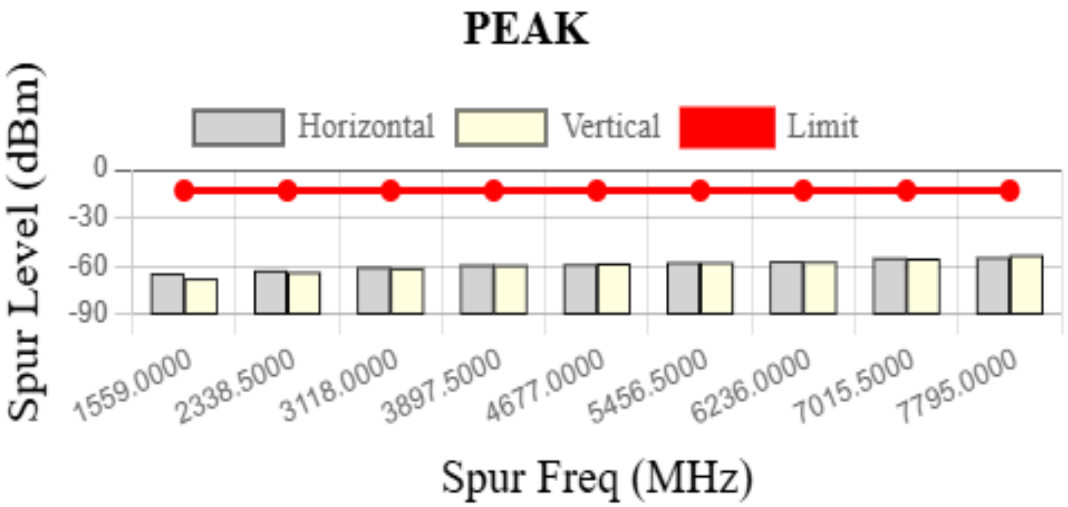
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1559.0000	-67.51 **	-13.00	54.51
Horizontal	Peak	1559.0000	-64.40 **	-13.00	51.40
Vertical	Peak	2338.5000	-63.53 **	-13.00	50.53
Horizontal	Peak	2338.5000	-62.42 **	-13.00	49.42
Vertical	Peak	3118.0000	-60.88 **	-13.00	47.88
Horizontal	Peak	3118.0000	-60.47 **	-13.00	47.47
Vertical	Peak	3897.5000	-59.13 **	-13.00	46.13
Horizontal	Peak	3897.5000	-59.03 **	-13.00	46.03
Vertical	Peak	4677.0000	-57.99 **	-13.00	44.99
Horizontal	Peak	4677.0000	-58.74 **	-13.00	45.74
Vertical	Peak	5456.5000	-57.45 **	-13.00	44.45
Horizontal	Peak	5456.5000	-57.45 **	-13.00	44.45
Vertical	Peak	6236.0000	-57.15 **	-13.00	44.15
Horizontal	Peak	6236.0000	-56.84 **	-13.00	43.84
Vertical	Peak	7015.5000	-55.04 **	-13.00	42.04
Horizontal	Peak	7015.5000	-54.65 **	-13.00	41.65
Vertical	Peak	7795.0000	-52.97 **	-13.00	39.97
Horizontal	Peak	7795.0000	-54.38 **	-13.00	41.38

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1559.0000
2338.5000
3118.0000
3897.5000
4677.0000
5456.5000
6236.0000
7015.5000
7795.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	782.0000	**Power :**	0.28 Watt/MAX
Plane :	X-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

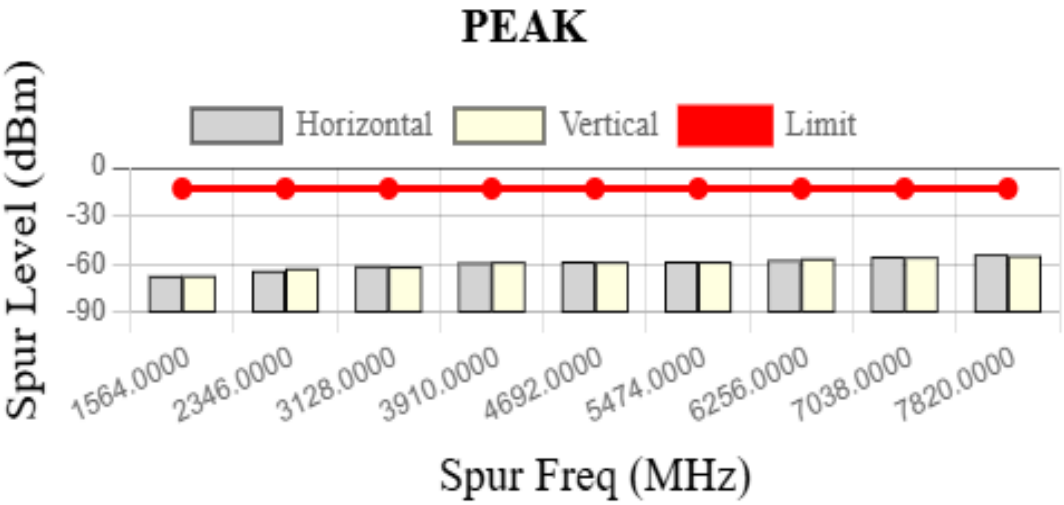
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1564.0000	-66.89 **	-13.00	53.89
Horizontal	Peak	1564.0000	-67.02 **	-13.00	54.02
Vertical	Peak	2346.0000	-62.37 **	-13.00	49.37
Horizontal	Peak	2346.0000	-63.89 **	-13.00	50.89
Vertical	Peak	3128.0000	-61.28 **	-13.00	48.28
Horizontal	Peak	3128.0000	-60.84 **	-13.00	47.84
Vertical	Peak	3910.0000	-58.48 **	-13.00	45.48
Horizontal	Peak	3910.0000	-58.92 **	-13.00	45.92
Vertical	Peak	4692.0000	-58.44 **	-13.00	45.44
Horizontal	Peak	4692.0000	-58.12 **	-13.00	45.12
Vertical	Peak	5474.0000	-58.25 **	-13.00	45.25
Horizontal	Peak	5474.0000	-58.13 **	-13.00	45.13
Vertical	Peak	6256.0000	-56.26 **	-13.00	43.26
Horizontal	Peak	6256.0000	-57.33 **	-13.00	44.33
Vertical	Peak	7038.0000	-55.49 **	-13.00	42.49
Horizontal	Peak	7038.0000	-55.14 **	-13.00	42.14
Vertical	Peak	7820.0000	-54.49 **	-13.00	41.49
Horizontal	Peak	7820.0000	-53.82 **	-13.00	40.82

