TEST REPORT

No. 23T04Z80809-01

for

Baicells Technologies Co., Ltd.

Aurora6449m

Model Name: BSC7261A249D

FCC ID: 2AG32BSC7261A249D

with

Hardware Version: VerA

Software Version: BaiBNW_2.6

Issued Date: 2024-04-03

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

Test Laboratory:

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
23T04Z80809-01	Rev.0	1st edition	2024-03-08
23T04Z80809-01	Rev.1	Modified the RBW and VBW of Occupied Bandwidth test. Modified the of Test Equipment Utilized	2024-03-21
23T04Z80809-01	Rev.2	Add the detail of calculation of the far-field boundary in P16, P23, P41, P44; Add the specific information for the beam ID, RB, bandwidth and SCS information in P7; Add a note to describe the early exit in P20, P26, P45	2024-04-02
23T04Z80809-01	Rev.3	Add the Reference Beam Tables in P186 ANNEX E	2024-04-03

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA website.

1.2. Testing Location

Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191

Location 2: CTTL(Kangding)

Address: No. 18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, P. R. China 100191

1.3. Testing Environment

Extreme Temperature: -30/+50℃

Relative Humidity: 20-75%

1.4. Project Data

Testing Start Date: 2024-01-31

Testing End Date: 2024-03-06

1.5. Signature

Zhang Ying

(Prepared this test report)

An Hui

(Reviewed this test report)

Zhang Xia

(Approved this test report)

2. Client Information

2.1. Applicant Information

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2.2. Manufacturer Information

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Address /Post:	9-10F,1stBldg.,No.81BeiqingRoad,Haidian District,Beijing,China
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Fax:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Aurora6449m
Model Name	BSC7261A249D
FCC ID	2AG32BSC7261A249D
Frequency band	n261
IBW	100MHz*4
Nominal Output power (EIRP)	48.29dBm
Antenna beam steering	Beam11&Beam139(Reference Beam Tables are showed in Annex E)
Antenna gain	22dBi
Channel bandwidth(s)/ Sub Carrier Spacing	100 MHz(Only)/ 120 kHz
Modulations	CP-OFDM(QPSK, 16QAM, 64QAM)
Extreme vol. Limits	-40VDC to -57VDC , nominal -48VDC
Extreme temp. Tolerance	-30°C to +50°C

Note: EUT supports FULL RB only.

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL.

Test frequencies used for radiated measurements:

Frequency (MHz)	CCs	comment
27550.08	1	Low channel
27924.96	1	middle channel
28299.96	1	high channel
27550.08 + 27650.04	2	Low channel
27874.92 + 27974.88	2	middle channel
28200.00 + 28299.96	2	high channel
27550.08 + 27650.04 + 27750.00	3	Low channel
27824.04 + 27924.96 + 28024.02	3	middle channel
28099.92 + 28199.04 + 28299.96	3	high channel
27550.08 + 27650.04 + 27750.00 + 27849.96	4	Low channel
27775.02 + 27874.98 + 27975.00 + 28074.96	4	middle channel
27999.96 + 28099.92 + 28200.00 + 28299.96	4	high channel

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI / Serial Number	HW Version	SW Version
UT01a	120299999922BXB0012	VerA	BaiBNW_2.6

*EUT ID: is used to identify the test sample in the lab internally.

The IMEI and SW version information were provided by the applicant.

The frequency stability was performed on UT01a, the others were performed on UT03a.

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters, referring to chapter 3.1 for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 30	UPPER MICROWAVE FLEXIBLE USE SERVICE	10-1-23 Edition
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 842590	Upper Microwave Flexible Use Service v01r02	April 20, 2021

5. Laboratory Environment

Semi/Full-anechoic chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 M
Ground system resistance	< 4
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (SVSWR)	Between 0 and 6 dB, from 1GHz to 18GHz

6. Summary Of Test Result

n261

Items	Test Name	Clause in FCC rules	limit	Verdict
1	Output Power	2.1046 30.202(a)	75dBm/100 MHz	P
2	Unwanted Emission	30.203	-13dBm/MHz	P
3	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	P
4	Occupied Bandwidth	2.1049	Not Applicable	Reporting only
5	Band Edge Compliance	2.1051 30.203	-5dBm/MHz from the band edge up to 10% of the channel BW	P

Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. The test was not performed by CTTL.
NA	Not Applicable.The test was not applicable.
BR	Re-use test data from basic model report.
F	Fail. The EUT does not comply with the essential requirements in the standard.
Reporting only	No limit. Just report the measurement.

Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the output power, occupied bandwidth, band edge emission measurement investigation results. The test results shown in the following sections represent the worst case measurement results. For each frequency only the maximum measurement results of Beam ID were represent in the report. The Beam ID of maximum results for low, center and high frequency of different chains maybe vary.

7. Measurement Uncertainty

Measurement Uncertainty:

Frequency Range	Uncertainty(dB) (k=2)
30MHz-1GHz	5.64
1GHz-18GHz	4.23
Above 18GHz	3.72

Note: Uncertainty of the above 18GHz, giving only the worst case.

8. Test Equipment Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1	Spectrum Analyzer	FSW67	103290	R&S	2024-11-28	1 year
3	Antenna	VULB 9163	482	SCHWARZBECK	2025-01-03	2 years
4	Antenna	3115	00146404	ETS-Lindgren	2024-05-05	1 year
5	Antenna	3116	2661	ETS-Lindgren	2025-01-30	2 years
6	Upconverter (50GHz-75GHz)	SMZ75	101309	R&S	2025-01-14	4 years
7	Upconverter (75GHz-110GHz)	SMZ110	101357	R&S	2025-01-14	4 years
8	(downconverter)Harmonic Mixer(60GHz-90GHz)	FS-Z90	101655	R&S	2025-01-14	4 years
9	(downconverter)Harmonic Mixer(75GHz-110GHz)	FS-Z110	101463	R&S	2025-01-14	4 years
10	Standard Gain Horn Antenna （40GHz-60GHz）	LB-19-25	J202024086	A-INFO	/	/
11	Standard Gain Horn Antenna （40GHz-60GHz）	LB-19-25	J202024087	A-INFO	/	/
12	Standard Gain Horn Antenna （60GHz-90GHz）	LB-12-25	J202062912	A-INFO	/	/
13	Standard Gain HornAntenna （50GHz-75GHz）	LB-15-25	J202062019	A-INFO	/	/
14	Standard Gain Horn Antenna （75GHz-110GHz）	LB-10-25	J202023231	A-INFO	/	/
15	Standard Gain Horn Antenna （75GHz-110GHz）	LB-10-25	J202023232	A-INFO	/	/

Test Item	Test Software and Version	Software Vendor
Output Power	mmWave InBand testing V1.2.2	CAICT
Unwanted Emission	mmW Spurious Emission V5.0	CAICT
Occupied Bandwidth	mmWave InBand testing V1.2.2	CAICT
Band Edge Compliance	mmWave InBand testing V1.2.2	CAICT

Annex A: Radiated Test Setup

The radiated test facilities consisted of an indoor 3m/10m semi-anechoic chamber used for final measurements and exploratory measurements from 30MHz-18GHz, when necessary for radiated emissions measurements in the spurious domain. According to Clause 5 in ANSI C63.4-2014, absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz (Figure A.2). For measurements below 1GHz, the absorbers are removed (Figure A.1).

Radiated measurement test sites shall conform to the site validation criteria called out in CISPR 16-1-4:2019 above 18 GHz. The test object is mounted on a positioner (Figure A.3). The positioner is used to move the test object according to the sampling grid. A measurement antenna is placed in the chamber at a suitable measurement antenna far-field distance.

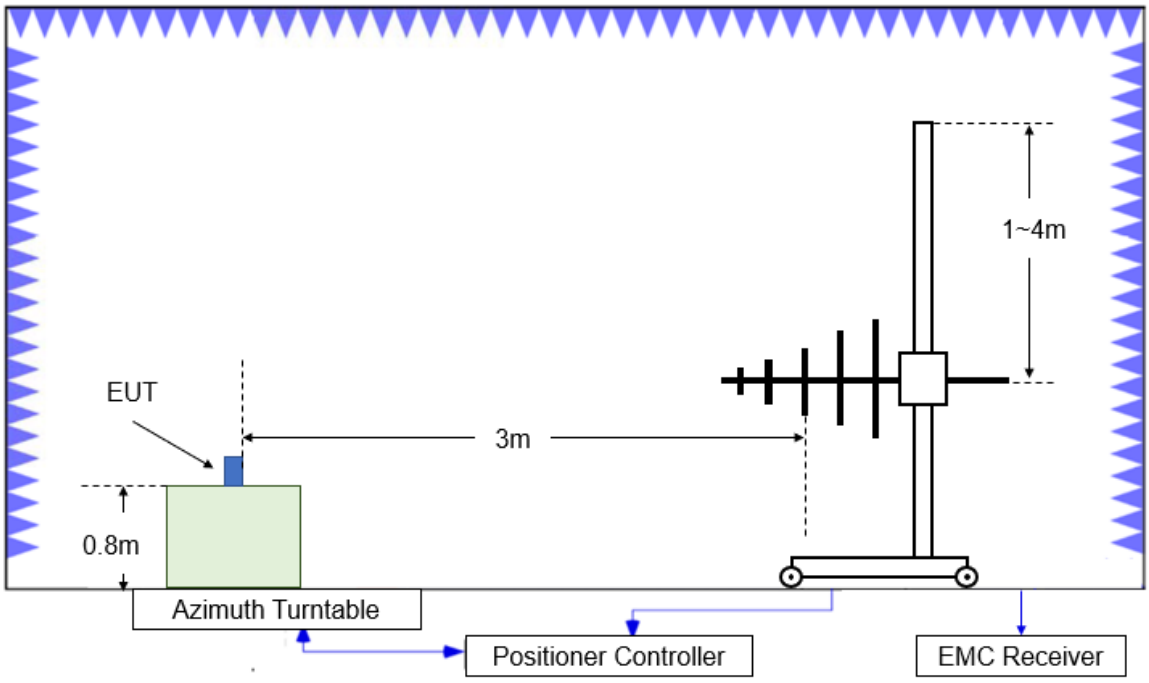


Figure A.1. Test Site Diagram (30MHz-1GHz)

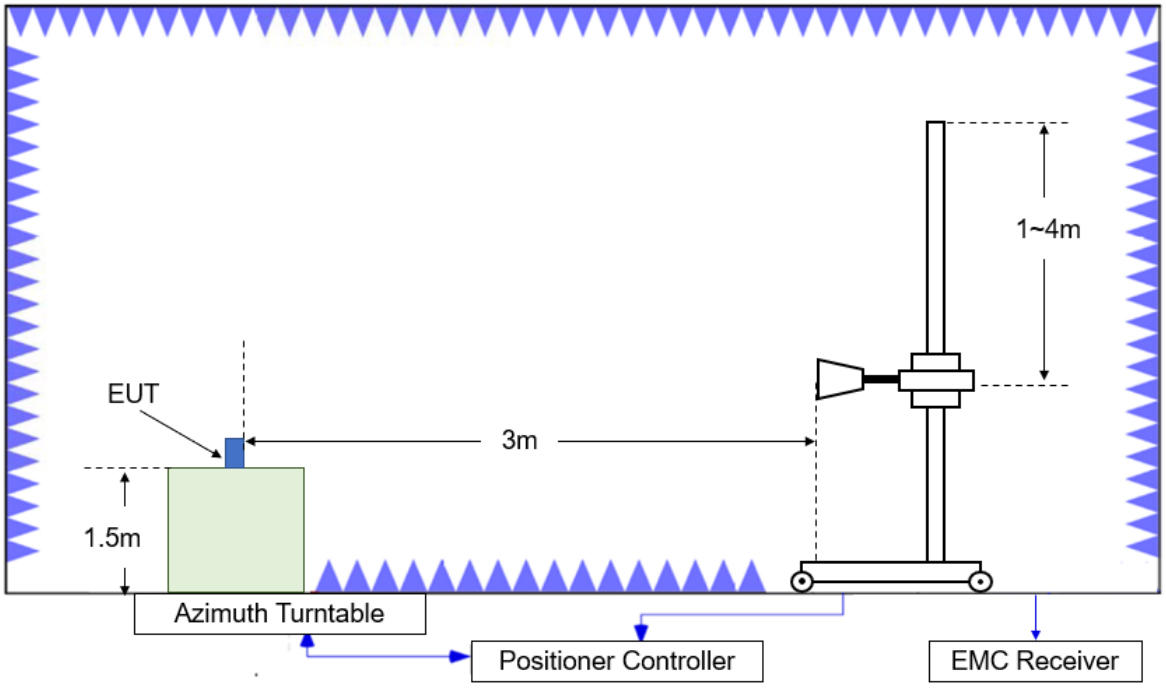


Figure A.2. Test Site Diagram (1GHz-18GHz)

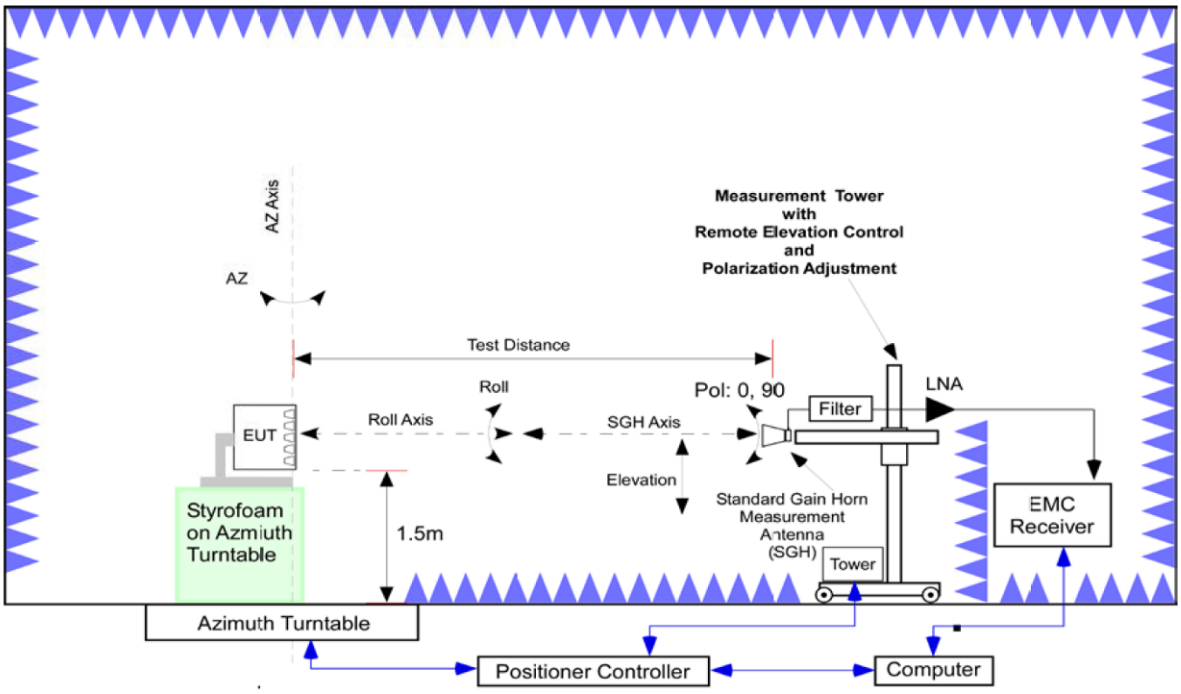


Figure A.3. Test Site Diagram (above18GHz)

Annex B: Measurement Results

B.1 Radiated Output Power

B.1.1 Summary

In all cases, output power is within the specified limits.

30.202 (a) For fixed and base stations operating in connection with mobile systems, the average power of the sum of all antenna elements is limited to an equivalent isotopically radiated power (EIRP) density of +75dBm/100 MHz. For channel bandwidths less than 100 MHz the EIRP must be reduced proportionally and linearly based on the bandwidth relative to 100 MHz.

B.1.2 Minimum Measurement Distance Evaluation

According to KDB842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). We calculate the far-field boundary and the test distance meet the requirement of standard.

For fundamental or out-of-band emissions the largest far-field distance of either the EUT antenna or measurement antenna shall be used. For spurious emissions the far-field distance will be based on the measurement antenna.

	Antenna	D(mm)	λ(mm)	far-field boundary (m)	Measurement distance(m)
18-40GHz	EUT mmW Antenna	39	39	0.81	3

B.1.3 Method of Measurements

ANSI C63.26 chapter 5.5.2.1: Such radiated measurements shall use substitution methods unless a test site validated to ANSI C63.4 requirements is utilized, in which case, radiated fundamental and/or unwanted emissions can be measured using the direct radiated field strength method.

The EUT was set up for the max output power with pseudo random data modulation.

These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

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

The EIRP measurement used integration method and the bandwidth is 100MHz.

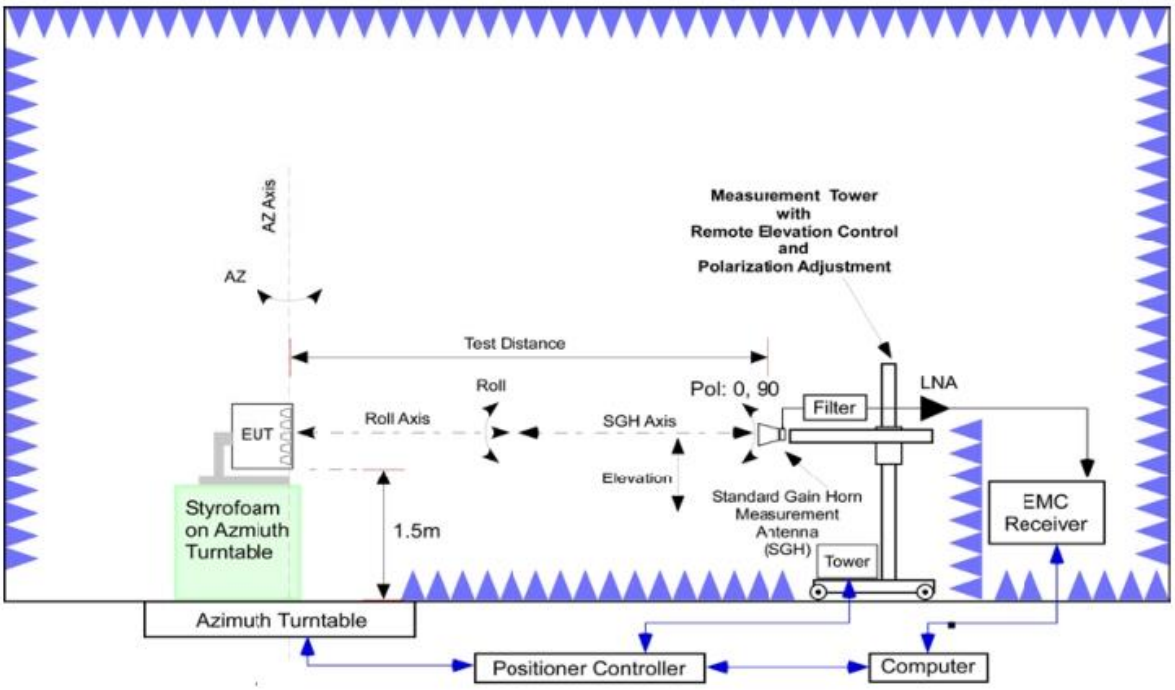
B.1.4 Test Procedure

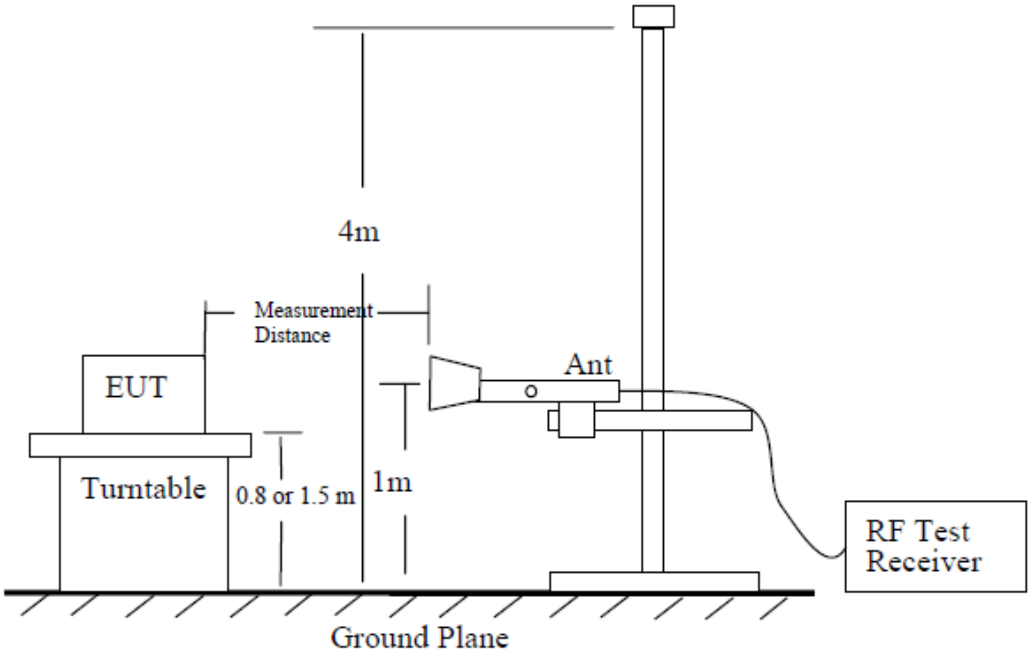
According to Clause 5.2.4.4 in ANSI C63.26-2015 and Clause 4.2 in KDB 842590 D01 v01r02

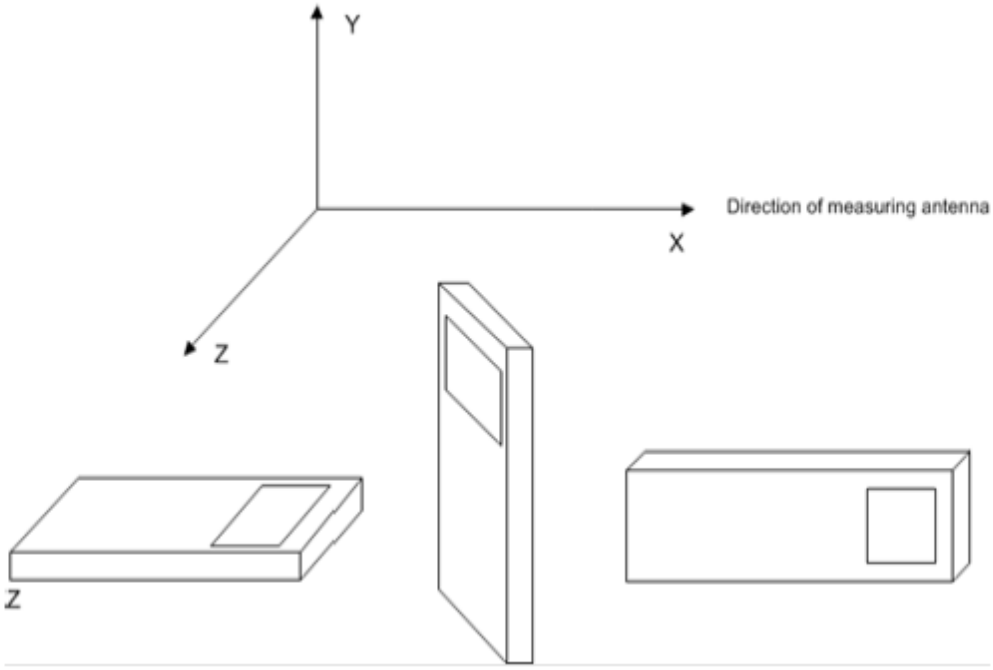
1. Set EUT at maximum output power
2. Select channels for each band and proper modulation

3. Enable channel power measurement function of spectrum analyzer
4. Set RBW = 1% to 5% of the OBW, not to exceed 1MHz
5. Set VBW ≥ 3×RBW
6. Set span to 2× to 3× the OBW
7. Set number of measurement points in sweep ≥ 2×span/RBW
8. Set Detector = RMS (power averaging)
9. Set Sweep time = auto-couple
10. Trace average at least 100 traces in power averaging (rms) mode
11. Compute the power by integrating the spectrum across the OBW of the signal for signals with continuous operation

Using the test configuration as follow, measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits.







The emission characteristics of the EUT can be identified from the pre-scan measurement information.

Exploratory radiated measurements (pre-scans) may be performed to determine the general EUT radiated emissions characteristics and, when necessary, the EUT-to-measurement antenna orientation that produces the maximum emission amplitude. Pre-scans shall only be used to determine the emission frequencies (i.e., not amplitude levels). The information garnered from a pre-scan can then be used to perform final compliance measurements using either the substitution or direct field strength method.

For radiated emissions measurements performed at frequencies less than or equal to 1 GHz,

the EUT shall be placed on a RF-transparent table or support at a nominal height of 80 cm above the reference ground plane. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e., field strength or received power). When orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25 cm.

