



<b>Report Reference ID:</b>	REP016793
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<b>Test specification:</b>	<b>Title 47 – Telecommunication</b> Chapter I – Federal Communications Commission Subchapter B – Common carrier services Part 27 – Miscellaneous wireless communications services
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<b>Applicant:</b>	TEKO Telecom Srl. Via Meucci, 24/a 40024 – Castel S. Pietro Terme (BO) – Italy
<b>Apparatus:</b>	Next Generation Very Very High Power Remote Unit 3450 – 3550 MHz
<b>Model:</b>	RD35BWW2AT
<b>FCC ID:</b>	XM2-RD35BW2

<b>Testing laboratory:</b>	<b>Nemko Italy Spa</b> Via del Carroccio, 4 20853 Biassono (MB) – Italy Telephone: +39 039 2201201 Facsimile: +39 039 2201221
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	Name and title	Date
<b>Tested by:</b>	 P. Barbieri, Wireless/EMC Specialist	2023-09-22
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## Table of contents

<b>Section 1: Report summary .....</b>	<b>3</b>
1.1 Test specification.....	3
1.2 Statement of compliance .....	3
1.3 Exclusions .....	3
1.4 Registration number .....	3
1.5 Test report revision history .....	3
1.6 Limits of responsibility .....	3
<b>Section 2: Summary of test results .....</b>	<b>4</b>
2.1 FCC Part 27, test results .....	4
<b>Section 3: Equipment under test (EUT) and application details.....</b>	<b>5</b>
3.1 Applicant details .....	5
3.2 Modular equipment.....	5
3.3 Product details.....	5
3.4 Application purpose .....	5
3.5 Composite/related equipment.....	6
3.6 Sample information.....	6
3.7 EUT technical specifications.....	6
3.8 Accessories and support equipment.....	7
The following information identifies accessories used to exercise the EUT during testing: .....	7
3.9 Operation of the EUT during testing .....	8
3.10 EUT setup diagram.....	8
<b>Section 4: Engineering considerations.....</b>	<b>9</b>
4.1 Modifications incorporated in the EUT .....	9
4.2 Deviations from laboratory tests procedures.....	9
4.3 Technical judgment .....	9
<b>Section 5: Test conditions .....</b>	<b>10</b>
5.1 Deviations from laboratory tests procedures.....	10
5.2 Test conditions, power source and ambient temperatures .....	10
5.3 Measurement uncertainty .....	10
5.4 Test equipment.....	12
<b>Appendix A: Test results.....</b>	<b>13</b>
Clause 935210 D05v01r04 (3.2) AGC threshold.....	13
Clause 935210 D05v01r04 (3.3) Out of band rejection .....	16
Clause 27.53(l)(1) Occupied bandwidth .....	18
Clause 27.50(j) Peak output power at RF antenna connector .....	23
Clause 27.53(l) Spurious emissions at RF antenna connector .....	30
Clause 27.53(l) Radiated Spurious emissions.....	39
Clause 27.54 Frequency stability .....	49
<b>Appendix B: Block diagrams of test set-ups .....</b>	<b>52</b>
<b>Appendix C: EUT Photos .....</b>	<b>53</b>

## Section 1: Report summary

### 1.1 Test specification

<b>Specifications</b>	<b>Part 27 – Miscellaneous wireless communications services</b>
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### 1.2 Statement of compliance

<b>Compliance</b>	<p>In the configuration tested the EUT was found compliant</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Test method: ANSI C63.26-2015, 662911 D01 Multiple Transmitter Output v02r01, 662911 D02 MIMO with Cross-Polarized Antennas v01, 935210 D05 Measurements guidance for industrial and non-consumer signal booster, repeater and amplifier devices v01r04</p>
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### 1.3 Exclusions

<b>Exclusions</b>	None
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### 1.4 Registration number

<b>FCC site number</b>	682159
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### 1.5 Test report revision history

Revision #	Details of changes made to test report
REP016793	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
	§ 935210 D05v01r04 (3.2)	AGC threshold	Pass
	§ 935210 D05v01r04 (3.3)	Out of band rejection	Pass
§27.53(n)(1)	§ 935210 D05v01r04 (3.4)	Occupied bandwidth	Pass
§27.50(k)	§ 935210 D05v01r04 (3.5)	Peak output power at RF antenna connector	Pass
§27.53(n)(1)	§ 935210 D05v01r04 (3.6)	Spurious emissions at RF antenna connector	Pass
§27.53(n)(1)	§ 935210 D05v01r04 (3.8)	Radiated spurious emissions	Pass
§27.54	§ 935210 D05v01r04 (3.7)	Frequency stability	Pass
Notes:			

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

### 3.1 Applicant details

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

### 3.2 Modular equipment

<b>a) Single modular approval</b>	Single modular approval Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>b) Limited single modular approval</b>	Limited single modular approval Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

### 3.3 Product details

<b>FCC ID</b>	Grantee code:	XM2
	Product code:	-RD35BW2
<b>Equipment class</b>	B2I	
<b>Description of product as it is marketed</b>	Booster	
	Model name/number:	RD35BWW2AT
	Serial number:	1043949002

### 3.4 Application purpose

<b>Type of application</b>	<input checked="" type="checkbox"/> Original certification
	<input type="checkbox"/> Change in identification of presently authorized equipment
	Original FCC ID: Grant date:
	<input type="checkbox"/> Class II permissive change or modification of presently authorized equipment

## Section 3: Equipment under test

### 3.5 Composite/related equipment

<b>a) Composite equipment</b>	The EUT is a composite device subject to an additional equipment authorization Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>b) Related equipment</b>	The EUT is part of a system that operates with, or is marketed with, another device that requires an equipment authorization Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>c) Related FCC ID</b>	If either of the above is "yes": <input type="checkbox"/> has been granted under the FCC ID(s) listed below: <input type="checkbox"/> is in the process of being filled under the FCC ID(s) listed below: <input type="checkbox"/> is pending with the FCC ID(s) listed below: <input type="checkbox"/> 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

<b>Receipt date:</b>	2023/08/22
<b>Nemko sample ID number:</b>	1043949002

### 3.7 EUT technical specifications

<b>Operating band:</b>	Down Link – Up Link: 3450–3550 MHz
<b>Operating frequency:</b>	Wideband
<b>Modulation type:</b>	TDD 5G NR (QAM and QPSK)
<b>Occupied bandwidth:</b>	5G NR: 10 MHz to 100 MHz
<b>Channel spacing:</b>	standard
<b>Emission designator:</b>	5G NR: D7W
<b>RF Output</b>	Down Link: - max composite output power based on one carrier per path: 46dBm (40,00W) - MIMO max composite output power based on one carrier per path: 49dBm (80,00W) Up Link: N.A. (The EUT does not transmit over the air in the up-link direction)
<b>Gain</b>	Down Link: 48dB Up Link: N.A. (The EUT does not transmit over the air in the up-link direction)
<b>Antenna type:</b>	External Antenna is not provided, equipment that has an external 50 $\Omega$ RF connector
<b>Power source:</b>	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:	Next Generation OTRX
Brand name:	Teko Telecom srl
Model name or number:	ED35BD
Serial number:	-----
Nemko sample number:	-----
Connection port:	DL/UL RF connector (to connect to the base station) SFP/Optical port (to connect to remote unit)
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:	

## Section 3: Equipment under test

### 3.9 Operation of the EUT during testing

<b>Details:</b>	In down-link direction, normal working at max gain with max RF power output.
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### 3.10 EUT setup diagram

In this system, Next Generation Remote Unit is the EUT. Next Generation OTRX includes only management of optical conversion (to convert RF signal in optical signal in down-link direction and vice versa optical signal in RF signal in up-link direction). As described in "Operational description", OTRX is connected directly to base station, so the system doesn't use another equipment (under another FCC ID) to exercise the EUT. Signal generator is linked directly to the RF connector of the OTRX.

#### Test setup for output power, occupied bandwidth, spurious emissions:



#### Procedure

Connect the signal modulated generator to the input of the EUT, so that the EUT works at the max gain. Raise the input level to the EUT until reach the maximum output 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: 18–33 °C Relative humidity: 25–75 % 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 $\pm 5$ %, 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)
	Conducted	Radiated spurious emissions	66 GHz ÷ 220 GHz	10 dB	(1)
			0.009 MHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
		Sensitivity measurement	1 MHz ÷ 18 GHz	6.0 dB	(1)
			0.009 MHz ÷ 18 GHz	3.0 dB	(1)
	Conducted	Conducted spurious emissions	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 %

## Section 5: Test conditions, continued

## 5.4 Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Vector Signal Generator	Keysight	N5182B MXG	MY61252595	2024-11
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12
Spectrum Analyzer	Keysight	N9041B UXA	US57220208	2024-05
Combiner	Miczen	MZP200506GA (0.5-6 GHz)	210314001	COU
Climatic Chambre	ESPEC	ARS-1100-AE	4100200526	2023-12
Antenna Trilog 25MHz - 8GHz	Schwarzbeck	VULB9168	9168-242	2024-06
Antenna 1-18 GHz	Schwarzbeck	STLP 9148	STPL 9148-123	2024-06
Double Ridge Horn Antenna	RFSpin	DRH40	061106A40	2026-05
Broadband Amplifier	Schwarzbeck	BBV9718C	00121	2024-03
Broadband Bench Top Amplifier	Sage	STB-1834034030-KFKF-L1	18490-01	2024-05
EMI Receiver	Rohde & Schwarz	ESU8	100202	2024-09
Spectrum analyzer	R&S	FSW43	101767	2024-01
Controller	Maturo	FCU3.0	10041	NCR
Tilt antenna mast	Maturo	TAM4.0-E	10042	NCR
Turntable	Maturo	TT4.0-5T	2.527	NCR
3m Semi anechoic chamber	Comtest	SAC-3	1711-150	NCR

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use  
 (\*) Equipment supplied by manufacturer's

## Appendix A: Test results

### Clause 935210 D05v01r04 (3.2) AGC threshold

Measure of EUT AGC Threshold

Test date: 2023-08-22 to 2023-09-08

Test results: Pass

### Special notes

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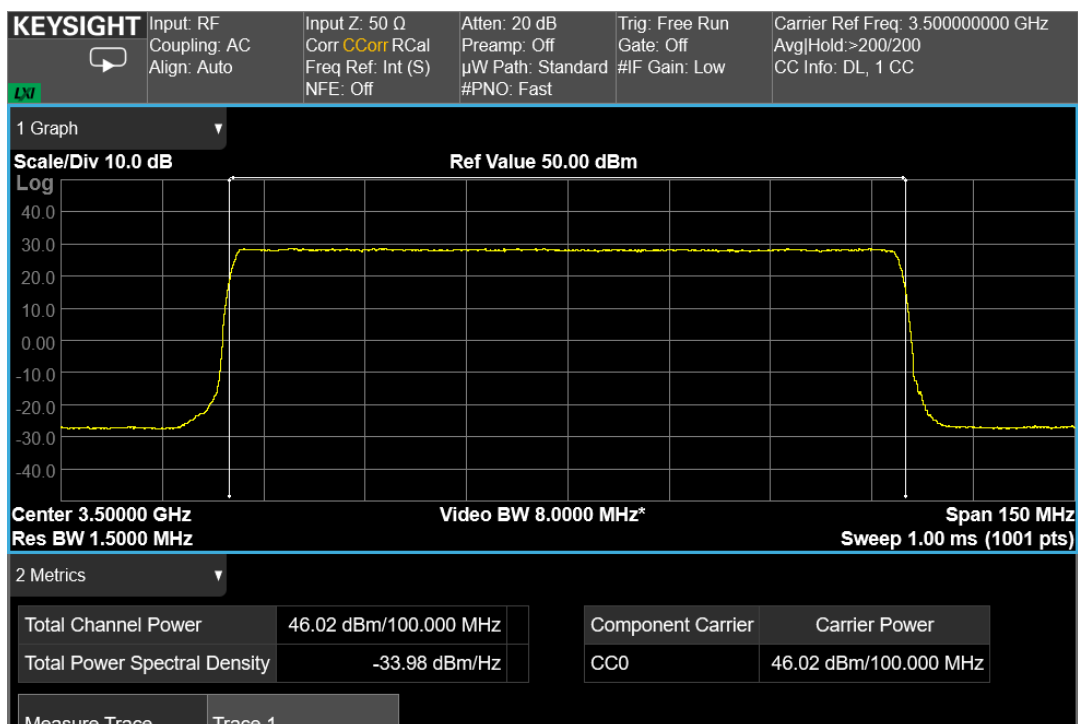
### Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12

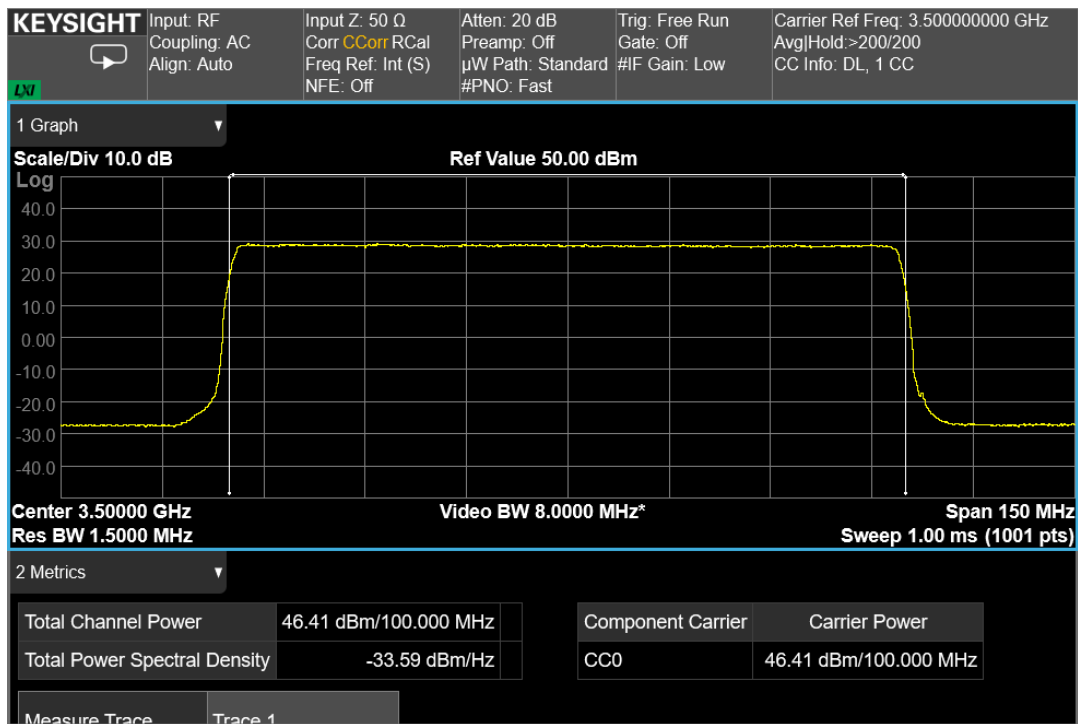
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use  
(\*) Equipment supplied by manufacturer's

## Test data

## RF PORT 1

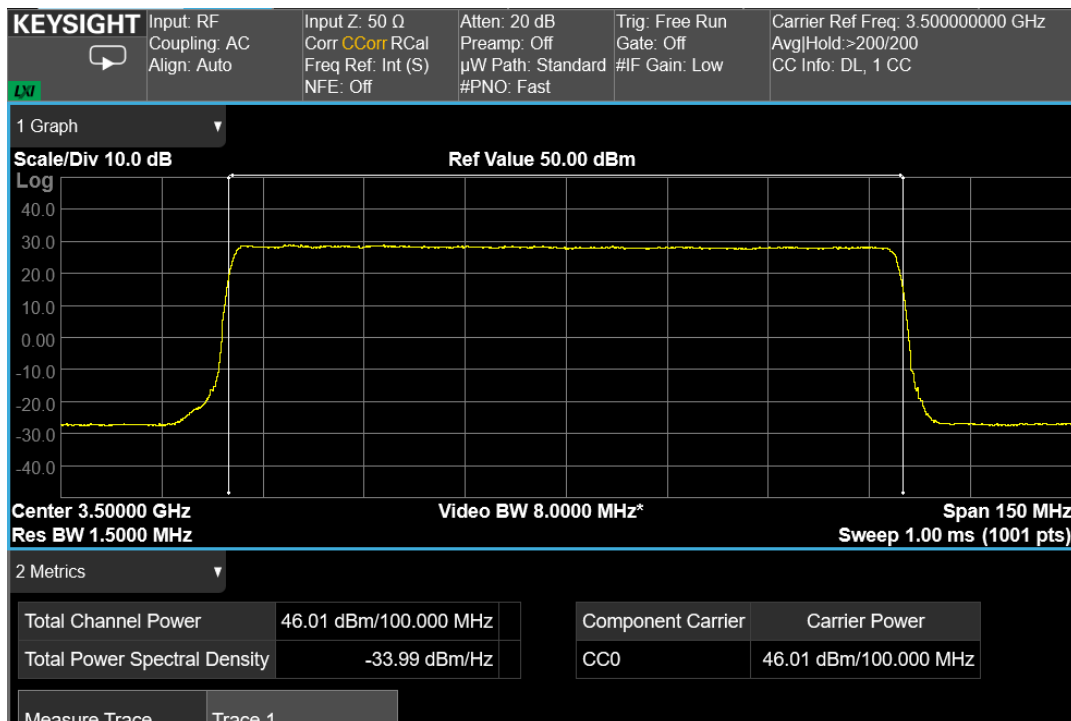


100 MHz signal, bottom=middle=top channel, nominal input signal

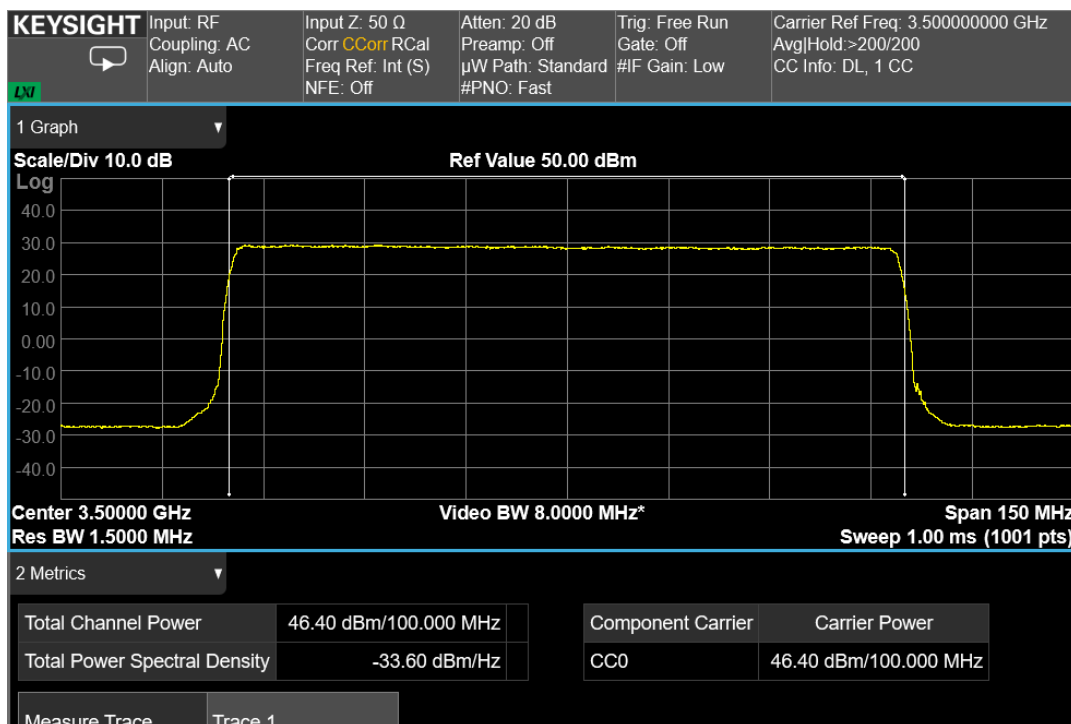


100 MHz signal, bottom=middle=top channel, nominal input signal +1 dB

## RF PORT 2



100 MHz signal, bottom=middle=top channel, nominal input signal



100 MHz signal, bottom=middle=top channel, nominal input signal +1 dB

## Clause 935210 D05v01r04 (3.3) Out of band rejection

Out of Band Rejection – Test for rejection of out of band signals.