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1564.0000
2346.0000
3128.0000
3910.0000
4692.0000
5474.0000
6256.0000
7038.0000
7820.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	784.5000	**Power :**	0.28 Watt/MAX
Plane :	X-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

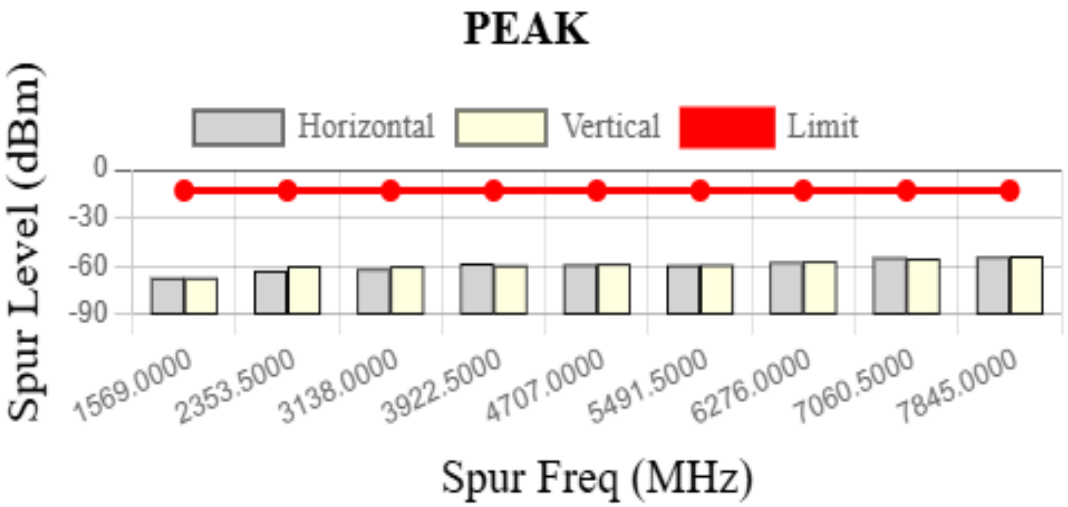
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1569.0000	-66.93 **	-13.00	53.93
Horizontal	Peak	1569.0000	-66.95 **	-13.00	53.95
Vertical	Peak	2353.5000	-59.78 **	-13.00	46.78
Horizontal	Peak	2353.5000	-62.55 **	-13.00	49.55
Vertical	Peak	3138.0000	-59.88 **	-13.00	46.88
Horizontal	Peak	3138.0000	-61.78 **	-13.00	48.78
Vertical	Peak	3922.5000	-59.26 **	-13.00	46.26
Horizontal	Peak	3922.5000	-58.04 **	-13.00	45.04
Vertical	Peak	4707.0000	-58.44 **	-13.00	45.44
Horizontal	Peak	4707.0000	-58.89 **	-13.00	45.89
Vertical	Peak	5491.5000	-58.97 **	-13.00	45.97
Horizontal	Peak	5491.5000	-59.16 **	-13.00	46.16
Vertical	Peak	6276.0000	-56.86 **	-13.00	43.86
Horizontal	Peak	6276.0000	-57.33 **	-13.00	44.33
Vertical	Peak	7060.5000	-55.18 **	-13.00	42.18
Horizontal	Peak	7060.5000	-54.47 **	-13.00	41.47
Vertical	Peak	7845.0000	-53.47 **	-13.00	40.47
Horizontal	Peak	7845.0000	-54.15 **	-13.00	41.15

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1569.0000
2353.5000
3138.0000
3922.5000
4707.0000
5491.5000
6276.0000
7060.5000
7845.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	779.5000	**Power :**	0.28 Watt/MAX
Plane :	Y-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

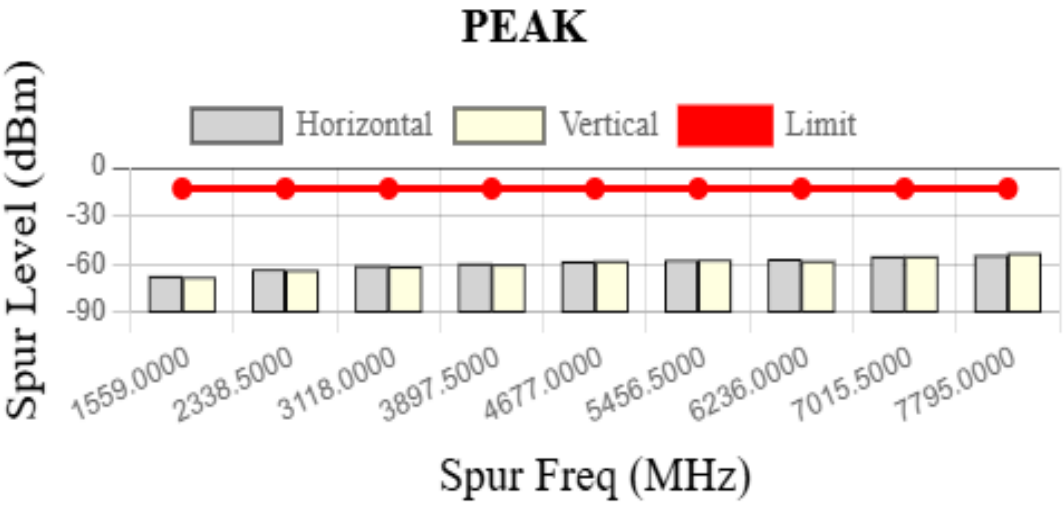
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1559.0000	-67.91 **	-13.00	54.91
Horizontal	Peak	1559.0000	-67.11 **	-13.00	54.11
Vertical	Peak	2338.5000	-63.51 **	-13.00	50.51
Horizontal	Peak	2338.5000	-63.13 **	-13.00	50.13
Vertical	Peak	3118.0000	-61.26 **	-13.00	48.26
Horizontal	Peak	3118.0000	-60.70 **	-13.00	47.70
Vertical	Peak	3897.5000	-60.02 **	-13.00	47.02
Horizontal	Peak	3897.5000	-59.35 **	-13.00	46.35
Vertical	Peak	4677.0000	-57.74 **	-13.00	44.74
Horizontal	Peak	4677.0000	-58.00 **	-13.00	45.00
Vertical	Peak	5456.5000	-57.13 **	-13.00	44.13
Horizontal	Peak	5456.5000	-57.32 **	-13.00	44.32
Vertical	Peak	6236.0000	-57.69 **	-13.00	44.69
Horizontal	Peak	6236.0000	-56.52 **	-13.00	43.52
Vertical	Peak	7015.5000	-54.78 **	-13.00	41.78
Horizontal	Peak	7015.5000	-54.86 **	-13.00	41.86
Vertical	Peak	7795.0000	-52.97 **	-13.00	39.97
Horizontal	Peak	7795.0000	-54.35 **	-13.00	41.35