For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table or support at a nominal height of 1.5 m above the ground plane. When maximizing the emissions from the EUT for measurement, the EUT and its transmitting antenna(s) shall be rotated through 360°. For each mode of operation to be tested, the frequency spectrum (based on findings from exploratory measurements) shall be monitored.

Test Note:

EIRP was calculated from measuring field strength by the following formula:

EIRP (dBm) = E (dBμV/m) + 20log(D) − 104.8

where

E (dBμV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)

where

Antenna Factor（dB/m) = 20log(F)-Antenna Gain(dBi)-29.76

Then the average EIRP reported below is calculated by:

EIRP (dBm) = Measured amplitude level (dBm) - Antenna Gain(dBi) + Cable Loss(dB) + 20log(F) + 20log(D) - 27.56

Where:

F: frequency (MHz)

D: Distance(m) = 3m

B.1.5 Measurement Result

Note: The measured EIRP levels are below the TRP limit and the early exit condition is met.

Note: We choose the worst modulation by the EIRP of middle channel, the high channel and low channel measure the EIRP only with the worst modulation.

The plots are showed in Annex D.1.

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	1	QPSK	66/0	46.58	75	28.42	H
					47.40	75	27.60	V
Mid	100	1	16QAM	66/0	46.36	75	28.64	H
					47.33	75	27.67	V
Mid	100	1	64QAM	66/0	46.50	75	28.50	H
					47.33	75	27.67	V

The high channel and low channel measure the EIRP only with the worst modulation

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	1	QPSK	66/0	46.16	75	28.84	H
					47.22	75	27.78	V
High	100	1	QPSK	66/0	46.59	75	28.41	H
					47.69	75	27.31	V

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	2	QPSK	66/0	46.20	75	28.80	H
					48.29	75	26.71	V
Mid	100	2	16QAM	66/0	46.20	75	28.80	H
					48.15	75	26.85	V
Mid	100	2	64QAM	66/0	46.17	75	28.83	H
					47.85	75	27.15	V

The high channel and low channel measure the EIRP only with the worst modulation

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	2	QPSK	66/0	46.52	75	28.48	H
					47.31	75	27.69	V
High	100	2	QPSK	66/0	46.48	75	28.52	H
					48.03	75	26.97	V

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	3	QPSK	66/0	46.30	75	28.70	H
					46.31	75	28.69	V
Mid	100	3	16QAM	66/0	45.62	75	29.38	H
					46.28	75	28.72	V
Mid	100	3	64QAM	66/0	45.96	75	29.04	H
					46.62	75	28.38	V

The high channel and low channel measure the EIRP only with the worst modulation

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	3	QPSK	66/0	45.32	75	29.68	H
			64QAM	66/0	45.90	75	29.10	V
High	100	3	QPSK	66/0	45.26	75	29.74	H
			64QAM	66/0	47.23	75	27.77	V

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	4	QPSK	66/0	45.27	75	29.73	H
					46.60	75	28.40	V
Mid	100	4	16QAM	66/0	45.27	75	29.73	H
					46.51	75	28.49	V
Mid	100	4	64QAM	66/0	45.41	75	29.59	H
					46.37	75	28.63	V

The high channel and low channel measure the EIRP only with the worst modulation

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	4	64QAM	66/0	44.97	75	30.03	H
			QPSK	66/0	45.92	75	29.08	V
High	100	4	64QAM	66/0	45.56	75	29.44	H
			QPSK	66/0	48.01	75	26.99	V

B.2 Emission Limit

B.2.1 Summary

The spectrum of FR2 n261 was scanned from 30 MHz to 100GHz. All modes of operation were investigated and the worst case configuration results are reported in this section.

30.203 (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be −5 dBm/MHz or lower.

B.2.2 Minimum Measurement Distance Evaluation

According to KDB842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). We calculate the far-field boundary and the test distance meet the requirement of standard.

	Antenna model	D(mm)	λ(mm)	far-field boundary (m)	Measurement distance(m)
40-60GHz	LB-19-25	0.063891	0.0050	1.63	3
60-75GHz	LB-15-25	0.041231	0.0033	1.02	3
75-100GHz	LB-10-25	0.035609	0.0030	0.85	3

B.2.3 Measurement Method

The measurement procedures in ANSI C63.26 are used.

The spectrum was scanned from 30 MHz to the 5th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set as outlined in Part 30.203.

The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of FR2 n261.

ANSI C63.26 chapter 5.5.2.1: Such radiated measurements shall use substitution methods unless a test site validated to ANSI C63.4 requirements is utilized, in which case, radiated fundamental and/or unwanted emissions can be measured using the direct radiated field strength method.

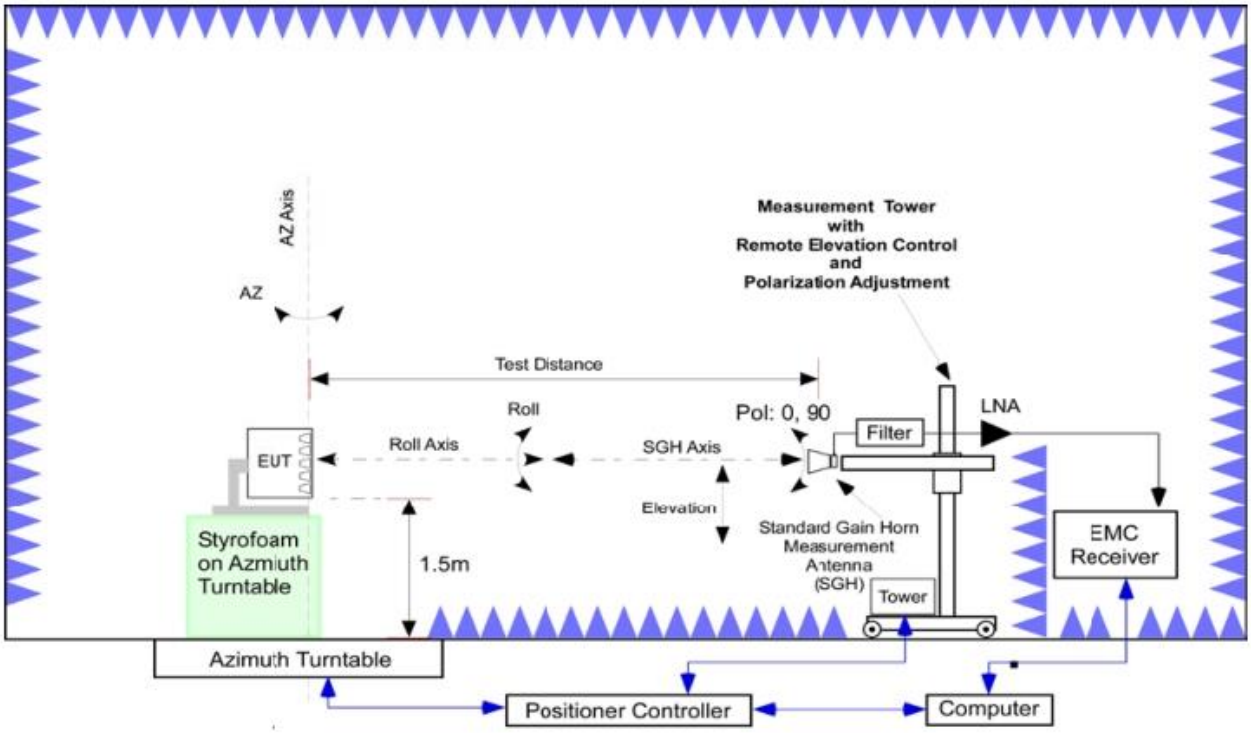
B.2.4 Test Procedure

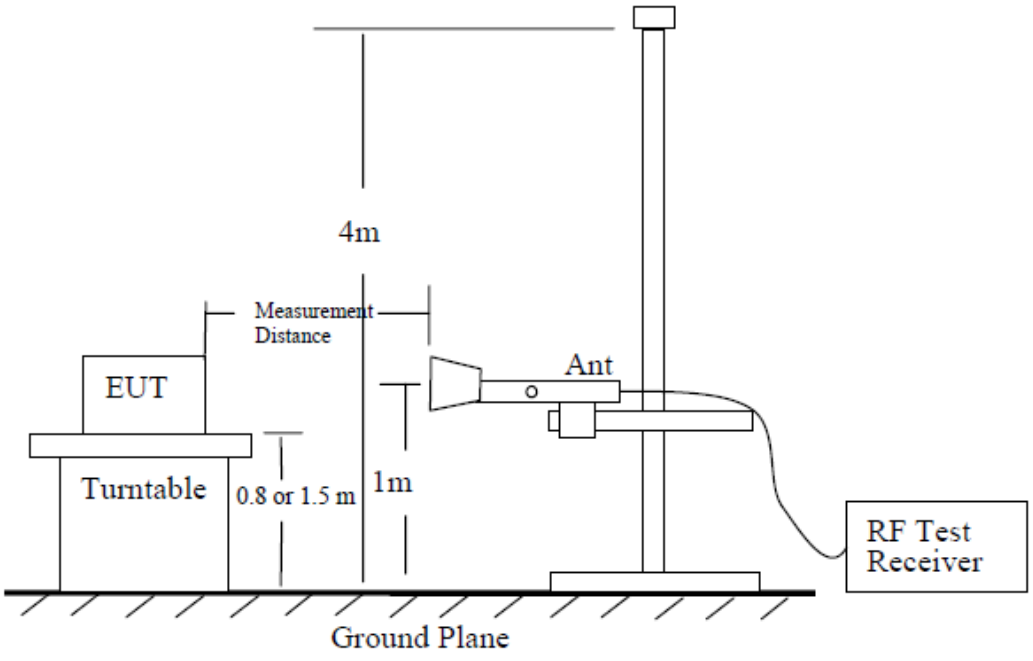
According to Clause 5.5 in ANSI C63.26-2015, 30.203 (b) and Clause 4.4 in KDB 842590 D01 v01r02

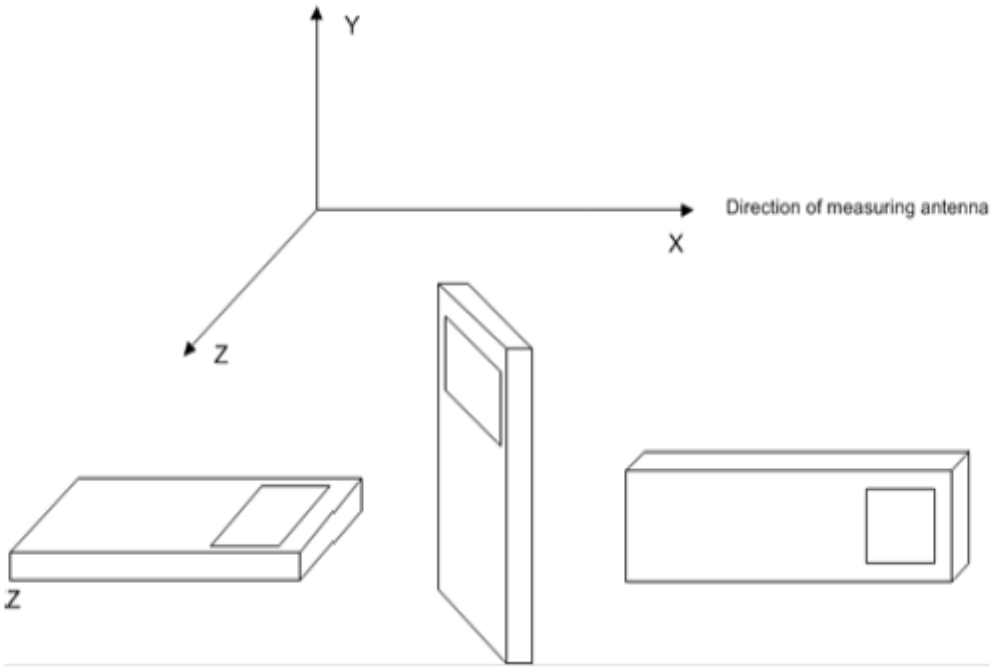
1. Set EUT at maximum output power
2. Select channels for each band and proper modulation
3. Set RBW=1MHz, VBW=3MHz
4. Set number of measurement points in sweep ≥ 2×span/RBW
5. Set Detector = RMS
6. Set Sweep time = auto-couple

7. Trace average at least 100 traces in power averaging (rms) mode
8. The trace was allowed to stabilize

Using the test configuration as follow, measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits.







The emission characteristics of the EUT can be identified from the pre-scan measurement information.

Exploratory radiated measurements (pre-scans) may be performed to determine the general EUT radiated emissions characteristics and, when necessary, the EUT-to-measurement antenna orientation that produces the maximum emission amplitude. Pre-scans shall only be used to determine the emission frequencies (i.e., not amplitude levels). The information garnered from a pre-scan can then be used to perform final compliance measurements using either the substitution or direct field strength method.

For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80 cm above the reference ground plane. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e., field strength or received power). When orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25 cm.

The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 5th harmonic were measured with peak detector.

For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table or support at a nominal height of 1.5 m above the ground plane. When maximizing the emissions from the EUT for measurement, the EUT and its transmitting antenna(s) shall be rotated through 360°. For each mode of operation to be tested, the frequency spectrum (based on findings from exploratory measurements) shall be monitored.

Final measurements shall be performed for the worst case combination(s) of variable technical parameters that result in the maximum measured emission amplitude, record the frequency and

amplitude of the highest fundamental emission (if applicable), and the frequency and amplitude data for the six highest-amplitude spurious emissions.

Test Note:

1. The average EIRP reported below is calculated by:

30M-18GHz: EIRP (dBm) = Spectrum Analyzer Level (dBm) + Path Loss(dB)

18GHz-60GHz: EIRP (dBm) = Spectrum Analyzer Level (dBm) - Antenna Gain (dBi) + Cable Loss (dB) + 20log (F) + 20log(D) - 27.56

60GHz-110GHz: EIRP (dBm) = Spectrum Analyzer Level (dBm) - Antenna Gain (dBi) + converter Loss (dB) + 20log(F) + 20log(D) - 27.56

Where: F: frequency (MHz), D: Distance(m), the distance for different frequency range as shown in table.

Frequency Range	Distance(m)	Frequency Range	Distance(m)
30MHz-1GHz	3	60GHz-75GHz	3
1GHz-18GHz	3	75GHz-100GHz	3
18GHz-40GHz	3		
40GHz-60GHz	3		

2. The TRP method refers to the Clause 4.4 of KDB 842590 D01 v01r02. If EIRP measurement results exceed the emission limit, then TRP measurement will be used as an alternative method.

B.2.5 Measurement Results Table (worse case of the power measured)

The plots are showed in Annex D.2.

Note: The measured EIRP levels are below the TRP limit and the early exit condition is met.

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	27,201.50	100	1	QPSK	66/0	-11.04	22	-33.04	-13	20.04	H
low	27,225.23	100	1	QPSK	66/0	-10.85	22	-32.85	-13	19.85	H
low	27,345.75	100	1	QPSK	66/0	-8.92	22	-30.92	-13	17.92	H
low	27,355.72	100	1	QPSK	66/0	-8.97	22	-30.97	-13	17.97	H
low	27,445.40	100	1	QPSK	66/0	-1.2	22	-23.2	-13	10.2	H
low	27,487.63	100	1	QPSK	66/0	3.41	22	-18.59	-13	5.59	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	25,850.13	100	1	QPSK	66/0	-9.55	22	-31.55	-13	18.55	V
low	26,950.02	100	1	QPSK	66/0	-5.92	22	-27.92	-13	14.92	V
low	27,203.88	100	1	QPSK	66/0	-11.07	22	-33.07	-13	20.07	V
low	27,342.43	100	1	QPSK	66/0	-9.28	22	-31.28	-13	18.28	V
low	27,489.53	100	1	QPSK	66/0	6.2	22	-15.8	-13	2.8	V
low	28,599.73	100	1	QPSK	66/0	-8.46	22	-30.46	-13	17.46	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
Middle	26,009.56	100	1	QPSK	66/0	-22.3	22	-44.3	-13	31.3	H
Middle	27,081.93	100	1	QPSK	66/0	-18.75	22	-40.75	-13	27.75	H
Middle	27,246.58	100	1	QPSK	66/0	-16.6	22	-38.6	-13	25.6	H
Middle	27,262.24	100	1	QPSK	66/0	-16.15	22	-38.15	-13	25.15	H
Middle	27,402.22	100	1	QPSK	66/0	-15.15	22	-37.15	-13	24.15	H
Middle	28,366.79	100	1	QPSK	66/0	-19.12	22	-41.12	-13	28.12	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
Middle	26,202.68	100	1	QPSK	66/0	-11.41	22	-33.41	-13	20.41	V
Middle	26,760.22	100	1	QPSK	66/0	-11.5	22	-33.5	-13	20.5	V
Middle	27,317.28	100	1	QPSK	66/0	-7.71	22	-29.71	-13	16.71	V
Middle	28,431.87	100	1	QPSK	66/0	-6.96	22	-28.96	-13	15.96	V
Middle	28,989.95	100	1	QPSK	66/0	-10.46	22	-32.46	-13	19.46	V
Middle	29,547.55	100	1	QPSK	66/0	-13.13	22	-35.13	-13	22.13	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	26,144.32	100	1	QPSK	66/0	-24.78	22	-46.78	-13	33.78	H
high	27,247.06	100	1	QPSK	66/0	-22.5	22	-44.5	-13	31.5	H
high	27,480.51	100	1	QPSK	66/0	-20.12	22	-42.12	-13	29.12	H
high	28,360.48	100	1	QPSK	66/0	1.81	22	-20.19	-13	7.19	H
high	28,547.64	100	1	QPSK	66/0	-17.95	22	-39.95	-13	26.95	H
high	28,768.07	100	1	QPSK	66/0	-21.34	22	-43.34	-13	30.34	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	25,990.11	100	1	QPSK	66/0	-13.69	22	-35.69	-13	22.69	V
high	26,554.76	100	1	QPSK	66/0	-13.13	22	-35.13	-13	22.13	V
high	27,119.89	100	1	QPSK	66/0	-10.31	22	-32.31	-13	19.31	V
high	28,360.00	100	1	QPSK	66/0	5.22	22	-16.78	-13	3.78	V
high	28,814.86	100	1	QPSK	66/0	-6.05	22	-28.05	-13	15.05	V
high	29,379.69	100	1	QPSK	66/0	-14.42	22	-36.42	-13	23.42	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	25,874.33	100	2	QPSK	66/0	-20.83	22	-42.83	-13	29.83	H
low	26,888.81	100	2	QPSK	66/0	-15.51	22	-37.51	-13	24.51	H
low	27,016.92	100	2	QPSK	66/0	-14.55	22	-36.55	-13	23.55	H
low	27,206.72	100	2	QPSK	66/0	-11.32	22	-33.32	-13	20.32	H
low	27,386.09	100	2	QPSK	66/0	-3.25	22	-25.25	-13	12.25	H
low	27,486.68	100	2	QPSK	66/0	1.67	22	-20.33	-13	7.33	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	25,850.13	100	2	QPSK	66/0	-8.52	22	-30.52	-13	17.52	V
low	26,950.02	100	2	QPSK	66/0	-6.71	22	-28.71	-13	15.71	V
low	27,197.71	100	2	QPSK	66/0	-12.01	22	-34.01	-13	21.01	V
low	27,489.05	100	2	QPSK	66/0	3.27	22	-18.73	-13	5.73	V
low	28,599.73	100	2	QPSK	66/0	-9.3	22	-31.3	-13	18.3	V
low	29,150.09	100	2	QPSK	66/0	-11.12	22	-33.12	-13	20.12	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
middle	25,991.53	100	2	QPSK	66/0	-22.15	22	-44.15	-13	31.15	H
middle	27,029.74	100	2	QPSK	66/0	-18.61	22	-40.61	-13	27.61	H
middle	27,195.81	100	2	QPSK	66/0	-16.57	22	-38.57	-13	25.57	H
middle	27,338.16	100	2	QPSK	66/0	-13.74	22	-35.74	-13	22.74	H
middle	27,480.51	100	2	QPSK	66/0	-15.96	22	-37.96	-13	24.96	H
middle	28,419.33	100	2	QPSK	66/0	-17.66	22	-39.66	-13	26.66	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
middle	26,155.23	100	2	QPSK	66/0	-11.04	22	-33.04	-13	20.04	V
middle	26,711.82	100	2	QPSK	66/0	-10.98	22	-32.98	-13	19.98	V
middle	27,268.41	100	2	QPSK	66/0	-6.29	22	-28.29	-13	15.29	V
middle	28,381.22	100	2	QPSK	66/0	-7.05	22	-29.05	-13	16.05	V
middle	28,937.86	100	2	QPSK	66/0	-9.68	22	-31.68	-13	18.68	V
middle	29,494.49	100	2	QPSK	66/0	-12.04	22	-34.04	-13	21.04	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	26,108.73	100	2	QPSK	66/0	-23.91	22	-45.91	-13	32.91	H
high	27,371.85	100	2	QPSK	66/0	-18.96	22	-40.96	-13	27.96	H
high	27,481.46	100	2	QPSK	66/0	-18.52	22	-40.52	-13	27.52	H
high	28,361.93	100	2	QPSK	66/0	-0.47	22	-22.47	-13	9.47	H
high	28,367.24	100	2	QPSK	66/0	-0.52	22	-22.52	-13	9.52	H
high	28,520.14	100	2	QPSK	66/0	-13.35	22	-35.35	-13	22.35	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	25,898.05	100	2	QPSK	66/0	-13.68	22	-35.68	-13	22.68	V
high	26,461.28	100	2	QPSK	66/0	-10.97	22	-32.97	-13	19.97	V
high	27,024.04	100	2	QPSK	66/0	-10.72	22	-32.72	-13	19.72	V
high	28,360.00	100	2	QPSK	66/0	4.92	22	-17.08	-13	4.08	V
high	28,712.60	100	2	QPSK	66/0	-5.67	22	-27.67	-13	14.67	V
high	29,275.99	100	2	QPSK	66/0	-13.76	22	-35.76	-13	22.76	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	25,946.45	100	3	QPSK	66/0	-20.49	22	-42.49	-13	29.49	H
low	26,926.77	100	3	QPSK	66/0	-18.54	22	-40.54	-13	27.54	H
low	27,084.30	100	3	QPSK	66/0	-14.14	22	-36.14	-13	23.14	H
low	27,271.26	100	3	QPSK	66/0	-7.26	22	-29.26	-13	16.26	H
low	27,362.83	100	3	QPSK	66/0	-0.66	22	-22.66	-13	9.66	H
low	27,480.51	100	3	QPSK	66/0	1.22	22	-20.78	-13	7.78	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	26,038.03	100	3	64QAM	66/0	-8.41	22	-30.41	-13	17.41	V
low	26,592.25	100	3	64QAM	66/0	-10.94	22	-32.94	-13	19.94	V
low	27,146.46	100	3	64QAM	66/0	-6.48	22	-28.48	-13	15.48	V
low	27,488.58	100	3	64QAM	66/0	3.17	22	-18.83	-13	5.83	V
low	28,808.11	100	3	64QAM	66/0	-9.52	22	-31.52	-13	18.52	V
low	29,362.33	100	3	64QAM	66/0	-11.2	22	-33.2	-13	20.2	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
middle	26,009.56	100	3	QPSK	66/0	-21.01	22	-43.01	-13	30.01	H
middle	27,072.44	100	3	QPSK	66/0	-18.7	22	-40.7	-13	27.7	H
middle	27,327.72	100	3	QPSK	66/0	-14.38	22	-36.38	-13	23.38	H
middle	27,378.02	100	3	QPSK	66/0	-12.19	22	-34.19	-13	21.19	H
middle	27,478.14	100	3	QPSK	66/0	-12.52	22	-34.52	-13	21.52	H
middle	28,369.17	100	3	QPSK	66/0	-14.66	22	-36.66	-13	23.66	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
middle	26,202.68	100	3	64QAM	66/0	-10.59	22	-32.59	-13	19.59	V
middle	26,760.22	100	3	64QAM	66/0	-10.37	22	-32.37	-13	19.37	V
middle	27,317.76	100	3	64QAM	66/0	-5.94	22	-27.94	-13	14.94	V
middle	28,432.35	100	3	64QAM	66/0	-5.18	22	-27.18	-13	14.18	V
middle	28,989.95	100	3	64QAM	66/0	-9.51	22	-31.51	-13	18.51	V
middle	29,547.55	100	3	64QAM	66/0	-11.47	22	-33.47	-13	20.47	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	26,108.73	100	3	QPSK	66/0	-23.1	22	-45.1	-13	32.1	H
high	27,371.85	100	3	QPSK	66/0	-18.7	22	-40.7	-13	27.7	H
high	27,482.41	100	3	QPSK	66/0	-18.12	22	-40.12	-13	27.12	H
high	28,365.79	100	3	QPSK	66/0	-1.03	22	-23.03	-13	10.03	H
high	28,446.34	100	3	QPSK	66/0	-2.07	22	-24.07	-13	11.07	H
high	28,524.48	100	3	QPSK	66/0	-3.82	22	-25.82	-13	12.82	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	26,461.28	100	3	64QAM	66/0	-9.17	22	-31.17	-13	18.17	V
high	27,024.04	100	3	64QAM	66/0	-9.36	22	-31.36	-13	18.36	V
high	28,368.68	100	3	64QAM	66/0	3.1	22	-18.9	-13	5.9	V
high	28,713.08	100	3	64QAM	66/0	-5.14	22	-27.14	-13	14.14	V
high	29,275.99	100	3	64QAM	66/0	-12.25	22	-34.25	-13	21.25	V
high	29,839.38	100	3	64QAM	66/0	-13.19	22	-35.19	-13	22.19	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	25,946.45	100	4	64QAM	66/0	-22.11	22	-44.11	-13	31.11	H
low	26,936.73	100	4	64QAM	66/0	-18.5	22	-40.5	-13	27.5	H
low	27,090.00	100	4	64QAM	66/0	-15.06	22	-37.06	-13	24.06	H
low	27,232.82	100	4	64QAM	66/0	-4.76	22	-26.76	-13	13.76	H
low	27,380.87	100	4	64QAM	66/0	0.2	22	-21.8	-13	8.8	H
low	27,488.58	100	4	64QAM	66/0	1.21	22	-20.79	-13	7.79	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	26,038.03	100	4	QPSK	66/0	-7.62	22	-29.62	-13	16.62	V
low	26,592.25	100	4	QPSK	66/0	-9.88	22	-31.88	-13	18.88	V
low	27,146.46	100	4	QPSK	66/0	-5.88	22	-27.88	-13	14.88	V
low	27,473.87	100	4	QPSK	66/0	2.28	22	-19.72	-13	6.72	V
low	28,807.62	100	4	QPSK	66/0	-9.72	22	-31.72	-13	18.72	V
low	29,361.85	100	4	QPSK	66/0	-12.66	22	-34.66	-13	21.66	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
middle	26,027.59	100	4	64QAM	66/0	-21.94	22	-43.94	-13	30.94	H
middle	26,976.59	100	4	64QAM	66/0	-19.51	22	-41.51	-13	28.51	H
middle	27,383.71	100	4	64QAM	66/0	-9.06	22	-31.06	-13	18.06	H
middle	27,486.20	100	4	64QAM	66/0	-3.02	22	-25.02	-13	12.02	H
middle	28,360.48	100	4	64QAM	66/0	-5.47	22	-27.47	-13	14.47	H
middle	28,415.47	100	4	64QAM	66/0	-8.09	22	-30.09	-13	17.09	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
middle	26,249.66	100	4	QPSK	66/0	-8.75	22	-30.75	-13	17.75	V
middle	26,808.14	100	4	QPSK	66/0	-9.03	22	-31.03	-13	18.03	V
middle	27,366.63	100	4	QPSK	66/0	-4.75	22	-26.75	-13	13.75	V
middle	27,489.53	100	4	QPSK	66/0	-3.47	22	-25.47	-13	12.47	V
middle	28,360.48	100	4	QPSK	66/0	-2.38	22	-24.38	-13	11.38	V
middle	28,483.48	100	4	QPSK	66/0	-5.22	22	-27.22	-13	14.22	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	26,108.73	100	4	64QAM	66/0	-23.16	22	-45.16	-13	32.16	H
high	27,367.58	100	4	64QAM	66/0	-18.12	22	-40.12	-13	27.12	H
high	27,486.20	100	4	64QAM	66/0	-16.15	22	-38.15	-13	25.15	H
high	28,377.85	100	4	64QAM	66/0	-1.57	22	-23.57	-13	10.57	H
high	28,488.79	100	4	64QAM	66/0	-2.2	22	-24.2	-13	11.2	H
high	28,602.14	100	4	64QAM	66/0	-6.47	22	-28.47	-13	15.47	H

