CERTIFICATION TEST REPORT

Report Number. : 4791196575-E2V3

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-F956U, SM-F956U1
FCC ID	:	A3LSMF956U
EUT Description	:	GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC, WPT and UWB
Test Standard(s)	:	FCC CFR47 PART 22 SUBPART H FCC CFR47 PART 90 SUBPART R,S

Date Of Issue:
2024-05-07

Prepared by:
UL KOREA LTD.
26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL KOREA LTD. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, Korea
TEL: (031) 337-9902
FAX: (031) 213-5433

IAS ACCREDITED
Testing Laboratory
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2024-04-29	Initial issue	Yeonghwan Hong
V2	2024-05-05	Updated to address TCB's question	Yeonghwan Hong
V3	2024-05-07	Updated to address TCB's question	Yeonghwan Hong

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

TABLE OF CONTENTS

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC, WPT and UWB.
MODEL NUMBER:	SM-F956U, SM-F956U1
SERIAL NUMBER:	R3CX10W5RBA, R3CX10W5RAL, R3CX10W6A5R, R3CX10EN7PY (CONDUCTED); R3CX10W662L, R3CX10W66ZL, R3CX10W668D (RADIATED);
DATE TESTED:	2024-02-19 - 2023-04-29;

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H and 90R,S	Complies

UL KOREA LTD. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL KOREA LTD. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL KOREA LTD. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL KOREA LTD. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL KOREA LTD. By:

Seokhwan Hong
Suwon Lab Engineer
UL KOREA LTD.

Tested By:

Yeonghwan Hong
Suwon Lab Engineer
UL KOREA LTD.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC 47 CFR Part 2.
2. FCC 47 CFR Part 22.
3. FCC 47 CFR Part 90.
4. ANSI TIA-603-E, 2016
5. ANSI C63.26, 2015
6. KDB 971168 D01 Power Meas License Digital Systems v03r01
7. KDB 971168 D02 Misc Rev Approv License Devices v02r02
8. KDB 412172 D01 Determining ERP and EIRP v01r01
9. KDB 648474 D03 Wireless Chargers Battery Cover v01r04

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do,16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
☒ Chamber 1(3m semi-anechoic chamber)
☒ Chamber 2(3m semi-anechoic chamber)
☐ Chamber 3(3m semi-anechoic chamber)
☐ Chamber 4(3m Full-anechoic chamber)
☐ Chamber 5(3m Full-anechoic chamber)

UL KOREA LTD. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

ERP = SG reading with EUT worst orientation (dBm) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBd)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.79 dB
Radiated Disturbance, 9 kHz to 30 MHz	1.69 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.07 dB
Radiated Disturbance, 1 GHz to 18 GHz	4.99 dB
Radiated Disturbance, Above 18 GHz	5.96 dB

Uncertainty figures are valid to a confidence level of 95%.

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Clause 4.3.3 in IEC Guide 115:2023.

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC, WPT and UWB. This test report addresses the WWAN operational mode.

Representative model	Difference	Derivative model
		SM-F956U1
SM-F956U	Hardware	Same as SM-F956U
	Software	Different UI

Thus, SM-F956U was set for final test.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average radiated ERP output powers as follows:

GSM

FCC Part 22								
Band	Frequency Range [MHz]	Modulation	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
			Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
GSM850	824.20 ~ 848.80	GPRS	**32.24**	**1674.94**	**29.90**	977.24	**23.88**	**244.34**
		EGPRS	27.04	505.82	24.60	288.40	18.86	76.91

FCC Part 22						
Band	Frequency Range [MHz]	Modulation	Conducted (ANT D)		Radiated (ANT D)	
			Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
GSM850	824.20 ~ 848.80	GPRS	**32.03**	**1595.88**	**27.07**	509.33
		EGPRS	26.71	468.81	22.28	169.04

WCDMA

FCC Part 22								
Band	Frequency Range [MHz]	Modulation	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
			Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 5_ANT A	826.40 ~ 846.60	Rel. 99	**24.51**	**282.49**	**22.67**	**184.93**	**16.10**	**40.74**
		HSDPA	23.50	223.87	21.81	151.71	15.08	32.21

FCC Part 22						
Band	Frequency Range [MHz]	Modulation	Conducted (ANT D)		Radiated (ANT D)	
			Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 5	826.40 ~ 846.60	Rel. 99	**24.46**	**279.25**	**18.78**	**75.51**
		HSDPA	23.48	222.84	17.68	58.61

LTE Band 14

FCC Part 90									
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 14	793.00	10	QPSK	24.74	297.85	19.58	90.78	**15.00**	**31.62**
			16QAM	24.00	251.19	18.57	71.94	14.20	26.30
			64QAM	22.89	194.54				
			256QAM	19.94	98.63				
	790.50 ~ 795.50	5	QPSK	**24.89**	**308.32**	**19.87**	**97.05**	14.88	30.76
			16QAM	24.11	257.63	18.93	78.16	13.82	24.10
			64QAM	23.13	205.59				
			256QAM	20.08	101.86				

FCC Part 90							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted (ANT D)		Radiated (ANT D)	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 14	793.00	10	QPSK	24.54	284.45	17.10	51.29
			16QAM	23.69	233.88	16.17	41.40
			64QAM	22.87	193.64		
			256QAM	19.70	93.33		
	790.50 ~ 795.50	5	QPSK	**24.61**	**289.07**	**17.40**	**54.95**
			16QAM	24.08	255.86	16.44	44.06
			64QAM	22.84	192.31		
			256QAM	19.74	94.19		

LTE Band 26 (Part90)

FCC Part 90									
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 26	821.50	15	QPSK	24.85	305.49	21.18	131.22	15.46	35.16
			16QAM	24.08	255.86	20.27	106.41	14.54	28.44
			64QAM	22.79	190.11				
			256QAM	20.01	100.23				
	819.00	10	QPSK	24.79	301.30	21.09	128.53	15.41	34.75
			16QAM	24.12	258.23	20.14	103.28	14.07	25.53
			64QAM	22.65	184.08				
			256QAM	20.01	100.23				
	816.50 ~ 821.50	5	QPSK	**24.99**	**315.50**	21.30	134.90	15.79	37.93
			16QAM	24.46	279.25	20.29	106.91	14.48	28.05
			64QAM	23.09	203.70				
			256QAM	19.94	98.63				
	815.50 ~ 822.50	3	QPSK	24.75	298.54	21.34	136.14	15.57	36.06
			16QAM	24.29	268.53	20.36	108.64	14.65	29.17
			64QAM	23.02	200.45				
			256QAM	20.02	100.46				
	814.70 ~ 823.30	1.4	QPSK	24.90	309.03	**21.39**	**137.72**	**15.83**	**38.28**
			16QAM	24.22	264.24	20.29	106.91	14.69	29.44
			64QAM	22.84	192.31				
			256QAM	19.92	98.17				

FCC Part 90							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted (ANT D)		Radiated (ANT D)	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 26	821.50	15	QPSK	**24.96**	**313.33**	**18.55**	**71.61**
			16QAM	24.36	272.90	17.66	58.34
			64QAM	23.29	213.30		
			256QAM	20.23	105.44		
	819.00	10	QPSK	24.52	283.14	18.07	64.12
			16QAM	23.80	239.88	17.06	50.82
			64QAM	22.71	186.64		
			256QAM	19.76	94.62		
	816.50 ~ 821.50	5	QPSK	24.72	296.48	18.27	67.14
			16QAM	23.90	245.47	17.20	52.48
			64QAM	22.86	193.20		
			256QAM	19.78	95.06		
	815.50 ~ 822.50	3	QPSK	24.52	283.14	17.98	62.81
			16QAM	23.90	245.47	17.20	52.48
			64QAM	22.81	190.99		
			256QAM	19.62	91.62		
	814.70 ~ 823.30	1.4	QPSK	24.56	285.76	17.99	62.95
			16QAM	23.76	237.68	16.90	48.98
			64QAM	22.68	185.35		
			256QAM	19.50	89.13		

LTE Band 26 (Straddle)

Straddle									
Band	Frequency Range	BandWidth	Modulation	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
	[MHz]	[MHz]		Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 26	824.00	15	QPSK	24.70	295.12	21.27	133.97	**15.90**	**38.90**
			16QAM	23.83	241.55	20.32	107.65	14.63	29.04
			64QAM	22.63	183.23				
			256QAM	19.89	97.50				
		10	QPSK	24.78	300.61	21.45	139.64	15.78	37.84
			16QAM	23.89	244.91	20.50	112.20	14.86	30.62
			64QAM	22.59	181.55				
			256QAM	19.87	97.05				
		5	QPSK	**24.83**	**304.09**	**21.52**	**141.91**	15.70	37.15
			16QAM	24.25	266.07	20.50	112.20	14.68	29.38
			64QAM	22.76	188.80				
			256QAM	19.92	98.17				
		3	QPSK	24.68	293.76	21.43	139.00	15.79	37.93
			16QAM	24.29	268.53	20.56	113.76	14.79	30.13
			64QAM	22.86	193.20				
			256QAM	19.96	99.08				
		1.4	QPSK	24.65	291.74	21.37	137.09	15.60	36.31
			16QAM	24.00	251.19	20.34	108.14	14.63	29.04
			64QAM	22.65	184.08				
			256QAM	19.97	99.31				

Straddle							
Band	Frequency Range	BandWidth	Modulation	Conducted (ANT D)		Radiated (ANT D)	
	[MHz]	[MHz]		Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 26	824.00	15	QPSK	**24.98**	**314.77**	**18.36**	**68.55**
			16QAM	24.05	254.10	17.43	55.34
			64QAM	23.32	214.78		
			256QAM	20.25	105.93		
		10	QPSK	24.52	283.14	17.90	61.66
			16QAM	23.66	232.27	17.04	50.58
			64QAM	22.76	188.80		
			256QAM	19.69	93.11		
		5	QPSK	24.47	279.90	17.78	59.98
			16QAM	23.83	241.55	17.14	51.76
			64QAM	22.66	184.50		
			256QAM	19.46	88.31		
		3	QPSK	24.44	277.97	17.82	60.53
			16QAM	23.84	242.10	17.22	52.72
			64QAM	22.65	184.08		
			256QAM	19.70	93.33		
		1.4	QPSK	24.39	274.79	17.77	59.84
			16QAM	23.55	226.46	16.93	49.32
			64QAM	22.55	179.89		
			256QAM	19.36	86.30		

LTE Band 26 (Part22)

FCC Part 22									
Band	Frequency Range	BandWidth	Modulation	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
	[MHz]	[MHz]		Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 26	831.50 ~ 841.50	15	QPSK	24.59	287.74	22.27	168.66	15.90	38.90
			16QAM	23.89	244.91	21.08	128.23	15.05	31.99
			64QAM	22.48	177.01				
			256QAM	19.87	97.05				
	829.00 ~ 844.00	10	QPSK	**24.86**	**306.20**	22.22	166.72	16.07	40.46
			16QAM	24.20	263.03	21.21	132.13	15.13	32.58
			64QAM	22.66	184.50				
			256QAM	19.82	95.94				
	826.50 ~ 846.50	5	QPSK	24.78	300.61	**22.36**	**172.19**	**16.29**	**42.56**
			16QAM	24.11	257.63	21.41	138.36	15.45	35.08
			64QAM	22.84	192.31				
			256QAM	20.00	100.00				
	825.50 ~ 847.50	3	QPSK	24.62	289.73	22.13	163.31	15.99	39.72
			16QAM	24.15	260.02	21.01	126.18	15.09	32.28
			64QAM	22.88	194.09				
			256QAM	19.89	97.50				
	824.70 ~ 848.30	1.4	QPSK	24.72	296.48	22.12	162.93	16.24	42.07
			16QAM	24.10	257.04	21.19	131.52	15.19	33.04
			64QAM	22.83	191.87				
			256QAM	19.85	96.61				

FCC Part 22							
Band	Frequency Range	BandWidth	Modulation	Conducted (ANT D)		Radiated (ANT D)	
	[MHz]	[MHz]		Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 26	831.50 ~ 841.50	15	QPSK	**24.75**	**298.54**	**18.85**	**76.74**
			16QAM	24.09	256.45	17.94	62.23
			64QAM	23.22	209.89		
			256QAM	20.07	101.62		
	829.00 ~ 844.00	10	QPSK	24.32	270.40	18.39	69.02
			16QAM	23.60	229.09	17.41	55.08
			64QAM	22.61	182.39		
			256QAM	19.44	87.90		
	826.50 ~ 846.50	5	QPSK	24.37	273.53	18.25	66.83
			16QAM	23.83	241.55	17.45	55.59
			64QAM	22.72	187.07		
			256QAM	19.51	89.33		
	825.50 ~ 847.50	3	QPSK	24.34	271.64	18.24	66.68
			16QAM	23.77	238.23	17.39	54.83
			64QAM	22.77	189.23		
			256QAM	19.58	90.78		
	824.70 ~ 848.30	1.4	QPSK	24.25	266.07	18.12	64.86
			16QAM	23.70	234.42	17.31	53.83
			64QAM	22.63	183.23		
			256QAM	19.56	90.36		

NR Band n26 (Part90)

FCC Part 90										
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Mode	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
					Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
n26	821.50	15	DFT-s OFDM	π/2 BPSK	24.00	251.19				
				QPSK	23.98	250.03	20.12	102.80	14.98	31.48
				16QAM	22.95	197.24	19.15	82.22	14.04	25.35
				64QAM	21.71	148.25				
				256QAM	19.03	79.98				
			CP-OFDM	QPSK	22.62	182.81				
	819.00	10	DFT-s OFDM	π/2 BPSK	24.08	255.86				
				QPSK	24.09	256.45	20.02	100.46	14.92	31.05
				16QAM	22.87	193.64	18.93	78.16	13.90	24.55
				64QAM	21.69	147.57				
				256QAM	18.97	78.89				
			CP-OFDM	QPSK	22.65	184.08				
	816.50 ~ 821.50	5	DFT-s OFDM	π/2 BPSK	24.16	260.62				
				QPSK	**24.17**	**261.22**	**20.29**	**106.91**	**15.19**	**33.04**
				16QAM	23.00	199.53	19.15	82.22	14.34	27.16
				64QAM	21.76	149.97				
				256QAM	18.94	78.34				
			CP-OFDM	QPSK	22.54	179.47				

FCC Part 90								
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Mode	Conducted (ANT D)		Radiated (ANT D)	
					Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
n26	821.50	15	DFT-s OFDM	π/2 BPSK	24.58	287.08		
				QPSK	24.53	283.79	17.89	61.52
				16QAM	23.39	218.27	16.85	48.42
				64QAM	22.21	166.34		
				256QAM	19.60	91.20		
			CP-OFDM	QPSK	23.19	208.45		
	819.00	10	DFT-s OFDM	π/2 BPSK	24.61	289.07		
				QPSK	**24.64**	**291.07**	**18.09**	**64.42**
				16QAM	23.40	218.78	16.95	49.55
				64QAM	22.23	167.11		
				256QAM	19.51	89.33		
			CP-OFDM	QPSK	23.12	205.12		
	816.50 ~ 821.50	5	DFT-s OFDM	π/2 BPSK	24.62	289.73		
				QPSK	24.56	285.76	18.06	63.97
				16QAM	23.46	221.82	17.06	50.82
				64QAM	22.30	169.82		
				256QAM	19.58	90.78		
			CP-OFDM	QPSK	23.16	207.01		

NR Band n26 (Straddle)

Straddle										
Band	Frequency Range	BandWidth	Modulation	Mode	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
	[MHz]	[MHz]			Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
n26	824.00	20	DFT-s OFDM	π/2 BPSK	23.89	244.91				
				QPSK	23.77	238.23	20.39	109.40	15.32	34.04
				16QAM	22.72	187.07	19.22	83.56	14.12	25.82
				64QAM	21.49	140.93				
				256QAM	18.88	77.27				
			CP-OFDM	QPSK	22.44	175.39				
		15	DFT-s OFDM	π/2 BPSK	24.14	259.42				
				QPSK	24.07	255.27	**20.56**	**113.76**	15.10	32.36
				16QAM	23.05	201.84	19.70	93.33	14.10	25.70
				64QAM	21.96	157.04				
				256QAM	18.61	72.61				
			CP-OFDM	QPSK	22.66	184.50				
		10	DFT-s OFDM	π/2 BPSK	24.21	263.63				
				QPSK	24.11	257.63	20.45	110.92	**15.43**	**34.91**
				16QAM	23.14	206.06	19.38	86.70	14.29	26.85
				64QAM	21.92	155.60				
				256QAM	18.65	73.28				
			CP-OFDM	QPSK	22.62	182.81				
		5	DFT-s OFDM	π/2 BPSK	24.40	275.42				
				QPSK	**24.42**	**276.69**	20.44	110.66	15.18	32.96
				16QAM	23.34	215.77	19.44	87.90	14.17	26.12
				64QAM	21.72	148.59				
				256QAM	18.82	76.21				
			CP-OFDM	QPSK	22.84	192.31				

Straddle								
Band	Frequency Range	BandWidth	Modulation	Mode	Conducted (ANT D)		Radiated (ANT D)	
	[MHz]	[MHz]			Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
n26	824.00	20	DFT-s OFDM	π/2 BPSK	23.75	237.14		
				QPSK	23.79	239.33	17.08	51.05
				16QAM	22.63	183.23	16.02	39.99
				64QAM	21.43	139.00		
				256QAM	18.75	74.99		
			CP-OFDM	QPSK	22.50	177.83		
		15	DFT-s OFDM	π/2 BPSK	23.73	236.05		
				QPSK	23.77	238.23	17.06	50.82
				16QAM	22.95	197.24	16.34	43.05
				64QAM	21.31	135.21		
				256QAM	18.84	76.56		
			CP-OFDM	QPSK	22.18	165.20		
		10	DFT-s OFDM	π/2 BPSK	23.75	237.14		
				QPSK	**23.86**	**243.22**	**17.15**	**51.88**
				16QAM	23.62	230.14	17.01	50.23
				64QAM	21.63	145.55		
				256QAM	18.64	73.11		
			CP-OFDM	QPSK	22.06	160.69		
		5	DFT-s OFDM	π/2 BPSK	23.75	237.14		
				QPSK	23.74	236.59	17.03	50.47
				16QAM	22.66	184.50	16.05	40.27
				64QAM	21.56	143.22		
				256QAM	18.97	78.89		
			CP-OFDM	QPSK	22.37	172.58		

NR Band n26 (Part22)

FCC Part 22										
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Mode	Conducted (ANT A)		Radiated (ANT A+B)		Radiated (ANT A)	
					Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
n26	834.00 ~ 839.00	20	DFT-s OFDM	π/2 BPSK	24.21	263.63				
				QPSK	24.09	256.45	21.10	128.82	**15.99**	**39.72**
				16QAM	23.24	210.86	19.97	99.31	14.73	29.72
				64QAM	21.98	157.76				
				256QAM	18.77	75.34				
			CP-OFDM	QPSK	22.66	184.50				
	831.50 ~ 841.50	15	DFT-s OFDM	π/2 BPSK	23.84	242.10				
				QPSK	23.86	243.22	21.09	128.53	15.68	36.98
				16QAM	22.81	190.99	19.99	99.77	14.68	29.38
				64QAM	21.57	143.55				
				256QAM	18.89	77.45				
			CP-OFDM	QPSK	22.47	176.60				
	829.00 ~ 844.00	10	DFT-s OFDM	π/2 BPSK	24.17	261.22				
				QPSK	24.30	269.15	21.08	128.23	15.63	36.56
				16QAM	23.08	203.24	20.00	100.00	14.43	27.73
				64QAM	21.90	154.88				
				256QAM	18.93	78.16				
			CP-OFDM	QPSK	22.58	181.13				
	826.50 ~ 846.50	5	DFT-s OFDM	π/2 BPSK	24.41	276.06				
				QPSK	**24.82**	**303.39**	**21.11**	**129.12**	15.67	36.90
				16QAM	23.33	215.28	20.01	100.23	14.58	28.71
				64QAM	22.11	162.55				
				256QAM	19.15	82.22				
			CP-OFDM	QPSK	22.90	194.98				

FCC Part 22								
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Mode	Conducted (ANT D)		Radiated (ANT D)	
					Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
n26	834.00 ~ 839.00	20	DFT-s OFDM	π/2 BPSK	23.87	243.78		
				QPSK	23.85	242.66	17.49	56.10
				16QAM	22.70	186.21	16.22	41.88
				64QAM	21.46	139.96		
				256QAM	18.77	75.34		
			CP-OFDM	QPSK	22.36	172.19		
	831.50 ~ 841.50	15	DFT-s OFDM	π/2 BPSK	24.36	272.90		
				QPSK	24.29	268.53	17.97	62.66
				16QAM	23.28	212.81	16.89	48.87
				64QAM	22.02	159.22		
				256QAM	19.39	86.90		
			CP-OFDM	QPSK	22.89	194.54		
	829.00 ~ 844.00	10	DFT-s OFDM	π/2 BPSK	24.27	267.30		
				QPSK	24.21	263.63	18.09	64.42
				16QAM	23.07	202.77	16.88	48.75
				64QAM	21.83	152.41		
				256QAM	19.12	81.66		
			CP-OFDM	QPSK	22.84	192.31		
	826.50 ~ 846.50	5	DFT-s OFDM	π/2 BPSK	24.41	276.06		
				QPSK	**24.42**	**276.69**	**18.22**	**66.37**
				16QAM	23.28	212.81	16.89	48.87
				64QAM	21.92	155.60		
				256QAM	19.35	86.10		
			CP-OFDM	QPSK	22.91	195.43		

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a internal antenna for the supported bands with a maximum peak gain as follow:

Frequency (MHz)	Antenna	Peak Gain (dBd)
GSM850 / WCDMA Band 5 / LTE Band 5, 26 / NR Band n5, n26 814 - 849 MHz	A+B	-3.9
	A	-4.7
	D	-4.4
LTE Band 14 788 - 798 MHz	A+B	-4.1
	A	-4.9
	D	-6.1

5.4. WORST-CASE ORIENTATION

Following modes should be considered as worst-case scenario for all other measurements.

- GSM GPRS/EGPRS
- UMTS REL 99/HSDPA

For LTE Bands the worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM, 64QAM and 256QAM modulations. It was found QPSK and 16QAM results were worst case.