Test date: 2023-08-22 to 2023-09-08

Test results: Pass

### Special notes

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### Test equipment

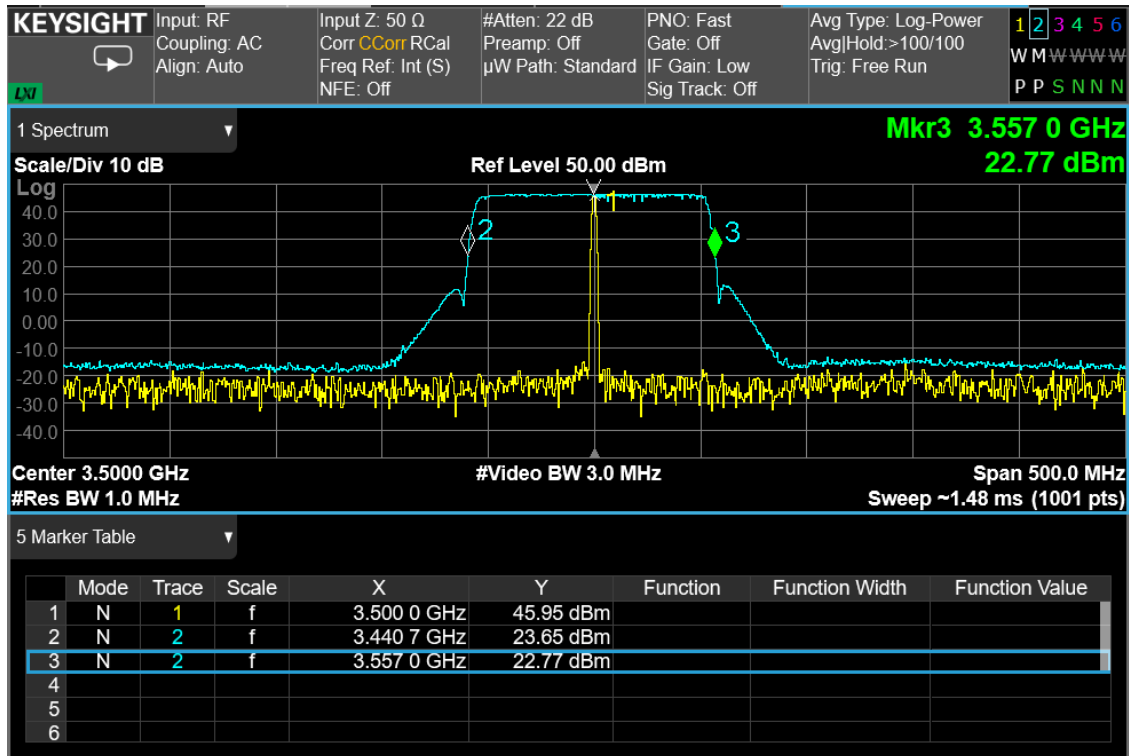
Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use  
(\* ) Equipment supplied by manufacturer's

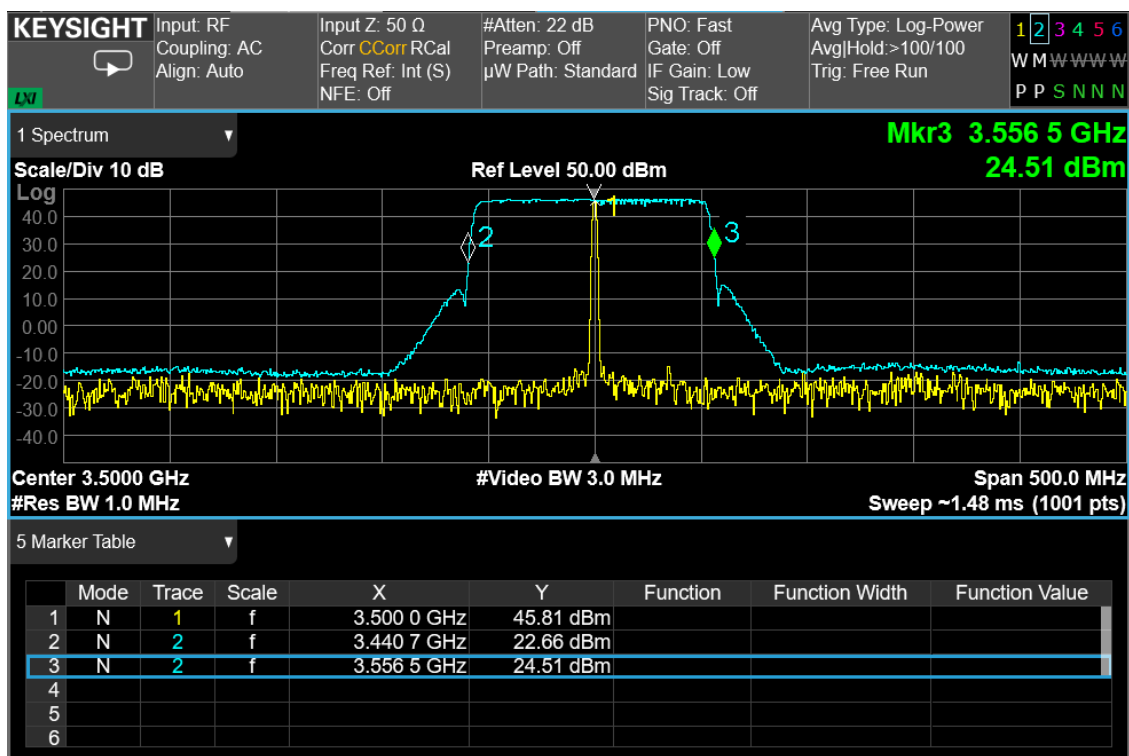


## Test data

## RF PORT 1



## RF PORT 2



## Clause 27.53(n)(1) 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: 2023-08-22 to 2023-09-08

Test results: Pass

## Special notes

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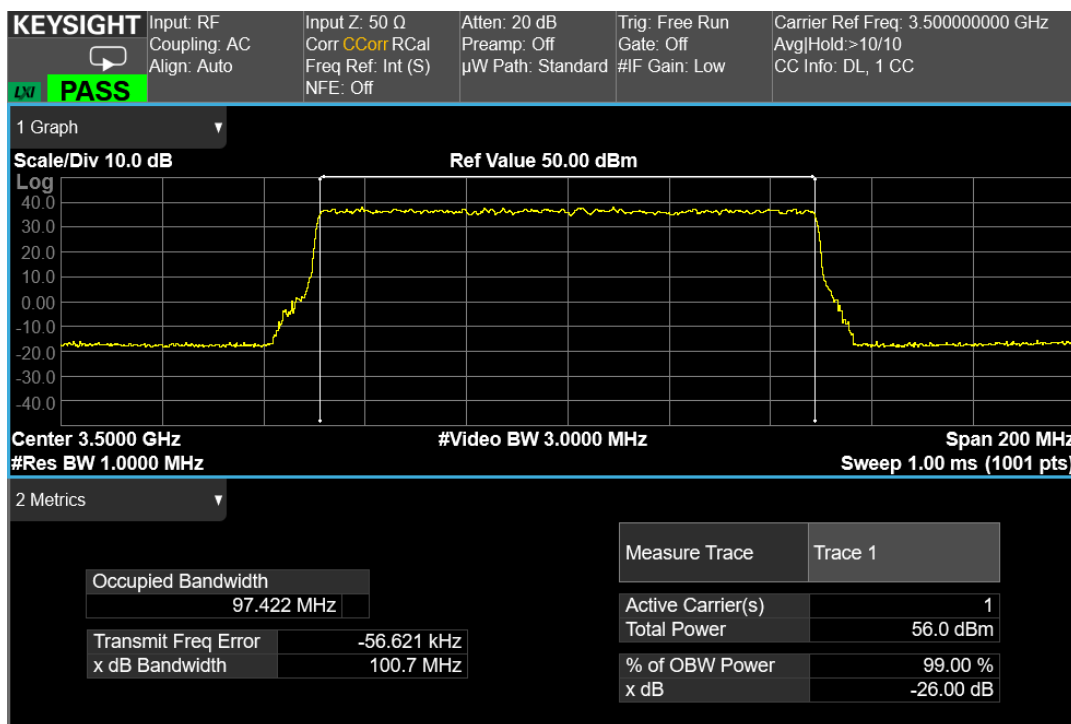
## Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12

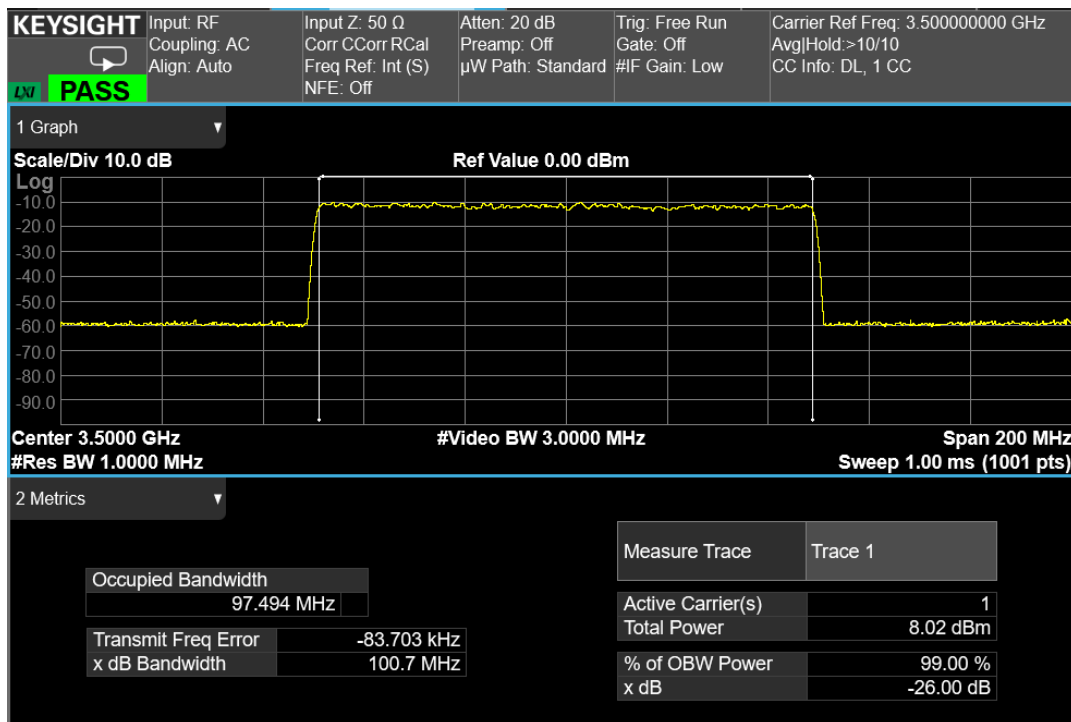
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use  
(\*) Equipment supplied by manufacturer's

## Test data

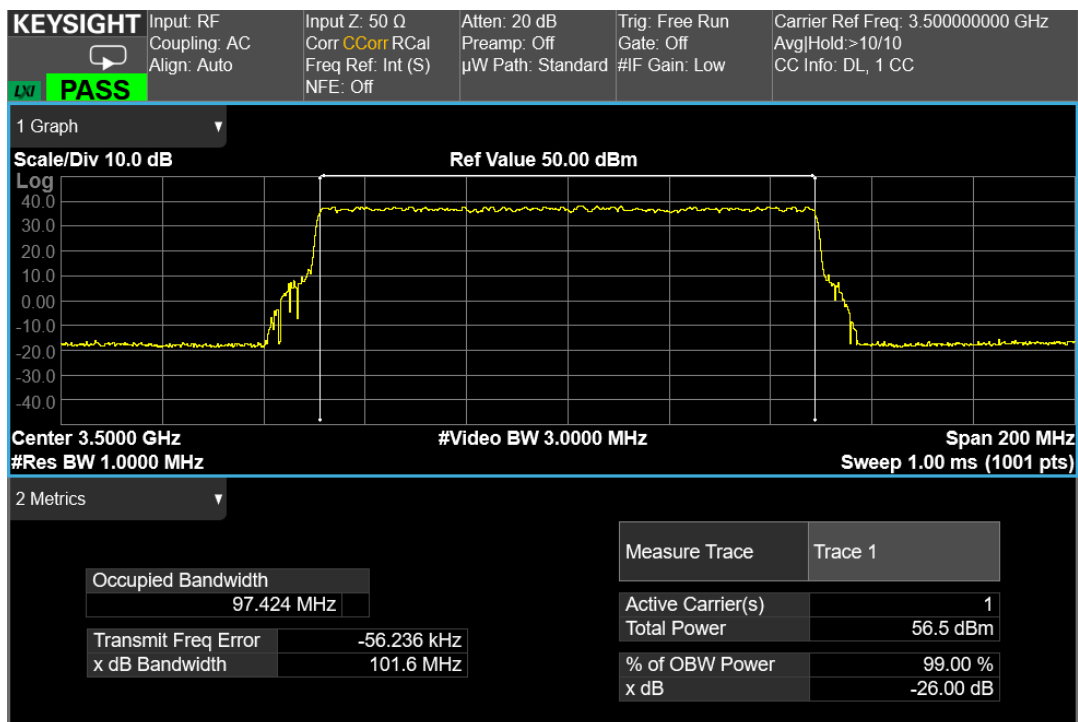
## RF PORT 1



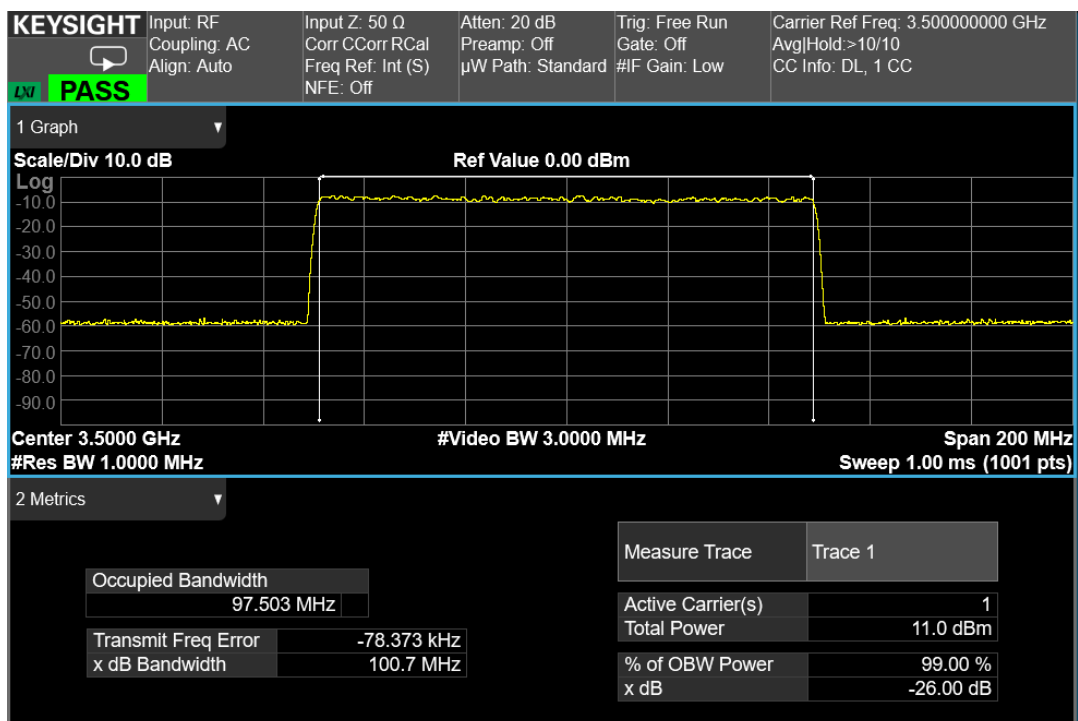
100 MHz signal, bottom=middle=top channel, nominal input signal - Output