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
high	26,461.28	100	4	QPSK	66/0	-9.55	22	-31.55	-13	18.55	V
high	27,024.04	100	4	QPSK	66/0	-10.58	22	-32.58	-13	19.58	V
high	28,369.17	100	4	QPSK	66/0	1.76	22	-20.24	-13	7.24	V
high	28,554.39	100	4	QPSK	66/0	-1.07	22	-23.07	-13	10.07	V
high	28,712.60	100	4	QPSK	66/0	-5.48	22	-27.48	-13	14.48	V
high	29,275.99	100	4	QPSK	66/0	-12.34	22	-34.34	-13	21.34	V

B.3 Frequency Stability

B.3.1 Summary

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block.

B.3.2 Test Procedure

According to Clause 5.6 in ANSI C63.26-2015 and 2.1055

For temperature variation

1. Measure the carrier frequency at room temperature (20 °C to provide a reference)
2. At 10 °C intervals of temperatures between −30 °C and +50 °C
3. While maintaining a constant temperature inside the environmental chamber, turn on the EUT and allow sufficient time for the EUT temperature to stabilize

For supply voltage variation

1. The EUT was placed in a temperature chamber at 20 °C
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.

B.3.3 Measurement results

n261, QPSK

Frequency Error vs Temperature

OPERATING FREQUENCY: 27924960000Hz

POWER （VDC）	TEMP (℃)	Freq. Dev (Hz)	Relative Freq. Dev (Hz)
48	+20(REF)	11490	0
	-30	12450	960
	-20	11813	323
	-10	11640	150
	+0	11384	-106
	+10	11400	-90
	+30	11386	-104
	+40	12135	645
	+50	12620	1130
40.8	+20	3943	-7547
55.2	+20	8449	-3041

When the frequency stability limit is stated as being sufficient such that the fundamental emissions stay within the authorized bands of operation, a reference point shall be established at the applicable unwanted emissions limit using a RBW equal to the RBW required by the unwanted emissions specification of the applicable regulatory standard. These reference points measured using the lowest and highest channel of operation shall be identified as fL and fH respectively. The worst-case frequency offset determined in the above methods shall be added or subtracted from

the values of fL and fH and the resulting frequencies must remain within the band.
The worst-case frequency offset is -7547Hz. The worst-case frequency offset added the values of fL and fH and the resulting frequencies are 27.550GHz and 28.299GHz. They remain within the band 27.500GHz to 28.350GHz.

B.4 Occupied Bandwidth

B.4.1 Summary

occupied bandwidth (OBW) as the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean power is equal to 0.5% of the total mean power radiated by a given emission shall be measured.

No limit is applicable, the results are for reporting only.

B.4.2 Minimum Measurement Distance Evaluation

According to KDB842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). We calculate the far-field boundary and the test distance meet the requirement of standard.

For fundamental or out-of-band emissions the largest far-field distance of either the EUT antenna or measurement antenna shall be used. For spurious emissions the far-field distance will be based on the measurement antenna.

	Antenna	D(mm)	λ(mm)	far-field boundary (m)	Measurement distance(m)
18-40GHz	EUT mmW Antenna	39	39	0.81	3

B.4.3 Test Procedure

According to Clause 5.4 in ANSI C63.26-2015 and 2.1049

1. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of 1.5 × OBW is sufficient).
2. Set RBW = 1% to 5% of the anticipated OBW
3. Set VBW ≥ 3×RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize

Test Note:

The average EIRP reported below is calculated by:

EIRP (dBm) = Spectrum Analyzer Channel Power Level(dBm) - Antenna Gain(dBi) + Cable Loss(dB) + 20log(F) + 20log(D) - 27.56

Where:

F: frequency (MHz)

D: Distance(m) = 3m

B.4.4 Measurement results

The plots are showed in Annex D.3.

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	middle	100	1	94.67	H
					94.66	V
261	16AQM	middle	100	1	94.65	H
					94.65	V
261	64QAM	middle	100	1	94.64	H
					94.66	V

The high channel and low channel measure the OBW only with the worst modulation

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	low	100	1	94.69	H
					94.77	V
261	QPSK	high	100	1	94.62	H
					94.47	V

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	middle	100	2	193.89	H
					194.12	V
261	16AQM	middle	100	2	193.85	H
					194.20	V
261	64QAM	middle	100	2	193.86	H
					194.14	V

The high channel and low channel measure the OBW only with the worst modulation

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	low	100	2	194.01	H
					194.17	V
261	QPSK	high	100	2	194.44	H
					193.82	V

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	middle	100	3	292.94	H
					293.06	V
261	16AQM	middle	100	3	292.89	H
					293.07	V
261	64QAM	middle	100	3	292.93	H
					293.04	V

The high channel and low channel measure the OBW only with the worst modulation

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	low	100	3	293.24	H
	64QAM	low	100	3	293.85	V
261	QPSK	high	100	3	293.88	H
	64QAM	high	100	3	293.69	V

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	QPSK	middle	100	4	393.38	H
					393.51	V
261	16AQM	middle	100	4	393.41	H
					393.71	V
261	64QAM	middle	100	4	393.40	H
					393.64	V

The high channel and low channel measure the OBW only with the worst modulation

Band	Modulation	Channel	Bandwidth	CCs	OBW (MHz)	Pol.
261	64QAM	low	100	4	393.37	H
	QPSK	low	100	4	394.28	V
261	64QAM	high	100	4	393.61	H
	QPSK	high	100	4	393.56	V

B.5 Band Edge Compliance

B.5.1 Summary

All modes of operation were investigated and the worst case configuration results are reported in this section.

30.203 (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be −5 dBm/MHz or lower.

B.5.2 Minimum Measurement Distance Evaluation

According to KDB842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). We calculate the far-field boundary and the test distance meet the requirement of standard.

For fundamental or out-of-band emissions the largest far-field distance of either the EUT antenna or measurement antenna shall be used. For spurious emissions the far-field distance will be based on the measurement antenna.

	Antenna	D(mm)	λ(mm)	far-field boundary (m)	Measurement distance(m)
18-40GHz	EUT mmW Antenna	39	39	0.81	3

B.5.3 Test Procedure

According to Clause 5.7 in ANSI C63.26-2015 and Clause 4.4 in KDB 842590 D01 v01r02

1. Start and stop frequency were set such that both upper and lower band edges are measured.
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Set RBW=1MHz, VBW=3MHz
4. Set number of measurement points in sweep ≥ 2×span/RBW
5. Set Detector = RMS
6. Set Sweep time = auto-couple
7. Trace average at least 100 traces in power averaging (rms) mode
8. The trace was allowed to stabilize

Test Note:

According to 4.4.2.5 in KDB 842590 D01 v01r02, the conducted power is calculated by:

Conducted Power Level (dBm) at any frequency/BW = Measured EIRP (dBm)/BW – EUT antenna Gain (dBi)

The average EIRP reported below is calculated by:

EIRP (dBm) = Spectrum Analyzer Level (dBm) - Antenna Gain (dBi) + Cable Loss (dB) + 20log (F) + 20log(D) - 27.56

Where: F: frequency (MHz), D: Distance(m)

B.5.4 Measurement result

n261

Note: The measured EIRP levels are below the TRP limit and the early exit condition is met.

Note: The channel with the maximum power was chosen.

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(GHz)	(MHz)		(GHz)		(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	27.5	100	1	QPSK	66/0	3.08	22	-18.92	-5	13.92	H
low	27.5	100	1	QPSK	66/0	5.99	22	-16.01	-5	11.01	V
low	27.49	100	1	QPSK	66/0	0.01	22	-21.99	-13	8.99	H
low	37.49	100	1	QPSK	66/0	1.96	22	-20.04	-13	7.04	V
high	28.35	100	1	QPSK	66/0	-0.35	22	-22.35	-5	17.35	H
high	28.35	100	1	QPSK	66/0	3.09	22	-18.91	-5	13.91	V
high	28.36	100	1	QPSK	66/0	-2.76	22	-24.76	-13	11.76	H
high	28.36	100	1	QPSK	66/0	0.62	22	-21.38	-13	8.38	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(GHz)	(MHz)		(GHz)		(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	27.5	100	2	QPSK	66/0	2.79	22	-19.21	-5	14.21	H
low	27.5	100	2	QPSK	66/0	6.15	22	-15.85	-5	10.85	V
low	27.49	100	2	QPSK	66/0	-2.28	22	-24.28	-13	11.28	H
low	37.49	100	2	QPSK	66/0	-0.39	22	-22.39	-13	9.39	V
high	28.35	100	2	QPSK	66/0	-3.11	22	-25.11	-5	20.11	H
high	28.35	100	2	QPSK	66/0	0.90	22	-21.10	-5	16.10	V
high	28.36	100	2	QPSK	66/0	-5.54	22	-27.54	-13	14.54	H
high	28.36	100	2	QPSK	66/0	0.01	22	-21.99	-13	8.99	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(GHz)	(MHz)		(GHz)		(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	27.5	100	3	QPSK	66/0	-1.91	22	-23.91	-5	18.91	H
low	27.5	100	3	QPSK	66/0	-0.11	22	-22.11	-5	17.11	V
low	27.49	100	3	QPSK	66/0	-2.73	22	-24.73	-13	11.73	H
low	37.49	100	3	QPSK	66/0	-1.38	22	-23.38	-13	10.38	V
high	28.35	100	3	QPSK	66/0	-4.41	22	-26.41	-5	21.41	H
high	28.35	100	3	QPSK	66/0	-0.26	22	-22.26	-5	17.26	V
high	28.36	100	3	QPSK	66/0	-5.93	22	-27.93	-13	14.93	H
high	28.36	100	3	QPSK	66/0	-1.41	22	-23.41	-13	10.41	V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(GHz)	(MHz)		(GHz)		(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	27.5	100	4	64QAM	66/0	-3.49	22	-25.49	-5	20.49	H
low	27.5	100	4	QPSK	66/0	-1.87	22	-23.87	-5	18.87	V
low	27.49	100	4	64QAM	66/0	-3.54	22	-25.54	-13	12.54	H
low	37.49	100	4	QPSK	66/0	-2.24	22	-24.24	-13	11.24	V
high	28.35	100	4	64QAM	66/0	-4.94	22	-26.94	-5	21.94	H
high	28.35	100	4	QPSK	66/0	-1.38	22	-23.38	-5	18.38	V
high	28.36	100	4	64QAM	66/0	-6.49	22	-28.49	-13	15.49	H
high	28.36	100	4	QPSK	66/0	-2.66	22	-24.66	-13	11.66	V

Annex C: Calibration Certificates List

NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
Spectrum Analyzer	FSW67	103290	R&S	2024-11-28	1 year

中国计量科学研究院

校 准 证 书

Calibration Certificate

证书编号 XDxh2023-02367
Certificate No.

客户名称 Client	中国泰尔实验室
器具名称 Instrument	信号和频谱分析仪 Signal and Spectrum Analyzer
型号/规格 Type/Model	FSW67
出厂编号 Serial No.	103290
生产厂商 Manufacturer	Rohde & Schwarz
联络信息 Contact Information	北京市海淀区花园北路 52 号
校准日期 Date of Calibration	2023 年 11 月 29 日
接收日期 Date of Receiving	2023 年 11 月 27 日

批准人：
Approved by

中国计量科学研究院 校准专用章

发布日期：2023 年 11 月 29 日
Date of Issue

地址：中国北京北三环东路 18 号
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传真：+86-10-64271948
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网址：http://www.nim.ac.cn
Website
电子邮箱：kehufuwu@nim.ac.cn
Email

2019-jz-R0520

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NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
Antenna	VULB 9163	482	SCHWARZBECK	2025-01-03	2 years

中国计量科学研究院
National Institute of Metrology, China

校 准 证 书
Calibration Certificate

证书编号 XDtx2023-00017
Certificate No.

客户名称 Client: 中国泰尔实验室 / China Telecommunication Technology Labs
器具名称 Instrument: 复合天线 / Hybrid Antenna
型号/规格 Type/Model: VULB9163
出厂编号 Serial No.: 482
生产厂商 Manufacturer: Schwarzbeck
联络信息 Contact Information: 北京市海淀区花园北路 52 号 / No. 52 Huayuan North Road, Haidian District, Beijing
校准日期 Date of Calibration: 2023 年 01 月 04 日
接收日期 Date of Receiving: 2022 年 11 月 15 日

批准人：
Approved by

中国计量科学研究院 校准专用章

发布日期：2023 年 01 月 18 日
Date of Issue

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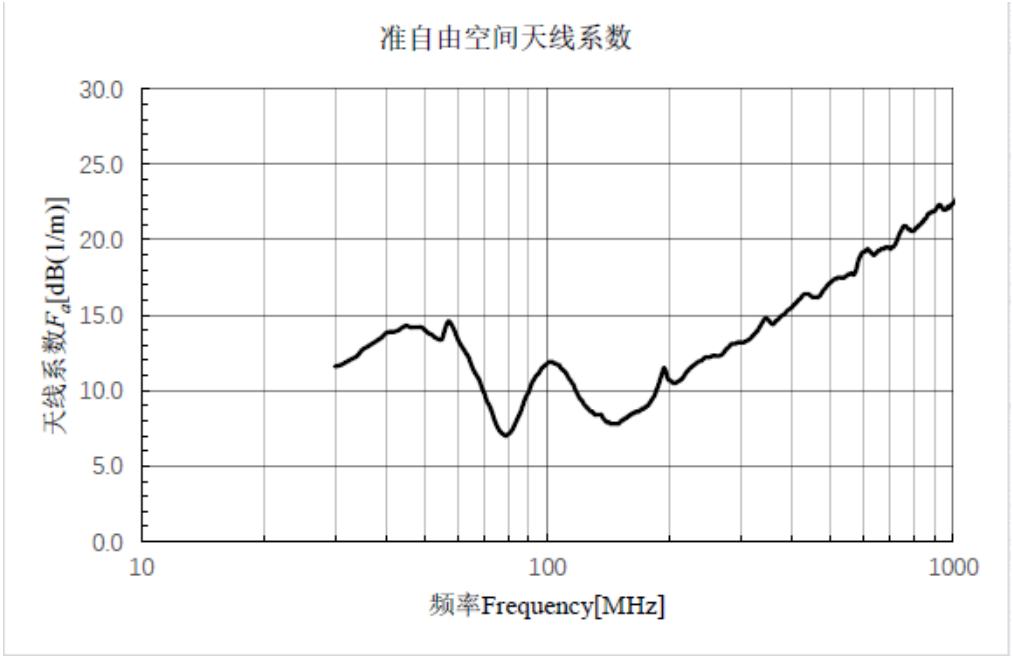

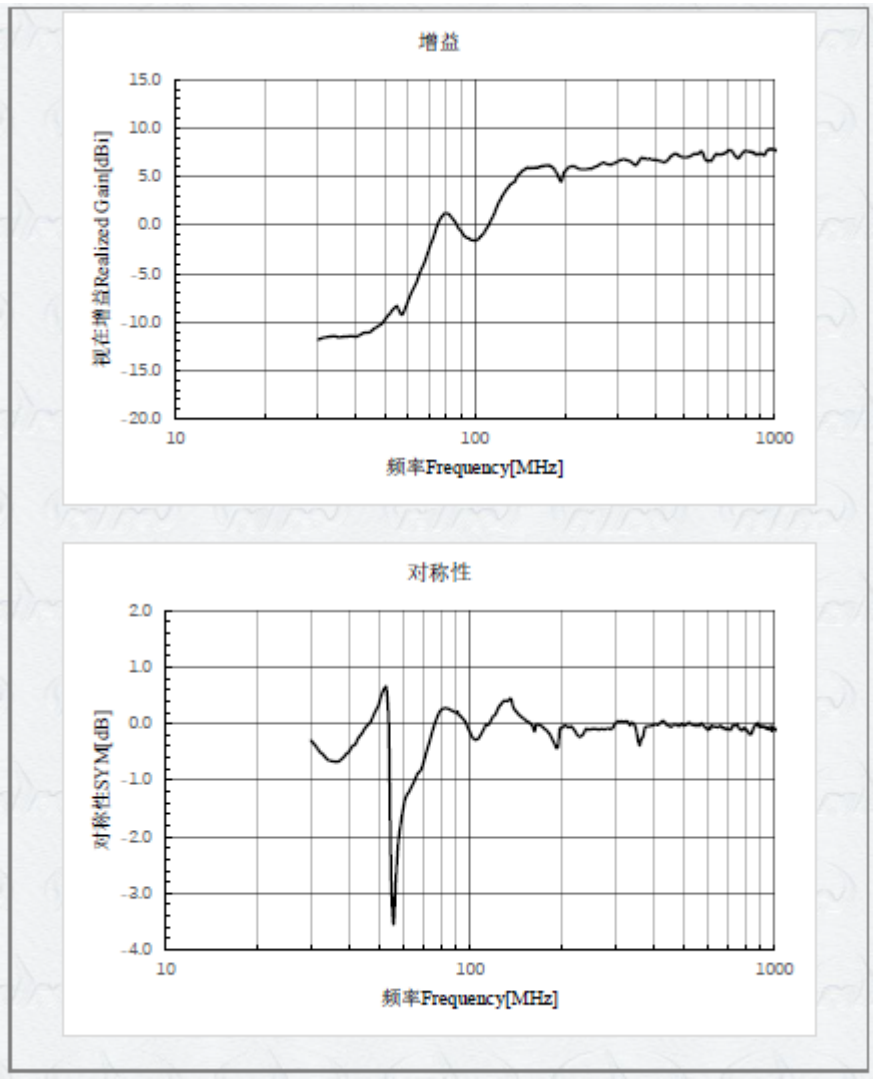

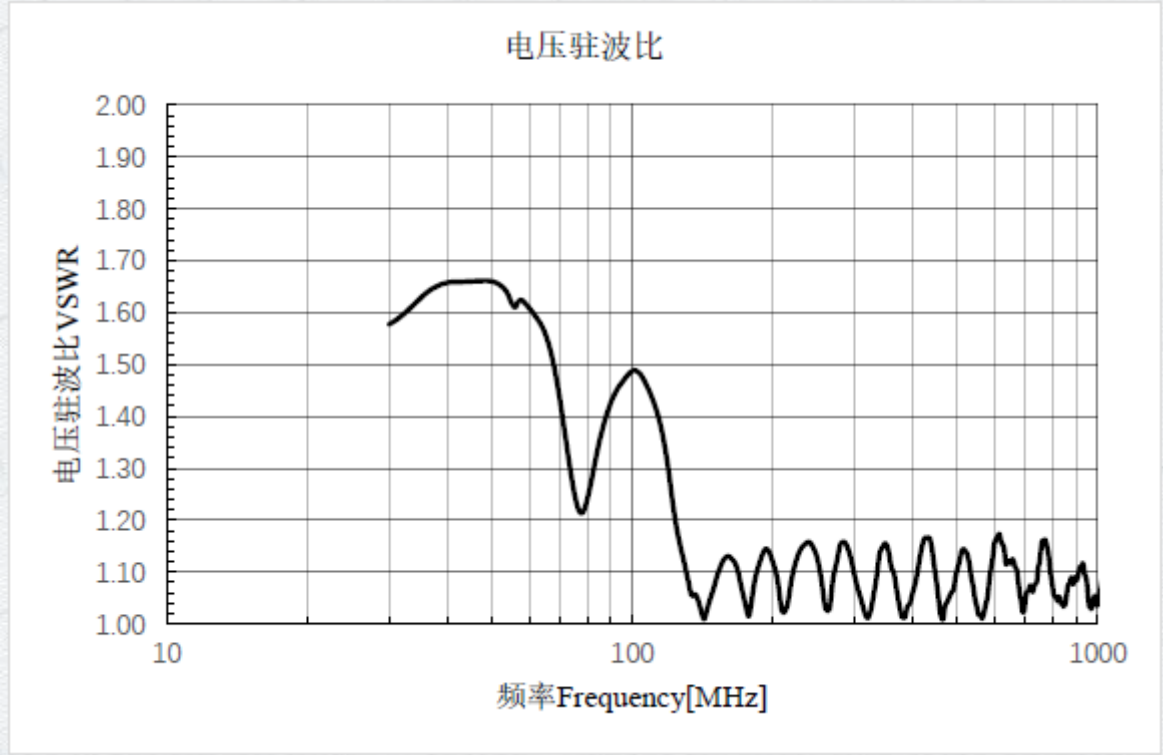

NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
Antenna	3115	00146404	ETS-Lindgren	2024-05-05	1 year

中国计量科学研究院
National Institute of Metrology, China

CNAS CALIBRATION CNAS L0500

校 准 证 书
Calibration Certificate

证书编号 XDtx2023-00676
Certificate No.