This device supports AsDiv Mode. So the test case is as below.

GSM / WCDMA / LTE Band	Antenna Switching
GSM850	**AFS (Adaptive Frame Switching) / ASDiv (Antenna Switching Diversity)**
WCDMA B5	
LTE B14	
LTE B26	

For 5G NR Band n26 the worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on π/2 BPSK, QPSK, 16QAM, 64QAM and 256QAM modulations. It was found QPSK and 16QAM results were worst case.

This device supports NSA and SA Mode and Antenna Switching Mode.
Worst case reported both SA Mode and Antenna Switching Mode. So the test case is as below.

NR Band	NSA	SA	Antenna Switching
N26	N/A	**Stand Alone**	**AFS / ASDiv**

As for the conducted test, 'Main ANT conducted output power test' is the higher than 'Sub ANT conducted output power test', so we tested with 'Main ANT'.

Band	Main antenna	Tune-up Limit (dBm)	Sub antenna	Tune-up Limit (dBm)
GSM 850	**A**	**33.3**	D	33.3
WCDMA B5	**A**	**25.3**	D	25.3
LTE B14	**A**	**25.5**	D	25.5
LTE B26	**A**	**25.5**	D	25.5
NR n26	**A**	**25.0**	D	25.0

Test Item	Test case antenna & port
Conducted output power	All
RF port test	Worst case
e.r.p	All
Radiated Spurious Emissions	All

LTE Band 5

LTE Band 5 (Frequency range: 824-849 MHz) is covered by LTE Band 26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

NR Band n5

NR Band n5 (Frequency range: 824-849 MHz) is covered by NR Band n26 (Frequency range: 814-849 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

- Conducted Spurious Emission

Highest conducted output power setting for each bands					
LTE Band	**ANT**	**Frequency (MHz)**	**Bandwidth (MHz)**	**RB size**	**RB offset**
14	A	790.5	5	1	12
		793.0		1	12
		795.5		1	12
26 (Part 90)		816.5	5	1	0
		821.5		1	0
26 (Straddle)		824.0	5	1	0
26 (Part 22)		829.0	10	1	0
		831.5		1	0
		844.0		1	0
NR Band	**ANT**	**Frequency (MHz)**	**Bandwidth (MHz)**	**RB size**	**RB offset**
26 (Part 90)	A	816.5	5	1	13
		821.5		1	13
26 (Straddle)		824.0	5	1	13
26 (Part 22)		826.5	5	1	13
		831.5		1	13
		846.5		1	13

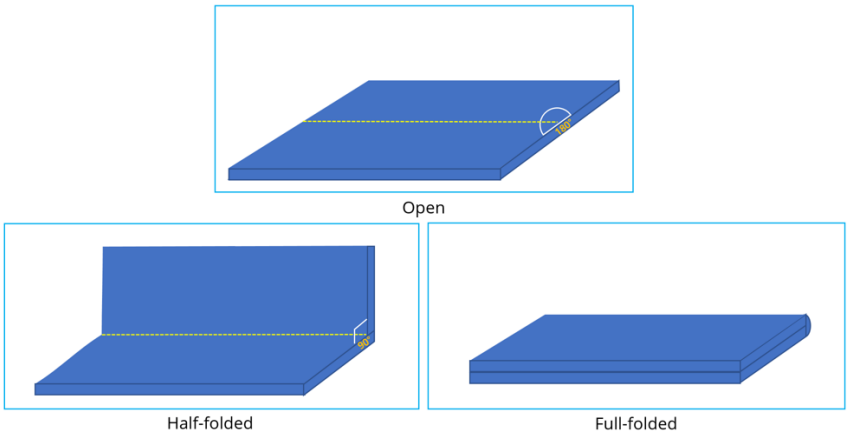
- Radiated Spurious Emission

Highest ERP setting for each bands					
LTE Band	**ANT**	**Frequency (MHz)**	**Bandwidth (MHz)**	**RB size**	**RB offset**
14	A+B	790.5	5	1	12
		793.0		1	12
		795.5		1	12
26 (Part 90)		814.7	1.4	1	3
		823.3		1	3
26 (Straddle)		824.0	5	1	0
26 (Part 22)		826.5	5	1	12
		831.5		1	0
		846.5		1	12
14	A	793.0	10	1	0
26 (Part 90)		814.7	1.4	1	3
		823.3		1	3
26 (Straddle)		824.0	15	1	0
26 (Part 22)		826.5	5	1	12
		831.5		1	0
		846.5		1	12
14	D	790.5	5	1	12
		793.0		1	12
		795.5		1	12
26 (Part 90)		821.5	15	1	0
26 (Straddle)		824.0	15	1	0
26 (Part 22)		831.5	15	1	0
		836.5		1	74
		841.5		1	37

NR Band	ANT	Frequency (MHz)	Bandwidth (MHz)	RB size	RB offset
26 (Part 90)	A+B	816.5	5	1	13
		821.5		1	13
26 (Straddle)		824.0	15	1	1
26 (Part 22)		826.5	5	1	13
		831.5		1	13
		846.5		1	13
26 (Part 90)	A	816.5	5	1	13
		821.5		1	13
26 (Straddle)		824.0	10	1	26
26 (Part 22)		834.0	20	1	53
		836.5		1	53
		839.0		1	1
26 (Part 90)	D	819.0	10	1	1
26 (Straddle)		824.0	10	1	26
26 (Part 22)		826.5	5	1	1
		831.5		1	13
		846.5		1	23

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X, Y and Z and folded conditions it was determined that below orientation was worst-case orientation for each band.



Band	ANT	ERP			RSE		
		X	Y	Z	X	Y	Z
GSM 850	A+B	Open	-	-	-	-	Open
	A	Full-folded	-	-	-	Full-folded	-
	D	Open	-	-	Open	-	-
WCDMA B5	A+B	Open	-	-	-	Open-	-
	A	Full-folded	-	-	-	-	Full-folded
	D	Open	-	-	-	Open-	-
LTE B14	A+B	Open	-	-	Open	-	-
	A	Full-folded	-	-	Full-folded	-	-
	D	Open	-	-	Half-folded	-	-
LTE B26	A+B	Open	-	-	Full-folded	-	-
	A	Full-folded	-	-	-	-	Full-folded
	D	Open	-	-	-	Open-	-
NR n26	A+B	Open	-	-	-	Open	-
	A	Full-folded	-	-	-	-	Full-folded
	D	Open	-	-	Open	-	-

Note1 : For the radiated spurious testing, the EUT attached with travel adapter for the worst case condition. The EUT is continuously communicated with the call box during the tests.

Note2 : The EUT supported wireless charging capability. For the radiated spurious testing were performed on wireless charging pad. The worst case is shown in this report.

Note3 : Antenna switching-related actions according to foldable conditions were force operated and tested in factory mode.

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacture**	**Model**	**Serial Number**	**FCC ID**
Charger	SAMSUNG	EP-TA800	R37N9QP6H39DK3	N/A
Data Cable	SAMSUNG	EP-DN980	GH39-02111A	N/A
Wireless Charger	SAMSUNG	EP-N5200	RF7T20401XMCIS	A3LEPN5200
Wireless Charger	SAMSUNG	EP-P5400	RF7W800BH1CWSB	A3LEPP5400

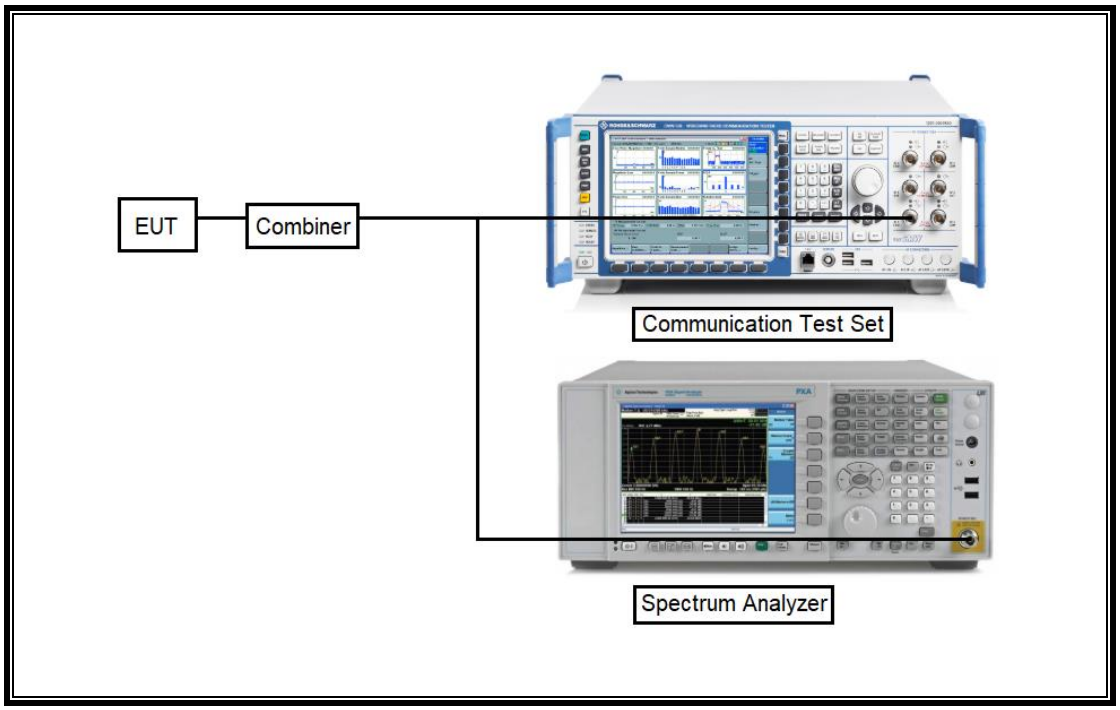
I/O CABLE

I/O Cable List						
Cable No.	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power	1	C Type	Shielded	1.0 m	N/A

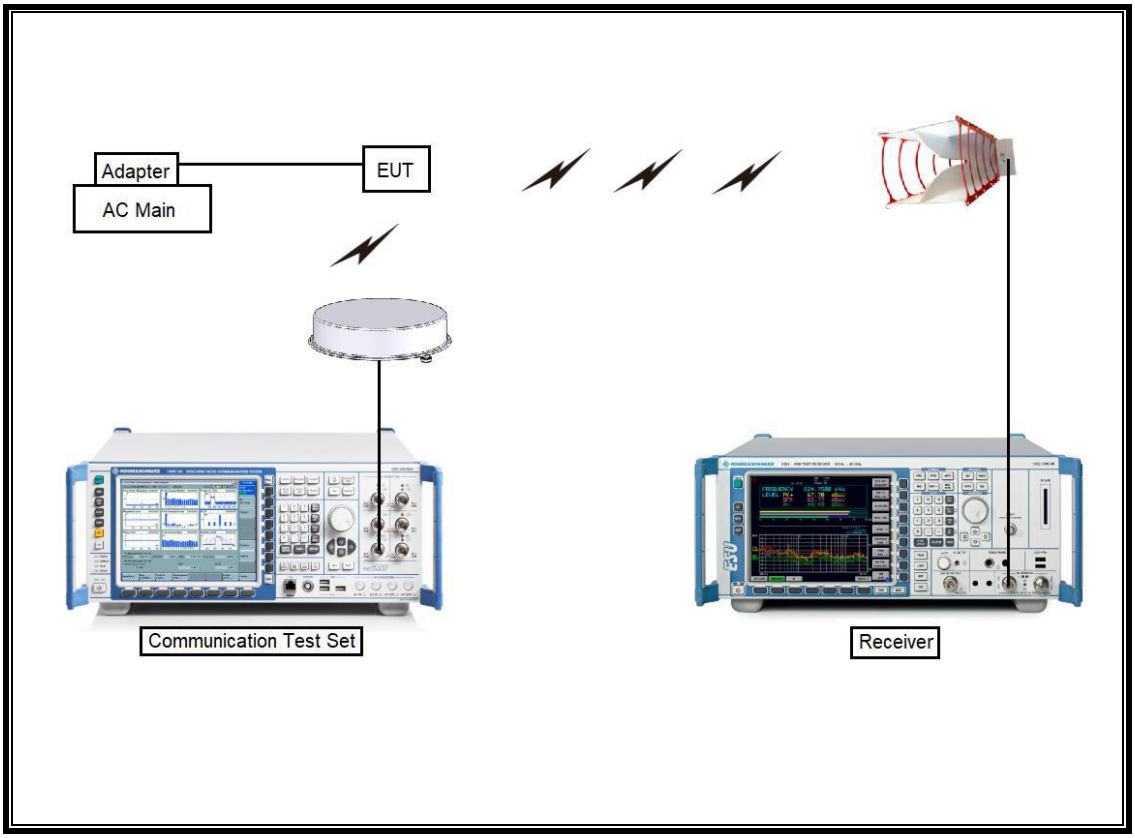
TEST SETUP

The EUT is continuously communicated with the call box during the tests.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**S/N**	**Cal Due**
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121D DB4	00164753	2025-01-17
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	110367-0003	N/A
Directional Antenna	Cobham	FPA3-0.8-6.0R/1329	80108-0004	N/A
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2024-08-02
Antenna, Horn, 40 GHz	ETS	3116C	00168645	2025-10-05
Preamplifier	ETS	3115-PA	00167475	2024-07-25
Preamplifier	ETS	3116C-PA	00168841	2024-07-25
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2024-08-15
Antenna, Horn, 18 GHz	ETS	3115	00167211	2024-08-04
Antenna, Horn, 18 GHz	ETS	3115	00161451	2024-08-21
Antenna, Horn, 18 GHz	ETS	3117	00168724	2024-08-04
Antenna, Horn, 18 GHz	ETS	3117	00168717	2024-08-21
Communications Test Set	R&S	CMW500	169797	2024-07-23
DC Power Supply	Agilent / HP	E3640A	MY54226395	2024-07-24
Preamplifier, 1000 MHz	Sonoma	310N	341282	2024-07-24
Preamplifier, 1000 MHz	Sonoma	310N	370599	2024-07-24
Preamplifier, 1000 MHz	Sonoma	310N	351741	2024-07-24
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	2024-07-24
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2024-07-25
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2024-07-25
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	2024-07-24
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9030B	MY57143717	2024-07-24
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2024-07-23
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2024-07-24
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	2024-07-23
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G006	2024-07-23
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	010	2024-07-24
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	011	2024-07-24
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G001	2024-07-24
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G002	2024-07-24
Attenuator	PASTERNACK	PE7087-10	A009	2024-07-24
Attenuator	PASTERNACK	PE7087-10	A001	2024-07-24
Attenuator	PASTERNACK	PE7087-10	A008	2024-07-27
Attenuator	PASTERNACK	PE7004-10	2	2024-07-23
Attenuator	PASTERNACK	PE7395-10	A011	2024-07-25
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	2025-09-06
Temperature Chamber	ESPEC	SH-642	93001109	2024-07-24
Power Splitter	MINI-CIRCUITS	WA1534	UL003	2025-01-02
Power Splitter	MINI-CIRCUITS	WA1534	UL004	2025-01-02
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY57510655	2025-01-03

UL Software			
Description	**Manufacturer**	**Model**	**Version**
Antenna port test software	UL	CLT	Ver 3.4
Radiated software	UL	UL EMC	Ver 9.5
Antenna port test software (5G NR FR1)	UL	UL iM	Ver 1.06

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Band width (99%)	N/A	Conducted	Pass
22.917(a)	Band Edge / Conducted Spurious Emission	-13dBm		Pass
90.543(e)		-35 dBm		Pass
90.691	Emission mask	Section 9.2.2		Pass
2.1046	Conducted output power	N/A		Pass
90.635(b)		50 dBm		Pass
22.355 90.213	Frequency Stability	2.5PPM		Pass
22.913(a)(5)	Effective Radiated Power	38.5dBm	Radiated	Pass
90.542(a)(7) 90.635(b)		34.77dBm		Pass
22.917(a) 90.543(c) 90.691(a)	Radiated Spurious Emission	-13dBm		Pass

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

8. CONDUCTED RESULTS

8.1. CONDUCTED OUTPUT POWER

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to either CMW500 Test Set or E7515B Test set and configured to operate at maximum power.

NOTE

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations (π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

RESULTS

See the following pages.

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

8.1.1. CONDUCTED AVERAGE OUTPUT POWER

GSM_ANT A

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			
					Pmax / DSI = 1, 3			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	31.83	22.64	33.3	24.1
			190	836.6	32.09	22.90		
			251	848.8	32.24	23.05		
GPRS (GMSK)	CS1	1	128	824.2	31.85	22.66	33.3	24.1
			190	836.6	32.00	22.81		
			251	848.8	32.17	22.98		
		2	128	824.2	30.98	24.80	32.5	26.3
			190	836.6	30.97	24.79		
			251	848.8	31.08	24.90		
		3	128	824.2	28.94	24.52	30.5	26.1
			190	836.6	28.87	24.45		
			251	848.8	29.03	24.61		
		4	128	824.2	26.94	23.77	28.5	25.3
			190	836.6	27.03	23.86		
			251	848.8	27.33	24.16		
EGPRS (8PSK)	MCS5	1	128	824.2	26.06	16.87	28.0	18.8
			190	836.6	26.60	17.41		
			251	848.8	27.04	17.85		
		2	128	824.2	24.44	18.26	26.0	19.8
			190	836.6	24.37	18.19		
			251	848.8	25.14	18.96		
		3	128	824.2	22.38	17.96	24.0	19.6
			190	836.6	22.42	18.00		
			251	848.8	23.11	18.69		
		4	128	824.2	21.41	18.24	23.0	19.8
			190	836.6	21.76	18.59		
			251	848.8	22.27	19.10		

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

GSM_ANT D

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			
					Pmax / DSI = 1, 3			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	31.87	22.68	33.3	24.1
			190	836.6	31.98	22.79		
			251	848.8	32.03	22.84		
GPRS (GMSK)	CS1	1	128	824.2	31.85	22.66	33.3	24.1
			190	836.6	31.59	22.40		
			251	848.8	31.77	22.58		
		2	128	824.2	30.88	24.70	32.5	26.3
			190	836.6	30.84	24.66		
			251	848.8	30.94	24.76		
		3	128	824.2	29.00	24.58	30.5	26.1
			190	836.6	29.08	24.66		
			251	848.8	29.12	24.70		
		4	128	824.2	27.07	23.90	28.5	25.3
			190	836.6	27.35	24.18		
			251	848.8	27.38	24.21		
EGPRS (8PSK)	MCS5	1	128	824.2	26.16	16.97	28.0	18.8
			190	836.6	26.53	17.34		
			251	848.8	26.71	17.52		
		2	128	824.2	24.67	18.49	26.0	19.8
			190	836.6	25.07	18.89		
			251	848.8	25.27	19.09		
		3	128	824.2	22.87	18.45	24.0	19.6
			190	836.6	22.96	18.54		
			251	848.8	22.84	18.42		
		4	128	824.2	21.78	18.61	23.0	19.8
			190	836.6	22.00	18.83		
			251	848.8	22.07	18.90		

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

WCDMA B5_ANT A

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Pmax / DSI = 1, 3		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.48	N/A	25.3
		4183	836.6	24.49		
		4233	846.6	24.51		
HSDPA	Subtest 1	4132	826.4	23.47	0	24.3
		4183	836.6	23.48		
		4233	846.6	23.47		
	Subtest 2	4132	826.4	23.50	0	24.3
		4183	836.6	23.50		
		4233	846.6	23.48		
	Subtest 3	4132	826.4	22.98	0.5	23.8
		4183	836.6	23.02		
		4233	846.6	22.97		
	Subtest 4	4132	826.4	22.99	0.5	23.8
		4183	836.6	22.98		
		4233	846.6	22.99		
HSUPA	Subtest 1	4132	826.4	23.47	0	24.3
		4183	836.6	23.53		
		4233	846.6	23.48		
	Subtest 2	4132	826.4	21.48	2	22.3
		4183	836.6	21.48		
		4233	846.6	21.48		
	Subtest 3	4132	826.4	22.45	1	23.3
		4183	836.6	22.49		
		4233	846.6	22.52		
	Subtest 4	4132	826.4	21.48	2	22.3
		4183	836.6	21.51		
		4233	846.6	21.48		
	Subtest 5	4132	826.4	23.04	0	24.3
		4183	836.6	23.07		
		4233	846.6	23.11		
DC-HSDPA	Subtest 1	4132	826.4	23.48	0	24.3
		4183	836.6	23.53		
		4233	846.6	23.47		
	Subtest 2	4132	826.4	23.52	0	24.3
		4183	836.6	23.53		
		4233	846.6	23.41		
	Subtest 3	4132	826.4	22.97	0.5	23.8
		4183	836.6	23.05		
		4233	846.6	22.99		
	Subtest 4	4132	826.4	22.94	0.5	23.8
		4183	836.6	23.03		
		4233	846.6	22.99		

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

WCDMA B5_ANT D

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Pmax / DSI = 1, 3		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.42	N/A	25.3
		4183	836.6	24.46		
		4233	846.6	24.43		
HSDPA	Subtest 1	4132	826.4	23.46	0	24.3
		4183	836.6	23.45		
		4233	846.6	23.42		
	Subtest 2	4132	826.4	23.47	0	24.3
		4183	836.6	23.48		
		4233	846.6	23.43		
	Subtest 3	4132	826.4	22.94	0.5	23.8
		4183	836.6	22.96		
		4233	846.6	22.91		
	Subtest 4	4132	826.4	22.97	0.5	23.8
		4183	836.6	22.95		
		4233	846.6	22.91		
HSUPA	Subtest 1	4132	826.4	23.44	0	24.3
		4183	836.6	23.46		
		4233	846.6	23.43		
	Subtest 2	4132	826.4	21.44	2	22.3
		4183	836.6	21.48		
		4233	846.6	21.43		
	Subtest 3	4132	826.4	22.44	1	23.3
		4183	836.6	22.46		
		4233	846.6	22.43		
	Subtest 4	4132	826.4	21.44	2	22.3
		4183	836.6	21.46		
		4233	846.6	21.43		
	Subtest 5	4132	826.4	23.00	0	24.3
		4183	836.6	23.02		
		4233	846.6	22.98		
DC-HSDPA	Subtest 1	4132	826.4	23.45	0	24.3
		4183	836.6	23.48		
		4233	846.6	23.43		
	Subtest 2	4132	826.4	23.45	0	24.3
		4183	836.6	23.46		
		4233	846.6	23.44		
	Subtest 3	4132	826.4	22.95	0.5	23.8
		4183	836.6	22.93		
		4233	846.6	22.93		
	Subtest 4	4132	826.4	22.93	0.5	23.8
		4183	836.6	22.93		
		4233	846.6	22.90		

