



TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SRF0016 Page(1) of (170)	 eurofins KCTL
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1. Client

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
- Date of Receipt : 2024-11-11

2. Use of Report : Certification

3. Name of Product / Model : Tablet PC / SM-X356B

4. Manufacturer / Country of Origin : Samsung Electronics Co., Ltd. / Vietnam

5. FCC ID : A3LSMX356B

6. Date of Test : 2024-11-29 to 2025-03-06

7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing
(Address: 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)

8. Test method used : FCC Part 2
FCC Part 27 Subpart C

9. Test Result : Refer to the test result in the test report

Affirmation	Tested by	Technical Manager
	Name : Kwonse Kim (Signature)	Name : Harim Lee (Signature)

2025-03-06

Eurofins KCTL Co.,Ltd.

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REPORT REVISION HISTORY

Date	Revision	Page No
2025-03-06	Originally issued	-

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General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ Statement not required by the standard or client used for type testing

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1. General information

Client : Samsung Electronics Co., Ltd.
 Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
 Manufacturer : Samsung Electronics Co., Ltd.
 Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
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 Laboratory : Eurofins KCTL Co.,Ltd.
 Address : 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
 Accreditations : FCC Site Designation No: KR0040, FCC Site Registration No: 687132
 VCCI Registration No. : R-20080, G-20078, C-20059, T-20056
 CAB Identifier: KR0040
 ISED Number: 8035A
 KOLAS No.: KT231

2. Device information

Equipment under test : Tablet PC
 Model : SM-X356B
 Modulation technique : WCDMA : QPSK
 LTE : QPSK, 16QAM, 64QAM, 256QAM
 5G NR DFT-s OFDM : PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM
 5G NR CP OFDM : QPSK, 16QAM, 64QAM, 256QAM
 Power source : DC 3.85 V
 Antenna specification : Main Antenna 1 : LDS Antenna
 (WCDMA 1700, LTE B12/17, 13, 66/4, 5G NR n66, 71)
 Anchor band for EN-DC : Sub Antenna 1 : LDS Antenna (LTE B66/4)
 Antenna gain : Main Antenna 1 (W4) : 2.4 dBi
 Main Antenna 1 (B66/4) : 2.4 dBi
 Main Antenna 1 (B12/17) : -3.3 dBi
 Main Antenna 1 (B13) : -1.6 dBi
 Main Antenna 1 (n66) : 2.4 dBi
 Main Antenna 1 (n71) : -4.0 dBi
 Sub Antenna 1 (B66/4) : 2.3 dBi
 5G NR Antenna operation : SA/NSA
 5G NR SCS : 15 kHz
 Frequency range : WCDMA 1700 : 1 712.4 MHz ~ 1 752.6 MHz
 LTE B4 : 1 710.7 MHz ~ 1 754.3 MHz
 LTE B12 : 699.7 MHz ~ 715.3 MHz
 LTE B13 : 779.5 MHz ~ 784.5 MHz
 LTE B17 : 706.5 MHz ~ 713.5 MHz
 LTE B66 : 1 710.7 MHz ~ 1 779.3 MHz
 5G NR n66 : 1 712.5 MHz ~ 1 777.5 MHz
 5G NR n71 : 665.5 MHz ~ 695.5 MHz
 Bandwidth : LTE B4 : 1.4/3/5/10/15/20 MHz
 LTE B12 : 1.4/3/5/10 MHz
 LTE B13 : 5/10 MHz
 LTE B17 : 5/10 MHz
 LTE B66 : 1.4/3/5/10/15/20 MHz
 5G NR n66 : 5/10/15/20/25/30/40 MHz
 5G NR n71 : 5/10/15/20 MHz
 Software version : X356B.001
 Hardware version : REV1.0
 Test device serial No. : Conducted : R32XB0066LV, R32XB006PFD
 Radiated : R32Y100QWZF
 Operation Temperature : 0 °C ~ 35 °C

2.1. Frequency/channel operations

This device contains the following capabilities:

WCDMA 1700, LTE B4/12/13/17/66, NR n66/71

WCDMA 1700

Ch.	Frequency (MHz)
1312	1 712.4
1412	1 732.4
1513	1 752.6

Table 2.1-1.
RMC/HSDPA/HSUPA/
DC-HSDPA

LTE B4

Ch.	Frequency (MHz)
19957	1 710.7
20175	1 732.5
20393	1 754.3

Table 2.1-2. 1.4M BW

Ch.	Frequency (MHz)
19965	1 711.5
20175	1 732.5
20385	1 753.5

Table 2.1-3. 3M BW

Ch.	Frequency (MHz)
19975	1 712.5
20175	1 732.5
20375	1 752.5

Table 2.1-4. 5M BW

Ch.	Frequency (MHz)
20000	1 715.0
20175	1 732.5
20350	1 750.0

Table 2.1-5. 10M BW

Ch.	Frequency (MHz)
20025	1 717.5
20175	1 732.5
20325	1 747.5

Table 2.1-6. 15M BW

Ch.	Frequency (MHz)
20050	1 720.0
20175	1 732.5
20300	1 745.0

Table 2.1-7. 20M BW

LTE B12

Ch.	Frequency (MHz)
23017	699.7
23095	707.5
23173	715.3

Table 2.1-8. 1.4M BW

Ch.	Frequency (MHz)
23025	700.5
23095	707.5
23165	714.5

Table 2.1-9. 3M BW

Ch.	Frequency (MHz)
23035	701.5
23095	707.5
23155	713.5

Table 2.1-10. 5M BW

Ch.	Frequency (MHz)
23060	704.0
23095	707.5
23130	711.0

Table 2.1-11. 10M BW

LTE B13

Ch.	Frequency (MHz)
23205	779.5
23230	782.0
23255	784.5

Table 2.1-12. 5M BW

Ch.	Frequency (MHz)
-	-
23230	782.0
-	-

Table 2.1-13. 10M BW

LTE B17

Ch.	Frequency (MHz)
23755	706.5
23790	710.0
23825	713.5

Table 2.1-14. 5M BW

Ch.	Frequency (MHz)
23780	709.0
23790	710.0
23800	711.0

Table 2.1-15. 10M BW

LTE B66

Ch.	Frequency (MHz)
131979	1 710.7
132322	1 745.0
132665	1 779.3

Table 2.1-16. 1.4M BW

Ch.	Frequency (MHz)
131987	1 711.5
132322	1 745.0
132657	1 778.5

Table 2.1-17. 3M BW

Ch.	Frequency (MHz)
131997	1 712.5
132322	1 745.0
132647	1 777.5

Table 2.1-18. 5M BW

Ch.	Frequency (MHz)
132022	1 715.0
132322	1 745.0
132622	1 775.0

Table 2.1-19. 10M BW

Ch.	Frequency (MHz)
132047	1 717.5
132322	1 745.0
132597	1 772.5

Table 2.1-20. 15M BW

Ch.	Frequency (MHz)
132072	1 720.0
132322	1 745.0
132572	1 770.0

Table 2.1-21. 20M BW

5G NR n66

Ch.	Frequency (MHz)
342500	1 712.5
349000	1 745.0
355500	1 777.5

Table 2.1-22. 5M BW

Ch.	Frequency (MHz)
343000	1 715.0
349000	1 745.0
355000	1 775.0

Table 2.1-23. 10M BW

Ch.	Frequency (MHz)
343500	1 717.5
349000	1 745.0
354500	1 772.5

Table 2.1-24. 15M BW

Ch.	Frequency (MHz)
344000	1 720.0
349000	1 745.0
354000	1 770.0

Table 2.1-25. 20M BW

Ch.	Frequency (MHz)
344500	1 722.5
349000	1 745.0
353500	1 767.5

Table 2.1-26. 25M BW

Ch.	Frequency (MHz)
345000	1 725.0
349000	1 745.0
353000	1 765.0

Table 2.1-27. 30M BW

Ch.	Frequency (MHz)
346000	1 730.0
349000	1 745.0
352000	1 760.0

Table 2.1-28. 40M BW

5G NR n71

Ch.	Frequency (MHz)
133100	665.5
136100	680.5
139100	695.5

Table 2.1-29. 5M BW

Ch.	Frequency (MHz)
133600	668.0
136100	680.5
138600	693.0

Table 2.1-30. 10M BW

Ch.	Frequency (MHz)
134100	670.5
136100	680.5
138100	690.5

Table 2.1-31. 15M BW

Ch.	Frequency (MHz)
134600	673.0
136100	680.5
137600	688.0

Table 2.1-32. 20M BW

Notes:

1. LTE B4(1 710 – 1 755 MHz) overlaps the entire frequency range of LTE B66(1 710 – 1 780 MHz) and they have same maximum tune-up power. Therefore, B66 was tested as a representative and the test data provided in this report covers B66 as well as B4 subpart to Part 27.
2. LTE B17(706.5 – 713.5 MHz) overlaps the entire frequency range of LTE B12(699.7 – 715.3 MHz) and they have same maximum tune-up power. Therefore, B12 was tested as a representative and the test data provided in this report covers B12 as well as B17 subpart to Part 27.

3. Maximum ERP/EIRP power

WCDMA 1700

Mode	Tx frequency (MHz)	Emission designator	EIRP	
			Max. power (dBm)	Max. power (W)
WCDMA 1700	1 712.4 ~ 1 752.6	4M18F9W	25.69	0.371

LTE B12/17

Mode	Tx frequency (MHz)	Emission designator	ERP	
			Max. power (dBm)	Max. power (W)
LTE B12	699.7 ~ 715.3	1M11G7D	23.78	0.239
		1M11W7D	22.82	0.191
	700.5 ~ 714.5	2M71G7D	23.67	0.233
		2M71W7D	22.95	0.197
LTE B12/17	701.5 ~ 713.5	4M52G7D	23.68	0.233
		4M52W7D	22.79	0.190
	704.0 ~ 711.0	8M99G7D	23.55	0.226
		9M02W7D	22.74	0.188

LTE B13

Mode	Tx frequency (MHz)	Emission designator	ERP	
			Max. power (dBm)	Max. power (W)
LTE B13	779.5 ~ 784.5	4M53G7D	24.79	0.301
		4M52W7D	23.83	0.242
	782	8M97G7D	25.10	0.324
		8M99W7D	24.18	0.262

LTE B66/4

Mode	Tx frequency (MHz)	Emission designator	EIRP	
			Max. power (dBm)	Max. power (W)
LTE Band 66/4	1 710.7 ~ 1 779.3	1M11G7D	25.94	0.393
		1M11W7D	25.07	0.321
	1 711.5 ~ 1 778.5	2M72G7D	25.99	0.397
		2M71W7D	25.02	0.317
	1 712.5 ~ 1 777.5	4M53G7D	26.01	0.399
		4M53W7D	25.06	0.321
	1 715.0 ~ 1 775.0	9M04G7D	26.06	0.404
		9M02W7D	25.15	0.327
	1 717.5 ~ 1 772.5	13M5G7D	25.95	0.393
		13M5W7D	24.99	0.315
	1 720.0 ~ 1 770.0	18M1G7D	25.78	0.379
		18M1W7D	24.92	0.311

5G NR n66

Mode	Tx frequency (MHz)	Emission designator	EIRP	
			Max. power (dBm)	Max. power (W)
5G NR n66	1 712.5 ~ 1 777.5	4M50G7D	24.41	0.276
		4M52W7D	23.99	0.251
	1 715.0 ~ 1 775.0	8M99G7D	24.65	0.292
		9M02W7D	24.50	0.282
	1 717.5 ~ 1 772.5	13M5G7D	25.07	0.321
		13M6W7D	24.68	0.294
	1 720.0 ~ 1 770.0	18M0G7D	25.01	0.317
		18M0W7D	24.42	0.277
	1 722.5 ~ 1 767.5	23M0G7D	24.61	0.289
		23M0W7D	24.06	0.255
	1 725.0 ~ 1 765.0	29M0G7D	24.72	0.296
		29M2W7D	24.15	0.260
	1 730.0 ~ 1 760.0	39M0G7D	24.36	0.273
		38M9W7D	23.90	0.246

5G NR n71

Mode	Tx frequency (MHz)	Emission designator	ERP	
			Max. power (dBm)	Max. power (W)
5G NR n71	665.5 ~ 695.5	4M50G7D	22.45	0.176
		4M56W7D	21.42	0.139
	668.0 ~ 693.0	8M99G7D	23.56	0.227
		8M99W7D	22.50	0.178
	670.5 ~ 690.5	13M5G7D	23.39	0.218
		13M5W7D	22.42	0.174
	673.0 ~ 688.0	17M9G7D	23.30	0.214
		17M9W7D	22.10	0.162

4. Summary of tests

FCC Part section(s)	Parameter	Test Limit	Test Condition	Test results
2.1046	Conducted Output Power	N/A	Conducted	Pass
2.1049	Occupied Bandwidth & 26 dB Bandwidth	N/A		Pass
2.1051 27.53(c) 27.53(g) 27.53(h)	Band Edge Emissions at Antenna Terminal	<43 + 10Log ₁₀ (P) dB at Band Edge and for all out of band emissions, <65 + 10Log ₁₀ (P) dB for all frequencies between 763 ~ 775 MHz and 793 ~ 805 MHz		Pass
	Spurious Emissions at Antenna Terminal			Pass
27.50(d)	Peak to Average Power Ratio	<13 dB		Pass
2.1055 27.54	Frequency stability	Emission must remain in band		Pass
27.50(d)	Equivalent Isotropic Radiated Power	<1 Watts max. EIRP	Radiated	Pass
27.50(b)(10) 27.50(c)(10)	Equivalent Radiated Power	<3 Watts max. ERP		Pass
2.1053 27.53(c)(2)(f) 27.53(g) 27.53(h)	Radiated Spurious Emissions	<43 + 10Log ₁₀ (P) dB for all out of band emissions, <-70 dBW/MHz EIRP - Wideband <-80 dBW/MHz EIRP- Narrowband		Pass

Notes:

- The test procedure(s) in this report were performed in accordance as following.
 - ◆ ANSI C63.26-2015
 - ◆ ANSI/TIA-603-E-2016
 - ◆ KDB 971168 D01 v03r01

4.1. Worst case orientation

- All modes of operation were investigated and the worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations in the test data.
- In the case of radiated spurious emissions, only the worst case bandwidth results were reported.
- Output power measurements were measured on all of modulation. All tests except output power was performed with below modulation with highest power.
 - WCDMA: RMC
 - LTE: QPSK, 16QAM
 - NR: QPSK, 256QAM
 - Waveform: DFT-s OFDM
 - Mode: NSA/SA [Worst case: SA]
- However, the PAPR was evaluated for all wave forms and modulations during pre-test, then all bandwidth was performed for the modulations with the highest result.
 - LTE: QPSK, 16QAM
 - NR: QPSK, 256QAM
 - Waveform: DFT-s OFDM/CP OFDM [Worst case: CP OFDM]
- In case of sub antenna 1 (usage of EN-DC), LTE B66/4 was investigated additionally for EIRP and spurious emissions.
- In case of EN-DC mode, highest EIRP/ERP for stand-alone test case for LTE or 5GNR was configured then the spurious emissions were evaluated for simultaneous transmissions.

Test case	5GNR Band	NR Antenna	LTE EN-DC Band		
			Main Antenna 1	Main Antenna 2	Sub Antenna 1
1	NR n66	Main Antenna 1	B5, 12, 13	-	B2
2	NR n71	Main Antenna 1	B66	-	-

*Tested EN-DC combinations for NSA.

- All configurations have been performed (Stand-alone, Stand-alone with TA, With accessories).
 - Accessory type: S-pen, TA, DLC, Protective cover
- The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z and all of the radiated tests have been performed with the accessories as below. It was determined that below orientation was worst case orientation for each band.

Band	Stand-alone			Stand-alone with TA			With accessories		
	X-axis	Y-axis	Z-axis	X-axis	Y-axis	Z-axis	X-axis	Y-axis	Z-axis
WCDMA1700	-	-	-	-	-	-	O	-	-
LTE B4	-	-	-	-	-	-	O	-	-
LTE B12	-	-	-	-	-	-	O	-	-
LTE B13	-	-	-	-	-	-	O	-	-
LTE B17	-	-	-	-	-	-	O	-	-
LTE B66	-	-	-	-	-	-	O	-	-
NR n66	-	-	-	-	-	-	O	-	-
NR n71	-	-	-	-	-	-	O	-	-
LTE B66/4 (Sub ANT)	-	-	-	-	-	-	O	-	-

9. Test Condition

- The measurement was performed with various configurations then worst results are reported.

