MOTOROLA SOLUTIONS

CERTIFICATE 2518.08

SAMM 825

MOTOROLA PENANG ADV. COMM. LABORATORY
Motorola Solutions Malaysia Sdn Bhd,
Plot 2A, Medan Bayan Lepas,
Mukim 12 S.W.D, 11900 Bayan Lepas,
Penang, Malaysia.

FCC / ISED TEST REPORT

Report Revision : **Rev.B**

Date/s Tested	:	04-April-2024 - 28-June-2024
Report Issue Date	:	19-August-2024
Manufacturer/Location	:	Motorola Solutions Malaysia Sdn Bhd
Manufacturer Address	:	Plot 2A, Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia
Requestor	:	CADOGAN SEAN
Product Type	:	Hand-held
Product Marketing Name (PMN	:	APX N70
Hardware Version Identification Number (HVIN)	:	H35KET9PW8AN & H35KET9PW8AN-H
Frequency Band	:	Refer to section 1.4
Rated / Max RF Output Power	:	199.53mW / 252mW
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)	:	D03.75.21 (BP), D00.00.16 (AP)

The equipment was tested accordance to the requirement listed below:

(LTE Band 4) **FCC 47 CFR Part 2 / 27** **ISED RSS GEN / 139**	**PASS**

Prepared By:

Awatif Rahman Binti Abdul Rahman
Technician

Approve Signatory:

Maheshvaran A/L Rajagopal
Responsible Engineer

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REVISION HISTORY

Revision History	Description	Date	Originator
Rev A.	Initial Report	10-July-2024	Awatif Rahman
Rev B.	Update Firmware Version Identification Number (FVIN)	19-August-2024	Awatif Rahman

1.0. Summary of Test Results

FCC Clause	ISED Clause	Test Item	Results	Remarks	Serial Number Tested
2.1046 27.50(d)(6)	RSS-Gen 6.12 RSS-139 4.1	Conducted RF Output Power	Pass	Meet the requirement of limit	022TAD0679
27.50(d)(5)	RSS-139 6.5	Peak-to-Average Power Ratio	Pass	Meet the requirement of limit	022TAD0679
2.1049 27.53(h)(3)	RSS-Gen 6.6	Occupied Bandwidth (26dBc, 99%)	Pass	Meet the requirement of limit	022TAD0679
2.1055 27.54	RSS-139 6.4	Frequency Stability	Pass	Meet the requirement of limit	022TAD0679
2.1051 27.53(h)(1)(3)	RSS-Gen 6.13 RSS-139 6.6	Band Edge Conducted Spurious Emission	Pass	Meet the requirement of limit	022TAD0679
2.1051 27.53(h)(1)	RSS-Gen 6.13 RSS-139 6.6	Conducted Spurious Emissions	Pass	Meet the requirement of limit	022TAD0679
2.1053 27.53 (h)	RSS-139 6.6	Radiated Spurious Emission	Pass	- 27.25 dBm (Margin: 14.25 dBm, Noise Floor)	022TAF1521
2.1049 27.50(d)(4)	RSS-139 6.5	Equivalent Isotropically Radiated Power (EIRP)	Pass	Meet the requirement of limit	022TAD0679

1.1. Measurement Uncertainty

Measurement	Frequency	Expended Uncertainty (k=1.96) (±dB)
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	5.01
	200MHz ~ 1000MHz	5.01
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.01
	18GHz ~ 25GHz	5.01

1.2. Equipment List

DESCRIPTION	MODEL	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
BROADBAND ATE 1 (RF CONDUCTED TESTS)				
Wideband Radio Communication Tester	CMW500	154550	08-Aug-23	08-Aug-24
Signal Analyzer	FSV40	101431	07-Aug-23	07-Aug-24
Chamber	SH-641	92003150	15-Sep-23	15-Sep-24
Power Supply	6652A	3640A02967	15-Oct-23	15-Oct-24
Test Software	R&S CMWrun			
Version	V.1.9.8			
RADIATED SPURIOUS EMISSION (EMC CHAMBER 1)				
Drg Horn Freq.	SAS-571	1143	08-Mar-23	08-Mar-25
Drg Horn Freq.	SAS-571	720	18-Apr-23	18-Apr-25
Power Supply	NR973A	MY54180189	30-Aug-23	30-Aug-24
Signal Generator	SMB 100A	182511	04-Jun-21	04-Jun-24
Emi Test Receiver	ESW44	101731	11-Aug-23	11-Aug-24
Bilog Antenna	CBL6112B	2950	14-Dec-23	14-Dec-24
Bilog Antenna	CBL6112B	2964	25-Sep-23	25-Sep-24
Data Logger Thermohygrometer	SDL500	A.016800	21-Jun-23	21-Jun-24
Broad-Band Horn Antenna	BBHA9170	BBHA9170143	28-Aug-23	28-Aug-24
Preamplifier	PAM-0118P	361	29-Sep-23	29-Sep-26
Loop Antenna	6502	00208416	26-Oct-23	26-Oct-24
5m Semi-Anechoic Chamber	S800-HX	J2308	Not Required	Not Required
System Controller	SC104V	050806-1	Not Required	Not Required
Turntable Flush Mount 2m	FM2011	NA	Not Required	Not Required
Antenna Positioning Tower	TLT2	NA	Not Required	Not Required
Preamplifier 18-40Ghz	Miteq Hi Gain Sucoflex	002	Not Required	Not Required
Test Software	EMC_FCC_IC_BLUETOOTH_RE_TEST			
Version	EMC_FCC_RE_v1.6.5			

1.3. General Information

General Description of EUT

Product	APX N70			
Brand	Motorola Solutions			
Test Model	H35KET9PW8AN & H35KET9PW8AN-H			
Power Supply Rating	7.5 Vdc			
Mode of Operation	LTE Band 4			
Modulation Type	QPSK, 16QAM			
Operating Frequency	LTE Band 4	Channel Bandwidth 1.4MHz	1710.7MHz~1754.3MHz	
		Channel Bandwidth 3MHz	1711.5MHz~1753.5MHz	
		Channel Bandwidth 5MHz	1712.5MHz~1752.5MHz	
		Channel Bandwidth 10MHz	1715.0MHz~1750.0MHz	
		Channel Bandwidth 15MHz	1717.5MHz~1747.5MHz	
		Channel Bandwidth 20MHz	1720.0MHz~1745.0MHz	
Max. Conducted RF Output Power	LTE Band 4 QPSK	Channel Bandwidth 1.4MHz	23.315dBm (0.215W)	
		Channel Bandwidth 3MHz	23.379dBm (0.218W)	
		Channel Bandwidth 5MHz	23.401dBm (0.219W)	
		Channel Bandwidth 10MHz	**23.809dBm (0.240W)**	
		Channel Bandwidth 15MHz	23.358dBm (0.217W)	
		Channel Bandwidth 20MHz	23.217dBm (0.210W)	
	LTE Band 4 16QAM	Channel Bandwidth 1.4MHz	22.432dBm (0.175W)	
		Channel Bandwidth 3MHz	22.672dBm (0.185W)	
		Channel Bandwidth 5MHz	22.565dBm (0.181W)	
		Channel Bandwidth 10MHz	**22.964dBm (0.198W)**	
		Channel Bandwidth 15MHz	22.528dBm (0.179W)	
		Channel Bandwidth 20MHz	22.836dBm (0.192W)	
Emission Designator	LTE Band 4		QPSK	16QAM
		Channel Bandwidth 1.4MHz	1M07G7D	1M07D7W
		Channel Bandwidth 3MHz	2M68G7D	2M68D7W
		Channel Bandwidth 5MHz	4M47G7D	4M48D7W
		Channel Bandwidth 10MHz	8M95G7D	8M95D7W
		Channel Bandwidth 15MHz	13M40G7D	13M40D7W
		Channel Bandwidth 20MHz	17M86G7D	17M82D7W
Antenna Type	LTE Band 4	Stamped Metal, Antenna LTE Main 1710-1755MHz (1.9dBi)		
SW Version	D03.75.21 (BP), D00.0016 (AP)			
HW Version	P1			

Note:

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

Item	Brand	Model or P/N	Specification
Li-Ion Battery	MOTOROLA	PMNN4818A	UL 3650mAH (using RN 2170 Li-Ion cell)

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	154550	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:

FCC 47 CFR Part 2
FCC 47 CFR Part 27
KDB 971168 D01 Power Meas License Digital Systems v03r01
KDB 971168 D02 Misc OOBE License Digital Systems v02r01
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 4	1.4 MHz	19957 ~ 20393	19957	20175	20393	1710.7	1732.5	1754.3
	3 MHz	19965 ~ 20386	19965	20175	20385	1711.5	1732.5	1753.5
	5 MHz	19975 ~ 20375	19975	20175	20375	1712.5	1732.5	1752.5
	10 MHz	20000 ~ 20350	20000	20175	20350	1715.0	1732.5	1750.0
	15 MHz	20025 ~ 20325	20025	20175	20325	1717.5	1732.5	1747.5
	20 MHz	20050 ~ 20300	20050	20175	20300	1720.0	1732.5	1745.0

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 4

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted RF Output Power	19957 ~ 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	As per table 1.6.3
	19965 ~ 20386	19965, 20175, 20385	3 MHz		
	19975 ~ 20375	19975, 20175, 20375	5 MHz		
	20000 ~ 20350	20000, 20175, 20350	10 MHz		
	20025 ~ 20325	20025, 20175, 20325	15 MHz		
	20050 ~ 20300	20050, 20175, 20300	20 MHz		
Peak to Average Power Ratio	19957 ~ 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	19965 ~ 20386	19965, 20175, 20385	3 MHz		15 RB / 0 RB Offset
	19975 ~ 20375	19975, 20175, 20375	5 MHz		25 RB / 0 RB Offset
	20000 ~ 20350	20000, 20175, 20350	10 MHz		50 RB / 0 RB Offset
	20025 ~ 20325	20025, 20175, 20325	15 MHz		75 RB / 0 RB Offset
	20050 ~ 20300	20050, 20175, 20300	20 MHz		100 RB / 0 RB Offset
Occupied Bandwidth	19957 ~ 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	19965 ~ 20386	19965, 20175, 20385	3 MHz		15 RB / 0 RB Offset
	19975 ~ 20375	19975, 20175, 20375	5 MHz		25 RB / 0 RB Offset
	20000 ~ 20350	20000, 20175, 20350	10 MHz		50 RB / 0 RB Offset
	20025 ~ 20325	20025, 20175, 20325	15 MHz		75 RB / 0 RB Offset
	20050 ~ 20300	20050, 20175, 20300	20 MHz		100 RB / 0 RB Offset
Frequency Stability	19957 ~ 20393	20175	1.4 MHz	QPSK	6 RB / 0 RB Offset
	19965 ~ 20386	20175	3 MHz		15 RB / 0 RB Offset
	19975 ~ 20375	20175	5 MHz		25 RB / 0 RB Offset
	20000 ~ 20350	20175	10 MHz		50 RB / 0 RB Offset
	20025 ~ 20325	20175	15 MHz		75 RB / 0 RB Offset
	20050 ~ 20300	20175	20 MHz		100 RB / 0 RB Offset
Band Edge	19957 ~ 20393	19957, 20393	1.4 MHz	QPSK,	1 RB / 0 RB Offset