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1559.0000
2338.5000
3118.0000
3897.5000
4677.0000
5456.5000
6236.0000
7015.5000
7795.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	782.0000	**Power :**	0.28 Watt/MAX
Plane :	Y-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

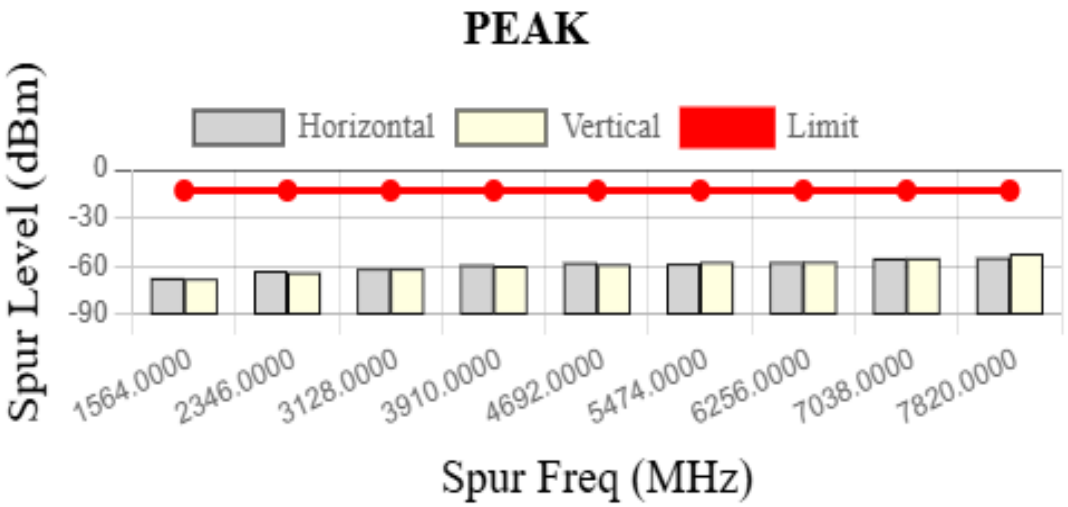
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1564.0000	-67.73 **	-13.00	54.73
Horizontal	Peak	1564.0000	-67.12 **	-13.00	54.12
Vertical	Peak	2346.0000	-63.71 **	-13.00	50.71
Horizontal	Peak	2346.0000	-62.76 **	-13.00	49.76
Vertical	Peak	3128.0000	-61.51 **	-13.00	48.51
Horizontal	Peak	3128.0000	-61.62 **	-13.00	48.62
Vertical	Peak	3910.0000	-59.60 **	-13.00	46.60
Horizontal	Peak	3910.0000	-59.06 **	-13.00	46.06
Vertical	Peak	4692.0000	-58.76 **	-13.00	45.76
Horizontal	Peak	4692.0000	-57.64 **	-13.00	44.64
Vertical	Peak	5474.0000	-57.32 **	-13.00	44.32
Horizontal	Peak	5474.0000	-58.38 **	-13.00	45.38
Vertical	Peak	6256.0000	-57.26 **	-13.00	44.26
Horizontal	Peak	6256.0000	-57.38 **	-13.00	44.38
Vertical	Peak	7038.0000	-54.80 **	-13.00	41.80
Horizontal	Peak	7038.0000	-54.91 **	-13.00	41.91
Vertical	Peak	7820.0000	-52.12 **	-13.00	39.12
Horizontal	Peak	7820.0000	-54.57 **	-13.00	41.57

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1564.0000
2346.0000
3128.0000
3910.0000
4692.0000
5474.0000
6256.0000
7038.0000
7820.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	784.5000	**Power :**	0.28 Watt/MAX
Plane :	Y-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