客户名称 Client	中国泰尔实验室
器具名称 Instrument	喇叭天线
型号/规格 Type/Model	3115
出厂编号 Serial No.	00146404
生产厂商 Manufacturer	/
联络信息 Contact Information	北京市海淀区花园北路 52 号
校准日期 Date of Calibration	2023-05-06
接收日期 Date of Receiving	2023-04-26

批准人：刘涛 Approved by

中国计量科学研究院 校准专用章

发布日期：2023 年 05 月 11 日
Date of Issue

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2019-jz-R0520

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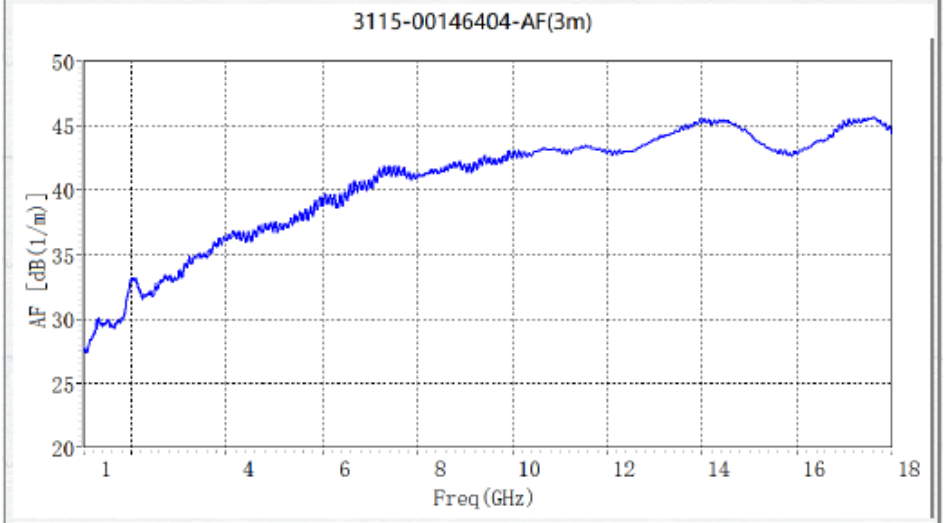
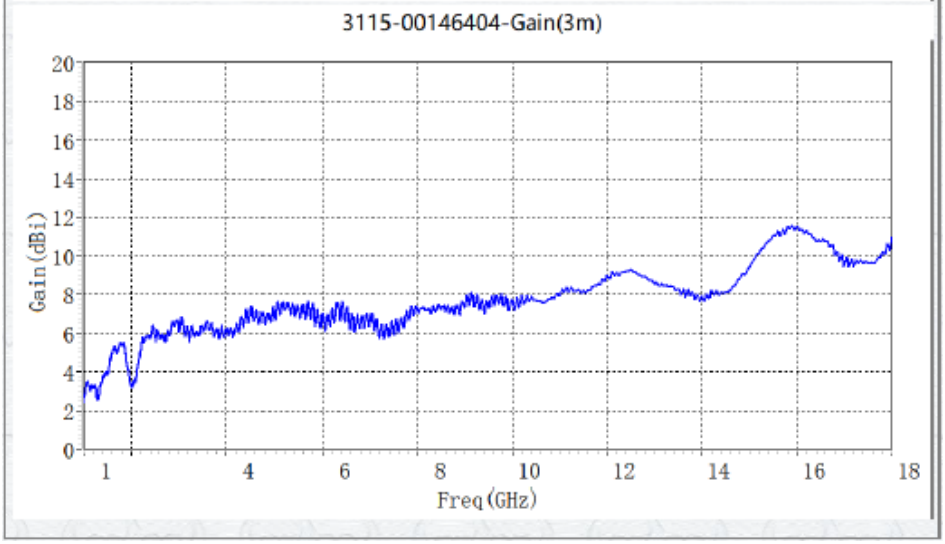
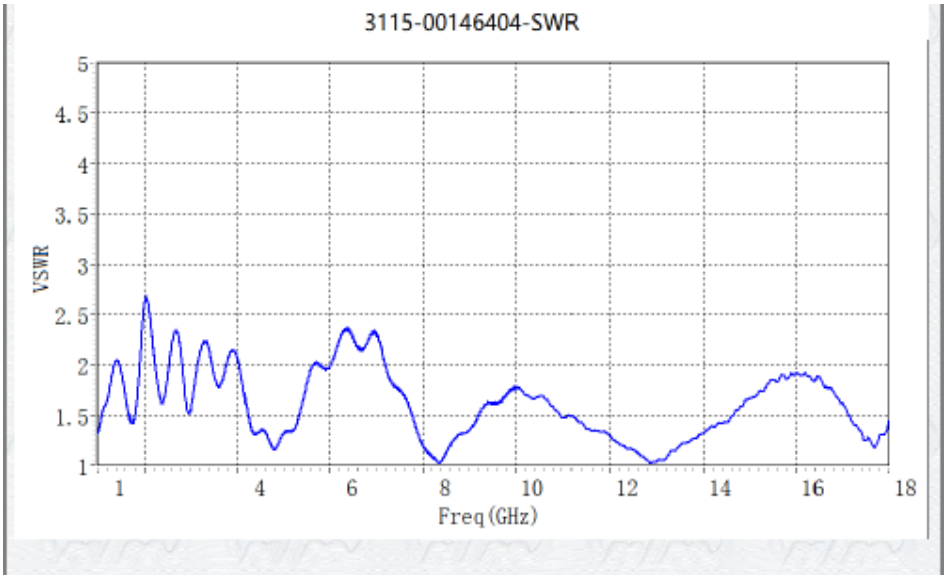
校准曲线
Calibration Curve







NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
Antenna	3116	2661	ETS-Lindgren	2025-01-30	2 years

中国计量科学研究院

校准证书

Calibration Certificate

证书编号 XDtx2023-00074
Certificate No.

客户名称 Client	中国泰尔实验室
器具名称 Instrument	喇叭天线
型号/规格 Type/Model	3116
出厂编号 Serial No.	2661
生产厂商 Manufacturer	/
联络信息 Contact Information	北京市海淀区花园北路 52 号
校准日期 Date of Calibration	2023-01-31
接收日期 Date of Receiving	2023-01-10

批准人：
Approved by

中国计量科学研究院 校准专用章

发布日期：2023 年 02 月 07 日
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2019-jz-R0520

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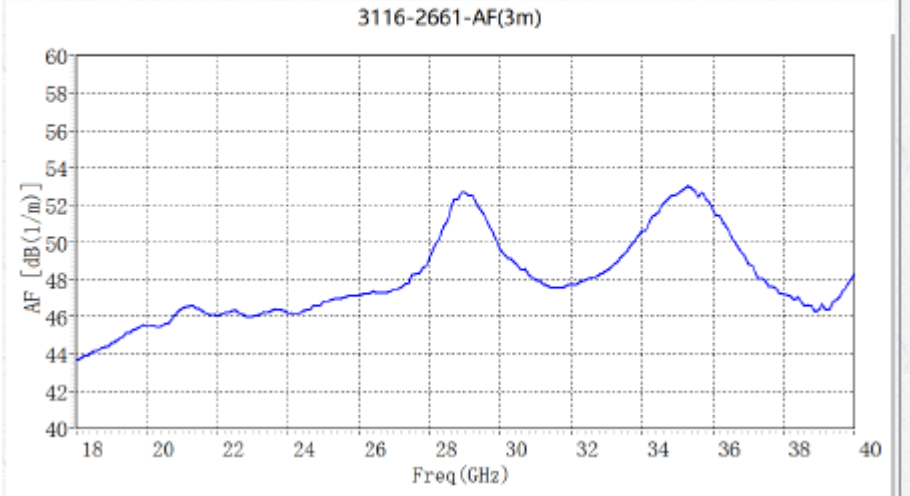
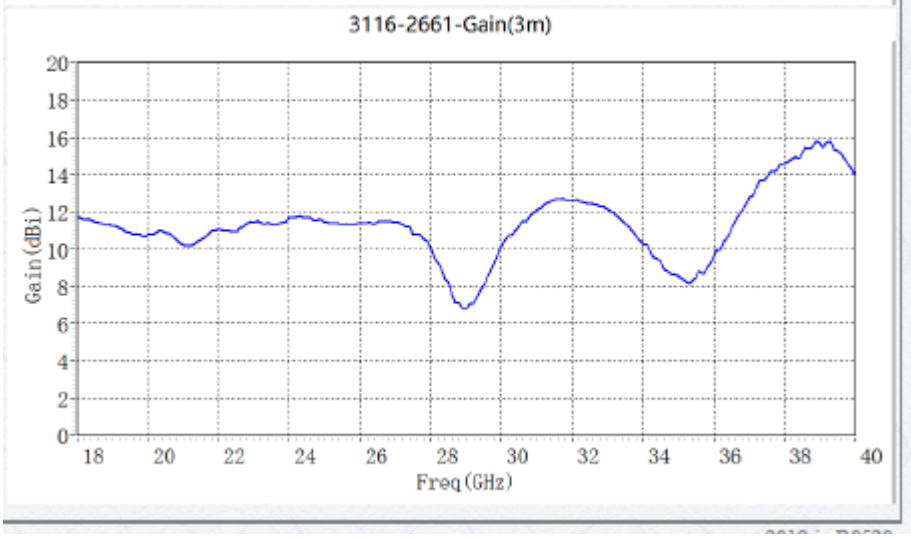
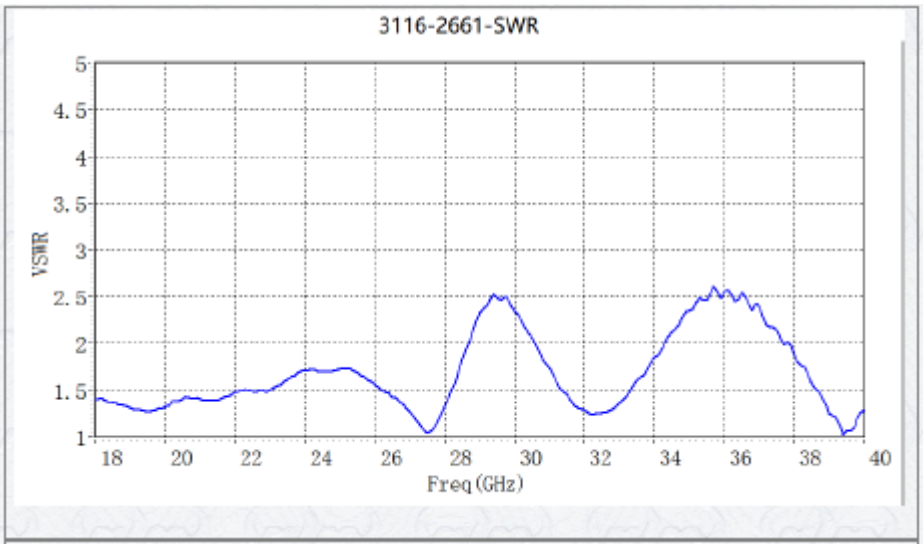
校准曲线
Calibration Curve







NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Upconverter(50GHz-75GHz)	SMZ75	101309	R&S	2025-01-14	4 years

中国计量科学研究院

CNAS 中国认可 国际互认 校准 CALIBRATION CNAS L0502

校 准 证 书

证书编号 XDxh2021-10059

客户名称 中国泰尔实验室

器具名称 SMZ75 倍频源

型号/规格 SMZ75

出厂编号 101309

生产厂商 Rohde & Schwarz

联络信息 北京市海淀区花园北路 52 号

校准日期 2021-01-15

接收日期 2021-01-08

批准人：

中国计量科学研究院 校准专用章

发布日期： 2021 年 03 月 16 日

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网址：http://www.nim.ac.cn 电子邮箱：kehufuwu@nim.ac.cn

2019-jz-R0520

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NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Upconverter(75GHz-110GHz)	SMZ110	101357	R&S	2025-01-14	4 years

中国计量科学研究院

校 准 证 书

证书编号 XDxh2021-10060

客户名称 中国泰尔实验室

器具名称 SMZ110 倍频源

型号/规格 SMZ110

出厂编号 101357

生产厂商 Rohde & Schwarz

联络信息 北京市海淀区花园北路 52 号

校准日期 2021-01-15

接收日期 2021-01-08

批准人：

中国计量科学研究院 校准专用章

发布日期： 2021 年 03 月 16 日

地址：北京北三环东路 18 号 邮编：100029

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2019-jz-R0520

第1页共4页

NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
(downconverter)Harmonic Mixer(60GHz-90GHz)	FS-Z90	101655	R&S	2025-01-14	4 years

中国计量科学研究院

校 准 证 书

证书编号 XDxh2021-10057

客户名称 中国泰尔实验室

器具名称 FS-Z90 混频器

型号/规格 FS-Z90

出厂编号 101655

生产厂商 Rohde & Schwarz

联络信息 北京市海淀区花园北路 52 号

校准日期 2021-01-15

接收日期 2021-01-08

批准人：

中国计量科学研究院 校准专用章

发布日期： 2021 年 01 月 20 日

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2019-jz-R0520

第1页共4页

NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
(downconverter)Harmonic Mixer(75GHz-110GHz)	FS-Z110	101463	R&S	2025-01-14	4 years

中国计量科学研究院

校 准 证 书

证书编号 XDxh2021-10058

客户名称 中国泰尔实验室

器具名称 FS-Z110 混频器

型号/规格 FS-Z110

出厂编号 101463

生产厂商 Rohde & Schwarz

联络信息 北京市海淀区花园北路 52 号

校准日期 2021-01-15

接收日期 2021-01-08

批准人：

中国计量科学研究院 校准专用章

发布日期： 2021 年 01 月 20 日

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2019-jz-R0520

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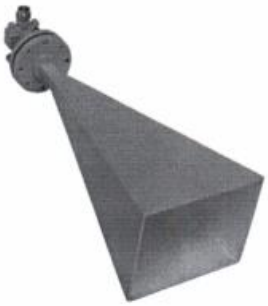
NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Standard Gain Horn （40GHz-60GHz）	LB-19-25	J202024086	A-INFO	/	/

A-INFO 英联微波

LB-19-25
40.0 - 60.0GHz 标准增益喇叭天线

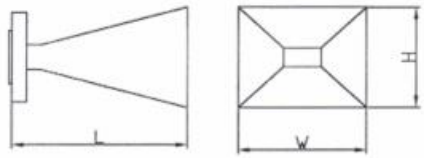
技术指标



频率(GHz)	A 型, 波导输出	40.0 - 60.0
	C 型, 2.4mm-50K 输出	40.0 - 50.0
	C 型, 1.85mm-50K 输出	40.0 - 60.0
增益(dB)	25 典型值	
驻波	1.6 最大值	
3dB 波束宽度(°)	10 典型值	
波导型号	BJ500(WR19)	
材料	铜	
输出形式	A 型 FUGP500	
	C 型 2.4mm-50K 或 1.85mm-50K	
尺寸(mm) 宽 x 高 x 长	A 型, 波导输出	49x41x130
	C 型, 2.4mm-50K 输出	49x41x155
	C 型, 1.85mm-50K 输出	49x41x157
净重(Kg)	A 型, 波导输出	约 0.15
	C 型, 2.4mm-50K 输出	约 0.18
	C 型, 1.85mm-50K 输出	约 0.18

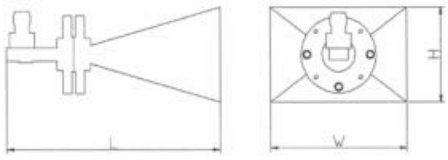
外形图 (尺寸: mm)

A 型



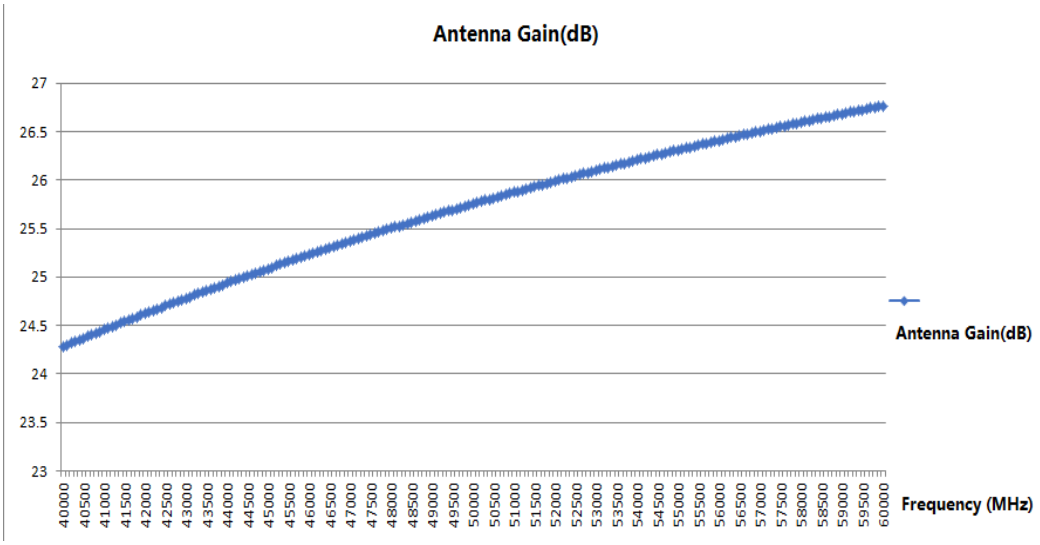
宽 x 高 x 长: 49x41x130

C 型



宽 x 高 x 长: 49x41x157

英联微波
北京 电话: 010-6266-7326 或 010-6266-7327 传真: 010-6266-7379 网址:www.ainfoinc.com
成都 电话: 028-8519-2786 或 028-8519-3047 传真: 028-8519-3068 www.ainfoinc.cn

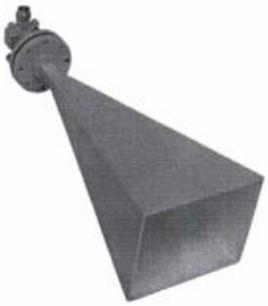


NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Standard Gain Horn （40GHz-60GHz）	LB-19-25	J202024087	A-INFO	/	/

A-INFO 英联微波

LB-19-25
40.0 - 60.0GHz 标准增益喇叭天线

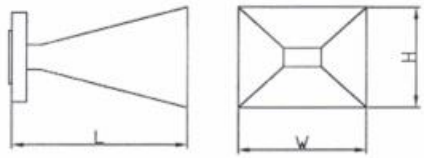
技术指标



频率(GHz)	A 型，波导输出	40.0 - 60.0
	C 型，2.4mm-50K 输出	40.0 - 50.0
	C 型，1.85mm-50K 输出	40.0 - 60.0
增益(dB)	25 典型值	
驻波	1.6 最大值	
3dB 波束宽度(°)	10 典型值	
波导型号	BJ500(WR19)	
材料	铜	
输出形式	A 型 FUGP500	
	C 型 2.4mm-50K 或 1.85mm-50K	
尺寸(mm) 宽 x 高 x 长	A 型，波导输出	49x41x130
	C 型，2.4mm-50K 输出	49x41x155
	C 型，1.85mm-50K 输出	49x41x157
净重(Kg)	A 型，波导输出	约 0.15
	C 型，2.4mm-50K 输出	约 0.18
	C 型，1.85mm-50K 输出	约 0.18

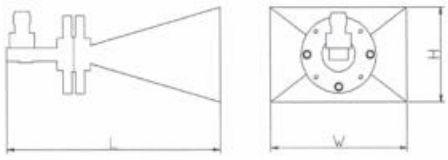
外形图 (尺寸: mm)

A 型

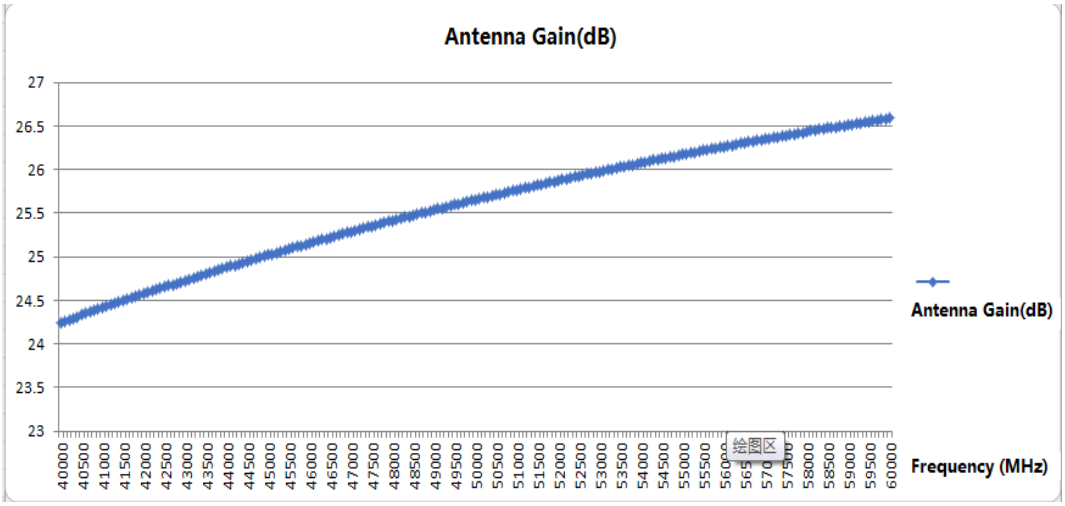


宽 x 高 x 长: 49x41x130

C 型



宽 x 高 x 长: 49x41x157



NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Standard Gain Horn （50GHz-75GHz）	LB-15-25	J202062019	A-INFO	/	/

A-INFO 英联微波

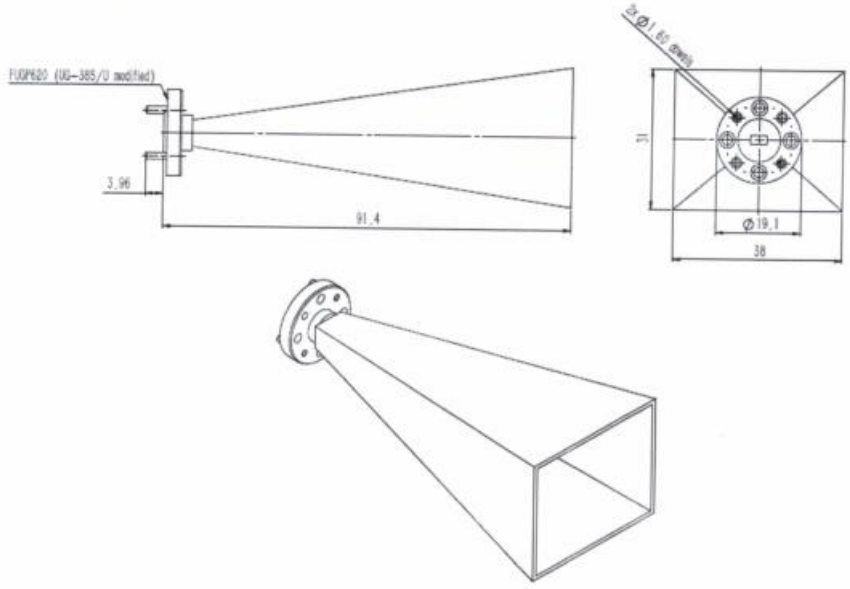
LB-15-25
50.0 - 75.0GHz 标准增益喇叭天线

技术指标

频率(GHz)	A 型, 波导输出	50.0 - 75.0
	C 型, 1.85mm-50K 输出	50.0 - 65.0
增益(dB)	25 典型值	
驻波	1.6 最大值	
3dB 波束宽度(°)	10 典型值	
波导型号	BJ620(WR15)	
材料	铜	
输出形式	A 型 FUGP620	
	C 型 1.85mm-50K	
尺寸(mm) 宽 x 高 x 长	A 型, 波导输出	38x31x91.4
	C 型, 1.85mm-50K 输出	38x32.6x118.4
净重(Kg)	A 型, 波导输出	约 0.07
	C 型, 1.85mm-50K 输出	约 0.10

外形图 (尺寸: mm)

A 型(FUGP620 法兰输出)

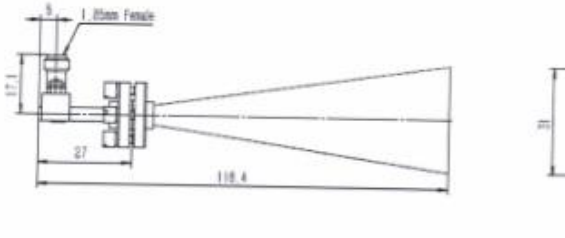


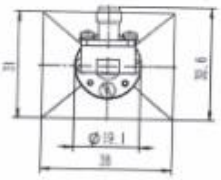
英联微波
北京 电话: 010-6266-7326 或 010-6266-7327 传真: 010-6266-7379 网址:www.ainfoinc.com
成都 电话: 028-8519-2786 或 028-8519-3047 传真: 028-8519-3068 www.ainfoinc.cn

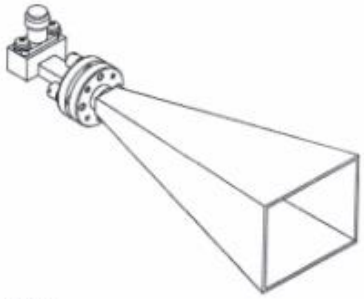
A-INFO 英联微波

LB-15-25
50.0 - 75.0GHz 标准增益喇叭天线

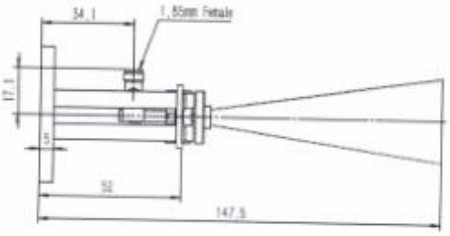
C 型(1.85mm-50K 输出)