Conducted Spurious Emission				16QAM	1 RB / 5 RB Offset 6 RB / 0 RB Offset
	19965 ~ 20386	19965, 20385	3 MHz		1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
	19975 ~ 20375	19975, 20375	5 MHz		1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
	20000 ~ 20350	20000, 20350	10 MHz		1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
	20025 ~ 20325	20025, 20325	15 MHz		1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
	20050 ~ 20300	20050, 20300	20 MHz		1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
Conducted Spurious Emission	19957 ~ 20393	19957, 20175, 20393	1.4 MHz	QPSK	1 RB / 3 RB Offset
	19965 ~ 20386	19965, 20175, 20385	3 MHz		1 RB / 7 RB Offset
	19975 ~ 20375	19975, 20175, 20375	5 MHz		1 RB / 0 RB Offset
	20000 ~ 20350	20000, 20175, 20350	10 MHz		1 RB / 49 RB Offset
	20025 ~ 20325	20025, 20175, 20325	15 MHz		1 RB / 0 RB Offset
	20050 ~ 20300	20050, 20175, 20300	20 MHz		1 RB / 0 RB Offset
Radiated Emission	20000 ~ 20350	20000	10 MHz	QPSK	1 RB / 0 RB Offset
		20175	10 MHz		1 RB / 0 RB Offset
		20350	10 MHz		1 RB / 7 RB Offset
Equivalent Isotropically Radiated Power (EIRP)	19957 ~ 20393	19957, 20175, 20393	1.4 MHz	QPSK, 16QAM	As per table 1.6.4
	19965 ~ 20386	19965, 20175, 20385	3 MHz		
	19975 ~ 20375	19975, 20175, 20375	5 MHz		
	20000 ~ 20350	20000, 20175, 20350	10 MHz		
	20025 ~ 20325	20025, 20175, 20325	15 MHz		
	20050 ~ 20300	20050, 20175, 20300	20 MHz		

NOTE:

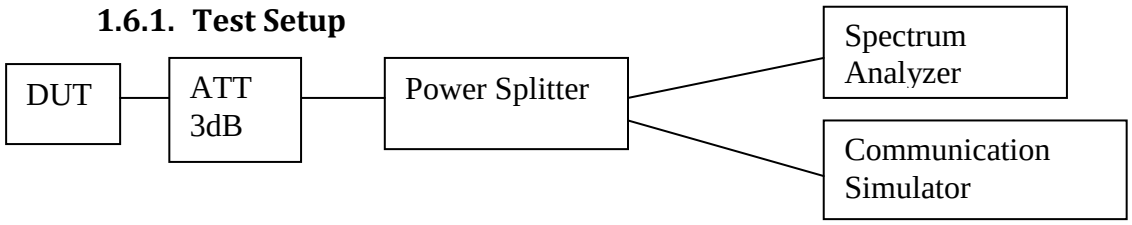
1. The Conducted RF Output Power for QPSK and 16QAM, measured value of QPSK mode is higher than 16QAM mode. Therefore, only Conducted Spurious Emission and Radiated Emission had been tested under QPSK modes.
2. Band Edge was performed with 1 and full Resource Block at the lowest and highest operating frequency band.
3. The Equivalent Isotropically Radiated Power (EIRP) 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	7.5 Vdc	Awatif Rahman
Peak-to-Average Power Ratio	25ºC, 50% RH	7.5 Vdc	Awatif Rahman
Occupied Bandwidth	25ºC, 50% RH	7.5 Vdc	Awatif Rahman
Frequency Stability	-30ºC ~ 60ºC	7.5 Vdc	Awatif Rahman
Band Edge Conducted Spurious Emission	25ºC, 50% RH	7.5 Vdc	Awatif Rahman
Conducted Spurious Emission	25ºC, 50% RH	7.5 Vdc	Awatif Rahman
Radiated Spurious Emission	23.5ºC, 68.6% RH	7.5 Vdc	Rezza & Fuad
Equivalent Isotropically Radiated Power (EIRP)	25ºC, 50% RH	7.5 Vdc	Awatif Rahman

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: Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

ISED: The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt.

1.6.3. Conducted RF Output Power – LTE Band 4 (1710-1755MHz)

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
			19957	20175	20393	19957	20175	20393
			1710.7 MHz	1732.5 MHz	1754.3 MHz	1710.7 MHz	1732.5 MHz	1754.3 MHz
Band 4 / 1.4 MHz	1	0	23.294	23.294	23.189	22.291	22.131	22.293
	1	3	23.204	**23.315**	23.262	22.319	22.127	22.297
	1	5	23.272	23.288	23.175	22.245	22.129	22.304
	3	0	23.198	23.125	23.197	22.139	22.291	22.326
	3	2	23.236	23.239	23.278	22.239	22.318	**22.432**
	3	3	23.237	23.175	23.21	22.204	22.315	22.343
	6	0	22.182	22.119	22.161	21.142	21.217	21.265

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
			19965	20175	20385	19965	20175	20385
			1711.5 MHz	1732.5 MHz	1753.5 MHz	1711.5 MHz	1732.5 MHz	1753.5 MHz
Band 4 / 3MHz	**1**	**0**	23.31	23.284	23.349	**22.672**	22.295	22.254
	1	**7**	23.295	23.264	**23.379**	22.576	22.422	22.132
	1	**14**	23.234	23.185	23.328	22.522	22.24	22.146
	8	**0**	22.314	22.21	22.208	21.4	21.203	21.242
	8	**4**	22.27	22.227	22.213	21.397	21.169	21.218
	8	**7**	22.291	22.197	22.163	21.396	21.169	21.209
	15	**0**	22.238	22.238	22.197	21.292	21.176	21.192

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
			19975	20175	20375	19975	20175	20375
			1712.5MHz	1732.5MHz	1752.5MHz	1712.5MHz	1732.5MHz	1752.5MHz
Band 4 / 5MHz	**1**	**0**	**23.401**	23.382	23.384	22.418	22.561	**22.565**
	1	**13**	23.25	23.286	23.323	22.257	22.439	22.454
	1	**25**	23.196	23.235	23.29	22.188	22.404	22.437
	12	**0**	22.339	22.281	22.224	21.298	21.2	21.208
	12	**6**	22.298	22.242	22.194	21.256	21.148	21.183
	12	**13**	22.265	22.233	22.168	21.253	21.127	21.166
	25	**0**	22.302	22.27	22.219	21.237	21.238	21.219

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
			20000	20175	20350	20000	20175	20350
			1715MHz	1732.5MHz	1750MHz	1715MHz	1732.5MHz	1750MHz
Band 4 / 10MHz	**1**	**0**	23.445	23.582	23.529	22.894	22.57	22.391
	1	**25**	23.125	23.211	23.318	22.51	22.293	22.087
	1	**49**	23.569	23.677	**23.809**	**22.964**	22.751	22.526
	25	**0**	22.238	22.241	22.189	21.29	21.329	21.231
	25	**13**	22.281	22.274	22.186	21.289	21.338	21.232
	25	**25**	22.381	22.394	22.285	21.319	21.414	21.318
	50	**0**	22.32	22.33	22.265	21.309	21.287	21.235

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
			20025	20175	20325	20025	20175	20325
			1717.5MHz	1732.5MHz	1747.5MHz	1717.5MHz	1732.5MHz	1747.5MHz
Band 4 / 15MHz	**1**	**0**	23.294	**23.358**	23.083	22.463	22.256	22.023
	1	**38**	23.245	23.336	23.066	**22.528**	22.254	21.993
	1	**74**	23.189	23.106	23.001	22.384	22.047	21.85
	36	**0**	22.237	22.221	22.031	21.238	21.269	21.015
	36	**19**	22.258	22.225	22.06	21.265	21.292	21.045
	36	**39**	22.174	22.072	21.977	21.201	21.134	21
	75	**0**	22.169	22.207	22.025	21.178	21.213	21.012

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
			20050	20175	20300	20050	20175	20300
			1720MHz	1732.5MHz	1745MHz	1720MHz	1732.5MHz	1745MHz
Band 4 / 20MHz	**1**	**0**	22.985	22.987	22.666	21.838	22.582	22.098
	1	**49**	23.184	**23.217**	22.938	22.138	**22.836**	22.279
	1	**99**	23.03	22.895	22.838	21.784	22.481	22.176
	50	**0**	22.109	22.147	21.951	21.078	21.124	20.925
	50	**25**	22.204	22.177	21.998	21.187	21.164	20.993
	50	**50**	22.095	21.976	21.886	21.086	20.98	20.883
	100	**0**	22.084	22.11	21.892	21.094	21.133	20.929

1.6.4. Equivalent Isotropically Radiated Power (EIRP) - LTE Band 4 (1710-1755MHz)

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			19957	20175	20393	19957	20175	20393
			1710.7 MHz	1732.5 MHz	1754.3 MHz	1710.7 MHz	1732.5 MHz	1754.3 MHz
Band 4 / 1.4 MHz	**1**	**0**	25.194	25.194	25.089	24.191	24.031	24.193
	1	**3**	25.104	**25.215**	25.162	24.219	24.027	24.197
	1	**5**	25.172	25.188	25.075	24.145	24.029	24.204
	3	**0**	25.098	25.025	25.097	24.039	24.191	24.226
	3	**2**	25.136	25.139	25.178	24.139	24.218	**24.332**
	3	**3**	25.137	25.075	25.11	24.104	24.215	24.243
	6	**0**	24.082	24.019	24.061	23.042	23.117	23.165

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			19965	20175	20385	19965	20175	20385
			1711.5 MHz	1732.5 MHz	1753.5 MHz	1711.5 MHz	1732.5 MHz	1753.5 MHz
Band 4 / 3MHz	**1**	**0**	25.21	25.184	25.249	**24.572**	24.195	24.154
	1	**7**	25.195	25.164	**25.279**	24.476	24.322	24.032
	1	**14**	25.134	25.085	25.228	24.422	24.14	24.046
	8	**0**	24.214	24.11	24.108	23.3	23.103	23.142
	8	**4**	24.17	24.127	24.113	23.297	23.069	23.118
	8	**7**	24.191	24.097	24.063	23.296	23.069	23.109
	15	**0**	24.138	24.138	24.097	23.192	23.076	23.092

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			19975	20175	20375	19975	20175	20375
			1712.5MHz	1732.5MHz	1752.5MHz	1712.5MHz	1732.5MHz	1752.5MHz
Band 4 / 5MHz	**1**	**0**	**25.301**	25.282	25.284	24.318	24.461	**24.465**
	1	**13**	25.15	25.186	25.223	24.157	24.339	24.354
	1	**25**	25.096	25.135	25.19	24.088	24.304	24.337
	12	**0**	24.239	24.181	24.124	23.198	23.1	23.108
	12	**6**	24.198	24.142	24.094	23.156	23.048	23.083
	12	**13**	24.165	24.133	24.068	23.153	23.027	23.066
	25	**0**	24.202	24.17	24.119	23.137	23.138	23.119

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			20000	20175	20350	20000	20175	20350
			1715MHz	1732.5MHz	1750MHz	1715MHz	1732.5MHz	1750MHz
Band 4 / 10MHz	**1**	**0**	25.345	25.482	25.429	24.794	24.47	24.291
	1	**25**	25.025	25.111	25.218	24.41	24.193	23.987
	1	**49**	25.469	25.577	**25.709**	**24.864**	24.651	24.426
	25	**0**	24.138	24.141	24.089	23.19	23.229	23.131
	25	**13**	24.181	24.174	24.086	23.189	23.238	23.132
	25	**25**	24.281	24.294	24.185	23.219	23.314	23.218
	50	**0**	24.22	24.23	24.165	23.209	23.187	23.135

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			20025	20175	20325	20025	20175	20325
			1717.5MHz	1732.5MHz	1747.5MHz	1717.5MHz	1732.5MHz	1747.5MHz
Band 4 / 15MHz	**1**	**0**	25.194	**25.258**	24.983	24.363	24.156	23.923
	1	**38**	25.145	25.236	24.966	**24.428**	24.154	23.893
	1	**74**	25.089	25.006	24.901	24.284	23.947	23.75
	36	**0**	24.137	24.121	23.931	23.138	23.169	22.915
	36	**19**	24.158	24.125	23.96	23.165	23.192	22.945
	36	**39**	24.074	23.972	23.877	23.101	23.034	22.9
	75	**0**	24.069	24.107	23.925	23.078	23.113	22.912

