

Report Reference ID:	468302-1TRFWL
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Test specification:	Title 47 – Telecommunication Chapter I – Federal Communications Commission Subchapter B – Common carrier services Part 27 – Miscellaneous wireless communications services
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Applicant:	TEKO Telecom Srl. Via Meucci, 24/a I-40024 Castel S. Pietro Terme (BO) (Italy)
Apparatus:	Cell Hub High-Power Radio Remote Unit
Model:	XR25WH2/ACY-C
FCC ID:	XM2-X25H2

Testing laboratory:	Nemko Italy Spa Via del Carroccio, 4 20853 Biassono (MB) – Italy Telephone: +39 039 2201201 Facsimile: +39 039 2201221
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	Name and title	Date
Tested by:	 P. Barbieri (project handler)	07/01/2022
Reviewed by:	 D. Guarnone (verifier)	07/01/2022

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Section 1: Report summary

1.1 Test specification

Specifications	Part 27 – Miscellaneous wireless communications services
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1.2 Statement of compliance

Compliance	In the configuration tested the EUT was found compliant Yes ☒ No ☐ Test method: ANSI C63.26-2015, 662911 D01 Multiple Transmitter Output v02r01, 662911 D02 MIMO with Cross-Polarized Antennas v01
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1.3 Exclusions

Exclusions	None
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1.4 Registration number

Test site FCC ID number	682159
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1.5 Test report revision history

Revision #	Details of changes made to test report
TRF	Original report issued

1.6 Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

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Section 2: Summary of test results

2.1 FCC Part 27, test results

Part	Methods	Test description	Verdict
§27.53(m)(6)	2.1049	Occupied bandwidth	Pass
§27.50(h)	2.1046	Peak output power at RF antenna connector (EIRP)	Pass
§27.50(h)	2.1046	Peak output power at RF antenna connector (PAPR)	Pass
§27.53(m)	2.1051	Spurious emissions at RF antenna connector	Pass
§27.53(m)	2.1053	Radiated spurious emissions	Pass
§27.54	2.1055	Frequency stability	Pass

Notes:

Section 3: Equipment under test (EUT) and application details

3.1 Applicant details

Applicant complete business name	Name:	Teko Telecom Srl
	Federal Registration Number (FRN):	0018963462
	Grantee code	XM2
Mailing address	Address:	Via Meucci, 24/a
	City:	Castel S. Pietro Terme
	Province/State:	Bologna
	Post code:	40024
	Country:	Italy

3.2 Modular equipment

a) Single modular approval	Single modular approval Yes ☐ No ☒
b) Limited single modular approval	Limited single modular approval Yes ☐ No ☒

3.3 Product details

FCC ID	Grantee code:	XM2
	Product code:	-X25H2
Equipment class	PCB	
Description of product as it is marketed	Base Station	
	Model name/number:	XR25WH2/ACY-C
	Serial number:	1034459001

3.4 Application purpose

Type of application	☒ Original certification
	☐ Change in identification of presently authorized equipment
	Original FCC ID: Grant date:
	☐ Class II permissive change or modification of presently authorized equipment

Section 3: Equipment under test

3.5 Composite/related equipment

a) Composite equipment	The EUT is a composite device subject to an additional equipment authorization Yes ☐ No ☒
b) Related equipment	The EUT is part of a system that operates with, or is marketed with, another device that requires an equipment authorization Yes ☐ No ☒
c) Related FCC ID	If either of the above is "yes": ☐ has been granted under the FCC ID(s) listed below: ☐ is in the process of being filled under the FCC ID(s) listed below: ☐ is pending with the FCC ID(s) listed below: ☐ has a mix of pending and granted statuses under the FCC ID(s) listed below: i FCC ID: ii FCC ID:

3.6 Sample information

Receipt date:	06/09/2022
Nemko sample ID number:	468302

3.7 EUT technical specifications

Operating band:	Down Link – Up Link: 2496–2690 MHz
Operating frequency:	Wideband
Modulation type:	LTE-TDD (QPSK, 16QAM, 64QAM, 256QAM)
Occupied bandwidth:	LTE: 5 MHz, 10 MHz, 15 MHz, 20 MHz
Channel spacing:	standard
Emission designator:	LTE: D7W
RF Output	Down Link: 37 dBm (5.0 W)
Antenna type:	External Antenna is not provided, equipment that has an external 50 Ω RF connector
Power source:	100–240 Vac

Section 3: Equipment under test

3.8 Accessories and support equipment

The following information identifies accessories used to exercise the EUT during testing:

Item # 1

Type of equipment:	Server
Brand name:	Dell
Model name or number:	E38S
Serial number:	066JJ5
Nemko sample number:	364520
Connection port:	Optical fiber
Cable length and type:	-

Item # 2

Type of equipment:	
Brand name:	
Model name or number:	
Serial number:	
Nemko sample number:	
Connection port:	
Cable length and type:	

Item # 3

Type of equipment:	
Brand name:	
Model name or number:	
Serial number:	
Nemko sample number:	
Connection port:	
Cable length and type:	

Item # 4

Type of equipment:	
Brand name:	
Model name or number:	
Serial number:	
Nemko sample number:	
Connection port:	
Cable length and type:	

3.9 Operation of the EUT during testing

Details:

In down-link direction, normal working at max gain with max RF power output.

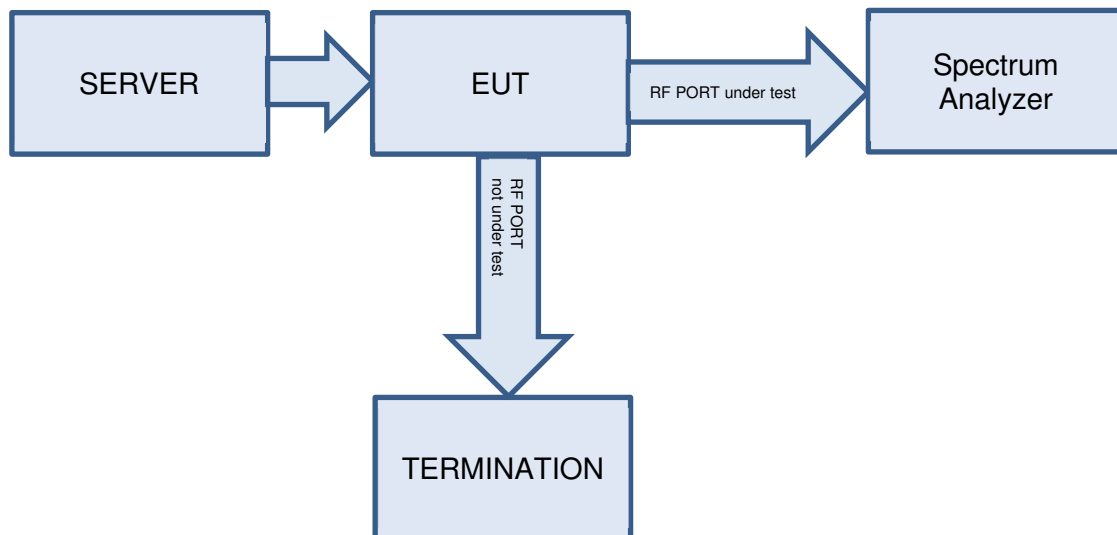
This report refer to measurement both RF port 1 and RF port 2.

When a RF port has been tested, the other one has been terminated on 50Ω load.

3.10 EUT setup diagram

In this system Cell Hub (Base Station) is the EUT.

The server generates wanted signals in base band frequency and Cell Hub convert the signal to RF band.

Test setup :

Procedure

Connect the server to the input of EUT by means of optical fiber, so the EUT can works at the maximum power.

Connect the spectrum analyzer to the RF output connector of the EUT.

Section 4: Engineering considerations

4.1 Modifications incorporated in the EUT

Modifications

Modifications performed to the EUT during this assessment
None ☒ Yes ☐, performed by Client ☐ or Nemko ☐
Details:

4.2 Deviations from laboratory tests procedures

Deviations

Deviations from laboratory test procedures
None ☒ Yes ☐ - details are listed below:

4.3 Technical judgment

Judgment

None

Section 5: Test conditions

5.1 Deviations from laboratory tests procedures

No deviations were made from laboratory test procedures.

5.2 Test conditions, power source and ambient temperatures

Normal temperature, humidity and air pressure test conditions	Temperature: 15–30 °C Relative humidity: 20–75 % Air pressure: 86–106 kPa When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.
Power supply range:	The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ± 5 %, for which the equipment was designed.

5.3 Measurement uncertainty

The measurement uncertainty was calculated for each test and quantity listed in this test report, according to CISPR 16-4-2 and other specific test standard and is documented in Nemko Spa working manual WML1002. The assessment of conformity for each test performed on the equipment is performed not taking into account the measurement uncertainty. The two following possible verdicts are stated in the report:

P (Pass) - The measured values of the equipment respect the specification limit at the points tested. The specific risk of false accept is up to 50% when the measured result is close to the limit.
F (Fail) - One or more measured values of the equipment do not respect the specification limit at the points tested. The specific risk of false reject is up to 50% when the measured result is close to the limit.