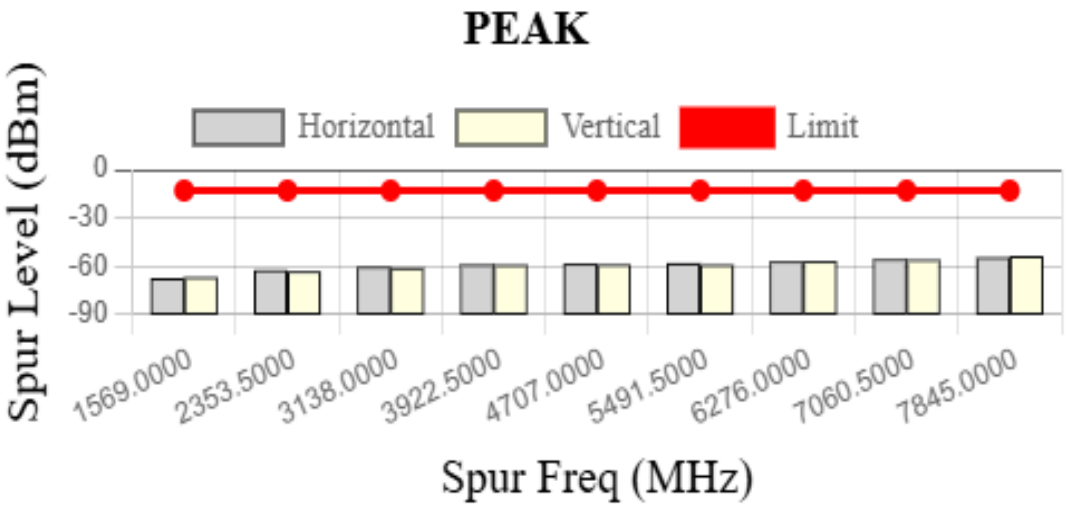
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1569.0000	-66.65 **	-13.00	53.65
Horizontal	Peak	1569.0000	-67.27 **	-13.00	54.27
Vertical	Peak	2353.5000	-63.07 **	-13.00	50.07
Horizontal	Peak	2353.5000	-62.28 **	-13.00	49.28
Vertical	Peak	3138.0000	-60.81 **	-13.00	47.81
Horizontal	Peak	3138.0000	-60.29 **	-13.00	47.29
Vertical	Peak	3922.5000	-59.00 **	-13.00	46.00
Horizontal	Peak	3922.5000	-58.85 **	-13.00	45.85
Vertical	Peak	4707.0000	-58.81 **	-13.00	45.81
Horizontal	Peak	4707.0000	-58.35 **	-13.00	45.35
Vertical	Peak	5491.5000	-58.94 **	-13.00	45.94
Horizontal	Peak	5491.5000	-57.92 **	-13.00	44.92
Vertical	Peak	6276.0000	-56.79 **	-13.00	43.79
Horizontal	Peak	6276.0000	-56.98 **	-13.00	43.98
Vertical	Peak	7060.5000	-55.86 **	-13.00	42.86
Horizontal	Peak	7060.5000	-55.63 **	-13.00	42.63
Vertical	Peak	7845.0000	-53.52 **	-13.00	40.52
Horizontal	Peak	7845.0000	-54.41 **	-13.00	41.41

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1569.0000
2353.5000
3138.0000
3922.5000
4707.0000
5491.5000
6276.0000
7060.5000
7845.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	779.5000	**Power :**	0.28 Watt/MAX
Plane :	Z-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

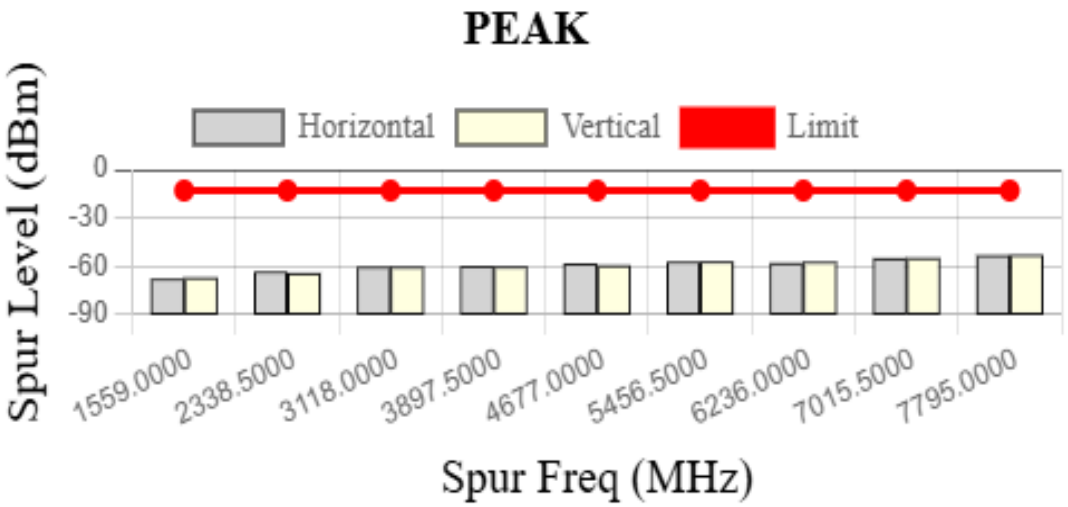
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1559.0000	-66.84 **	-13.00	53.84
Horizontal	Peak	1559.0000	-67.76 **	-13.00	54.76
Vertical	Peak	2338.5000	-63.99 **	-13.00	50.99
Horizontal	Peak	2338.5000	-63.26 **	-13.00	50.26
Vertical	Peak	3118.0000	-60.25 **	-13.00	47.25
Horizontal	Peak	3118.0000	-60.28 **	-13.00	47.28
Vertical	Peak	3897.5000	-60.12 **	-13.00	47.12
Horizontal	Peak	3897.5000	-59.89 **	-13.00	46.89
Vertical	Peak	4677.0000	-59.24 **	-13.00	46.24
Horizontal	Peak	4677.0000	-58.28 **	-13.00	45.28
Vertical	Peak	5456.5000	-56.96 **	-13.00	43.96
Horizontal	Peak	5456.5000	-57.11 **	-13.00	44.11
Vertical	Peak	6236.0000	-57.17 **	-13.00	44.17
Horizontal	Peak	6236.0000	-57.77 **	-13.00	44.77
Vertical	Peak	7015.5000	-54.64 **	-13.00	41.64
Horizontal	Peak	7015.5000	-54.81 **	-13.00	41.81
Vertical	Peak	7795.0000	-52.82 **	-13.00	39.82
Horizontal	Peak	7795.0000	-53.04 **	-13.00	40.04

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1559.0000
2338.5000
3118.0000
3897.5000
4677.0000
5456.5000
6236.0000
7015.5000
7795.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	782.0000	**Power :**	0.28 Watt/MAX
Plane :	Z-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