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			20050	20175	20300	20050	20175	20300
			1720MHz	1732.5MHz	1745MHz	1720MHz	1732.5MHz	1745MHz
Band 4 / 20MHz	**1**	**0**	24.885	24.887	24.566	23.738	24.482	23.998
	1	**49**	25.084	**25.117**	24.838	24.038	**24.736**	24.179
	1	**99**	24.93	24.795	24.738	23.684	24.381	24.076
	50	**0**	24.009	24.047	23.851	22.978	23.024	22.825
	50	**25**	24.104	24.077	23.898	23.087	23.064	22.893
	50	**50**	23.995	23.876	23.786	22.986	22.88	22.783
	100	**0**	23.984	24.01	23.792	22.994	23.033	22.829

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

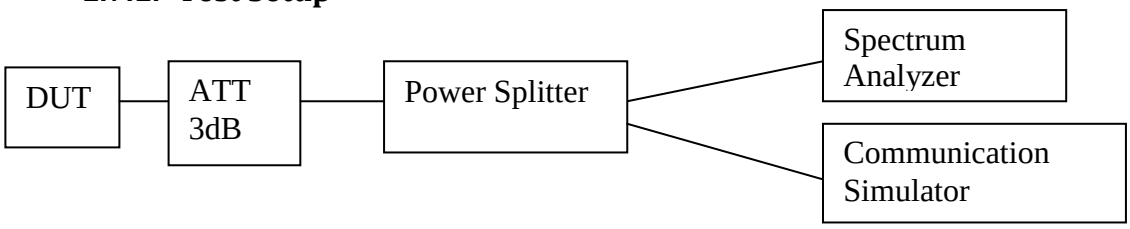
$$\mathbf{EIRP} = \mathbf{P_{Meas}} + \mathbf{G_T}$$
$$\mathbf{ERP} = \mathbf{EIRP} - \mathbf{2.15}$$

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

P_{Meas} measured transmitter output power, in dBm
G_T 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

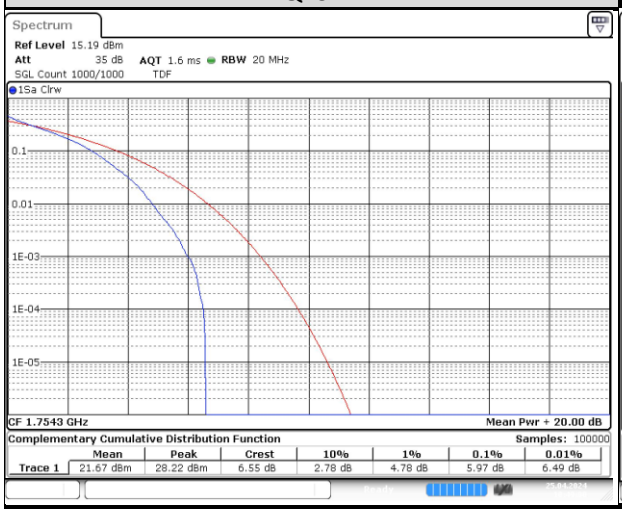
In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

1.7.3. Peak-to-Average Power Ratio – LTE Band 4 (1710-1755MHz)

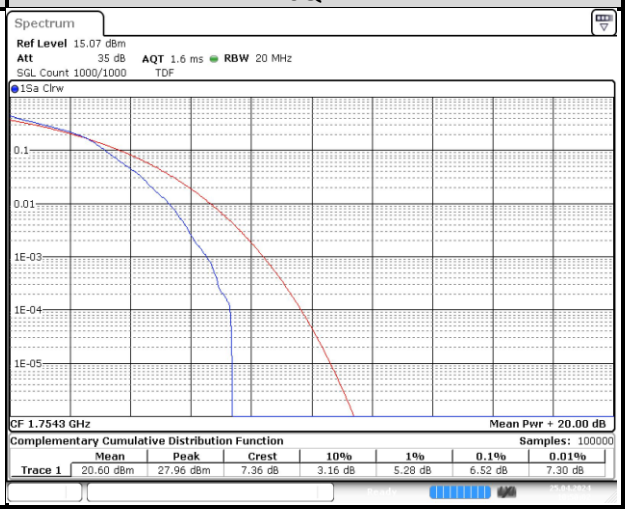
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 4/1.4MHz/6/0	Low CH 19957	1710.7 MHz	5.362	6.232
	Mid CH 20175	1732.5 MHz	5.594	6.261
	High CH 20393	1754.3 MHz	**5.971**	**6.522**

Spectrum Plot of Worst Value

QPSK



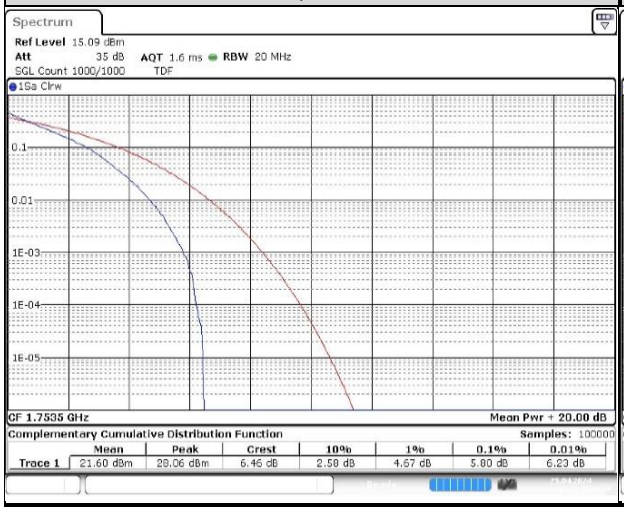
16QAM



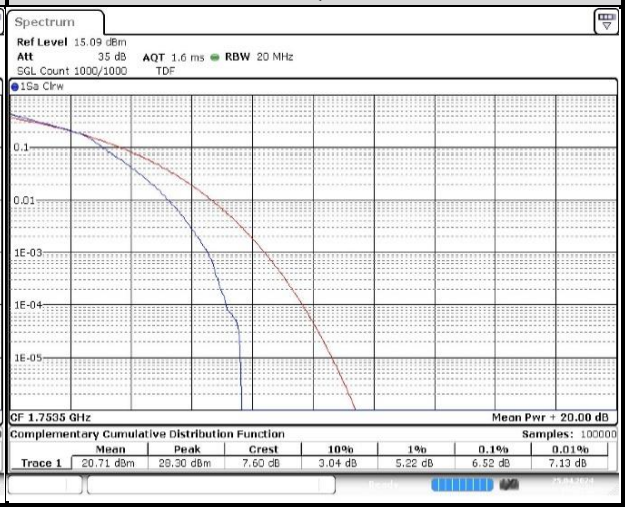
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 4/3MHz/15/0	Low CH 19965	1711.5 MHz	5.594	6.493
	Mid CH 20175	1732.5 MHz	5.681	6.464
	High CH 20385	1753.5 MHz	**5.797**	**6.522**

Spectrum Plot of Worst Value

QPSK



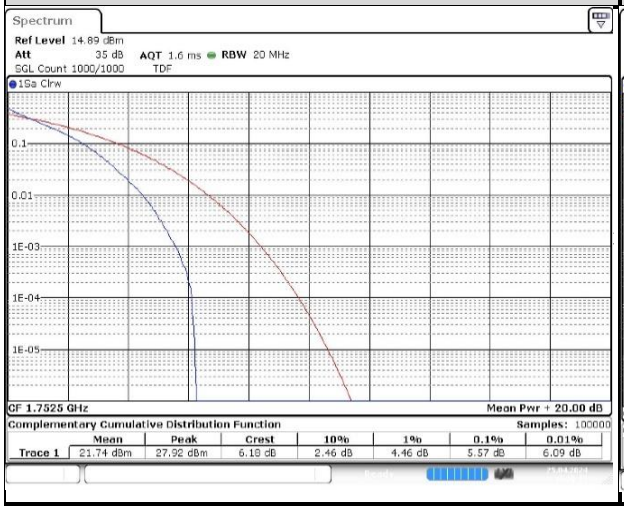
16QAM



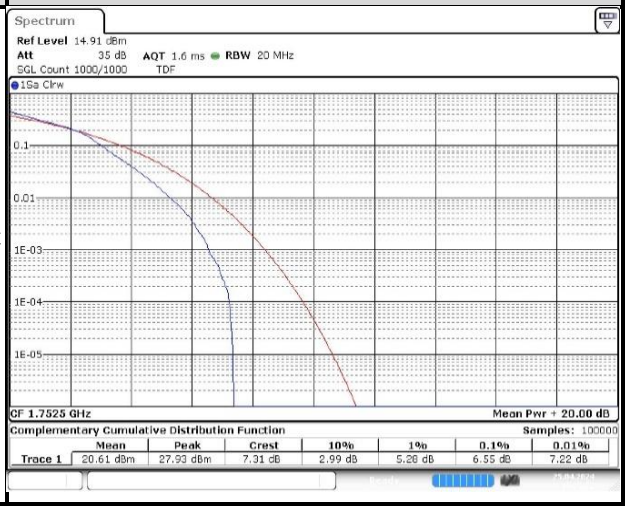
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 4/5MHz/25/0	Low CH 19975	1712.5 MHz	5.478	6.348
	Mid CH 20175	1732.5 MHz	5.42	6.319
	High CH 20375	1752.5 MHz	**5.565**	**6.551**

Spectrum Plot of Worst Value

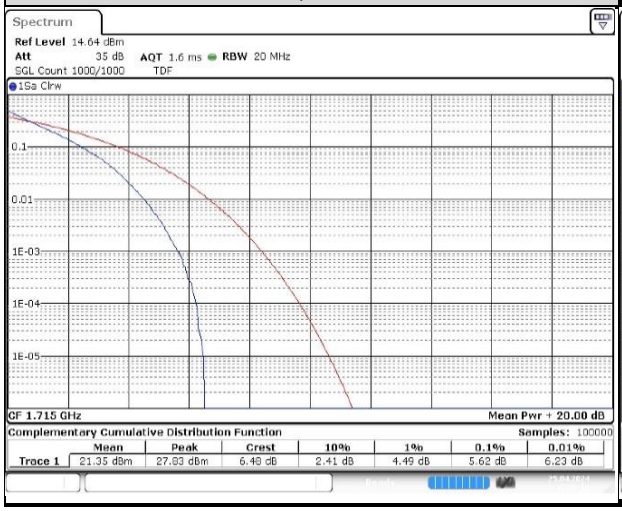
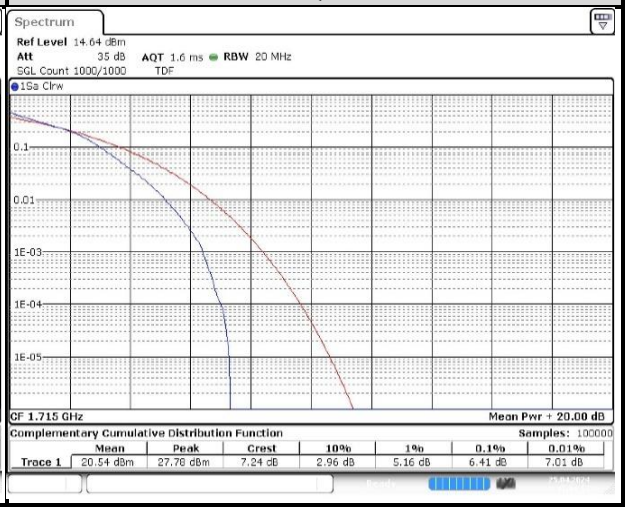
QPSK