Hereafter Nemko's measurement uncertainties are reported:

Section 5: Test conditions, continued

EUT	Type	Test	Range	Measurement Uncertainty	Notes
Transmitter	Conducted	Frequency error	0.001 MHz ÷ 40 GHz	0.08 ppm	(1)
		Carrier power RF Output Power	0.009 MHz ÷ 30 MHz	1.1 dB	(1)
			30 MHz ÷ 18 GHz	1.5 dB	(1)
			18 MHz ÷ 40 GHz	3.0 dB	(1)
			40 MHz ÷ 140 GHz	5.0 dB	(1)
		Adjacent channel power	1 MHz ÷ 18 GHz	1.4 dB	(1)
		Conducted spurious emissions	0.009 MHz ÷ 18 GHz	3.0 dB	(1)
			18 GHz ÷ 40 GHz	4.2 dB	(1)
			40 GHz ÷ 220 GHz	6.0 dB	(1)
		Intermodulation attenuation	1 MHz ÷ 18 GHz	2.2 dB	(1)
		Attack time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Attack time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Release time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Release time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Transient behaviour of the transmitter– Transient frequency behaviour	1 MHz ÷ 18 GHz	0.2 kHz	(1)
		Transient behaviour of the transmitter – Power level slope	1 MHz ÷ 18 GHz	9%	(1)
		Frequency deviation - Maximum permissible frequency deviation	0.001 MHz ÷ 18 GHz	1.3%	(1)
		Frequency deviation - Response of the transmitter to modulation frequencies above 3 kHz	0.001 MHz ÷ 18 GHz	0.5 dB	(1)
		Dwell time	-	3%	(1)
		Hopping Frequency Separation	0.01 MHz ÷ 18 GHz	1%	(1)
		Occupied Channel Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
		Modulation Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
Receiver	Radiated	Radiated spurious emissions	0.009 MHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
			66 GHz ÷ 220 GHz	10 dB	(1)
		Effective radiated power transmitter	10 kHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
			66 GHz ÷ 220 GHz	10 dB	(1)
	Radiated	Radiated spurious emissions	0.009 MHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
			66 GHz ÷ 220 GHz	10 dB	(1)
		Sensitivity measurement	1 MHz ÷ 18 GHz	6.0 dB	(1)
Receiver	Conducted	Conducted spurious emissions	0.009 MHz ÷ 18 GHz	3.0 dB	(1)
			18 GHz ÷ 40 GHz	4.2 dB	(1)
			40 GHz ÷ 220 GHz	6.0 dB	(1)

NOTES:

(1) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %

5.4 Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Spectrum Analyzer	Agilent	N9030B PXA	MY61330632	04/2023
Climatic Chambre	Angelantoni	ACS-Hygros 600	7237	11/2023
Trilog Broad Band Antenna	Schwarzbeck	VULB 9162	VULB 9162-25	07/2024
Bilog antenna (1 ÷ 18 GHz)	Schwarzbeck	STLP 9148	STPL 9148-123	06/2024
Double ridge horn antenna (4 ÷ 40 GHz)	RFSpin	DRH40	061106A40	04/2023
Broadband preamplifier (18 ÷ 40 GHz)	Sage	STB-1834034030-KFKF-L1	18490-01	05/2023
Broadband preamplifier (1 ÷ 18 GHz)	Schwarzbeck	BBV9718C	00121	03/2023
EMI receiver (2 Hz ÷ 44 GHz)	R&S	ESW44	101620	08/2022
Controller	Maturo	FCU3.0	10041	NCR
Tilt antenna mast	Maturo	TAM4.0-E	10042	NCR
Turntable	Maturo	TT4.0-5T	2.527	NCR
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530	09/2023
Shielded room	Siemens	10m control room	1947	NCR
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use (*) Equipment supplied by manufacturer's				

Appendix A: Test results

Clause 27.53(m)(6) Occupied bandwidth

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

Test date: 06/09/2022 to 06/24/2022

Test results: Pass

Special notes

Measurements were performed for all modulation types. As an example, only measurements for 64 QAM modulation type are reported.

Test equipment used

Equipment	Manufacturer	Model No.	Asset/Serial No.
Spectrum Analyzer	Agilent	N9030B PXA	MY61330632

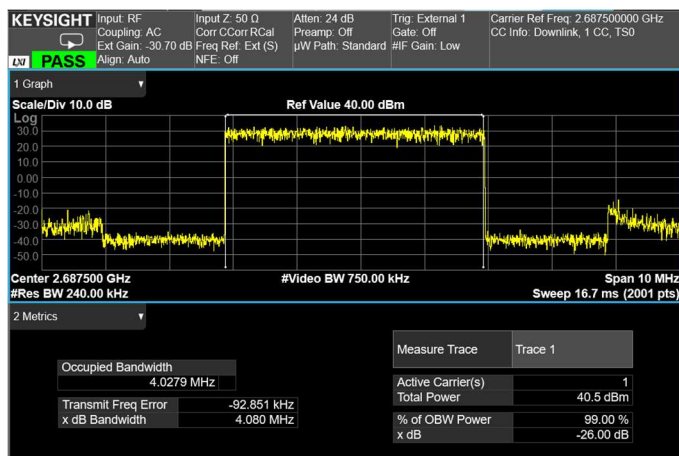
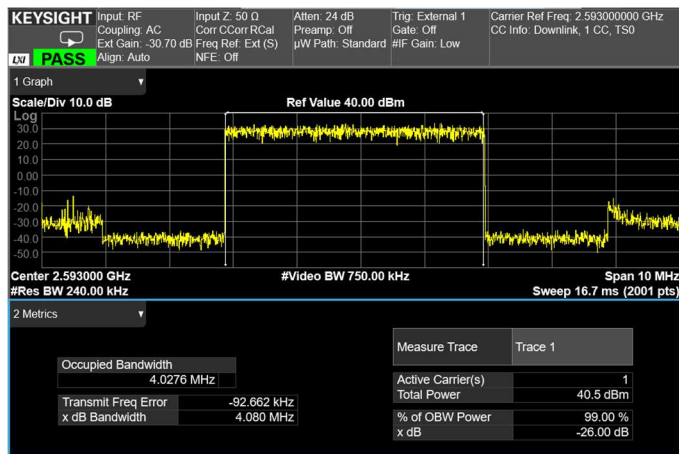
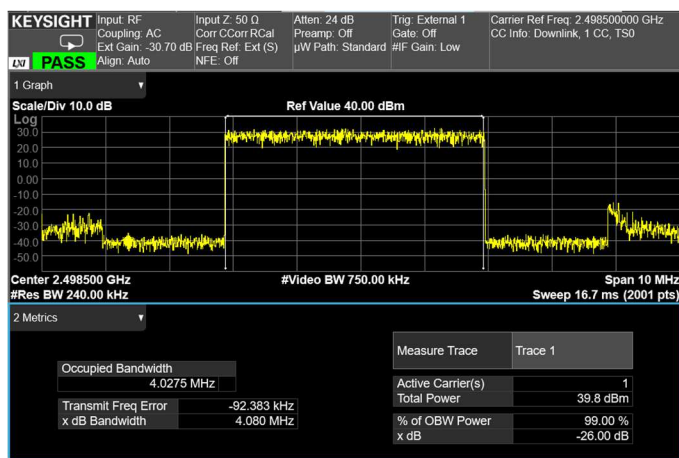
Clause 27.53(m)(6) Occupied bandwidth, continued