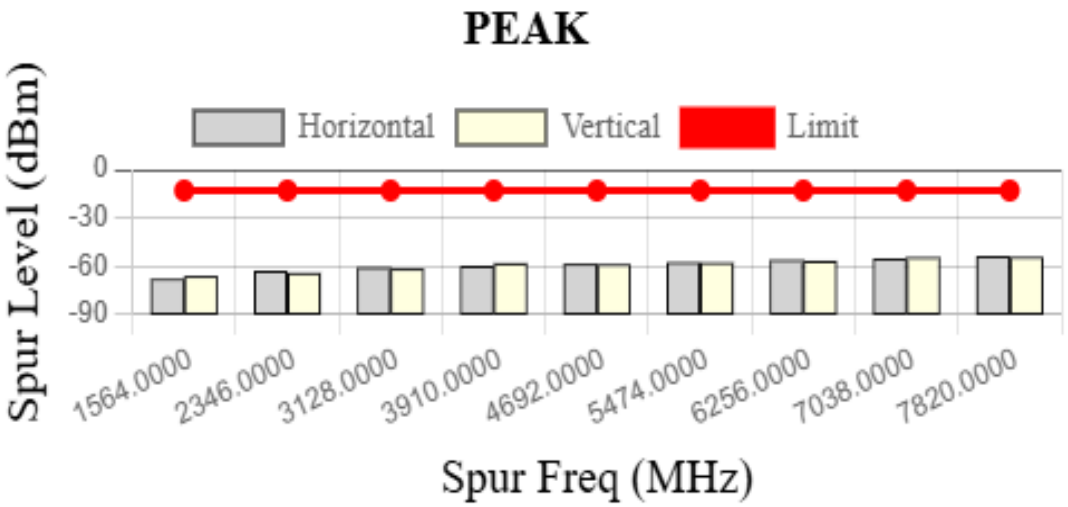
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1564.0000	-65.94 **	-13.00	52.94
Horizontal	Peak	1564.0000	-67.79 **	-13.00	54.79
Vertical	Peak	2346.0000	-63.93 **	-13.00	50.93
Horizontal	Peak	2346.0000	-62.61 **	-13.00	49.61
Vertical	Peak	3128.0000	-61.42 **	-13.00	48.42
Horizontal	Peak	3128.0000	-60.57 **	-13.00	47.57
Vertical	Peak	3910.0000	-57.88 **	-13.00	44.88
Horizontal	Peak	3910.0000	-59.56 **	-13.00	46.56
Vertical	Peak	4692.0000	-58.66 **	-13.00	45.66
Horizontal	Peak	4692.0000	-58.44 **	-13.00	45.44
Vertical	Peak	5474.0000	-57.60 **	-13.00	44.60
Horizontal	Peak	5474.0000	-57.45 **	-13.00	44.45
Vertical	Peak	6256.0000	-56.48 **	-13.00	43.48
Horizontal	Peak	6256.0000	-55.95 **	-13.00	42.95
Vertical	Peak	7038.0000	-54.31 **	-13.00	41.31
Horizontal	Peak	7038.0000	-55.16 **	-13.00	42.16
Vertical	Peak	7820.0000	-54.14 **	-13.00	41.14
Horizontal	Peak	7820.0000	-53.59 **	-13.00	40.59

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1564.0000
2346.0000
3128.0000
3910.0000
4692.0000
5474.0000
6256.0000
7038.0000
7820.0000
Spur Freq (MHz)

SAC TX Radiated Emission : 1490N00-EMC-00034

FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK | RB Allocation: 1,13	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	784.5000	**Power :**	0.28 Watt/MAX
Plane :	Z-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015; KDB 971168		

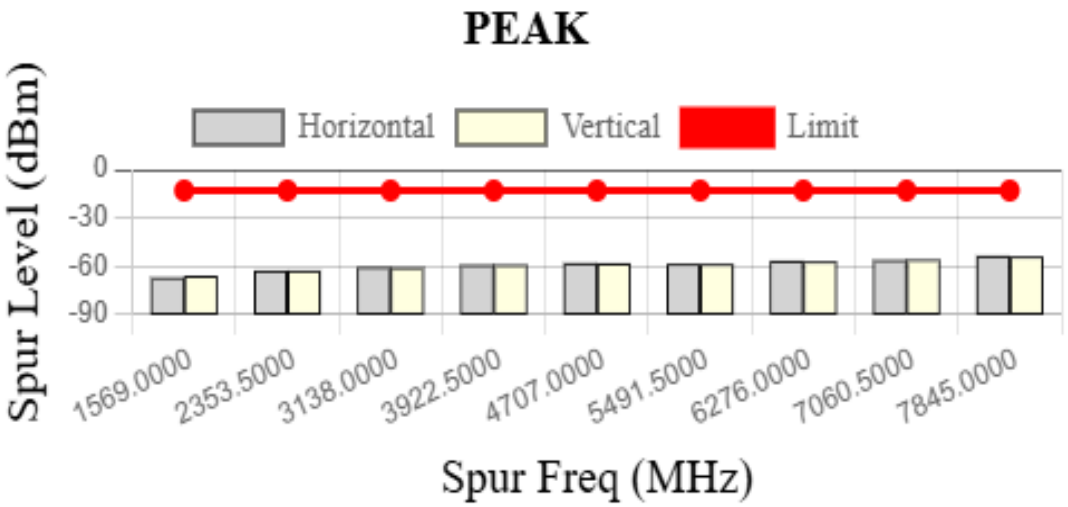
Antenna Polarization	Detector	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Margin (dB)
Vertical	Peak	1569.0000	-65.77 **	-13.00	52.77
Horizontal	Peak	1569.0000	-66.85 **	-13.00	53.85
Vertical	Peak	2353.5000	-62.47 **	-13.00	49.47
Horizontal	Peak	2353.5000	-62.50 **	-13.00	49.50
Vertical	Peak	3138.0000	-60.64 **	-13.00	47.64
Horizontal	Peak	3138.0000	-60.45 **	-13.00	47.45
Vertical	Peak	3922.5000	-58.97 **	-13.00	45.97
Horizontal	Peak	3922.5000	-59.02 **	-13.00	46.02
Vertical	Peak	4707.0000	-57.96 **	-13.00	44.96
Horizontal	Peak	4707.0000	-57.85 **	-13.00	44.85
Vertical	Peak	5491.5000	-58.53 **	-13.00	45.53
Horizontal	Peak	5491.5000	-58.45 **	-13.00	45.45
Vertical	Peak	6276.0000	-56.96 **	-13.00	43.96
Horizontal	Peak	6276.0000	-56.42 **	-13.00	43.42
Vertical	Peak	7060.5000	-55.80 **	-13.00	42.80
Horizontal	Peak	7060.5000	-56.04 **	-13.00	43.04
Vertical	Peak	7845.0000	-53.84 **	-13.00	40.84
Horizontal	Peak	7845.0000	-53.34 **	-13.00	40.34