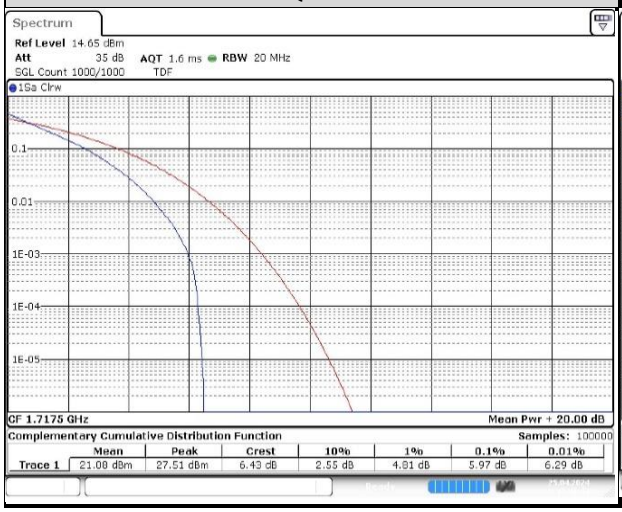
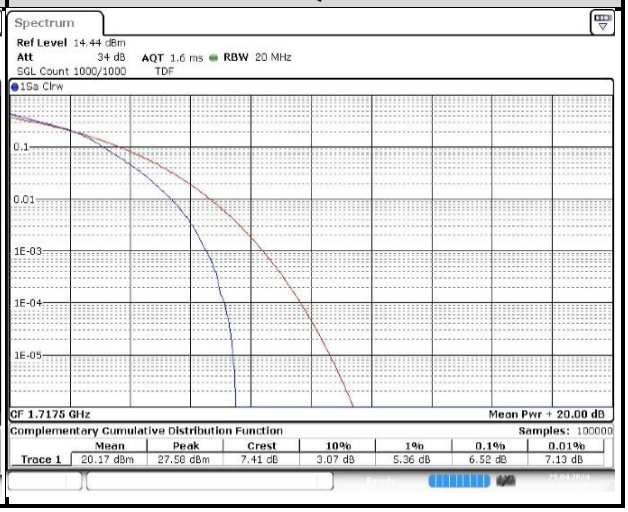
16QAM



LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 4/10MHz/50/0	Low CH 20000	1715 MHz	**5.623**	**6.406**
	Mid CH 20175	1732.5 MHz	5.42	6.319
	High CH 20350	1750 MHz	5.478	6.319

Spectrum Plot of Worst Value	
QPSK	16QAM
	

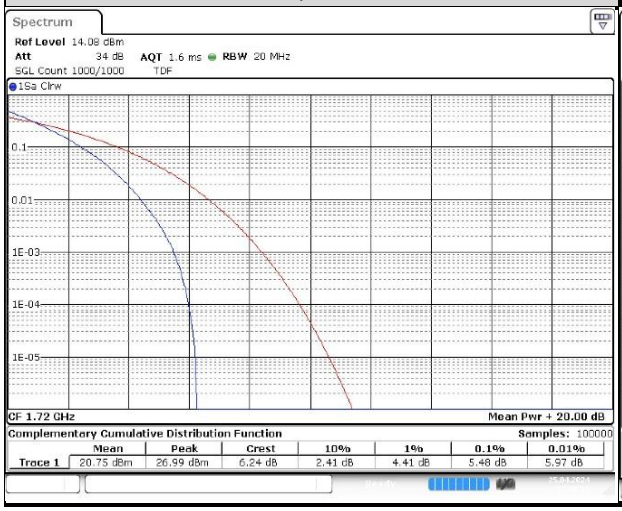
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 4/15MHz/75/0	Low CH 20025	1717.5 MHz	**5.791**	**6.522**
	Mid CH 20175	1732.5 MHz	5.681	6.261
	High CH 20325	1747.5 MHz	5.71	6.319

Spectrum Plot of Worst Value	
QPSK	16QAM
	

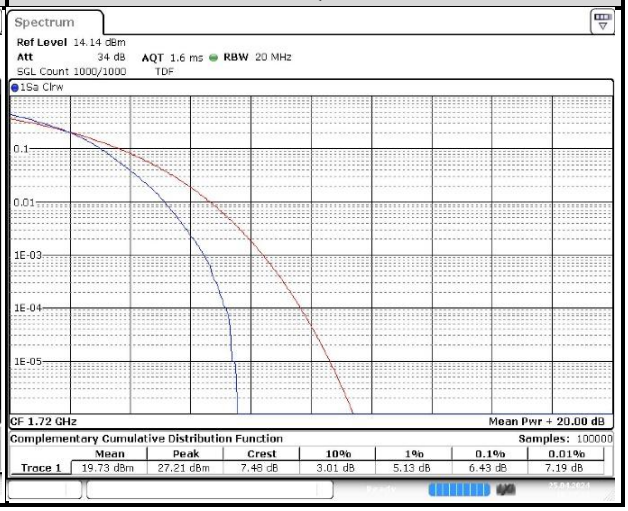
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 4/ 20MHz/100/0	Low CH 20050	1720 MHz	**5.478**	**6.435**
	Mid CH 20175	1732.5 MHz	5.391	6.319
	High CH 20300	1745 MHz	5.275	6.174

Spectrum Plot of Worst Value

QPSK

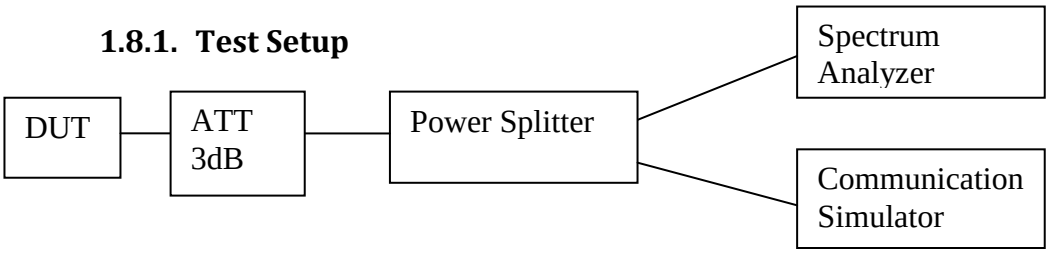


16QAM



1.8. Occupied Bandwidth

1.8.1. Test Setup



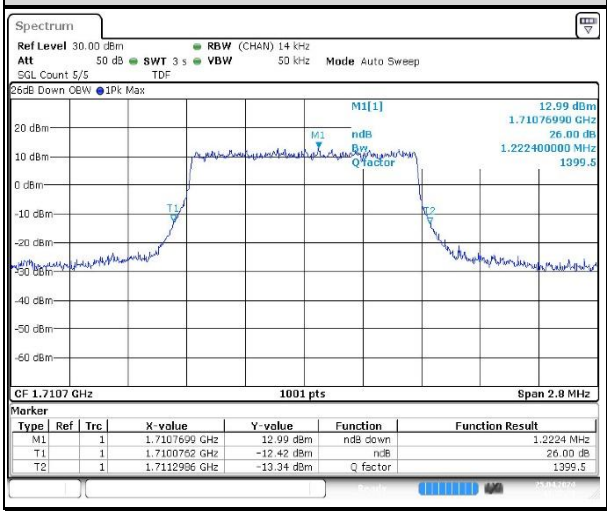
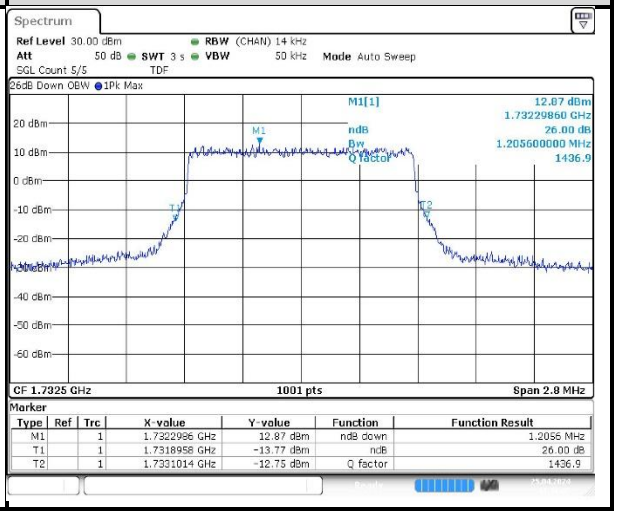
1) The DUT transmitter output port was connected to communication simulator with above setup.
2) Path loss for the measurement included.
3) For LTE measurement, set DUT to transmit maximum power & full RB size through communication simulator.
4) For LTE measurement, set DUT to transmit maximum power 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

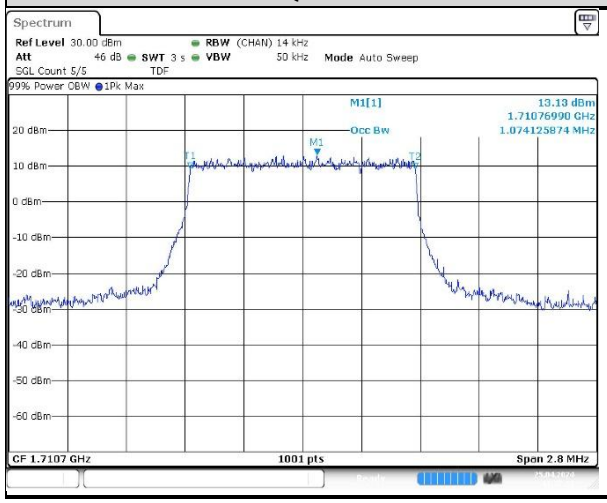
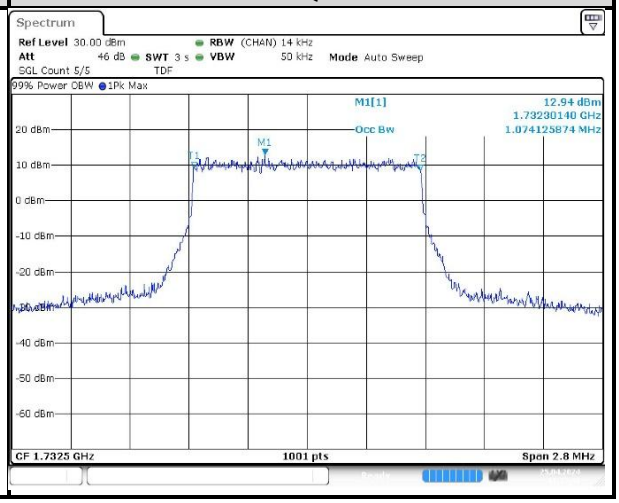
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

1.8.3. Occupied Bandwidth – LTE Band 4 (1710-1755MHz)

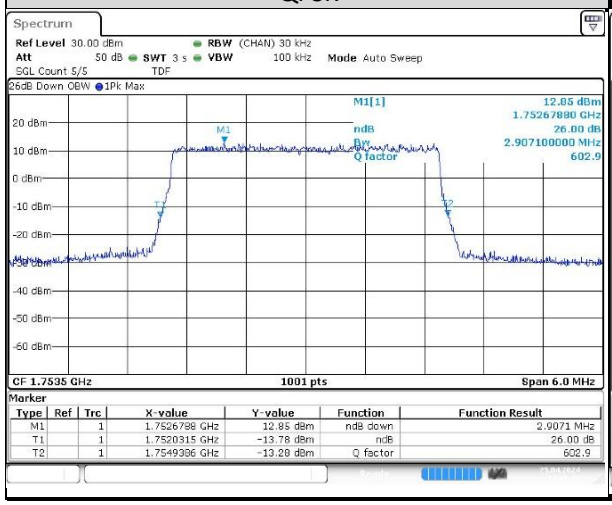
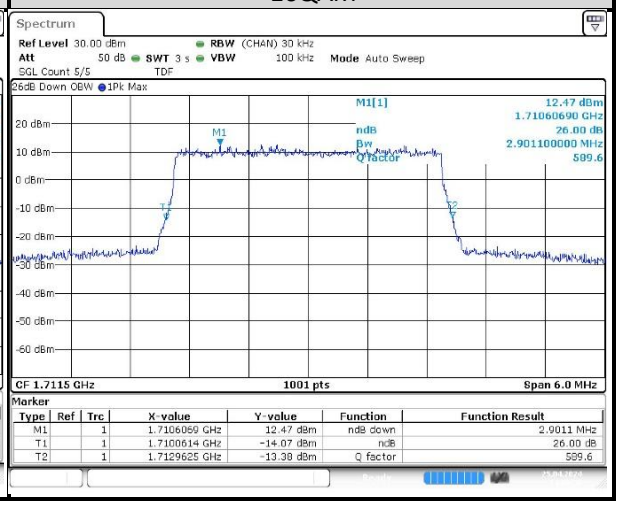
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/1.4MHz/6/0	Low CH 19957	1710.7 MHz	**1.222**	1.186
	Mid CH 20175	1732.5 MHz	1.206	**1.206**
	High CH 20393	1754.3 MHz	1.175	1.2