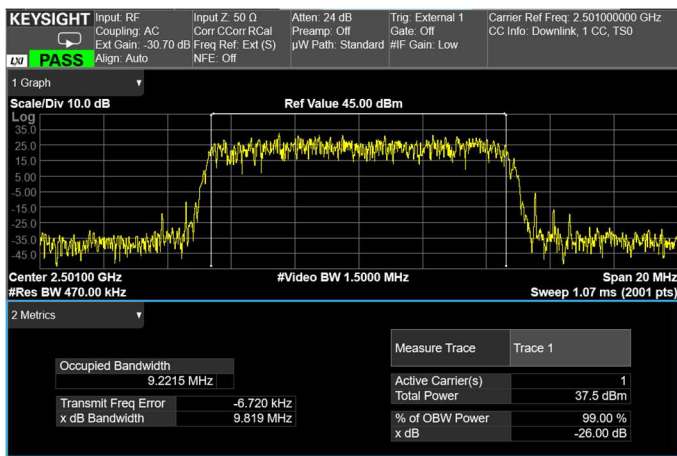
Test data

RF PORT 1

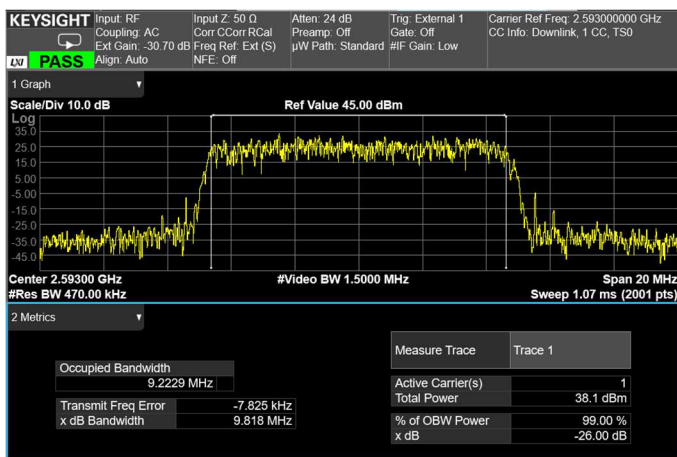
Test data			
Direction	Modulation	Frequency (MHz)	OBW (MHz)
Down-link	LTE 5MHz (QPSK)	2498.5	4.03
Down-link	LTE 5MHz (QPSK)	2593	4.03
Down-link	LTE 5MHz (QPSK)	2687.5	4.03
Down-link	LTE 5MHz (16QAM)	2498.5	4.03
Down-link	LTE 5MHz (16QAM)	2593	4.03
Down-link	LTE 5MHz (16QAM)	2687.5	4.03
Down-link	LTE 5MHz (64QAM)	2498.5	4.03
Down-link	LTE 5MHz (64QAM)	2593	4.03
Down-link	LTE 5MHz (64QAM)	2687.5	4.03
Down-link	LTE 5MHz (256QAM)	2498.5	4.03
Down-link	LTE 5MHz (256QAM)	2593	4.03
Down-link	LTE 5MHz (256QAM)	2687.5	4.03
Down-link	LTE 10MHz (QPSK)	2501	9.22
Down-link	LTE 10MHz (QPSK)	2593	9.22
Down-link	LTE 10MHz (QPSK)	2685	9.22
Down-link	LTE 10MHz (16QAM)	2501	9.22
Down-link	LTE 10MHz (16QAM)	2593	9.22
Down-link	LTE 10MHz (16QAM)	2685	9.22
Down-link	LTE 10MHz (64QAM)	2501	9.22
Down-link	LTE 10MHz (64QAM)	2593	9.22
Down-link	LTE 10MHz (64QAM)	2685	9.22
Down-link	LTE 10MHz (256QAM)	2501	9.22
Down-link	LTE 10MHz (256QAM)	2593	9.22
Down-link	LTE 10MHz (256QAM)	2685	9.22
Down-link	LTE 15MHz (QPSK)	2503.5	13.69
Down-link	LTE 15MHz (QPSK)	2593	13.70
Down-link	LTE 15MHz (QPSK)	2682.5	13.70
Down-link	LTE 15MHz (16QAM)	2503.5	13.69
Down-link	LTE 15MHz (16QAM)	2593	13.70
Down-link	LTE 15MHz (16QAM)	2682.5	13.70
Down-link	LTE 15MHz (64QAM)	2503.5	13.69
Down-link	LTE 15MHz (64QAM)	2593	13.70
Down-link	LTE 15MHz (64QAM)	2682.5	13.70
Down-link	LTE 15MHz (256QAM)	2503.5	13.69
Down-link	LTE 15MHz (256QAM)	2593	13.70
Down-link	LTE 15MHz (256QAM)	2682.5	13.70

Test data			
Direction	Modulation	Frequency (MHz)	OBW (MHz)
Down-link	LTE 20MHz (QPSK)	2506	18.18
Down-link	LTE 20MHz (QPSK)	2593	18.19
Down-link	LTE 20MHz (QPSK)	2680	18.19
Down-link	LTE 20MHz (16QAM)	2506	18.18
Down-link	LTE 20MHz (16QAM)	2593	18.19
Down-link	LTE 20MHz (16QAM)	2680	18.19
Down-link	LTE 20MHz (64QAM)	2506	18.18
Down-link	LTE 20MHz (64QAM)	2593	18.19
Down-link	LTE 20MHz (64QAM)	2680	18.19
Down-link	LTE 20MHz (256QAM)	2506	18.18
Down-link	LTE 20MHz (256QAM)	2593	18.19
Down-link	LTE 20MHz (256QAM)	2680	18.19





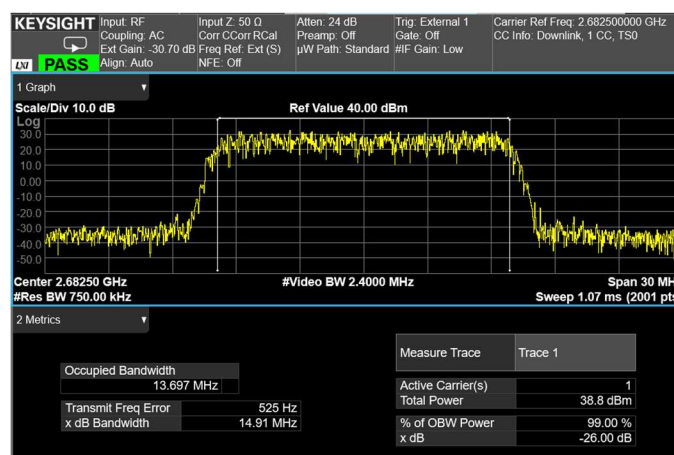
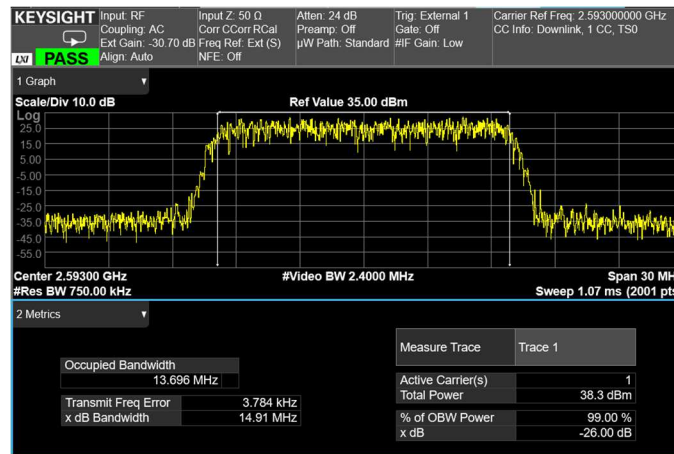
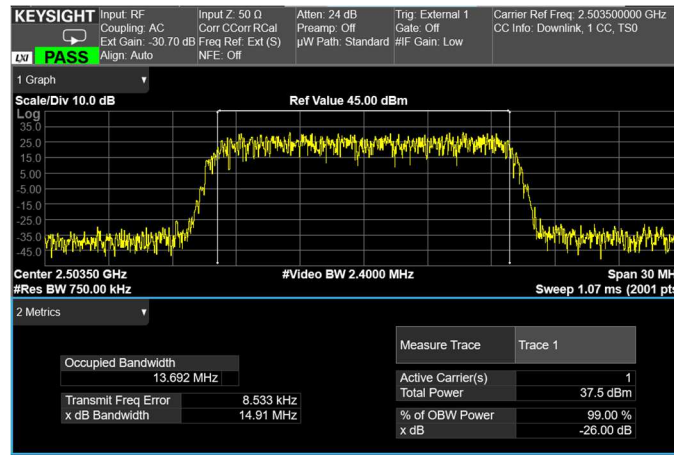
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 BW=10MHz

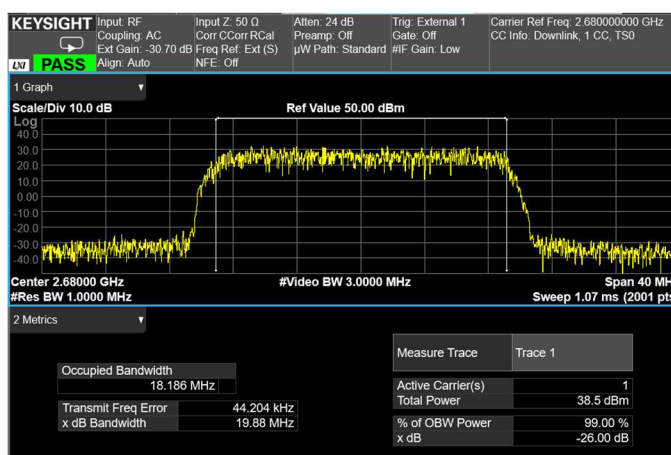
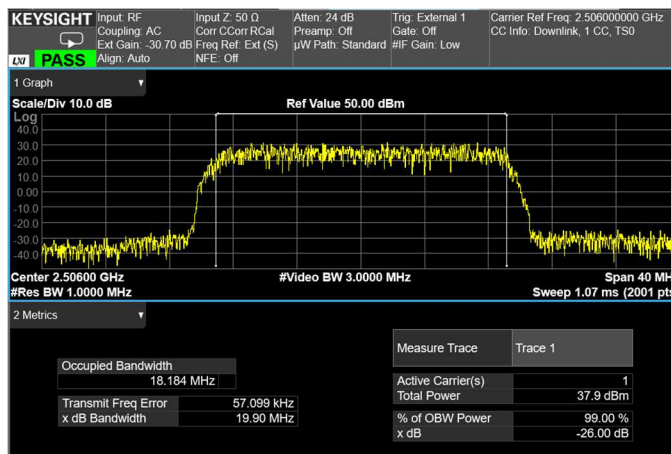