1) Radiated measurement

Test Description	Mode	Condition		Test Channel
Radiated power	WCDMA	RMC (12.2 kbps)		Low, Middle, High
	LTE	QPSK, 16QAM	RB Size: 1	
	NR	DFT-s OFDM: QPSK, 16QAM	RB Size: 1	
Radiated Spurious Emissions	WCDMA	RMC (12.2 kbps)		Low, Middle, High
	LTE	QPSK	RB Size: 1	
	NR	DFT-s OFDM: QPSK	RB Size: 1	

Band	Bandwidth (MHz)	RB size	RB offset
LTE B4	1.4, 3, 5, 10, 15, 20	1	Low, Middle, High
LTE B12	1.4, 3, 5, 10	1	Low, Middle, High
LTE B13	5, 10	1	Low, Middle, High
LTE B17	5, 10	1	Low, Middle, High
LTE B66	1.4, 3, 5, 10, 15, 20	1	Low, Middle, High
NR n66	5, 10, 15, 20, 25, 30, 40	1	Low, Middle, High
NR n71	5, 10, 15, 20	1	Low, Middle, High
LTE B66/4 (Sub ANT)	1.4, 3, 5, 10, 15, 20	1	Low, Middle, High

2) Conducted measurement

Test Description	Mode	Condition		Test Channel
OBW & 26 dB BW	WCDMA	RMC (12.2 kbps)		Low, Middle, High
	LTE	QPSK, 16QAM	RB Size: Full	
	NR	DFT-s OFDM: QPSK, 16QAM	RB Size: Full	
PAPR	WCDMA	RMC (12.2 kbps)		Middle
	LTE	QPSK, 16QAM	RB Size: Full	
	NR	CP OFDM: QPSK, 256QAM	RB Size: Full	
Stability	WCDMA	RMC (12.2 kbps)		Middle
	LTE	QPSK	RB Size: Full	
	NR	DFT-s OFDM: QPSK	RB Size: Full	
Band Edge	WCDMA	RMC (12.2 kbps)		Low, High
	LTE	QPSK	RB Size: 1, Full	
	NR	DFT-s OFDM: QPSK	RB Size: 1, Full	
Spurious Emissions	WCDMA	RMC (12.2 kbps)		Low, Middle, High
	LTE	QPSK	RB Size: 1	
	NR	DFT-s OFDM: QPSK	RB Size: 1	

Band	Bandwidth (MHz)	RB size	RB offset
LTE B4	1.4, 3, 5, 10, 15, 20	1	0, 5, 14, 24, 49, 74, 99
		Full	0
LTE B12	1.4, 3, 5, 10	1	0, 5, 14, 24, 49
		Full	0
LTE B13	5, 10	1	0, 24, 49
		Full	0
LTE B17	5, 10	1	0, 24, 49
		Full	0
LTE B66	1.4, 3, 5, 10, 15, 20	1	0, 5, 14, 24, 49, 74, 99
		Full	0
NR n66	5, 10, 15, 20, 25, 30, 40	1	0, 23, 50, 77, 104 131, 158, 214
		Full	0
NR n71	5, 10, 15, 20	1	0, 23, 50, 77, 104
		Full	0
LTE B66 (Sub ANT)	1.4, 3, 5, 10, 15, 20	1	0, 5, 14, 24, 49, 74, 99
		Full	0

5. Measurement uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014.

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicated a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$)	
Conducted RF power	0.9 dB	
Conducted spurious emissions	2.0 dB	
Radiated spurious emissions	Below 1 000 MHz	2.5 dB
	1 000 MHz to 18 000 MHz	2.5 dB
	Above 18 000 MHz	2.6 dB

6. Measurement results explanation example

[WCDMA, LTE]

Frequency (MHz)	Factor(dB)	Frequency (MHz)	Factor(dB)
30	6.15	11 000	9.26
50	6.19	12 000	8.88
100	6.27	13 000	6.58
200	6.40	14 000	9.49
300	6.50	15 000	10.19
400	6.59	16 000	10.31
500	6.67	17 000	10.19
600	6.71	18 000	10.51
700	6.78	19 000	10.77
800	6.84	20 000	10.96
900	6.91	21 000	10.91
1 000	6.95	22 000	11.03
2 000	7.40	23 000	11.14
3 000	7.67	24 000	10.80
4 000	8.01	25 000	10.72
5 000	8.08	26 000	10.71
6 000	8.27	26 500	11.14
7 000	8.19	27 000	11.30
8 000	8.83	28 000	12.27
9 000	8.90	29 000	13.16
10 000	9.17	30 000	12.10

Note.

- Offset(dB) = RF cable loss(dB) + Divider (dB)

[NR]

Frequency (MHz)	Factor(dB)	Frequency (MHz)	Factor(dB)
30	6.19	11 000	9.72
50	6.23	12 000	9.53
100	6.31	13 000	9.91
200	6.44	14 000	9.38
300	6.57	15 000	9.98
400	6.63	16 000	9.81
500	6.73	17 000	10.35
600	6.77	18 000	11.09
700	6.86	19 000	10.16
800	6.92	20 000	10.01
900	6.97	21 000	10.52
1 000	7.05	22 000	11.09
2 000	7.50	23 000	11.04
3 000	7.81	24 000	10.97
4 000	8.19	25 000	10.96
5 000	8.66	26 000	11.07
6 000	9.34	26 500	11.46
7 000	8.42	27 000	12.05
8 000	8.97	28 000	12.21
9 000	9.18	29 000	12.13
10 000	9.38	30 000	12.03

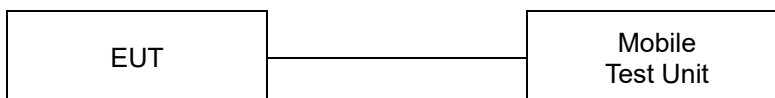
Note.

- Offset(dB) = RF cable loss(dB) + Divider (dB)

7. Test results

7.1. Conducted output power

Test setup



Test procedure

971168 D01 v03r01 – Section 5.2

ANSI C63.26-2015 – Section 5.2.4.2

CFR 47 - Section §2.1046

Test settings

When an average power meter is used to perform RF output power measurements, the fundamental condition that measurement be performed only over durations of active transmissions at maximum output power level applies. Thus, an average power meter can always be used to perform the measurement when the EUT can be configured to transmit continuously.

If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle < 98%), then the following options can be implemented to facilitate measurement of the average power with an average power meter:

- a) A gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only during active transmission bursts at maximum output power levels.
- b) A conventional average power meter with no signal gating capability can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to $[10\log (1/\text{duty cycle})]$. See 5.2.4.3.4 for guidance with respect to measuring the transmitter duty cycle.

See item r) of 4.1 for more information regarding power meter functional requirements and limitations, and consult the instrumentation-specific application literature for proper set-up and use.

Note:

1. Offset(dB) = RF cable loss(dB)

Test results

Main Antenna

Test Band	Test mode	Maximum Average Power (dBm)		
		Channel		
		Low	Middle	High
WCDMA 1700	RMC	24.15	24.01	24.10
	HSDPA-Subtest 1	23.00	22.95	22.97
	HSDPA-Subtest 2	22.21	22.13	22.16
	HSDPA-Subtest 3	21.35	21.37	21.40
	HSDPA-Subtest 4	21.29	21.60	21.27
	HSUPA-Subtest 1	23.02	23.00	22.96
	HSUPA-Subtest 2	20.95	20.98	21.14
	HSUPA-Subtest 3	22.01	22.03	22.00
	HSUPA-Subtest 4	20.99	20.96	20.99
	HSUPA-Subtest 5	23.00	22.99	23.05
	DC-HSDPA-Subtest 1	23.05	23.00	23.04
	DC-HSDPA-Subtest 2	23.01	23.01	23.05
	DC-HSDPA-Subtest 3	22.49	22.51	22.53
	DC-HSDPA-Subtest 4	22.51	22.46	22.50

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B4	1.4	QPSK	1	0	24.17	23.99	23.98
			1	3	24.18	24.03	23.99
			1	5	24.18	23.98	24.02
			3	0	24.14	24.04	24.00
			3	1	24.15	24.01	23.99
			3	3	24.17	24.00	24.02
			6	0	23.09	23.02	22.96
		16QAM	1	0	23.30	23.15	23.14
			1	3	23.39	23.18	23.08
			1	5	23.37	23.11	22.93
			3	0	23.11	22.96	23.12
			3	1	23.14	23.16	23.06
			3	3	23.31	22.98	23.01
			6	0	22.20	22.01	22.04
		64QAM	1	0	22.24	22.06	22.08
			1	3	22.20	22.19	22.08
			1	5	22.04	22.09	22.14
			3	0	22.31	22.11	22.08
			3	1	22.36	22.09	22.01
			3	3	22.16	22.12	22.03
			6	0	21.18	21.00	20.89
		256QAM	1	0	19.07	19.06	18.98
			1	3	19.14	18.97	19.16
			1	5	19.17	19.07	19.07
			3	0	19.24	19.07	19.00
			3	1	19.12	19.08	18.97
			3	3	19.18	19.13	19.05
			6	0	19.15	19.00	19.05
	3	QPSK	1	0	24.10	24.03	24.00
			1	8	24.22	24.04	24.06
			1	14	24.05	23.96	23.92
			8	0	23.15	23.07	22.95
			8	4	23.18	23.10	22.99
			8	7	23.17	23.05	23.00
			15	0	23.16	23.08	22.91
			1	0	23.27	23.25	23.01
		16QAM	1	8	23.46	23.24	23.13
			1	14	23.28	23.10	22.99
			8	0	22.21	22.09	21.96
			8	4	22.21	22.14	22.06
			8	7	22.19	22.09	22.04
			15	0	22.15	22.09	21.92
		64QAM	1	0	22.01	21.99	22.02
			1	8	22.28	22.17	22.17
			1	14	22.39	22.14	22.05
			8	0	21.17	21.07	21.03
			8	4	21.19	21.15	21.10
			8	7	21.16	21.19	21.06
			15	0	21.16	21.13	20.93
		256QAM	1	0	19.16	19.13	19.04
			1	8	19.32	19.17	19.26
			1	14	19.28	18.87	19.02
			8	0	19.20	19.11	19.03
			8	4	19.20	19.12	19.02
			8	7	19.20	19.17	19.03
			15	0	19.19	19.12	18.98

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B4	5	QPSK	1	0	24.14	24.04	23.92
			1	12	24.22	24.07	24.05
			1	24	24.18	24.00	23.99
			12	0	23.17	22.98	22.91
			12	7	23.23	23.07	23.03
			12	13	23.16	23.05	23.00
			25	0	23.20	23.09	23.04
		16QAM	1	0	23.25	23.12	23.19
			1	12	23.28	23.25	23.18
			1	24	23.37	23.20	23.09
			12	0	22.25	22.01	21.88
			12	7	22.24	22.10	22.02
			12	13	22.24	22.06	22.00
			25	0	22.20	22.11	22.04
		64QAM	1	0	22.34	22.37	22.27
			1	12	22.28	22.08	22.14
			1	24	22.18	22.18	22.22
			12	0	21.17	21.04	20.99
			12	7	21.19	21.07	21.04
			12	13	21.29	21.05	20.93
			25	0	21.19	21.09	21.04
		256QAM	1	0	19.15	19.05	18.93
			1	12	19.19	19.11	19.05
			1	24	19.26	19.17	19.14
			12	0	19.15	18.99	18.99
			12	7	19.15	19.00	19.11
			12	13	19.15	19.06	19.01
			25	0	19.15	19.06	19.04
	10	QPSK	1	0	24.14	24.04	24.02
			1	25	24.22	24.07	24.05
			1	49	24.08	24.03	24.00
			25	0	23.20	23.05	22.95
			25	12	23.21	23.09	23.02
			25	25	23.15	23.04	23.00
			50	0	23.22	23.07	23.03
		16QAM	1	0	23.29	23.11	22.87
			1	25	23.34	23.25	23.23
			1	49	23.15	23.17	23.06
			25	0	22.25	22.02	21.92
			25	12	22.21	22.12	22.04
			25	25	22.20	22.10	22.03
			50	0	22.17	22.07	22.04
		64QAM	1	0	22.10	22.05	22.03
			1	25	22.26	22.12	22.22
			1	49	22.30	22.24	22.17
			25	0	21.13	21.13	20.90
			25	12	21.26	21.15	21.07
			25	25	21.17	21.05	21.08
			50	0	21.22	21.07	21.12
		256QAM	1	0	19.30	19.23	18.92
			1	25	19.37	19.12	19.23
			1	49	19.21	19.08	19.16
			25	0	19.10	19.10	18.90
			25	12	19.24	19.19	19.10
			25	25	19.18	19.10	19.08
			50	0	19.13	19.12	19.04

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B4	15	QPSK	1	0	24.04	23.96	23.85
			1	36	23.99	23.89	23.87
			1	74	23.92	23.90	23.90
			36	0	22.98	22.92	22.89
			36	18	23.06	22.93	22.84
			36	37	23.02	22.92	22.89
			75	0	23.06	22.93	22.79
		16QAM	1	0	23.20	23.15	23.05
			1	36	23.05	23.16	23.04
			1	74	23.13	23.05	23.05
			36	0	22.02	21.85	21.87
			36	18	22.06	21.94	21.83
			36	37	22.03	21.95	21.89
			75	0	22.02	21.94	21.82
		64QAM	1	0	22.46	22.19	22.00
			1	36	22.09	21.96	22.16
			1	74	22.26	22.38	22.08
			36	0	21.00	20.85	20.84
			36	18	21.07	20.98	20.82
			36	37	21.10	20.99	20.95
			75	0	21.06	21.03	20.85
		256QAM	1	0	19.13	18.73	18.65
			1	36	19.11	19.16	19.10
			1	74	19.35	19.04	19.03
			36	0	18.96	18.83	18.77
			36	18	19.10	18.99	18.86
			36	37	19.06	18.93	18.97
			75	0	19.02	19.04	18.89
	20	QPSK	1	0	23.99	24.00	23.94
			1	49	24.04	23.91	23.83
			1	99	23.91	23.84	23.82
			50	0	23.07	22.91	22.85
			50	24	23.04	22.95	22.84
			50	50	22.99	22.93	22.90
			100	0	23.01	22.93	22.83
		16QAM	1	0	23.15	23.01	23.10
			1	49	23.36	23.06	23.19
			1	99	23.03	22.93	22.94
			50	0	22.08	21.88	21.87
			50	24	22.06	21.97	21.83
			50	50	21.97	21.91	21.89
			100	0	22.01	21.95	21.78
		64QAM	1	0	22.14	22.10	21.90
			1	49	22.01	21.89	21.95
			1	99	22.36	22.13	22.14
			50	0	21.03	20.95	20.78
			50	24	21.09	21.03	20.94
			50	50	21.10	20.97	20.94
			100	0	20.97	20.95	20.90
		256QAM	1	0	18.88	19.11	18.95
			1	49	19.03	19.22	19.14
			1	99	19.07	19.24	18.81
			50	0	18.93	18.95	18.81
			50	24	19.06	18.88	18.97
			50	50	19.01	19.10	18.96
			100	0	19.06	18.98	18.92

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B12	1.4	QPSK	1	0	23.75	23.63	23.80
			1	3	23.72	23.65	23.91
			1	5	23.75	23.69	23.84
			3	0	23.76	23.65	23.82
			3	1	23.74	23.70	23.88
			3	3	23.75	23.66	23.81
			6	0	22.74	22.67	22.75
		16QAM	1	0	22.83	22.85	23.06
			1	3	23.03	22.85	23.10
			1	5	22.73	22.79	22.96
			3	0	22.83	22.68	22.93
			3	1	22.82	22.67	22.94
			3	3	22.77	22.68	22.87
			6	0	21.81	21.65	21.73
		64QAM	1	0	21.98	21.87	21.86
			1	3	21.77	21.71	21.82
			1	5	21.80	21.63	21.81
			3	0	21.78	21.68	21.72
			3	1	21.82	21.65	21.92
			3	3	21.79	21.72	21.88
			6	0	20.75	20.58	20.76
		256QAM	1	0	18.81	18.68	18.78
			1	3	18.73	18.64	18.98
			1	5	18.64	18.61	18.95
			3	0	18.71	18.69	18.70
			3	1	18.71	18.64	18.74
			3	3	18.63	18.56	18.84
			6	0	18.68	18.64	18.77
	3	QPSK	1	0	23.75	23.63	23.79
			1	8	23.79	23.73	23.86
			1	14	23.71	23.64	23.78
			8	0	22.78	22.62	22.76
			8	4	22.84	22.72	22.88
			8	7	22.73	22.69	22.88
			15	0	22.78	22.71	22.77
			1	0	22.84	22.67	22.93
		16QAM	1	8	22.93	22.80	23.09
			1	14	22.91	23.02	22.95
			8	0	21.88	21.66	21.82
			8	4	21.84	21.72	21.94
			8	7	21.80	21.78	21.92
			15	0	21.78	21.70	21.84
		64QAM	1	0	21.60	21.73	21.97
			1	8	21.75	21.96	22.08
			1	14	21.69	21.62	21.89
			8	0	20.71	20.61	20.77
			8	4	20.86	20.62	20.80
			8	7	20.64	20.67	20.84
			15	0	20.71	20.64	20.75
		256QAM	1	0	18.77	18.59	18.57
			1	8	18.92	18.66	18.93
			1	14	18.71	18.55	18.70
			8	0	18.63	18.58	18.71
			8	4	18.71	18.69	18.84
			8	7	18.79	18.64	18.86
			15	0	18.65	18.63	18.71

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B12	5	QPSK	1	0	23.77	23.61	23.80
			1	12	23.85	23.69	23.89
			1	24	23.70	23.73	23.83
			12	0	22.77	22.58	22.78
			12	7	22.84	22.74	22.91
			12	13	22.73	22.74	22.87
			25	0	22.76	22.71	22.86
		16QAM	1	0	22.86	22.73	23.10
			1	12	22.92	23.05	23.13
			1	24	22.86	22.83	23.10
			12	0	21.79	21.63	21.73
			12	7	21.80	21.71	21.88
			12	13	21.72	21.67	21.82
			25	0	21.79	21.74	21.87
		64QAM	1	0	21.86	21.91	22.02
			1	12	21.87	21.86	21.99
			1	24	21.75	21.72	21.86
			12	0	20.75	20.62	20.74
			12	7	20.83	20.71	20.81
			12	13	20.67	20.65	20.82
			25	0	20.74	20.65	20.83
		256QAM	1	0	18.71	18.58	18.70
			1	12	18.75	18.88	18.78
			1	24	18.59	18.82	18.72
			12	0	18.75	18.57	18.77
	12		7	18.70	18.64	18.84	
	12		13	18.74	18.61	18.79	
	25		0	18.64	18.61	18.69	
	10	QPSK	1	0	23.78	23.76	23.74
			1	25	23.81	23.72	23.84
			1	49	23.61	23.69	23.78
			25	0	22.73	22.64	22.72
			25	12	22.76	22.73	22.83
			25	25	22.69	22.75	22.89
			50	0	22.73	22.74	22.78
		16QAM	1	0	22.89	22.97	22.64
			1	25	22.87	22.78	22.89
			1	49	22.78	22.90	22.94
			25	0	21.71	21.69	21.72
			25	12	21.76	21.74	21.78
			25	25	21.72	21.69	21.89
			50	0	21.75	21.74	21.80
		64QAM	1	0	22.10	21.70	21.88
			1	25	21.95	21.92	21.95
			1	49	21.79	22.03	21.77
			25	0	20.68	20.61	20.64
			25	12	20.73	20.69	20.77
			25	25	20.61	20.73	20.83
			50	0	20.64	20.76	20.69
		256QAM	1	0	18.86	18.62	18.73
			1	25	18.87	18.66	18.78
			1	49	18.63	18.70	18.85
			25	0	18.69	18.64	18.72
	25		12	18.70	18.66	18.76	
	25		25	18.68	18.67	18.80	
	50		0	18.70	18.63	18.77	