Temperature (°C) :	23.5	**Humidity (%) :**	68.8
Test Performed by :	Qawiman & Rezza	**Test Date :**	Wed, 4 Mar, 2026
System MU :	4.03 dB (30MHz-1000MHz); 4.03 dB (1000MHz-18000MHz); 4.03 dB (18000MHz-40000MHz)		

The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 Standard.

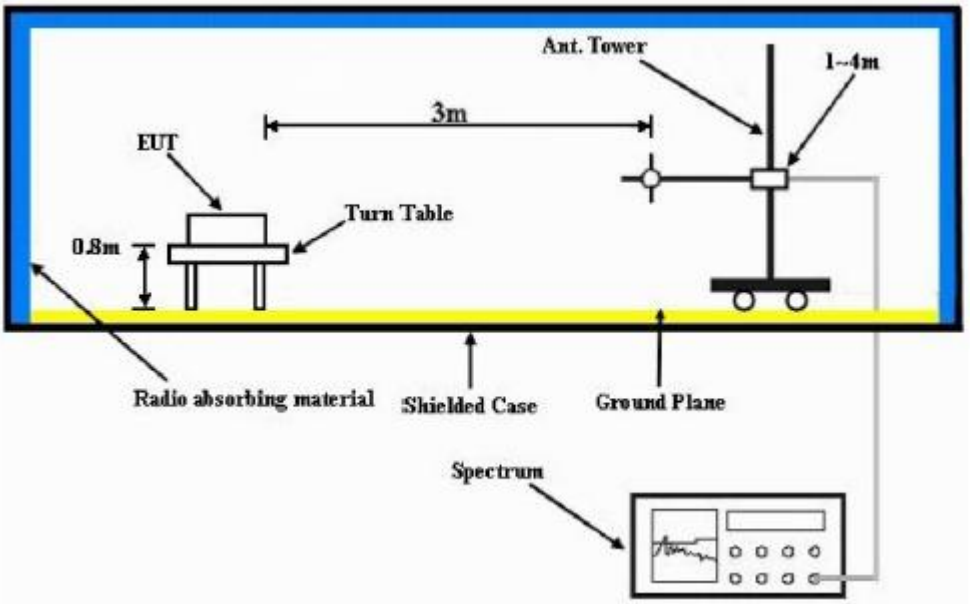
Remarks:
** Indicates the spurious emission could not be detected due to noise limitations or ambient.
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.

NOTE :
1) If the peak values is less than the QP limit, the QP result deemed to comply with QP limit.
2) If the peak values is less than the AV limit, the average result deemed to comply with AV limit.


PEAK
Horizontal
Vertical
Limit
Spur Level (dBm)
0
-30
-60
-90
1569.0000
2353.5000
3138.0000
3922.5000
4707.0000
5491.5000
6276.0000
7060.5000
7845.0000
Spur Freq (MHz)

1.13. Effective Radiated Power (ERP)

1.13.1. Test Setup



1) The spectrum setting for scanning Radiated Emission below 1 GHz is RBW = 100 kHz, VBW = 300 kHz and above 1 GHz is RBW = 1MHz, VBW = 3MHz. Detector mode is RMS.
2) In the semi-anechoic chamber, setup as illustrated above the EUT placed on the Turn Table at 0.8m height for below 1Ghz measurement and at 1.5m height for above 1GHz measurement, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
3) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
4) EIRP = "Read Value" + Measured substitution value.

1.13.2. Test Limit

FCC: Portable stations (hand-held devices) transmitting in the 776-788 MHz band is limited to 3 watts ERP.

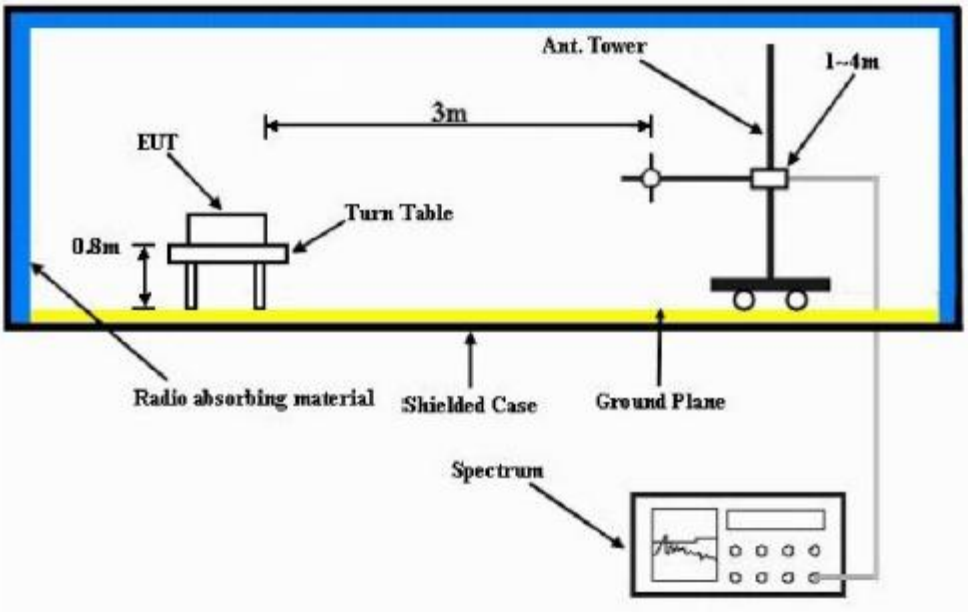
ISED: The e.i.r.p. shall not exceed 50 watts for mobile equipment or for outdoor fixed subscriber equipment, nor shall it exceed 5 watts for portable equipment or for indoor fixed subscriber equipment.