Channel: MIDDLE, Modulation: 64QAM,
 BW=10MHz



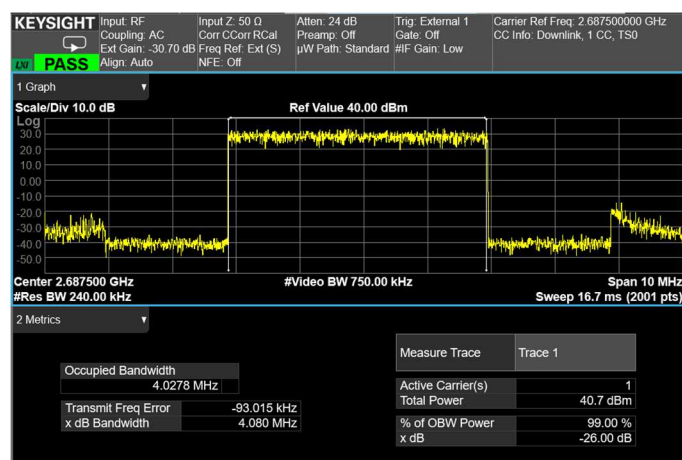
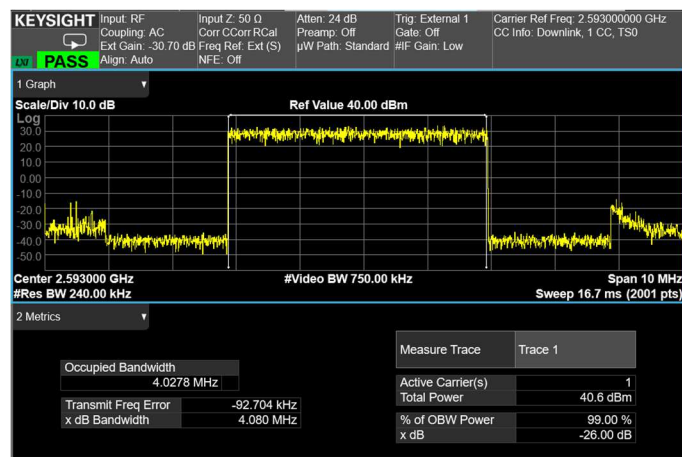
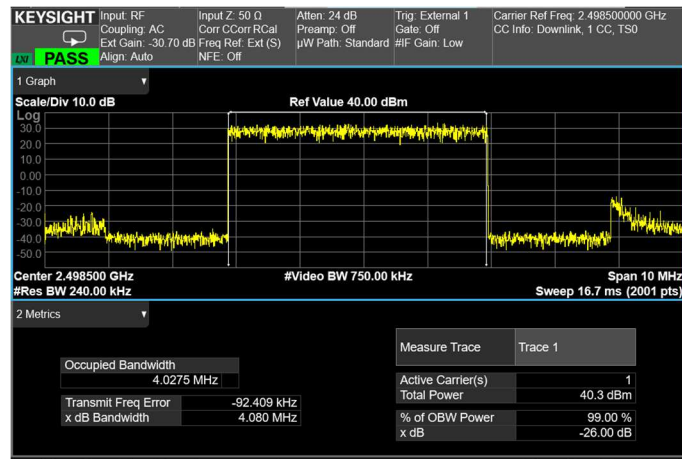
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 BW=10MHz

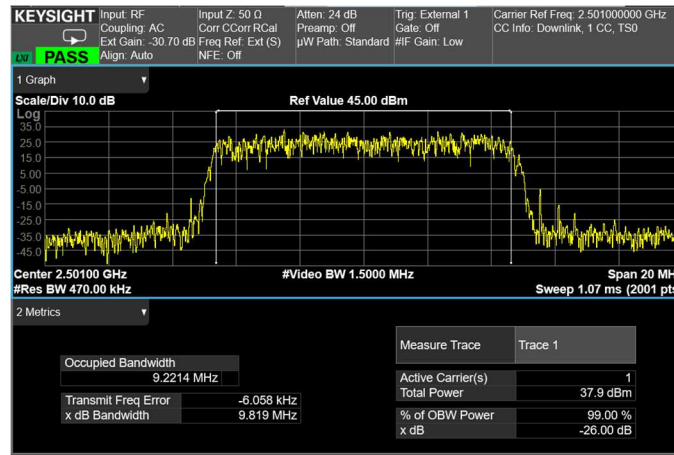




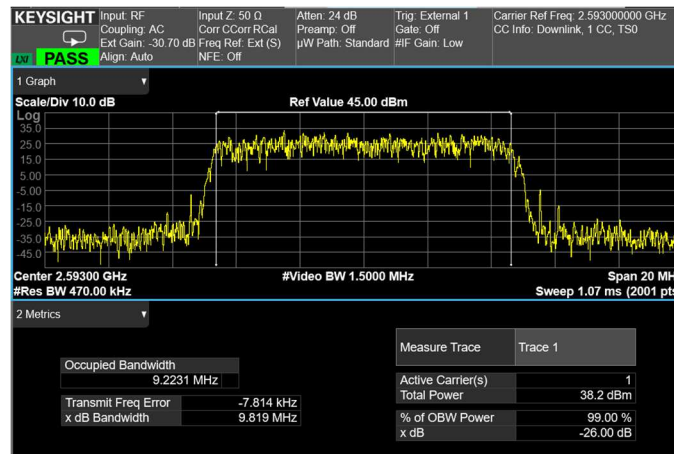
RF PORT 2

Test data			
Direction	Modulation	Frequency (MHz)	OBW (MHz)
Down-link	LTE 5MHz (QPSK)	2498.5	4.03
Down-link	LTE 5MHz (QPSK)	2593	4.03
Down-link	LTE 5MHz (QPSK)	2687.5	4.03
Down-link	LTE 5MHz (16QAM)	2498.5	4.03
Down-link	LTE 5MHz (16QAM)	2593	4.03
Down-link	LTE 5MHz (16QAM)	2687.5	4.03
Down-link	LTE 5MHz (64QAM)	2498.5	4.03
Down-link	LTE 5MHz (64QAM)	2593	4.03
Down-link	LTE 5MHz (64QAM)	2687.5	4.03
Down-link	LTE 5MHz (256QAM)	2498.5	4.03
Down-link	LTE 5MHz (256QAM)	2593	4.03
Down-link	LTE 5MHz (256QAM)	2687.5	4.03
Down-link	LTE 10MHz (QPSK)	2501	9.22
Down-link	LTE 10MHz (QPSK)	2593	9.22
Down-link	LTE 10MHz (QPSK)	2685	9.22
Down-link	LTE 10MHz (16QAM)	2501	9.22
Down-link	LTE 10MHz (16QAM)	2593	9.22
Down-link	LTE 10MHz (16QAM)	2685	9.22
Down-link	LTE 10MHz (64QAM)	2501	9.22
Down-link	LTE 10MHz (64QAM)	2593	9.22
Down-link	LTE 10MHz (64QAM)	2685	9.22
Down-link	LTE 10MHz (256QAM)	2501	9.22
Down-link	LTE 10MHz (256QAM)	2593	9.22
Down-link	LTE 10MHz (256QAM)	2685	9.22
Down-link	LTE 15MHz (QPSK)	2503.5	13.69
Down-link	LTE 15MHz (QPSK)	2593	13.70
Down-link	LTE 15MHz (QPSK)	2682.5	13.69
Down-link	LTE 15MHz (16QAM)	2503.5	13.69
Down-link	LTE 15MHz (16QAM)	2593	13.70
Down-link	LTE 15MHz (16QAM)	2682.5	13.69
Down-link	LTE 15MHz (64QAM)	2503.5	13.69
Down-link	LTE 15MHz (64QAM)	2593	13.70
Down-link	LTE 15MHz (64QAM)	2682.5	13.69
Down-link	LTE 15MHz (256QAM)	2503.5	13.69
Down-link	LTE 15MHz (256QAM)	2593	13.70
Down-link	LTE 15MHz (256QAM)	2682.5	13.69
Down-link	LTE 20MHz (QPSK)	2506	18.19
Down-link	LTE 20MHz (QPSK)	2593	18.20
Down-link	LTE 20MHz (QPSK)	2680	18.18
Down-link	LTE 20MHz (16QAM)	2506	18.19
Down-link	LTE 20MHz (16QAM)	2593	18.20
Down-link	LTE 20MHz (16QAM)	2680	18.18
Down-link	LTE 20MHz (64QAM)	2506	18.19
Down-link	LTE 20MHz (64QAM)	2593	18.20
Down-link	LTE 20MHz (64QAM)	2680	18.18
Down-link	LTE 20MHz (256QAM)	2506	18.19
Down-link	LTE 20MHz (256QAM)	2593	18.20
Down-link	LTE 20MHz (256QAM)	2680	18.18





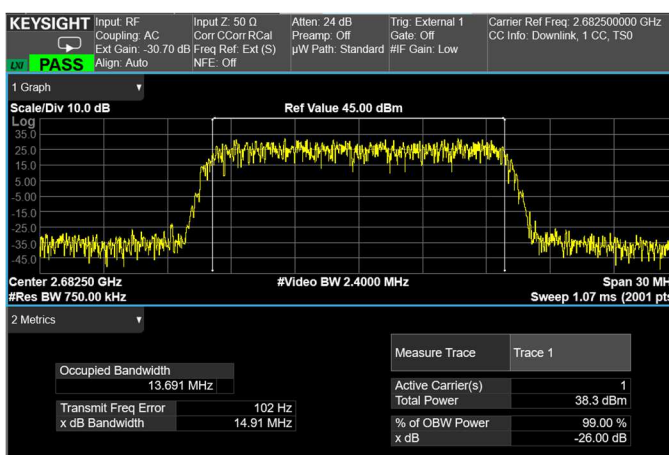
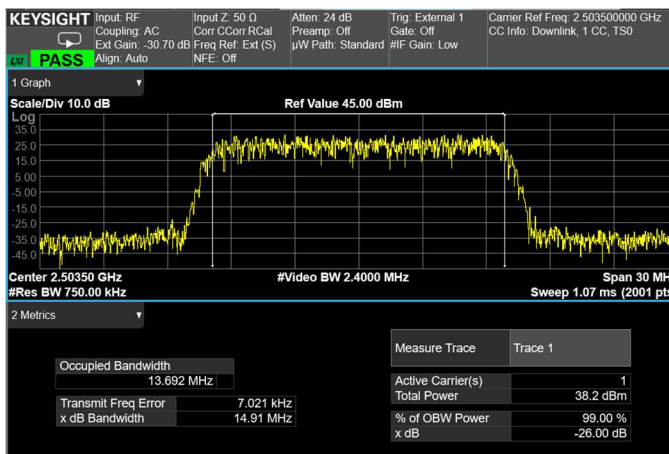
Channel: BOTTOM, Modulation: 64QAM,
 BW=10MHz