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B13	5	QPSK	1	0	24.04	23.97	23.89
			1	12	24.07	24.04	23.94
			1	24	23.93	23.83	23.86
			12	0	23.03	22.95	22.84
			12	7	23.04	23.04	22.90
			12	13	22.99	22.92	22.91
		16QAM	25	0	23.02	22.94	22.83
			1	0	23.17	23.05	23.13
			1	12	23.27	23.05	23.10
			1	24	23.06	22.94	23.07
			12	0	21.92	21.99	21.82
			12	7	21.97	22.00	21.84
			12	13	21.87	21.97	21.90
			25	0	22.00	21.93	21.81
		64QAM	1	0	22.15	22.05	22.10
			1	12	22.18	22.09	22.12
			1	24	22.02	22.01	21.85
			12	0	20.98	20.97	20.84
			12	7	21.04	20.92	20.83
			12	13	20.97	20.81	20.86
			25	0	20.96	20.95	20.74
		256QAM	1	0	19.01	19.01	18.92
			1	12	19.05	19.14	19.12
			1	24	18.96	18.74	18.83
			12	0	19.00	18.89	18.85
			12	7	19.05	18.96	18.75
			12	13	18.95	18.84	18.84
			25	0	19.01	18.86	18.75
	10	QPSK	1	0	-	24.03	-
			1	25	-	23.96	-
			1	49	-	23.91	-
			25	0	-	23.02	-
			25	12	-	23.01	-
			25	25	-	22.90	-
			50	0	-	22.95	-
		16QAM	1	0	-	23.38	-
			1	25	-	23.02	-
			1	49	-	22.92	-
			25	0	-	22.04	-
			25	12	-	22.01	-
			25	25	-	21.97	-
			50	0	-	21.98	-
		64QAM	1	0	-	22.19	-
			1	25	-	22.05	-
			1	49	-	21.90	-
			25	0	-	20.98	-
			25	12	-	20.98	-
			25	25	-	20.93	-
			50	0	-	20.94	-
		256QAM	1	0	-	19.12	-
			1	25	-	18.95	-
			1	49	-	18.82	-
			25	0	-	19.04	-
			25	12	-	18.98	-
			25	25	-	18.92	-
			50	0	-	18.96	-

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B17	5	QPSK	1	0	23.66	23.78	23.81
			1	12	23.74	23.85	23.89
			1	24	23.71	23.81	23.84
			12	0	22.60	22.69	22.78
			12	7	22.77	22.82	22.91
			12	13	22.72	22.80	22.88
			25	0	22.71	22.71	22.89
		16QAM	1	0	22.96	22.87	22.81
			1	12	23.00	22.72	22.87
			1	24	22.87	22.86	22.90
			12	0	21.65	21.71	21.77
			12	7	21.74	21.86	21.86
			12	13	21.72	21.83	21.88
			25	0	21.71	21.70	21.91
		64QAM	1	0	21.72	21.94	21.98
			1	12	21.76	21.91	22.01
			1	24	21.88	21.85	21.94
			12	0	20.61	20.70	20.74
			12	7	20.73	20.77	20.77
			12	13	20.63	20.75	20.75
			25	0	20.68	20.64	20.76
		256QAM	1	0	18.75	18.74	18.82
			1	12	18.87	18.84	19.02
			1	24	18.51	19.00	18.70
			12	0	18.59	18.65	18.78
			12	7	18.65	18.80	18.76
			12	13	18.66	18.70	18.84
			25	0	18.61	18.60	18.83
	10	QPSK	1	0	23.69	23.74	23.74
			1	25	23.77	23.82	23.89
			1	49	23.83	23.87	23.84
			25	0	22.73	22.72	22.73
			25	12	22.84	22.73	22.76
			25	25	22.77	22.78	22.86
			50	0	22.79	22.73	22.80
		16QAM	1	0	22.76	22.74	22.95
			1	25	22.97	22.90	23.00
			1	49	23.00	22.94	23.13
			25	0	21.76	21.73	21.73
			25	12	21.87	21.73	21.76
			25	25	21.79	21.81	21.83
			50	0	21.79	21.75	21.72
		64QAM	1	0	21.74	21.83	21.85
			1	25	21.82	21.93	21.80
			1	49	21.74	21.95	21.87
			25	0	20.67	20.67	20.72
			25	12	20.80	20.65	20.76
			25	25	20.72	20.79	20.77
			50	0	20.71	20.75	20.79
		256QAM	1	0	18.73	18.71	18.70
			1	25	18.91	18.89	18.99
			1	49	18.98	18.90	18.97
			25	0	18.65	18.74	18.71
			25	12	18.72	18.71	18.80
			25	25	18.75	18.77	18.80
			50	0	18.73	18.72	18.77

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B66	1.4	QPSK	1	0	24.14	24.07	24.08
			1	3	24.24	24.09	24.00
			1	5	24.17	24.04	23.98
			3	0	24.16	24.11	24.04
			3	1	24.18	24.06	24.00
			3	3	24.17	24.10	24.04
			6	0	23.15	23.07	23.01
		16QAM	1	0	23.32	23.29	23.12
			1	3	23.37	23.30	23.11
			1	5	23.37	23.30	23.28
			3	0	23.20	23.18	23.03
			3	1	23.19	23.21	23.04
			3	3	23.24	23.16	23.09
			6	0	22.18	22.10	21.97
		64QAM	1	0	22.15	22.25	22.04
			1	3	22.26	22.09	22.09
			1	5	22.30	22.09	22.32
			3	0	22.14	22.11	22.12
			3	1	22.23	22.17	22.14
			3	3	22.15	22.15	22.03
			6	0	21.11	21.08	21.06
		256QAM	1	0	19.17	19.22	19.15
			1	3	19.18	18.94	19.00
			1	5	19.40	19.18	19.11
			3	0	19.05	19.25	19.13
			3	1	19.21	19.13	19.07
			3	3	19.16	19.14	19.08
			6	0	19.12	19.07	19.07
	3	QPSK	1	0	24.14	24.08	23.97
			1	8	24.21	24.15	24.11
			1	14	24.13	24.10	24.01
			8	0	23.21	23.04	22.94
			8	4	23.23	23.16	23.06
			8	7	23.17	23.13	23.04
			15	0	23.20	23.05	22.94
		16QAM	1	0	23.32	23.19	23.15
			1	8	23.38	23.37	23.32
			1	14	23.22	22.89	23.20
			8	0	22.23	22.06	21.99
			8	4	22.26	22.18	22.05
			8	7	22.20	22.08	22.04
			15	0	22.17	22.03	22.03
		64QAM	1	0	22.29	22.21	22.27
			1	8	22.39	22.25	22.26
			1	14	22.21	22.04	22.18
			8	0	21.23	21.11	20.99
			8	4	21.24	21.16	21.13
			8	7	21.15	21.15	21.12
			15	0	21.14	21.09	20.92
		256QAM	1	0	19.25	19.11	19.04
			1	8	19.34	19.36	19.11
			1	14	19.17	19.08	19.12
			8	0	19.10	19.11	19.02
			8	4	19.27	19.22	19.12
			8	7	19.11	19.22	19.12
			15	0	19.13	19.10	19.00

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B66	5	QPSK	1	0	24.17	24.07	24.04
			1	12	24.21	24.14	24.06
			1	24	24.15	24.10	23.97
			12	0	23.20	23.05	23.07
			12	7	23.20	23.18	23.06
			12	13	23.23	23.14	23.03
			25	0	23.20	23.04	23.05
		16QAM	1	0	23.13	23.24	23.17
			1	12	23.28	23.24	23.06
			1	24	23.40	23.21	23.17
			12	0	22.18	22.06	22.01
			12	7	22.24	22.13	22.05
			12	13	22.18	22.13	22.02
			25	0	22.19	22.06	22.04
		64QAM	1	0	22.37	22.30	22.05
			1	12	22.44	22.19	22.19
			1	24	22.30	22.17	22.27
			12	0	21.15	21.05	21.06
			12	7	21.13	21.24	21.19
			12	13	21.20	21.13	21.06
			25	0	21.15	21.01	21.03
		256QAM	1	0	19.11	19.12	19.32
			1	12	19.10	19.10	19.14
			1	24	19.35	18.92	19.21
			12	0	19.16	19.06	19.11
			12	7	19.21	19.06	19.12
	12		13	19.22	19.10	19.10	
	25		0	19.19	19.03	19.06	
	10	QPSK	1	0	24.14	24.16	24.00
			1	25	24.23	24.17	24.09
			1	49	24.13	24.06	24.03
			25	0	23.13	23.05	22.94
			25	12	23.28	23.09	23.10
			25	25	23.21	23.10	23.03
			50	0	23.24	23.03	23.06
		16QAM	1	0	23.35	22.97	23.30
			1	25	23.43	23.18	23.20
			1	49	23.21	23.30	23.08
			25	0	22.14	22.12	21.99
			25	12	22.23	22.13	22.08
			25	25	22.21	22.14	22.06
			50	0	22.26	22.08	22.04
		64QAM	1	0	22.40	22.41	22.31
			1	25	22.29	22.23	22.25
			1	49	22.52	22.24	22.22
			25	0	21.16	21.08	21.01
			25	12	21.23	21.11	21.16
			25	25	21.15	21.07	21.13
			50	0	21.23	21.01	21.10
		256QAM	1	0	19.14	19.25	19.12
			1	25	19.46	19.36	19.01
			1	49	19.26	19.19	19.24
			25	0	19.08	19.03	19.05
			25	12	19.22	19.15	19.14
	25		25	19.21	19.22	19.14	
	50		0	19.18	19.12	19.03	

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B66	15	QPSK	1	0	24.07	24.01	23.83
			1	36	24.05	23.96	23.88
			1	74	24.00	23.97	23.78
			36	0	23.02	22.93	22.89
			36	18	23.12	22.95	22.85
			36	37	23.12	23.01	22.92
			75	0	23.07	22.90	22.85
		16QAM	1	0	23.18	23.06	22.95
			1	36	23.14	23.03	23.05
			1	74	23.01	23.07	22.74
			36	0	22.06	21.90	21.90
			36	18	22.06	21.92	21.83
			36	37	22.01	21.98	21.91
			75	0	22.09	21.90	21.85
		64QAM	1	0	22.03	22.01	22.15
			1	36	22.08	21.95	22.27
			1	74	22.42	22.48	21.89
			36	0	21.01	21.00	20.81
			36	18	21.15	20.85	20.80
			36	37	21.00	21.05	21.05
			75	0	21.02	20.96	20.95
		256QAM	1	0	18.83	18.97	18.82
			1	36	19.11	19.19	19.14
			1	74	19.29	19.27	18.98
			36	0	18.95	18.88	18.86
			36	18	19.08	18.95	18.87
			36	37	19.08	19.08	18.90
			75	0	19.01	18.87	18.87
	20	QPSK	1	0	24.07	24.06	23.85
			1	49	24.00	24.01	23.84
			1	99	24.05	23.95	23.72
			50	0	23.10	22.99	22.90
			50	24	23.07	22.94	22.87
			50	50	23.03	22.98	22.86
			100	0	23.06	22.96	22.83
		16QAM	1	0	23.29	23.25	22.96
			1	49	23.17	22.96	23.36
			1	99	23.07	23.11	23.15
			50	0	22.01	21.90	21.86
			50	24	22.08	21.94	21.83
			50	50	22.04	21.95	21.92
			100	0	22.05	21.90	21.91
		64QAM	1	0	22.25	22.06	22.05
			1	49	22.24	22.23	22.03
			1	99	22.30	22.35	22.06
			50	0	21.03	20.94	20.85
			50	24	21.15	20.94	20.87
			50	50	21.09	21.03	20.99
			100	0	21.02	20.94	20.93
		256QAM	1	0	19.36	19.06	19.20
			1	49	19.03	19.12	18.93
			1	99	19.21	19.19	19.18
			50	0	18.96	18.96	18.91
			50	24	19.09	18.96	18.87
			50	50	19.08	19.05	18.95
			100	0	19.12	18.94	18.89

Test Band	Bandwidth (MHz)	Waveform	SCS (kHz)	Modulation	RB size	RB offset	Maximum Average Power (dBm)		
							Channel		
							Low	Middle	High
5G NR n66	5	DFT-s OFDM	15	PI/2 BPSK	1	1	23.72	23.86	23.74
					1	13	23.81	23.89	23.80
					1	23	23.75	23.80	23.68
					12	0	23.36	23.61	23.42
					12	7	23.77	23.91	23.85
					12	13	23.56	23.70	23.58
					25	0	23.57	23.68	23.56
				QPSK	1	1	23.91	23.85	23.92
					1	13	23.93	23.85	23.96
					1	23	24.01	23.86	23.91
					12	0	23.30	23.44	23.27
					12	7	23.88	23.93	23.98
					12	13	23.29	23.48	23.41
					25	0	23.27	23.49	23.41
				16QAM	1	1	23.22	23.44	23.32
				64QAM	1	1	21.87	22.08	21.96
				256QAM	1	1	19.14	19.37	19.30
		CP OFDM		QPSK	1	1	22.66	22.92	22.74
	10	DFT-s OFDM	15	PI/2 BPSK	1	1	23.71	23.85	23.74
					1	26	23.79	23.85	23.74
					1	50	23.84	23.88	23.75
					25	0	23.58	23.70	23.50
					25	14	23.75	23.90	23.84
					25	27	23.52	23.69	23.58
					50	0	23.55	23.66	23.52
				QPSK	1	1	23.96	23.91	23.98
					1	26	24.01	23.88	23.99
					1	50	23.98	23.85	23.92
					25	0	23.37	23.50	23.38
					25	14	23.84	23.92	23.94
					25	27	23.21	23.48	23.39
					50	0	23.23	23.51	23.46
				16QAM	1	1	23.24	23.44	23.38
				64QAM	1	1	21.93	22.17	22.09
				256QAM	1	1	19.32	19.45	19.38
		CP OFDM		QPSK	1	1	22.82	23.06	22.86

Test Band	Bandwidth (MHz)	Waveform	SCS (kHz)	Modulation	RB size	RB offset	Maximum Average Power (dBm)		
							Channel		
							Low	Middle	High
5G NR n66	15	DFT-s OFDM	15	PI/2 BPSK	1	1	23.80	23.90	23.81
					1	40	23.77	23.94	23.86
					1	77	23.97	23.97	23.87
					36	0	23.59	23.80	23.60
					36	22	23.83	24.01	23.94
					36	43	23.68	23.81	23.66
					75	0	23.64	23.80	23.71
				QPSK	1	1	23.98	23.97	24.05
					1	40	24.05	23.92	24.03
					1	77	24.13	23.99	24.06
					36	0	23.36	23.49	23.31
					36	22	23.96	23.99	24.01
					36	43	23.26	23.41	23.31
					75	0	23.30	23.50	23.43
				16QAM	1	1	23.38	23.55	23.49
				64QAM	1	1	21.92	22.16	22.02
				256QAM	1	1	19.33	19.58	19.48
		CP OFDM		QPSK	1	1	22.92	23.18	23.00
	20	DFT-s OFDM	15	PI/2 BPSK	1	1	23.74	23.97	23.78
					1	53	23.75	23.91	23.82
					1	104	23.93	23.96	23.84
					50	0	23.62	23.85	23.63
					50	28	23.84	23.99	23.92
					50	56	23.67	23.81	23.68
					100	0	23.68	23.82	23.70
				QPSK	1	1	23.77	23.74	23.91
					1	53	23.85	23.74	23.88
					1	104	24.00	23.85	23.93
					50	0	23.31	23.47	23.32
					50	28	23.83	23.88	23.93
					50	56	23.21	23.47	23.40
					100	0	23.24	23.54	23.46
				16QAM	1	1	23.32	23.52	23.43
				64QAM	1	1	21.99	22.22	22.11
				256QAM	1	1	19.26	19.51	19.42
		CP OFDM		QPSK	1	1	22.91	23.15	22.98

Test Band	Bandwidth (MHz)	Waveform	SCS (kHz)	Modulation	RB size	RB offset	Maximum Average Power (dBm)		
							Channel		
							Low	Middle	High
5G NR n66	25	DFT-s OFDM	s15	PI/2 BPSK	1	1	23.76	23.99	24.13
					1	67	23.85	24.07	24.03
					1	131	24.11	24.15	24.18
					64	0	23.75	23.87	23.89
					64	35	23.87	24.04	24.04
					64	69	23.82	23.97	24.01
					128	0	23.67	23.87	23.82
				QPSK	1	1	23.86	24.10	23.95
					1	67	23.83	23.98	23.71
					1	131	24.01	23.78	24.19
					64	0	22.85	23.25	22.97
					64	35	23.71	24.02	23.83
		64			69	22.79	23.01	22.91	
		128			0	22.80	23.15	23.10	
		16QAM		1	1	23.16	23.29	23.04	
		64QAM		1	1	21.92	22.01	21.77	
		256QAM		1	1	19.38	19.57	19.56	
		CP OFDM		QPSK	1	1	22.96	23.13	22.71
	30	DFT-s OFDM		PI/2 BPSK	1	1	23.84	24.05	24.01
					1	80	23.93	24.15	24.08
					1	158	24.06	24.10	24.09
					80	0	23.79	23.89	23.91
					80	40	23.98	24.08	24.13
					80	80	23.97	23.98	24.05
					160	0	23.82	23.90	23.97
				QPSK	1	1	23.82	24.06	24.08
					1	80	23.81	24.16	23.67
					1	158	23.97	23.67	23.43
					80	0	22.93	23.27	22.84
					80	40	23.85	24.06	23.98
					80	80	22.98	23.01	22.86
					160	0	22.96	23.15	22.86
				16QAM	1	1	23.08	23.32	23.10
				64QAM	1	1	21.83	22.03	21.79
				256QAM	1	1	19.48	19.64	19.77
		CP OFDM		QPSK	1	1	23.01	23.13	22.60

Test Band	Bandwidth (MHz)	Waveform	SCS (kHz)	Modulation	RB size	RB offset	Maximum Average Power (dBm)		
							Channel		
							Low	Middle	High
5G NR n66	40	DFT-s OFDM	15	PI/2 BPSK	1	1	23.81	23.81	23.84
					1	108	24.04	24.08	23.93
					1	214	24.07	23.97	23.96
					108	0	23.72	23.89	23.83
					108	54	24.08	24.08	23.91
					108	108	23.92	24.00	23.88
					216	0	23.87	23.85	23.80
				QPSK	1	1	23.85	23.91	23.87
					1	108	23.89	24.14	23.86
					1	214	23.74	23.60	23.66
					108	0	23.30	23.31	23.18
					108	54	23.98	24.10	23.89
					108	108	23.07	22.97	22.87
					216	0	23.03	23.16	23.01
				16QAM	1	1	23.04	23.14	23.36
				64QAM	1	1	21.76	21.86	22.10
				256QAM	1	1	19.41	19.51	19.51
		CP OFDM		QPSK	1	1	22.89	22.85	23.04