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

LTE Band 14_ANT A

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				Pmax / DSI = 1, 3				
				Measured Pwr (dBm)				
					23330			
					793 MHz			
10 MHz	QPSK	1	0		24.74		0.0	25.5
		1	25		24.66		0.0	25.5
		1	49		24.58		0.0	25.5
		25	0		23.75		1.0	24.5
		25	12		23.70		1.0	24.5
		25	25		23.64		1.0	24.5
		50	0		23.67		1.0	24.5
	16QAM	1	0		24.00		1.0	24.5
		1	25		23.90		1.0	24.5
		1	49		23.80		1.0	24.5
		25	0		22.75		2.0	23.5
		25	12		22.72		2.0	23.5
		25	25		22.69		2.0	23.5
		50	0		22.62		2.0	23.5
	64QAM	1	0		22.89		2.0	23.5
		1	25		22.85		2.0	23.5
		1	49		22.69		2.0	23.5
		25	0		21.71		3.0	22.5
		25	12		21.65		3.0	22.5
		25	25		21.61		3.0	22.5
		50	0		21.62		3.0	22.5
	256QAM	1	0		19.94		5.0	20.5
		1	25		19.84		5.0	20.5
		1	49		19.80		5.0	20.5
		25	0		19.73		5.0	20.5
		25	12		19.66		5.0	20.5
		25	25		19.62		5.0	20.5
		50	0		19.62		5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23305	23330	23355		
				790.5 MHz	793 MHz	795.5 MHz		
5 MHz	QPSK	1	0	24.88	24.82	24.86	0.0	25.5
		1	12	24.89	24.87	24.86	0.0	25.5
		1	24	24.82	24.84	24.81	0.0	25.5
		12	0	23.84	23.80	23.79	1.0	24.5
		12	7	23.92	23.86	23.92	1.0	24.5
		12	13	23.89	23.86	23.83	1.0	24.5
		25	0	23.88	23.80	23.84	1.0	24.5
	16QAM	1	0	23.95	23.98	24.04	1.0	24.5
		1	12	24.07	24.02	24.11	1.0	24.5
		1	24	23.91	23.99	24.01	1.0	24.5
		12	0	22.83	22.91	22.87	2.0	23.5
		12	7	22.93	22.94	22.99	2.0	23.5
		12	13	22.86	22.94	22.90	2.0	23.5
		25	0	22.91	22.83	22.84	2.0	23.5
	64QAM	1	0	23.06	22.92	22.95	2.0	23.5
		1	12	23.13	22.98	23.03	2.0	23.5
		1	24	23.02	22.94	22.95	2.0	23.5
		12	0	21.82	21.83	21.78	3.0	22.5
		12	7	21.94	21.83	21.82	3.0	22.5
		12	13	21.87	21.85	21.83	3.0	22.5
		25	0	21.86	21.88	21.76	3.0	22.5
	256QAM	1	0	19.96	19.94	19.87	5.0	20.5
		1	12	20.08	20.08	19.99	5.0	20.5
		1	24	19.95	19.92	19.88	5.0	20.5
		12	0	19.78	19.76	19.78	5.0	20.5
		12	7	19.89	19.82	19.79	5.0	20.5
		12	13	19.85	19.83	19.84	5.0	20.5
		25	0	19.83	19.80	19.74	5.0	20.5

LTE Band 14_ANT D

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
				Pmax / DSI = 1, 3				
				Measured Pwr (dBm)				
					23330			
					793 MHz			
10 MHz	QPSK	1	0		24.54		0.0	25.5
		1	25		24.38		0.0	25.5
		1	49		24.31		0.0	25.5
		25	0		23.55		1.0	24.5
		25	12		23.47		1.0	24.5
		25	25		23.43		1.0	24.5
		50	0		23.46		1.0	24.5
	16QAM	1	0		23.69		1.0	24.5
		1	25		23.63		1.0	24.5
		1	49		23.46		1.0	24.5
		25	0		22.57		2.0	23.5
		25	12		22.52		2.0	23.5
		25	25		22.46		2.0	23.5
		50	0		22.49		2.0	23.5
	64QAM	1	0		22.87		2.0	23.5
		1	25		22.61		2.0	23.5
		1	49		22.53		2.0	23.5
		25	0		21.61		3.0	22.5
		25	12		21.52		3.0	22.5
		25	25		21.46		3.0	22.5
		50	0		21.48		3.0	22.5
	256QAM	1	0		19.70		5.0	20.5
		1	25		19.64		5.0	20.5
		1	49		19.33		5.0	20.5
		25	0		19.57		5.0	20.5
		25	12		19.51		5.0	20.5
		25	25		19.46		5.0	20.5
		50	0		19.47		5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23305	23330	23355		
				790.5 MHz	793 MHz	795.5 MHz		
5 MHz	QPSK	1	0	24.60	24.48	24.61	0.0	25.5
		1	12	24.61	24.53	24.61	0.0	25.5
		1	24	24.57	24.44	24.54	0.0	25.5
		12	0	23.54	23.44	23.52	1.0	24.5
		12	7	23.62	23.46	23.63	1.0	24.5
		12	13	23.60	23.48	23.55	1.0	24.5
		25	0	23.60	23.40	23.59	1.0	24.5
	16QAM	1	0	23.92	23.70	23.99	1.0	24.5
		1	12	24.08	23.80	24.04	1.0	24.5
		1	24	24.06	23.73	23.95	1.0	24.5
		12	0	22.64	22.54	22.60	2.0	23.5
		12	7	22.77	22.56	22.75	2.0	23.5
		12	13	22.69	22.60	22.70	2.0	23.5
		25	0	22.59	22.44	22.60	2.0	23.5
	64QAM	1	0	22.77	22.68	22.76	2.0	23.5
		1	12	22.84	22.70	22.82	2.0	23.5
		1	24	22.75	22.60	22.79	2.0	23.5
		12	0	21.57	21.47	21.55	3.0	22.5
		12	7	21.67	21.49	21.69	3.0	22.5
		12	13	21.62	21.49	21.61	3.0	22.5
		25	0	21.57	21.43	21.58	3.0	22.5
	256QAM	1	0	19.62	19.51	19.58	5.0	20.5
		1	12	19.74	19.67	19.70	5.0	20.5
		1	24	19.57	19.50	19.54	5.0	20.5
		12	0	19.54	19.44	19.52	5.0	20.5
		12	7	19.63	19.47	19.62	5.0	20.5
		12	13	19.58	19.47	19.56	5.0	20.5
		25	0	19.59	19.40	19.58	5.0	20.5

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

LTE Band 26_ANT A

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm) Pmax						MPR	Tune-up Limit
				Measured Pwr (dBm)							
				26765		26790	26865	26915	26965		
				821.5 MHz		824 MHz	831.5 MHz	836.50 MHz	841.5 MHz		
15 MHz	QPSK	1	0	24.78		24.70	24.59	24.42	24.42	0.0	25.5
		1	37	24.85		24.65	24.53	24.50	24.38	0.0	25.5
		1	74	24.42		24.47	24.40	24.44	24.35	0.0	25.5
		36	0	23.69		23.65	23.57	23.46	23.43	1.0	24.5
		36	20	23.66		23.51	23.50	23.38	23.43	1.0	24.5
		36	39	23.51		23.45	23.44	23.42	23.38	1.0	24.5
		75	0	23.60		23.49	23.46	23.38	23.44	1.0	24.5
	16QAM	1	0	24.08		23.83	23.89	23.79	23.66	1.0	24.5
		1	37	24.01		23.76	23.78	23.62	23.53	1.0	24.5
		1	74	23.87		23.63	23.61	23.60	23.47	1.0	24.5
		36	0	22.81		22.69	22.60	22.53	22.49	2.0	23.5
		36	20	22.73		22.55	22.56	22.47	22.53	2.0	23.5
		36	39	22.55		22.51	22.46	22.47	22.46	2.0	23.5
		75	0	22.68		22.55	22.51	22.42	22.53	2.0	23.5
	64QAM	1	0	22.68		22.58	22.48	22.34	22.33	2.0	23.5
		1	37	22.79		22.63	22.41	22.33	22.46	2.0	23.5
		1	74	22.46		22.49	22.32	22.35	22.37	2.0	23.5
		36	0	21.50		21.33	21.25	21.25	21.25	3.0	22.5
		36	20	21.73		21.21	21.33	21.34	21.33	3.0	22.5
		36	39	21.41		21.13	21.24	21.19	21.26	3.0	22.5
		75	0	21.50		21.32	21.24	21.28	21.16	3.0	22.5
	256QAM	1	0	20.01		19.89	19.87	19.65	19.53	5.0	20.5
		1	37	19.82		19.88	19.87	19.63	19.48	5.0	20.5
		1	74	19.56		19.53	19.42	19.32	19.40	5.0	20.5
		36	0	19.77		19.73	19.63	19.44	19.44	5.0	20.5
		36	20	19.73		19.59	19.55	19.46	19.50	5.0	20.5
		36	39	19.55		19.54	19.47	19.46	19.46	5.0	20.5
		75	0	19.67		19.56	19.52	19.42	19.51	5.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26740		26790	26840	26865	26990		
				819 MHz		824 MHz	829 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	24.49		24.52	24.86	24.57	24.45	0.0	25.5
		1	25	24.79		24.78	24.62	24.55	24.44	0.0	25.5
		1	49	24.53		24.62	24.40	24.54	24.31	0.0	25.5
		25	0	23.75		23.74	23.65	23.61	23.48	1.0	24.5
		25	12	23.80		23.67	23.52	23.59	23.50	1.0	24.5
		25	25	23.68		23.63	23.53	23.54	23.53	1.0	24.5
		50	0	23.77		23.69	23.55	23.55	23.55	1.0	24.5
	16QAM	1	0	24.12		23.89	23.82	23.89	23.83	1.0	24.5
		1	25	23.99		23.85	23.96	23.82	24.20	1.0	24.5
		1	49	23.77		23.70	23.55	23.57	23.42	1.0	24.5
		25	0	22.84		22.77	22.64	22.63	22.54	2.0	23.5
		25	12	22.83		22.70	22.57	22.57	22.61	2.0	23.5
		25	25	22.65		22.70	22.57	22.56	22.57	2.0	23.5
		50	0	22.80		22.63	22.56	22.61	22.55	2.0	23.5
	64QAM	1	0	22.53		22.59	22.59	22.48	22.62	2.0	23.5
		1	25	22.65		22.47	22.66	22.57	22.40	2.0	23.5
		1	49	22.50		22.42	22.65	22.42	22.37	2.0	23.5
		25	0	21.40		21.45	21.30	21.28	21.28	3.0	22.5
		25	12	21.51		21.48	21.34	21.34	21.40	3.0	22.5
		25	25	21.40		21.41	21.38	21.32	21.36	3.0	22.5
		50	0	21.44		21.45	21.33	21.30	21.43	3.0	22.5
	256QAM	1	0	20.01		19.87	19.80	19.82	19.58	5.0	20.5
		1	25	19.85		19.76	19.75	19.68	19.60	5.0	20.5
		1	49	19.78		19.59	19.55	19.56	19.57	5.0	20.5
		25	0	19.84		19.79	19.64	19.63	19.47	5.0	20.5
		25	12	19.84		19.64	19.60	19.64	19.52	5.0	20.5
		25	25	19.65		19.50	19.50	19.59	19.53	5.0	20.5
		50	0	19.78		19.62	19.52	19.53	19.56	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26715	26765	26790	26815	26865	27015		
				816.5 MHz	821.5 MHz	824 MHz	826.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.87	24.99	24.83	24.69	24.66	24.46	0.0	25.5
		1	12	24.72	24.83	24.79	24.78	24.58	24.61	0.0	25.5
		1	24	24.70	24.68	24.58	24.61	24.56	24.38	0.0	25.5
		12	0	23.79	23.78	23.69	23.69	23.60	23.43	1.0	24.5
		12	7	23.72	23.74	23.75	23.64	23.60	23.46	1.0	24.5
		12	13	23.74	23.72	23.59	23.61	23.54	23.48	1.0	24.5
		25	0	23.68	23.67	23.62	23.68	23.53	23.39	1.0	24.5
	16QAM	1	0	24.46	24.23	24.25	24.02	23.94	24.02	1.0	24.5
		1	12	24.30	24.46	24.06	24.10	23.97	23.94	1.0	24.5
		1	24	24.25	24.16	24.06	24.11	23.85	23.86	1.0	24.5
		12	0	22.82	22.73	22.66	22.75	22.66	22.52	2.0	23.5
		12	7	22.71	22.77	22.69	22.76	22.68	22.51	2.0	23.5
		12	13	22.73	22.73	22.53	22.76	22.62	22.56	2.0	23.5
		25	0	22.78	22.74	22.63	22.70	22.63	22.42	2.0	23.5
	64QAM	1	0	22.97	22.73	22.72	22.81	22.59	22.63	2.0	23.5
		1	12	23.09	22.86	22.76	22.84	22.55	22.58	2.0	23.5
		1	24	22.99	22.59	22.53	22.78	22.49	22.48	2.0	23.5
		12	0	21.75	21.72	21.69	21.60	21.54	21.55	3.0	22.5
		12	7	21.70	21.72	21.63	21.58	21.52	21.64	3.0	22.5
		12	13	21.65	21.65	21.48	21.50	21.45	21.33	3.0	22.5
		25	0	21.67	21.63	21.50	21.57	21.43	21.45	3.0	22.5
	256QAM	1	0	19.88	19.94	19.88	20.00	19.66	19.50	5.0	20.5
		1	12	19.84	19.90	19.92	19.91	19.70	19.71	5.0	20.5
		1	24	19.65	19.73	19.64	19.59	19.50	19.44	5.0	20.5
		12	0	19.77	19.73	19.74	19.65	19.55	19.52	5.0	20.5
		12	7	19.78	19.73	19.74	19.71	19.62	19.44	5.0	20.5
		12	13	19.75	19.69	19.53	19.65	19.51	19.50	5.0	20.5
		25	0	19.71	19.69	19.60	19.65	19.64	19.43	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26705	26775	26790	26805	26865	27025		
				815.5 MHz	822.5 MHz	824 MHz	825.5 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.74	24.67	24.68	24.54	24.45	24.37	0.0	25.5
		1	8	24.73	24.74	24.68	24.59	24.62	24.58	0.0	25.5
		1	14	24.75	24.62	24.48	24.51	24.47	24.47	0.0	25.5
		8	0	23.77	23.70	23.66	23.61	23.53	23.37	1.0	24.5
		8	4	23.76	23.70	23.66	23.65	23.54	23.36	1.0	24.5
		8	7	23.69	23.67	23.67	23.65	23.47	23.38	1.0	24.5
		15	0	23.83	23.65	23.67	23.74	23.54	23.45	1.0	24.5
	16QAM	1	0	24.29	24.07	24.29	24.15	23.73	23.69	1.0	24.5
		1	8	24.16	24.11	24.17	23.85	23.93	23.80	1.0	24.5
		1	14	24.16	24.11	24.07	23.93	23.80	23.85	1.0	24.5
		8	0	22.83	22.78	22.80	22.73	22.66	22.43	2.0	23.5
		8	4	22.90	22.70	22.77	22.73	22.66	22.52	2.0	23.5
		8	7	22.82	22.78	22.80	22.69	22.70	22.52	2.0	23.5
		15	0	22.90	22.77	22.80	22.68	22.63	22.48	2.0	23.5
	64QAM	1	0	22.91	22.63	22.74	22.88	22.67	22.51	2.0	23.5
		1	8	23.02	22.61	22.86	22.72	22.77	22.53	2.0	23.5
		1	14	22.90	22.48	22.58	22.81	22.82	22.48	2.0	23.5
		8	0	21.78	21.63	21.63	21.57	21.51	21.29	3.0	22.5
		8	4	21.77	21.72	21.63	21.59	21.52	21.34	3.0	22.5
		8	7	21.77	21.65	21.61	21.53	21.54	21.38	3.0	22.5
		15	0	21.71	21.66	21.66	21.60	21.48	21.29	3.0	22.5
	256QAM	1	0	20.02	19.84	19.75	19.87	19.77	19.41	5.0	20.5
		1	8	19.84	19.96	19.96	19.89	19.73	19.62	5.0	20.5
		1	14	19.88	19.58	19.79	19.85	19.57	19.56	5.0	20.5
		8	0	19.79	19.75	19.74	19.70	19.67	19.44	5.0	20.5
		8	4	19.73	19.68	19.75	19.68	19.68	19.39	5.0	20.5
		8	7	19.76	19.77	19.72	19.70	19.63	19.45	5.0	20.5
		15	0	19.78	19.69	19.62	19.67	19.56	19.44	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26697	26783	26790	26797	26865	27033		
				814.7 MHz	823.3 MHz	824 MHz	824.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.77	24.69	24.59	24.58	24.56	24.47	0.0	25.5
		1	3	24.90	24.70	24.65	24.72	24.52	24.46	0.0	25.5
		1	5	24.77	24.54	24.60	24.57	24.59	24.40	0.0	25.5
		3	0	24.73	24.63	24.61	24.64	24.49	24.43	0.0	25.5
		3	1	24.81	24.62	24.63	24.62	24.49	24.49	0.0	25.5
		3	3	24.74	24.62	24.58	24.60	24.50	24.41	0.0	25.5
		6	0	23.24	23.06	23.13	23.13	23.00	22.90	1.0	24.5
	16QAM	1	0	24.14	23.88	23.93	24.00	23.78	23.68	1.0	24.5
		1	3	24.22	24.07	24.00	24.01	23.66	23.73	1.0	24.5
		1	5	24.11	23.95	23.87	24.10	23.68	23.65	1.0	24.5
		3	0	23.99	23.73	23.72	23.80	23.71	23.58	1.0	24.5
		3	1	23.95	23.73	23.70	23.77	23.73	23.59	1.0	24.5
		3	3	23.86	23.80	23.76	23.76	23.62	23.52	1.0	24.5
		6	0	22.85	22.74	22.76	22.68	22.55	22.46	2.0	23.5
	64QAM	1	0	22.84	22.81	22.55	22.83	22.59	22.29	2.0	23.5
		1	3	22.81	22.77	22.59	22.81	22.61	22.31	2.0	23.5
		1	5	22.73	22.80	22.58	22.77	22.52	22.33	2.0	23.5
		3	0	22.72	22.68	22.62	22.67	22.43	22.34	2.0	23.5
		3	1	22.68	22.71	22.61	22.65	22.41	22.35	2.0	23.5
		3	3	22.71	22.66	22.65	22.69	22.45	22.28	2.0	23.5
		6	0	21.68	21.57	21.56	21.64	21.40	21.41	3.0	22.5
	256QAM	1	0	19.86	19.66	19.72	19.64	19.70	19.43	5.0	20.5
		1	3	19.92	19.66	19.97	19.75	19.85	19.45	5.0	20.5
		1	5	19.89	19.57	19.67	19.66	19.66	19.31	5.0	20.5
		3	0	19.72	19.77	19.68	19.62	19.50	19.47	5.0	20.5
		3	1	19.73	19.73	19.61	19.60	19.49	19.51	5.0	20.5
		3	3	19.83	19.69	19.69	19.74	19.57	19.50	5.0	20.5
		6	0	19.75	19.68	19.73	19.41	19.54	19.54	5.0	20.5