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 4/1.4MHz/6/0	Low CH 19957	1710.7 MHz	**1.074**	1.071
	Mid CH 20175	1732.5 MHz	1.071	**1.074**
	High CH 20393	1754.3 MHz	1.071	1.074

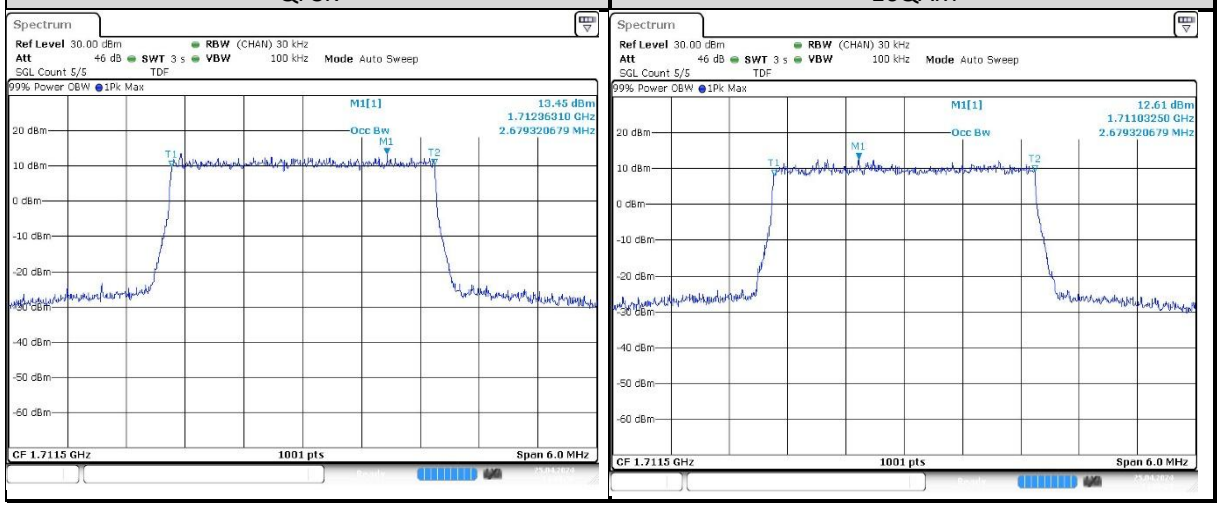
Spectrum Plot of Worst Value	
99% Occupied Bandwidth	
QPSK	16QAM
	

LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/3MHz/15/0	Low CH 19965	1711.5 MHz	2.883	**2.901**
	Mid CH 20175	1732.5 MHz	2.877	2.865
	High CH 20385	1753.5 MHz	**2.907**	2.883

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

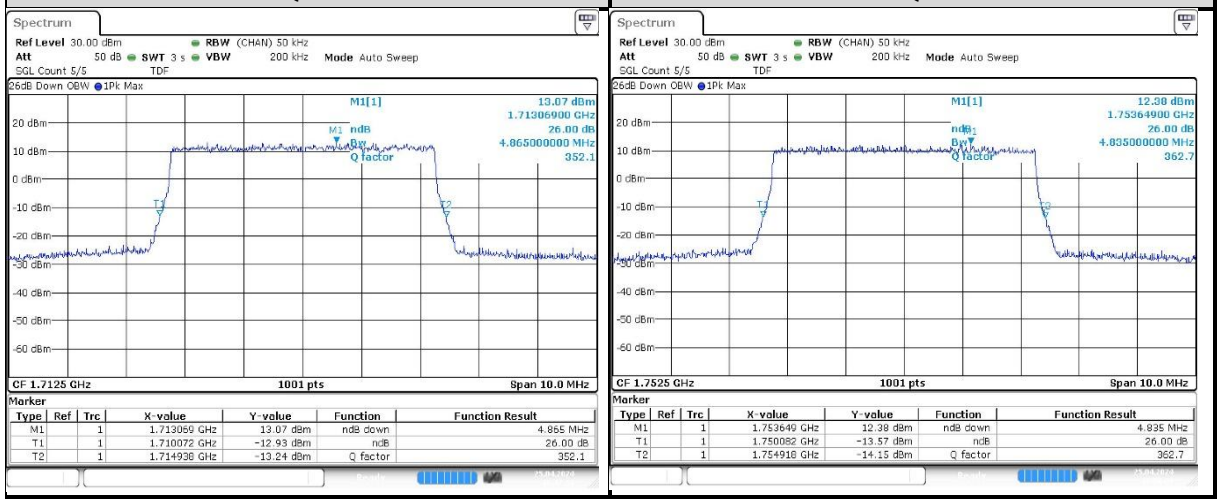
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/3MHz/15/0	Low CH 19965	1711.5 MHz	**2.679**	**2.679**
	Mid CH 20175	1732.5 MHz	2.673	2.679
	High CH 20385	1753.5 MHz	2.673	2.679

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

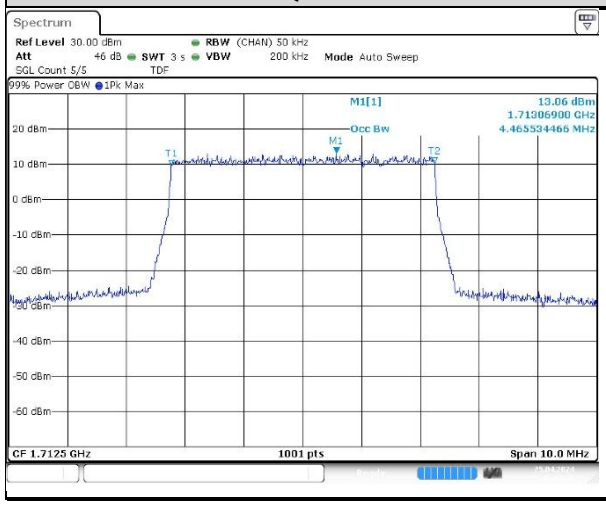
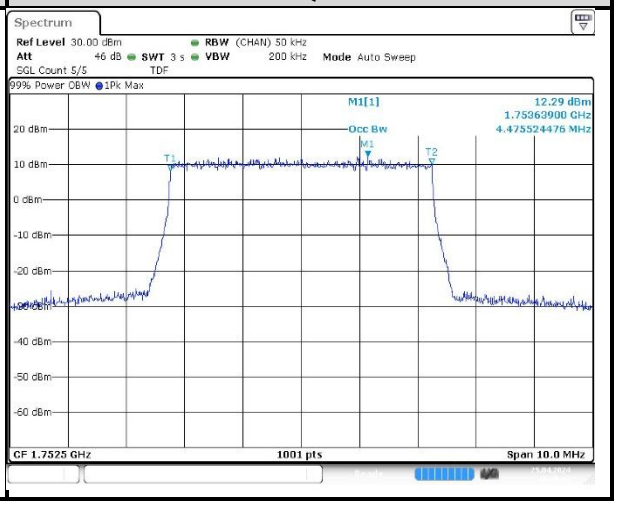


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/5MHz/25/0	Low CH 19975	1712.5 MHz	**4.865**	4.805
	Mid CH 20175	1732.5 MHz	4.825	4.805
	High CH 20375	1752.5 MHz	4.855	**4.835**

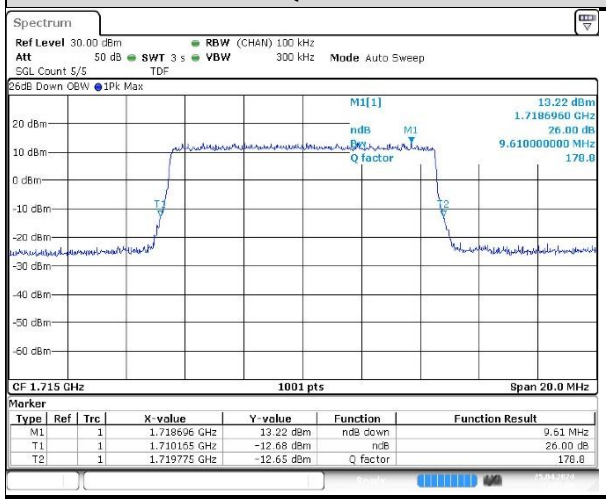
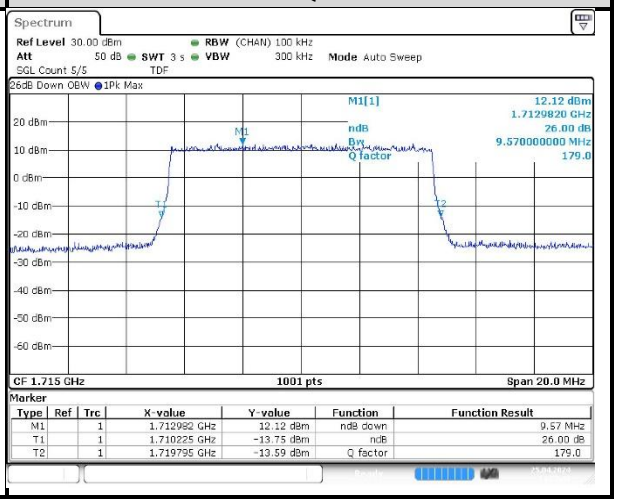
Spectrum Plot of Worst Value	
-26 dBC Bandwidth	
QPSK	16QAM



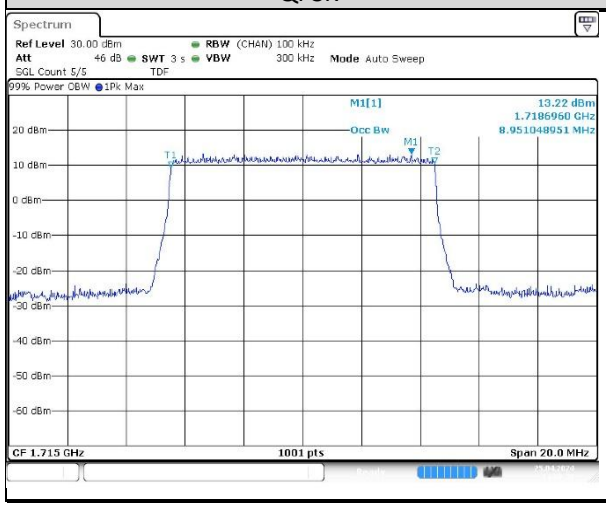
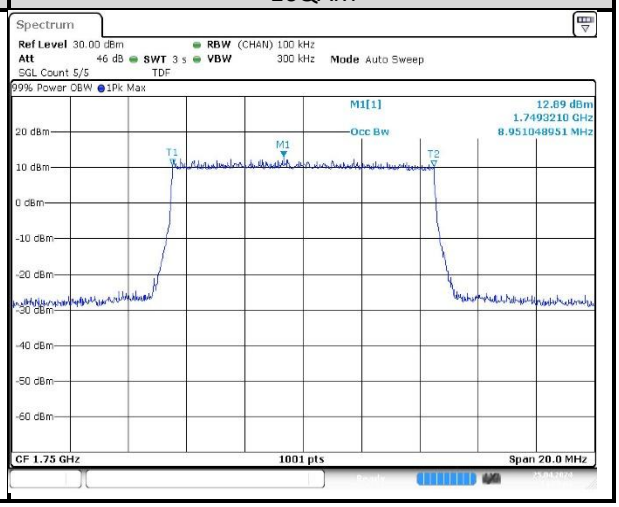
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/5MHz/25/0	Low CH 19975	1712.5 MHz	**4.466**	4.466
	Mid CH 20175	1732.5 MHz	4.466	4.466
	High CH 20375	1752.5 MHz	4.466	**4.476**