Test Band	Bandwidth (MHz)	Waveform	SCS (kHz)	Modulation	RB size	RB offset	Maximum Average Power (dBm)		
							Channel		
							Low	Middle	High
5G NR n71	5	DFT-s OFDM	15	PI/2 BPSK	1	1	24.11	23.95	23.77
					1	13	24.12	24.00	23.80
					1	23	24.07	23.94	23.62
					12	0	23.63	23.45	23.29
					12	7	24.11	23.99	23.76
					12	13	23.60	23.43	23.24
					25	0	23.64	23.48	23.32
				QPSK	1	1	24.06	24.05	23.81
					1	13	24.14	24.04	23.78
					1	23	24.06	23.96	23.37
					12	0	23.17	23.06	22.81
					12	7	24.12	24.01	23.80
					12	13	23.16	22.97	22.70
					25	0	23.15	22.98	22.79
				16QAM	1	1	23.12	23.00	22.83
				64QAM	1	1	21.85	21.71	21.43
				256QAM	1	1	19.09	19.01	18.83
		CP OFDM		QPSK	1	1	22.70	22.51	22.33
	10	DFT-s OFDM	15	PI/2 BPSK	1	1	24.13	23.95	23.85
					1	26	24.04	24.08	23.80
					1	50	24.06	23.90	23.63
					25	0	23.60	23.48	23.27
					25	14	24.03	24.00	23.74
					25	27	23.57	23.42	23.22
					50	0	23.52	23.39	23.24
				QPSK	1	1	24.04	23.99	23.85
					1	26	24.14	24.09	23.78
					1	50	24.12	23.92	23.26
					25	0	23.12	22.99	22.78
					25	14	24.04	24.05	23.72
					25	27	23.06	22.90	22.71
					50	0	23.03	22.95	22.73
				16QAM	1	1	23.00	22.95	22.84
				64QAM	1	1	21.74	21.65	21.47
				256QAM	1	1	19.08	18.89	18.78
		CP OFDM		QPSK	1	1	22.68	22.50	22.39

Test Band	Bandwidth (MHz)	Waveform	SCS (kHz)	Modulation	RB size	RB offset	Maximum Average Power (dBm)		
							Channel		
							Low	Middle	High
5G NR n71	15	DFT-s OFDM	15	PI/2 BPSK	1	1	24.16	24.18	24.02
					1	40	24.10	24.03	23.84
					1	77	24.07	23.96	23.73
					36	0	23.72	23.62	23.51
					36	22	24.10	24.11	23.92
					36	43	23.68	23.53	23.35
					75	0	23.71	23.57	23.40
				QPSK	1	1	24.14	24.20	24.02
					1	40	24.18	24.13	23.86
					1	77	24.14	23.92	23.28
					36	0	23.20	23.12	22.99
					36	22	24.13	24.07	23.91
					36	43	23.16	22.97	22.85
					75	0	23.23	23.08	22.91
				16QAM	1	1	23.19	23.11	22.96
				64QAM	1	1	21.88	21.85	21.69
				256QAM	1	1	19.24	19.17	19.01
		CP OFDM		QPSK	1	1	22.79	22.79	22.57
	20	DFT-s OFDM	15	PI/2 BPSK	1	1	24.10	24.01	24.10
					1	53	24.08	24.03	23.96
					1	104	23.95	23.81	23.71
					50	0	23.64	23.64	23.59
					50	28	24.14	24.06	23.96
					50	56	23.61	23.43	23.39
					100	0	23.70	23.52	23.46
				QPSK	1	1	24.04	24.00	24.08
					1	53	24.14	24.08	23.91
					1	104	24.07	23.87	23.41
					50	0	23.17	23.13	23.06
					50	28	24.16	23.98	23.91
					50	56	23.04	22.92	22.91
					100	0	23.19	23.10	22.98
				16QAM	1	1	23.13	22.98	23.06
				64QAM	1	1	21.69	21.62	21.70
				256QAM	1	1	19.05	19.01	18.98
		CP OFDM		QPSK	1	1	22.67	22.71	22.70

Sub Antenna

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B4	1.4	QPSK	1	0	22.28	22.13	22.15
			1	3	22.51	22.60	22.49
			1	5	22.18	22.34	22.16
			3	0	22.43	22.70	22.27
			3	1	22.34	22.49	22.32
			3	3	22.39	22.33	22.30
			6	0	21.23	21.61	21.30
		16QAM	1	0	21.63	21.65	21.41
			1	3	21.59	21.57	21.67
			1	5	21.54	21.61	21.42
			3	0	21.34	21.60	21.50
			3	1	21.31	21.67	21.45
			3	3	21.70	21.88	21.85
			6	0	20.28	20.51	20.39
		64QAM	1	0	20.55	20.50	20.42
			1	3	20.40	20.55	20.56
			1	5	20.67	20.40	20.40
			3	0	20.28	20.42	20.24
			3	1	20.29	20.38	20.48
			3	3	20.32	20.47	20.55
			6	0	19.05	19.20	19.32
		256QAM	1	0	16.94	17.43	17.37
			1	3	17.28	17.46	17.31
			1	5	17.34	17.36	17.30
			3	0	17.28	17.38	17.46
			3	1	17.13	17.35	17.42
			3	3	17.13	17.23	17.33
			6	0	17.19	17.26	17.19
	3	QPSK	1	0	22.09	21.99	22.01
			1	8	22.45	22.36	22.29
			1	14	22.33	22.21	22.20
			8	0	21.18	21.58	21.21
			8	4	21.25	21.47	21.25
			8	7	21.25	21.28	21.25
			15	0	21.35	21.53	21.39
			1	0	21.56	21.56	21.17
		16QAM	1	8	21.69	21.56	21.56
			1	14	21.74	21.49	21.62
			8	0	20.11	20.50	20.24
			8	4	20.32	20.41	20.25
			8	7	20.21	20.39	20.25
			15	0	20.33	20.31	20.29
			1	0	20.36	20.49	20.47
			1	8	20.42	20.67	20.29
		64QAM	1	14	20.56	20.68	20.30
			8	0	19.31	19.54	19.43
			8	4	19.28	19.51	19.14
			8	7	19.33	19.48	19.13
			15	0	19.24	19.54	19.20
			1	0	17.06	17.61	17.20
			1	8	17.31	17.63	17.12
			1	14	17.48	17.51	17.51
		256QAM	8	0	17.33	17.62	17.67
			8	4	17.10	17.39	17.20
			8	7	17.20	17.41	17.09
			15	0	17.15	17.35	17.04

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B4	5	QPSK	1	0	22.25	22.05	22.05
			1	12	22.33	22.54	22.27
			1	24	22.28	22.39	22.14
			12	0	21.02	21.44	21.36
			12	7	21.09	21.32	21.26
			12	13	21.09	21.30	21.14
		16QAM	25	0	21.09	21.37	21.19
			1	0	21.50	21.55	21.19
			1	12	21.57	21.50	21.32
			1	24	21.41	21.52	21.28
			12	0	19.98	20.25	20.13
			12	7	20.13	20.34	20.24
			12	13	20.14	20.39	20.13
			25	0	20.27	20.11	20.19
		64QAM	1	0	20.27	20.24	20.35
			1	12	20.24	20.43	20.31
			1	24	20.60	20.36	20.44
			12	0	19.08	19.67	19.30
			12	7	19.09	19.35	19.18
			12	13	19.26	19.67	19.21
			25	0	19.01	19.48	19.15
		256QAM	1	0	17.20	17.43	17.39
			1	12	17.46	17.25	17.31
			1	24	17.18	17.63	17.43
			12	0	17.32	17.29	17.48
			12	7	17.03	17.35	17.19
			12	13	17.24	17.40	17.22
			25	0	17.17	17.23	17.11
	10	QPSK	1	0	22.22	22.07	22.18
			1	25	22.41	22.41	22.51
			1	49	22.33	22.38	22.35
			25	0	20.92	21.36	21.28
			25	12	21.14	21.30	21.28
			25	25	21.09	21.19	21.17
		16QAM	50	0	21.14	21.14	21.27
			1	0	21.43	21.45	21.27
			1	25	21.47	21.49	21.53
			1	49	21.53	21.61	21.36
			25	0	20.07	20.56	20.38
			25	12	20.21	20.30	20.28
		64QAM	25	25	20.13	20.50	20.32
			50	0	20.17	20.24	20.28
			1	0	20.27	20.16	20.32
			1	25	20.07	20.52	20.40
			1	49	20.20	20.47	20.44
			25	0	19.16	19.45	19.15
		256QAM	25	12	19.11	19.28	19.40
			25	25	19.17	19.38	19.23
			50	0	18.92	19.27	19.35
			1	0	17.00	17.34	17.10
			1	25	17.23	17.68	17.26
			1	49	17.17	17.26	17.06
			25	0	17.14	17.34	17.72
			25	12	17.10	17.28	17.41
			25	25	17.09	17.35	17.26
			50	0	17.09	17.16	17.24

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B4	15	QPSK	1	0	22.07	21.96	22.06
			1	36	22.55	22.45	22.20
			1	74	22.30	22.18	22.31
			36	0	21.11	21.43	21.49
			36	18	21.35	21.51	21.41
			36	37	21.29	21.30	21.29
			75	0	21.33	21.40	21.46
		16QAM	1	0	21.42	21.49	21.32
			1	36	21.65	21.56	21.66
			1	74	21.54	21.64	21.62
			36	0	20.30	20.33	20.43
			36	18	20.37	20.10	20.43
			36	37	20.42	20.33	20.40
			75	0	20.30	20.13	20.53
		64QAM	1	0	20.21	20.04	20.32
			1	36	20.59	20.41	20.52
			1	74	20.71	20.42	20.56
			36	0	19.19	19.34	19.25
			36	18	19.28	19.30	19.59
			36	37	19.42	19.31	19.57
			75	0	19.22	19.15	19.10
		256QAM	1	0	16.77	17.35	17.24
			1	36	17.57	17.60	17.61
			1	74	17.05	17.28	17.16
			36	0	17.16	17.26	17.65
			36	18	17.27	17.38	17.16
			36	37	17.14	17.19	17.43
			75	0	17.38	17.30	17.41
	20	QPSK	1	0	22.09	21.94	22.02
			1	49	22.40	22.35	22.38
			1	99	21.86	21.98	21.84
			50	0	21.27	21.28	21.31
			50	24	21.45	21.36	21.43
			50	50	21.27	21.17	21.23
			100	0	21.33	21.26	21.30
		16QAM	1	0	21.10	21.05	21.07
			1	49	21.55	21.52	21.46
			1	99	21.35	21.27	21.19
			50	0	20.26	20.21	20.24
			50	24	20.47	20.37	20.45
			50	50	20.28	20.20	20.26
			100	0	20.35	20.29	20.32
		64QAM	1	0	20.26	20.16	20.23
			1	49	20.38	20.48	20.52
			1	99	20.15	20.13	20.03
			50	0	19.24	19.20	19.22
			50	24	19.40	19.36	19.42
			50	50	19.30	19.15	19.23
			100	0	19.29	19.22	19.31
		256QAM	1	0	17.10	17.05	17.10
			1	49	17.42	17.36	17.43
			1	99	17.05	17.12	17.16
			50	0	17.22	17.15	17.35
			50	24	17.38	17.26	17.51
			50	50	17.26	17.17	17.22
			100	0	17.26	17.17	17.24

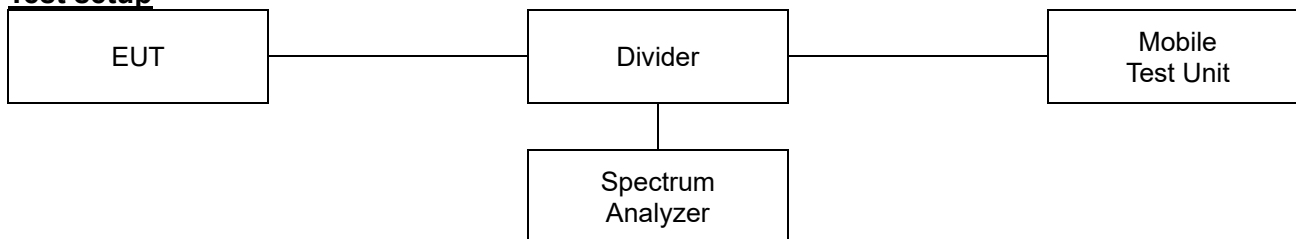
Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B66	1.4	QPSK	1	0	22.37	22.21	22.04
			1	3	22.62	22.19	22.48
			1	5	22.43	22.23	22.04
			3	0	22.27	22.22	22.43
			3	1	22.48	22.23	22.57
			3	3	22.39	22.11	22.34
			6	0	21.37	21.27	21.35
		16QAM	1	0	21.77	21.53	21.58
			1	3	21.76	21.30	21.43
			1	5	21.81	21.33	21.51
			3	0	21.57	21.49	21.68
			3	1	21.30	21.29	21.46
			3	3	21.46	21.68	21.84
			6	0	20.17	20.17	20.37
		64QAM	1	0	20.30	20.27	20.19
			1	3	20.47	20.53	20.50
			1	5	20.30	20.37	20.42
			3	0	20.35	20.39	20.43
			3	1	20.33	20.25	20.34
			3	3	20.38	20.35	20.29
			6	0	19.34	19.16	19.24
		256QAM	1	0	16.84	17.38	17.20
			1	3	17.55	17.63	17.49
			1	5	17.17	17.09	17.20
			3	0	17.29	17.36	17.43
			3	1	17.21	17.25	17.28
			3	3	17.42	17.15	17.34
			6	0	17.13	17.13	17.28
	3	QPSK	1	0	22.19	22.07	22.03
			1	8	22.20	22.32	22.46
			1	14	22.30	22.29	22.00
			8	0	20.91	21.21	21.43
			8	4	21.07	21.36	21.42
			8	7	21.28	21.25	21.44
			15	0	21.19	21.48	21.52
			1	0	21.50	21.39	21.46
		16QAM	1	8	21.35	21.49	21.65
			1	14	21.73	21.39	21.54
			8	0	20.20	20.28	20.37
			8	4	20.05	20.31	20.53
			8	7	20.28	20.29	20.44
			15	0	20.07	20.17	20.36
		64QAM	1	0	20.22	20.23	20.24
			1	8	20.35	20.58	20.47
			1	14	20.54	20.64	20.61
			8	0	19.19	19.42	19.64
			8	4	19.07	19.32	19.38
			8	7	19.09	19.26	19.31
			15	0	19.16	19.19	19.30
		256QAM	1	0	17.00	17.28	17.04
			1	8	17.41	17.72	17.45
			1	14	17.33	17.35	17.26
			8	0	17.00	17.28	17.43
			8	4	17.07	17.25	17.38
			8	7	17.17	17.08	17.23
			15	0	17.00	17.21	17.43

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B66	5	QPSK	1	0	22.25	22.13	21.99
			1	12	22.41	22.27	22.43
			1	24	22.34	22.30	21.98
			12	0	21.13	21.07	21.49
			12	7	20.97	21.17	21.45
			12	13	21.23	21.13	21.40
			25	0	21.15	21.27	21.34
		16QAM	1	0	21.82	21.38	21.43
			1	12	21.64	21.36	21.60
			1	24	21.69	21.40	21.54
			12	0	20.22	20.11	20.43
			12	7	20.12	20.26	20.48
			12	13	20.48	20.15	20.47
			25	0	19.99	19.95	20.19
		64QAM	1	0	20.13	20.11	20.11
			1	12	20.51	20.53	20.65
			1	24	20.51	20.48	20.78
			12	0	19.24	19.34	19.48
			12	7	19.13	19.27	19.39
			12	13	19.39	19.21	19.45
			25	0	19.18	19.30	19.39
		256QAM	1	0	17.11	17.20	17.15
			1	12	17.48	17.47	17.53
			1	24	17.19	17.26	17.31
			12	0	17.04	17.17	17.39
			12	7	17.13	17.11	17.24
			12	13	17.35	17.12	17.21
			25	0	17.10	17.11	17.38
	10	QPSK	1	0	22.15	22.13	22.13
			1	25	22.16	22.29	22.55
			1	49	21.99	22.29	22.12
			25	0	20.77	21.19	21.37
			25	12	20.91	21.13	21.40
			25	25	20.92	21.11	21.40
			50	0	20.96	21.31	21.42
			1	0	21.37	21.27	21.31
		16QAM	1	25	21.25	21.39	21.40
			1	49	21.31	21.43	21.30
			25	0	20.05	20.17	20.49
			25	12	19.98	20.11	20.31
			25	25	20.15	20.28	20.43
			50	0	19.93	20.01	20.14
			1	0	19.80	20.15	20.20
			1	25	20.05	20.50	20.60
		64QAM	1	49	20.16	20.31	20.53
			25	0	18.93	19.23	19.43
			25	12	18.78	19.09	19.54
			25	25	19.06	19.21	19.32
			50	0	18.86	19.03	19.46
			1	0	16.90	17.26	16.96
			1	25	17.07	17.51	17.28
			1	49	17.05	17.05	17.07
		256QAM	25	0	16.76	17.14	17.42
			25	12	16.77	17.08	17.45
			25	25	17.05	17.12	17.44
			50	0	16.81	17.10	17.26

Test Band	Bandwidth (MHz)	Test mode	RB size	RB offset	Maximum Average Power (dBm)		
					Channel		
					Low	Middle	High
LTE B66	15	QPSK	1	0	22.01	21.92	21.86
			1	36	22.60	22.17	22.28
			1	74	22.53	22.34	22.08
			36	0	21.06	21.23	21.29
			36	18	21.12	21.15	21.20
			36	37	21.27	21.18	21.11
			75	0	21.19	21.17	21.30
		16QAM	1	0	21.62	21.25	21.40
			1	36	21.55	21.44	21.63
			1	74	21.84	21.36	21.55
			36	0	20.24	20.10	20.15
			36	18	20.10	19.94	20.16
			36	37	20.44	20.14	20.12
			75	0	20.05	19.93	20.20
		64QAM	1	0	20.02	19.81	20.17
			1	36	20.34	20.29	20.36
			1	74	20.39	20.26	20.45
			36	0	19.28	19.18	19.35
			36	18	19.16	19.04	19.30
			36	37	19.19	19.02	19.36
			75	0	19.23	19.16	19.21
		256QAM	1	0	16.80	17.12	17.00
			1	36	17.31	17.40	17.35
			1	74	17.24	17.01	16.92
			36	0	17.13	17.01	17.57
			36	18	17.11	17.20	17.12
			36	37	17.30	16.97	17.14
			75	0	17.21	17.05	17.16
	20	QPSK	1	0	22.09	21.92	21.90
			1	49	22.53	22.45	22.41
			1	99	22.04	21.96	21.89
			50	0	21.12	21.21	21.27
			50	24	21.40	21.39	21.35
			50	50	21.19	21.20	21.24
			100	0	21.30	21.27	21.29
		16QAM	1	0	21.19	21.12	21.05
			1	49	21.57	21.44	21.62
			1	99	21.14	21.01	21.11
			50	0	20.18	20.22	20.22
			50	24	20.33	20.31	20.38
			50	50	20.14	20.26	20.24
			100	0	20.20	20.18	20.23
		64QAM	1	0	20.02	19.92	20.06
			1	49	20.41	20.60	20.57
			1	99	20.04	20.15	20.10
			50	0	19.24	19.28	19.25
			50	24	19.36	19.31	19.40
			50	50	19.25	19.25	19.22
			100	0	19.20	19.13	19.29
		256QAM	1	0	17.03	17.20	17.06
			1	49	17.46	17.55	17.29
			1	99	17.08	17.05	17.01
			50	0	17.29	17.18	17.24
			50	24	17.40	17.32	17.42
			50	50	17.24	17.21	17.28
			100	0	17.24	17.26	17.28

7.2. 99% Occupied Bandwidth & 26dB Bandwidth

Test setup



Limit

According to §2.1049,

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

Test procedure

971168 D01 v03r01 – Section 4.2 and 4.3

ANSI C63.26-2015 – Section 5.4.3 and 5.4.4

Test settings

◆ 26dB Bandwidth

- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
- Determine the reference value by either of the following:
 - Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
 - Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
- Determine the “-X dB amplitude” as equal to (Reference Value - X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
- If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).