100 MHz signal, bottom=middle=top channel, nominal input signal - Input

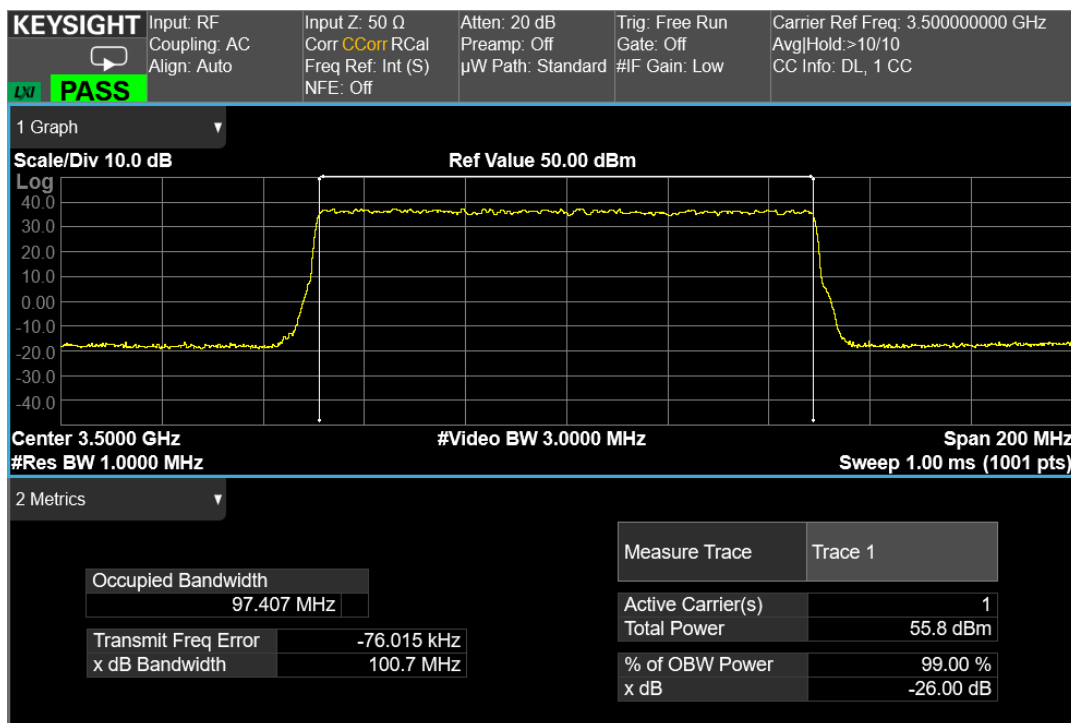


100 MHz signal, bottom=middle=top channel, nominal input signal + 3dB - Output

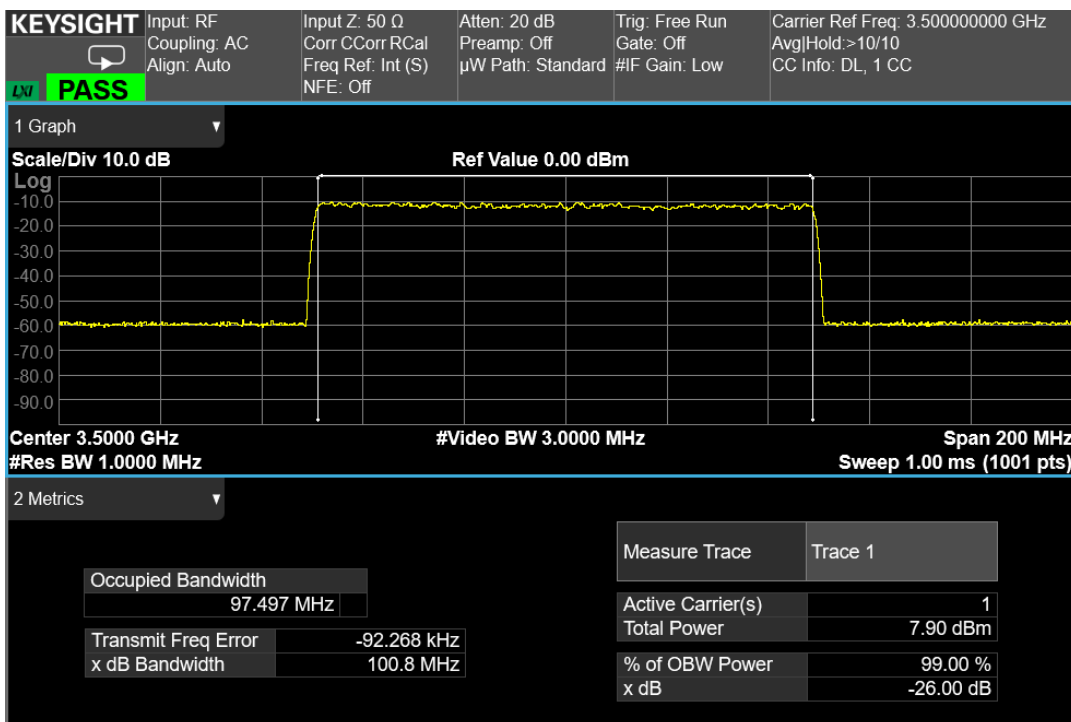


100 MHz signal, bottom=middle=top channel, nominal input signal + 3dB - Input

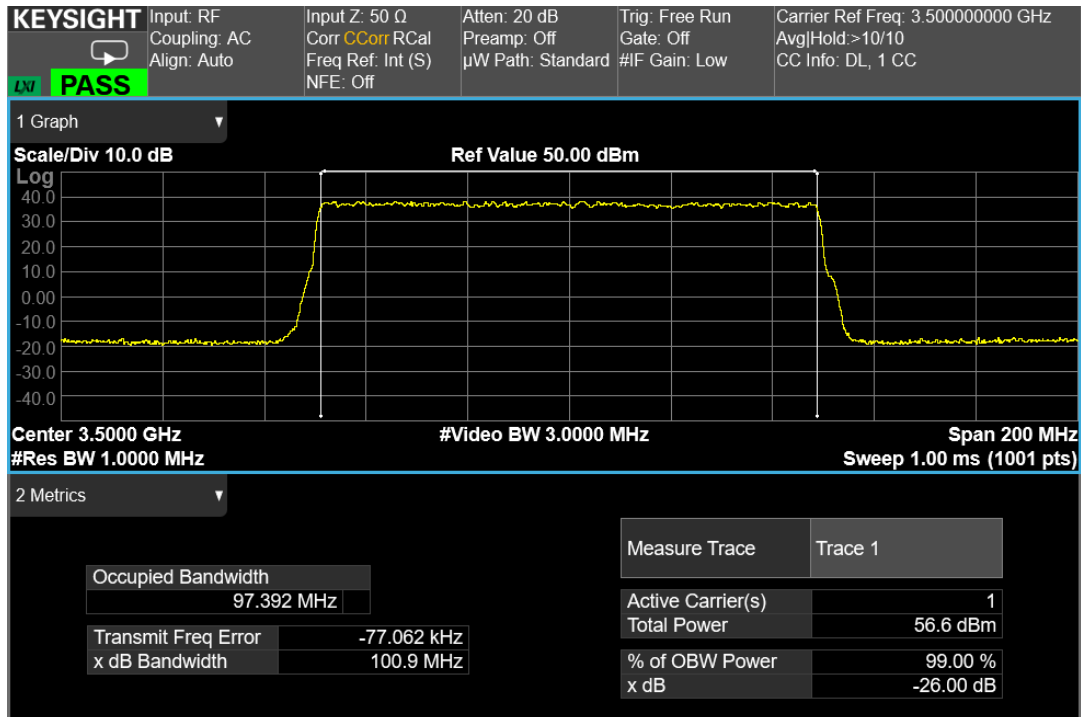
## RF PORT 2



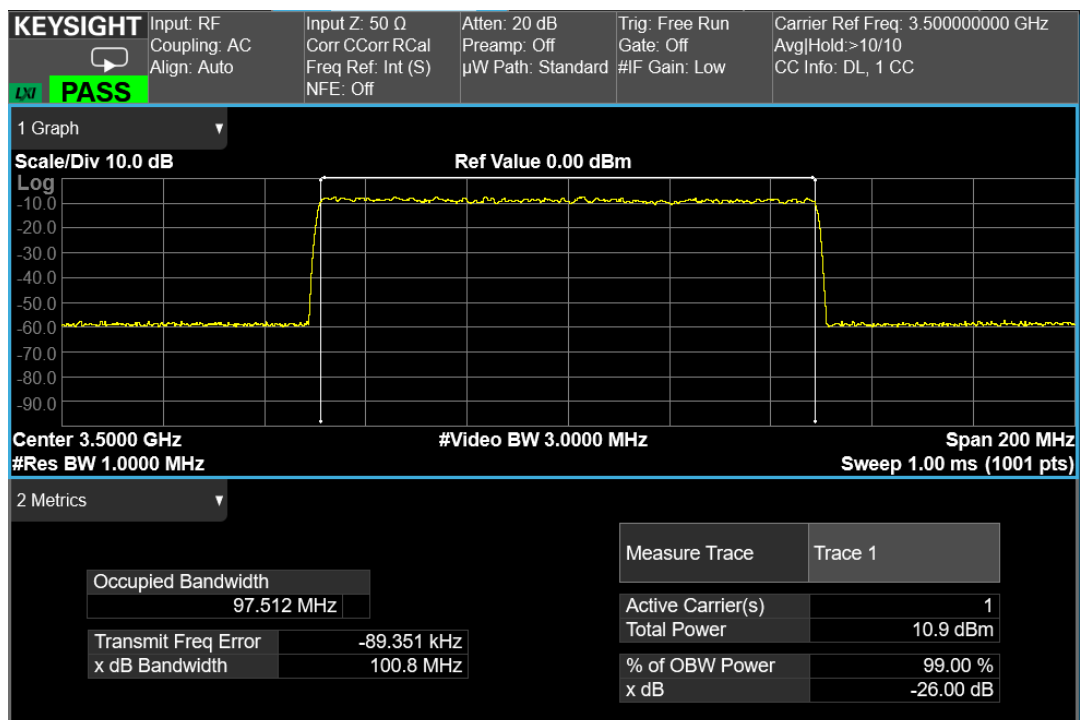
100 MHz signal, bottom=middle=top channel, nominal input signal - Output



100 MHz signal, bottom=middle=top channel, nominal input signal - Input



100 MHz signal, bottom=middle=top channel, nominal input signal + 3dB - Output



100 MHz signal, bottom=middle=top channel, nominal input signal + 3dB - Input

## Clause 27.50(k) Peak output power at RF antenna connector

### § 27.50(k) The following power requirements apply to stations transmitting in the 3450-3550MHz band:

- (1) The power of each fixed or base station transmitting in the 3450-3550 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to an equivalent isotropically radiated power (EIRP) of 3280 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.
- (2) The power of each fixed or base station transmitting in the 3450-3550 MHz band and situated in any geographic location other than that described in paragraph (k)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.
- (4) Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (k)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
- (5) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, and any other relevant factors, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

Test date: 2023-08-22 to 2023-09-08

Test results: Pass

### Special notes

-

### Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use  
(\*) Equipment supplied by manufacturer's

## Test data

## RF PORT 1

## AWGN signal, nominal input signal

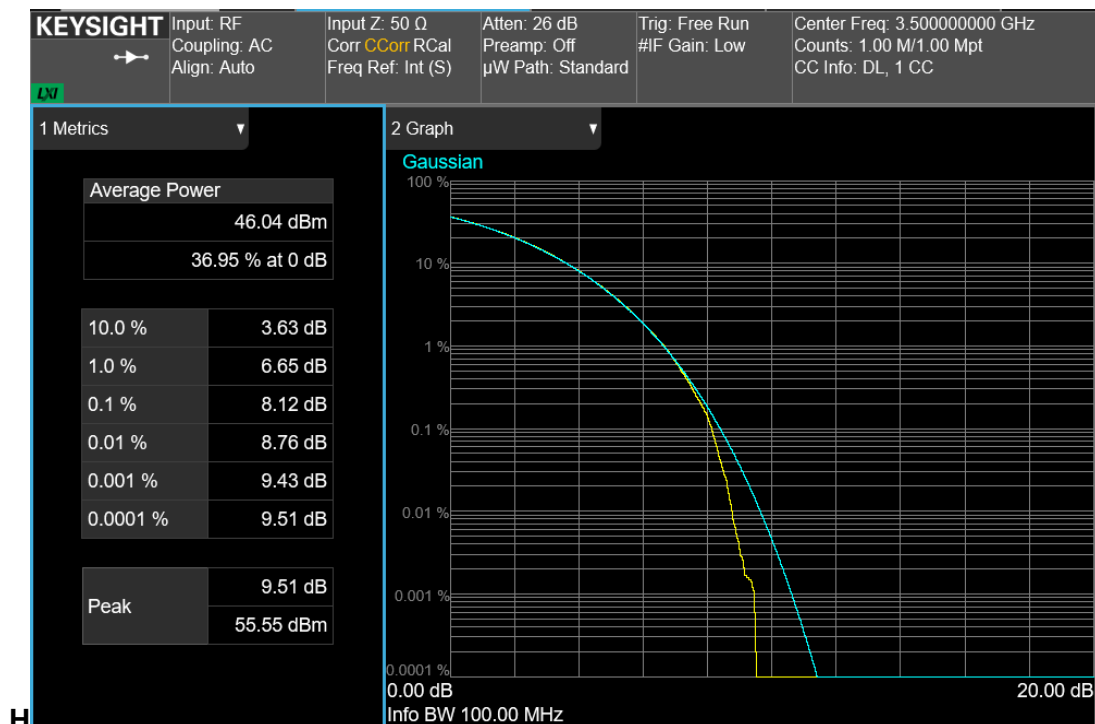
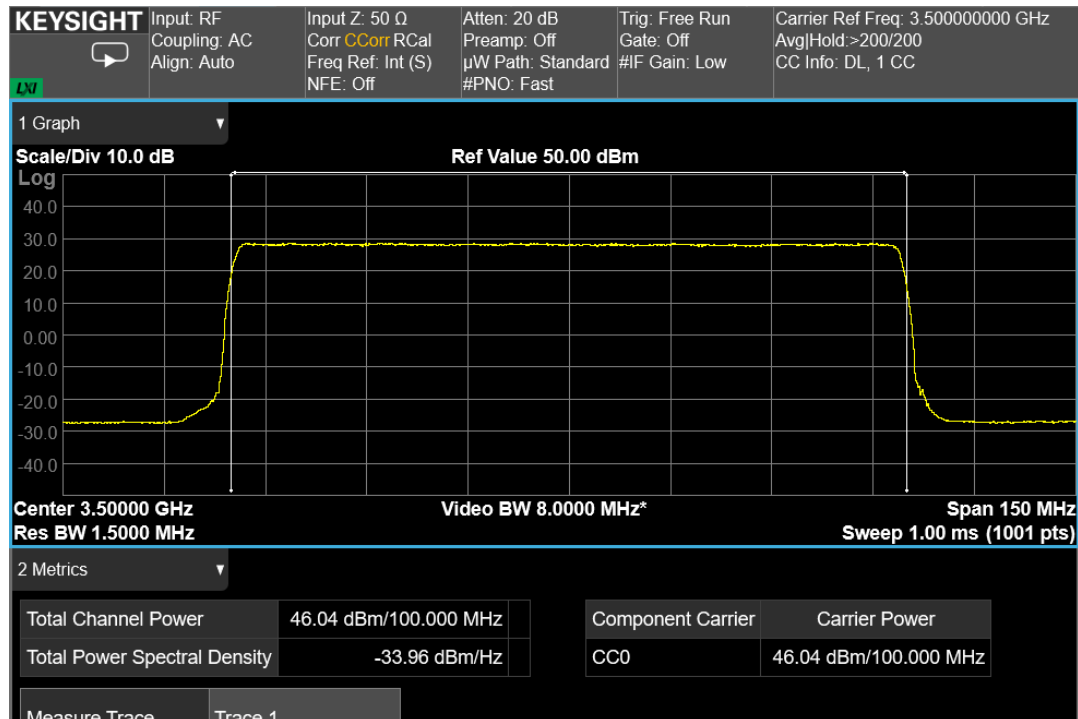
Test data						
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	RF output Power (W/MHz)	PAR (dB)
Down-link	5G NR, 100 MHz	3500.0	46.0	39.8	0.4	9.5