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

LTE Band 26_ANT D

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm) Pmax						MPR	Tune-up Limit
				Measured Pwr (dBm)							
				26765		26790	26865	26915	26965		
				821.5 MHz		824 MHz	831.5 MHz	836.50 MHz	841.5 MHz		
15 MHz	QPSK	1	0	24.96		24.98	24.74	24.57	24.60	0.0	25.5
		1	37	24.94		24.86	24.72	24.67	24.75	0.0	25.5
		1	74	24.79		24.70	24.62	24.68	24.52	0.0	25.5
		36	0	24.01		23.95	23.80	23.72	23.68	1.0	24.5
		36	20	23.91		23.80	23.71	23.62	23.64	1.0	24.5
		36	39	23.74		23.74	23.68	23.67	23.60	1.0	24.5
		75	0	23.85		23.76	23.70	23.62	23.70	1.0	24.5
	16QAM	1	0	24.36		24.05	24.09	24.04	24.00	1.0	24.5
		1	37	24.06		23.98	23.96	23.87	24.02	1.0	24.5
		1	74	23.97		23.83	23.85	23.96	23.84	1.0	24.5
		36	0	23.04		23.02	22.86	22.78	22.69	2.0	23.5
		36	20	22.95		22.88	22.84	22.71	22.71	2.0	23.5
		36	39	22.78		22.75	22.72	22.67	22.61	2.0	23.5
		75	0	22.93		22.83	22.79	22.69	22.71	2.0	23.5
	64QAM	1	0	23.12		23.32	23.01	22.96	22.98	2.0	23.5
		1	37	23.29		23.28	23.10	23.22	23.12	2.0	23.5
		1	74	23.02		23.04	23.00	22.93	22.94	2.0	23.5
		36	0	22.12		22.09	21.93	21.86	21.81	3.0	22.5
		36	20	22.11		21.96	21.95	21.82	21.87	3.0	22.5
		36	39	21.90		21.86	21.82	21.77	21.70	3.0	22.5
		75	0	22.05		21.93	21.88	21.75	21.85	3.0	22.5
	256QAM	1	0	20.23		20.25	20.07	19.88	19.79	5.0	20.5
		1	37	20.11		20.15	19.90	19.86	19.89	5.0	20.5
		1	74	19.82		19.84	19.73	19.54	19.71	5.0	20.5
		36	0	20.01		19.99	19.86	19.74	19.63	5.0	20.5
		36	20	19.96		19.81	19.80	19.68	19.66	5.0	20.5
		36	39	19.76		19.75	19.73	19.67	19.62	5.0	20.5
		75	0	19.92		19.80	19.74	19.66	19.71	5.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26740		26790	26840	26865	26990		
				819 MHz		824 MHz	829 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	24.52		24.36	24.32	24.03	23.95	0.0	25.5
		1	25	24.32		24.52	24.12	24.08	23.98	0.0	25.5
		1	49	24.41		24.21	23.97	24.15	24.11	0.0	25.5
		25	0	23.46		23.44	23.27	23.22	23.05	1.0	24.5
		25	12	23.47		23.27	23.14	23.22	23.15	1.0	24.5
		25	25	23.34		23.29	23.15	23.15	23.04	1.0	24.5
		50	0	23.49		23.29	23.15	23.22	23.13	1.0	24.5
	16QAM	1	0	23.80		23.66	23.60	23.30	23.41	1.0	24.5
		1	25	23.41		23.38	23.57	23.16	23.51	1.0	24.5
		1	49	23.56		23.43	23.19	23.30	22.89	1.0	24.5
		25	0	22.49		22.40	22.30	22.29	22.05	2.0	23.5
		25	12	22.47		22.39	22.31	22.30	22.13	2.0	23.5
		25	25	22.29		22.32	22.17	22.29	22.21	2.0	23.5
		50	0	22.47		22.30	22.21	22.28	22.14	2.0	23.5
	64QAM	1	0	22.62		22.76	22.47	22.51	22.58	2.0	23.5
		1	25	22.65		22.66	22.52	22.50	22.61	2.0	23.5
		1	49	22.71		22.21	22.51	22.26	22.27	2.0	23.5
		25	0	21.51		21.48	21.42	21.37	21.17	3.0	22.5
		25	12	21.40		21.51	21.34	21.35	21.29	3.0	22.5
		25	25	21.33		21.26	21.27	21.28	21.19	3.0	22.5
		50	0	21.51		21.39	21.31	21.34	21.24	3.0	22.5
	256QAM	1	0	19.76		19.69	19.44	19.41	19.16	5.0	20.5
		1	25	19.54		19.39	19.29	19.27	19.32	5.0	20.5
		1	49	19.29		19.23	19.33	19.19	19.23	5.0	20.5
		25	0	19.46		19.40	19.31	19.26	19.03	5.0	20.5
		25	12	19.36		19.32	19.17	19.23	19.12	5.0	20.5
		25	25	19.39		19.25	19.18	19.22	19.10	5.0	20.5
		50	0	19.41		19.22	19.19	19.25	19.14	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26715	26765	26790	26815	26865	27015		
				816.5 MHz	821.5 MHz	824 MHz	826.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.56	24.68	24.45	24.37	24.09	24.10	0.0	25.5
		1	12	24.72	24.47	24.47	24.35	24.21	24.07	0.0	25.5
		1	24	24.54	24.33	24.28	24.25	24.20	23.99	0.0	25.5
		12	0	23.49	23.47	23.39	23.29	23.19	23.04	1.0	24.5
		12	7	23.43	23.49	23.38	23.32	23.19	23.02	1.0	24.5
		12	13	23.41	23.38	23.30	23.24	23.15	23.05	1.0	24.5
		25	0	23.43	23.42	23.29	23.23	23.16	22.99	1.0	24.5
	16QAM	1	0	23.81	23.86	23.72	23.74	23.82	23.61	1.0	24.5
		1	12	23.75	23.76	23.80	23.83	23.81	23.59	1.0	24.5
		1	24	23.83	23.90	23.83	23.70	23.55	23.41	1.0	24.5
		12	0	22.60	22.42	22.34	22.37	22.29	22.03	2.0	23.5
		12	7	22.53	22.42	22.35	22.38	22.30	21.99	2.0	23.5
		12	13	22.46	22.38	22.24	22.31	22.19	22.06	2.0	23.5
		25	0	22.41	22.41	22.33	22.24	22.26	22.04	2.0	23.5
	64QAM	1	0	22.63	22.56	22.66	22.70	22.56	22.47	2.0	23.5
		1	12	22.86	22.74	22.62	22.72	22.43	22.53	2.0	23.5
		1	24	22.55	22.56	22.52	22.44	22.31	22.34	2.0	23.5
		12	0	21.60	21.48	21.46	21.43	21.31	21.05	3.0	22.5
		12	7	21.48	21.61	21.42	21.43	21.32	21.29	3.0	22.5
		12	13	21.53	21.46	21.35	21.34	21.23	21.07	3.0	22.5
		25	0	21.44	21.50	21.39	21.36	21.26	21.03	3.0	22.5
	256QAM	1	0	19.65	19.51	19.44	19.48	19.33	19.05	5.0	20.5
		1	12	19.78	19.68	19.46	19.51	19.35	19.29	5.0	20.5
		1	24	19.48	19.45	19.28	19.40	19.17	19.04	5.0	20.5
		12	0	19.47	19.40	19.40	19.29	19.25	18.97	5.0	20.5
		12	7	19.39	19.43	19.40	19.30	19.23	19.02	5.0	20.5
		12	13	19.37	19.34	19.30	19.30	19.15	19.00	5.0	20.5
		25	0	19.39	19.37	19.30	19.24	19.20	19.01	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26705	26775	26790	26805	26865	27025		
				815.5 MHz	822.5 MHz	824 MHz	825.5 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.52	24.28	24.37	24.25	24.21	23.95	0.0	25.5
		1	8	24.51	24.32	24.44	24.34	24.16	24.01	0.0	25.5
		1	14	24.45	24.30	24.17	24.17	24.09	24.04	0.0	25.5
		8	0	23.50	23.31	23.30	23.21	23.16	22.98	1.0	24.5
		8	4	23.46	23.31	23.33	23.28	23.23	22.88	1.0	24.5
		8	7	23.45	23.35	23.34	23.26	23.11	22.91	1.0	24.5
		15	0	23.47	23.34	23.30	23.31	23.12	23.00	1.0	24.5
	16QAM	1	0	23.87	23.83	23.81	23.69	23.77	23.45	1.0	24.5
		1	8	23.87	23.74	23.84	23.60	23.61	23.60	1.0	24.5
		1	14	23.84	23.90	23.70	23.75	23.71	23.31	1.0	24.5
		8	0	22.61	22.47	22.47	22.32	22.30	21.96	2.0	23.5
		8	4	22.54	22.46	22.42	22.38	22.24	22.03	2.0	23.5
		8	7	22.57	22.52	22.42	22.42	22.29	22.00	2.0	23.5
		15	0	22.64	22.40	22.38	22.38	22.21	22.07	2.0	23.5
	64QAM	1	0	22.78	22.56	22.60	22.50	22.61	22.40	2.0	23.5
		1	8	22.81	22.54	22.65	22.41	22.77	22.39	2.0	23.5
		1	14	22.73	22.40	22.58	22.33	22.37	22.10	2.0	23.5
		8	0	21.65	21.51	21.51	21.47	21.24	21.05	3.0	22.5
		8	4	21.65	21.52	21.45	21.39	21.31	21.04	3.0	22.5
		8	7	21.59	21.49	21.28	21.33	21.21	21.10	3.0	22.5
		15	0	21.58	21.44	21.39	21.38	21.21	21.01	3.0	22.5
	256QAM	1	0	19.60	19.54	19.61	19.40	19.21	19.00	5.0	20.5
		1	8	19.62	19.50	19.70	19.58	19.38	19.06	5.0	20.5
		1	14	19.62	19.41	19.53	19.34	19.21	19.12	5.0	20.5
		8	0	19.47	19.43	19.36	19.34	19.17	19.05	5.0	20.5
		8	4	19.54	19.41	19.42	19.37	19.22	19.00	5.0	20.5
		8	7	19.44	19.42	19.40	19.31	19.23	18.99	5.0	20.5
		15	0	19.50	19.36	19.32	19.30	19.23	18.97	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
				26697	26783	26790	26797	26865	27033		
				814.7 MHz	823.3 MHz	824 MHz	824.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.41	24.25	24.39	24.20	24.01	23.71	0.0	25.5
		1	3	24.50	24.33	24.37	24.25	24.04	23.54	0.0	25.5
		1	5	24.56	24.28	24.24	24.23	24.00	23.43	0.0	25.5
		3	0	24.49	24.26	24.26	24.16	24.09	23.56	0.0	25.5
		3	1	24.44	24.29	24.27	24.25	24.07	23.47	0.0	25.5
		3	3	24.51	24.31	24.24	24.25	24.08	23.41	0.0	25.5
		6	0	22.91	22.77	22.73	22.69	22.55	22.38	1.0	24.5
	16QAM	1	0	23.76	23.60	23.55	23.59	23.23	22.89	1.0	24.5
		1	3	23.70	23.50	23.51	23.54	23.30	22.71	1.0	24.5
		1	5	23.71	23.49	23.54	23.70	23.31	22.63	1.0	24.5
		3	0	23.62	23.37	23.27	23.43	23.17	22.66	1.0	24.5
		3	1	23.66	23.37	23.34	23.39	23.25	22.66	1.0	24.5
		3	3	23.56	23.39	23.37	23.28	23.19	22.62	1.0	24.5
		6	0	22.46	22.37	22.34	22.24	22.11	21.82	2.0	23.5
	64QAM	1	0	22.53	22.52	22.42	22.51	22.36	22.22	2.0	23.5
		1	3	22.57	22.30	22.55	22.63	22.39	22.21	2.0	23.5
		1	5	22.68	22.49	22.25	22.29	22.49	22.14	2.0	23.5
		3	0	22.63	22.39	22.39	22.38	22.34	22.21	2.0	23.5
		3	1	22.64	22.42	22.32	22.47	22.35	22.19	2.0	23.5
		3	3	22.57	22.44	22.22	22.29	22.22	22.02	2.0	23.5
		6	0	21.47	21.31	21.55	21.36	21.20	21.07	3.0	22.5
	256QAM	1	0	19.46	19.42	19.28	19.36	19.06	19.02	5.0	20.5
		1	3	19.39	19.39	19.35	19.56	18.98	19.12	5.0	20.5
		1	5	19.48	19.37	19.36	19.35	19.30	18.87	5.0	20.5
		3	0	19.37	19.31	19.30	19.25	19.03	18.96	5.0	20.5
		3	1	19.40	19.23	19.29	19.19	18.98	19.00	5.0	20.5
		3	3	19.50	19.42	19.24	19.17	19.11	18.97	5.0	20.5
		6	0	19.38	19.28	19.28	19.08	19.09	19.08	5.0	20.5

NR Band n26_ANT A

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)							
					Measured Pwr (dBm)						MPR	Tune-up Limit
							164800	166300	166300	167800		
							824 MHz	831.5 MHz	834 MHz	839 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1			23.89	23.86	23.80	23.73	0.0	25.0
			1	53			23.81	23.87	24.17	23.67	0.0	25.0
			1	104			23.67	23.81	23.96	23.64	0.0	25.0
			50	0			22.89	22.71	23.63	22.64	0.5	24.5
			50	28			23.81	23.75	24.21	23.57	0.0	25.0
			50	56			22.69	22.57	23.61	22.54	0.5	24.5
			100	0			22.89	22.83	23.73	22.64	0.5	24.5
		QPSK	1	1			23.68	23.75	24.04	23.66	0.0	25.0
			1	53			23.77	23.85	24.09	23.64	0.0	25.0
			1	104			23.72	23.71	23.93	23.65	0.0	25.0
			50	0			22.81	22.69	23.11	22.64	1.0	24.0
			50	28			23.71	23.73	24.05	23.58	0.0	25.0
			50	56			22.68	22.61	23.10	22.54	1.0	24.0
			100	0			22.83	22.82	23.23	22.66	1.0	24.0
		16QAM	1	1			22.72	22.70	23.24	22.43	1.0	24.0
			1	53			22.60	22.39	23.20	22.46	1.0	24.0
			1	104			22.54	22.42	23.16	22.39	1.0	24.0
		64QAM	1	1			21.49	21.46	21.98	21.25	2.5	22.5
		256QAM	1	1			18.88	18.77	18.64	18.73	4.5	20.5
	CP-OFDM	QPSK	1	1			22.44	22.34	22.66	22.39	1.5	23.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
						164300	164800	166300	167300	168300		
						821.5 MHz	824 MHz	831.5 MHz	836.5 MHz	841.5 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1		24.00	24.14	23.84	23.80	23.73	0.0	25.0
			1	40		23.82	24.03	23.69	23.66	23.56	0.0	25.0
			1	77		23.75	23.84	23.70	23.65	23.59	0.0	25.0
			36	0		22.95	23.69	22.80	22.71	22.74	0.5	24.5
			36	22		23.96	24.09	23.76	23.70	23.64	0.0	25.0
			36	43		22.85	23.48	22.74	22.60	22.64	0.5	24.5
			75	0		22.88	23.54	22.72	22.71	22.68	0.5	24.5
		QPSK	1	1		23.98	24.07	23.84	23.86	23.79	0.0	25.0
			1	40		23.87	24.00	23.73	23.72	23.58	0.0	25.0
			1	77		23.80	23.74	23.67	23.62	23.60	0.0	25.0
			36	0		22.97	23.16	22.78	22.80	22.80	1.0	24.0
			36	22		23.97	23.95	23.81	23.77	23.67	0.0	25.0
			36	43		22.86	22.95	22.79	22.72	22.63	1.0	24.0
			75	0		22.89	23.05	22.77	22.70	22.69	1.0	24.0
		16QAM	1	1		22.95	23.05	22.81	22.55	22.57	1.0	24.0
		64QAM	1	1		21.71	21.96	21.57	21.43	21.33	2.5	22.5
		256QAM	1	1		19.03	18.61	18.89	18.80	18.73	4.5	20.5
	CP-OFDM	QPSK	1	1		22.62	22.66	22.47	22.41	22.36	1.5	23.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
					163800		164800	165800	166300	168800		
					819 MHz		824 MHz	829 MHz	831.5 MHz	844 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.08		24.21	24.17	23.89	23.75	0.0	25.0
			1	26	24.01		24.16	24.12	23.79	23.72	0.0	25.0
			1	50	24.00		24.16	24.05	23.80	23.81	0.0	25.0
			25	0	23.05		23.69	23.76	22.76	22.65	0.5	24.5
			25	14	24.04		23.66	23.76	23.80	23.80	0.0	25.0
			25	27	23.01		23.64	23.69	22.69	22.69	0.5	24.5
			50	0	23.01		23.65	23.64	22.77	22.74	0.5	24.5
		QPSK	1	1	24.09		24.09	24.30	23.88	23.76	0.0	25.0
			1	26	24.04		24.11	24.06	23.84	23.76	0.0	25.0
			1	50	24.05		24.08	23.99	23.75	23.76	0.0	25.0
			25	0	23.02		23.14	23.21	22.77	22.69	1.0	24.0
			25	14	24.05		23.19	23.21	23.82	23.61	0.0	25.0
			25	27	23.00		23.04	23.12	22.71	22.69	1.0	24.0
			50	0	22.98		23.07	23.19	22.73	22.74	1.0	24.0
		16QAM	1	1	22.87		23.14	23.08	22.68	22.63	1.0	24.0
		64QAM	1	1	21.69		21.92	21.90	21.49	21.35	2.5	22.5
		256QAM	1	1	18.97		18.65	18.93	18.76	18.68	4.5	20.5
	CP-OFDM	QPSK	1	1	22.65		22.62	22.58	22.38	22.42	1.5	23.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
					163300	164300	164800	165300	166300	169300		
					816.5 MHz	821.5 MHz	824 MHz	826.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.12	24.10	24.32	24.63	23.80	23.77	0.0	25.0
			1	13	24.16	24.13	24.34	24.35	23.87	23.81	0.0	25.0
			1	23	24.06	24.10	24.37	24.34	23.71	23.84	0.0	25.0
			12	0	23.06	23.35	23.83	23.85	22.71	22.70	0.5	24.5
			12	7	24.11	24.13	24.40	24.34	23.78	23.67	0.0	25.0
			12	13	23.01	23.25	23.77	23.76	22.65	22.61	0.5	24.5
			25	0	23.08	23.16	23.80	23.77	22.73	22.69	0.5	24.5
		QPSK	1	1	24.33	24.23	24.26	24.23	23.80	23.78	0.0	25.0
			1	13	24.55	24.35	24.42	24.82	23.85	23.82	0.0	25.0
			1	23	24.01	24.20	24.26	24.13	23.76	23.79	0.0	25.0
			12	0	23.07	23.15	23.30	23.30	22.75	22.71	1.0	24.0
			12	7	24.08	24.23	24.40	24.38	23.81	23.71	0.0	25.0
			12	13	23.01	23.11	23.25	23.25	22.66	22.66	1.0	24.0
			25	0	23.04	23.10	23.28	23.28	22.75	22.69	1.0	24.0
		16QAM	1	1	23.00	23.21	23.34	23.33	22.68	22.67	1.0	24.0
		64QAM	1	1	21.76	21.73	21.72	22.11	21.44	21.42	2.5	22.5
		256QAM	1	1	18.94	18.88	18.82	19.15	18.77	18.80	4.5	20.5
	CP-OFDM	QPSK	1	1	22.54	22.30	22.84	22.90	22.48	22.43	1.5	23.5

NR Band n26_ANT D

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)						MPR	Tune-up Limit
					Measured Pwr (dBm)							
							164800	166800	167300	167800		
							824 MHz	834 MHz	836.5 MHz	839 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1			23.72	23.86	23.76	23.74	0.0	25.0
			1	53			23.75	23.87	23.79	23.66	0.0	25.0
			1	104			23.60	23.81	23.68	23.68	0.0	25.0
			50	0			22.77	22.71	22.75	22.66	0.5	24.5
			50	28			23.74	23.75	23.68	23.58	0.0	25.0
			50	56			22.64	22.57	22.60	22.60	0.5	24.5
			100	0			22.79	22.83	22.73	22.69	0.5	24.5
		QPSK	1	1			23.70	23.75	23.81	23.66	0.0	25.0
			1	53			23.79	23.85	23.68	23.65	0.0	25.0
			1	104			23.63	23.71	23.79	23.69	0.0	25.0
			50	0			22.84	22.69	22.64	22.69	1.0	24.0
			50	28			23.59	23.73	23.68	23.62	0.0	25.0
			50	56			22.69	22.61	22.63	22.61	1.0	24.0
			100	0			22.89	22.82	22.83	22.74	1.0	24.0
		16QAM	1	1			22.58	22.70	22.58	22.48	1.0	24.0
			1	53			22.63	22.39	22.46	22.49	1.0	24.0
			1	104			22.50	22.42	22.41	22.49	1.0	24.0
		64QAM	1	1			21.43	21.46	21.35	21.23	2.5	22.5
		256QAM	1	1			18.75	18.77	18.68	18.63	4.5	20.5
	CP-OFDM	QPSK	1	1			22.50	22.34	22.36	22.30	1.5	23.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					164300	164800	166300	167300	168300		
					821.5 MHz	824 MHz	831.5 MHz	836.5 MHz	841.5 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.58	23.73	24.36	24.13	24.17	0.0	25.0
			1	40	24.44	23.61	24.15	24.05	24.13	0.0	25.0
			1	77	24.26	23.61	24.17	23.95	24.03	0.0	25.0
			36	0	23.51	23.60	23.28	23.12	23.15	0.5	24.5
			36	22	24.41	23.59	24.19	24.10	24.13	0.0	25.0
			36	43	23.35	23.59	23.16	23.05	23.11	0.5	24.5
			75	0	23.37	23.62	23.19	23.20	23.16	0.5	24.5
		QPSK	1	1	24.53	23.63	24.29	24.15	24.16	0.0	25.0
			1	40	24.32	23.64	24.15	24.13	24.10	0.0	25.0
			1	77	24.29	23.47	24.17	24.06	24.04	0.0	25.0
			36	0	23.39	22.75	23.28	23.05	23.12	1.0	24.0
			36	22	24.39	23.77	24.20	24.23	24.18	0.0	25.0
			36	43	23.36	22.67	23.12	23.12	23.08	1.0	24.0
			75	0	23.41	22.73	23.21	23.10	23.20	1.0	24.0
		16QAM	1	1	23.39	22.95	23.28	23.06	23.10	1.0	24.0
		64QAM	1	1	22.21	21.31	21.98	22.02	21.90	2.5	22.5
		256QAM	1	1	19.60	18.84	19.39	19.35	19.23	4.5	20.5
	CP-OFDM	QPSK	1	1	23.19	22.18	22.89	22.41	22.78	1.5	23.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
					163800		164800	165800	166300	168800		
					819 MHz		824 MHz	829 MHz	831.5 MHz	844 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.61		23.75	23.85	23.23	24.27	0.0	25.0
			1	26	24.54		23.73	23.84	23.23	24.21	0.0	25.0
			1	50	24.54		23.72	23.68	23.33	24.11	0.0	25.0
			25	0	23.54		23.71	23.67	22.07	23.42	0.5	24.5
			25	14	24.56		23.71	23.66	23.30	23.17	0.0	25.0
			25	27	23.50		23.75	23.65	22.06	23.18	0.5	24.5
			50	0	23.54		23.73	23.65	23.13	23.14	0.5	24.5
		QPSK	1	1	24.64		23.86	23.69	23.60	24.21	0.0	25.0
			1	26	24.59		23.75	23.66	23.06	24.12	0.0	25.0
			1	50	24.53		23.69	23.68	23.13	24.17	0.0	25.0
			25	0	23.54		23.58	23.69	22.33	23.14	1.0	24.0
			25	14	24.56		23.59	22.65	23.17	24.17	0.0	25.0
			25	27	23.52		23.60	22.65	21.57	23.12	1.0	24.0
			50	0	23.56		23.62	22.70	21.88	23.12	1.0	24.0
		16QAM	1	1	23.40		23.62	22.79	21.62	23.07	1.0	24.0
		64QAM	1	1	22.23		21.63	21.33	21.08	21.83	2.5	22.5
		256QAM	1	1	19.51		18.64	18.91	18.30	19.12	4.5	20.5
	CP-OFDM	QPSK	1	1	23.12		22.06	22.19	21.00	22.84	1.5	23.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit
					163300	164300	164800	165300	166300	169300		
					816.5 MHz	821.5 MHz	824 MHz	826.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.61	24.18	23.75	23.65	24.30	24.25	0.0	25.0
			1	13	24.62	24.30	23.68	23.74	24.42	24.35	0.0	25.0
			1	23	24.61	24.20	23.61	23.75	24.26	24.20	0.0	25.0
			12	0	23.61	23.65	23.68	23.89	23.30	23.15	0.5	24.5
			12	7	24.61	24.21	23.72	23.86	24.30	24.10	0.0	25.0
			12	13	23.60	23.42	23.58	23.82	23.27	23.05	0.5	24.5
			25	0	23.67	23.70	23.66	23.79	23.34	23.09	0.5	24.5
		QPSK	1	1	24.43	24.32	23.73	23.85	24.34	24.20	0.0	25.0
			1	13	24.52	24.35	23.74	23.68	24.41	24.23	0.0	25.0
			1	23	24.50	24.24	23.66	23.67	24.33	24.34	0.0	25.0
			12	0	23.66	23.31	22.74	22.72	23.31	23.43	1.0	24.0
			12	7	24.56	24.13	23.71	23.79	24.32	23.11	0.0	25.0
			12	13	23.51	23.21	22.69	22.63	23.16	23.17	1.0	24.0
			25	0	23.59	23.06	22.72	22.82	23.30	23.20	1.0	24.0
		16QAM	1	1	23.46	23.24	22.66	22.75	23.28	23.08	1.0	24.0
		64QAM	1	1	22.30	22.10	21.56	21.45	21.92	21.88	2.5	22.5
		256QAM	1	1	19.58	19.13	18.97	18.88	19.35	19.18	4.5	20.5
	CP-OFDM	QPSK	1	1	23.16	22.94	22.37	22.33	22.91	22.90	1.5	23.5

8.2. PEAK TO AVERAGE RATIO

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to either CMW500 Test Set or E7515B Test set and configured to operate at maximum power. The PAR were measured on the Spectrum Analyzer.