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

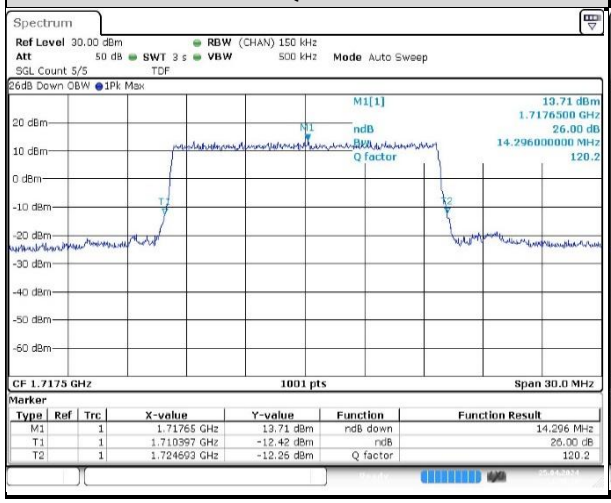
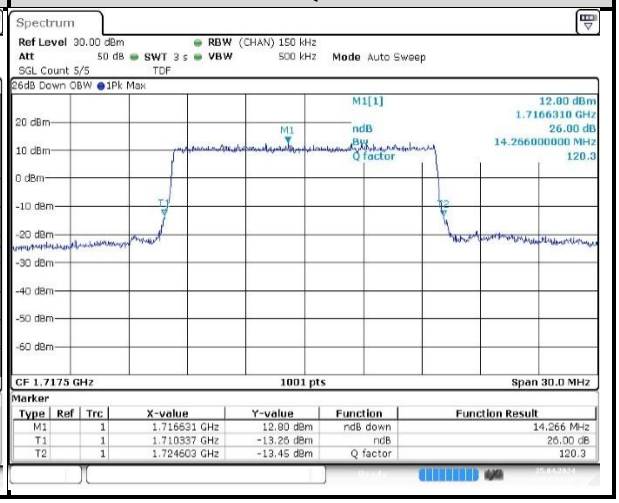
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/10MHz/50/0	Low CH 20000	1715 MHz	**9.61**	**9.57**
	Mid CH 20175	1732.5 MHz	9.55	9.51
	High CH 20350	1750 MHz	9.59	9.57

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

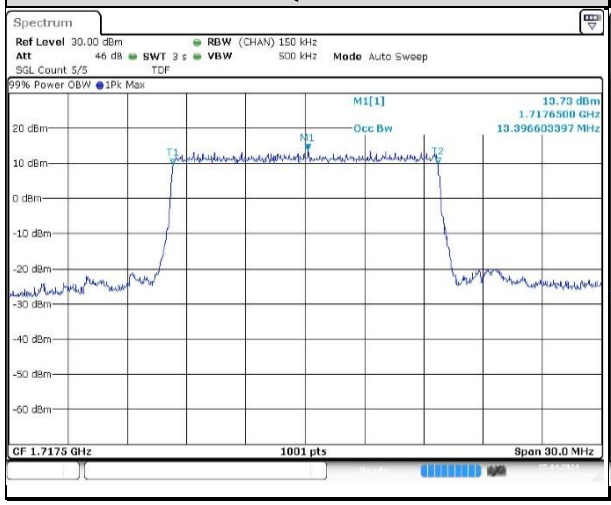
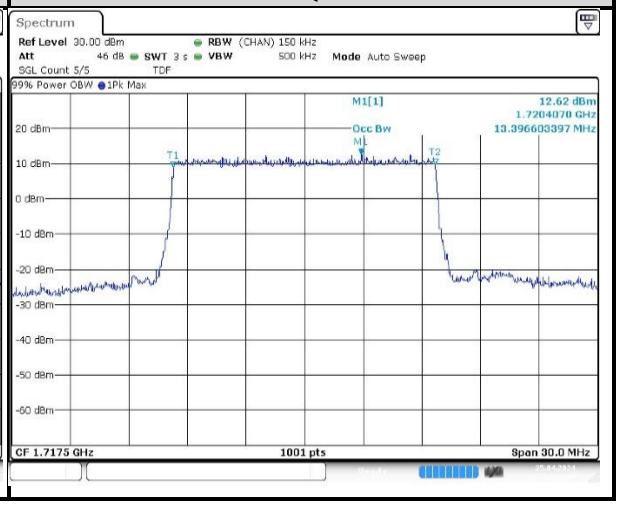
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/10MHz/50/0	Low CH 20000	1715 MHz	**8.951**	8.911
	Mid CH 20175	1732.5 MHz	8.911	8.911
	High CH 20350	1750 MHz	8.911	**8.951**

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

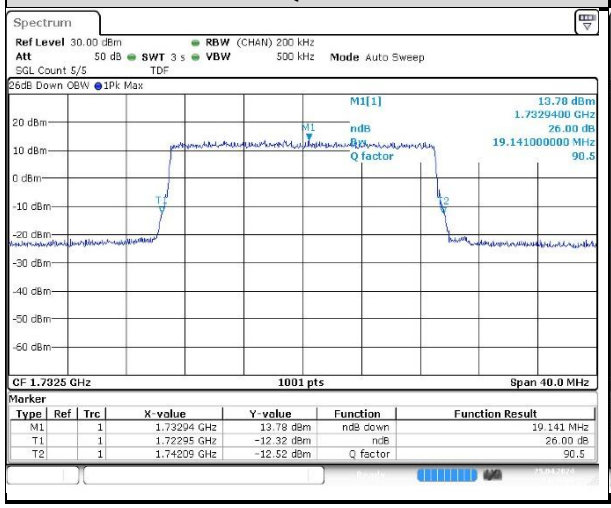
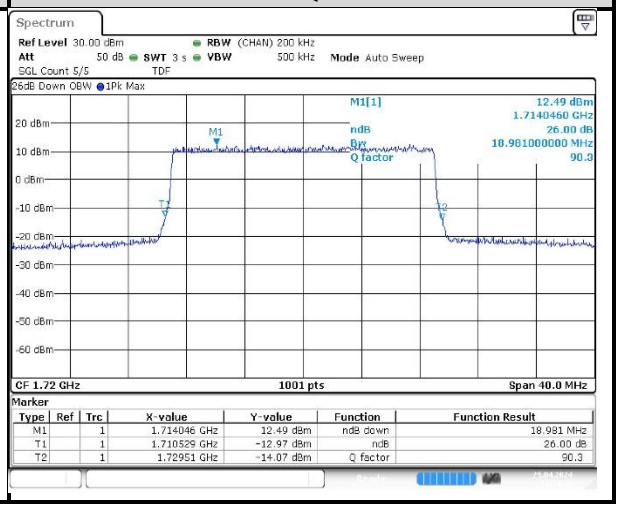
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/15MHz/75/0	Low CH 20025	1717.5 MHz	**14.296**	**14.266**
	Mid CH 20175	1732.5 MHz	14.296	14.236
	High CH 20325	1747.5 MHz	14.266	14.176

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 4/15MHz/75/0	Low CH 20025	1717.5 MHz	**13.397**	**13.397**
	Mid CH 20175	1732.5 MHz	13.367	13.367
	High CH 20325	1747.5 MHz	13.397	13.367

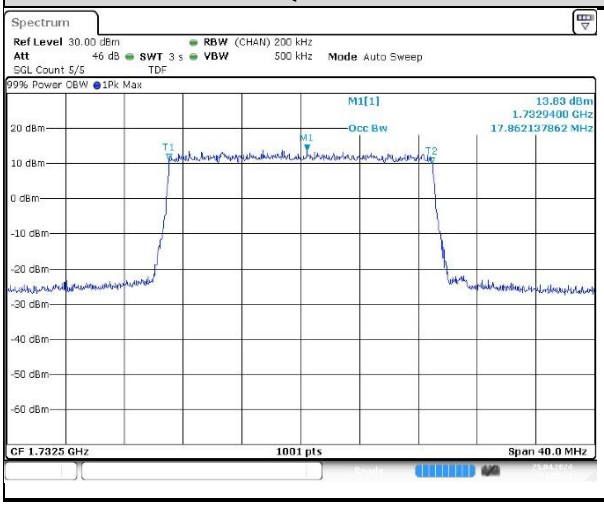
Spectrum Plot of Worst Value	
99% Occupied Bandwidth	
QPSK	16QAM
	

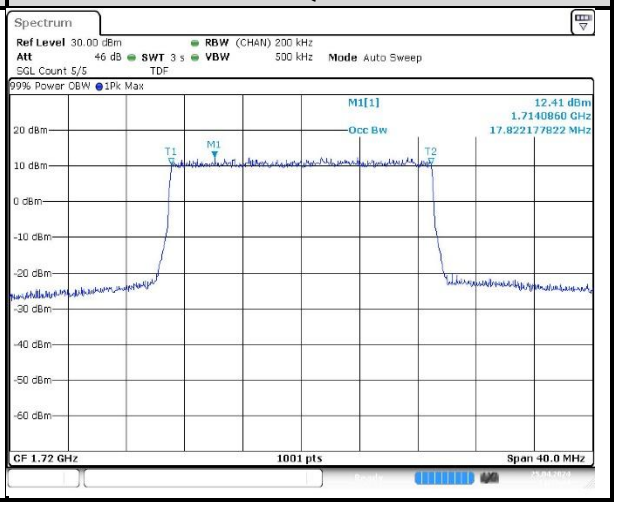
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 4/20MHz/100/0	Low CH 20050	1720 MHz	18.941	**18.981**
	Mid CH 20175	1732.5 MHz	**19.141**	18.861
	High CH 20300	1745 MHz	18.821	18.901

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 4/20MHz/100/0	Low CH 20050	1720 MHz	17.822	**17.822**
	Mid CH 20175	1732.5 MHz	**17.862**	17.822
	High CH 20300	1745 MHz	17.822	17.822

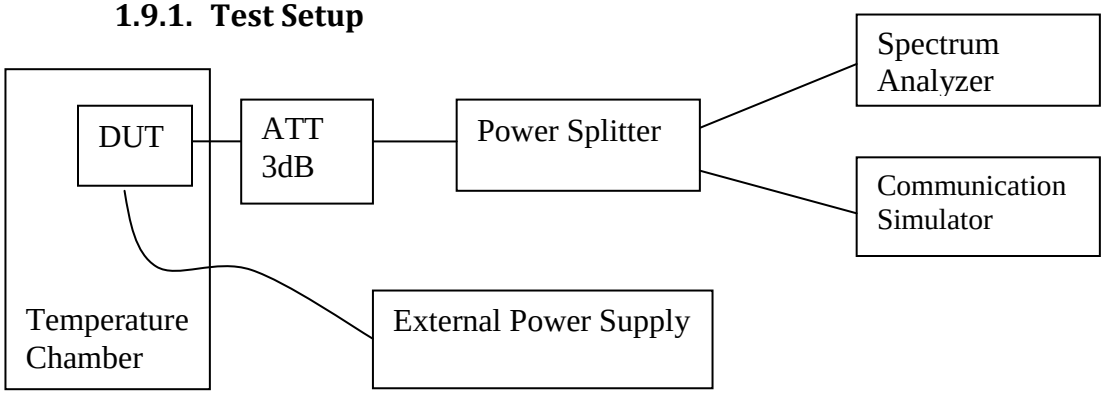
Spectrum Plot of Worst Value	
99% Occupied Bandwidth	
QPSK	16QAM