- i) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
- j) The spectral envelope can cross the “-X dB amplitude” at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “-X dB amplitude.”
- k) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

◆ 99% Occupied Bandwidth

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- d) Set the detection mode to peak, and the trace mode to max-hold.
- e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.
- f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

Notes:

1. The EUT was setup to maximum output power with all bandwidth and modulation.

Test results

Test mode		Channel	26 dB Bandwidth (MHz)	99 % Bandwidth (MHz)
WCDMA1700	RMC	Low	4.74	4.18
		Middle	4.71	4.14
		High	4.72	4.17

Test Band	Bandwidth (MHz)	Channel	Test mode	26dB Bandwidth (MHz)	99 % Bandwidth (MHz)
LTE B12	1.4	Low	QPSK	1.39	1.10
			16QAM	1.39	1.10
		Middle	QPSK	1.40	1.11
			16QAM	1.35	1.11
		High	QPSK	1.38	1.10
			16QAM	1.36	1.10
	3	Low	QPSK	3.06	2.71
			16QAM	3.08	2.70
		Middle	QPSK	3.06	2.71
			16QAM	3.03	2.70
		High	QPSK	3.06	2.70
			16QAM	3.06	2.71
LTE B12/17	5	Low	QPSK	5.16	4.52
			16QAM	5.18	4.52
		Middle	QPSK	5.21	4.51
			16QAM	5.20	4.52
		High	QPSK	5.20	4.52
			16QAM	5.22	4.52
	10	Low	QPSK	10.12	8.97
			16QAM	9.89	8.99
		Middle	QPSK	9.92	8.97
			16QAM	9.82	8.97
		High	QPSK	10.09	8.99
			16QAM	9.92	9.02

Test Band	Bandwidth (MHz)	Channel	Test mode	26dB Bandwidth (MHz)	99 % Bandwidth (MHz)
LTE B13	5	Low	QPSK	5.17	4.52
			16QAM	5.20	4.52
		Middle	QPSK	5.23	4.52
			16QAM	5.20	4.52
		High	QPSK	5.18	4.53
			16QAM	5.21	4.51
	10	Middle	QPSK	9.92	8.97
			16QAM	9.87	8.99



Test Band	Bandwidth (MHz)	Channel	Test mode	26dB Bandwidth (MHz)	99 % Bandwidth (MHz)
LTE B66/4	1.4	Low	QPSK	1.38	1.10
			16QAM	1.38	1.10
		Middle	QPSK	1.38	1.10
			16QAM	1.38	1.10
		High	QPSK	1.38	1.11
			16QAM	1.40	1.10
	3	Low	QPSK	3.07	2.72
			16QAM	3.06	2.71
		Middle	QPSK	3.07	2.70
			16QAM	3.07	2.70
		High	QPSK	3.08	2.70
			16QAM	3.06	2.70
	5	Low	QPSK	5.12	4.51
			16QAM	5.20	4.52
		Middle	QPSK	5.18	4.52
			16QAM	5.21	4.53
		High	QPSK	5.15	4.53
			16QAM	5.22	4.52
	10	Low	QPSK	9.94	9.02
			16QAM	9.97	8.99
		Middle	QPSK	9.89	9.04
			16QAM	9.92	8.97
		High	QPSK	9.82	8.99
			16QAM	10.09	9.02
	15	Low	QPSK	15.06	13.49
			16QAM	15.06	13.49
		Middle	QPSK	14.99	13.52
			16QAM	14.95	13.45
		High	QPSK	14.95	13.49
			16QAM	14.84	13.45
	20	Low	QPSK	19.83	18.08
			16QAM	19.78	17.98
		Middle	QPSK	19.78	18.03
			16QAM	19.88	18.08
		High	QPSK	20.03	18.03
			16QAM	19.83	18.03

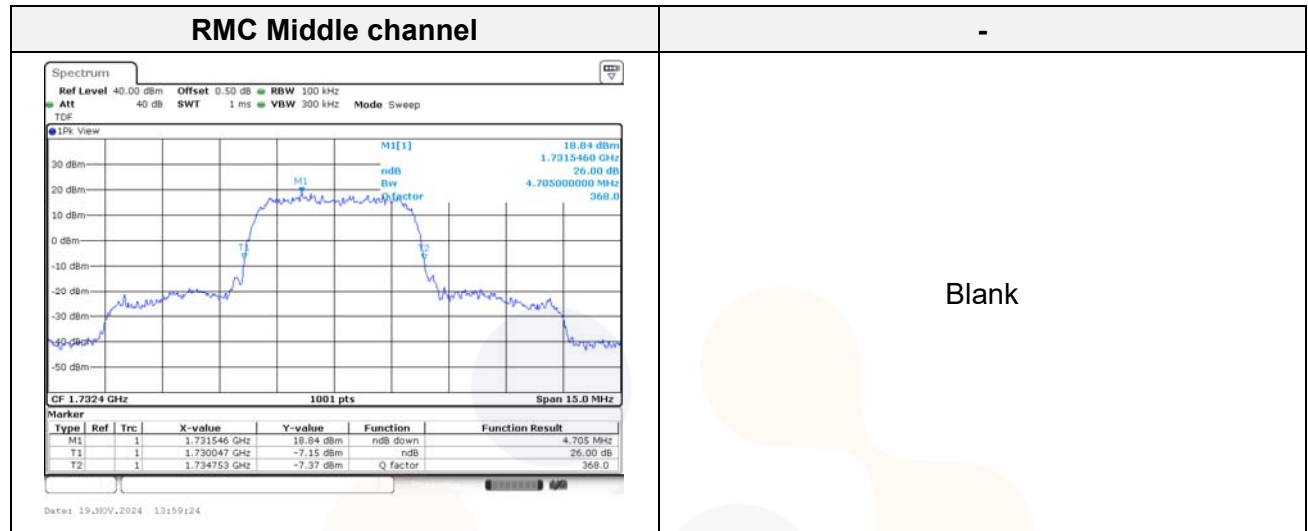
Test Band	Bandwidth (MHz)	Channel	Waveform	SCS (kHz)	Modulation	26dB Bandwidth (MHz)	99 % Bandwidth (MHz)
5G NR n66	5	Low	DFT-s OFDM	15	QPSK	5.12	4.50
		16QAM			5.24	4.52	
		QPSK			5.11	4.50	
		16QAM			5.26	4.52	
		QPSK			5.09	4.50	
		16QAM			5.22	4.52	
	10	Low	DFT-s OFDM		QPSK	9.92	8.99
		16QAM			9.87	9.02	
		QPSK			9.89	8.99	
		16QAM			9.84	9.02	
		QPSK			9.99	8.99	
		16QAM			9.92	9.02	
	15	Low	DFT-s OFDM		QPSK	14.61	13.52
		16QAM			14.69	13.56	
		QPSK			14.69	13.49	
		16QAM			14.69	13.52	
		QPSK			14.69	13.49	
		16QAM			14.65	13.52	
	20	Low	DFT-s OFDM		QPSK	19.53	17.98
		16QAM			19.48	17.93	
		QPSK			19.48	17.98	
		16QAM			19.48	17.93	
		QPSK			19.43	17.93	
		16QAM			19.38	17.98	
	25	Low	DFT-s OFDM		QPSK	24.48	22.98
		16QAM			24.48	22.98	
		QPSK			24.60	22.98	
		16QAM			24.35	22.98	
		QPSK			24.48	23.04	
		16QAM			24.60	23.04	
	30	Low	DFT-s OFDM		QPSK	31.24	29.00
		16QAM			31.17	29.15	
		QPSK			31.24	28.92	
		16QAM			31.17	28.92	
		QPSK			31.24	29.00	
		16QAM			31.17	28.92	
	40	Low	DFT-s OFDM		QPSK	41.36	38.96
		16QAM			41.36	38.86	
		QPSK			41.36	38.96	
		16QAM			41.46	38.86	
		QPSK			41.36	38.96	
		16QAM			41.36	38.86	

Test Band	Bandwidth (MHz)	Frequency (MHz)	Waveform	SCS (kHz)	Modulation	26dB bandwidth (MHz)	99 % bandwidth (MHz)
NR n71	5	665.5	DFT-s OFDM	15	QPSK	5.11	4.50
		16QAM			5.23	4.56	
		680.5			QPSK	5.14	4.50
		16QAM			5.19	4.53	
		695.5			QPSK	5.06	4.50
		16QAM			5.09	4.51	
	10	668.0	DFT-s OFDM		QPSK	9.84	8.97
		16QAM			9.87	8.99	
		680.5			QPSK	9.74	8.99
		16QAM			9.79	8.99	
		693.0			QPSK	9.87	8.97
		16QAM			9.77	8.99	
	15	670.5	DFT-s OFDM		QPSK	14.72	13.45
		16QAM			14.69	13.52	
		680.5			QPSK	14.57	13.45
		16QAM			14.54	13.49	
		690.5			QPSK	14.69	13.49
		16QAM			14.69	13.49	
	20	673.0	DFT-s OFDM		QPSK	19.48	17.93
		16QAM			19.43	17.88	
		680.5			QPSK	19.38	17.88
		16QAM			19.33	17.88	
		688.0			QPSK	19.43	17.88
		16QAM			19.33	17.88	