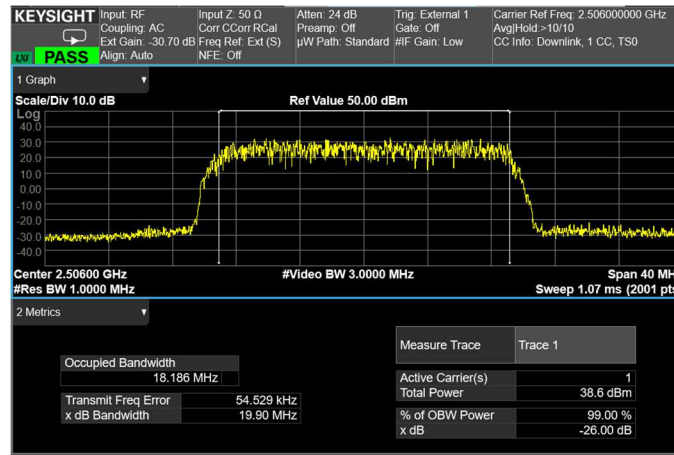


Channel: MIDDLE, Modulation: 64QAM,
 BW=10MHz

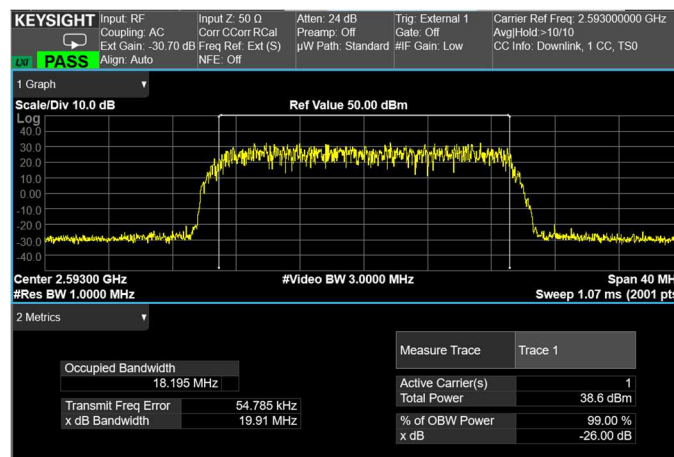


Channel: TOP, Modulation: 64QAM,
 BW=10MHz

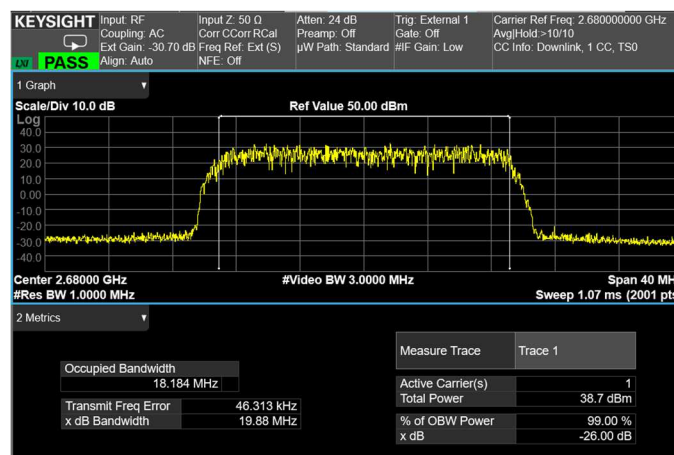




Channel: BOTTOM, Modulation: 64QAM,
 BW=20MHz



Channel: MIDDLE, Modulation: 64QAM,
 BW=20MHz



Channel: TOP, Modulation: 64QAM,
 BW=20MHz

Clause 27.50(h) Peak output power at RF antenna connector

§ 27.50(h) The following power limits shall apply in the BRS and EBS:

(1) Main, booster and base stations.

(i) The maximum EIRP of a main, booster or base station shall not exceed 33 dBW + 10log(X/Y) dBW, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in paragraph (h)(1)(ii) of this section.

(ii) If a main or booster station sectorizes or otherwise uses one or more transmitting antennas with a non-omnidirectional horizontal plane radiation pattern, the maximum EIRP in dBW in a given direction shall be determined by the following formula: $EIRP = 33 \text{ dBW} + 10 \log(X/Y) \text{ dBW} + 10 \log(360/\text{beamwidth}) \text{ dBW}$, where X is the actual channel width in MHz, Y is either (i) 6 MHz if prior to transition or the station is in the MBS following transition or (ii) 5.5 MHz if the station is in the LBS and UBS following transition, and beamwidth is the total horizontal plane beamwidth of the individual transmitting antenna for the station or any sector measured at the half-power points.

Test date: 06/09/2022 to 06/24/2022

Test results: Pass

Special notes

Measurements were performed for all modulation types. As an example, only measurements for 64 QAM modulation type are reported.

Test equipment used

Equipment	Manufacturer	Model No.	Asset/Serial No.
Spectrum Analyzer	Agilent	N9030B PXA	MY61330632

Clause 27.50(h) Peak output power at RF antenna connector

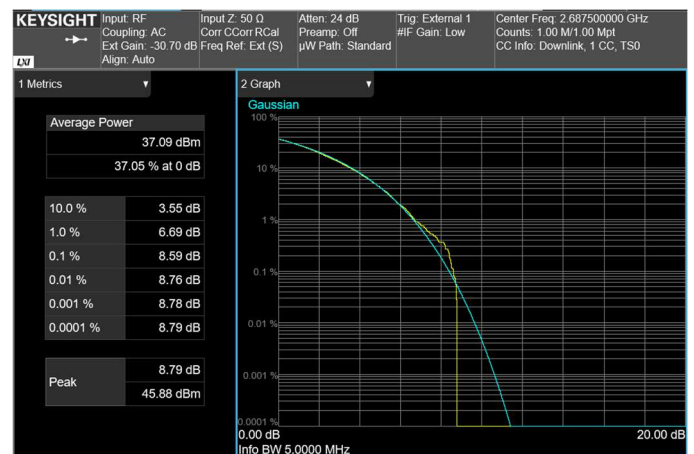
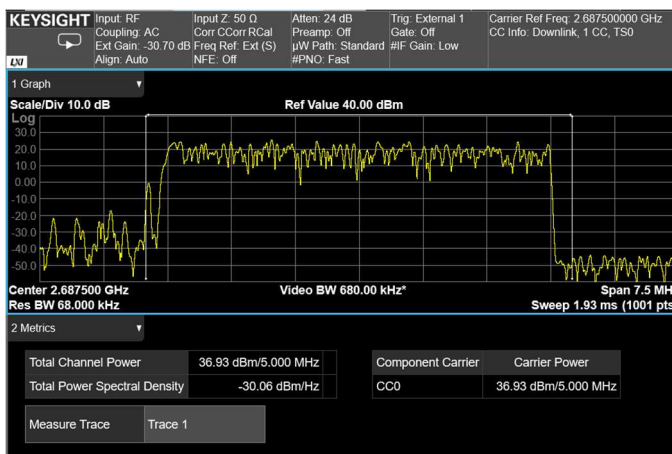
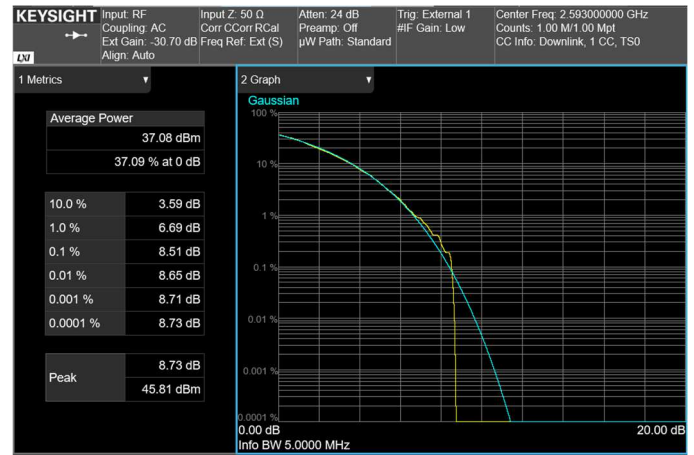
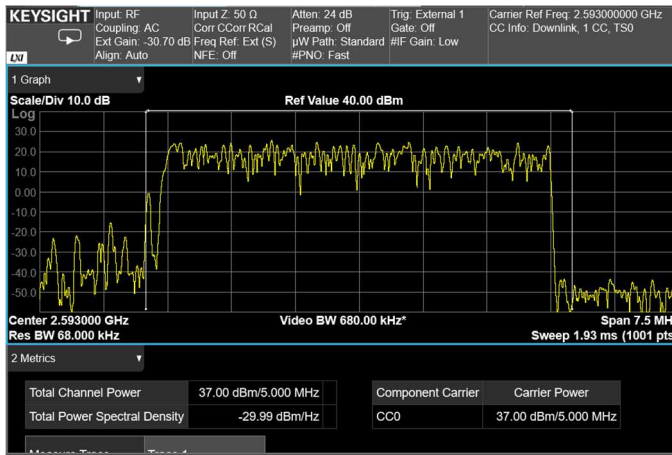
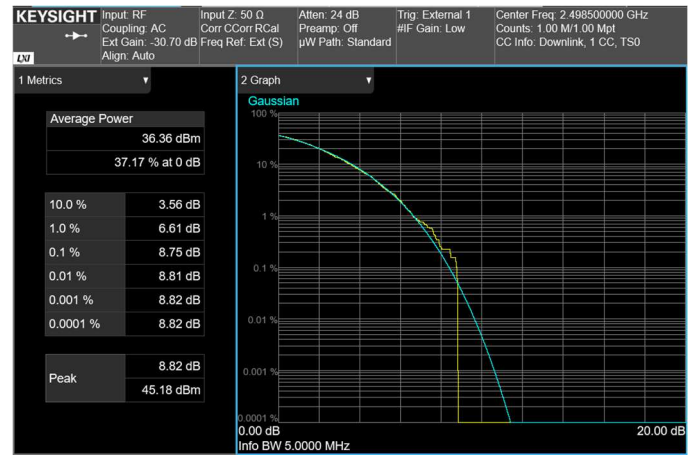
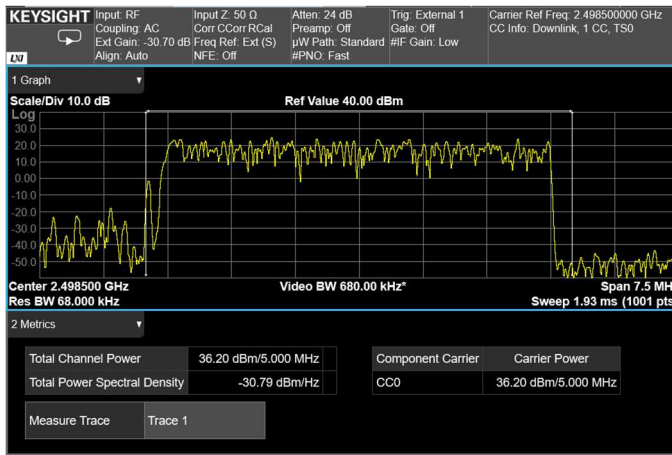
Test data