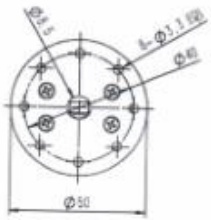


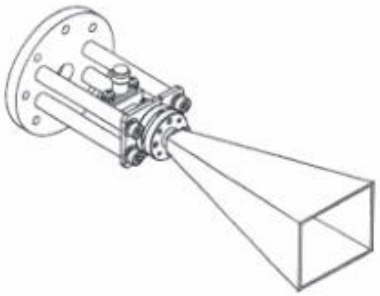




C 型(1.85mm-50K 输出，配圆形背夹)







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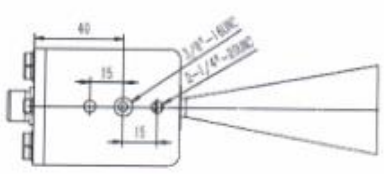
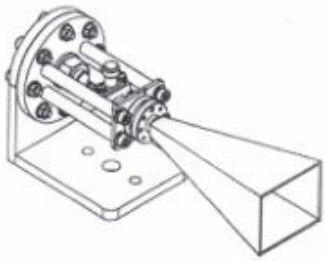
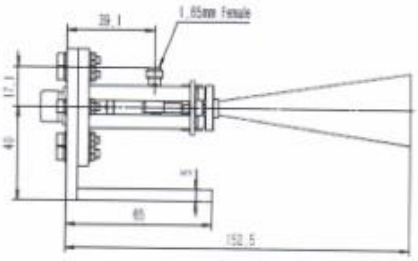
A-INFO 英联微波

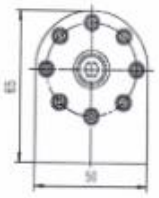
LB-15-25
50.0 - 75.0GHz 标准增益喇叭天线

C 型(1.85mm-50K 输出，配 L 形背夹)

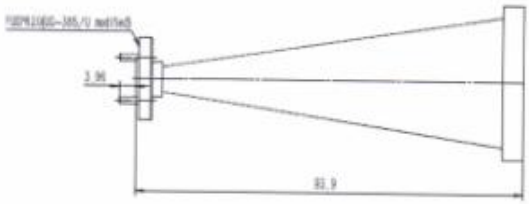


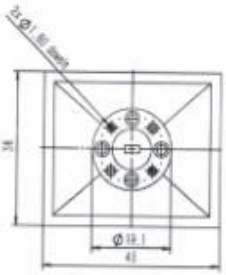


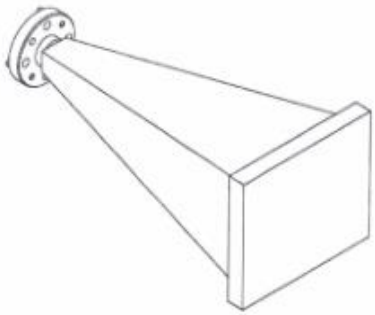




A 型(配天线罩)



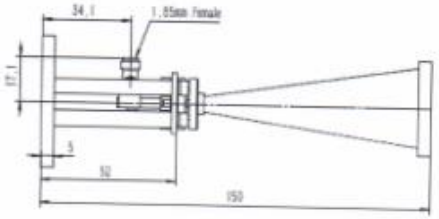


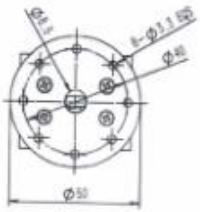


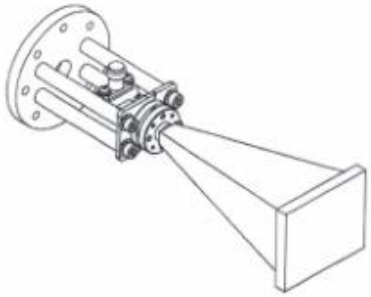
A-INFO 英联微波

LB-15-25
50.0 - 75.0GHz 标准增益喇叭天线

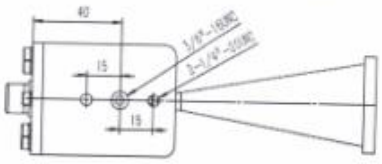
C 型(1.85mm-50K 输出，配圆形背夹和天线罩)

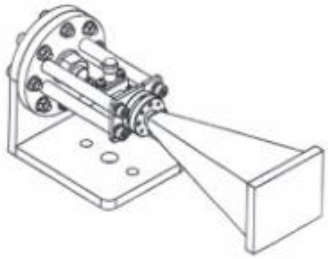


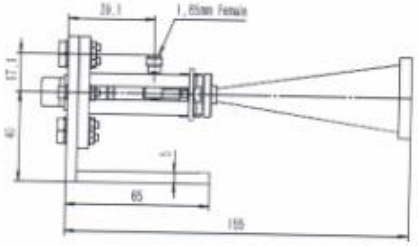


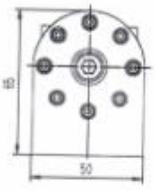


C 型(1.85mm-50K 输出，配 L 形背夹和天线罩)

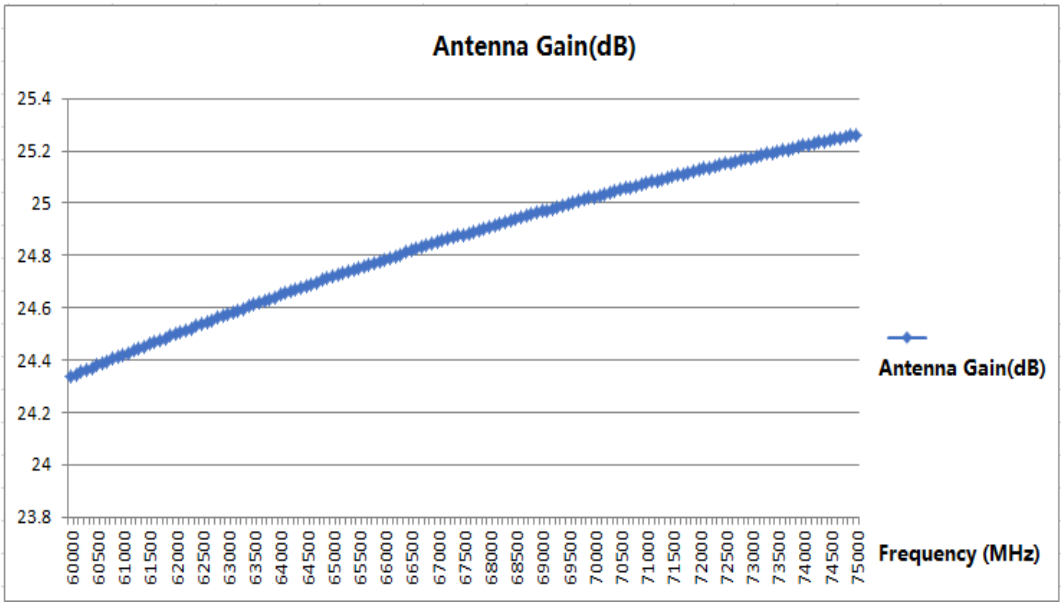








英联微波 第 4 页 / 共 8 页
北京 电话: 010-6266-7326 或 010-6266-7327 传真: 010-6266-7379 网址:www.ainfoinc.com
成都 电话: 028-8519-2786 或 028-8519-3047 传真: 028-8519-3068 www.ainfoinc.cn
测试报告仅供参考，详情请咨询: Sales@ainfoinc.com



NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Standard Gain Horn （60GHz-90GHz）	LB-12-25	J202062912	A-INFO	/	/

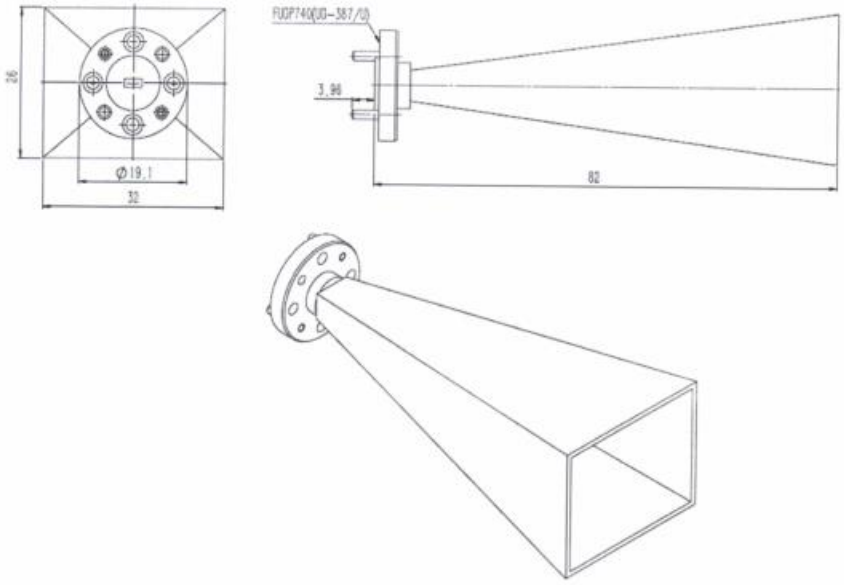
A-INFO 英联微波

LB-12-25
60.0 - 90.0GHz 标准增益喇叭天线

技术指标

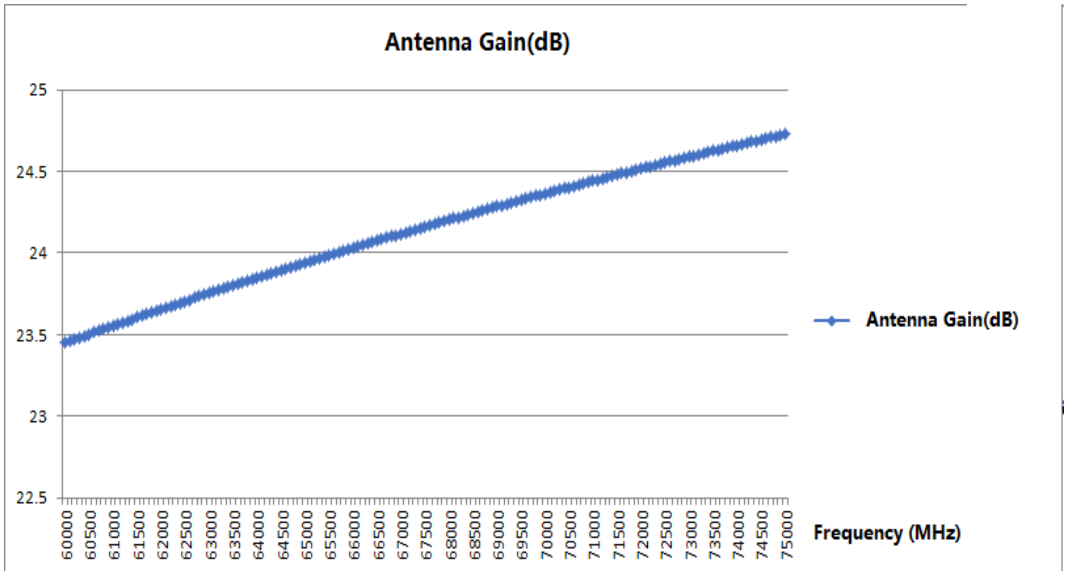
频率(GHz)	60.0 - 90.0
增益(dBi)	25 典型值
驻波	1.6 最大值
3dB 波束宽度(°)	10 典型值
波导型号	BJ740(WR12)
材料	铜
输出形式	A 型: FUGP740
尺寸(mm) 宽 x 高 x 长	A 型: 32x26x82
净重(Kg)	A 型: 约 0.05

外形图 (尺寸: mm)



英联微波

北京 电话: 010-6266-7326 或 010-6266-7327 传真: 010-6266-7379 网址:www.ainfoinc.com
成都 电话: 028-8519-2786 或 028-8519-3047 传真: 028-8519-3068 www.ainfoinc.cn



NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Standard Gain Horn （75GHz-110GHz）	LB-10-25	J202023231	A-INFO	/	/

A-INFO 英联微波

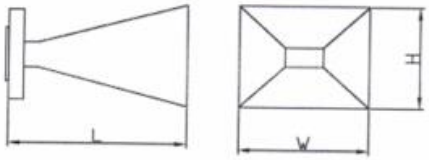
LB-10-25
75.0 - 110.0GHz 标准增益喇叭天线

技术指标

频率(GHz)	75.0 - 110.0
增益(dB)	25 典型值
驻波	1.6 最大值
3dB 波束宽度(°)	10 典型值
波导型号	BJ900(WR10)
材料	铜
输出形式	A 型: FUGP900
尺寸(mm) 宽 x 高 x 长	A 型: 28x22x70
净重(Kg)	A 型: 约 0.05

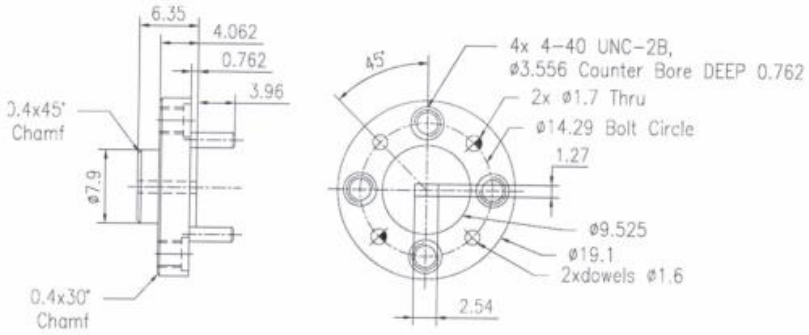
外形图 (尺寸: mm)

A 型



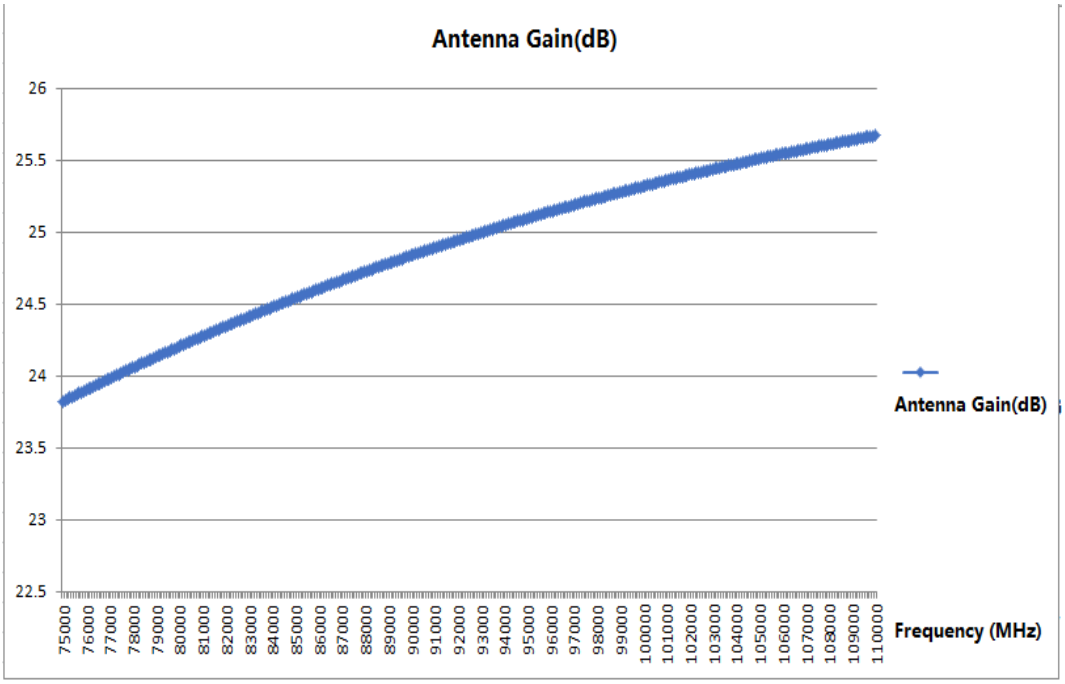
宽 x 高 x 长: 28x22x70

法兰外形图 (尺寸: mm)



FUGP900
(equivalent to UG-387/U modified)

英联微波
北京 电话: 010-6266-7326 或 010-6266-7327 传真: 010-6266-7379 网址:www.ainfoinc.com
成都 电话: 028-8519-2786 或 028-8519-3047 传真: 028-8519-3068 www.ainfoinc.cn



NAME	TYPE	series number	PRODUCER	CAL. DUE DATE	Cal. Interval
Standard Gain Horn （75GHz-110GHz）	LB-10-25	J202023232	A-INFO	/	/

A-INFO 英联微波

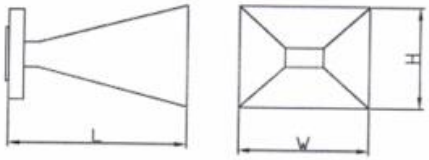
LB-10-25
75.0 - 110.0GHz 标准增益喇叭天线

技术指标

频率(GHz)	75.0 - 110.0
增益(dB)	25 典型值
驻波	1.6 最大值
3dB 波束宽度(°)	10 典型值
波导型号	BJ900(WR10)
材料	铜
输出形式	A 型: FUGP900
尺寸(mm) 宽 x 高 x 长	A 型: 28x22x70
净重(Kg)	A 型: 约 0.05

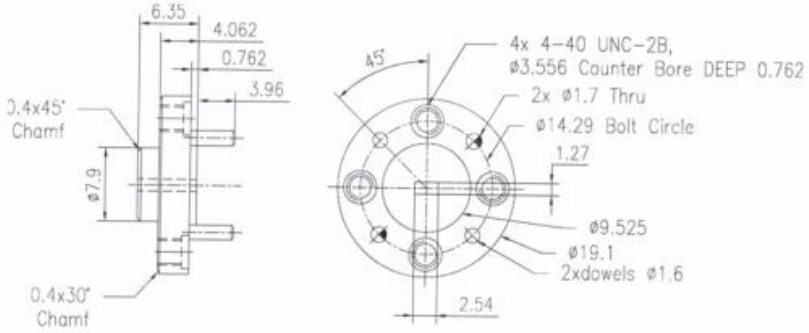
外形图 (尺寸: mm)

A 型



宽 x 高 x 长: 28x22x70

法兰外形图 (尺寸: mm)



FUGP900
(equivalent to UG-387/U modified)

英联微波
北京 电话: 010-6266-7326 或 010-6266-7327 传真: 010-6266-7379 网址:www.ainfoinc.com
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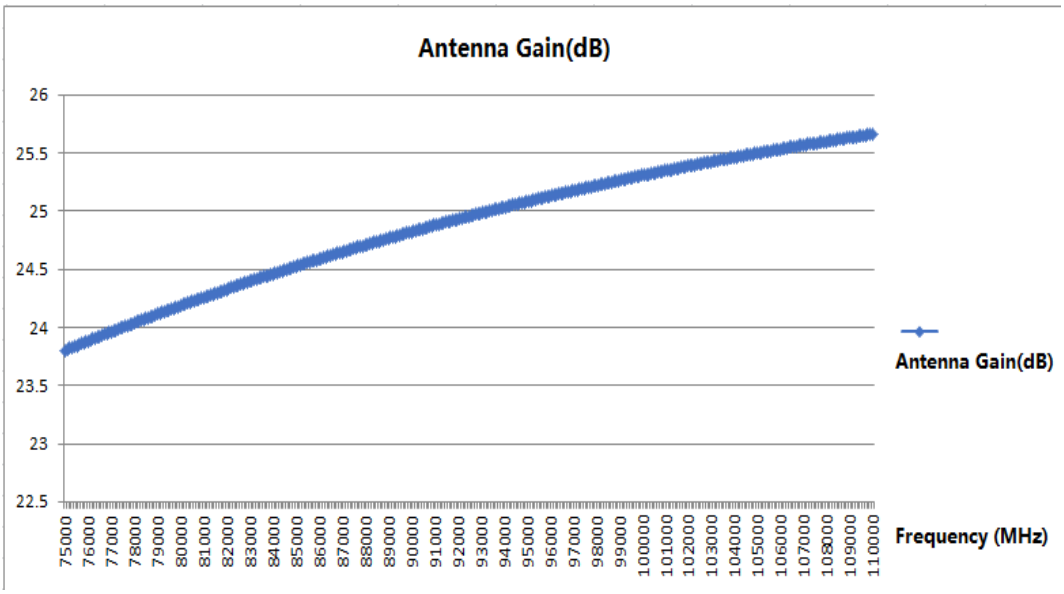
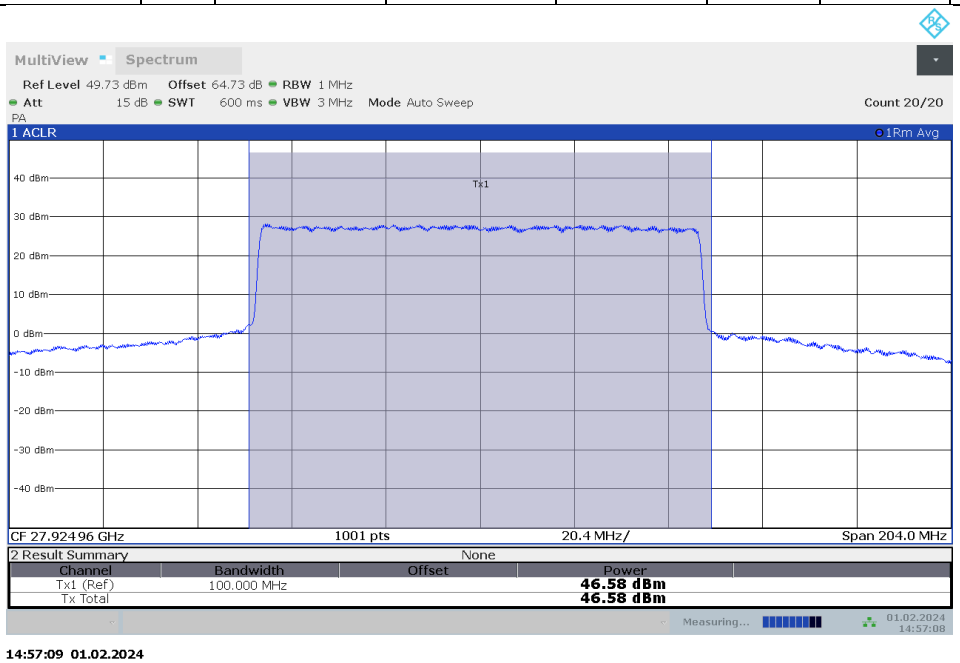


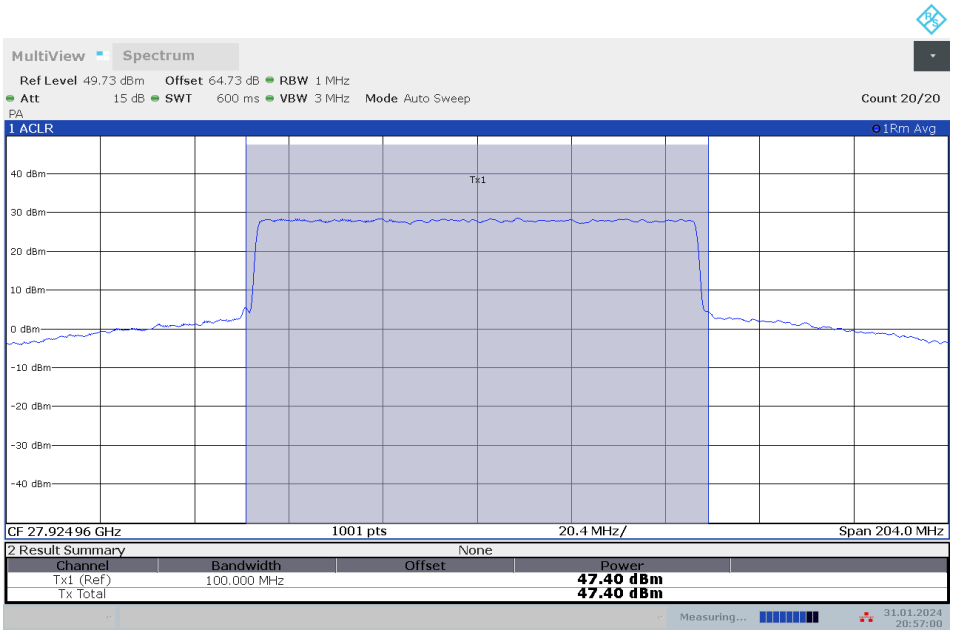
Annex D: Measurement Plots

D.1 Radiated Output Power Plots

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	1	QPSK	66/0	46.58	75	28.42	H
					47.40	75	27.60	V