In order to simplify the report, only Middle channel test plots are attached

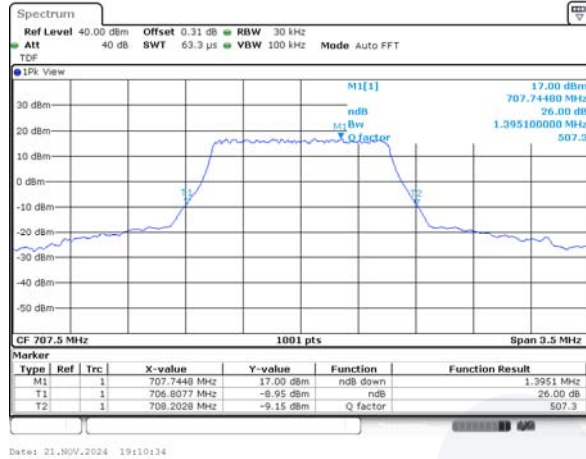
26dB Bandwidth

Test mode: WCDMA 1700

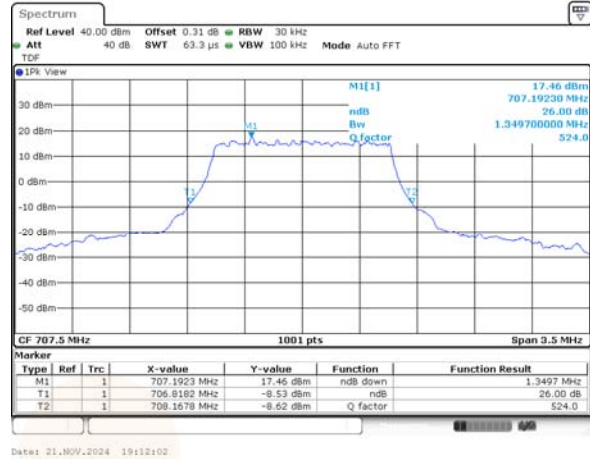


Test mode: LTE B12/17

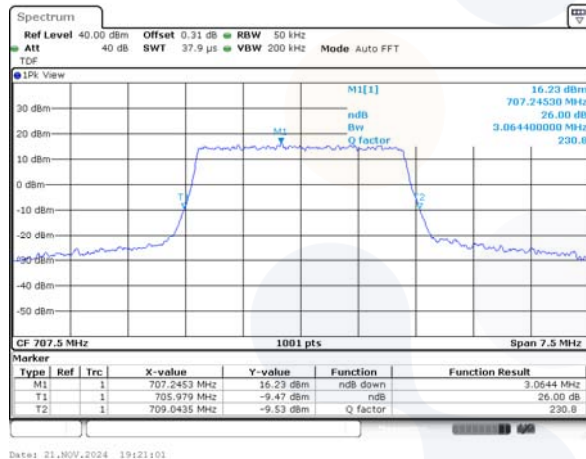
1.4M BW QPSK Middle channel



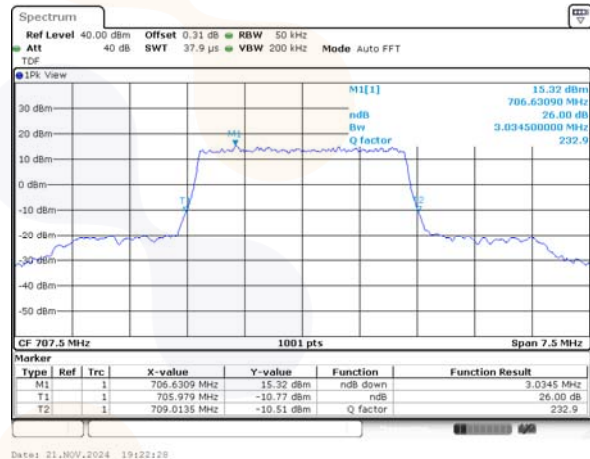
1.4M BW 16QAM Middle channel



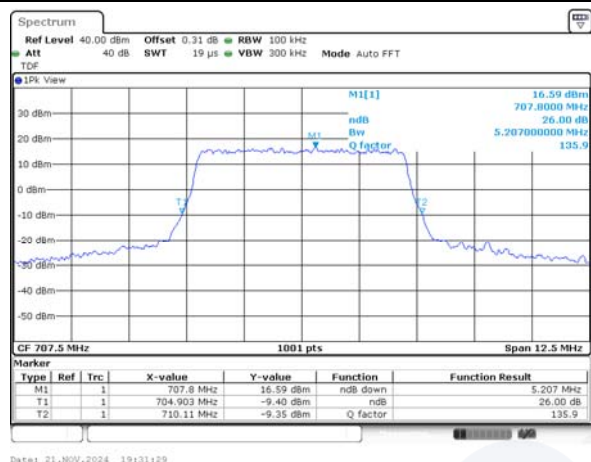
3M BW QPSK Middle channel



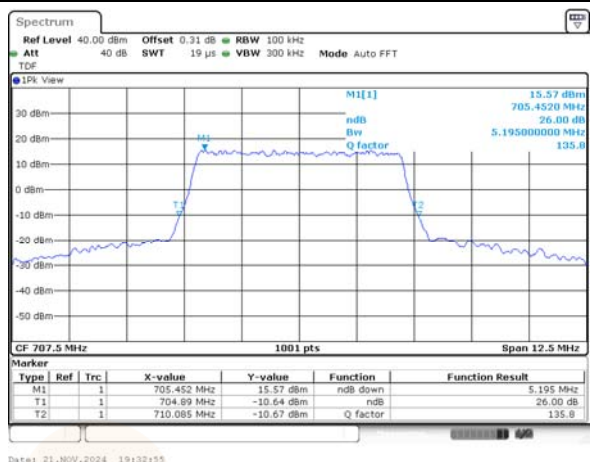
3M BW 16QAM Middle channel



5M BW QPSK Middle channel



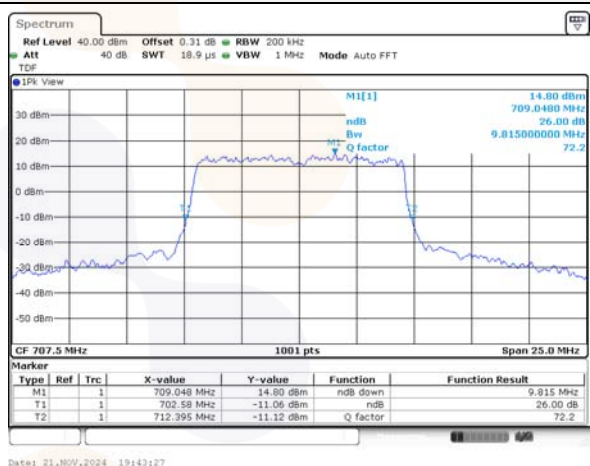
5M BW 16QAM Middle channel



10M BW QPSK Middle channel

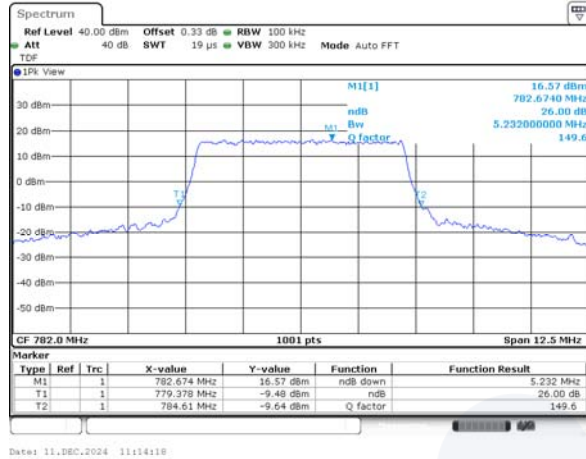


10M BW 16QAM Middle channel

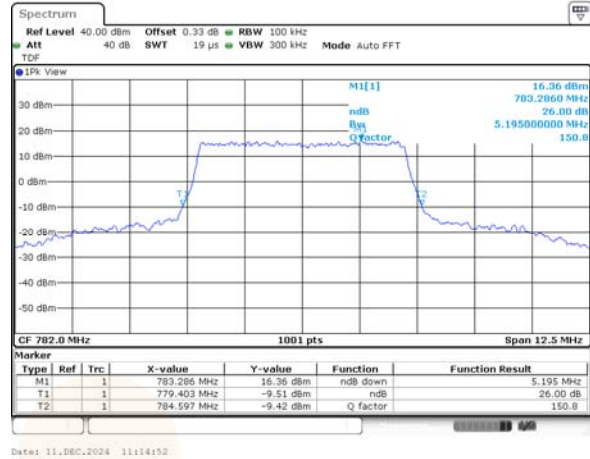


Test mode: LTE B13

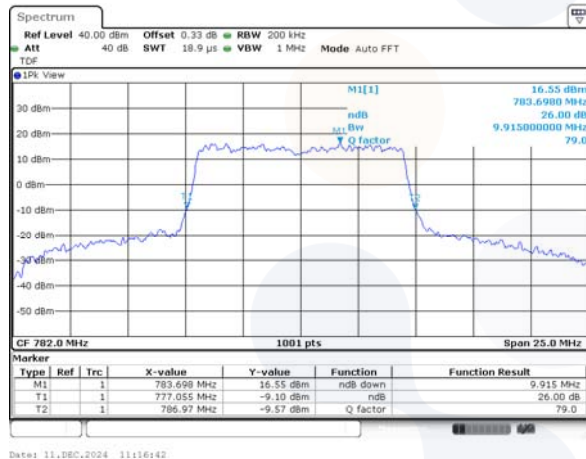
5M BW QPSK Middle channel



5M BW 16QAM Middle channel



10M BW QPSK Middle channel

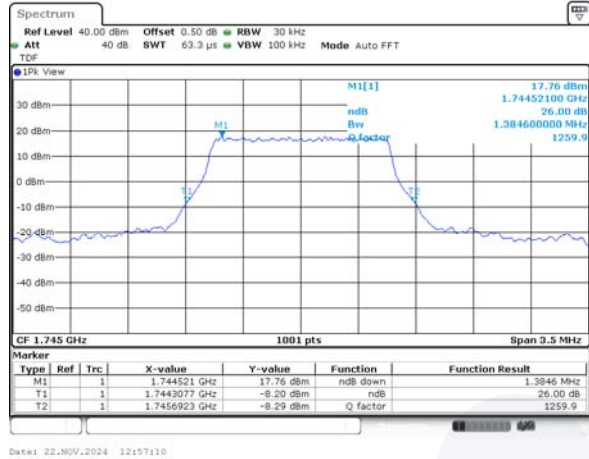


10M BW 16QAM Middle channel

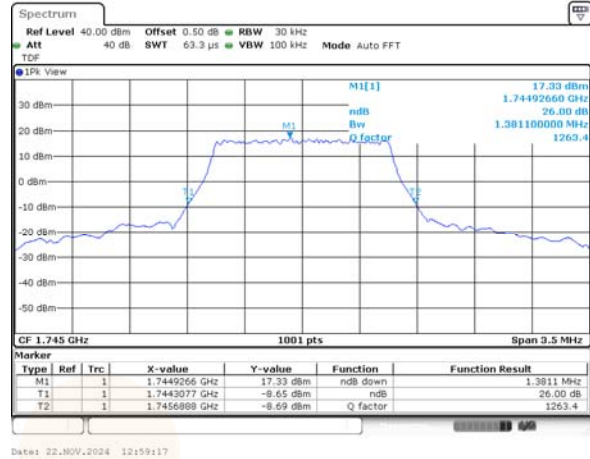


Test mode: LTE B66/4

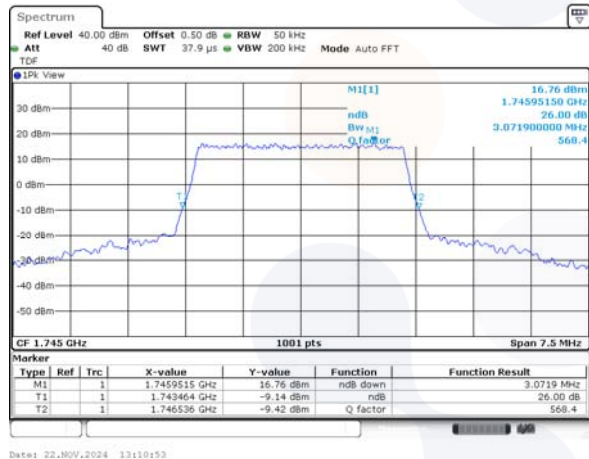
1.4M BW QPSK Middle channel



1.4M BW 16QAM Middle channel



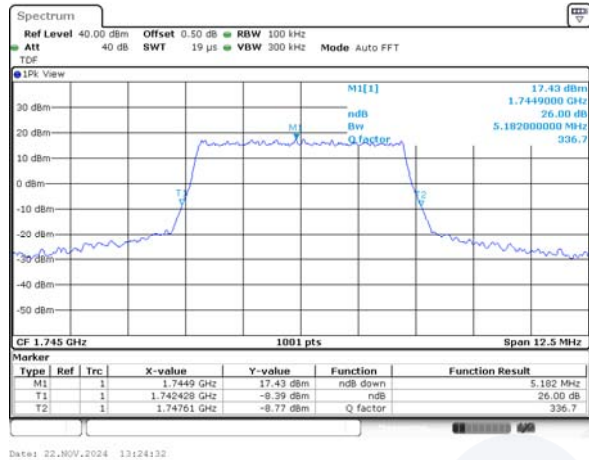
3M BW QPSK Middle channel



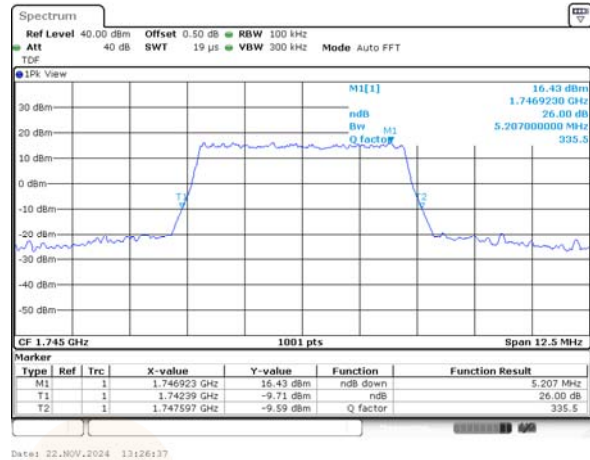
3M BW 16QAM Middle channel



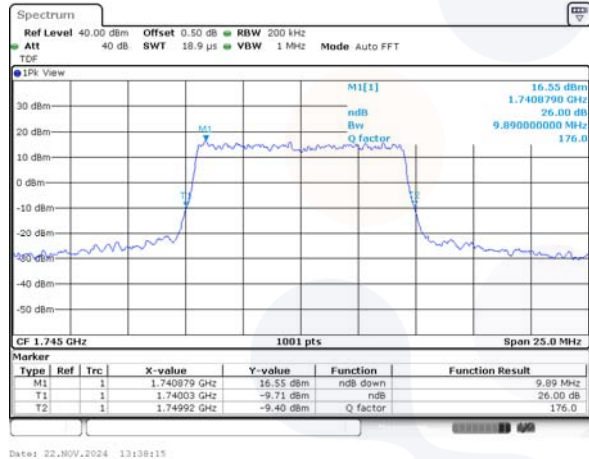
5M BW QPSK Middle channel



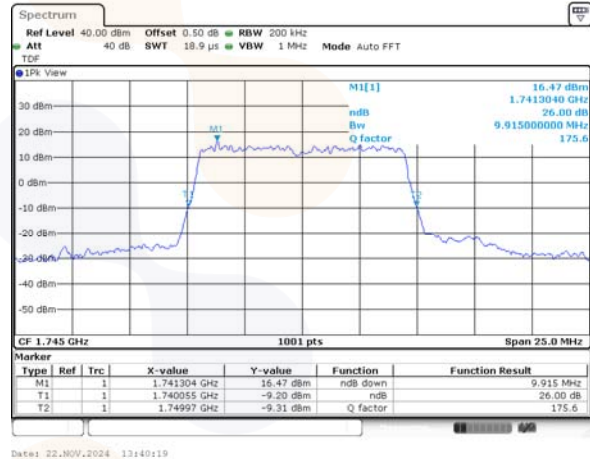
5M BW 16QAM Middle channel



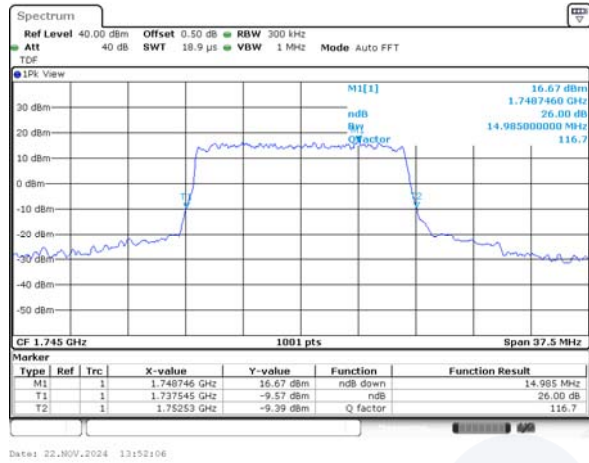
10M BW QPSK Middle channel



10M BW 16QAM Middle channel



15M BW QPSK Middle channel



15M BW 16QAM Middle channel



20M BW QPSK Middle channel

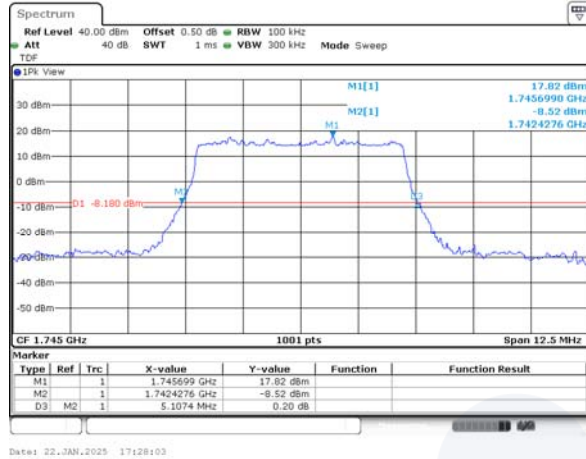


20M BW 16QAM Middle channel

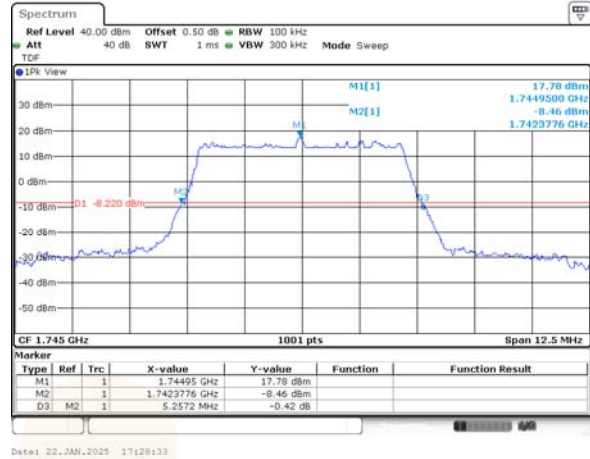


Test mode: 5G NR n66 DFT-s OFDM

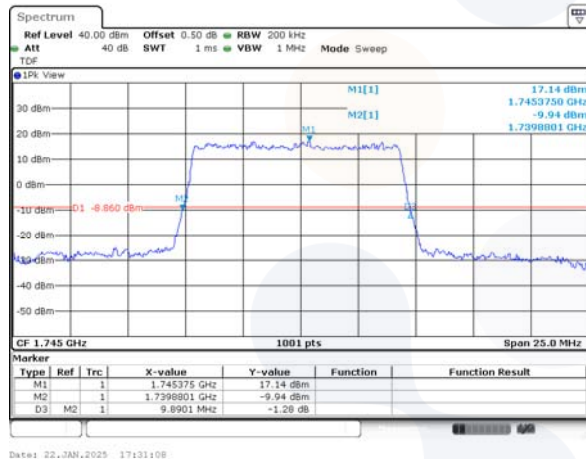
5M BW QPSK Middle channel



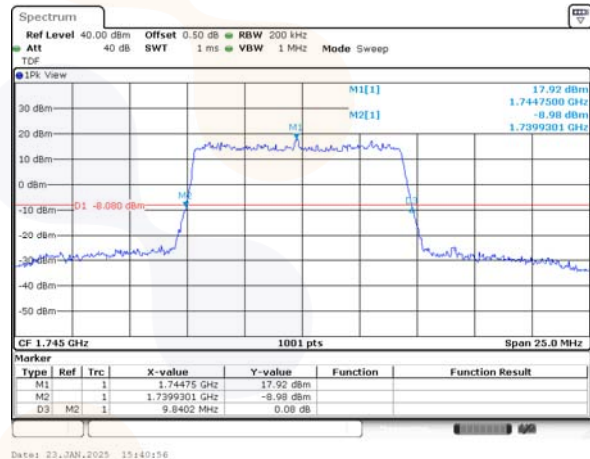
5M BW 16QAM Middle channel



10M BW QPSK Middle channel