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

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

1.9.3. Frequency Stability – LTE Band 4 (1710-1755MHz)

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 1.4 MHz			
		Low Channel		High Channel	
		1710.7MHz		1754.3MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**60**	1710.700036	-0.006815	1754.300179	-0.004257
	50	1710.700008	0.006163	1754.300085	-0.004093
	40	1710.700047	0.004532	1754.300145	-0.005553
	30	1710.700985	0.007325	1754.300777	-0.003637
	20	1710.700365	-0.007777	1754.300741	-0.004485
	10	1710.700004	0.007835	1754.300008	0.003629
	0	1710.700445	-0.004056	1754.300285	0.008676
	-10	1710.700085	0.0011615	1754.300517	0.004322
	-20	1710.700888	0.005059	1754.300077	-0.005235
	-30	1710.700555	0.01026	1754.300009	-0.0053

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 1.4 MHz			
		Low Channel		High Channel	
		1710.7MHz		1754.3MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**9**	1710.700265	0.008103	1754.300365	-0.005838
	7.5	1710.700002	-0.005987	1754.300055	-0.00707
	6	1710.700011	0.003571	1754.300006	-0.006254

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 3 MHz			
		Low Channel		High Channel	
		1711.5MHz		1753.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**60**	1711.500364	0.005466	1753.500036	0.003475
	50	1711.500145	0.004171	1753.501456	0.004373
	40	1711.500048	0.004739	1753.500081	0.005499
	30	1711.500554	0.004121	1753.500048	0.004316
	20	1711.500111	0.004137	1753.500145	0.004079
	10	1711.500144	0.005182	1753.500144	0.004879
	0	1711.509862	0.005508	1753.508621	0.005613
	-10	1711.500001	0.004848	1753.500024	0.005564
	-20	1711.500515	0.005717	1753.500212	0.004577
	-30	1711.500141	0.005299	1753.500111	0.004658

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 3 MHz			
		Low Channel		High Channel	
		1711.5MHz		1753.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**9**	1711.500952	0.005274	1753.500365	0.004781
	7.5	1711.500012	0.004789	1753.500875	0.005751
	6	1711.500011	0.004756	1753.500121	0.004552

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 5 MHz			
		Low Channel		High Channel	
		1712.5MHz		1752.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**60**	1712.500036	0.004244	1752.500036	-0.005257
	50	1712.500024	0.005522	1752.500144	-0.004457
	40	1712.500485	0.004394	1752.500046	-0.004751
	30	1712.500014	0.004795	1752.511101	-0.006024
	20	1712.500175	0.00568	1752.500017	-0.003853
	10	1712.500017	0.005647	1752.500841	-0.00351
	0	1712.500862	0.006273	1752.500148	-0.002955
	-10	1712.500361	0.005956	1752.502222	0.0044
	-20	1712.500555	0.00543	1752.500414	-0.003812
	-30	1712.500145	0.0068	1752.500415	0.003706

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 5 MHz			
		Low Channel		High Channel	
		1712.5MHz		1752.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**9**	1712.500333	0.006014	1752.500852	-0.004122
	7.5	1712.500009	0.004586	1752.500008	-0.003828
	6	1712.500111	0.006232	1752.500011	-0.004661

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 10 MHz			
		Low Channel		High Channel	
		1715MHz		1750MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**60**	1715.000356	-0.004179	1750.000326	0.004569
	50	1715.000236	-0.004337	1750.000278	0.005084
	40	1715.002563	-0.00483	1750.000074	0.003719
	30	1715.003687	-0.004738	1750.000177	0.004782
	20	1715.000353	-0.004488	1750.001125	0.005158
	10	1715.000036	0.004012	1750.000472	0.004823
	0	1715.002568	-0.003887	1750.004157	0.004308
	-10	1715.000954	-0.004129	1750.000521	0.005338
	-20	1715.000215	-0.004196	1750.000111	0.005771
	-30	1715.004417	-0.002586	1750.000514	0.005215

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 10 MHz			
		Low Channel		High Channel	
		1715MHz		1750MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**9**	1715.005214	-0.003812	1750.000325	0.005395
	7.5	1715.000325	-0.003754	1750.000029	0.004847
	6	1715.000111	-0.005105	1750.000188	0.004398

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 15 MHz			
		Low Channel		High Channel	
		1717.5MHz		1747.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**60**	1717.500359	0.005189	1747.500035	0.003626
	50	1717.500003	0.004256	1747.500036	0.003266
	40	1717.500067	-0.003556	1747.500364	0.004216
	30	1717.500479	0.004131	1747.503564	0.004101
	20	1717.500185	0.003923	1747.507489	0.003299
	10	1717.500014	0.004498	1747.508745	0.004191
	0	1717.500147	0.004173	1747.500098	0.004781
	-10	1717.500654	0.004539	1747.500852	0.004363
	-20	1717.500045	0.005031	1747.500114	0.005264
	-30	1717.500551	0.004439	1747.500333	0.004208

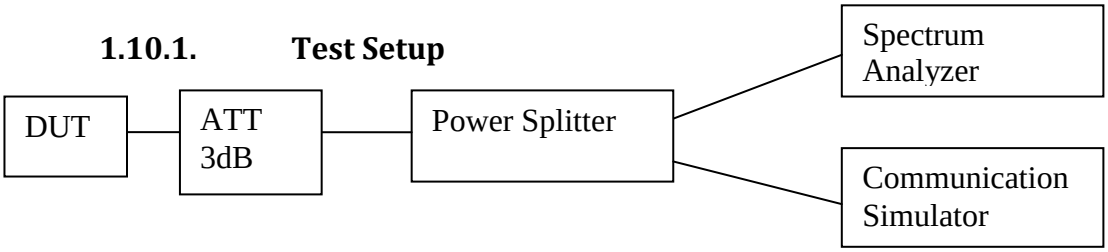
Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 15 MHz			
		Low Channel		High Channel	
		1717.5MHz		1747.5MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**9**	1717.500221	0.00344	1747.500007	0.004028
	7.5	1717.500365	0.004381	1747.500096	0.004175
	6	1717.500258	0.003598	1747.500008	0.003708

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 20 MHz			
		Low Channel		High Channel	
		1720MHz		1745MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**60**	1720.000524	0.003593	1475.001359	-0.004017
	50	1720.000247	0.004416	1745.000368	-0.004304
	40	1720.000458	0.003618	1745.000145	-0.007034
	30	1720.000074	0.004666	1745.005122	-0.004468
	20	1720.000082	0.004849	1745.005714	-0.005624
	10	1720.008521	0.004824	1745.009512	-0.003705
	0	1720.001487	0.005198	1745.000085	-0.004115
	-10	1720.000951	0.00514	1745.007952	-0.004714
	-20	1720.002211	0.004824	1745.005521	-0.004091
	-30	1720.000444	0.004965	1745.009999	-0.004058

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 20 MHz			
		Low Channel		High Channel	
		1720MHz		1745MHz	
		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
LTE Band 4	**9**	1720.003965	0.005231	1745.001254	-0.004369
	7.5	1720.000085	0.004674	1745.000821	-0.004082
	6	1720.000444	0.004383	1745.000021	-0.004828

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) The center frequency of spectrum is the band edge frequency, span is 3MHz, RBW is 1~3% of EBW and VBW is at least 3 times of RBW
6) Record the maximum trace plot into the test report.

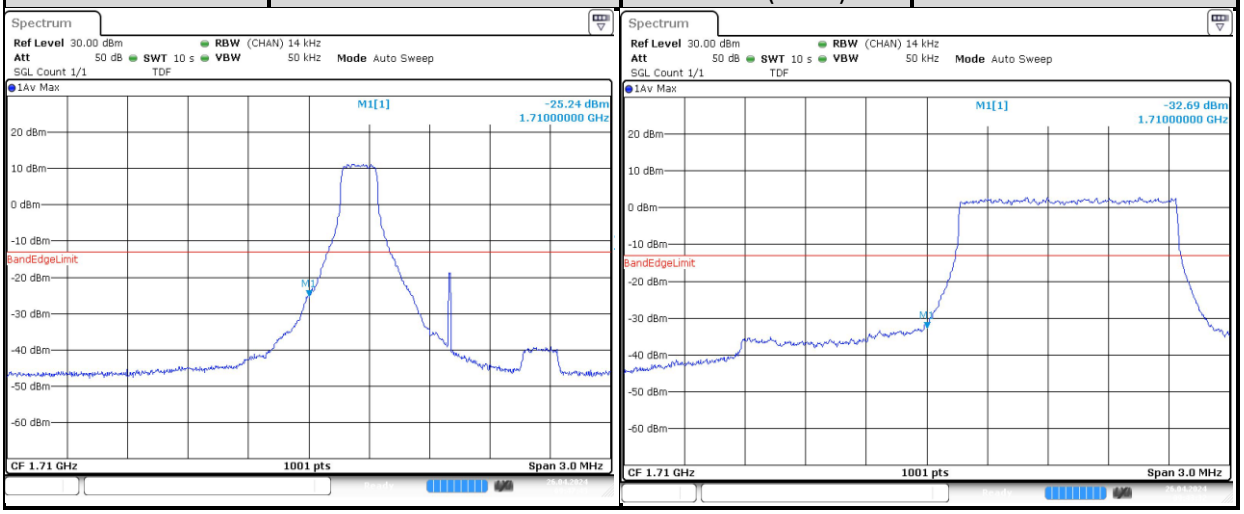
1.10.2. Test Limit

For operations in the 1710-1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB. In the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

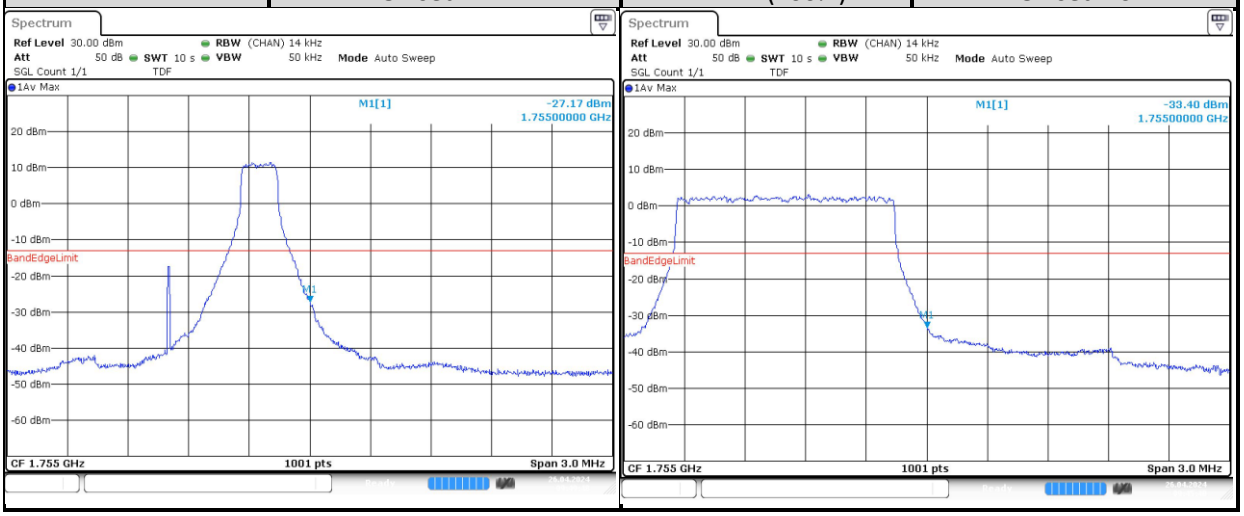
1.10.3. Band Edge Conducted Spurious Emission – LTE Band 4 (1710-1755MHz)