## AWGN signal, nominal input signal + 3dB

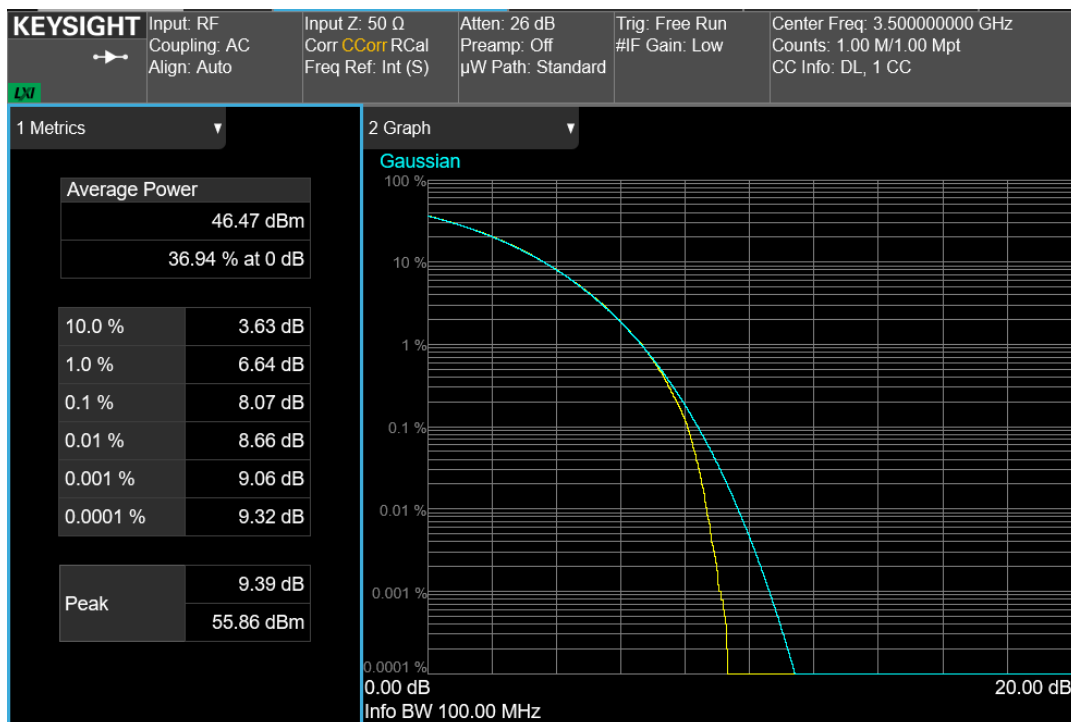
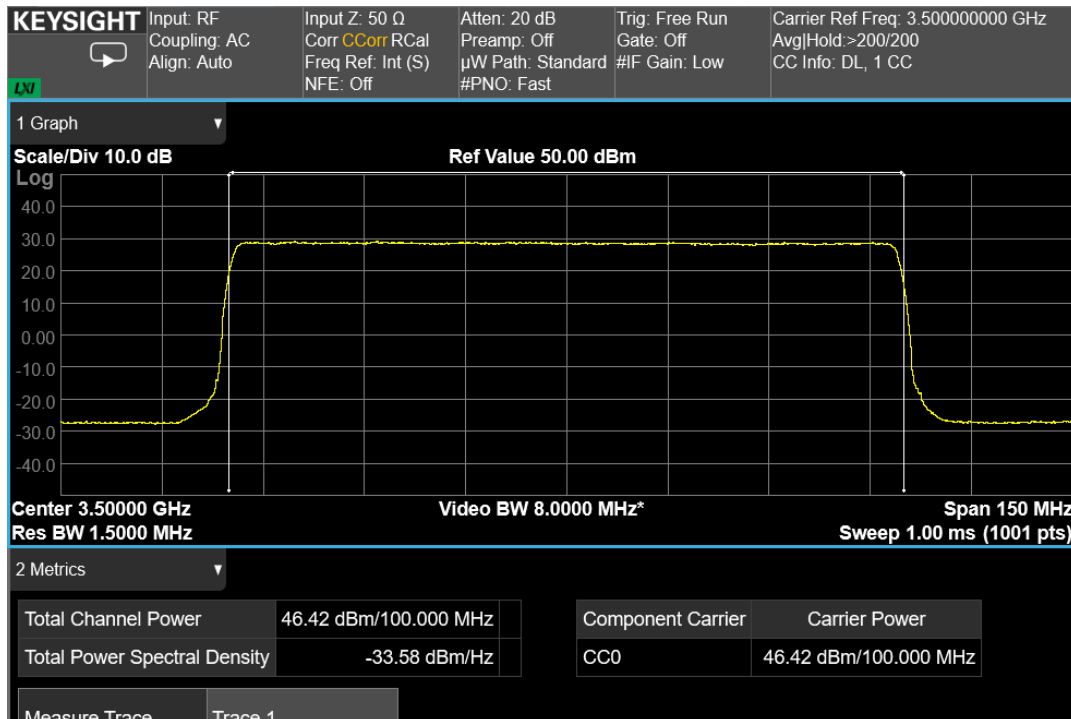
Test data						
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	RF output Power (W/MHz)	PAR (dB)
Down-link	5G NR, 100 MHz	3500.0	46.4	43.7	0.4	9.4

Note: 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.





100 MHz signal, bottom=middle=top channel, nominal input signal



100 MHz signal, bottom=middle=top channel, nominal input signal + 3dB

## RF PORT 2

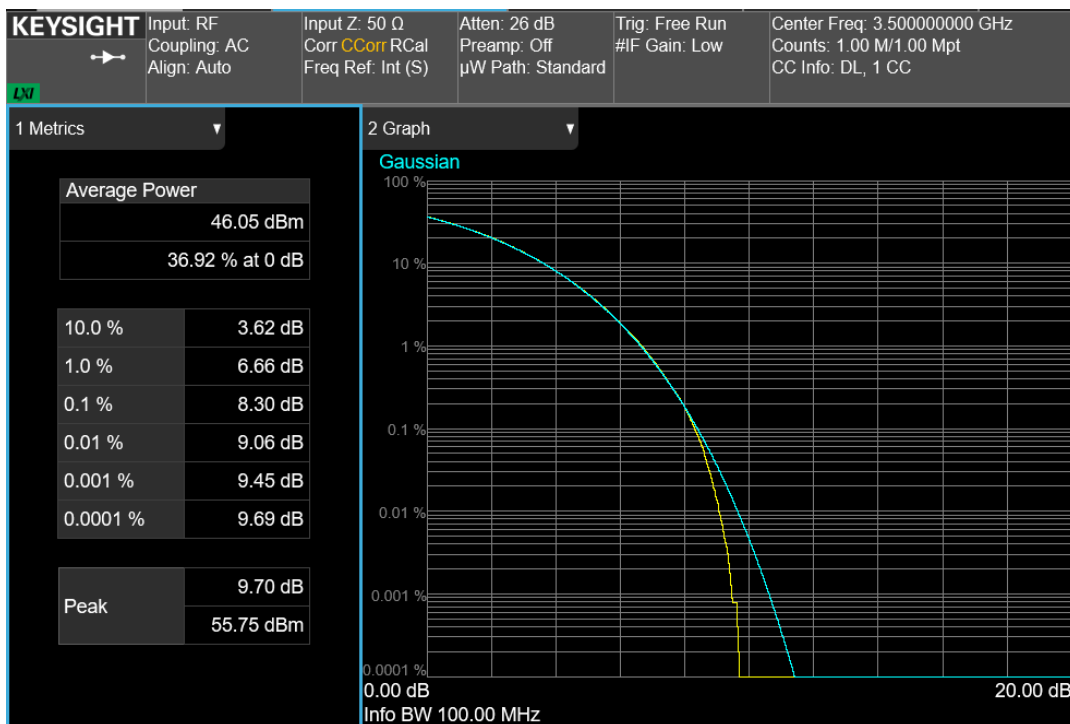
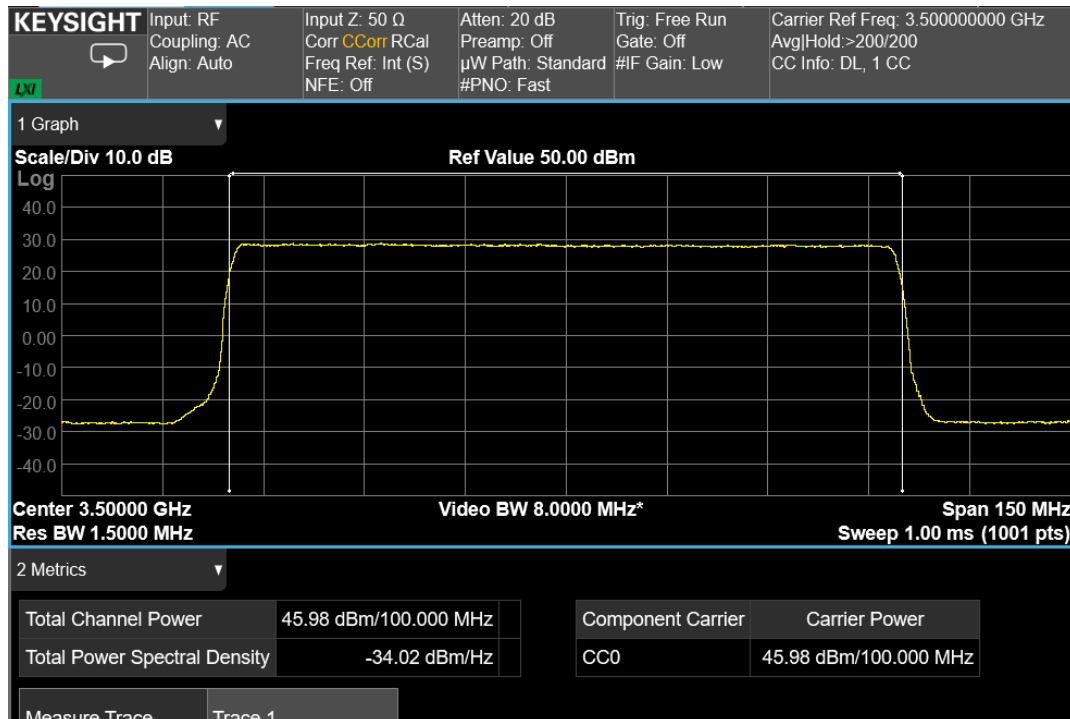
### AWGN signal, nominal input signal

Test data						
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	RF output Power (W/MHz)	PAR (dB)
Down-link	5G NR, 100 MHz	3500.0	46.0	39.8	0.4	9.7

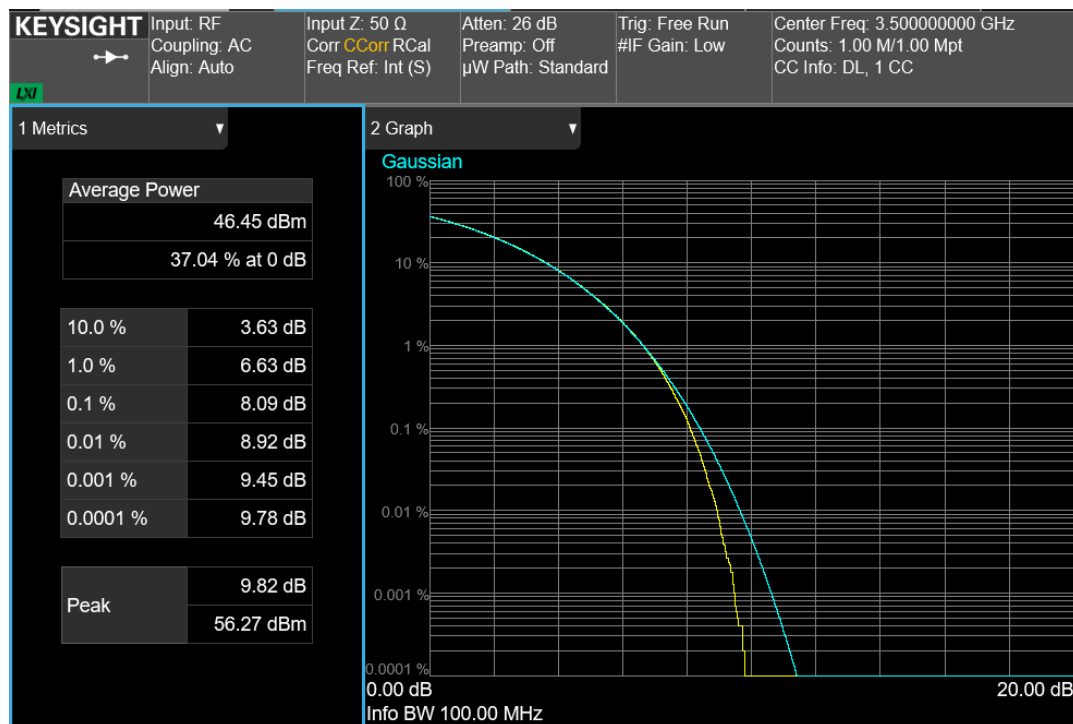
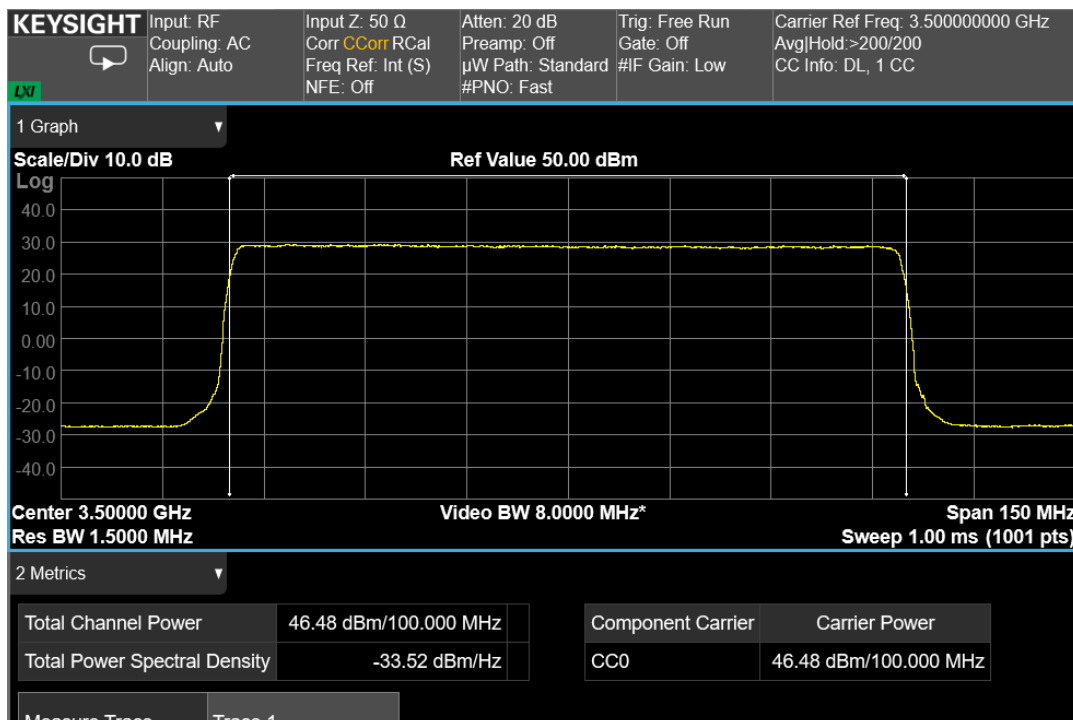
### AWGN signal, nominal input signal + 3dB

Test data						
Direction	Modulation	Frequency (MHz)	RF output Power (dBm)	RF output channel Power (W)	RF output Power (W/MHz)	PAR (dB)
Down-link	5G NR, 100 MHz	3500.0	46.5	44.7	0.4	9.8

Note: 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.



100 MHz signal, bottom=middle=top channel, nominal input signal



100 MHz signal, bottom=middle=top channel, nominal input signal + 3dB

## Clause 27.53(n) Spurious emissions at RF antenna connector

### (n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:

(1) For base station operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

Compliance with the provisions of this paragraph (n)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. 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.

Notwithstanding the channel edge requirement of -13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz

shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed -40 dBm/MHz.

Test date: 2023-08-22 to 2023-09-08

Test results: Pass

## Special notes

### MIMO consideration

The EUT has two MIMO RF Port, so it's possible manage two MIMO RF paths.

If EUT is used in MIMO configuration according to KDB 662911-D01 v02r01 and 662911-D02 v01 with signals completely uncorrelated, the maximum emission is calculated as follows:

- MIMO Maximum Emission = Emission at each path +  $10\log(N_{ant})$  dB =  
= Emission at each path +  $10\log(2)$  = Emission at each path + 3dB
- Spurious emissions are negligible.

## Test equipment

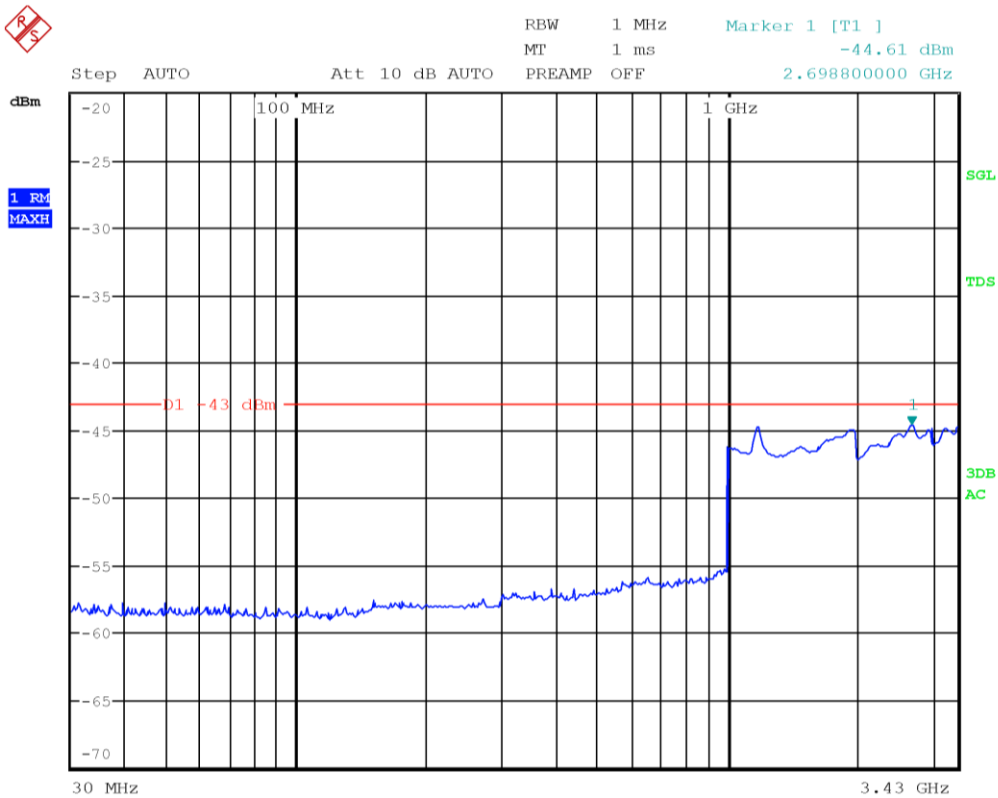
Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Vector Signal Generator	Keysight	N5182B MXG	MY61252595	2024-11
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12
Spectrum analyzer	R&S	FSW43	101767	2024-01
Combiner	Miczen	MZP200506GA (0.5-6 GHz)	210314001	COU