1.13.3. Effective Radiated Power (ERP) - LTE Band 13 (777-787MHz)

Refer to 1.6.4 / Not Performed.

1.14. GNSS (EIRP for 1559 – 1610MHz)

1.14.1. Test Setup



1) The Resolution Bandwidth for Equivalent Isotropically Radiated Power (EIRP) below 1 GHz is 100 kHz with Video Bandwidth = 300 kHz and Resolution Bandwidth for EIRP above 1 GHz is 1 MHz with Video Bandwidth = 3 MHz. Detector Mode is RMS.
2) In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The “Read Value” is the spectrum reading of maximum power value.
3) The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
4) EIRP = “Read Value” + Measured substitution value + 2.15

1.14.2. Test Limit

FCC: For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

ISED: The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

1.14.3. GNSS (EIRP for 1599 – 1610MHz) - LTE Band 13 (777-787MHz)

Motorola Solutions

SAC TX RNSS band (1.559GHz to 1.610GHz) Emissions : 1490N00-EMC-00054

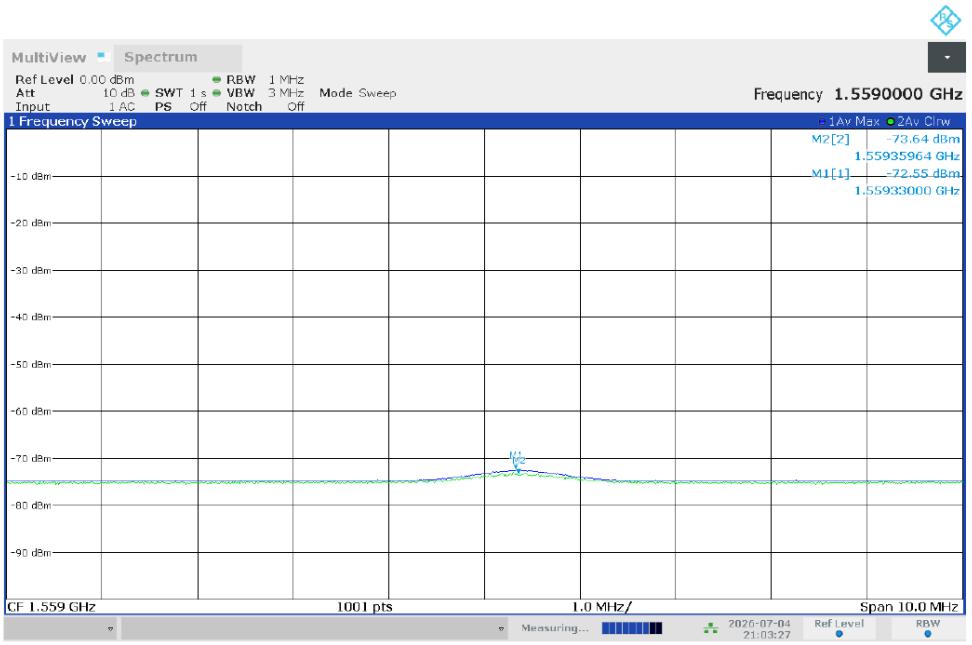
FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	779.5000	**TX Conducted Power :**	0.28 Watt
Plane :	Y-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015		

Antenna Polarization	2Fc (MHz)	EIRP (dBm)	Limit (dBm)
Horizontal	1559.0000	-69.7800	-40.00
Vertical	1559.0000	-55.7500	-40.00

Temperature (°C) :	23.5	**Humidity (%) :**	68.6
Test Performed by :	Nazrin & Fuad	**Test Date :**	Sun, 5 Jul, 2026

Measurement:
ERP (dBm) = DUT Reading (dBm) + Path Loss (dB)
EIRP (dBm) = ERP + 2.15

HORIZONTAL



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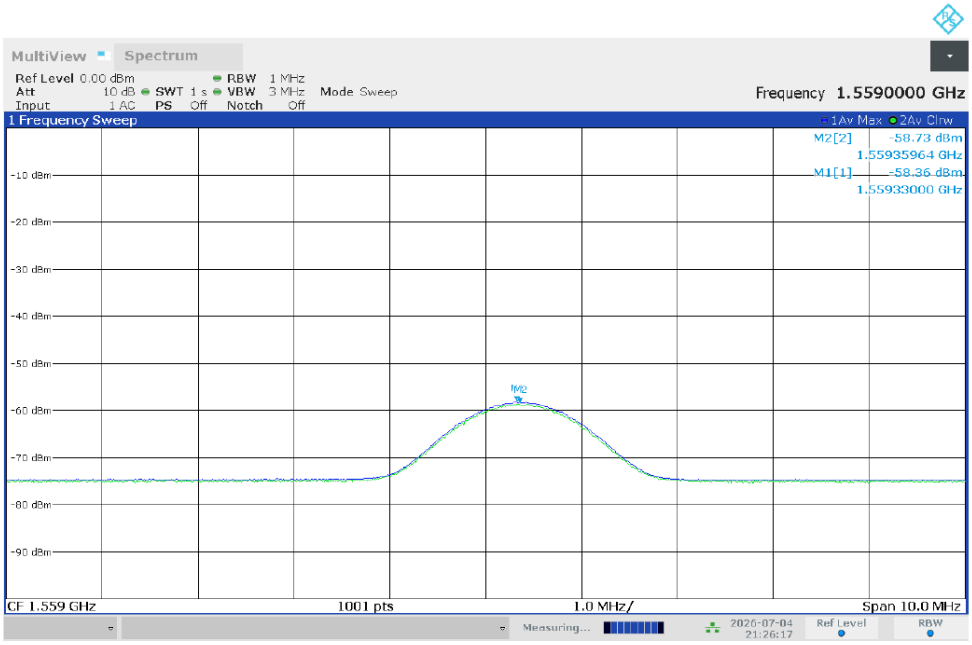
VERTICAL