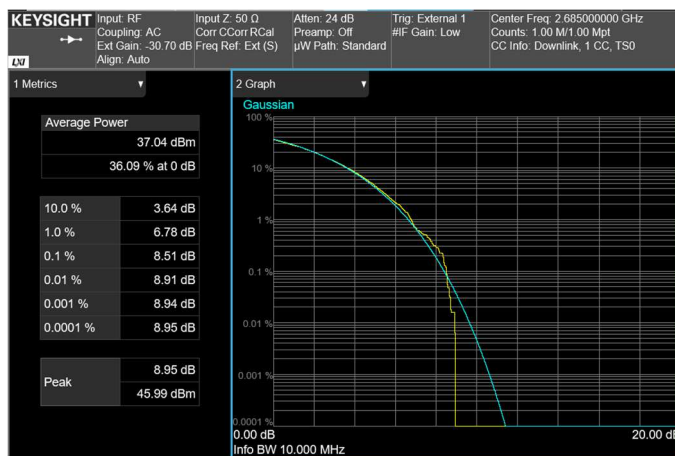
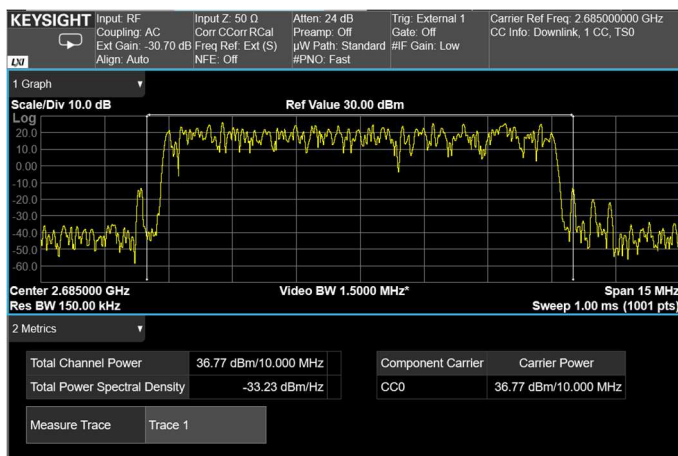
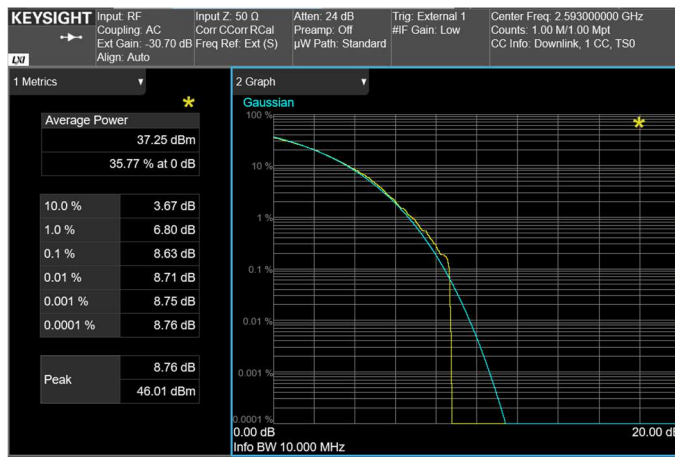
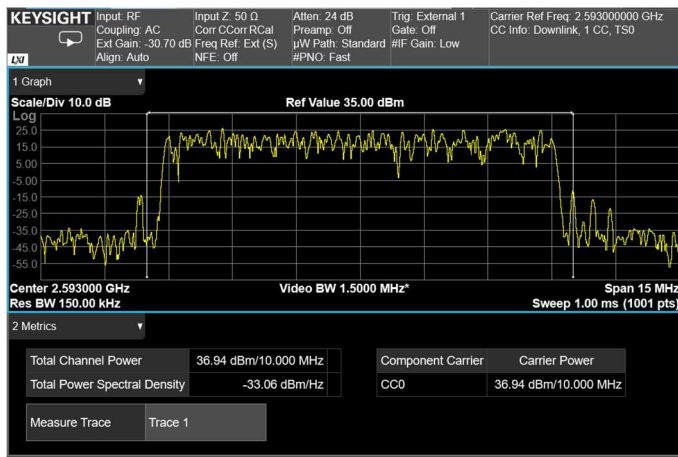
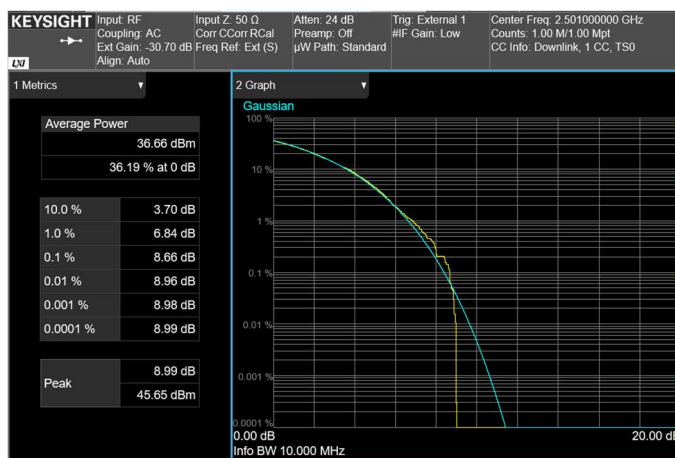
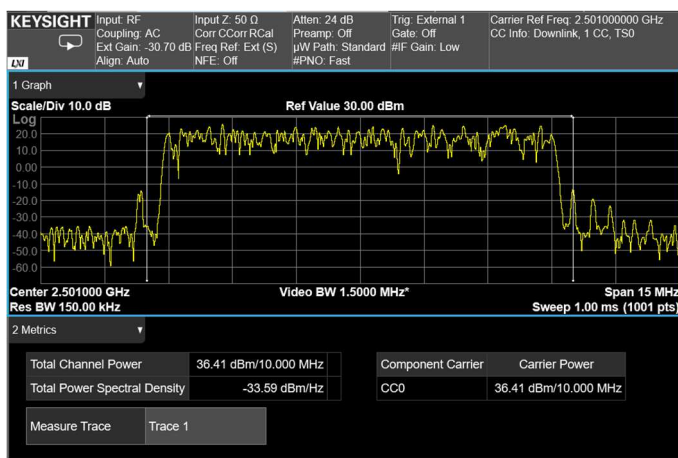
RF PORT 1