Test Spec

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

NOTE

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations (π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

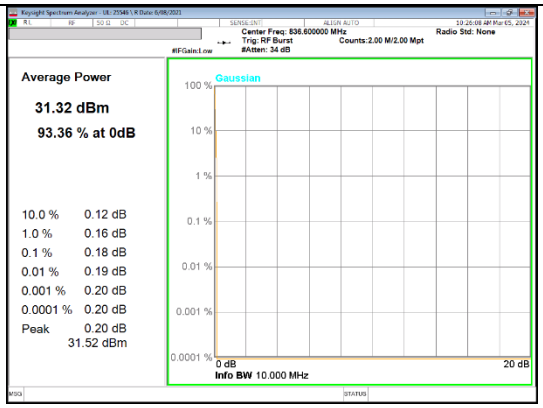
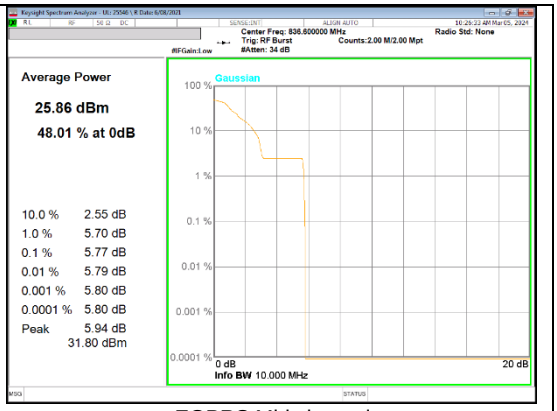
RESULTS

See the following pages.

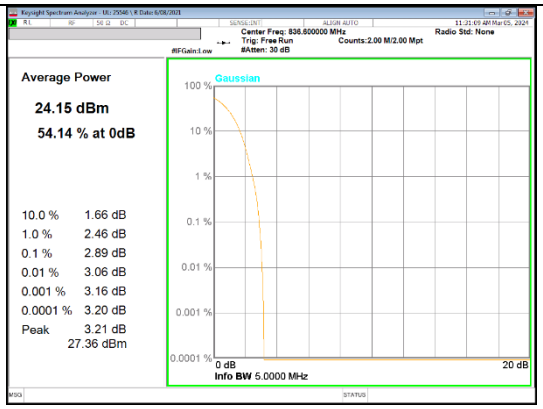
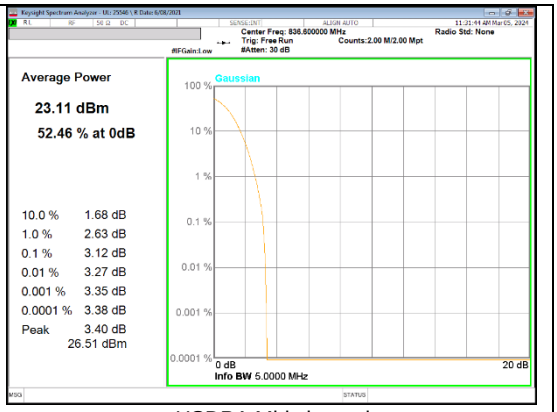
UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

8.2.1. CONDUCTED PEAK TO AVERAGE RESULT

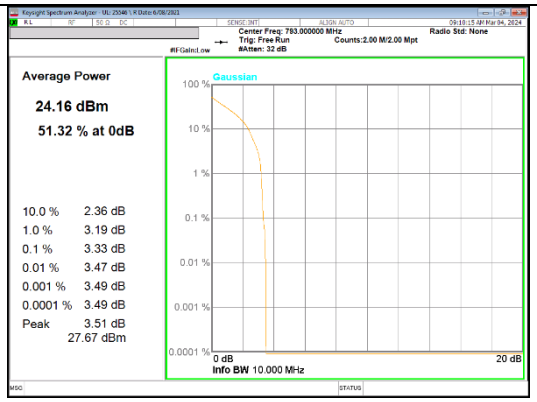
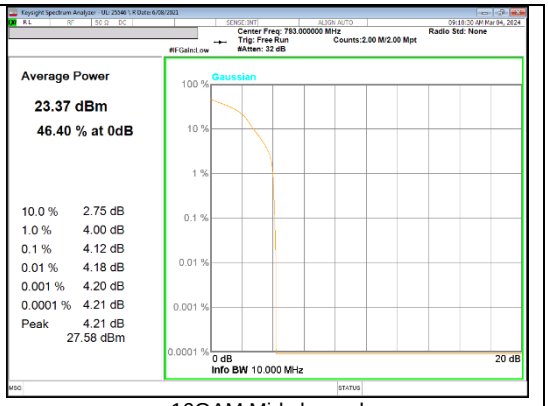
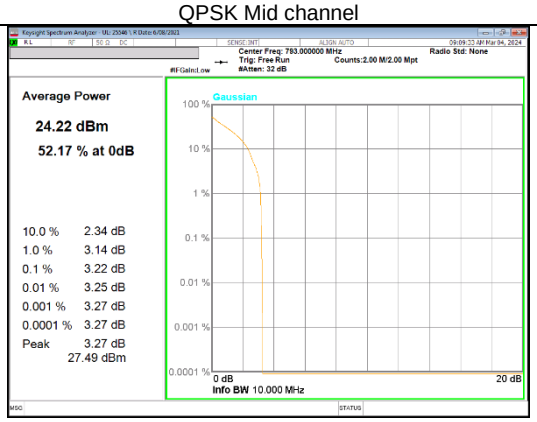
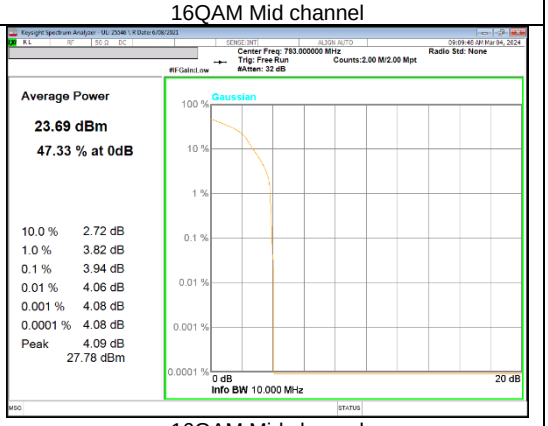
GSM

GSM 850	 GPRS Mid channel	 EGPRS Mid channel

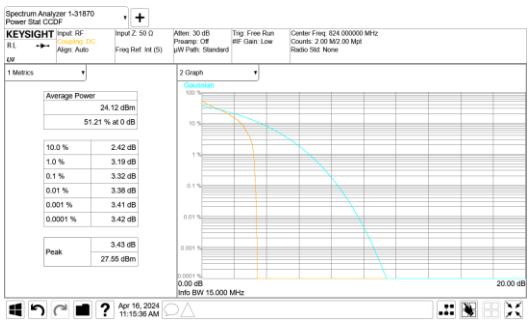
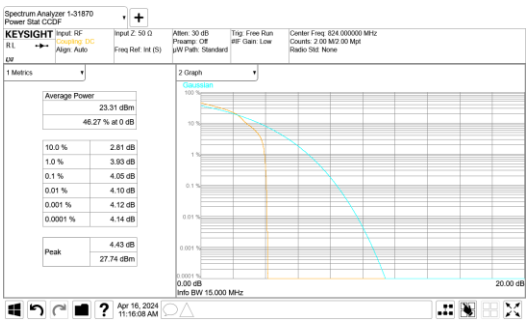
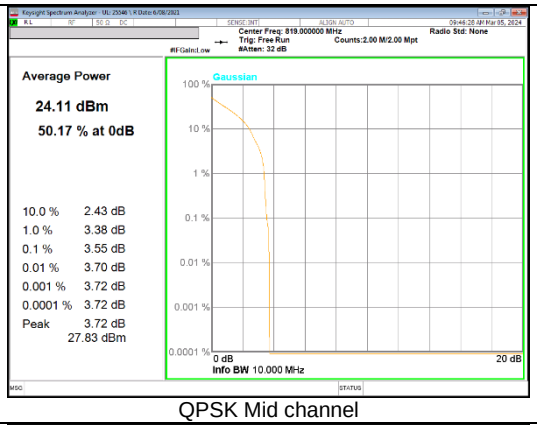
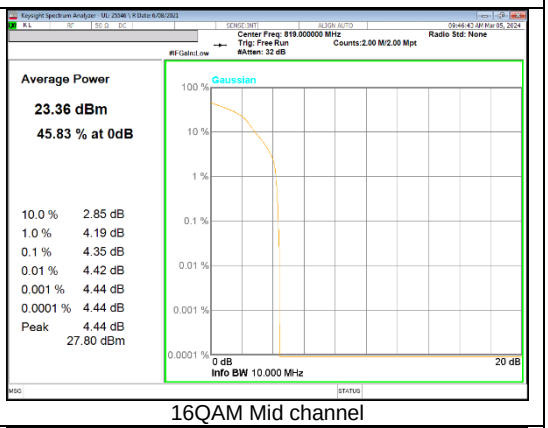
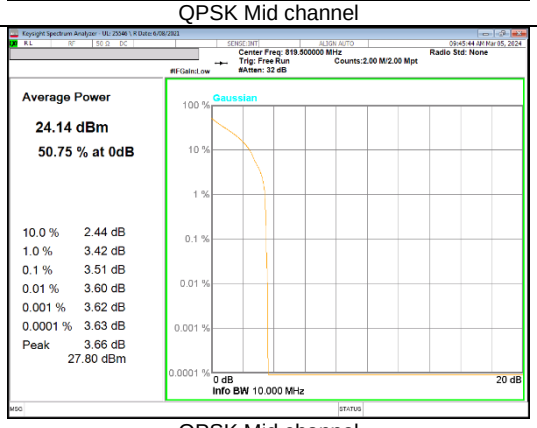
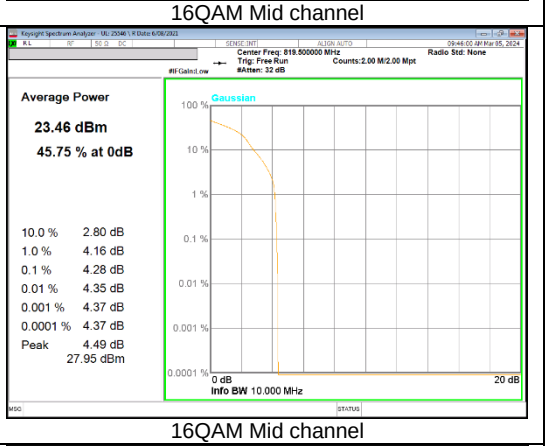
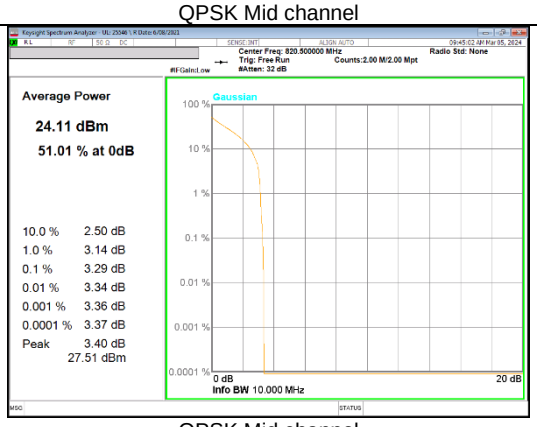
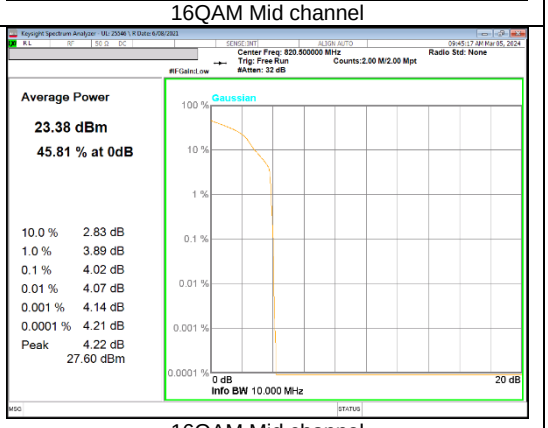
WCDMA

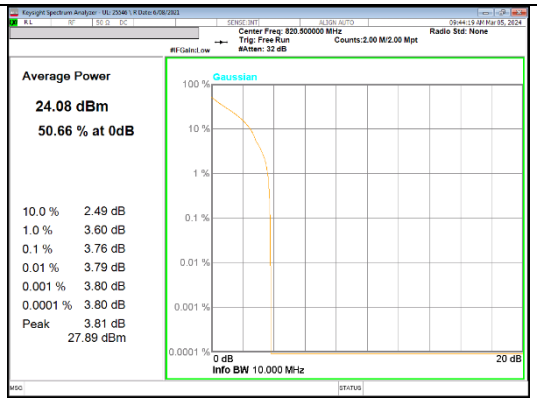
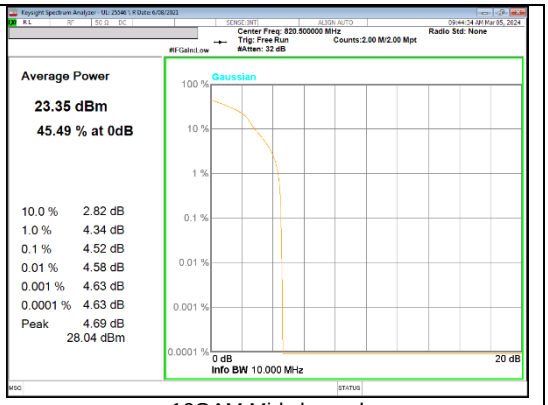
Band 5	 REL99 Mid channel	 HSDPA Mid channel

LTE Band 14

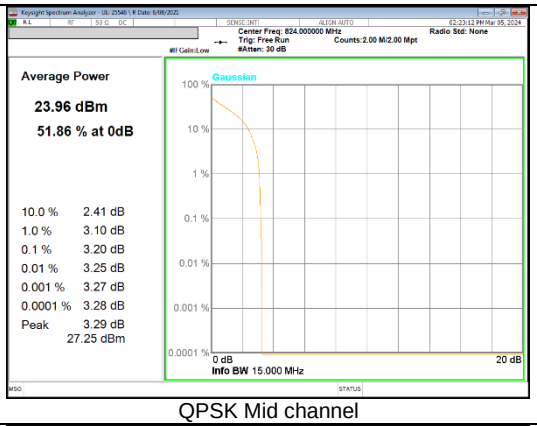
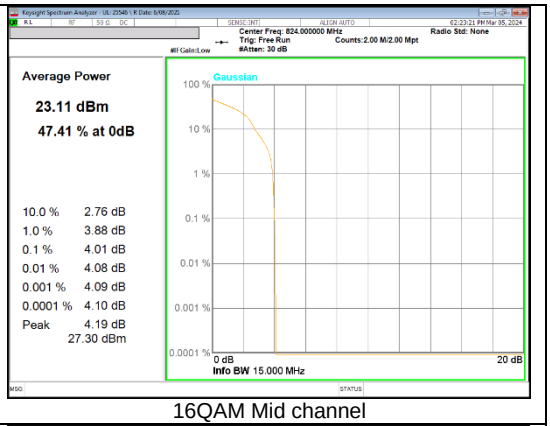
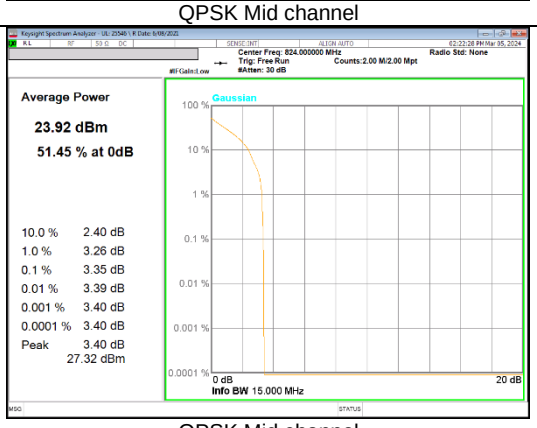
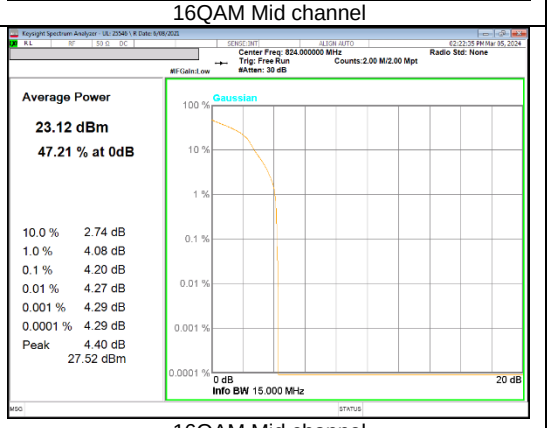
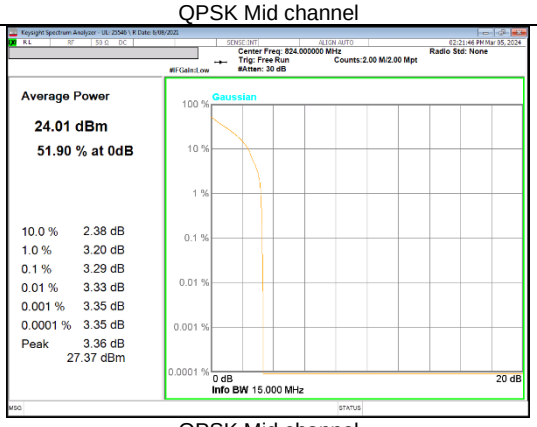
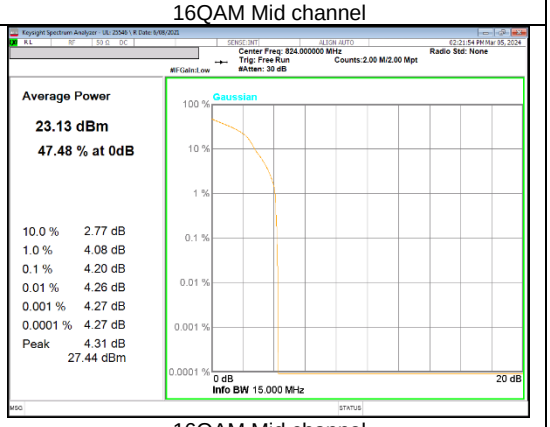
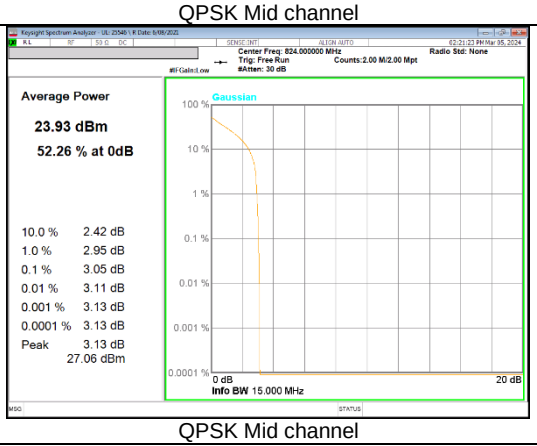
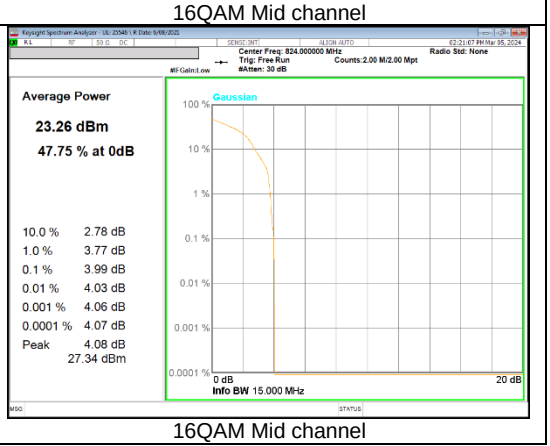
10 MHz	 QPSK Mid channel	 16QAM Mid channel
5 MHz	 QPSK Mid channel	 16QAM Mid channel