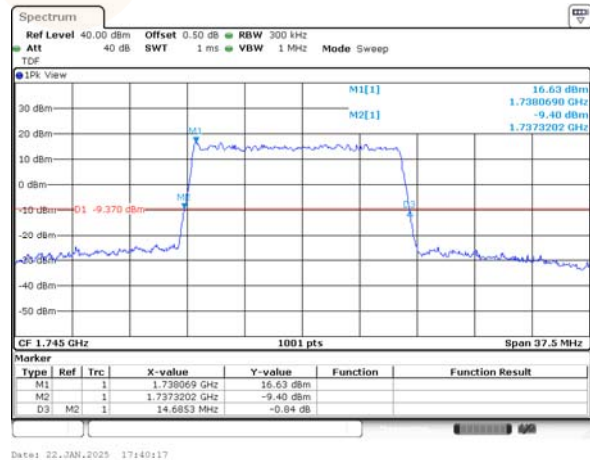
10M BW 16QAM Middle channel



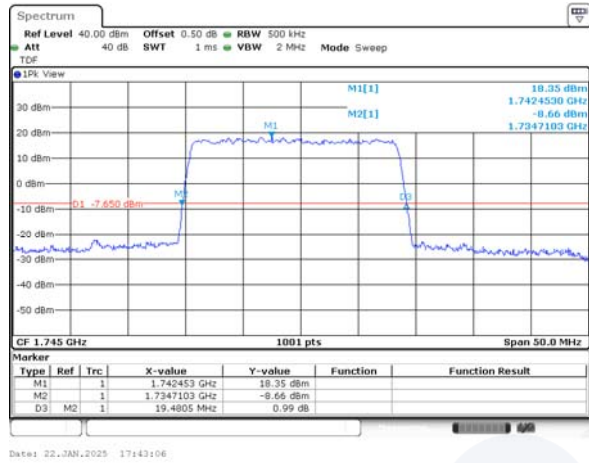
15M BW QPSK Middle channel



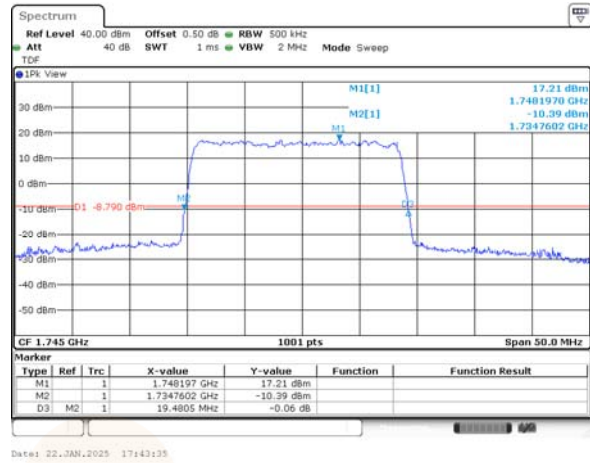
15M BW 16QAM Middle channel



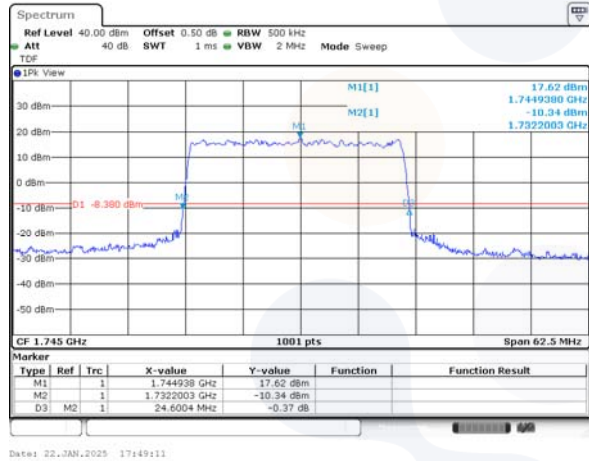
20M BW QPSK Middle channel



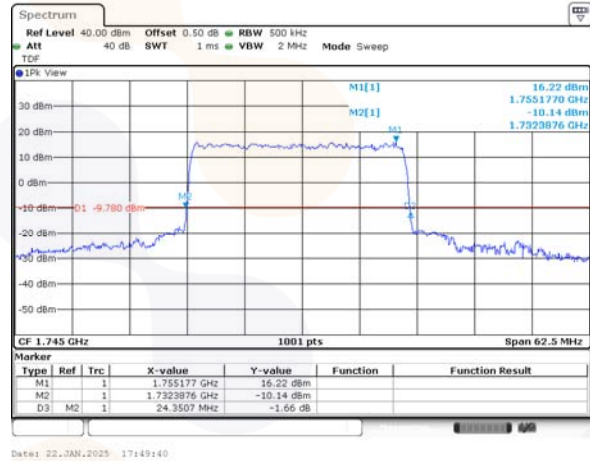
20M BW 16QAM Middle channel



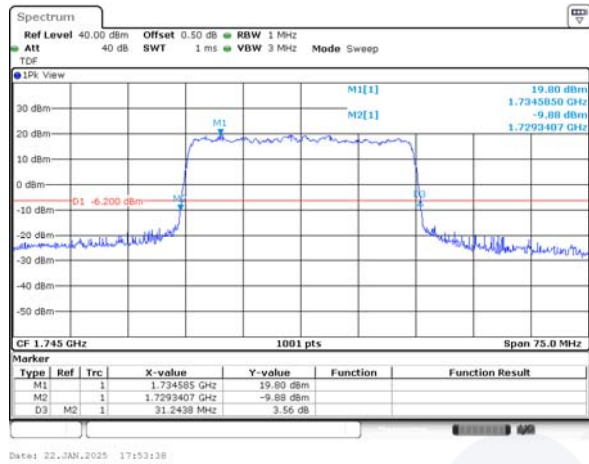
25M BW QPSK Middle channel



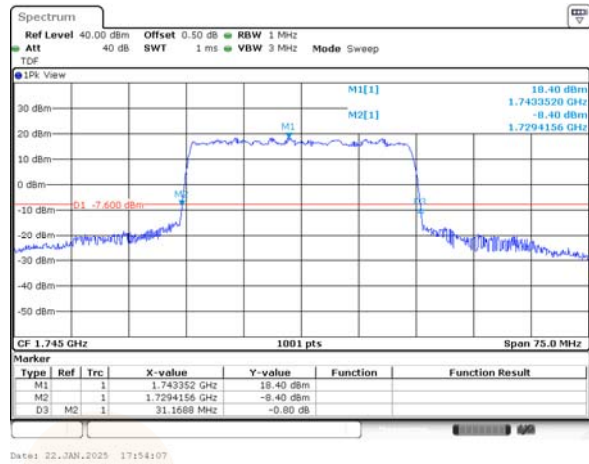
25M BW 16QAM Middle channel



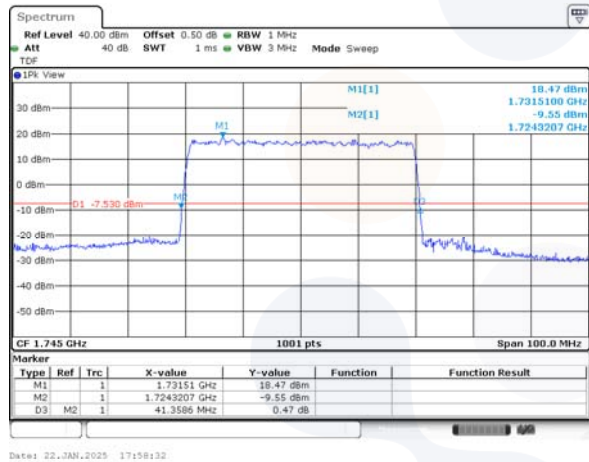
30M BW QPSK Middle channel



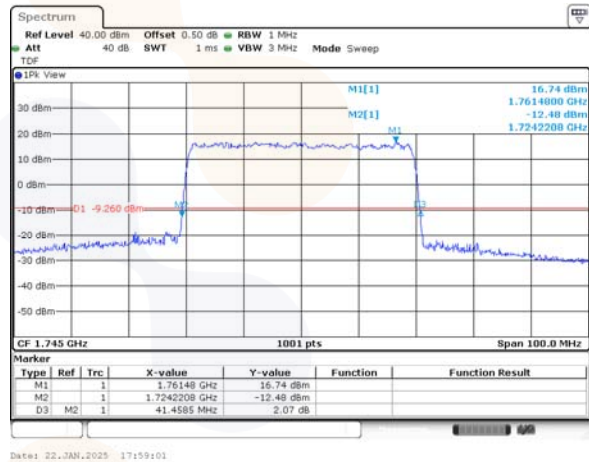
30M BW 16QAM Middle channel



40M BW QPSK Middle channel

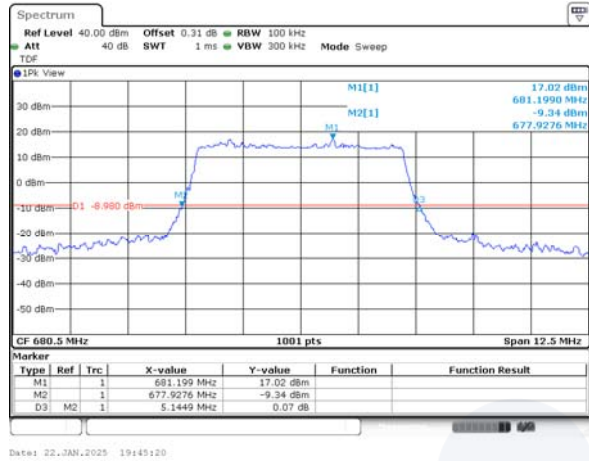


40M BW 16QAM Middle channel

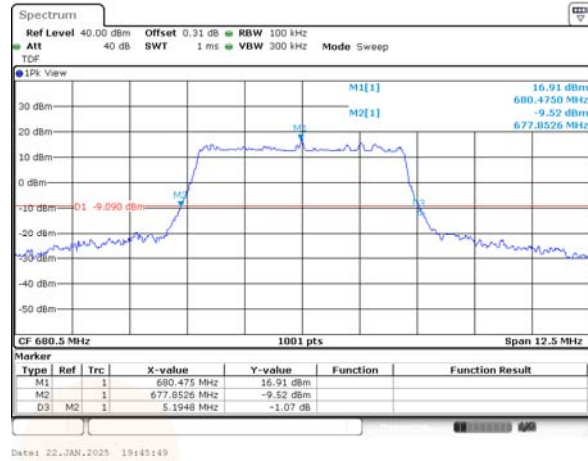


Test mode: 5G NR n71 DFT-s OFDM

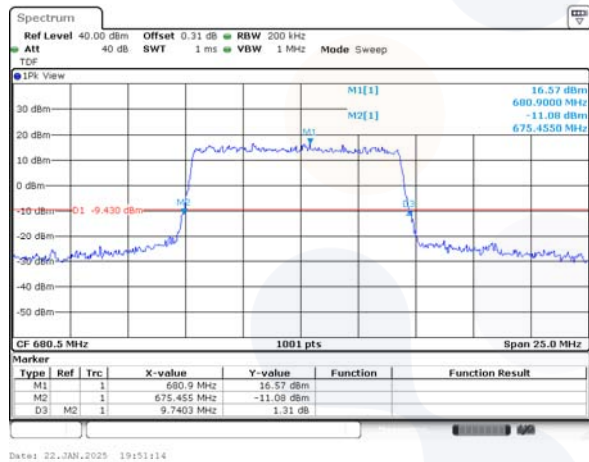
5M BW QPSK Middle channel



5M BW 16QAM Middle channel



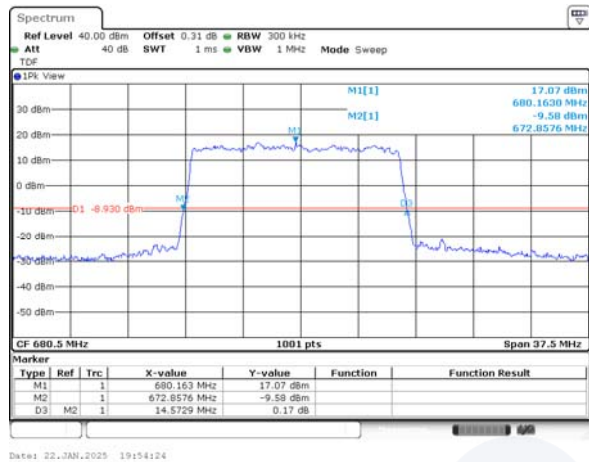
10M BW QPSK Middle channel



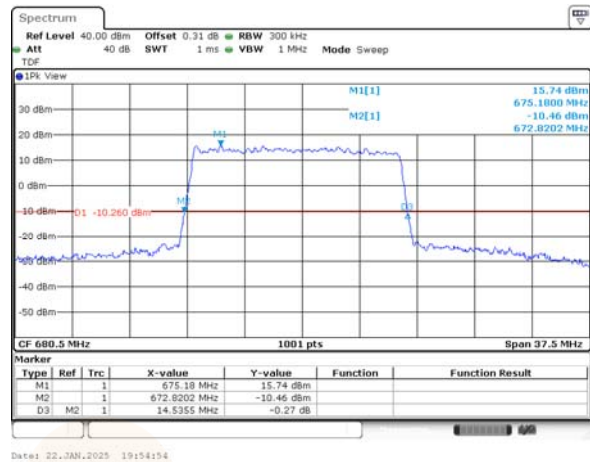
10M BW 16QAM Middle channel



15M BW QPSK Middle channel



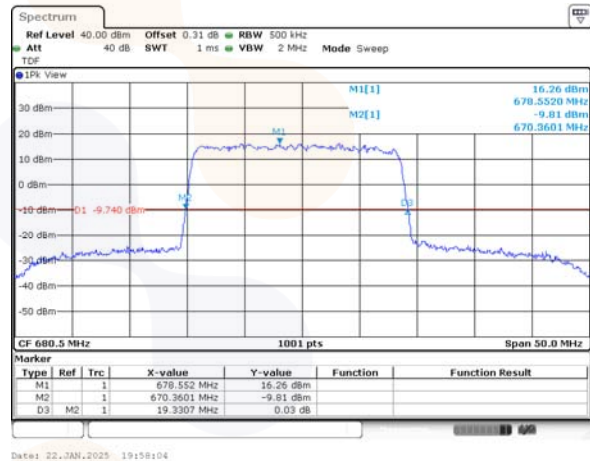
15M BW 16QAM Middle channel



20M BW QPSK Middle channel

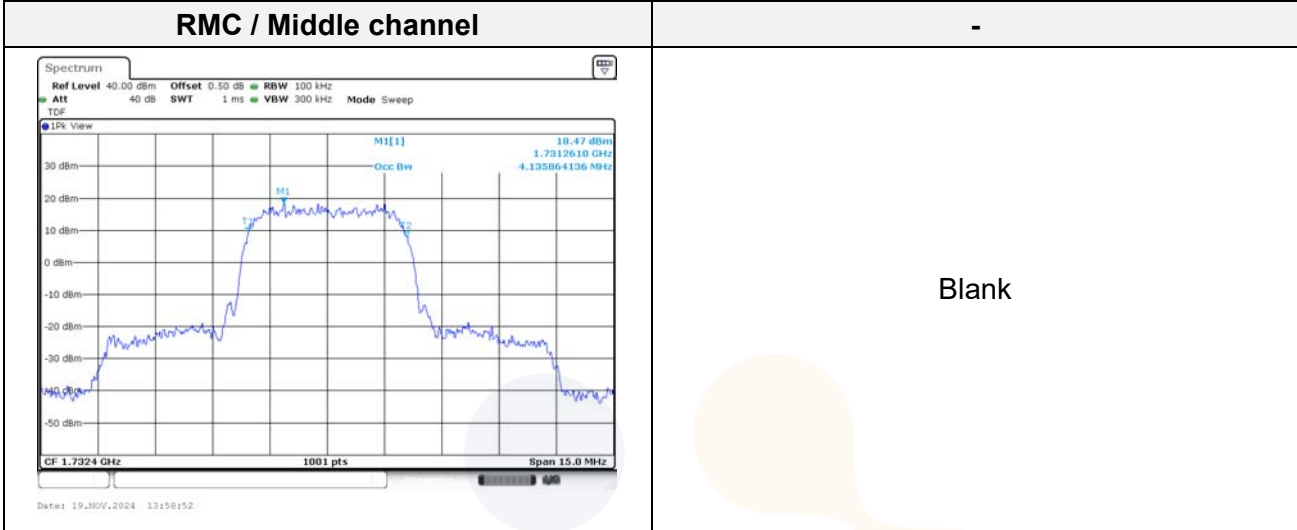


20M BW 16QAM Middle channel



99% Occupied Bandwidth

Test mode: WCDMA 1700



Test mode: LTE B12/17

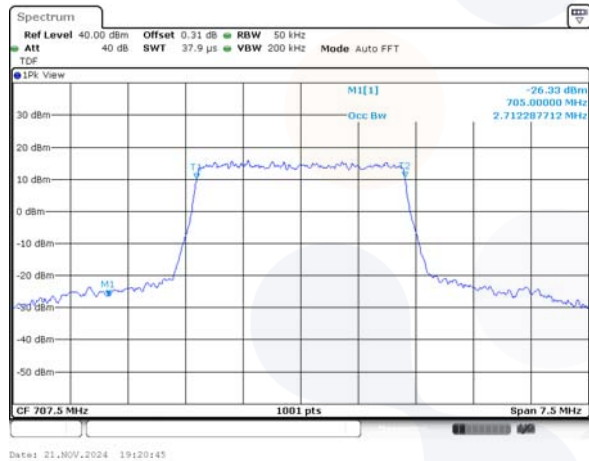
1.4M BW QPSK Middle channel



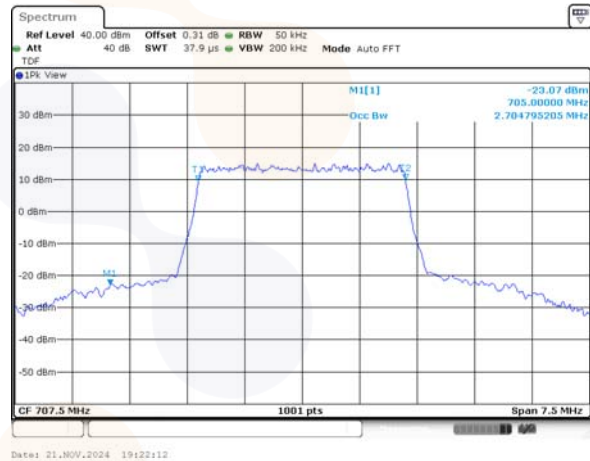
1.4M BW 16QAM Middle channel



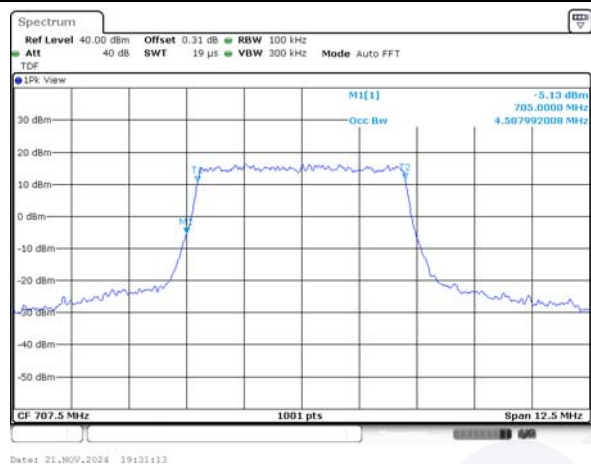
3M BW QPSK Middle channel



3M BW 16QAM Middle channel



5M BW QPSK Middle channel



5M BW 16QAM Middle channel



10M BW QPSK Middle channel

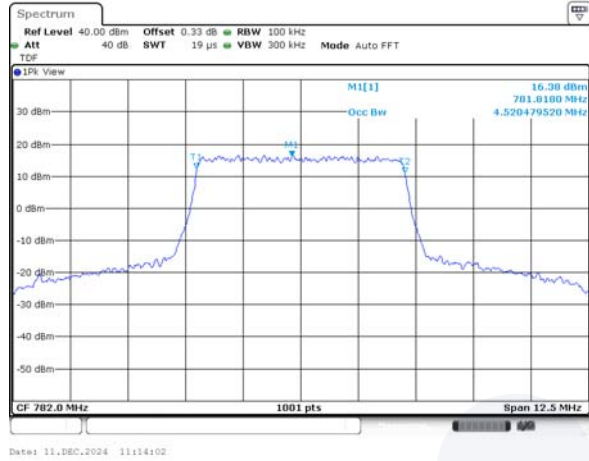


10M BW 16QAM Middle channel

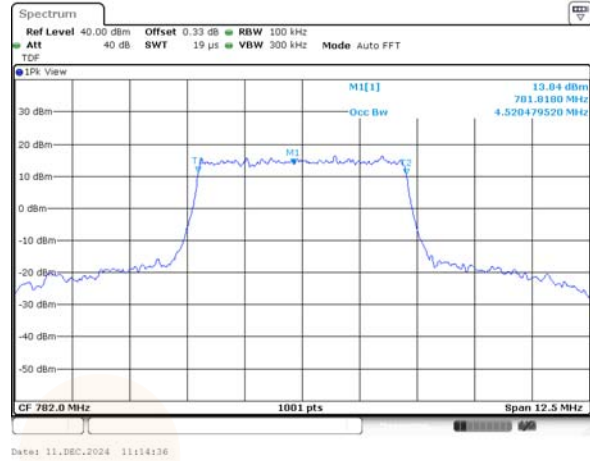


Test mode: LTE B13

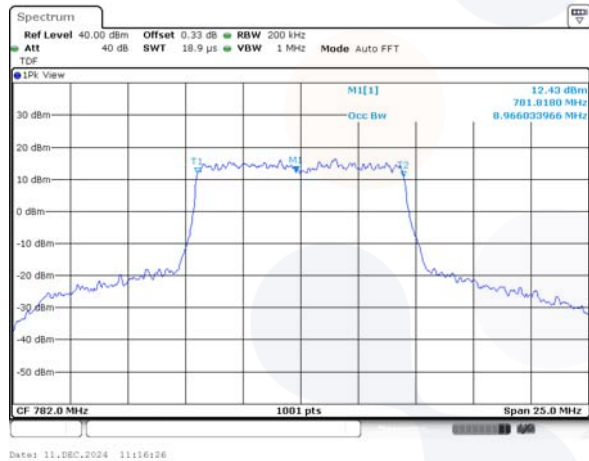
5M BW QPSK Middle channel



5M BW 16QAM Middle channel



10M BW QPSK Middle channel