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use

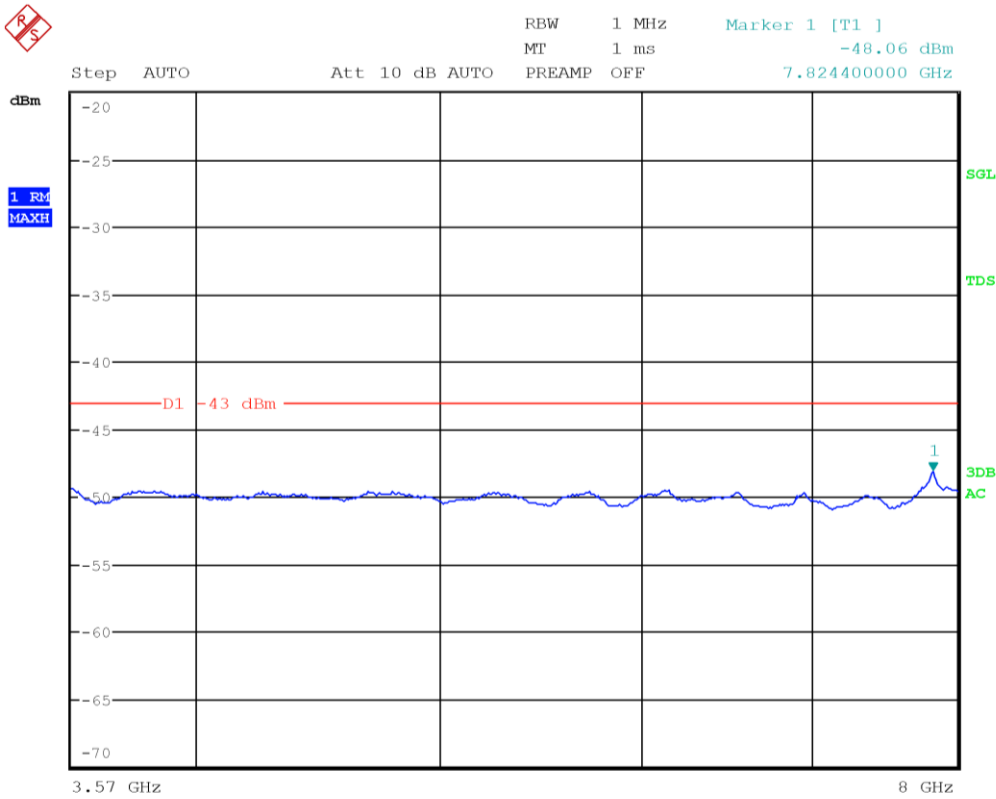
(\*) Equipment supplied by manufacturer's

Test data

RF PORT 1

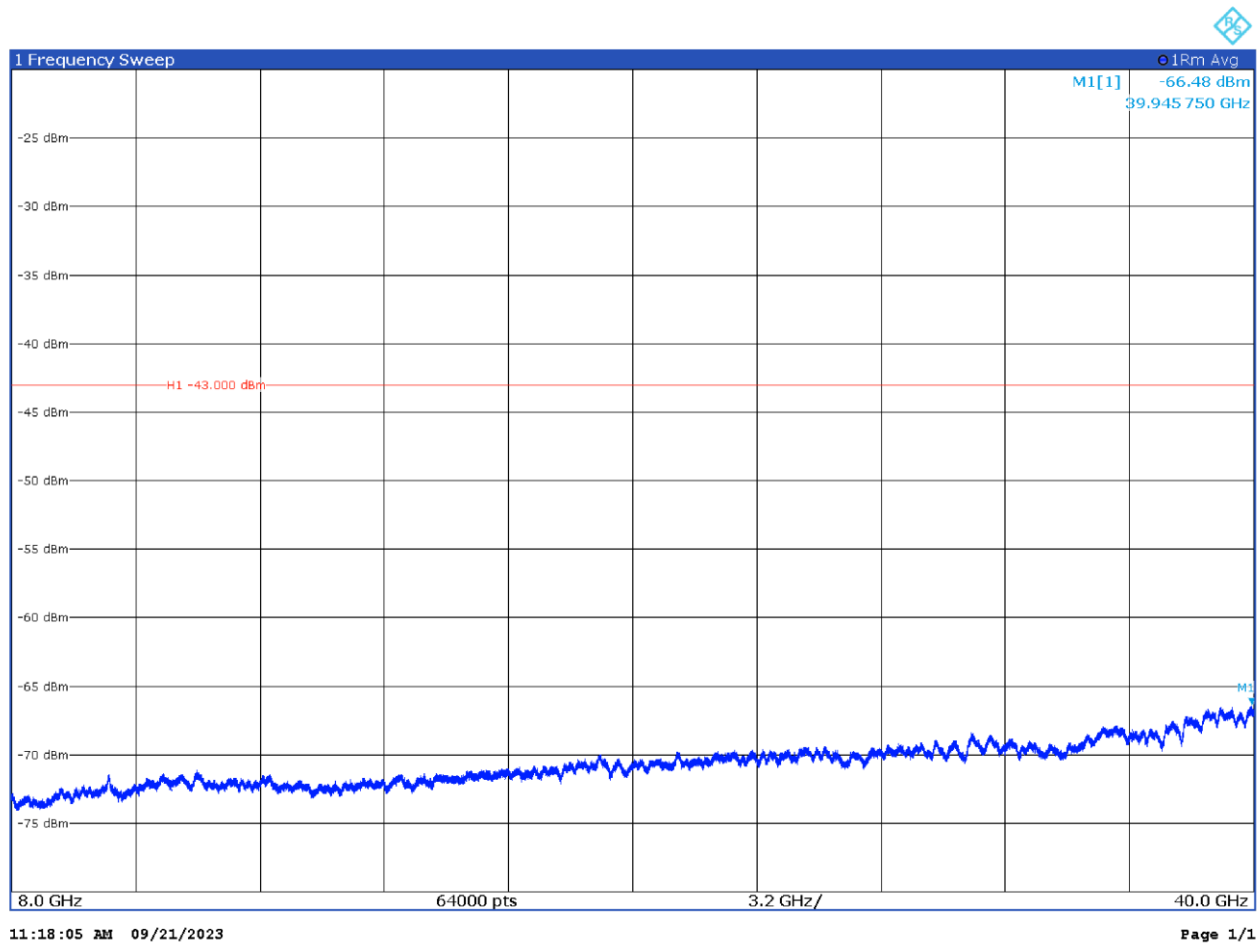


100 MHz signal, bottom=middle=top channel,  
Range: 30MHz - 3.43GHz



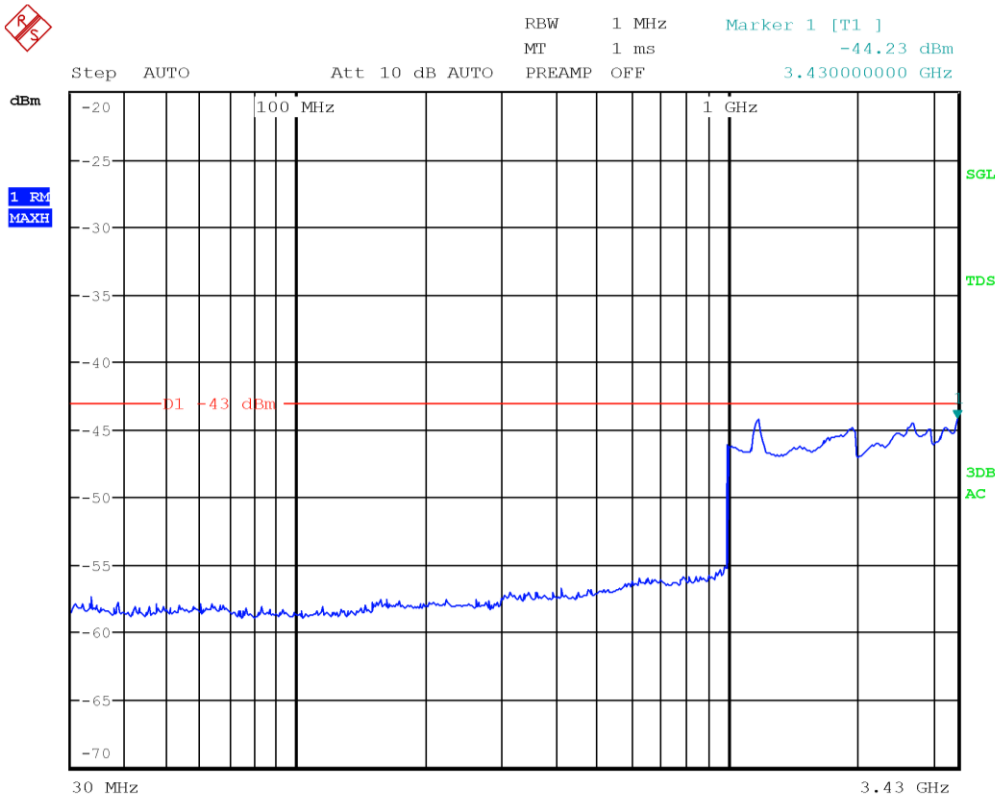
100 MHz signal, bottom=middle=top channel,  
Range: 3.57GHz – 8GHz



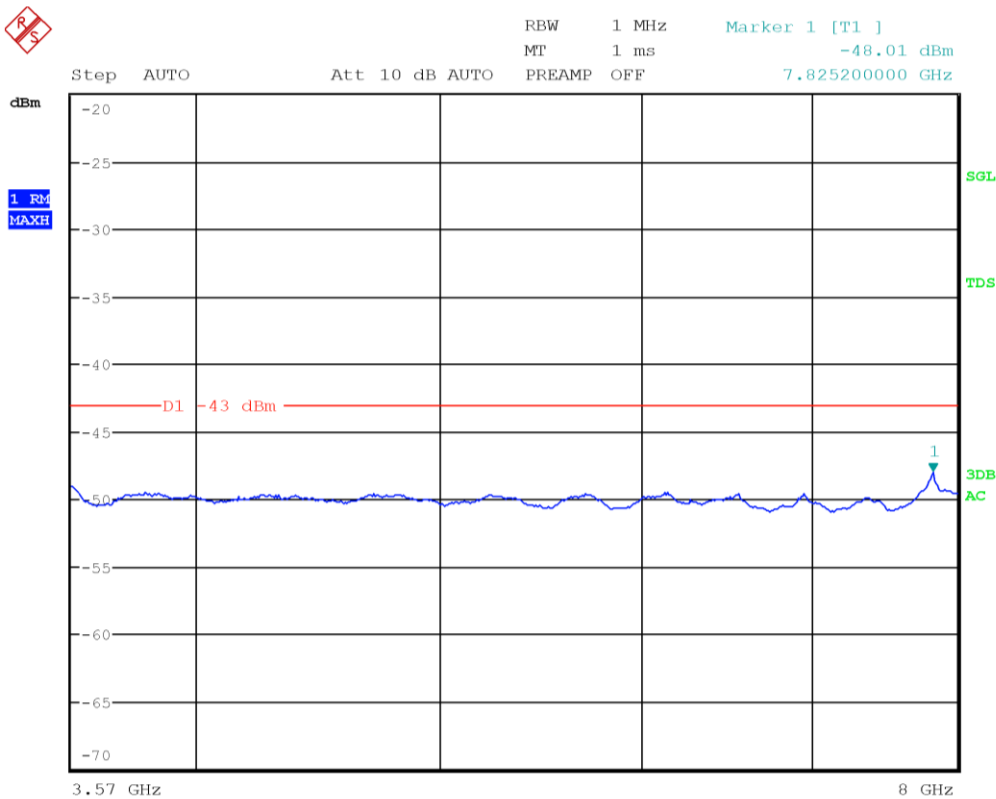


100 MHz signal, bottom=middle=top channel,  
Range: 8GHz – 40GHz

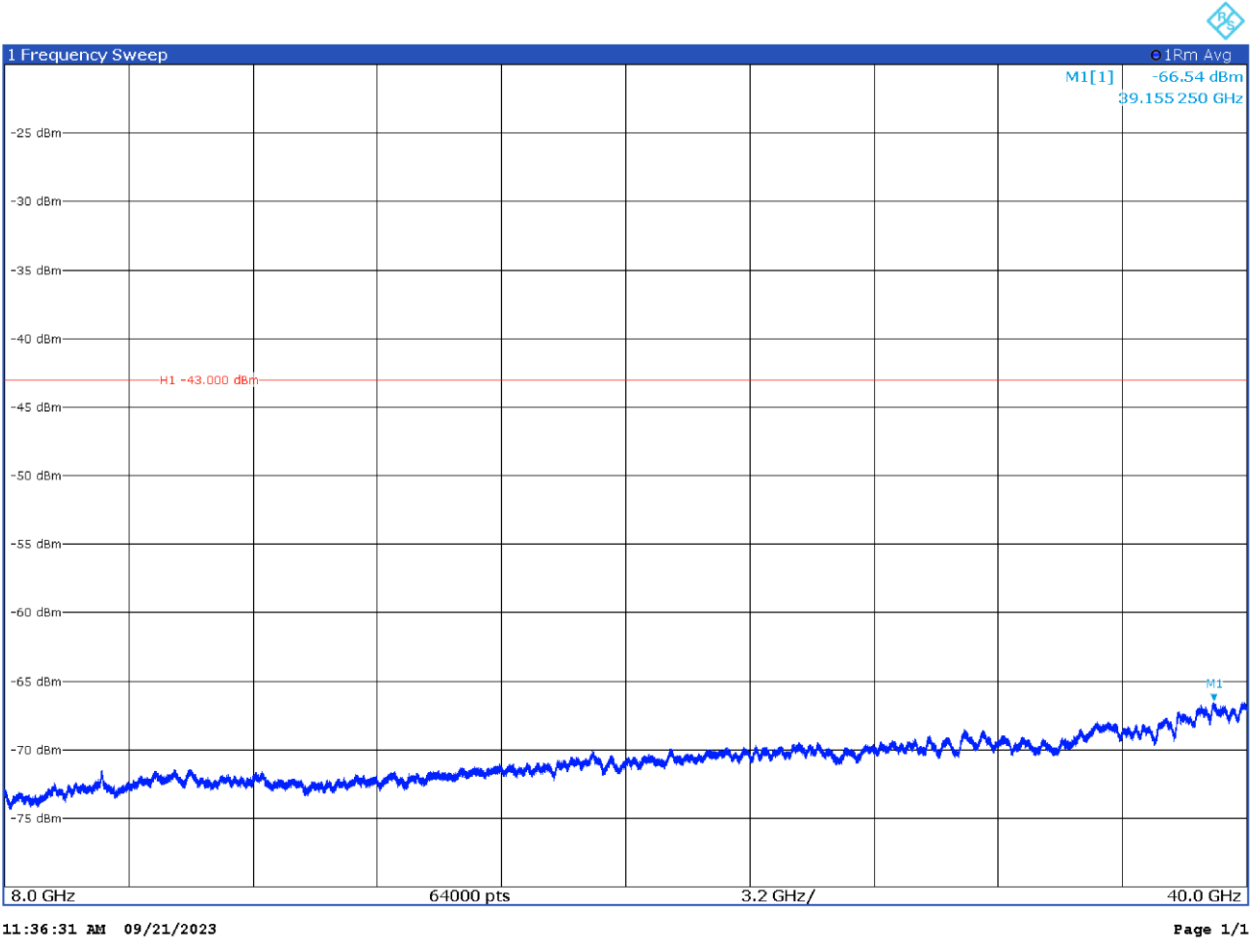
RF PORT 2



100 MHz signal, bottom=middle=top channel,  
Range: 30MHz - 3.43GHz



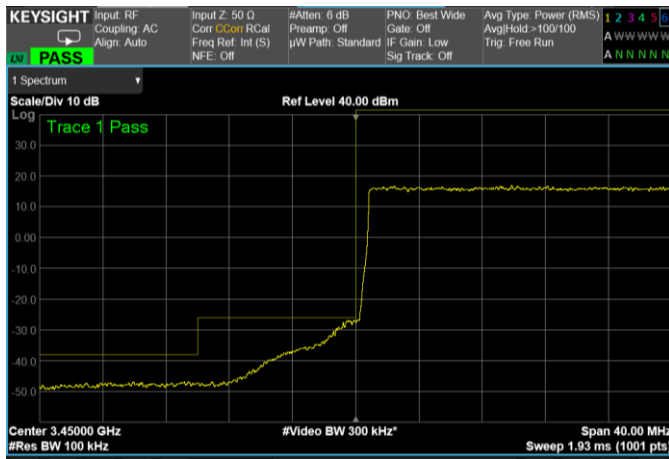
100 MHz signal, bottom=middle=top channel,  
Range: 3.57GHz – 8GHz



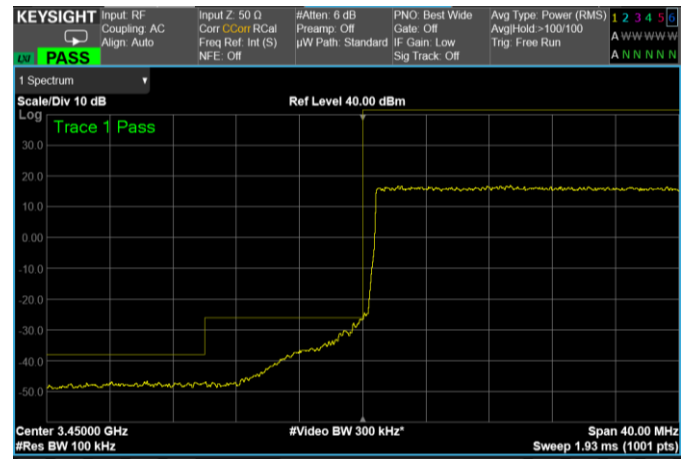
100 MHz signal, bottom=middle=top channel,  
Range: 8GHz – 40GHz