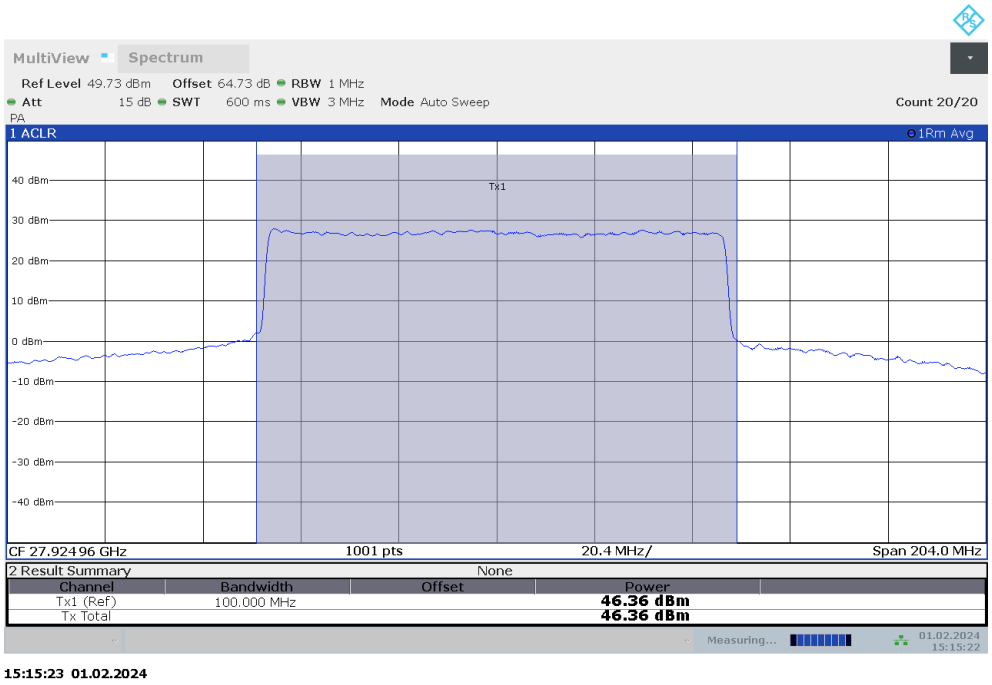


Radiated Output Power (n261, 1CC, 100MHz, FULL RB, QPSK, middle channel, H)

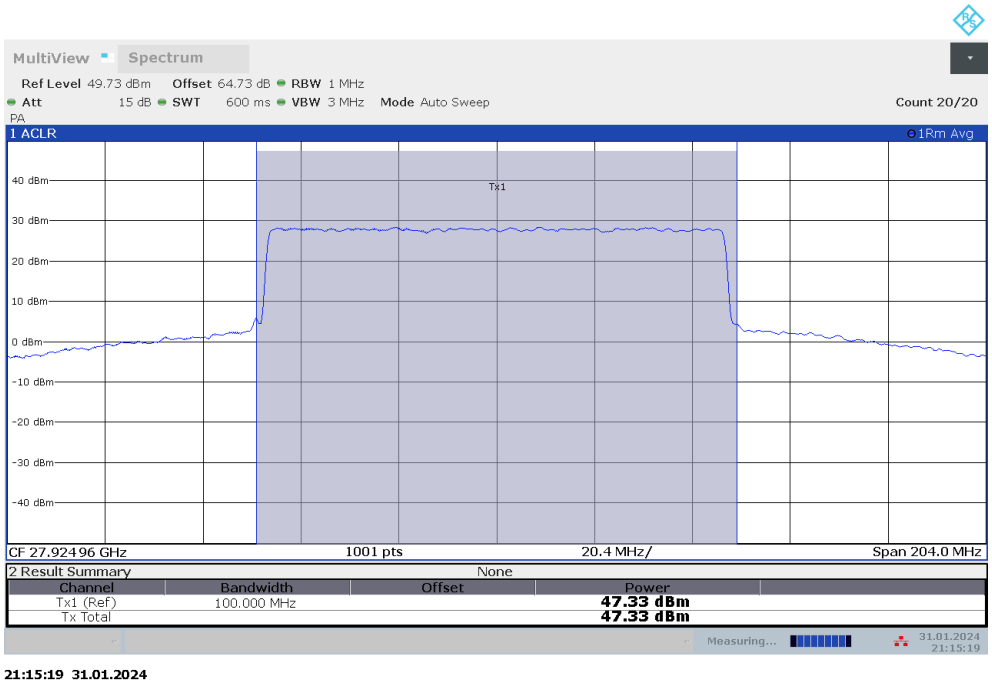


Radiated Output Power (n261, 1CC, 100MHz, FULL RB, QPSK, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	1	16QAM	66/0	46.36	75	28.64	H
					47.33	75	27.67	V

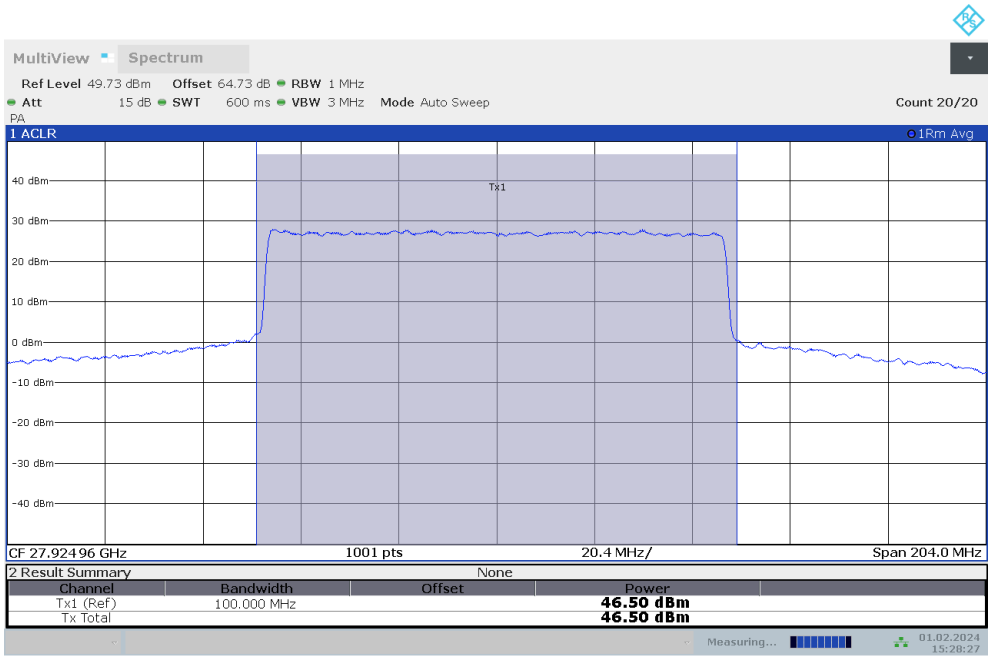


Radiated Output Power (n261, 1CC, 100MHz, FULL RB, 16QAM, middle channel, H)



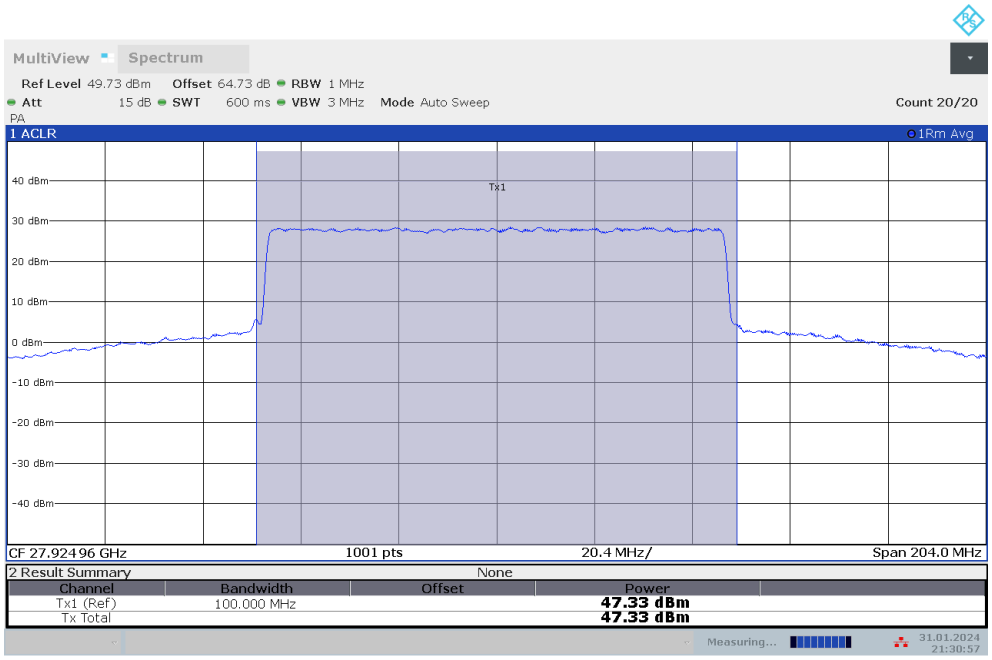
Radiated Output Power (n261, 1CC, 100MHz, FULL RB, 16QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	1	64QAM	66/0	46.50	75	28.50	H
					47.33	75	27.67	V



15:28:27 01.02.2024

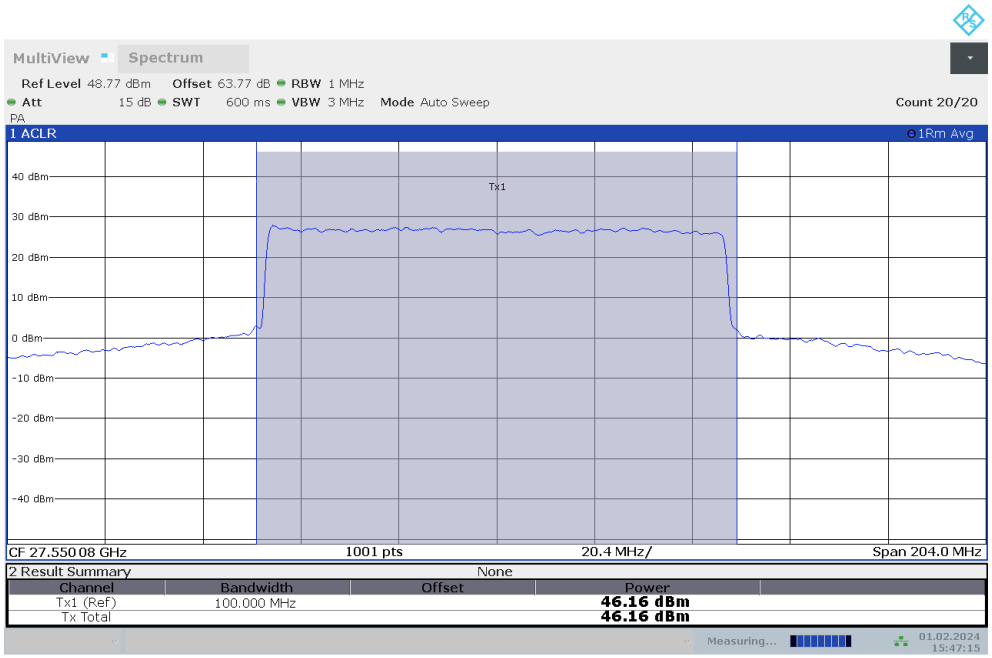
Radiated Output Power (n261, 1CC, 100MHz, FULL RB, 64QAM, middle channel, H)



21:30:57 31.01.2024

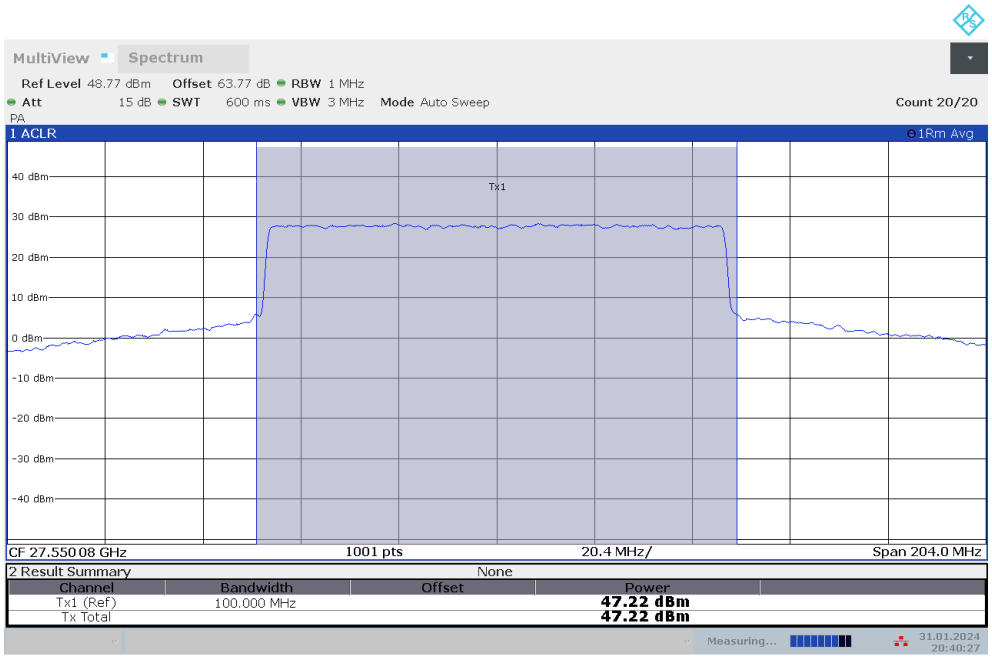
Radiated Output Power (n261, 1CC, 100MHz, FULL RB, 64QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	1	QPSK	66/0	46.16	75	28.84	H
					47.22	75	27.78	V



15:47:16 01.02.2024

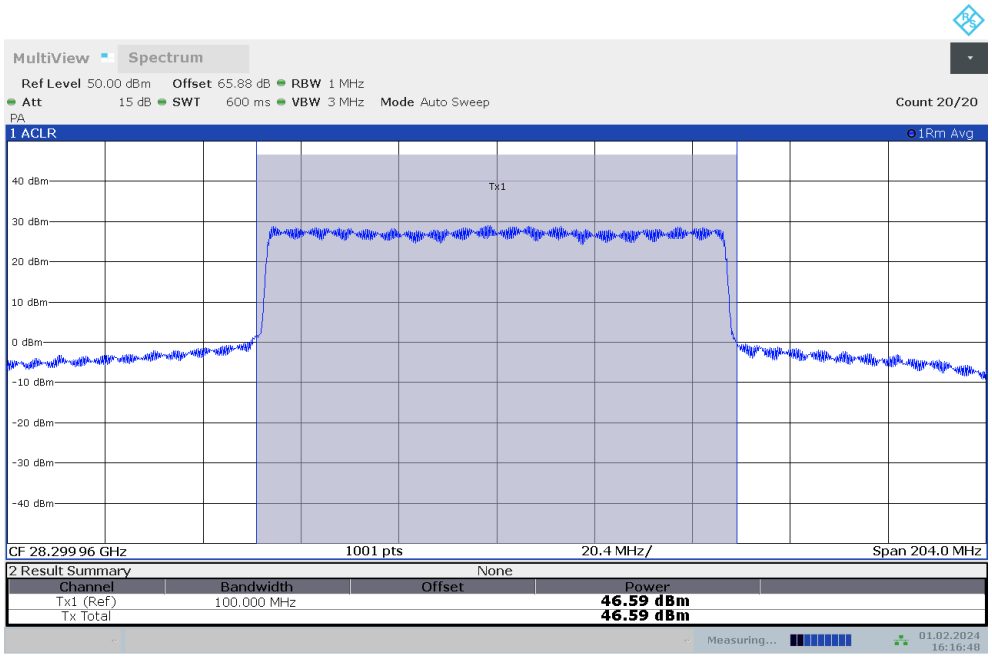
Radiated Output Power (n261, 1CC, 100MHz, FULL RB, QPSK, low channel, H)



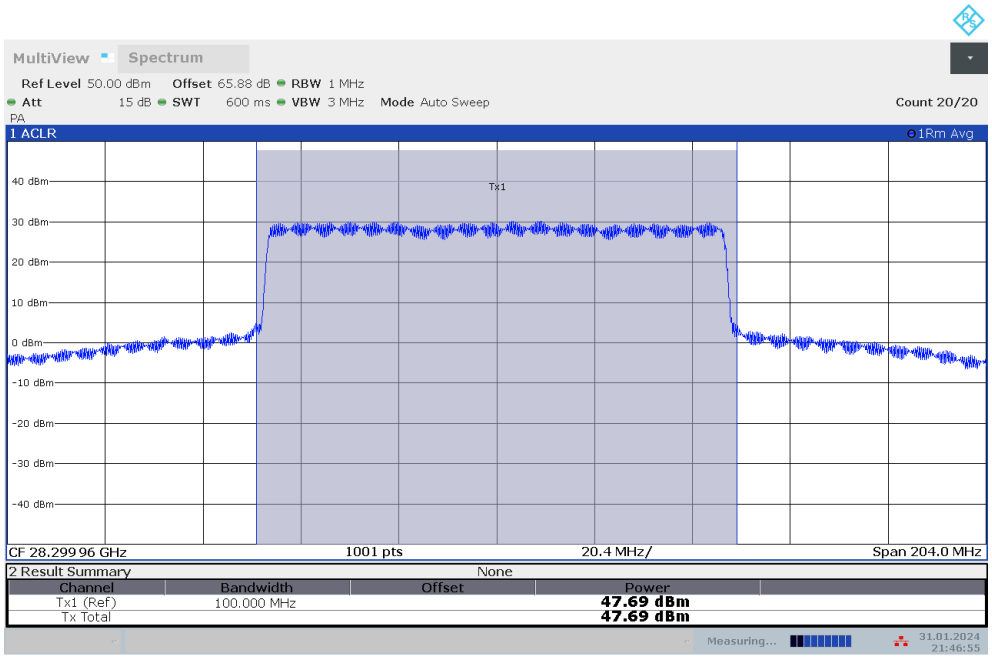
20:40:28 31.01.2024

Radiated Output Power (n261, 1CC, 100MHz, FULL RB, QPSK, low channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
High	100	1	QPSK	66/0	46.59	75	28.41	H
					47.69	75	27.31	V

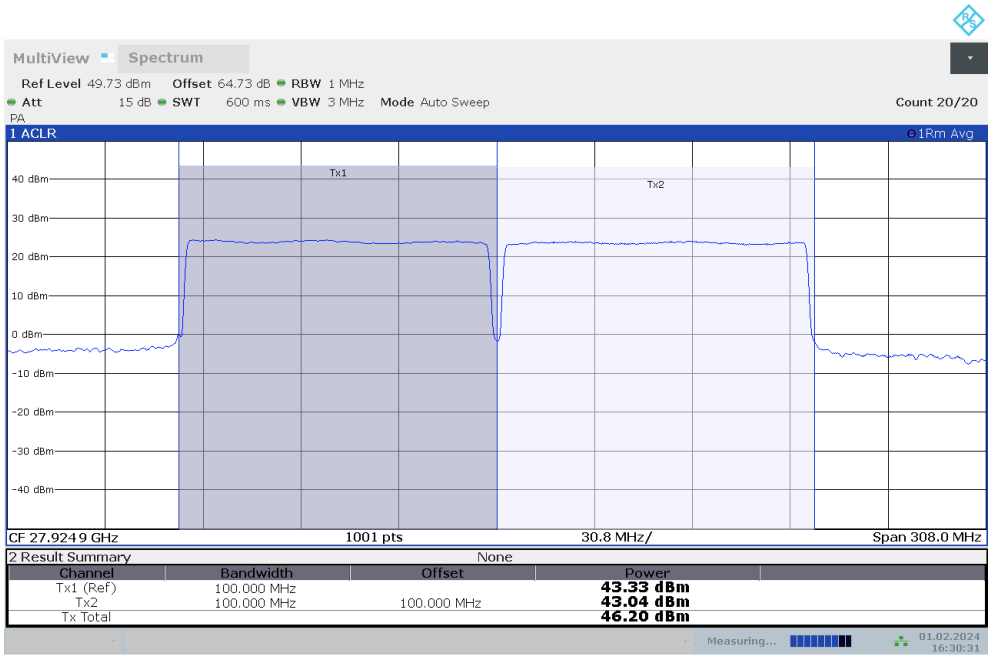


Radiated Output Power (n261, 1CC, 100MHz, FULL RB, QPSK, high channel, H)

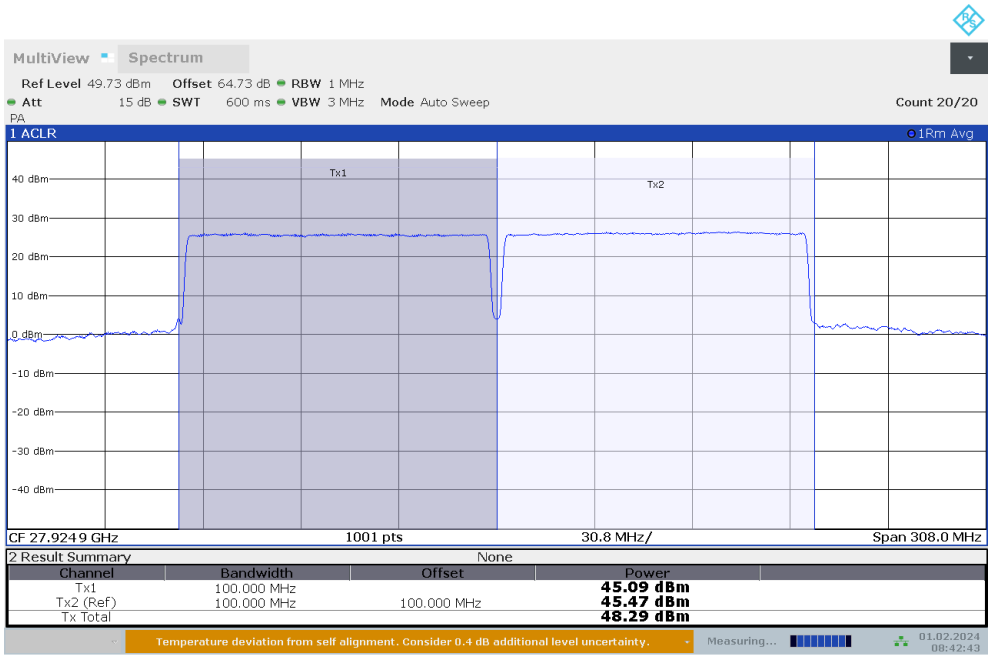


Radiated Output Power (n261, 1CC, 100MHz, FULL RB, QPSK, high channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	2	QPSK	132/0	46.20	75	28.80	H
					48.29	75	26.71	V

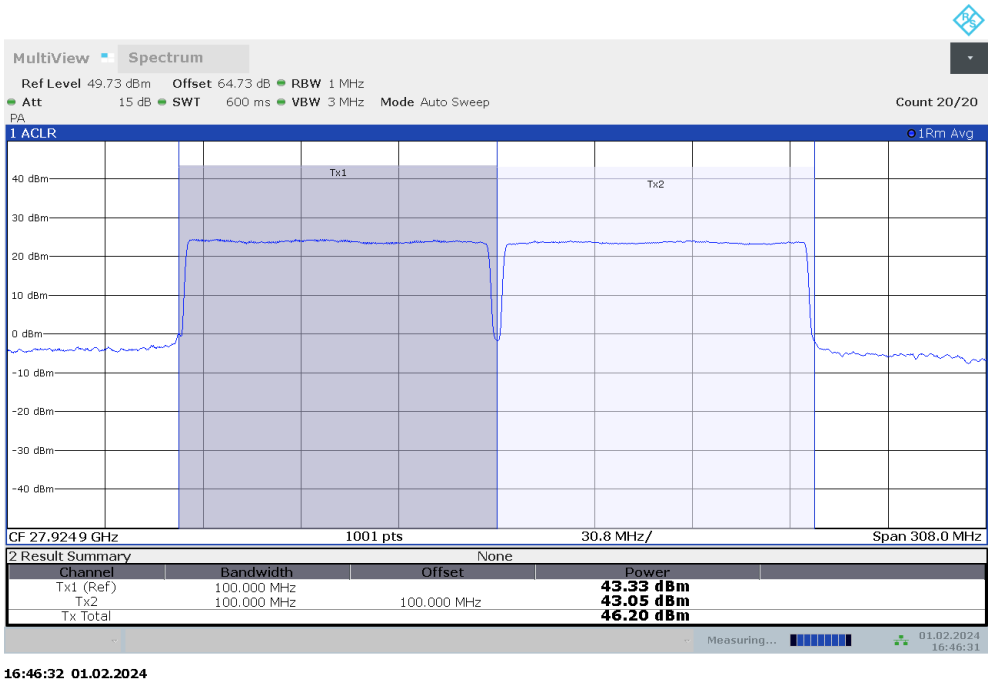


Radiated Output Power (n261, 2CC, 100MHz, FULL RB, QPSK, middle channel, H)