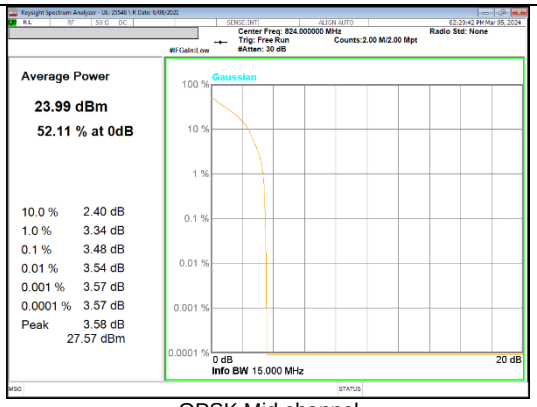
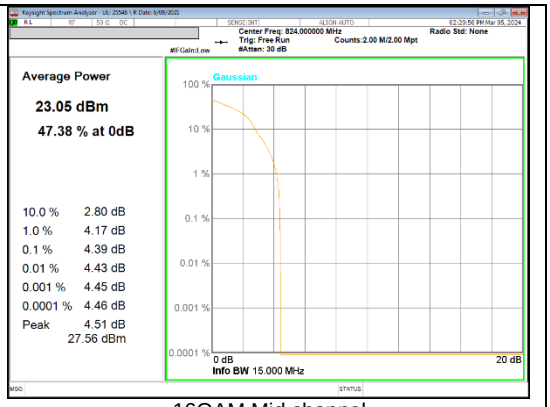
LTE Band 26 (Part 90)

15 MHz	 QPSK Mid channel	 16QAM Mid channel
10 MHz	 QPSK Mid channel	 16QAM Mid channel
5 MHz	 QPSK Mid channel	 16QAM Mid channel
3 MHz	 QPSK Mid channel	 16QAM Mid channel

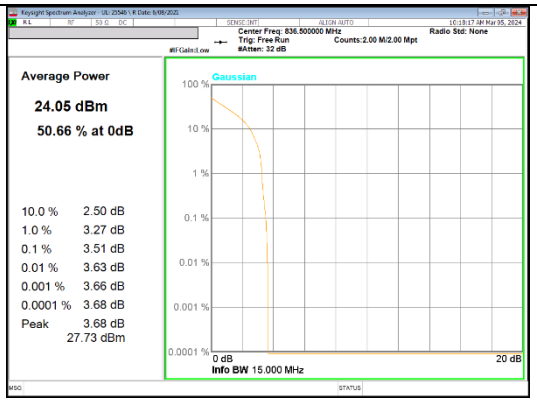
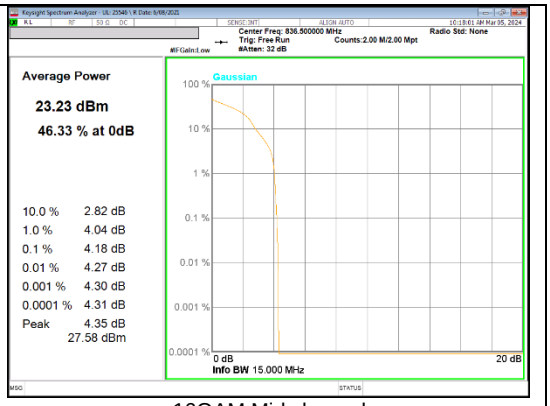
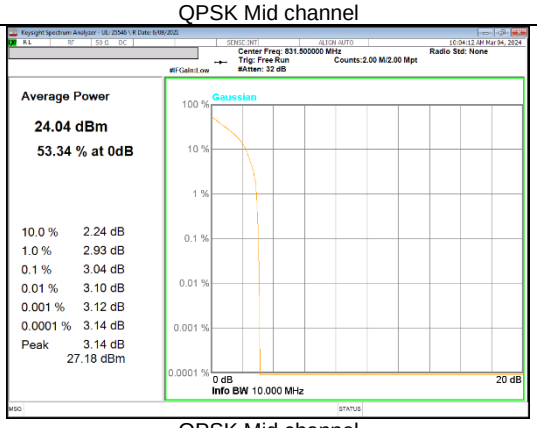
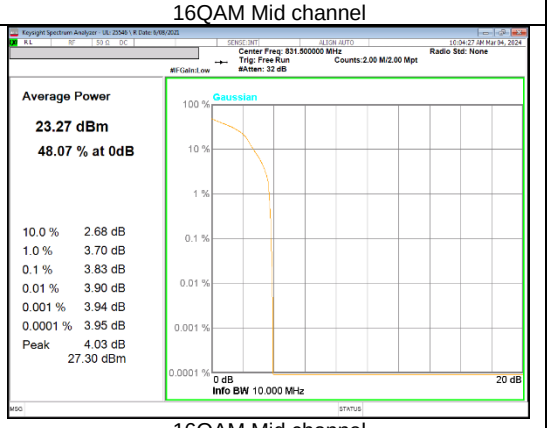
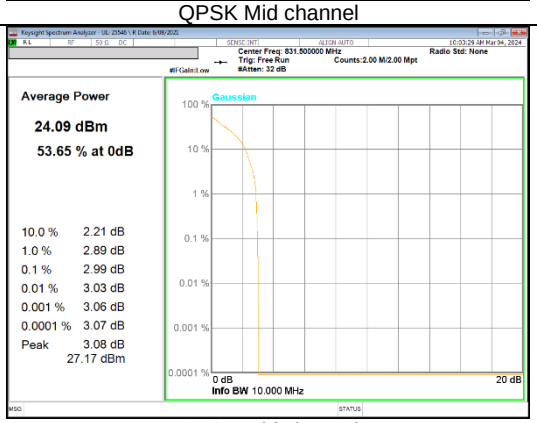
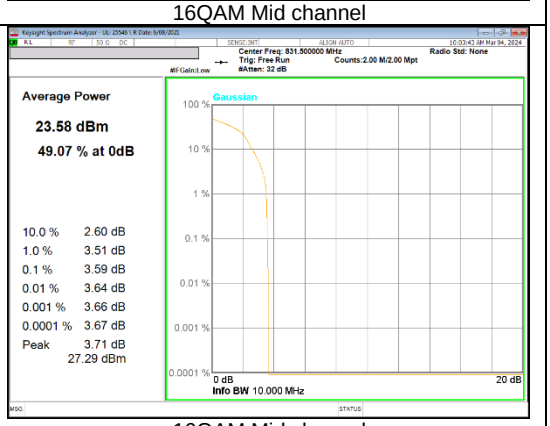
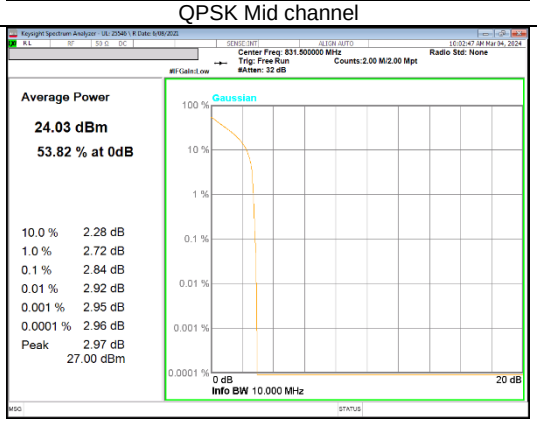
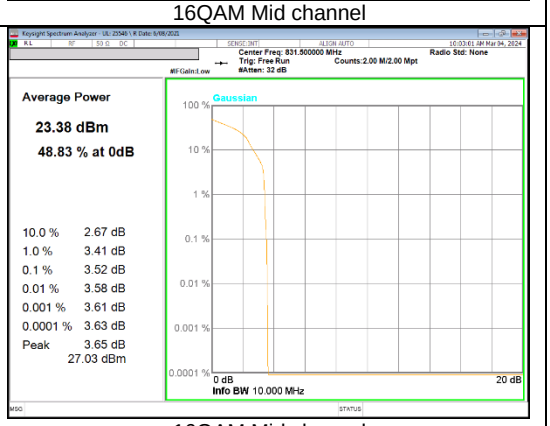
1.4 MHz		
	QPSK Mid channel	16QAM Mid channel

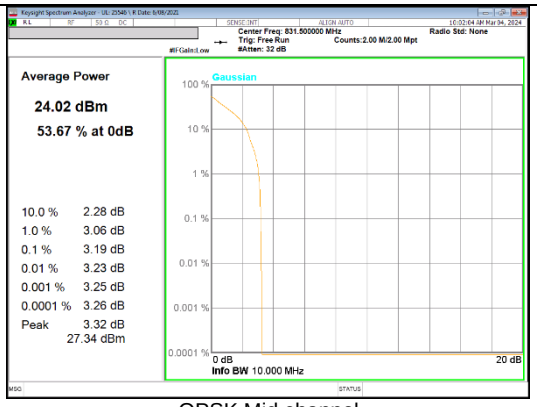
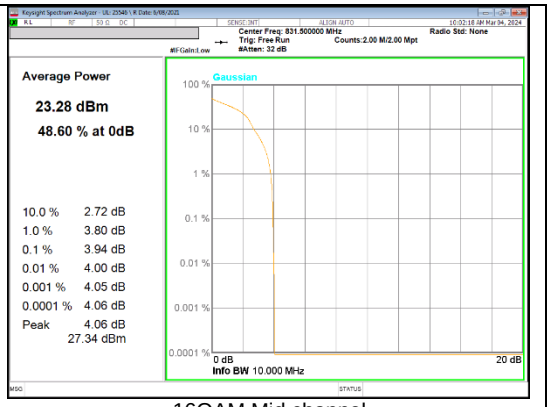
LTE Band 26 (Straddle)

15 MHz	 QPSK Mid channel	 16QAM Mid channel
10 MHz	 QPSK Mid channel	 16QAM Mid channel
5 MHz	 QPSK Mid channel	 16QAM Mid channel
3 MHz	 QPSK Mid channel	 16QAM Mid channel

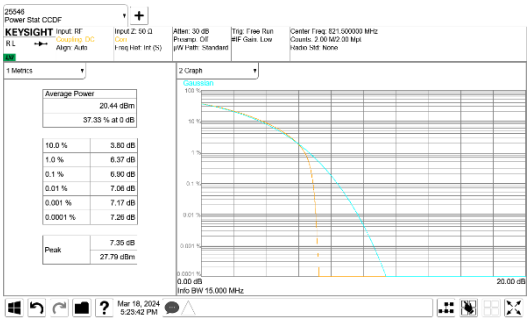
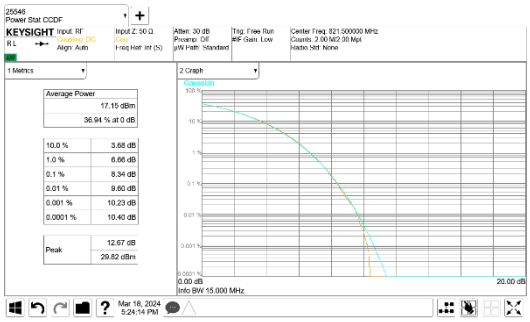
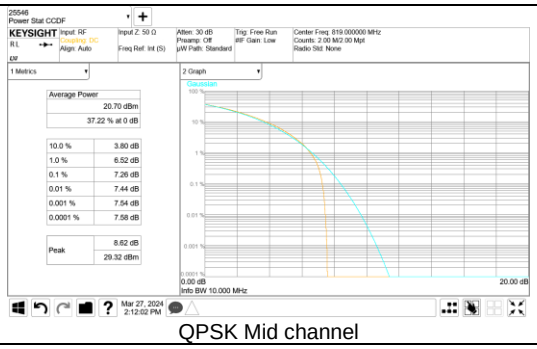
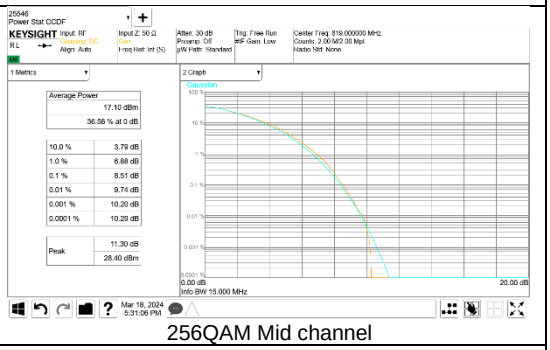
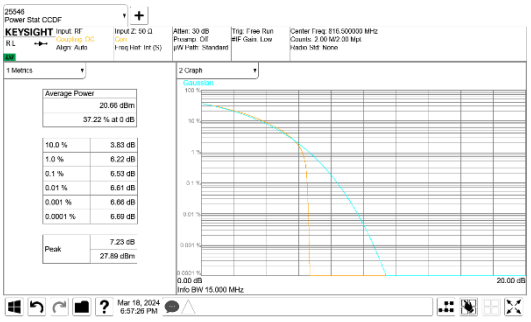
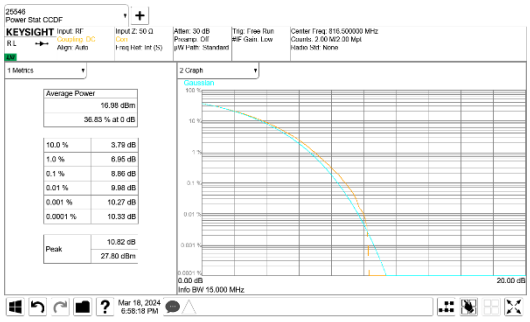
1.4 MHz		
	QPSK Mid channel	16QAM Mid channel

LTE Band 26 (Part 22)

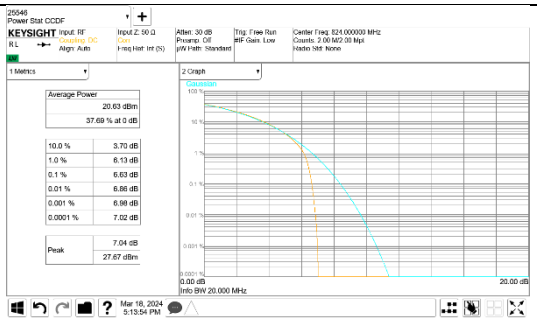
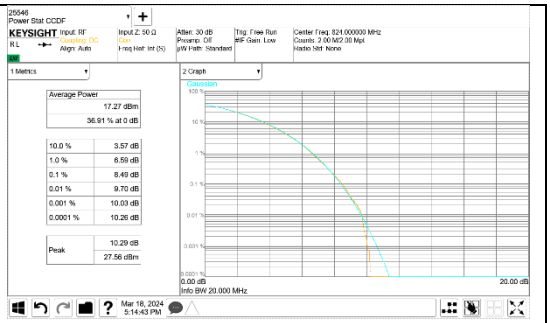
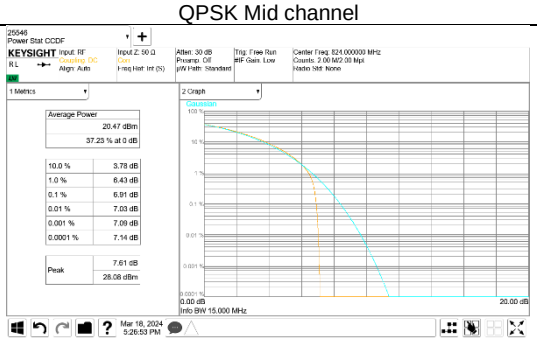
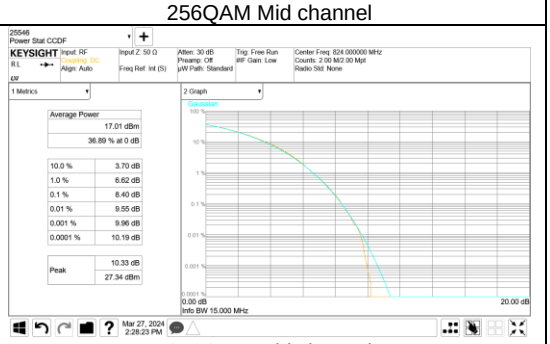
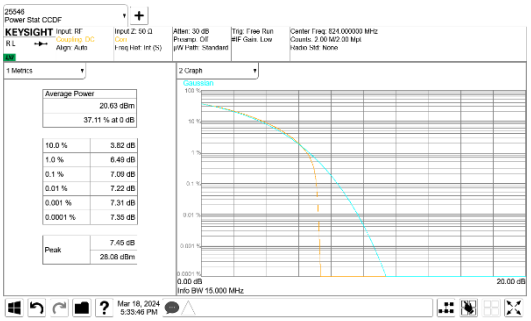
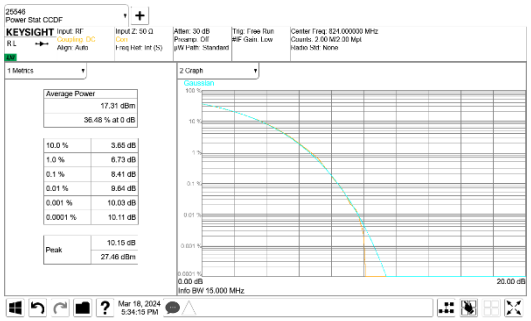
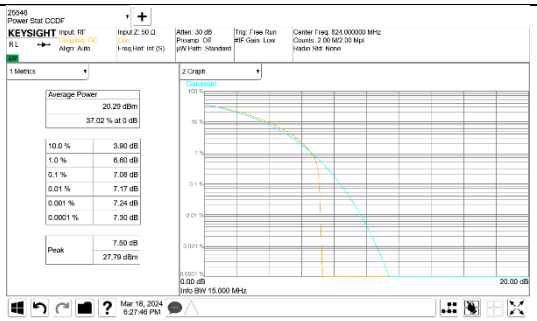
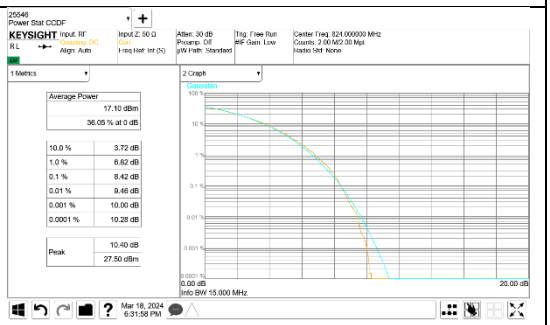
15 MHz	 QPSK Mid channel	 16QAM Mid channel
10 MHz	 QPSK Mid channel	 16QAM Mid channel
5 MHz	 QPSK Mid channel	 16QAM Mid channel
3 MHz	 QPSK Mid channel	 16QAM Mid channel

1.4 MHz		
	QPSK Mid channel	16QAM Mid channel

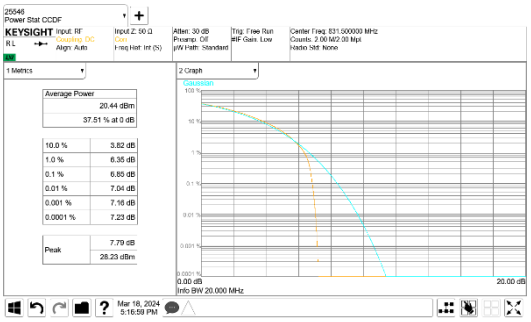
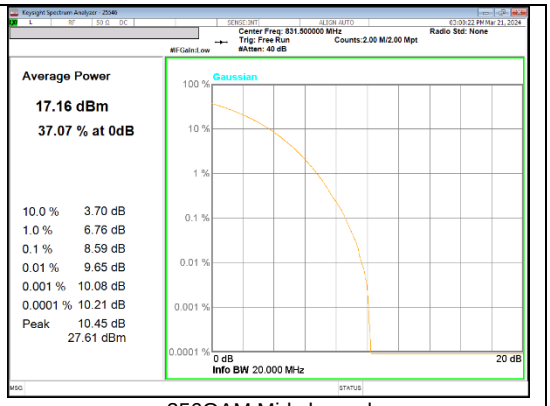
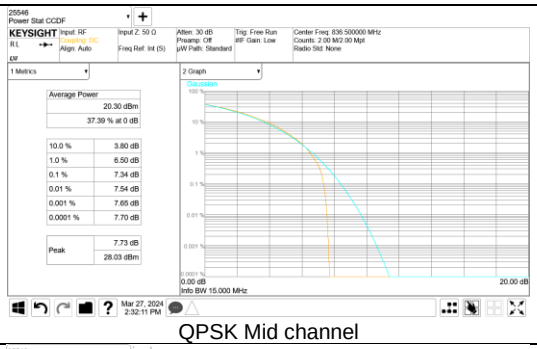
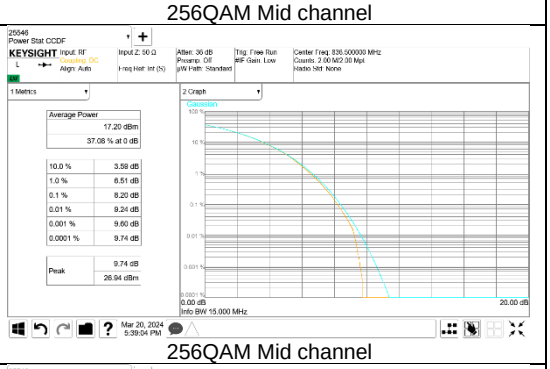
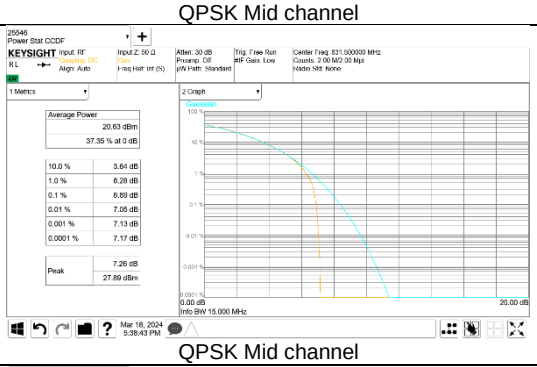
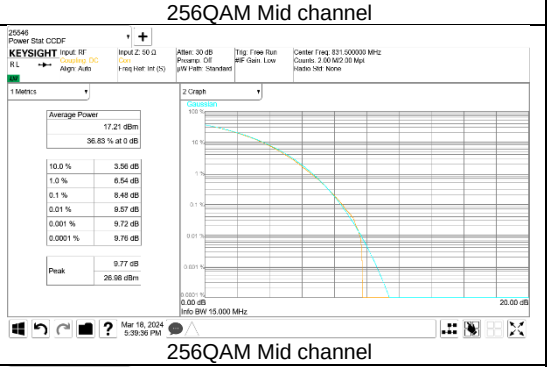
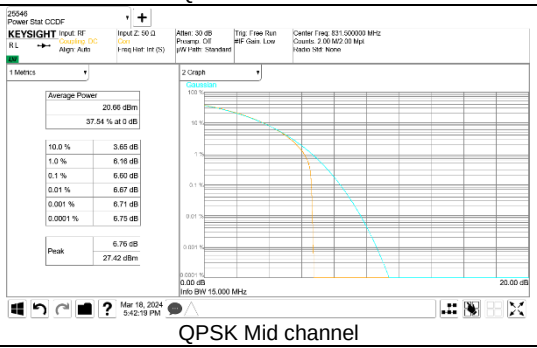
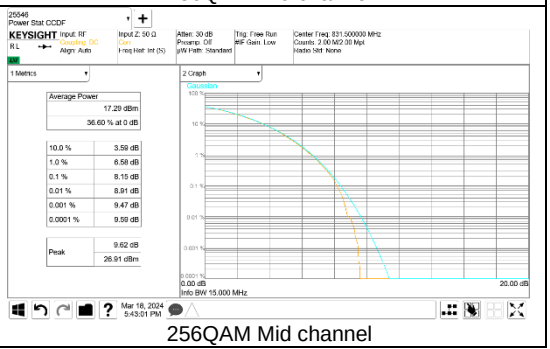
NR Band n26 (Part 90) CP-OFDM

15 MHz	 QPSK Mid channel	 256QAM Mid channel
10 MHz	 QPSK Mid channel	 256QAM Mid channel
5 MHz	 QPSK Mid channel	 256QAM Mid channel

NR Band n26 (Straddle) CP-OFDM

20 MHz	 QPSK Mid channel	 256QAM Mid channel
15 MHz	 QPSK Mid channel	 256QAM Mid channel
10 MHz	 QPSK Mid channel	 256QAM Mid channel
5 MHz	 QPSK Mid channel	 256QAM Mid channel

NR Band n26 (Part 22) CP-OFDM

20 MHz	 QPSK Mid channel	 256QAM Mid channel
15 MHz	 QPSK Mid channel	 256QAM Mid channel
10 MHz	 QPSK Mid channel	 256QAM Mid channel
5 MHz	 QPSK Mid channel	 256QAM Mid channel

8.3. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at middle channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v03r01)

RESULTS

See the following pages.