## Test data, continued: band edges Inter modulation

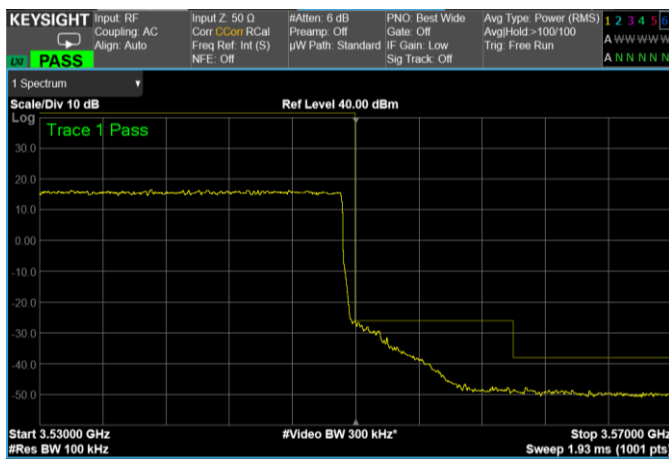
## RF PORT 1



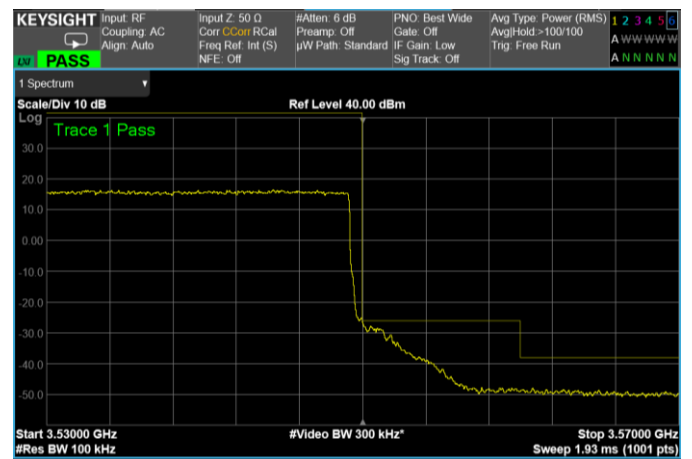
100 MHz signal, Low Band Edge, 1 carrier, nominal input signal



100 MHz signal, Low Band Edge, 1 carrier, nominal input signal + 3dB

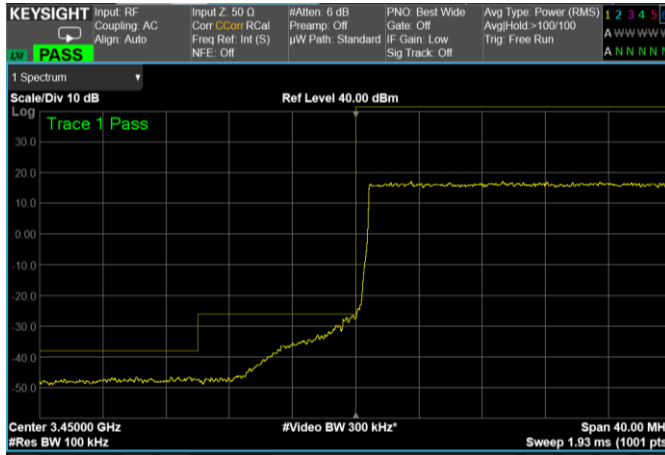


100 MHz signal, High Band Edge, 2 carrier, nominal input signal

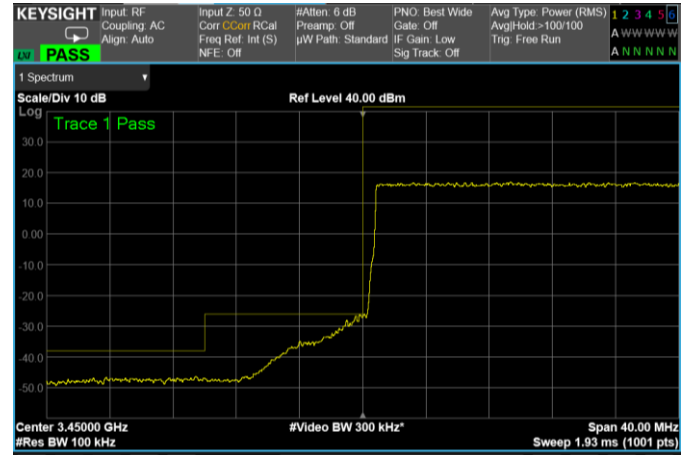


100 MHz signal, High Band Edge, 2 carrier, nominal input signal + 3dB

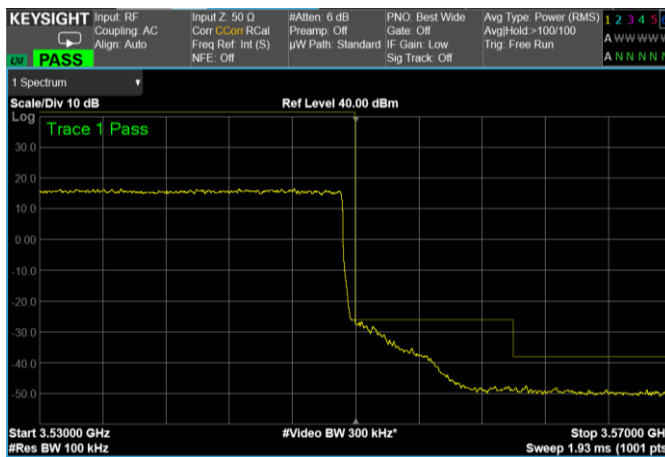
## RF PORT 2



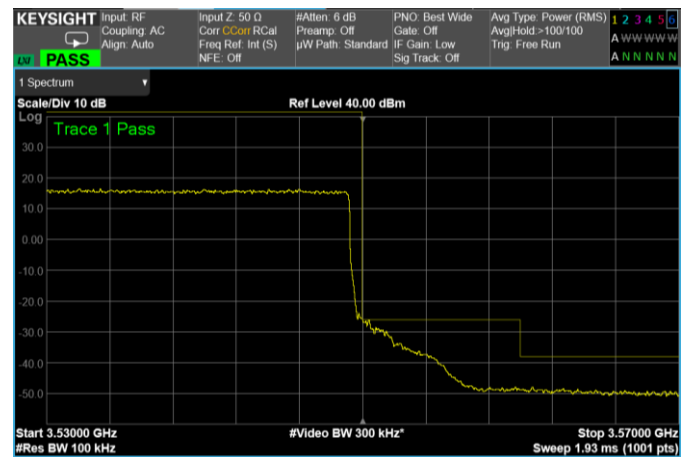
100 MHz signal, Low Band Edge, 1 carrier, nominal input signal



100 MHz signal, Low Band Edge, 1 carrier, nominal input signal + 3dB



100 MHz signal, High Band Edge, 2 carrier, nominal input signal



100 MHz signal, High Band Edge, 2 carrier, nominal input signal + 3dB

## Clause 27.53(n) Radiated Spurious emissions

### (n) 3.45 GHz Service. The following emission limits apply to stations transmitting in the 3450-3550 MHz band:

(1) For base station operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

Compliance with the provisions of this paragraph (n)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater.

However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. 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.

Notwithstanding the channel edge requirement of -13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz

shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed -40 dBm/MHz.

Test date: 2023-09-18 to 2023-09-22

Test results: Pass

### Special notes

-

### Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Antenna Trilog 25MHz - 8GHz	Schwarzbeck	VULB9168	9168-242	2024-06
Antenna 1-18 GHz	Schwarzbeck	STLP 9148	STPL 9148-123	2024-06
Double Ridge Horn Antenna	RFSpin	DRH40	061106A40	2026-05
Broadband Amplifier	Schwarzbeck	BBV9718C	00121	2024-03
Broadband Bench Top Amplifier	Sage	STB-1834034030-KFKF-L1	18490-01	2024-05
EMI Receiver	Rohde & Schwarz	ESU8	100202	2024-09
Spectrum analyzer	R&S	FSW43	101767	2024-01
Controller	Maturo	FCU3.0	10041	NCR
Tilt antenna mast	Maturo	TAM4.0-E	10042	NCR
Turntable	Maturo	TT4.0-5T	2.527	NCR
3m Semi anechoic chamber	Comtest	SAC-3	1711-150	NCR

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use

(\*) Equipment supplied by manufacturer's

# Clause 27.53(m) Radiated spurious emissions, continued

## Test data

The D.U.T. was positioned according to the radiated emissions set-up

The D.U.T. antenna connector was terminated by a 50  $\Omega$  shielded dummy load.

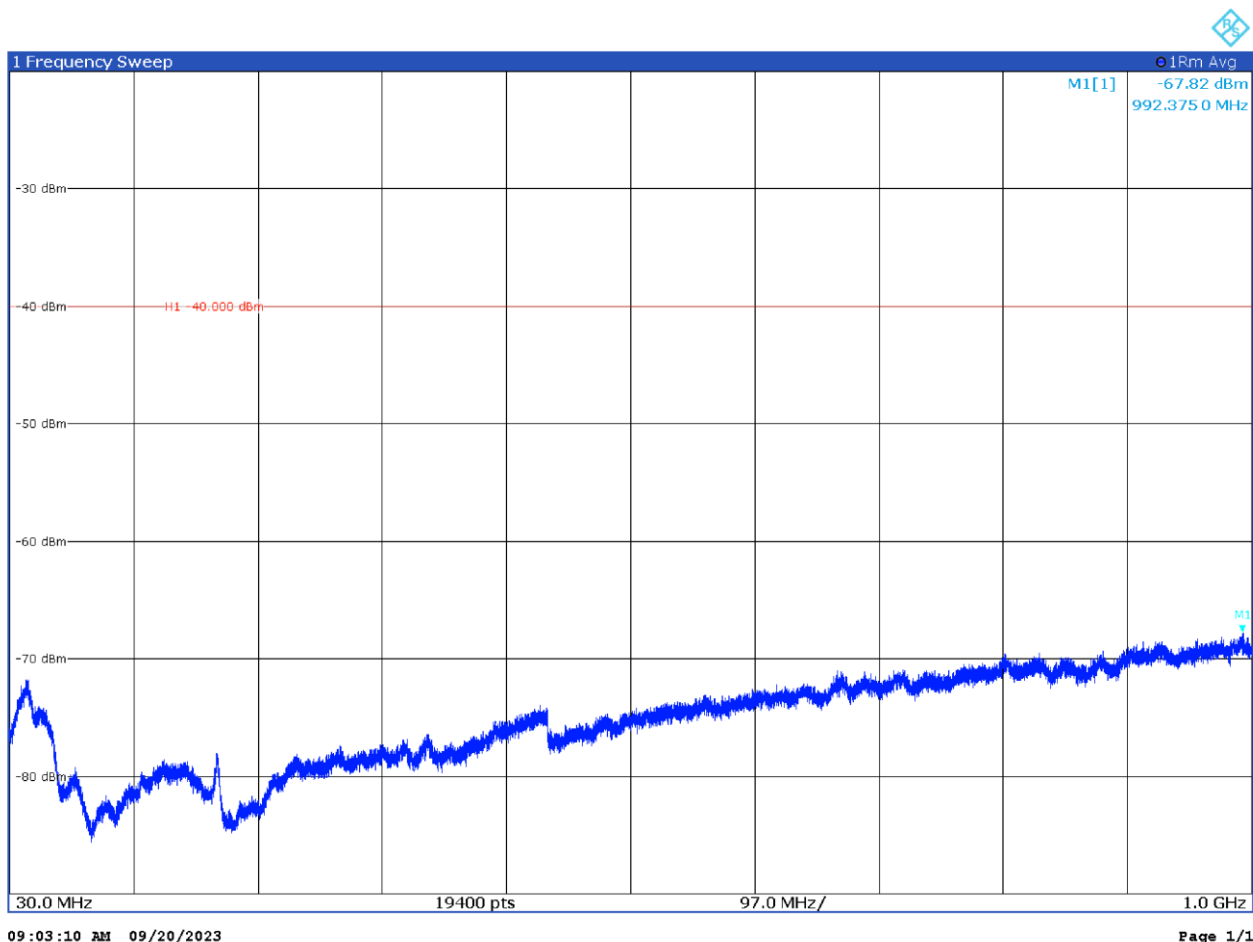
The spectrum was searched from 30 MHz to 1 GHz (RBW 100 kHz) & 1 GHz (RBW 1 MHz) to the tenth harmonic of the carrier.

## Spurious emissions measurement results:

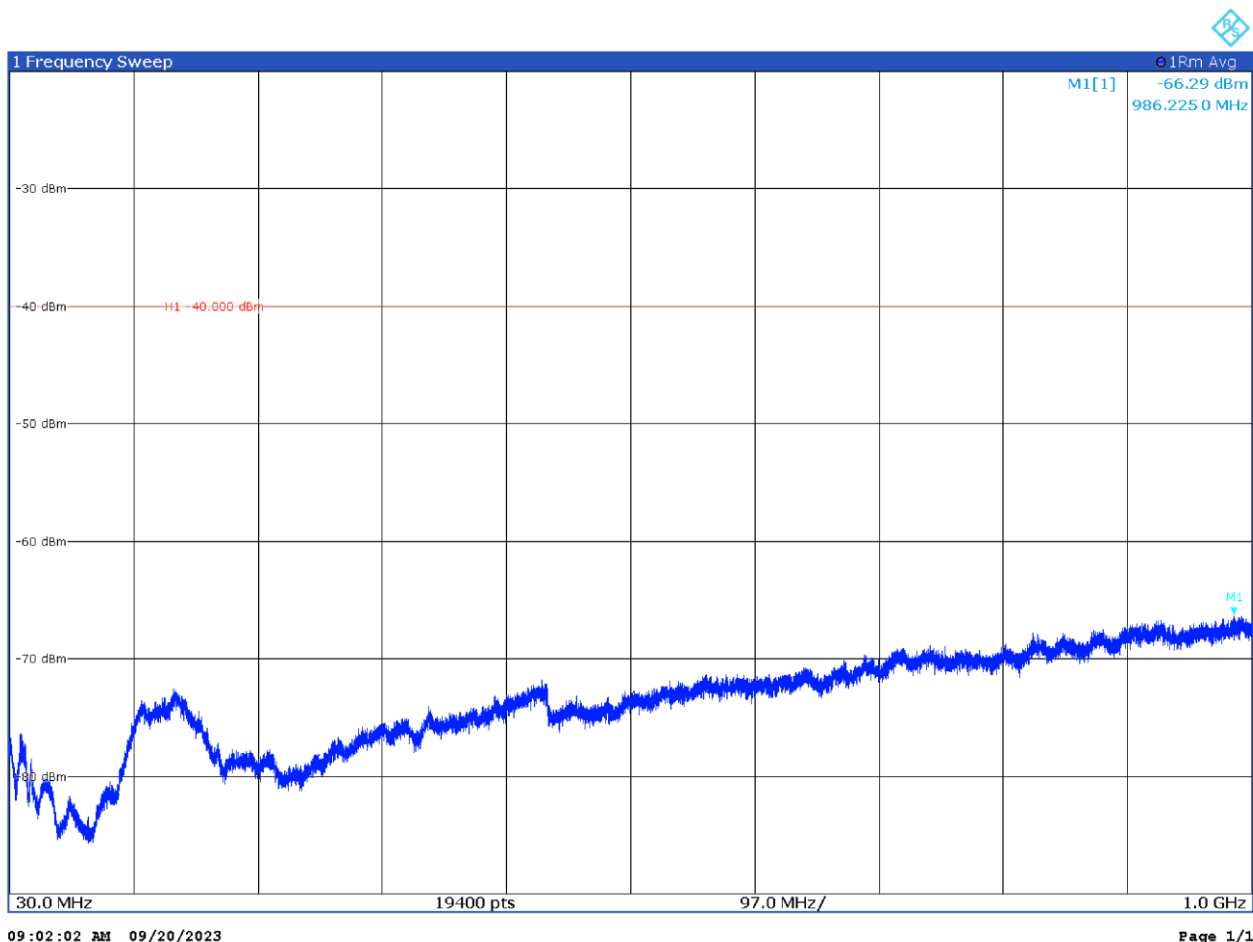
Frequency (MHz)	Polarization. V/H	Field strength (dBm)	Limit (dBm)	Margin (dB)
Low channel				
-				
-				
-				
Mid channel				
7.013250 GHz	V	-51.17	-40	11.17
7.023750 GHz	H	-49.14	-40	9.14
10.321750 GHz	V	-46.47	-40	6.47
14.377250 GHz	H	-47.95	-40	7.95
High channel				
-				
-				
-				

Note: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.