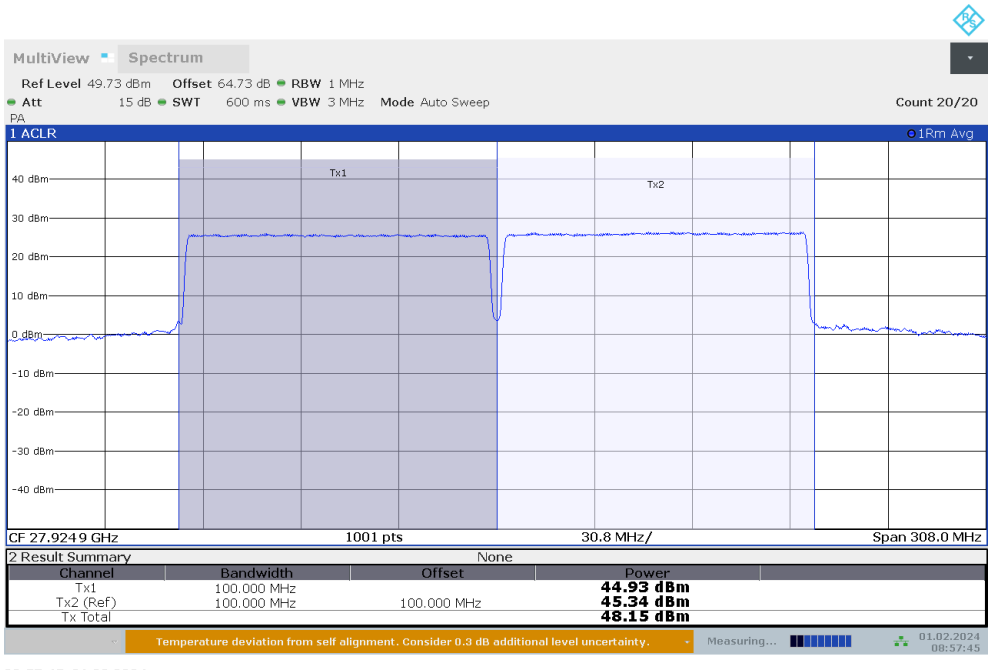
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, QPSK, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	2	16QAM	132/0	46.20	75	28.80	H
					48.15	75	26.85	V



16:46:32 01.02.2024

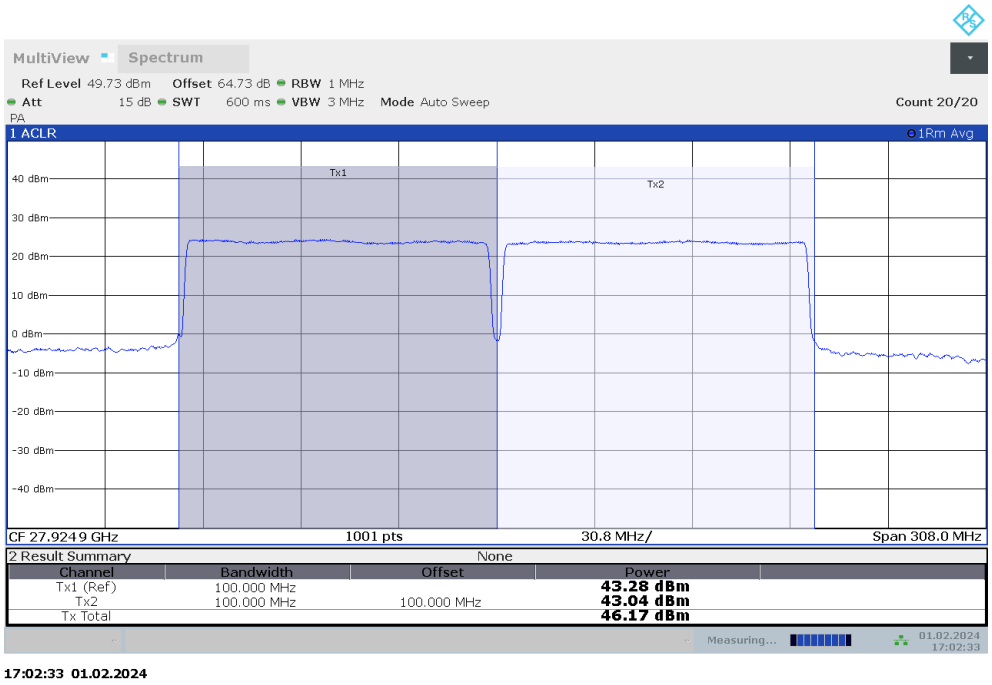
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, 16QAM, middle channel, H)



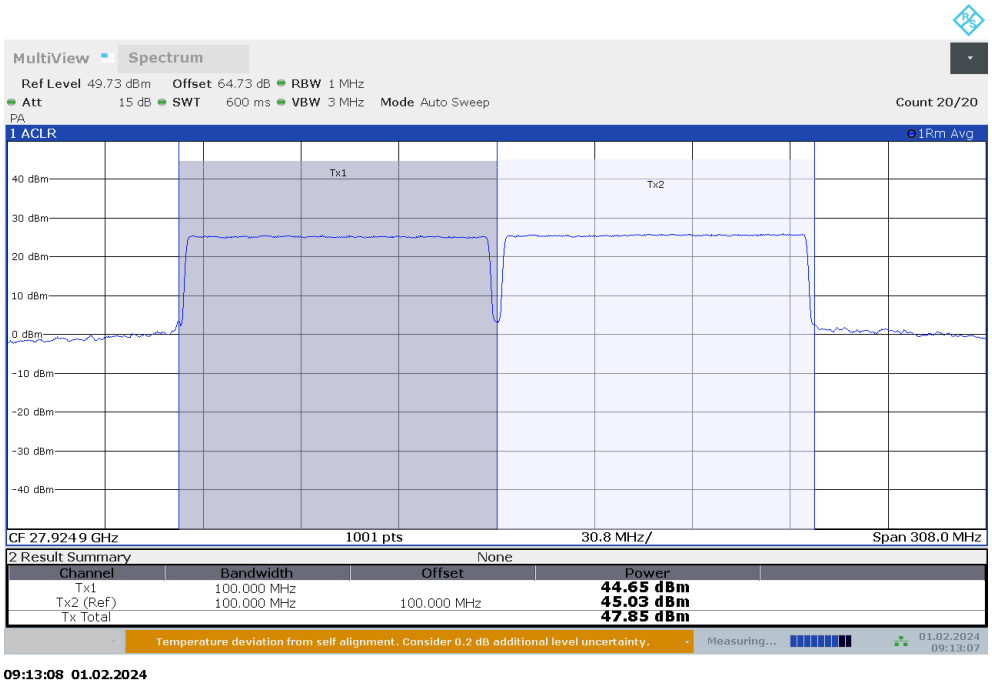
08:57:45 01.02.2024

Radiated Output Power (n261, 2CC, 100MHz, FULL RB, 16QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	2	64QAM	132/0	46.17	75	28.83	H
					47.85	75	27.15	V

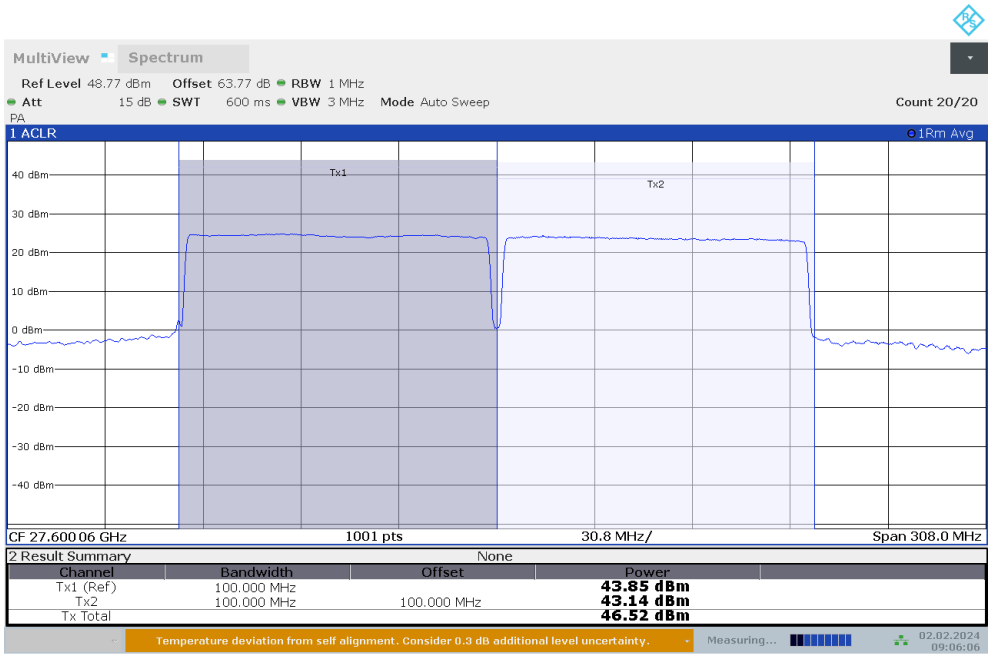


Radiated Output Power (n261, 2CC, 100MHz, FULL RB, 64QAM, middle channel, H)



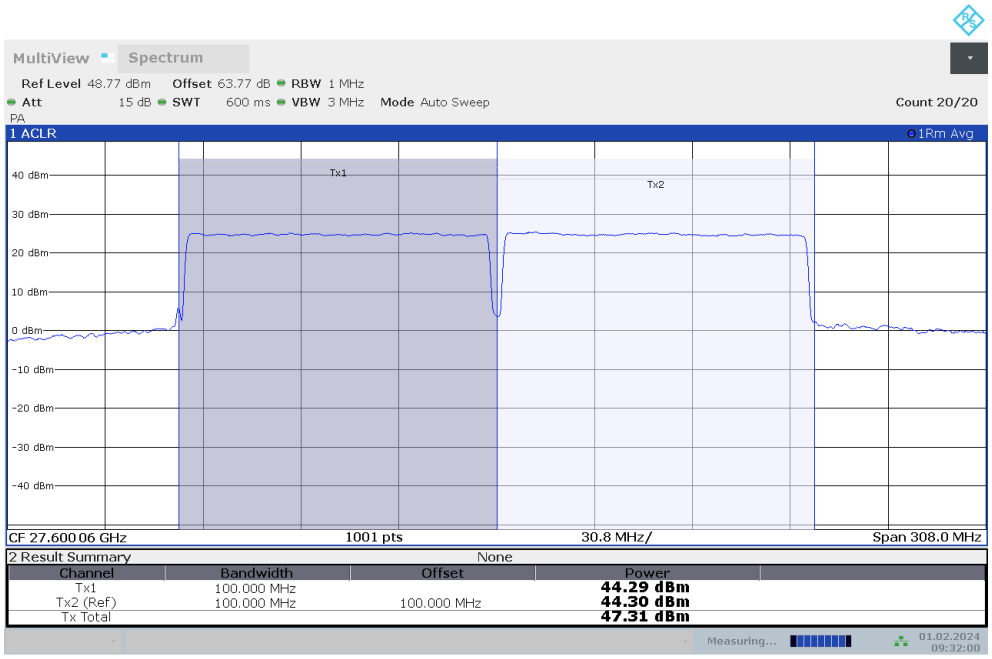
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, 64QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	2	QPSK	132/0	46.52	75	28.48	H
					47.31	75	27.69	V



09:06:07 02.02.2024

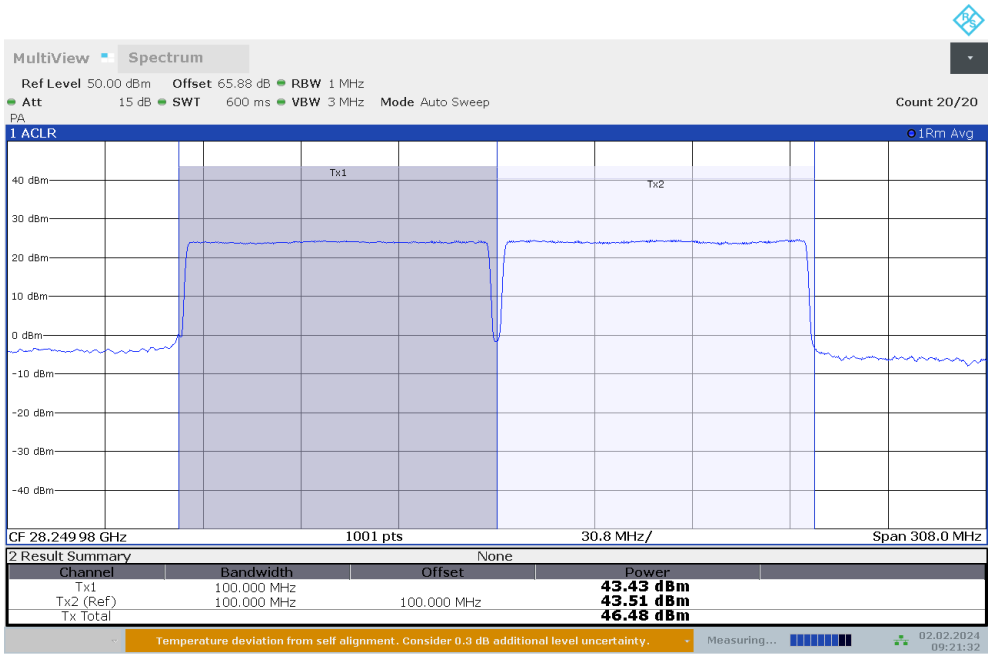
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, QPSK, low channel, H)



09:32:01 01.02.2024

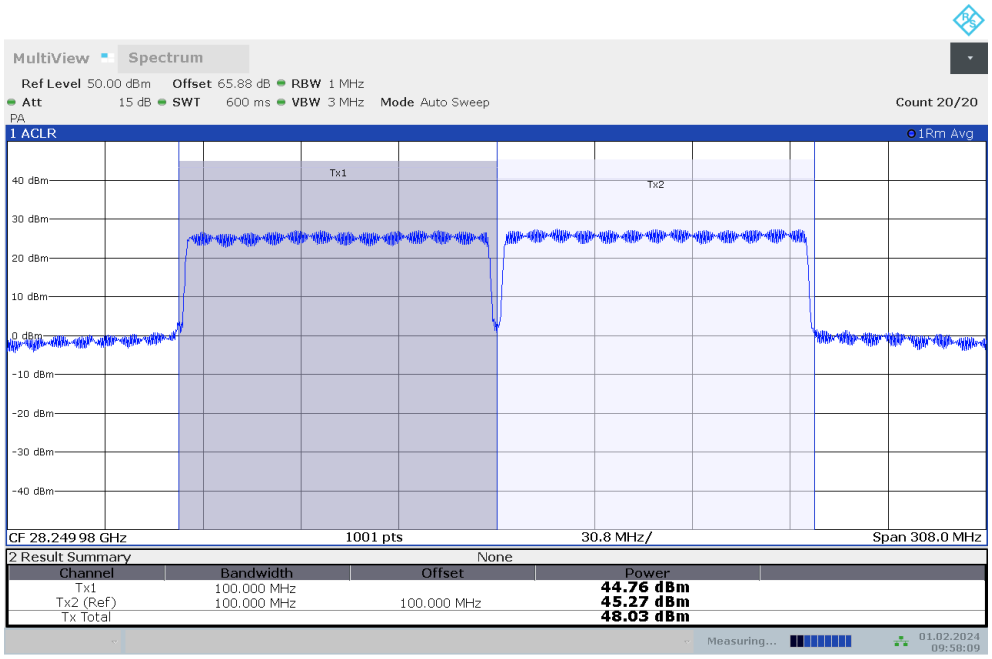
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, QPSK, low channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
High	100	2	QPSK	132/0	46.48	75	28.52	H
					48.03	75	26.97	V



09:21:32 02.02.2024

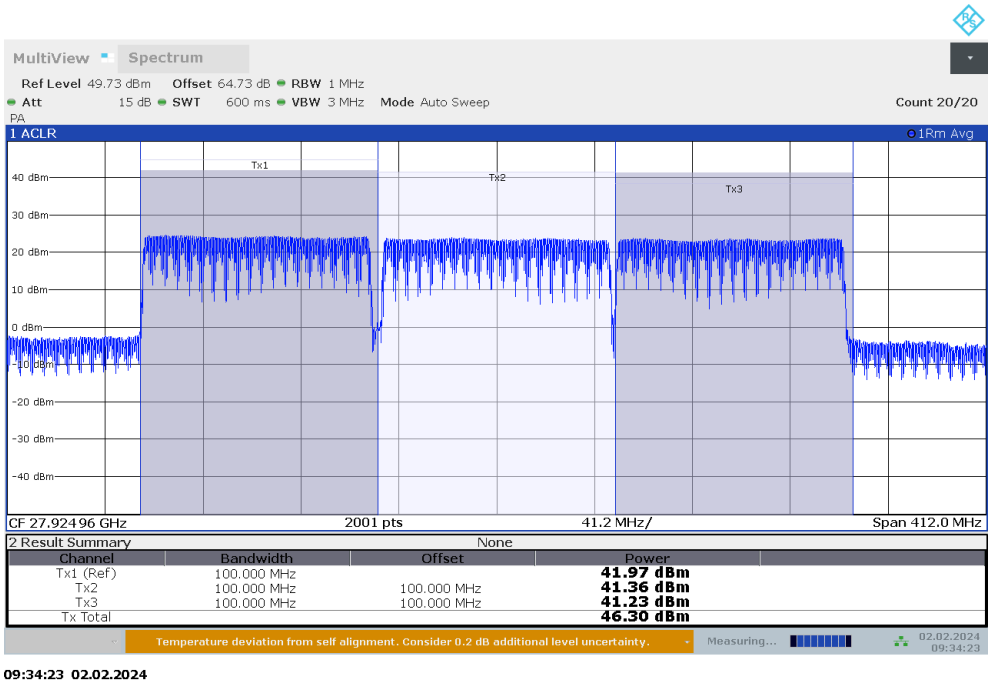
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, QPSK, high channel, H)



09:58:09 01.02.2024

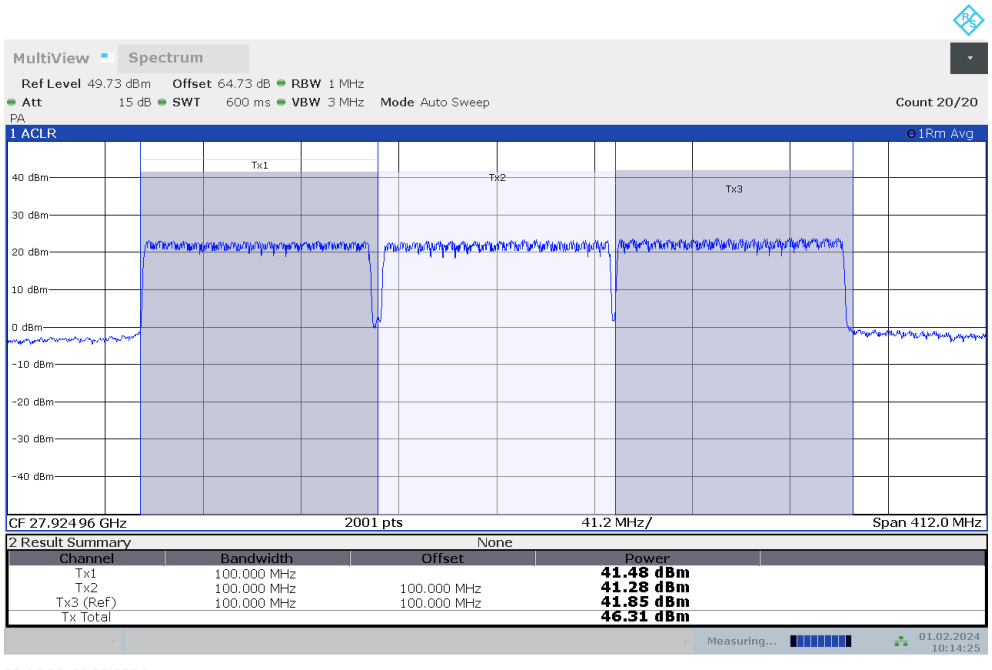
Radiated Output Power (n261, 2CC, 100MHz, FULL RB, QPSK, high channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	3	QPSK	198/0	46.30	75	28.70	H
					46.31	75	28.69	V



09:34:23 02.02.2024

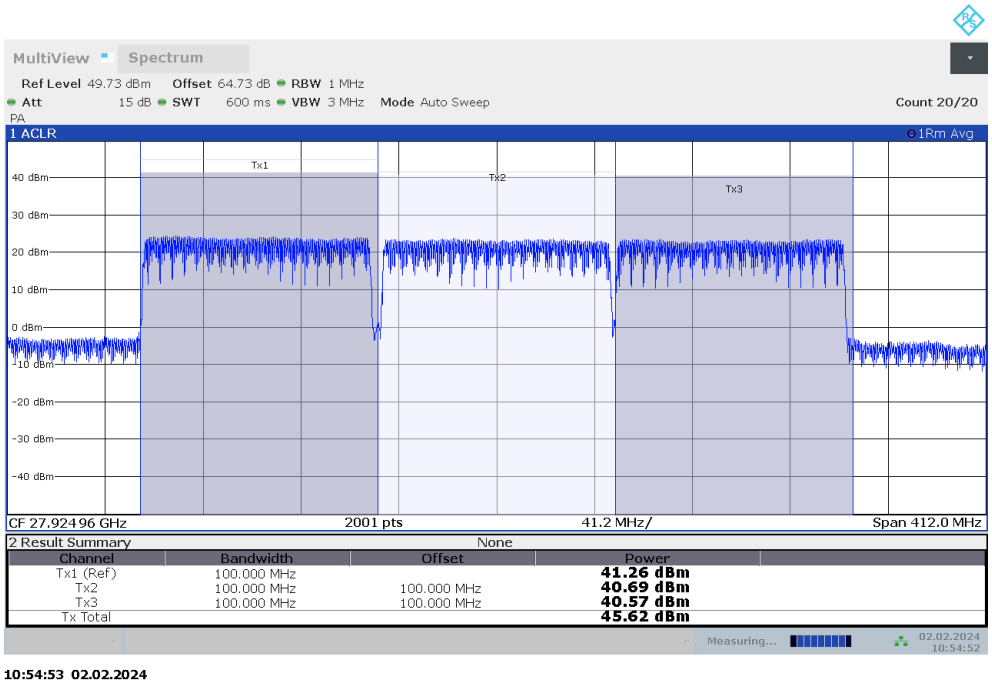
Radiated Output Power (n261, 3CC, 100MHz, FULL RB, QPSK, middle channel, H)



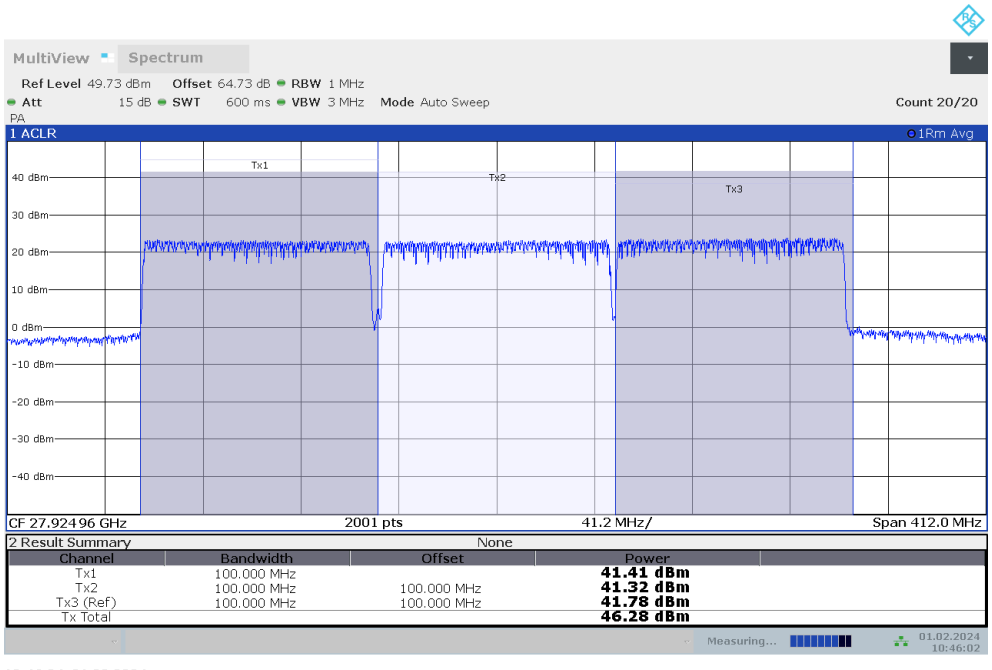
10:14:26 01.02.2024

Radiated Output Power (n261, 3CC, 100MHz, FULL RB, QPSK, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	3	16QAM	198/0	45.62	75	29.38	H
					46.28	75	28.72	V