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Motorola Solutions

SAC TX RNSS band (1.559GHz to 1.610GHz) Emissions : 1490N00-EMC-00054

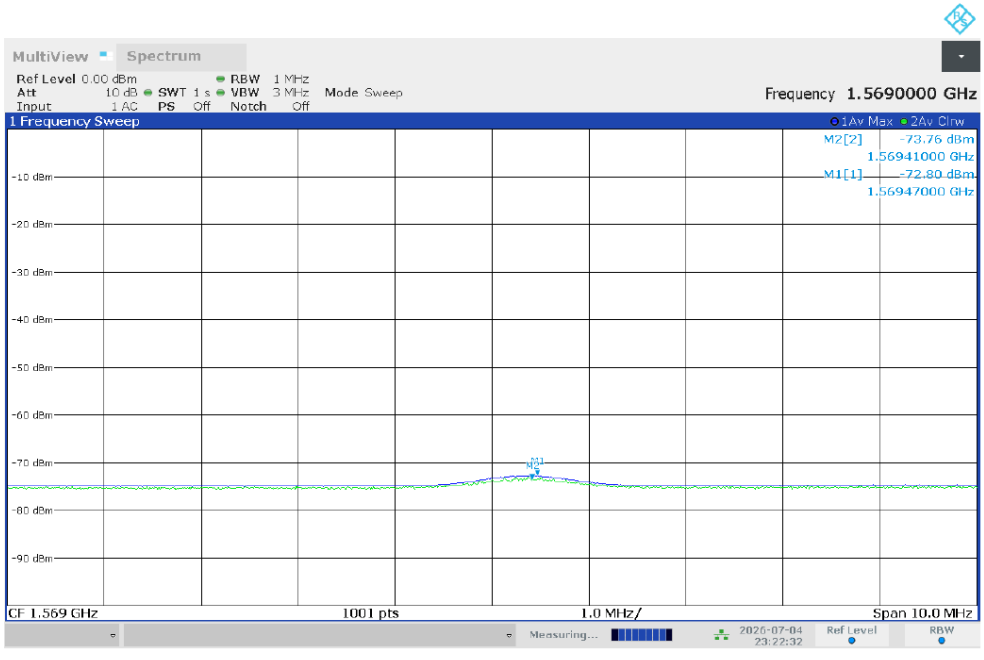
FCC ID :	AZ489FT7187	**IC :**	109U-89FT7187
Model No :	HK2300A	**Serial No :**	64222BY0124
Battery :	PMNN4578A	**Charger :**	-
Accessory :	AN000508A01		
Test Mode :	LTE - QPSK	**Channel SP/Bandwidth (kHz) :**	5000.0000
Test Frequency (MHz) :	784.5000	**TX Conducted Power :**	0.28 Watt
Plane :	Y-Plane	**Band :**	FDD Band 13
Test Standard :	ANSI C63.26-2015		

Antenna Polarization	2Fc (MHz)	EIRP (dBm)	Limit (dBm)
Horizontal	1569.0000	-70.0300	-40.00
Vertical	1569.0000	-56.5000	-40.00

Temperature (°C) :	23.5	**Humidity (%) :**	68.6
Test Performed by :	Nazrin & Fuad	**Test Date :**	Sun, 5 Jul, 2026

Measurement:
ERP (dBm) = DUT Reading (dBm) + Path Loss (dB)
EIRP (dBm) = ERP + 2.15

HORIZONTAL



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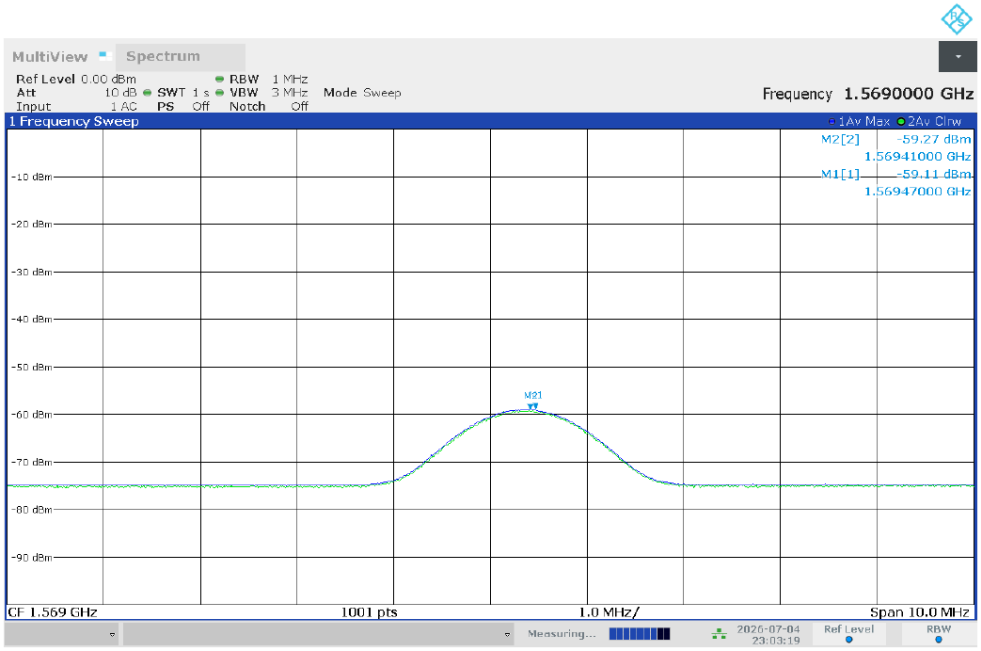
VERTICAL



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--End of Test Report--