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

- **GSM**

Band	Modulation	f [MHz]	99% BW (kHz)	-26dB BW (kHz)
850	GPRS	836.6	242.630	309.900
	EGPRS		253.120	325.600

- **WCDMA**

Band	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
B5	Rel.99	836.6	4.138	4.696
	HSDPA		4.135	4.690

- LTE Band 14

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B14	10M	QPSK	793.0	8.961	9.933
		16QAM		8.957	9.821
	5M	QPSK		4.487	5.064
		16QAM		4.496	5.099

- LTE Band 26 (Part 90)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B26	15M	QPSK	819.0	13.469	14.890
		16QAM		13.454	14.810
	10M	QPSK	819.0	8.990	10.070
		16QAM		8.988	10.040
	5M	QPSK	819.5	4.494	5.060
		16QAM		4.503	5.105
	3M	QPSK	820.5	2.707	3.085
		16QAM		2.703	3.053
	1.4M	QPSK	820.5	1.090	1.337
		16QAM		1.096	1.391

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

- LTE Band 26 (Straddle)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B26	15M	QPSK	824.0	13.468	14.570
		16QAM		13.458	14.750
	10M	QPSK		8.980	9.786
		16QAM		8.969	9.738
	5M	QPSK		4.494	5.113
		16QAM		4.485	5.034
	3M	QPSK		2.692	3.049
		16QAM		2.701	3.010
	1.4M	QPSK		1.089	1.356
		16QAM		1.094	1.339

- LTE Band 26 (Part 22)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B26	15M	QPSK	836.5	13.469	14.960
		16QAM		13.490	14.920
	10M	QPSK	831.5	8.975	9.995
		16QAM		8.975	9.979
	5M	QPSK	831.5	4.500	5.135
		16QAM		4.494	5.091
	3M	QPSK	831.5	2.708	3.098
		16QAM		2.701	3.094
	1.4M	QPSK	831.5	1.095	1.399
		16QAM		1.096	1.403

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

- NR Band n26 (Part 90)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n26	15M	QPSK	821.5	14.135	15.070
		16QAM		14.122	15.220
	10M	QPSK	819.0	9.297	10.060
		16QAM		9.277	10.050
	5M	QPSK	816.5	4.480	5.127
		16QAM		4.480	5.166

- NR Band n26 (Straddle)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n26	20M	QPSK	824.0	18.981	20.120
		16QAM		18.958	20.100
	15M	QPSK		14.175	15.180
		16QAM		14.156	15.090
	10M	QPSK		9.288	10.190
		16QAM		9.301	9.938
	5M	QPSK		4.491	5.213
		16QAM		4.494	5.155

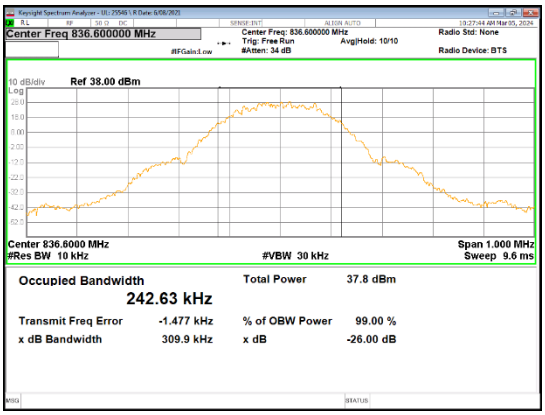
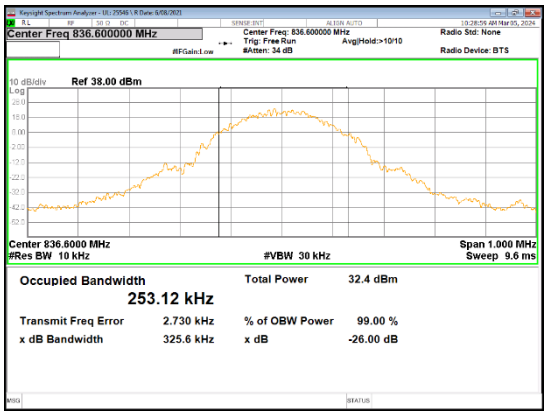
- NR Band n26 (Part 22)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n26	20M	QPSK	836.5	18.910	19.970
		16QAM		18.946	19.940
	15M	QPSK	836.5	14.122	15.060
		16QAM		14.104	15.090
	10M	QPSK	831.5	9.280	10.280
		16QAM		9.278	9.944
	5M	QPSK	831.5	4.519	5.369
		16QAM		4.492	5.225

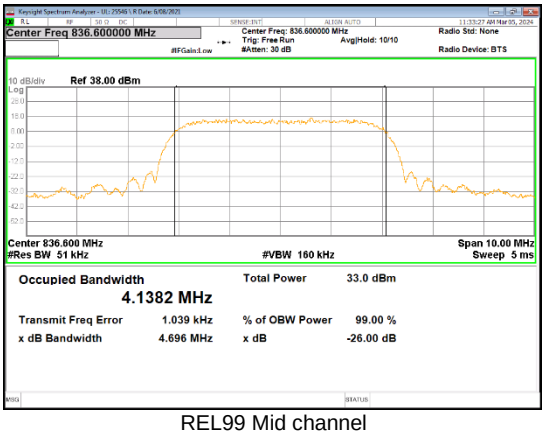
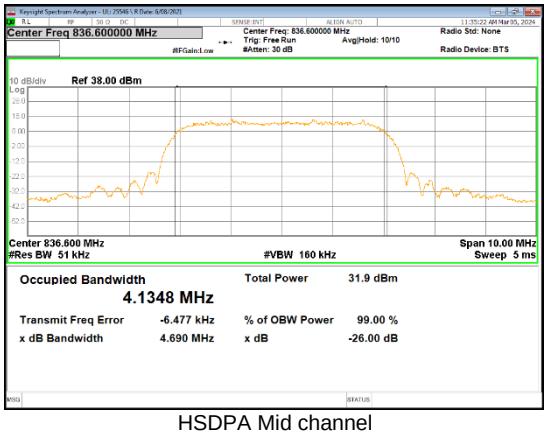
UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

8.3.1. OCCUPIED BANDWIDTH RESULTS

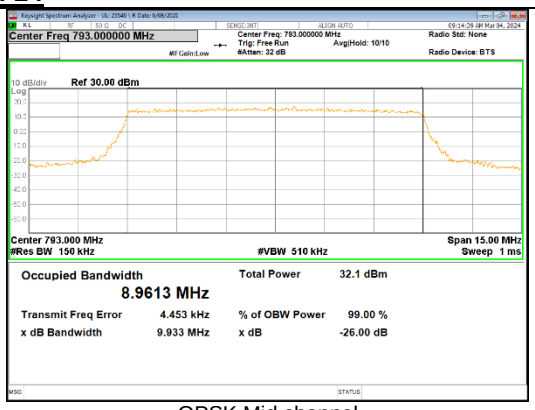
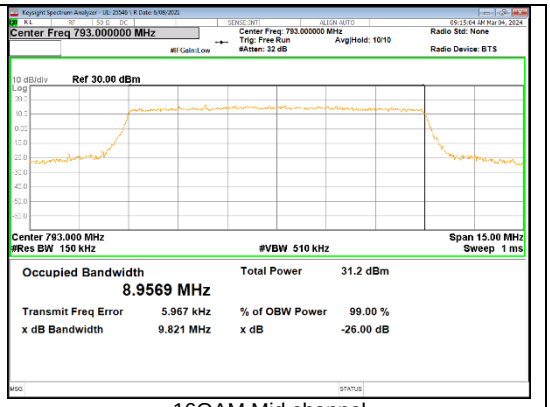
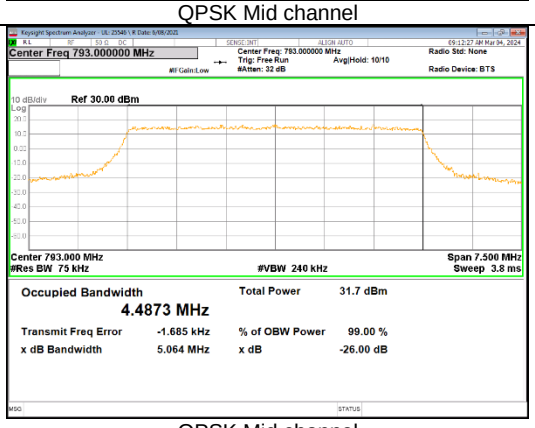
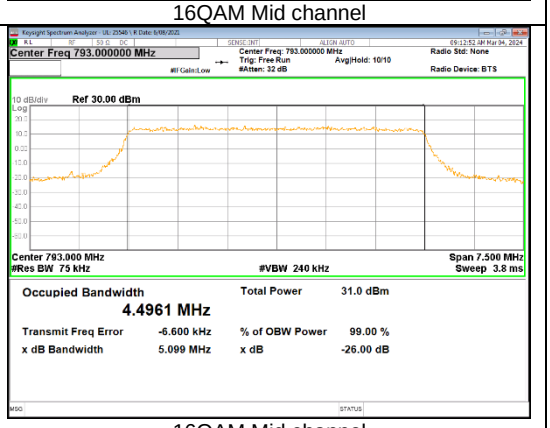
GSM 850

GSM 850	 GPRS Mid channel	 EGPRS Mid channel

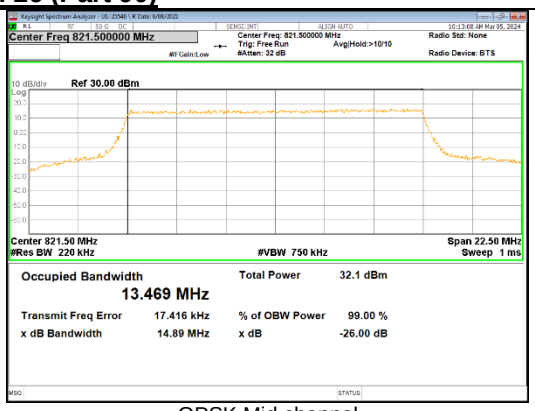
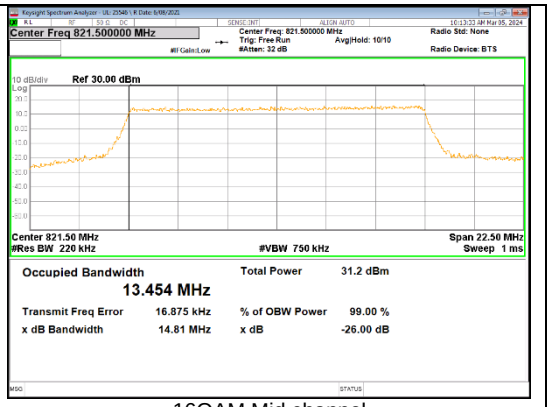
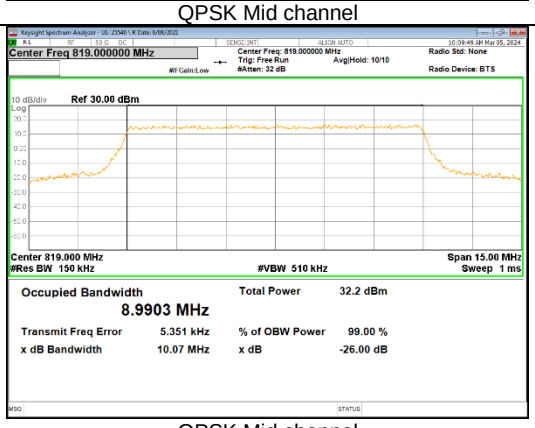
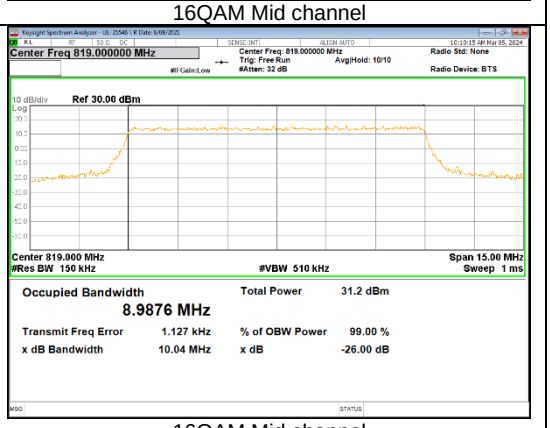
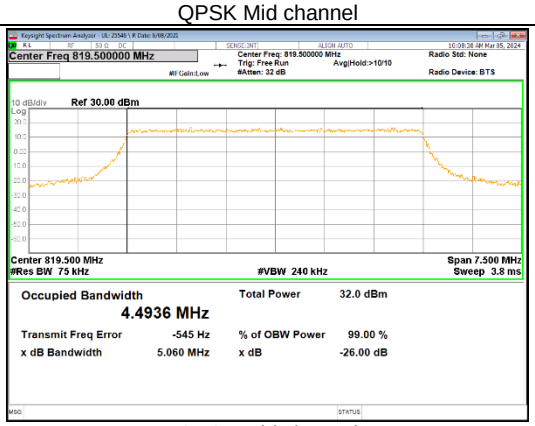
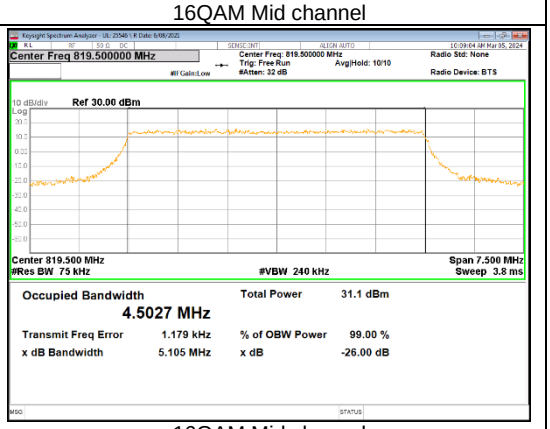
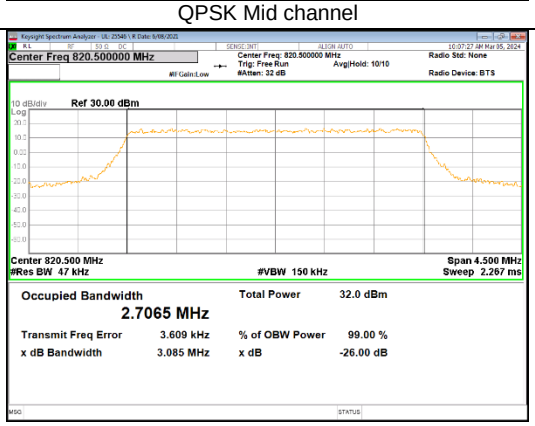
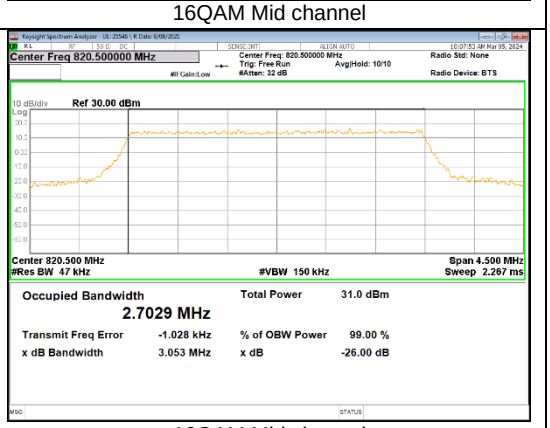
WCDMA Band 5

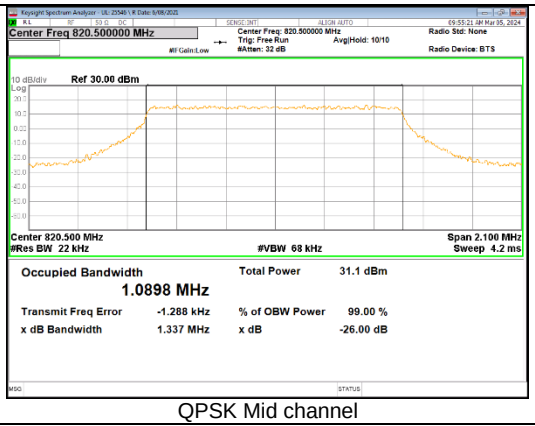
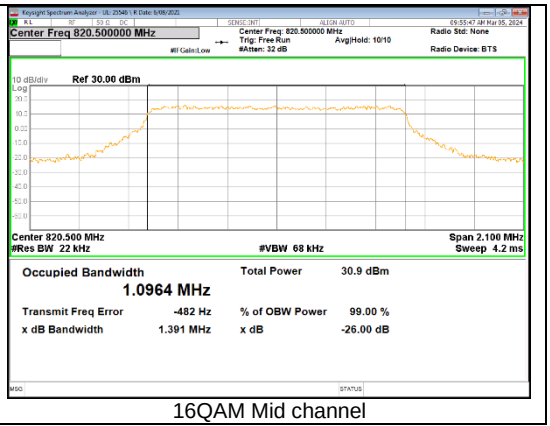
Band 5	 REL99 Mid channel	 HSDPA Mid channel

LTE Band 14

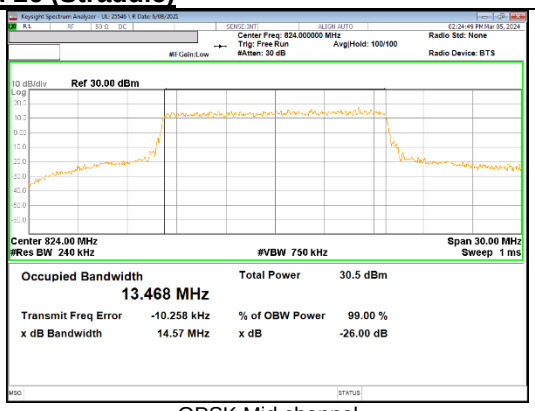
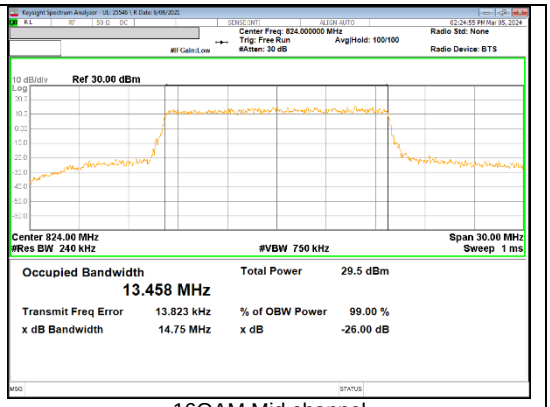
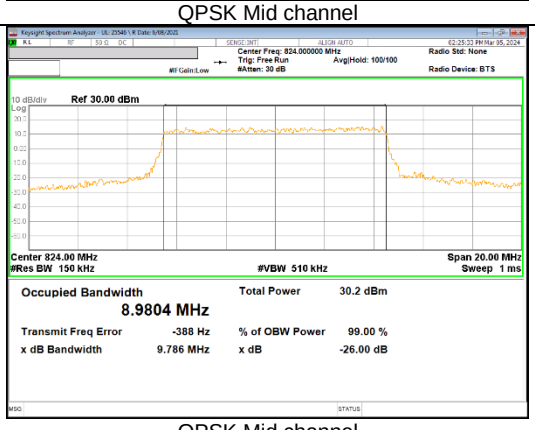
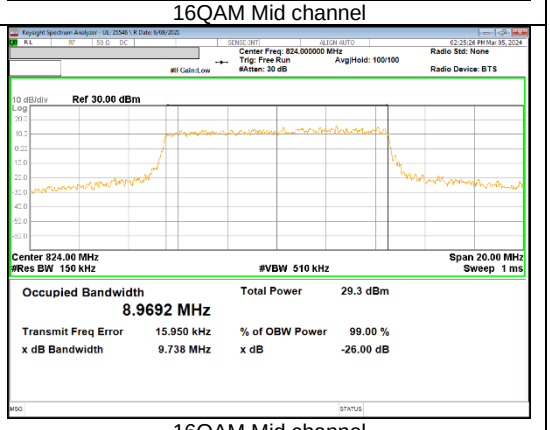
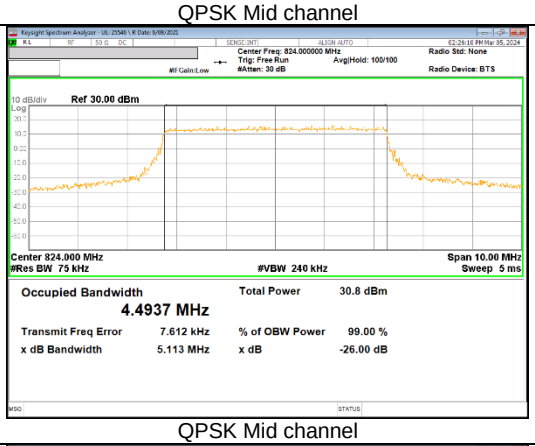
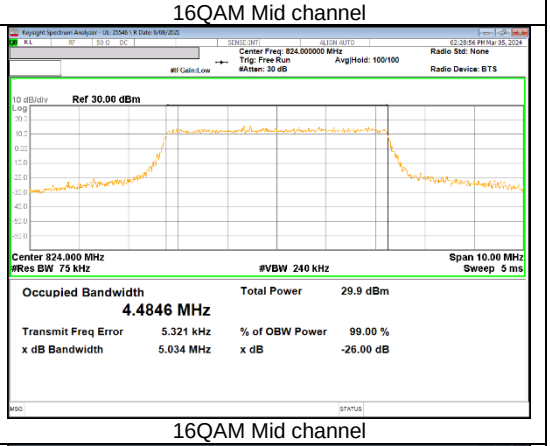
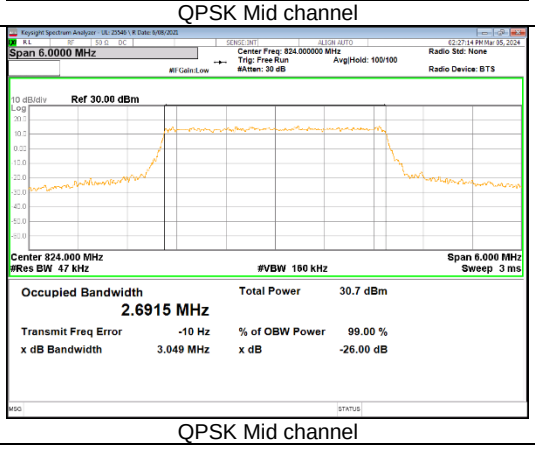
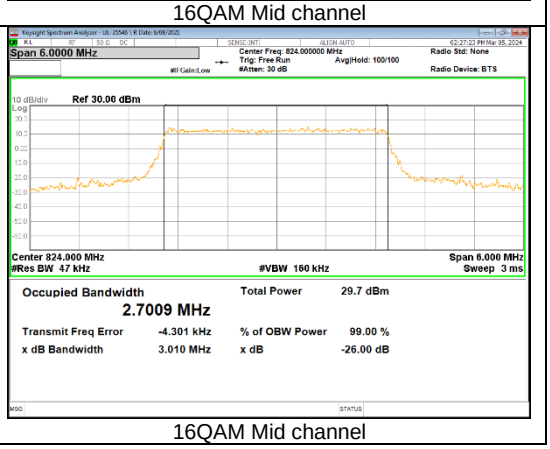
10MHz	 QPSK Mid channel	 16QAM Mid channel
5MHz	 QPSK Mid channel	 16QAM Mid channel