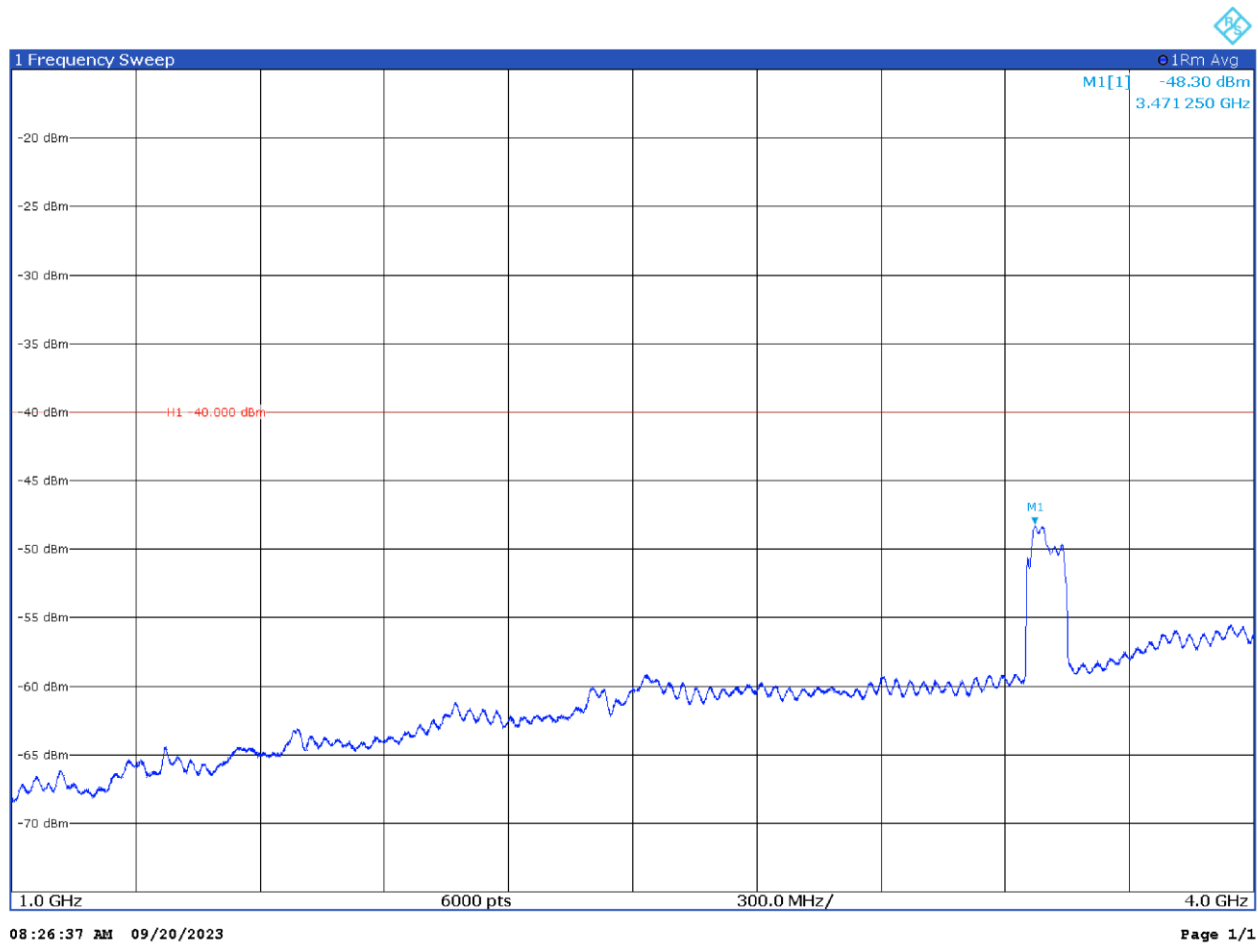




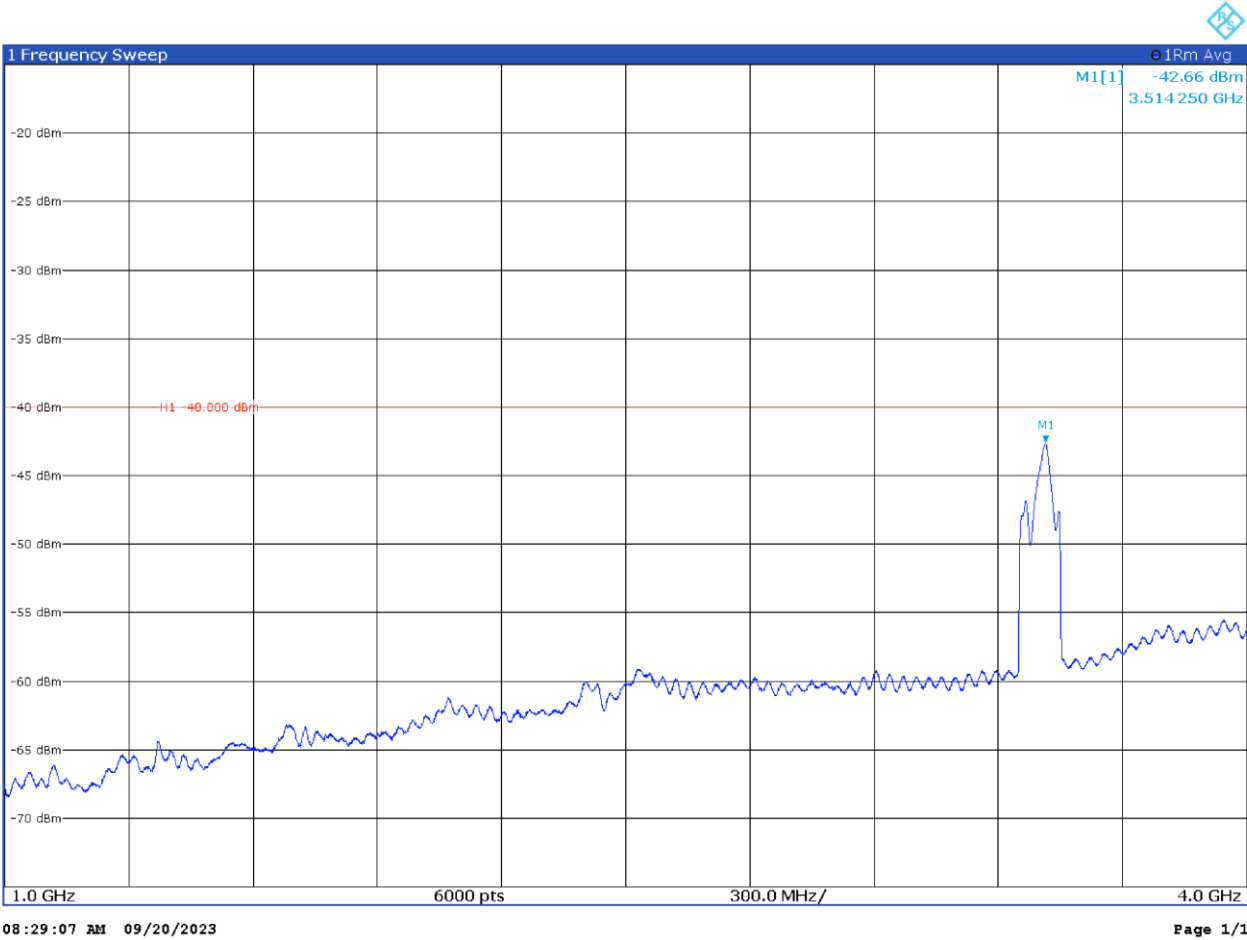
100 MHz signal, Bottom=Middle=Top Channel, 30MHz - 1GHz, H Pol



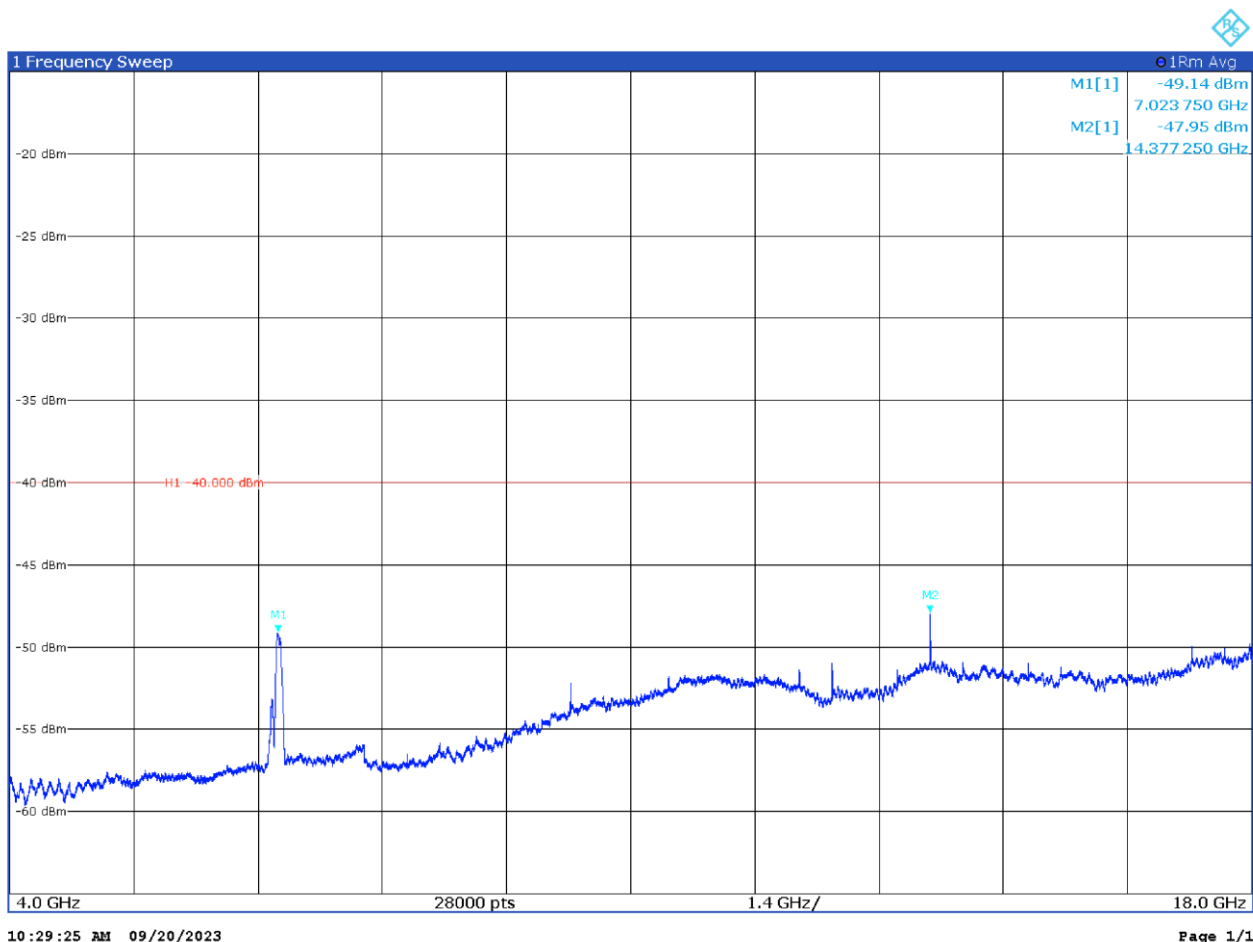
100 MHz signal, Bottom=Middle=Top Channel, 30MHz - 1GHz, V Pol



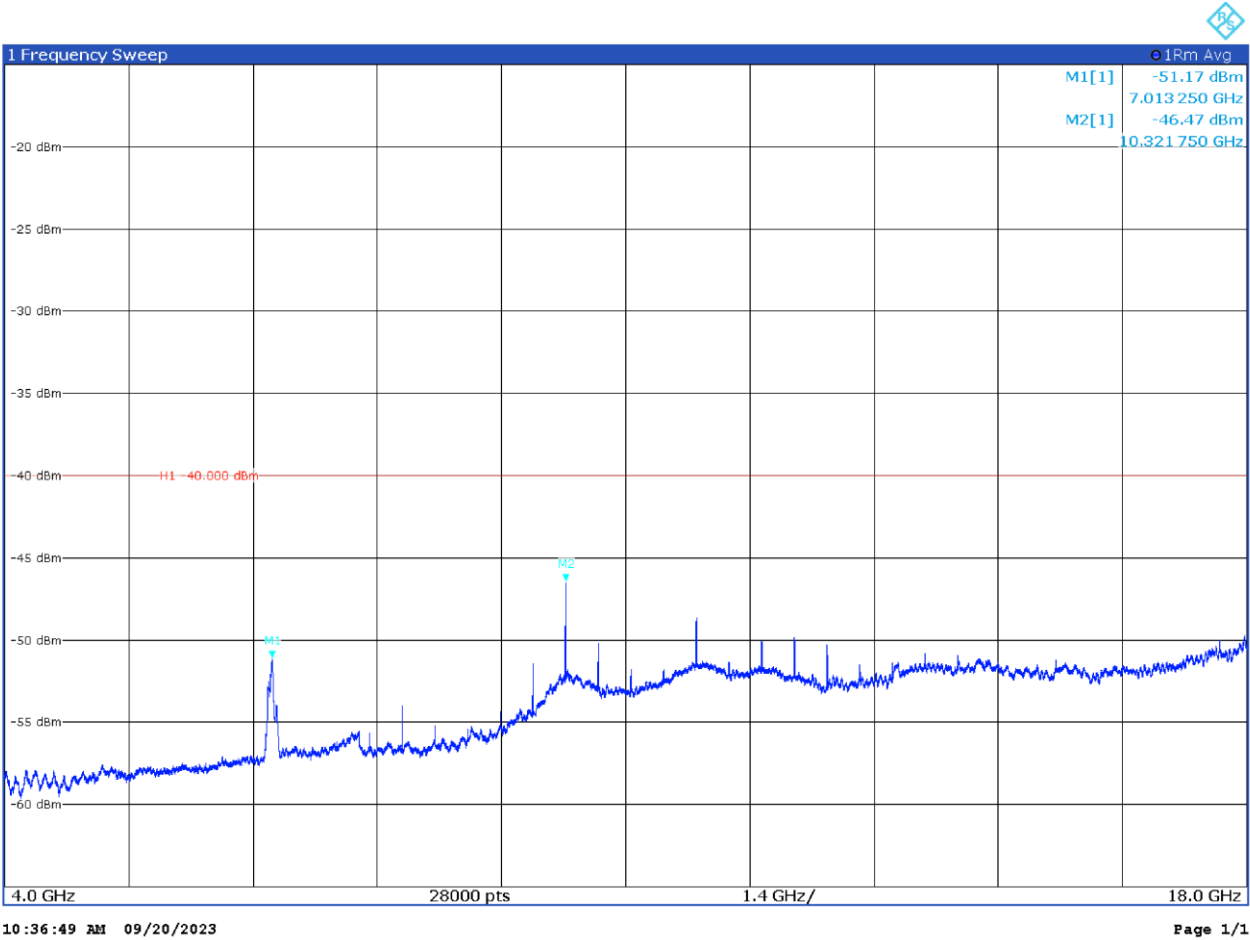
100 MHz signal, Bottom=Middle=Top Channel, 1GHz - 4GHz, H Pol



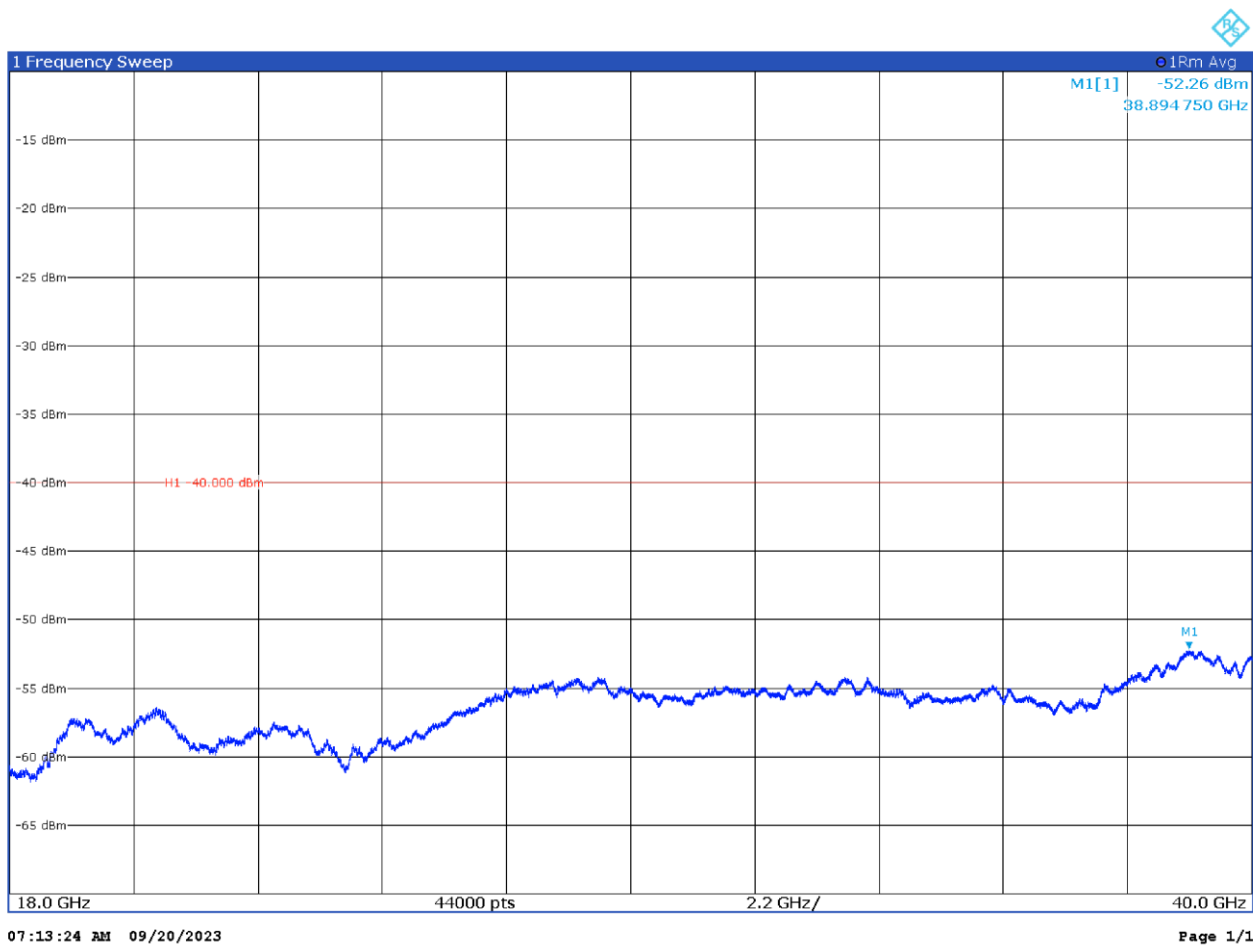
100 MHz signal, Bottom=Middle=Top Channel, 1GHz - 4GHz, V Pol



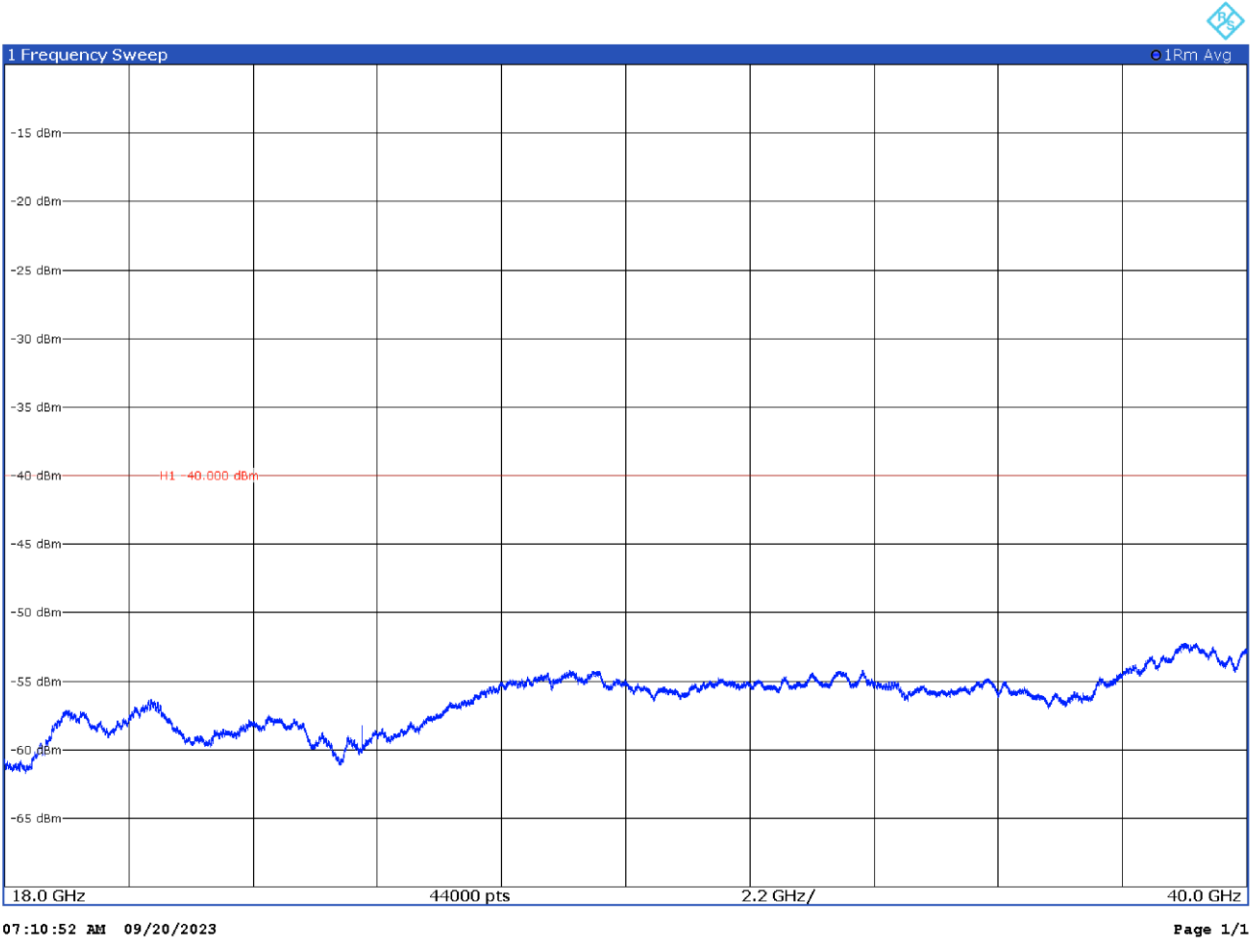
100 MHz signal, Bottom=Middle=Top Channel, 4GHz - 18GHz, H Pol



100 MHz signal, Bottom=Middle=Top Channel, 4GHz - 18GHz, V Pol



100 MHz signal, Bottom=Middle=Top Channel, 18GHz - 40GHz, H Pol



100 MHz signal, Bottom=Middle=Top Channel, 18GHz - 40GHz, V Pol



### Clause 27.54 Frequency stability

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test date: 2023-08-22 to 2023-09-08

**Test results: Pass**

### Special notes

Test are performed at 85% (90Vac) and 115% (264Vac) of the primary supply voltage and the same result was found.

### Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Spectrum Analyzer	Keysight	N9030B PXA	MY62282033	2023-12
Climatic Chambre	ESPEC	ARS-1100-AE	4100200526	2023-12

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use  
(\*) Equipment supplied by manufacturer's

### Test data

## RF PORT 1

Temperature = -30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	56.60	Hz

Temperature = -20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	57.59	Hz

Temperature = -10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	57.96	Hz

Temperature = 0°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	58.43	Hz

Temperature = 10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	57.13	Hz

Temperature = 20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	55.86	Hz

Temperature = 30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	52.17	Hz

Temperature = 40°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	47.88	Hz

Temperature = 50°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	52.98	Hz

## RF PORT 2

Temperature = -30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	57.48	Hz

Temperature = -20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	57.91	Hz

Temperature = -10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	58.28	Hz

Temperature = 0°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	58.64	Hz

Temperature = 10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	57.36	Hz

Temperature = 20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	56.04	Hz

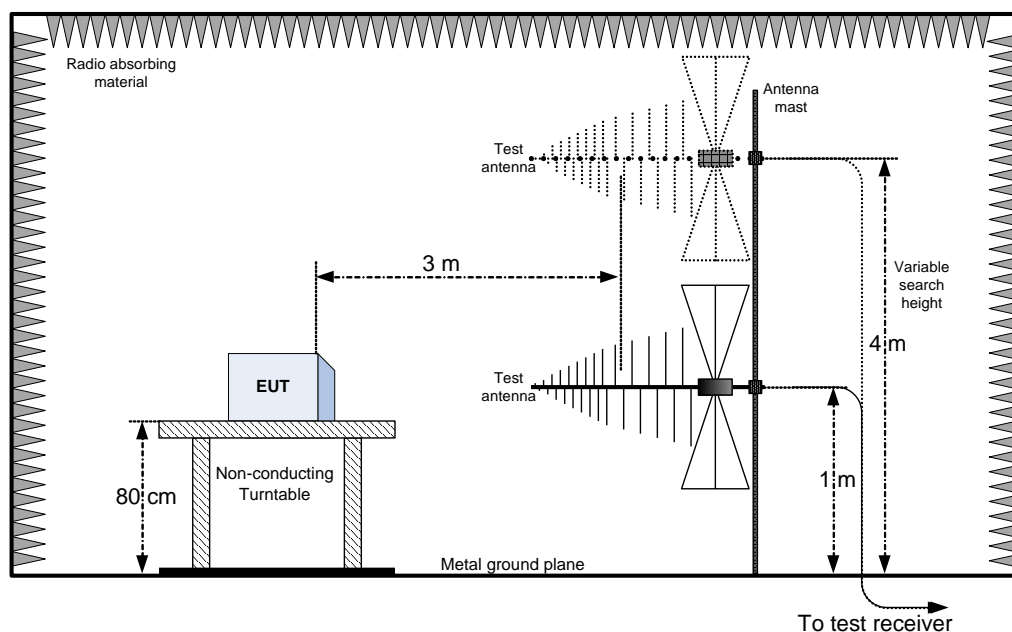
Temperature = 30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	53.37	Hz

Temperature = 40°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	50.62	Hz

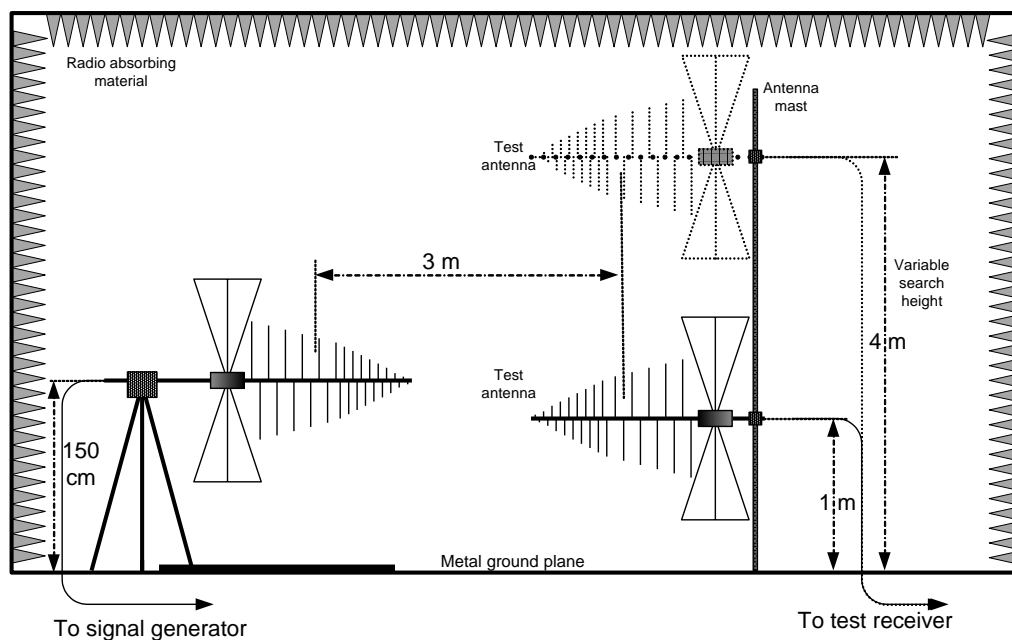
Temperature = 50°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM=MIDDLE=TOP	5G 100 MHz	53.24	Hz

## Appendix B: Block diagrams of test set-ups

## Radiated emissions set-up

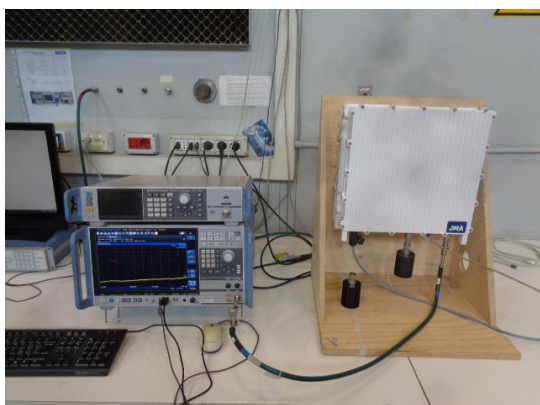
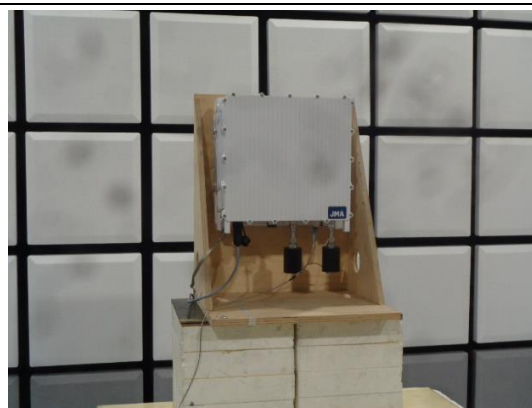
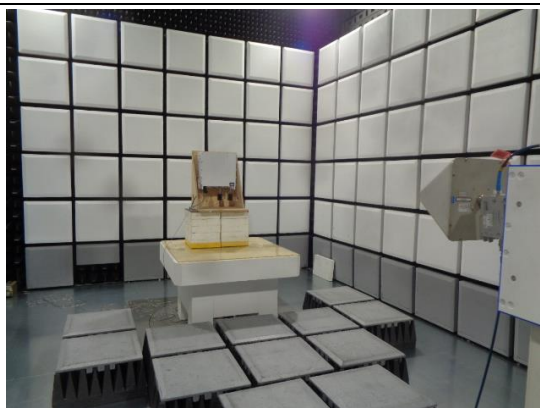
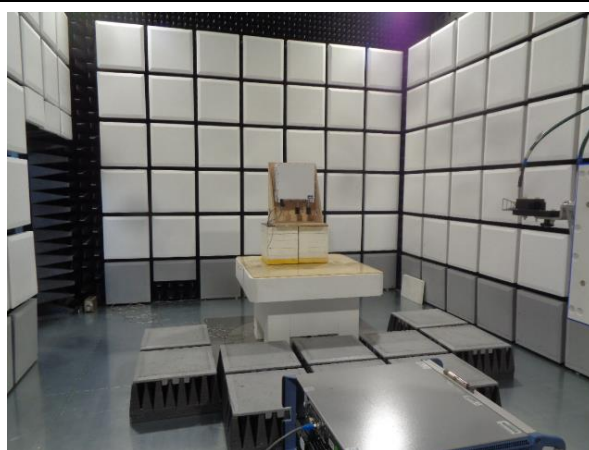


## Substitution method set-up



## Appendix C: EUT Photos

### Photo Set up



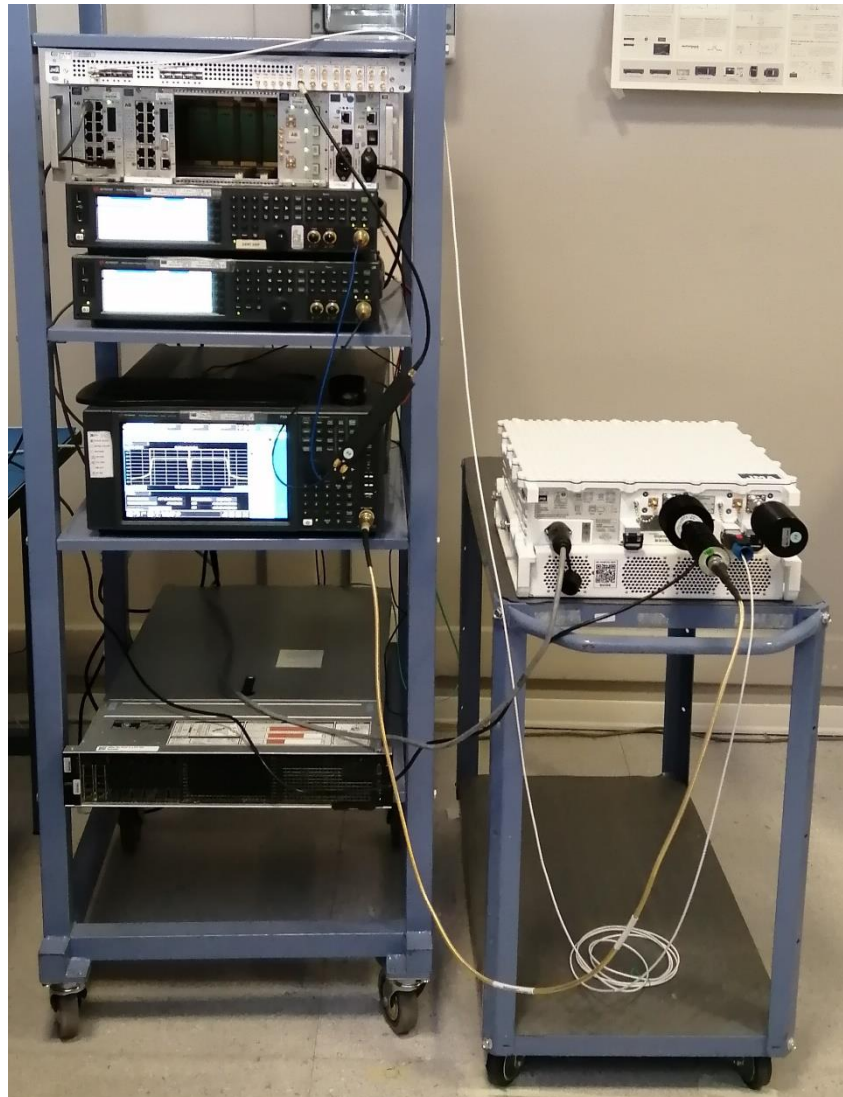
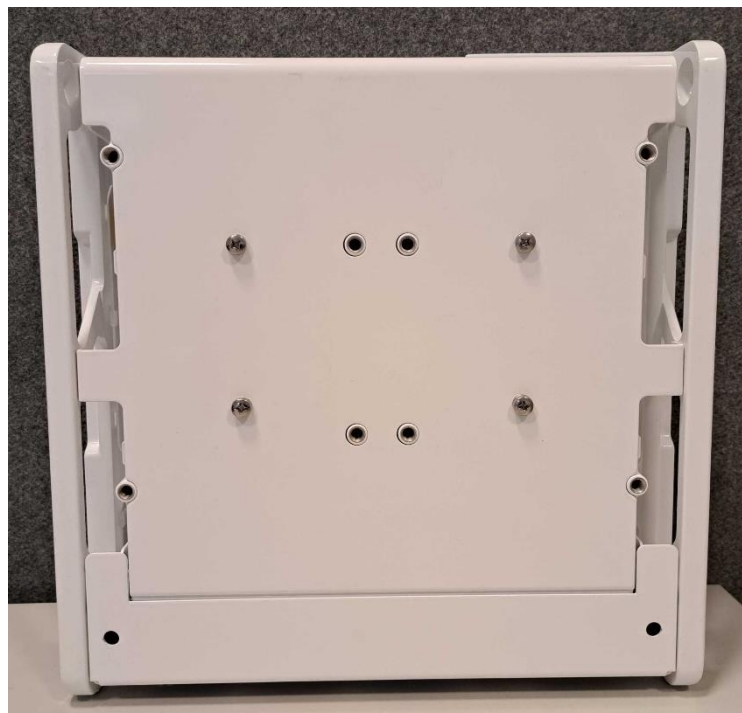


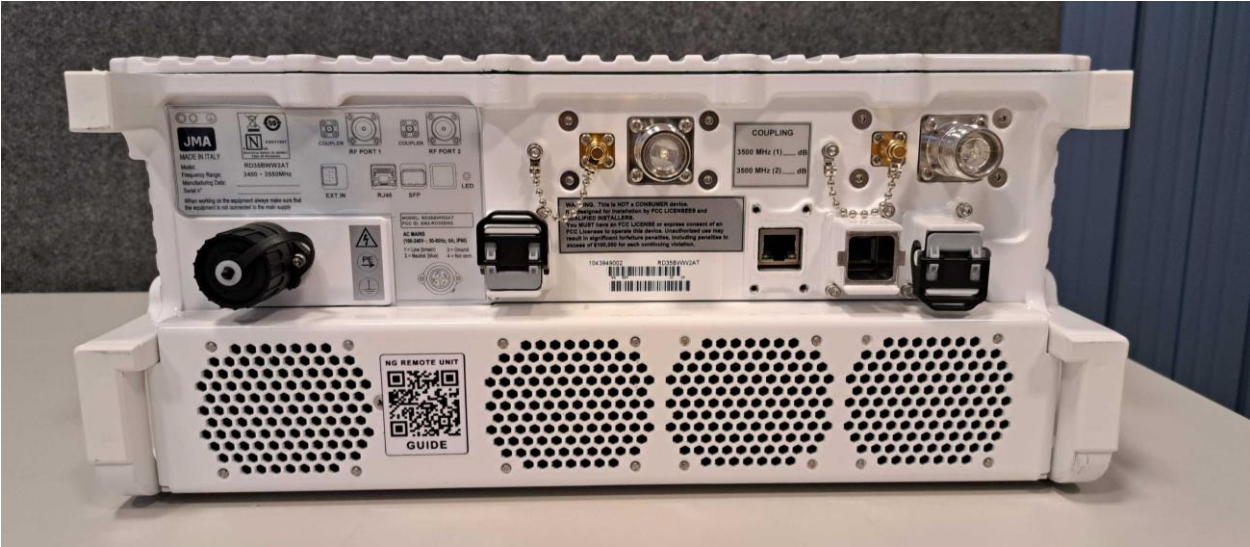


Photo EUT









- END OF REPORT -