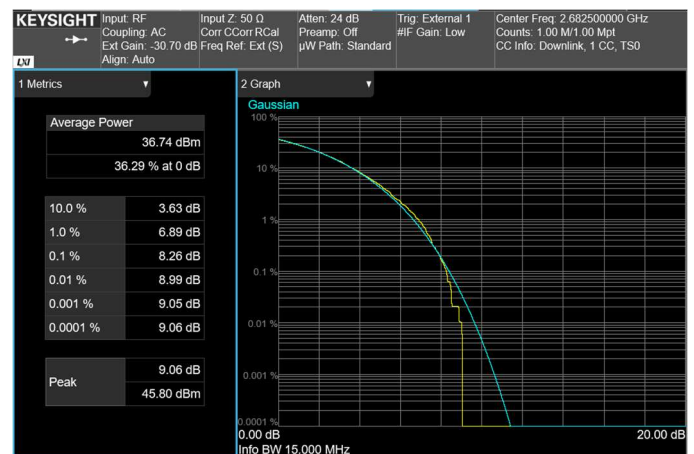
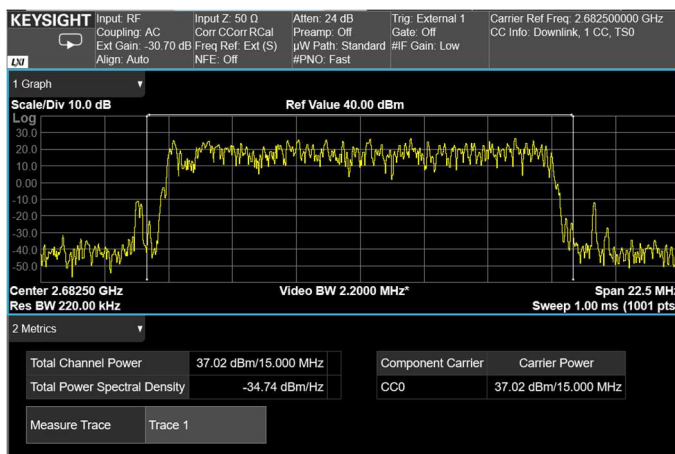
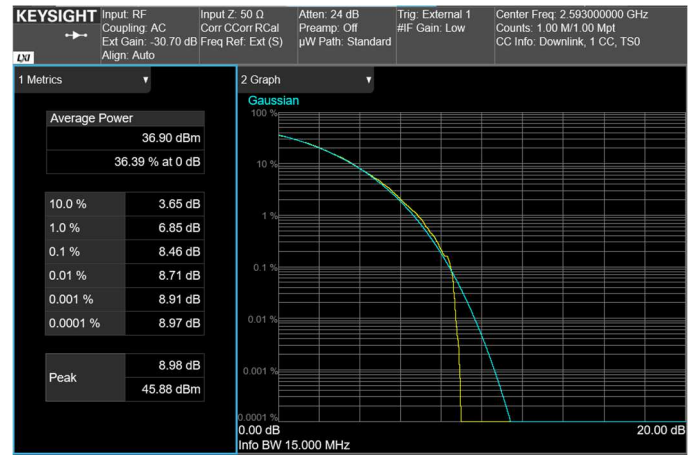
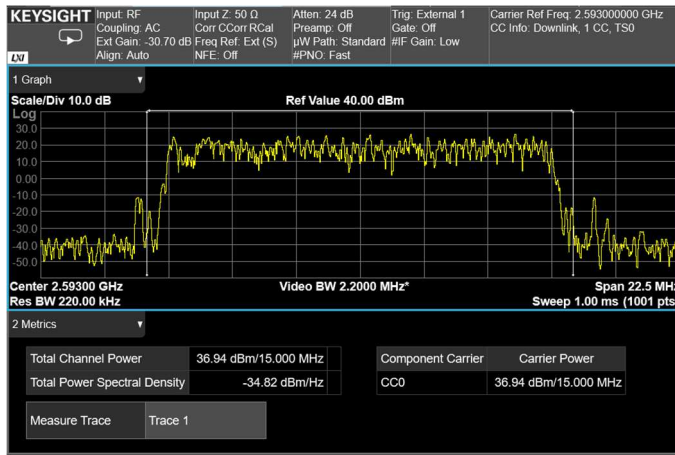
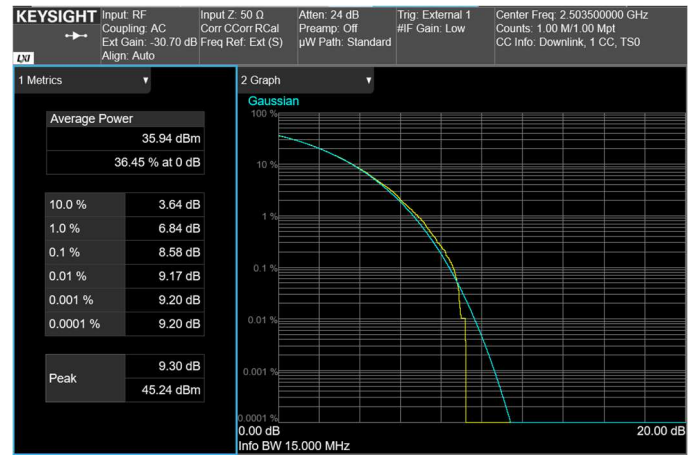
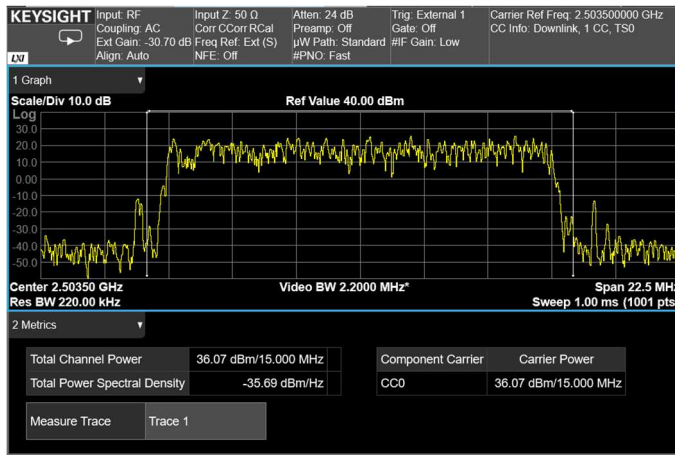
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 5MHz (QPSK)	2498.5	36.2	4.169	8.8
Down-link	LTE 5MHz (QPSK)	2593	36.9	4.898	8.8
Down-link	LTE 5MHz (QPSK)	2687.5	36.9	4.898	8.8
Down-link	LTE 5MHz (16QAM)	2498.5	36.2	4.169	9.0
Down-link	LTE 5MHz (16QAM)	2593	37.0	5.012	8.7
Down-link	LTE 5MHz (16QAM)	2687.5	36.8	4.786	8.8
Down-link	LTE 5MHz (64QAM)	2498.5	36.2	4.169	8.8
Down-link	LTE 5MHz (64QAM)	2593	37.0	5.012	8.7
Down-link	LTE 5MHz (64QAM)	2687.5	36.9	4.898	8.8
Down-link	LTE 5MHz (256QAM)	2498.5	36.2	4.169	9.0
Down-link	LTE 5MHz (256QAM)	2593	37.0	5.012	8.7
Down-link	LTE 5MHz (256QAM)	2687.5	36.8	4.786	8.8
Down-link	LTE 10MHz (QPSK)	2501	36.4	4.365	9.0
Down-link	LTE 10MHz (QPSK)	2593	37.0	5.012	8.7
Down-link	LTE 10MHz (QPSK)	2685	36.8	4.786	9.0
Down-link	LTE 10MHz (16QAM)	2501	36.4	4.365	9.0
Down-link	LTE 10MHz (16QAM)	2593	37.0	5.012	8.8
Down-link	LTE 10MHz (16QAM)	2685	36.8	4.786	9.0
Down-link	LTE 10MHz (64QAM)	2501	36.4	4.365	9.0
Down-link	LTE 10MHz (64QAM)	2593	36.9	4.898	8.8
Down-link	LTE 10MHz (64QAM)	2685	36.8	4.786	9.0
Down-link	LTE 10MHz (256QAM)	2501	36.4	4.365	9.0
Down-link	LTE 10MHz (256QAM)	2593	37.0	5.012	8.8
Down-link	LTE 10MHz (256QAM)	2685	36.8	4.786	8.9
Down-link	LTE 15MHz (QPSK)	2503.5	36.1	4.074	9.1
Down-link	LTE 15MHz (QPSK)	2593	36.9	4.898	9.0
Down-link	LTE 15MHz (QPSK)	2682.5	37.0	5.012	9.1
Down-link	LTE 15MHz (16QAM)	2503.5	36.1	4.074	9.3
Down-link	LTE 15MHz (16QAM)	2593	37.1	5.129	8.9
Down-link	LTE 15MHz (16QAM)	2682.5	37.1	5.129	9.1
Down-link	LTE 15MHz (64QAM)	2503.5	36.1	4.074	9.3
Down-link	LTE 15MHz (64QAM)	2593	36.9	5.129	9.0
Down-link	LTE 15MHz (64QAM)	2682.5	37.0	5.129	9.1
Down-link	LTE 15MHz (256QAM)	2503.5	36.1	4.074	9.3
Down-link	LTE 15MHz (256QAM)	2593	36.9	4.898	9.0
Down-link	LTE 15MHz (256QAM)	2682.5	37.1	5.129	9.1