10M BW 16QAM Middle channel



Test mode: LTE B66/4

1.4M BW QPSK Middle channel



1.4M BW 16QAM Middle channel



3M BW QPSK Middle channel



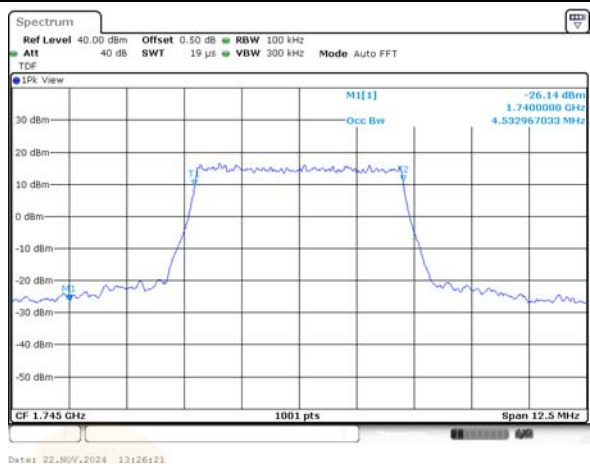
3M BW 16QAM Middle channel



5M BW QPSK Middle channel



5M BW 16QAM Middle channel



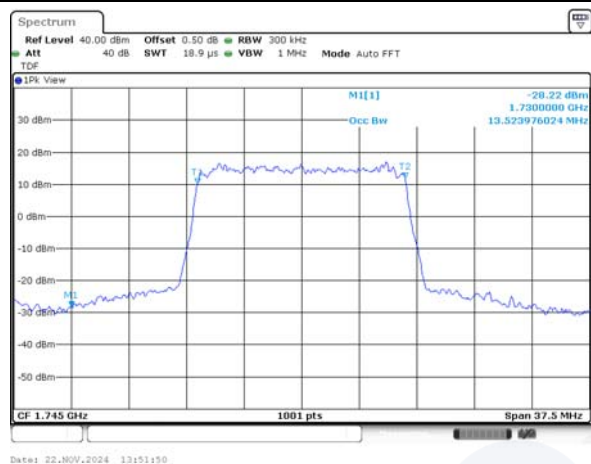
10M BW QPSK Middle channel



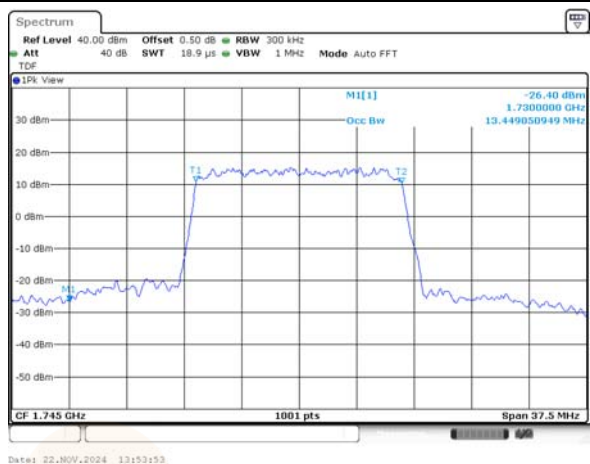
10M BW 16QAM Middle channel



15M BW QPSK Middle channel



15M BW 16QAM Middle channel



20M BW QPSK Middle channel

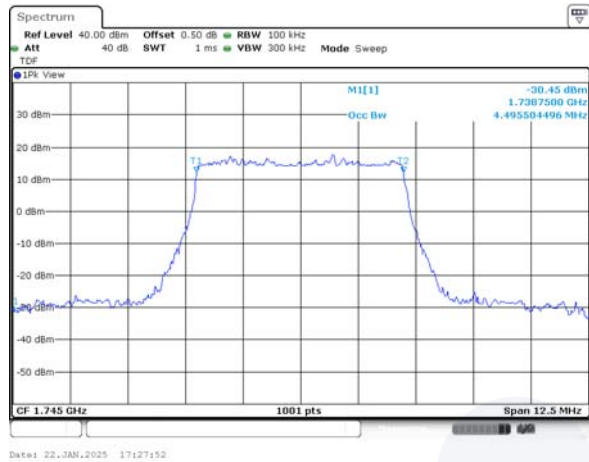


20M BW 16QAM Middle channel

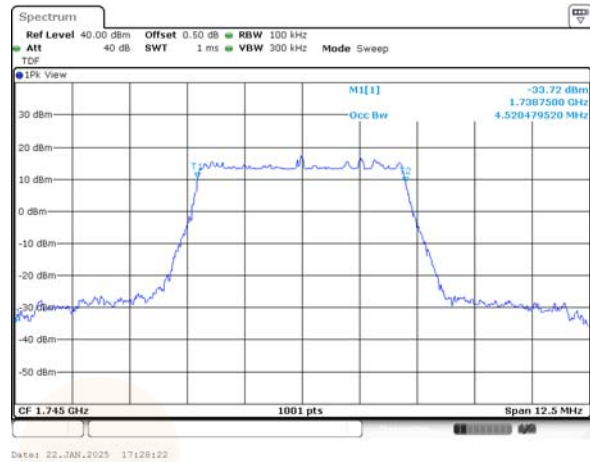


Test mode: 5G NR n66 DFT-s OFDM

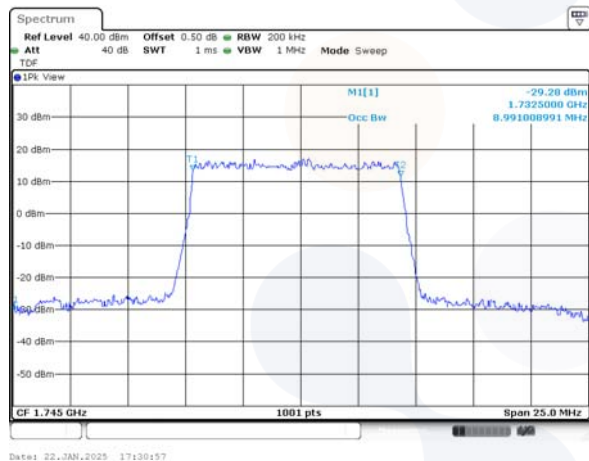
5M BW QPSK Middle channel



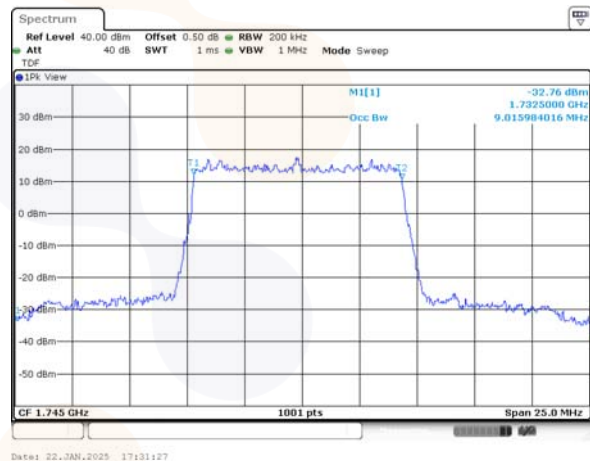
5M BW 16QAM Middle channel



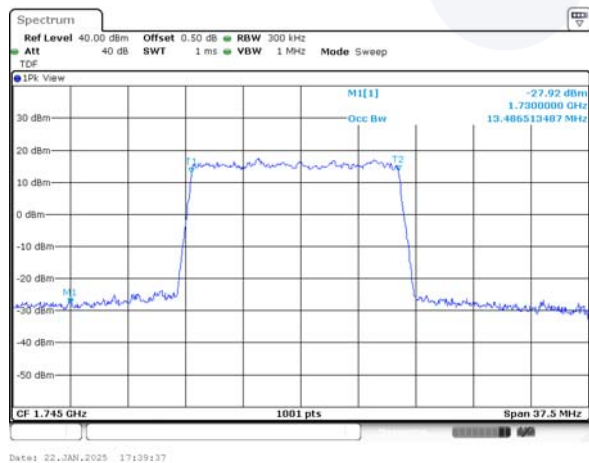
10M BW QPSK Middle channel



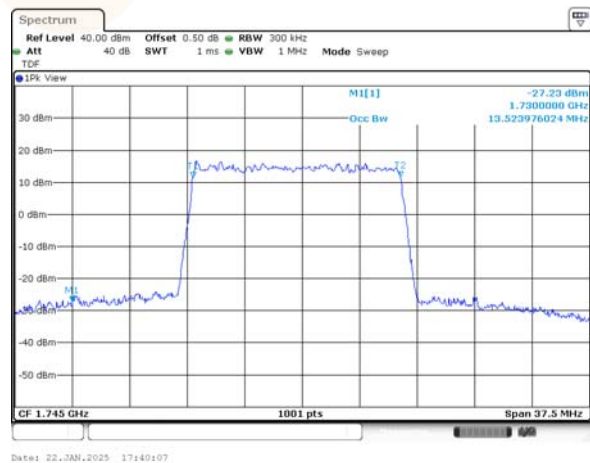
10M BW 16QAM Middle channel



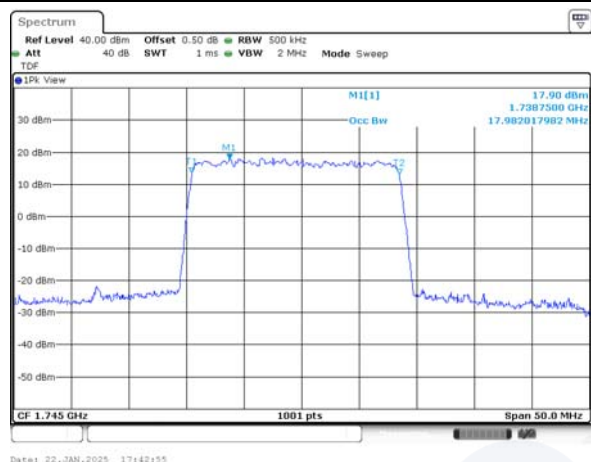
15M BW QPSK Middle channel



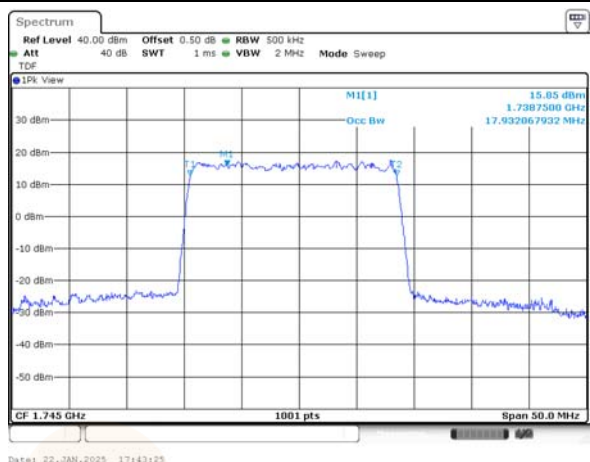
15M BW 16QAM Middle channel



20M BW QPSK Middle channel



20M BW 16QAM Middle channel



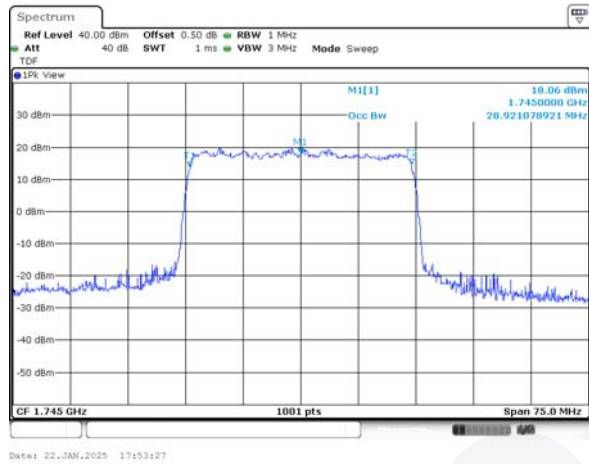
25M BW QPSK Middle channel



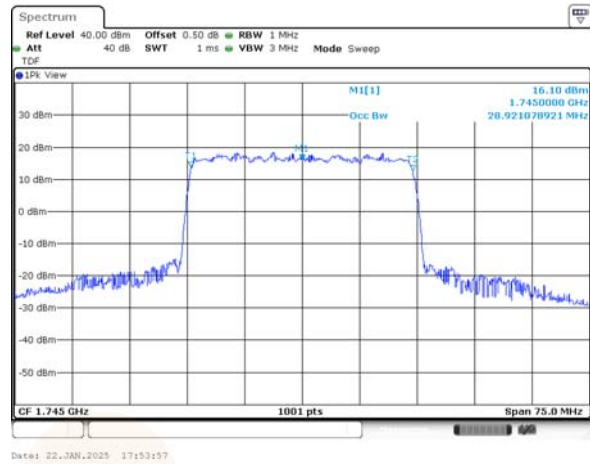
25M BW 16QAM Middle channel



30M BW QPSK Middle channel



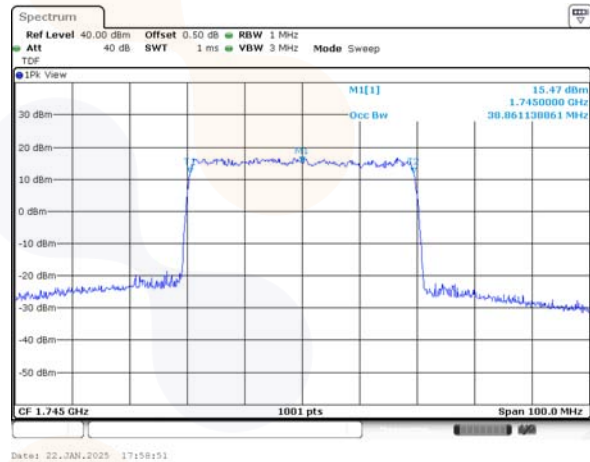
30M BW 16QAM Middle channel



40M BW QPSK Middle channel

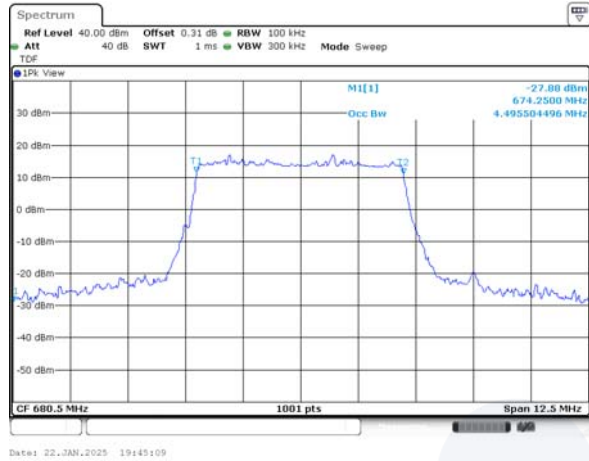


40M BW 16QAM Middle channel

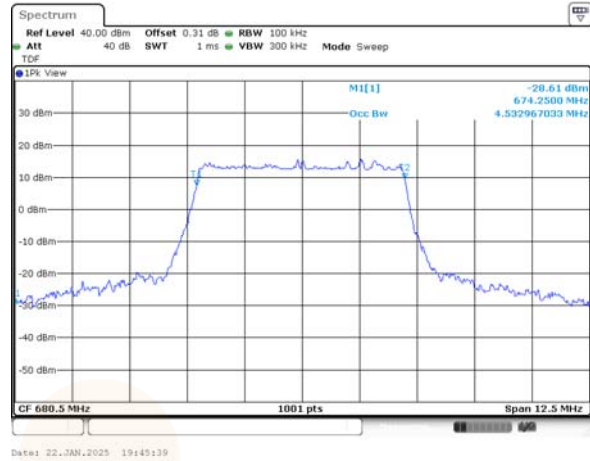


Test mode: 5G NR n71 DFT-s OFDM

5M BW QPSK Middle channel



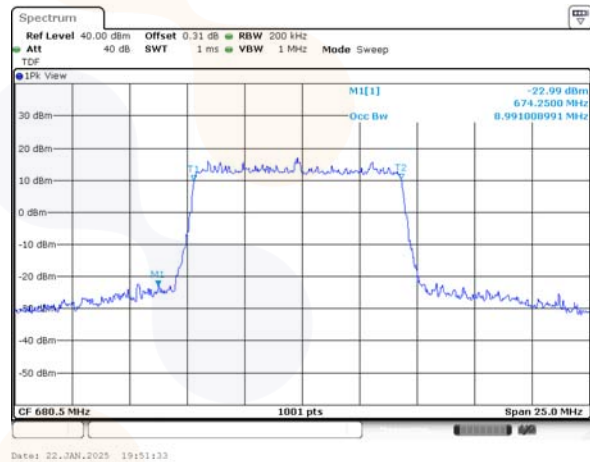
5M BW 16QAM Middle channel



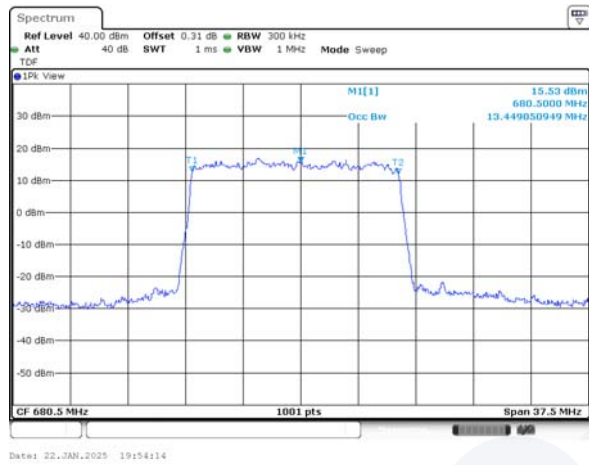
10M BW QPSK Middle channel



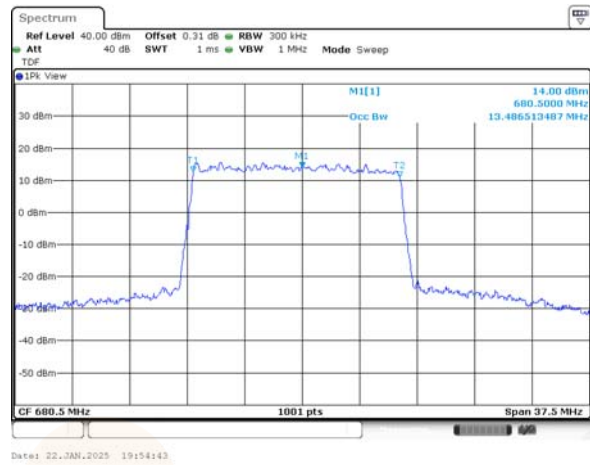
10M BW 16QAM Middle channel



15M BW QPSK Middle channel



15M BW 16QAM Middle channel



20M BW QPSK Middle channel



20M BW 16QAM Middle channel