1.4MHz

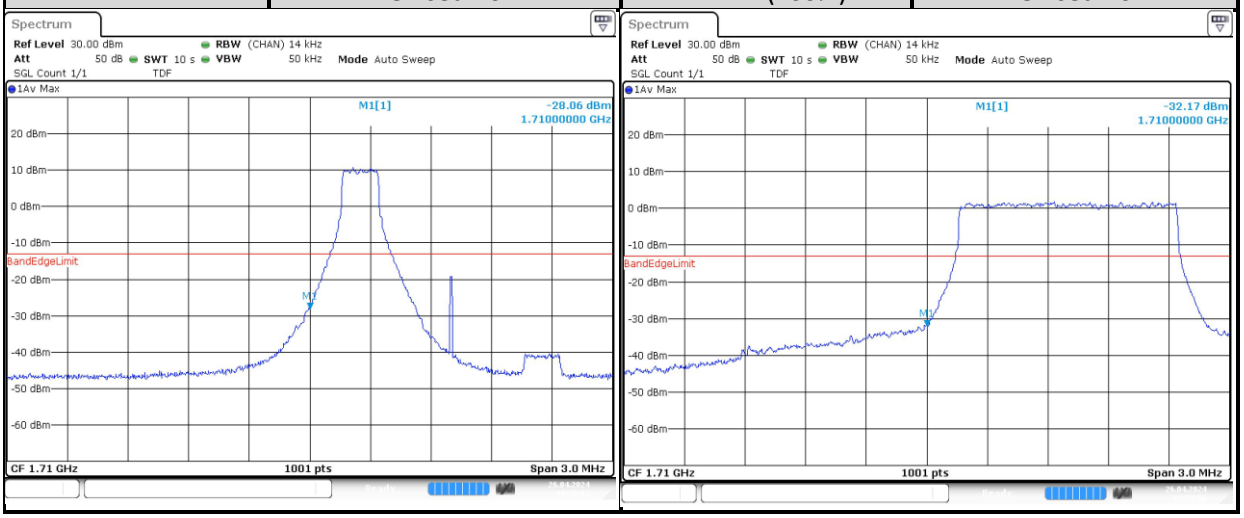
Band 4, 1.4MHz QPSK , Low Channel 19957			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



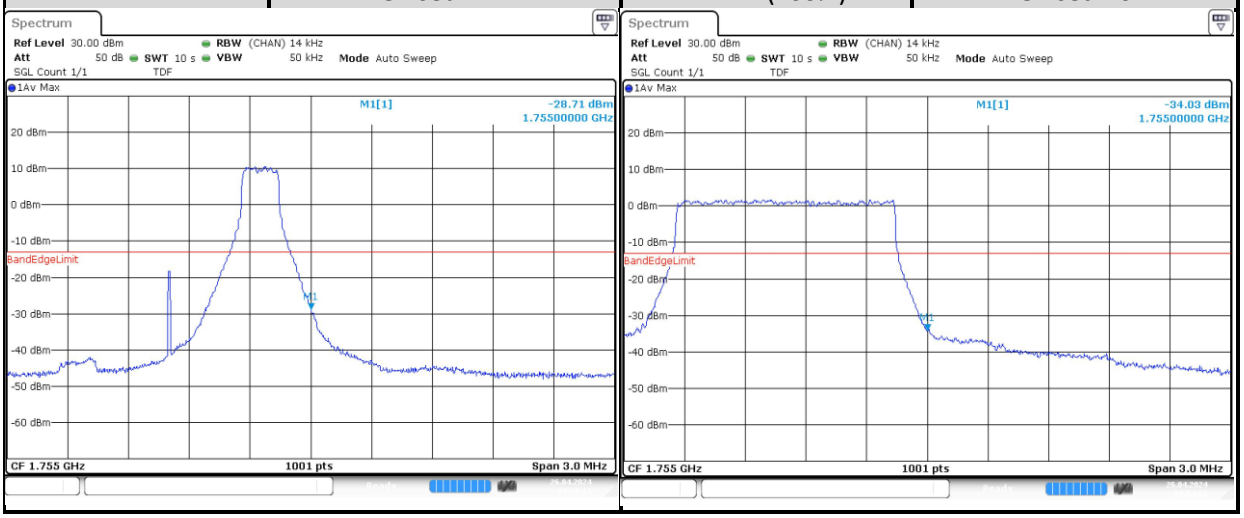
Band 4, 1.4MHz QPSK , High Channel 20393			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0



Band 4, 1.4MHz 16-QAM , Low Channel 19957			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0

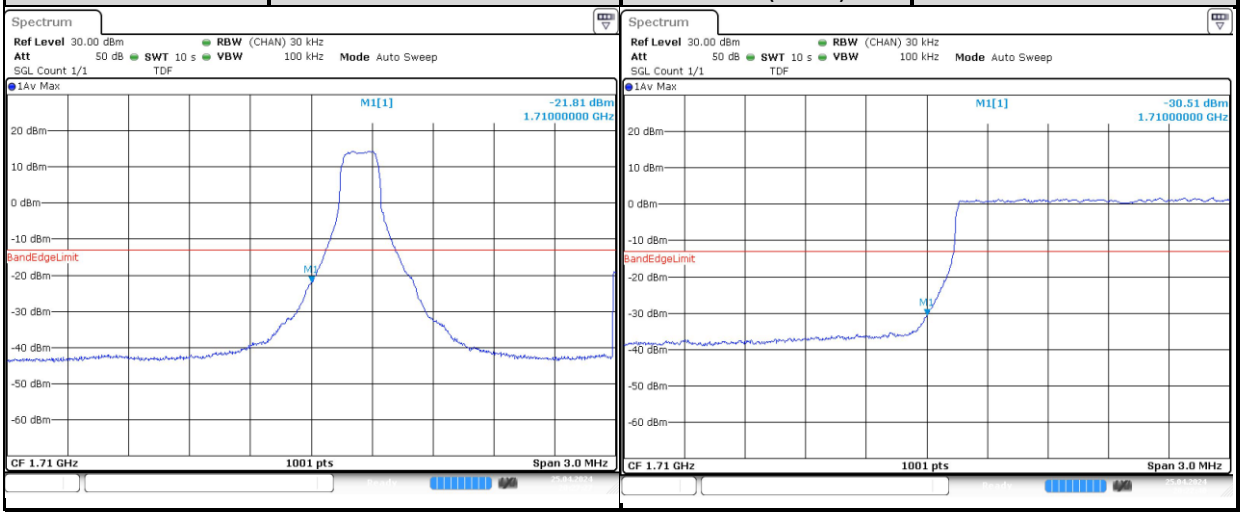


Band 4, 1.4MHz 16-QAM, High Channel 20393			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0

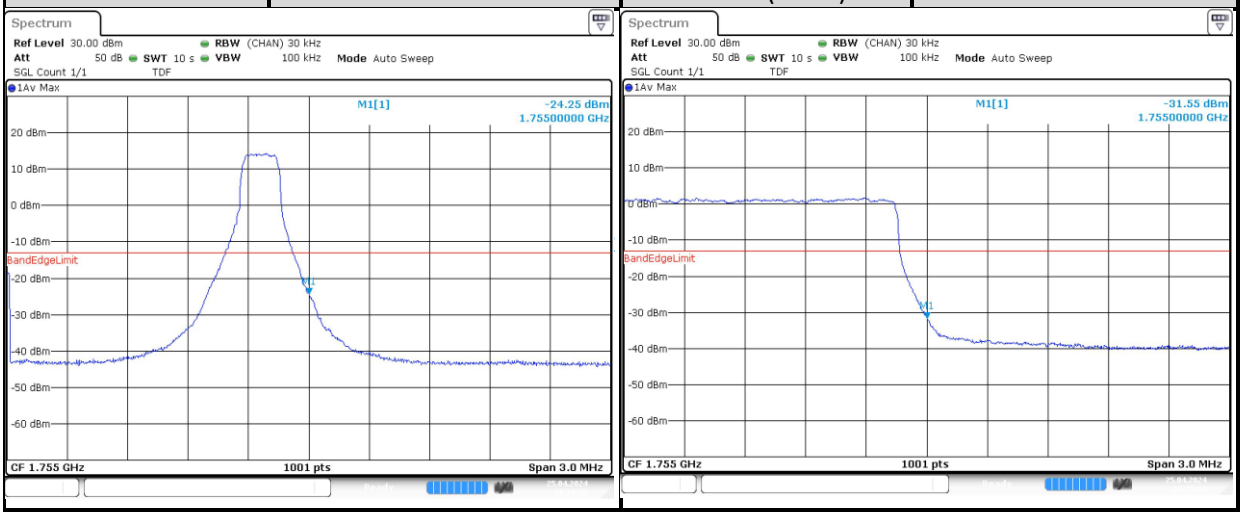


3MHz

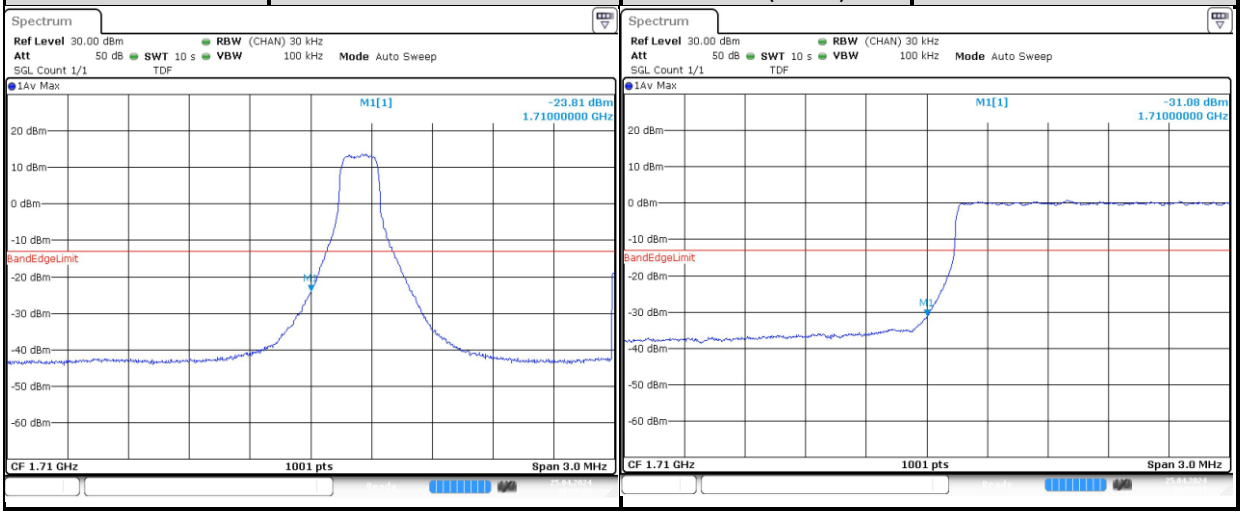
Band 4, 3MHz QPSK, Low CH 19965			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



Band 4, 3MHz QPSK, High CH 20385			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0



Band 4, 3MHz 16-QAM, Low CH 19965			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



Band 4, 3MHz 16-QAM, High CH 20385			
RB = 1	Offset =X-1	RB = X (100%)	Offset = 0