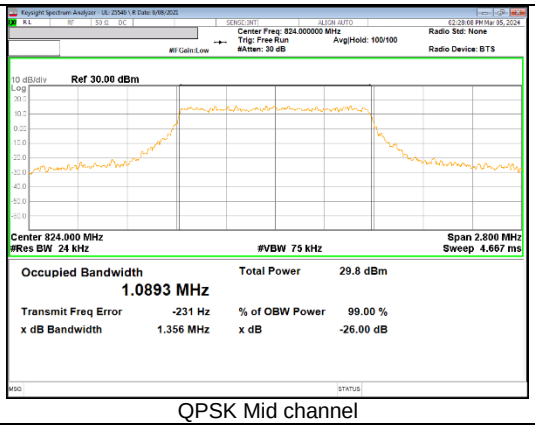
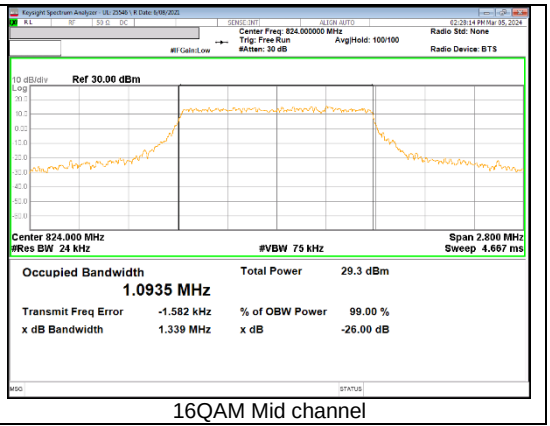
LTE Band 26 (Part 90)

15MHz	 QPSK Mid channel	 16QAM Mid channel
10MHz	 QPSK Mid channel	 16QAM Mid channel
5MHz	 QPSK Mid channel	 16QAM Mid channel
3MHz	 QPSK Mid channel	 16QAM Mid channel

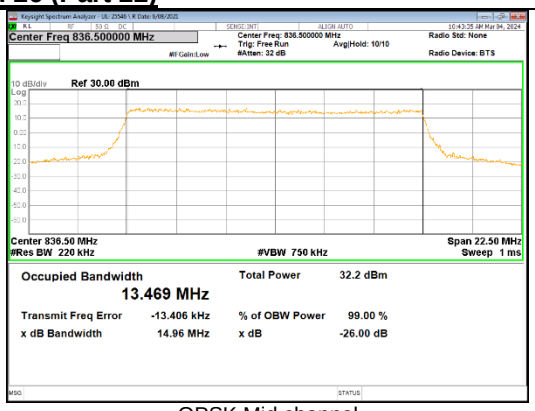
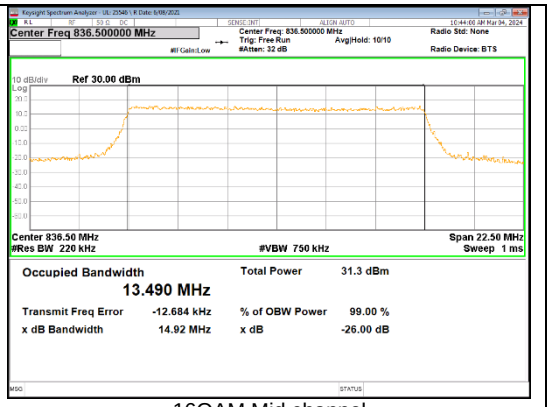
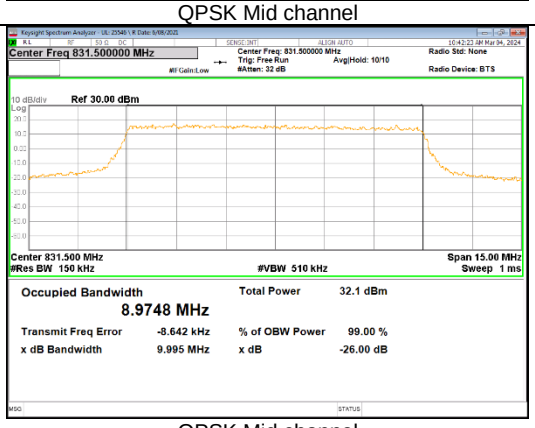
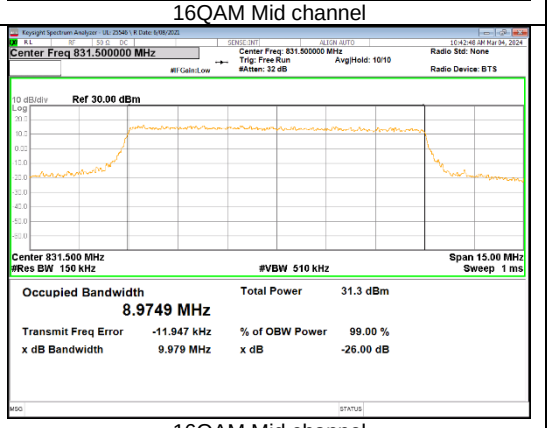
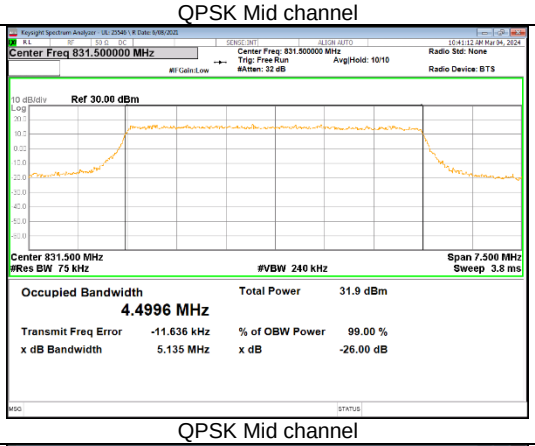
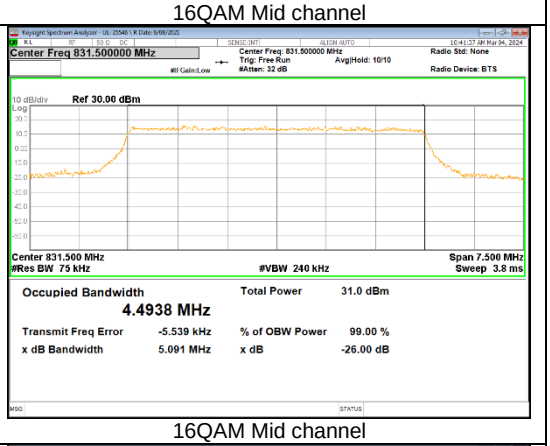
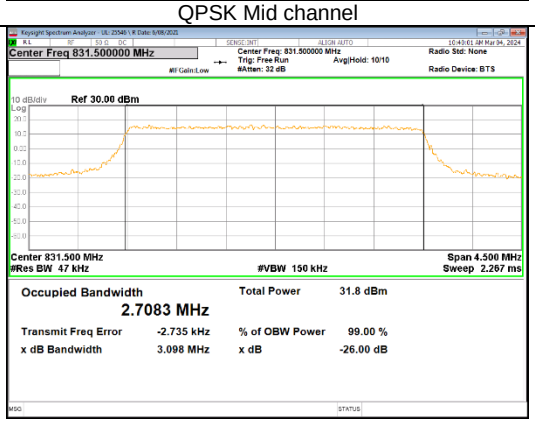
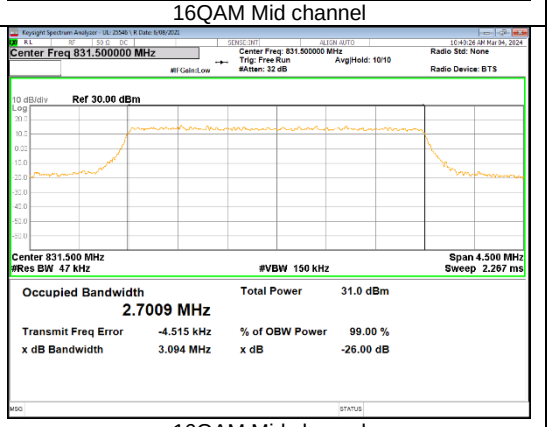
1.4MHz		
	QPSK Mid channel	16QAM Mid channel

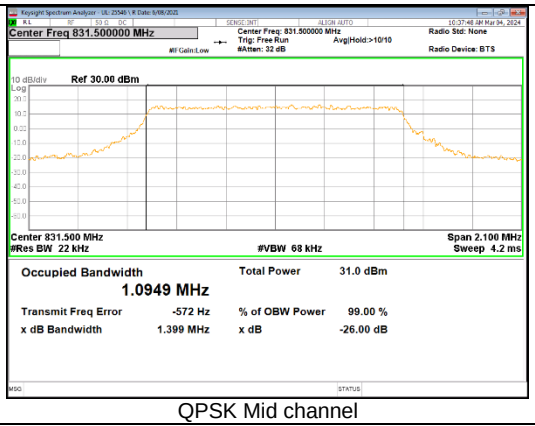
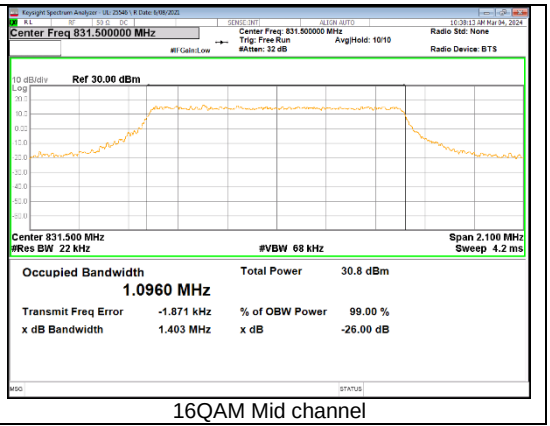
LTE Band 26 (Straddle)

15MHz	 QPSK Mid channel	 16QAM Mid channel
10MHz	 QPSK Mid channel	 16QAM Mid channel
5MHz	 QPSK Mid channel	 16QAM Mid channel
3MHz	 QPSK Mid channel	 16QAM Mid channel

1.4MHz	 QPSK Mid channel	 16QAM Mid channel

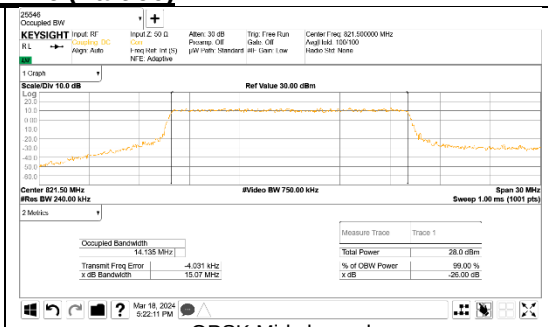
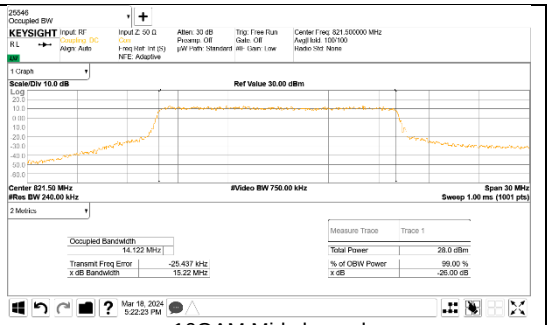
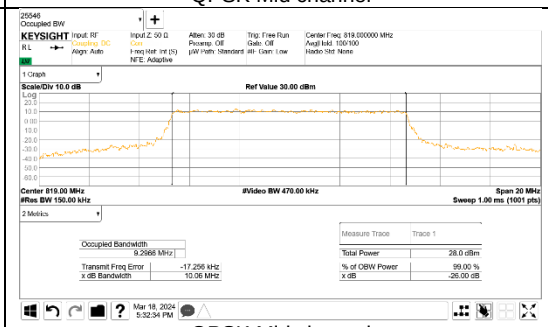
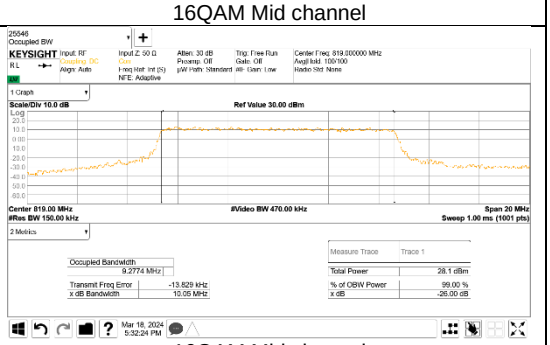
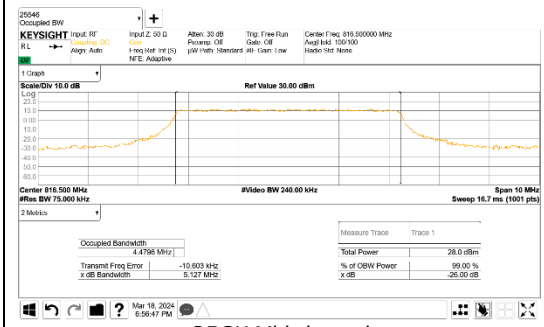
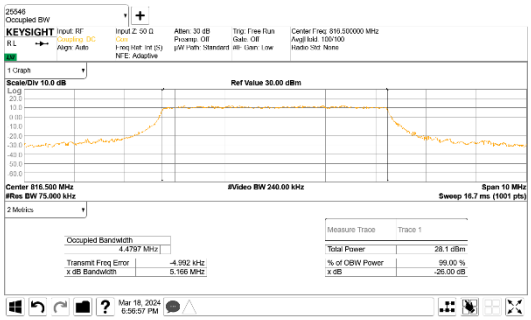
LTE Band 26 (Part 22)

15MHz	 QPSK Mid channel	 16QAM Mid channel
10MHz	 QPSK Mid channel	 16QAM Mid channel
5MHz	 QPSK Mid channel	 16QAM Mid channel
3MHz	 QPSK Mid channel	 16QAM Mid channel

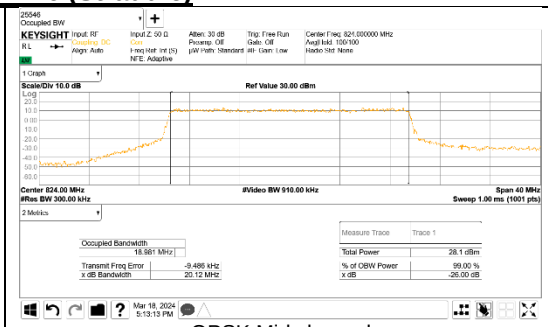
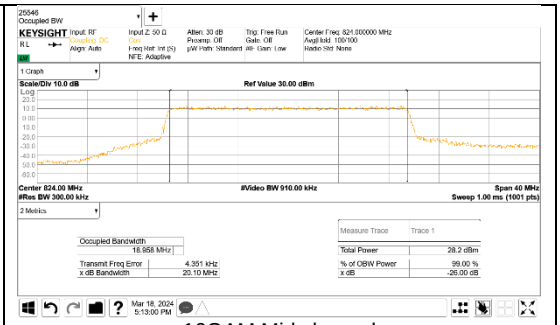
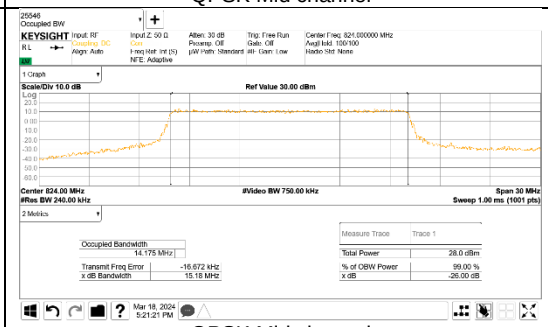
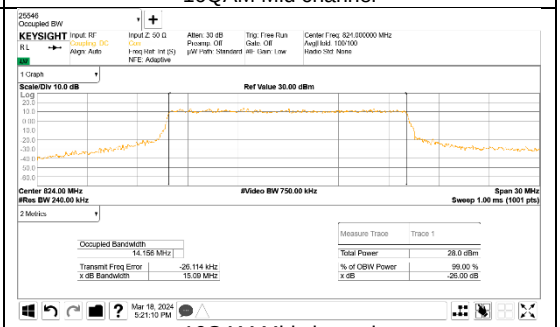
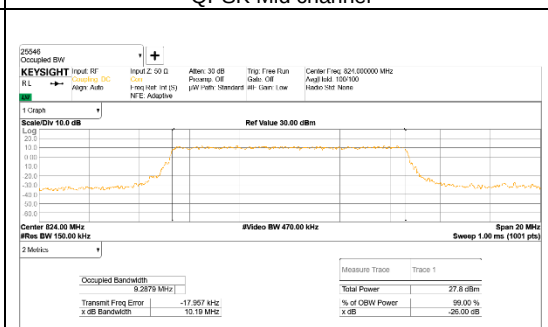
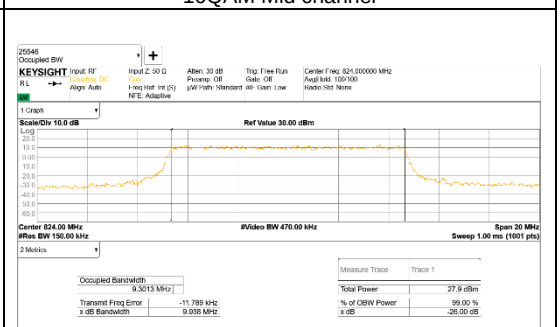
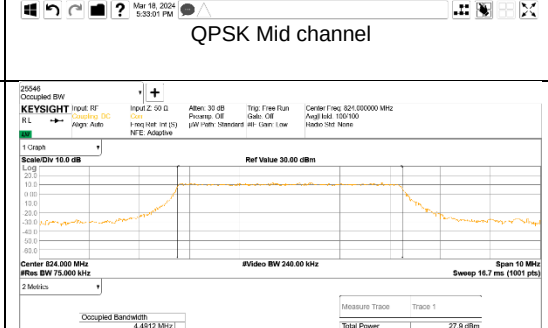
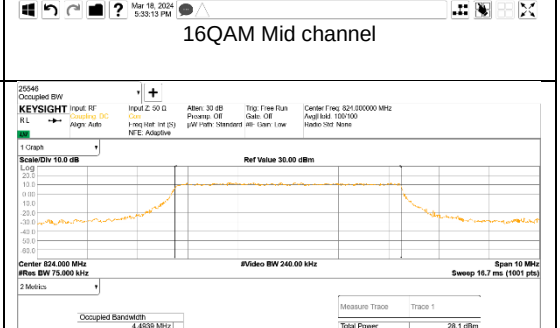
1.4MHz		
	QPSK Mid channel	16QAM Mid channel

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_22/90(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

NR Band n26 (Part 90)

15MHz	 QPSK Mid channel	 16QAM Mid channel
10MHz	 QPSK Mid channel	 16QAM Mid channel
5MHz	 QPSK Mid channel	 16QAM Mid channel

NR Band n26 (Straddle)

20MHz	 QPSK Mid channel	 16QAM Mid channel
15MHz	 QPSK Mid channel	 16QAM Mid channel
10MHz	 QPSK Mid channel	 16QAM Mid channel
5MHz	 QPSK Mid channel	 16QAM Mid channel