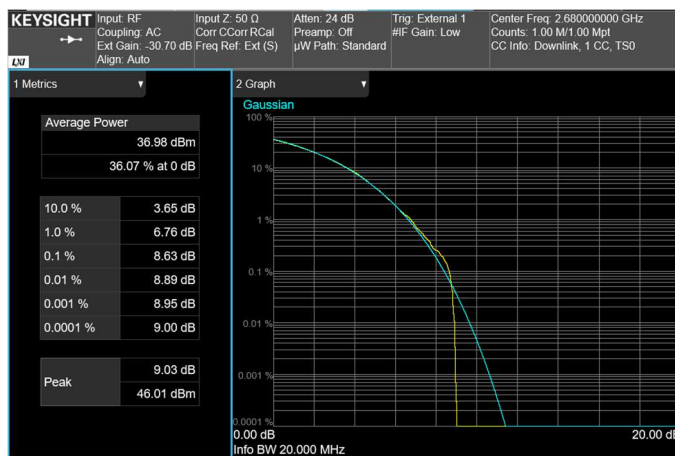
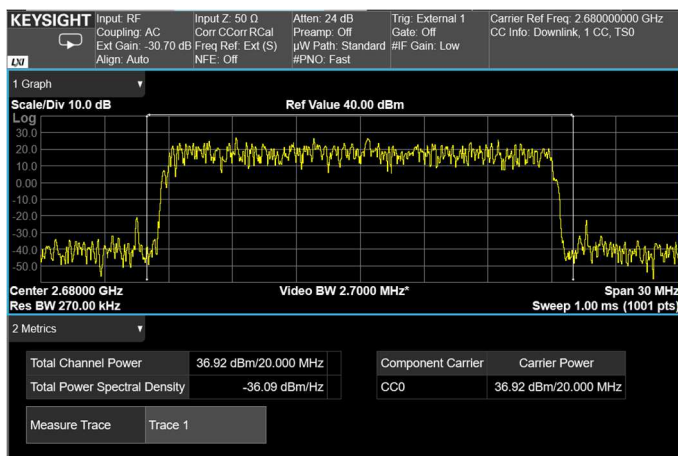
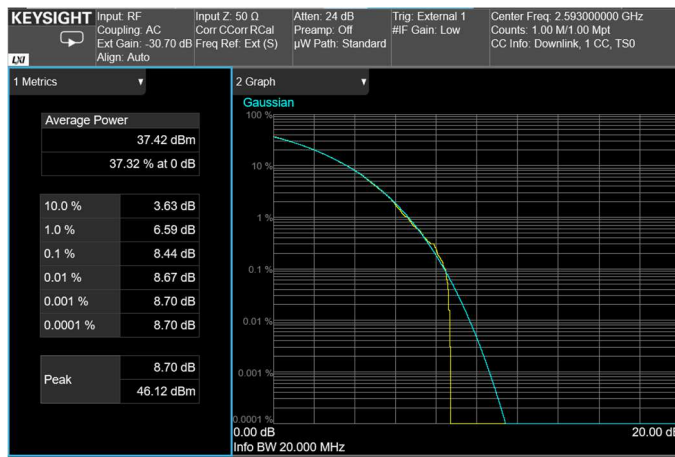
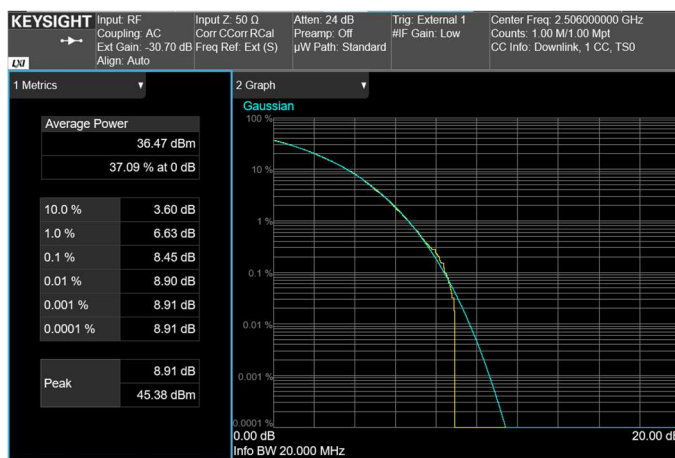
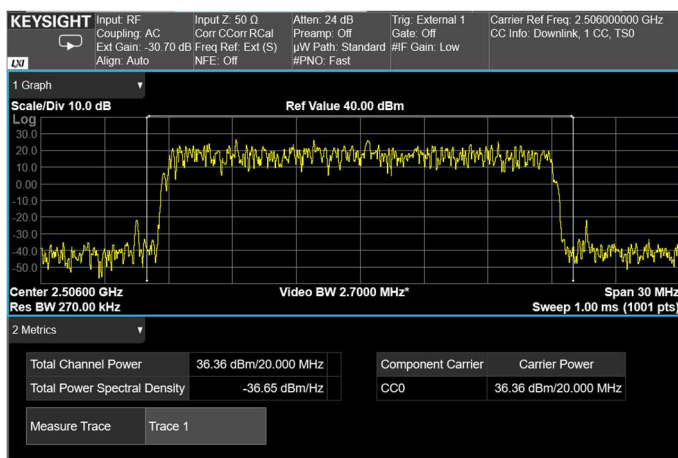
Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 20MHz (QPSK)	2506	36.4	4.365	8.9
Down-link	LTE 20MHz (QPSK)	2593	37.1	5.129	8.7
Down-link	LTE 20MHz (QPSK)	2680	36.9	4.898	8.9
Down-link	LTE 20MHz (16QAM)	2506	36.4	4.365	8.9
Down-link	LTE 20MHz (16QAM)	2593	37.1	5.129	8.7
Down-link	LTE 20MHz (16QAM)	2680	37.0	5.012	8.9
Down-link	LTE 20MHz (64QAM)	2506	36.4	4.365	8.9
Down-link	LTE 20MHz (64QAM)	2593	37.1	5.129	8.7
Down-link	LTE 20MHz (64QAM)	2680	36.9	4.898	9.0
Down-link	LTE 20MHz (256QAM)	2506	36.4	4.365	8.9
Down-link	LTE 20MHz (256QAM)	2593	37.1	5.129	8.7
Down-link	LTE 20MHz (256QAM)	2680	36.9	4.898	9.0

PAR measure is performed by the “CCDF” function installed on Spectrum analyzer that provides average power (the same measured with “Channel power” function), peak power and PAR.









RF PORT 2

Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 5MHz (QPSK)	2498.5	36.9	4.898	8.8
Down-link	LTE 5MHz (QPSK)	2593	36.9	4.909	8.8
Down-link	LTE 5MHz (QPSK)	2687.5	37.1	5.105	8.8
Down-link	LTE 5MHz (16QAM)	2498.5	36.9	4.909	8.9
Down-link	LTE 5MHz (16QAM)	2593	37.0	5.047	8.7
Down-link	LTE 5MHz (16QAM)	2687.5	37.1	5.105	8.8
Down-link	LTE 5MHz (64QAM)	2498.5	36.9	4.887	8.8
Down-link	LTE 5MHz (64QAM)	2593	37.0	4.977	8.9
Down-link	LTE 5MHz (64QAM)	2687.5	37.1	5.105	8.8
Down-link	LTE 5MHz (256QAM)	2498.5	36.9	4.898	8.8
Down-link	LTE 5MHz (256QAM)	2593	37.0	5.012	8.7
Down-link	LTE 5MHz (256QAM)	2687.5	37.1	5.105	8.8
Down-link	LTE 10MHz (QPSK)	2501	36.8	4.819	9.0
Down-link	LTE 10MHz (QPSK)	2593	37.1	5.140	8.7
Down-link	LTE 10MHz (QPSK)	2685	37.0	5.000	9.0
Down-link	LTE 10MHz (16QAM)	2501	36.8	4.808	8.9
Down-link	LTE 10MHz (16QAM)	2593	37.1	5.093	8.8
Down-link	LTE 10MHz (16QAM)	2685	37.0	5.012	9.0
Down-link	LTE 10MHz (64QAM)	2501	36.8	4.819	8.9
Down-link	LTE 10MHz (64QAM)	2593	37.1	5.129	8.7
Down-link	LTE 10MHz (64QAM)	2685	37.0	5.000	9.0
Down-link	LTE 10MHz (256QAM)	2501	36.8	4.819	8.9
Down-link	LTE 10MHz (256QAM)	2593	37.1	5.105	8.7
Down-link	LTE 10MHz (256QAM)	2685	37.0	5.012	9.1
Down-link	LTE 15MHz (QPSK)	2503.5	36.9	4.920	8.9
Down-link	LTE 15MHz (QPSK)	2593	36.9	4.932	9.0
Down-link	LTE 15MHz (QPSK)	2682.5	36.8	4.819	8.9
Down-link	LTE 15MHz (16QAM)	2503.5	36.9	4.932	8.9
Down-link	LTE 15MHz (16QAM)	2593	37.0	5.023	9.0
Down-link	LTE 15MHz (16QAM)	2682.5	36.8	4.819	9.0
Down-link	LTE 15MHz (64QAM)	2503.5	36.9	4.920	8.9
Down-link	LTE 15MHz (64QAM)	2593	37.0	5.000	8.9
Down-link	LTE 15MHz (64QAM)	2682.5	36.8	4.819	9.2
Down-link	LTE 15MHz (256QAM)	2503.5	36.9	4.920	8.9
Down-link	LTE 15MHz (256QAM)	2593	37.0	5.023	9.0
Down-link	LTE 15MHz (256QAM)	2682.5	36.8	4.819	8.9

Test data					
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	PAR (dB)
Down-link	LTE 20MHz (QPSK)	2506	37.0	5.047	8.9
Down-link	LTE 20MHz (QPSK)	2593	37.0	5.023	8.8
Down-link	LTE 20MHz (QPSK)	2680	37.1	5.105	9.0
Down-link	LTE 20MHz (16QAM)	2506	37.0	5.035	8.9
Down-link	LTE 20MHz (16QAM)	2593	37.0	5.023	8.7
Down-link	LTE 20MHz (16QAM)	2680	37.1	5.129	9.0
Down-link	LTE 20MHz (64QAM)	2506	37.1	5.082	8.9
Down-link	LTE 20MHz (64QAM)	2593	37.0	5.023	8.7
Down-link	LTE 20MHz (64QAM)	2680	37.1	5.082	9.0
Down-link	LTE 20MHz (256QAM)	2506	37.1	5.093	8.9
Down-link	LTE 20MHz (256QAM)	2593	37.0	4.977	8.8
Down-link	LTE 20MHz (256QAM)	2680	37.1	5.093	9.0

PAR measure is performed by the “CCDF” function installed on Spectrum analyzer that provides average power (the same measured with “Channel power” function), peak power and PAR.