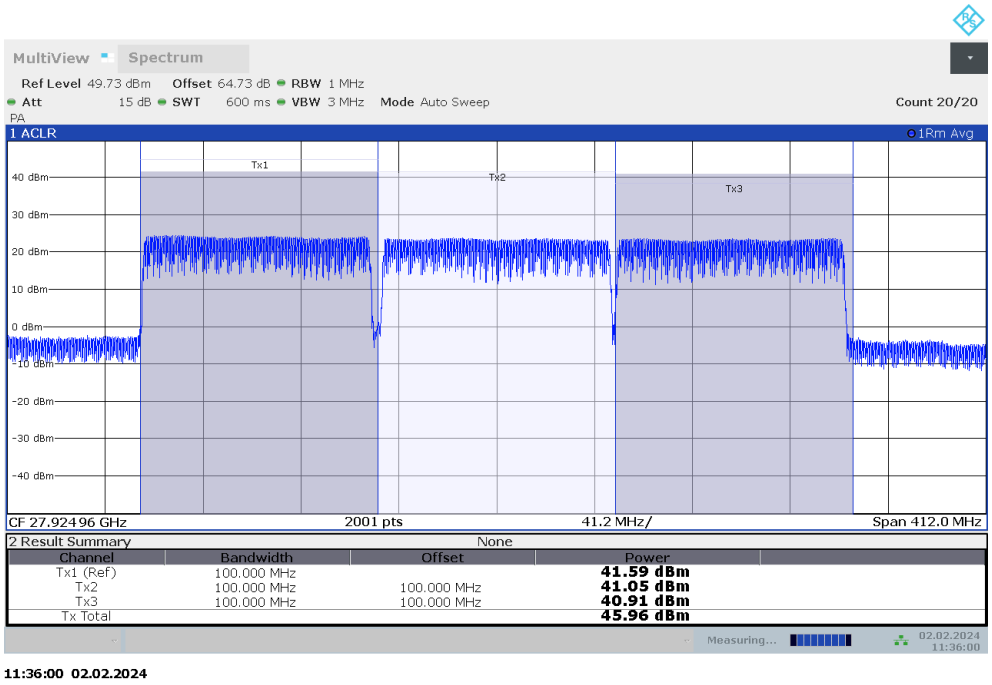


Radiated Output Power (n261, 3CC, 100MHz, FULL RB, 16QAM, middle channel, H)

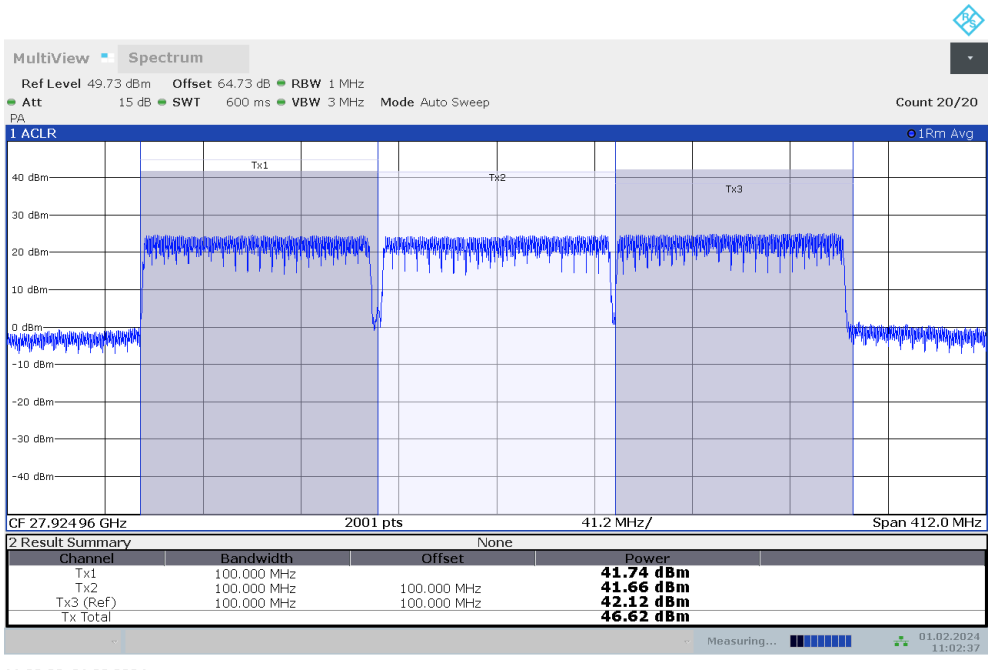


Radiated Output Power (n261, 3CC, 100MHz, FULL RB, 16QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	3	64QAM	198/0	45.96	75	29.04	H
					46.62	75	28.38	V

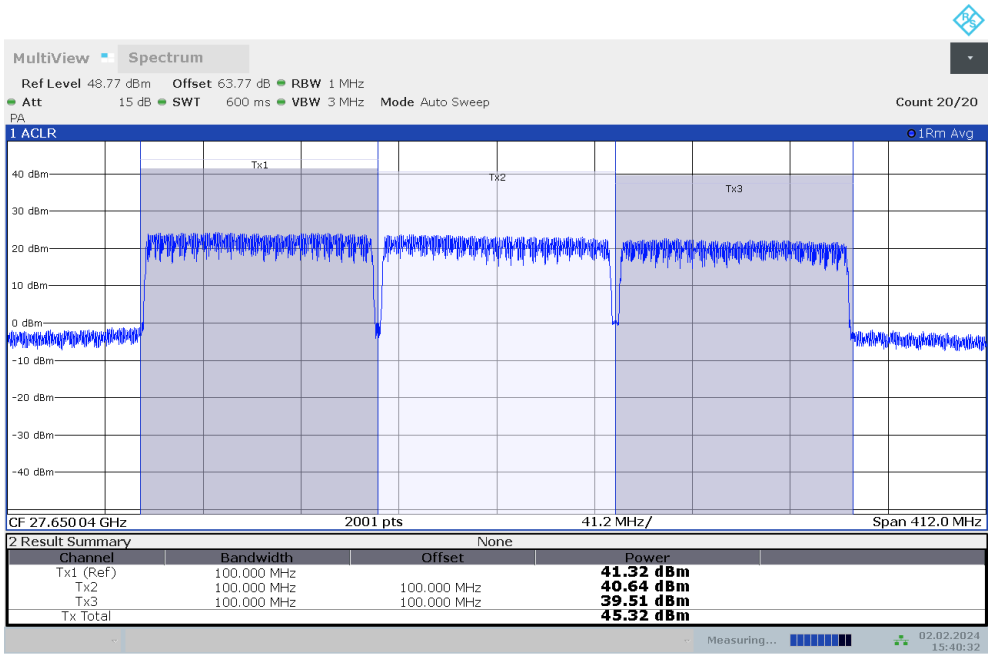


Radiated Output Power (n261, 3CC, 100MHz, FULL RB, 64QAM, middle channel, H)



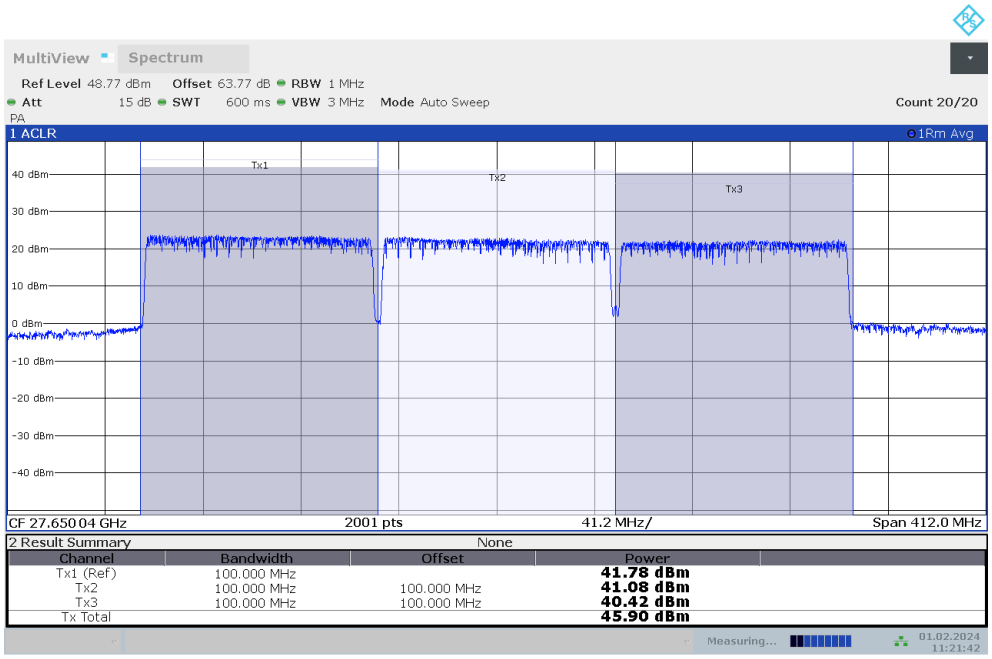
Radiated Output Power (n261, 3CC, 100MHz, FULL RB, 64QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	3	QPSK	198/0	45.32	75	29.68	H
			64QAM	198/0	45.90	75	29.10	V



15:40:33 02.02.2024

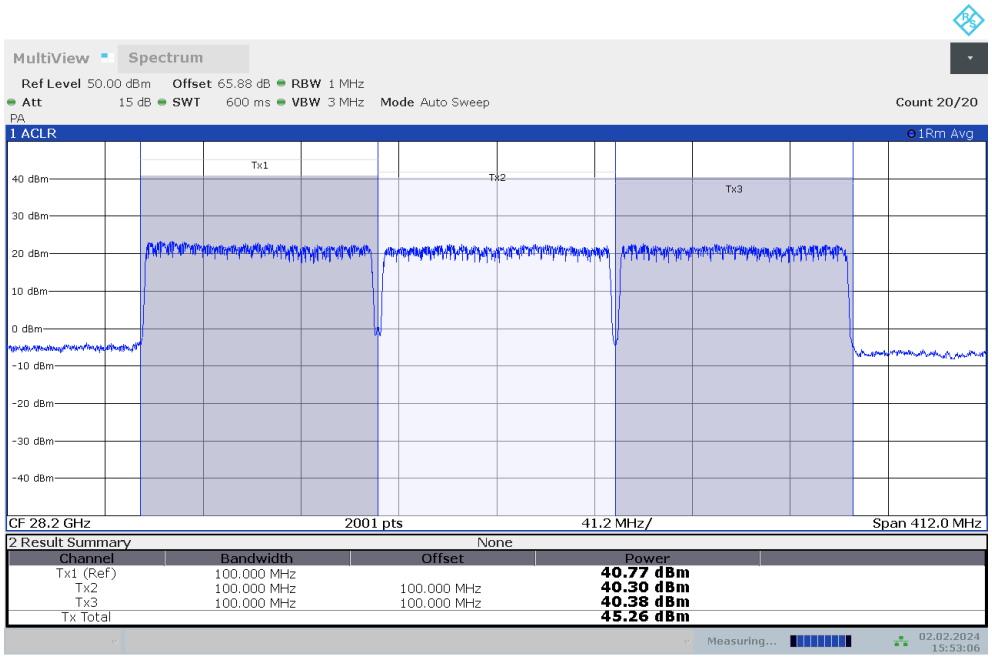
Radiated Output Power (n261, 3CC, 100MHz, FULL RB, QPSK, low channel, H)



11:21:43 01.02.2024

Radiated Output Power (n261, 3CC, 100MHz, FULL RB, 64QAM, low channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
High	100	3	QPSK	198/0	45.26	75	29.74	H
			64QAM	198/0	47.23	75	27.77	V



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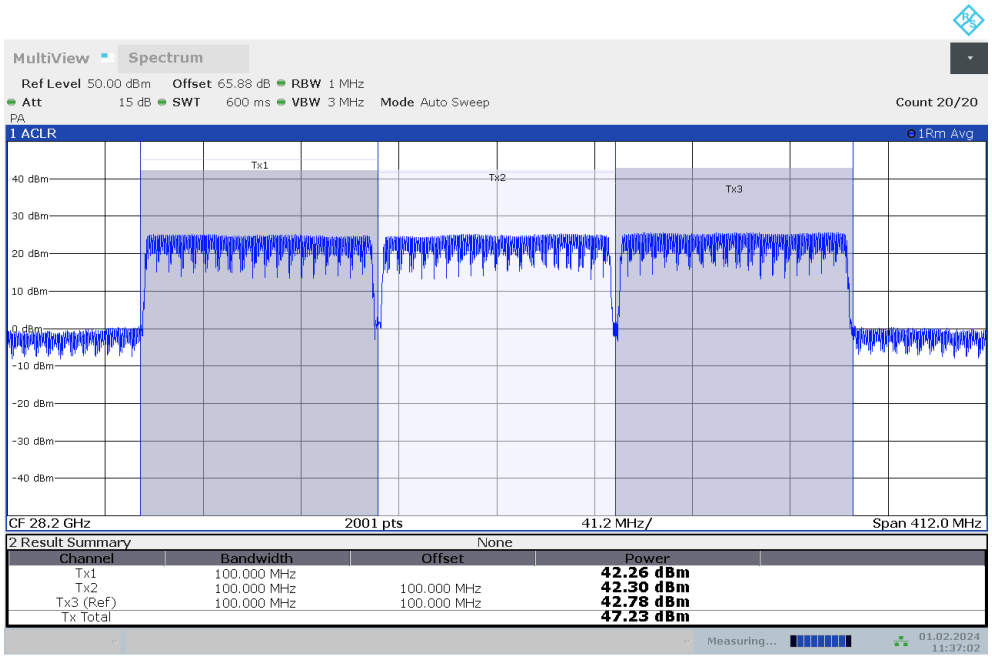
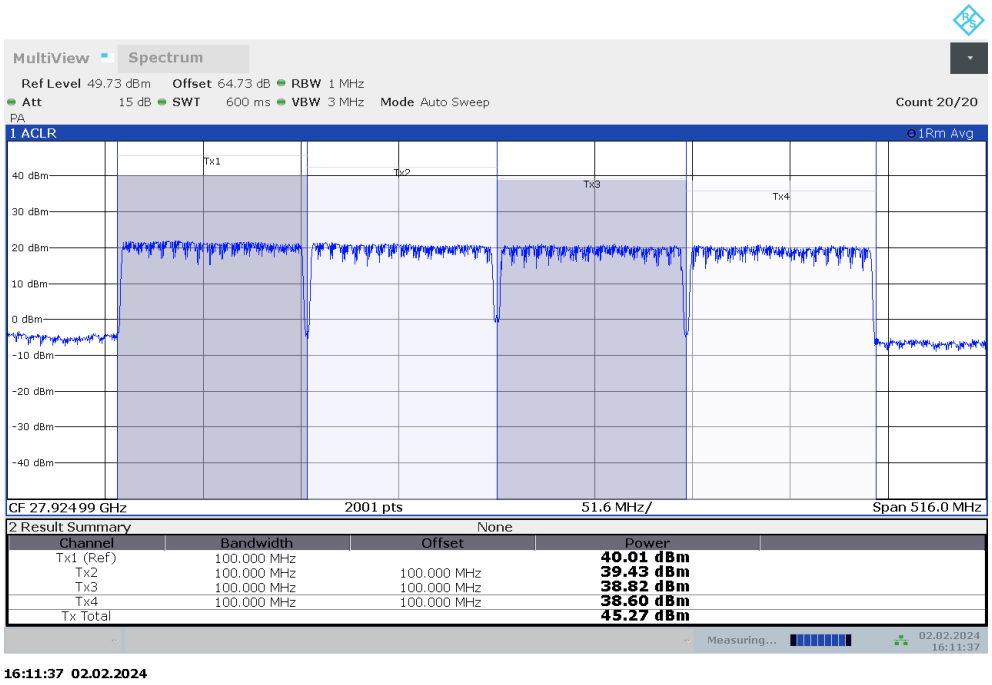
Radiated Output Power (n261, 3CC, 100MHz, FULL RB, QPSK, high channel, H)



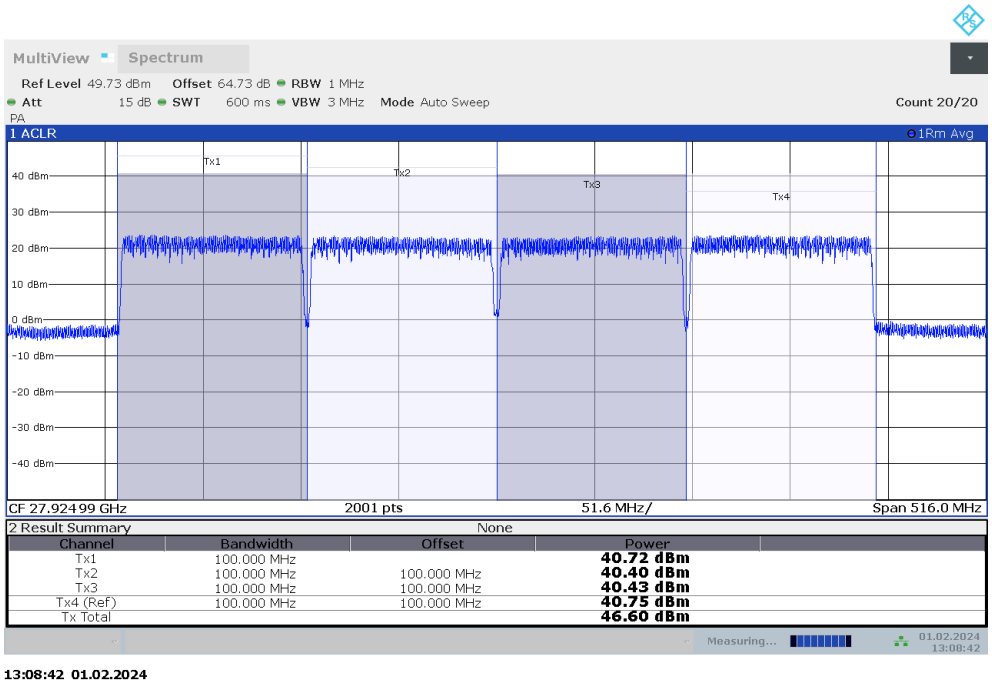
11:37:02 01.02.2024

Radiated Output Power (n261, 3CC, 100MHz, FULL RB, 64QAM, high channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	4	QPSK	264/0	45.27	75	29.73	H
					46.60	75	28.40	V

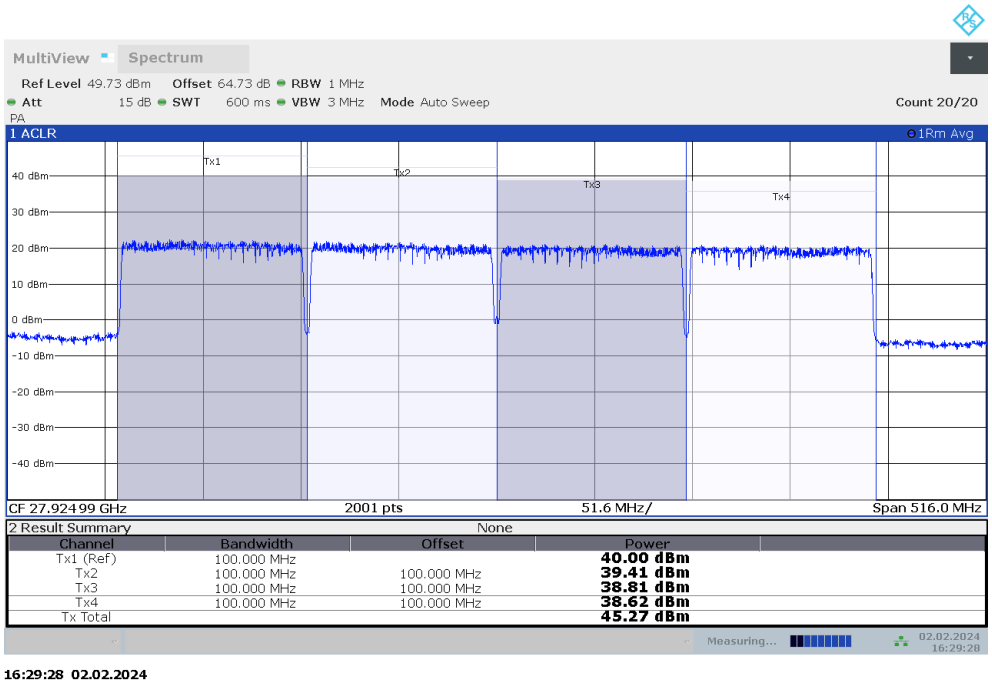


Radiated Output Power (n261, 4CC, 100MHz, FULL RB, QPSK, middle channel, H)

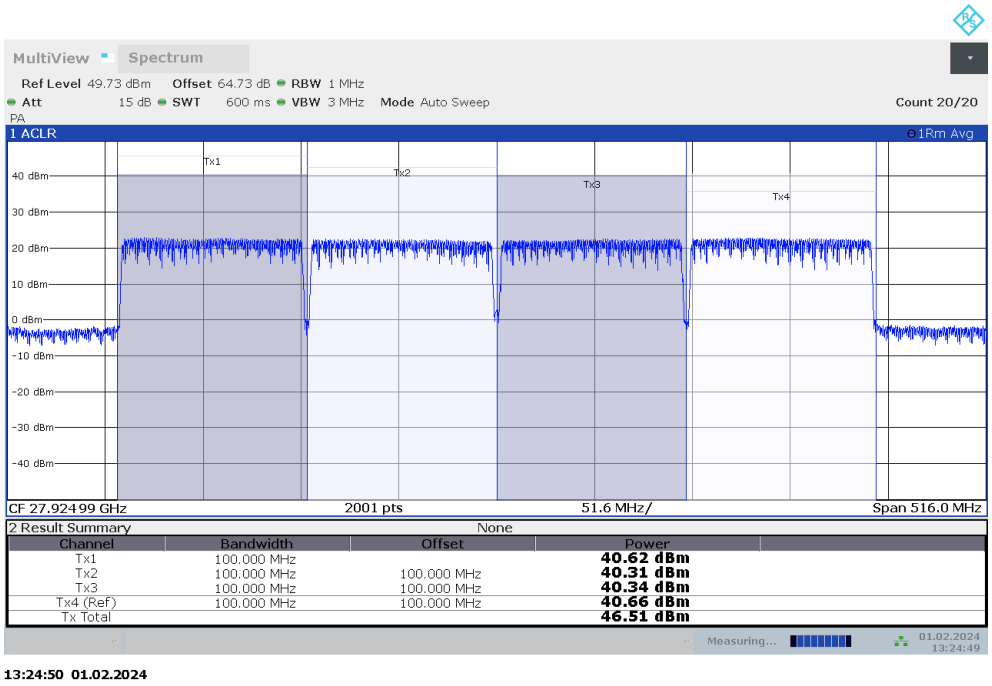


Radiated Output Power (n261, 4CC, 100MHz, FULL RB, QPSK, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	4	16QAM	264/0	45.27	75	29.73	H
					46.51	75	28.49	V

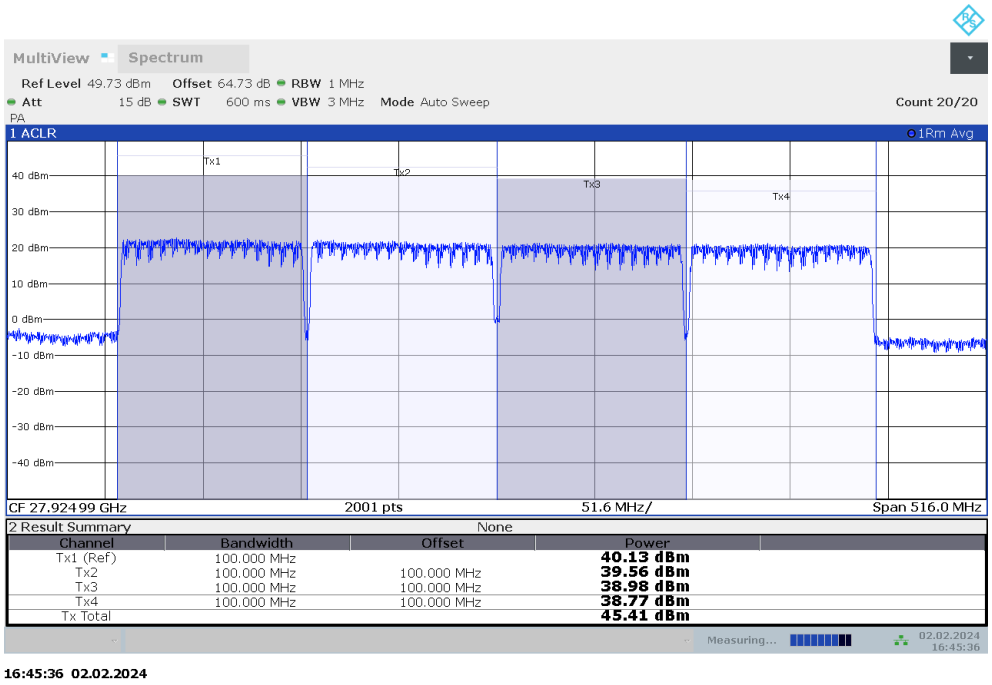


Radiated Output Power (n261, 4CC, 100MHz, FULL RB, 16QAM, middle channel, H)



Radiated Output Power (n261, 4CC, 100MHz, FULL RB, 16QAM, middle channel, V)

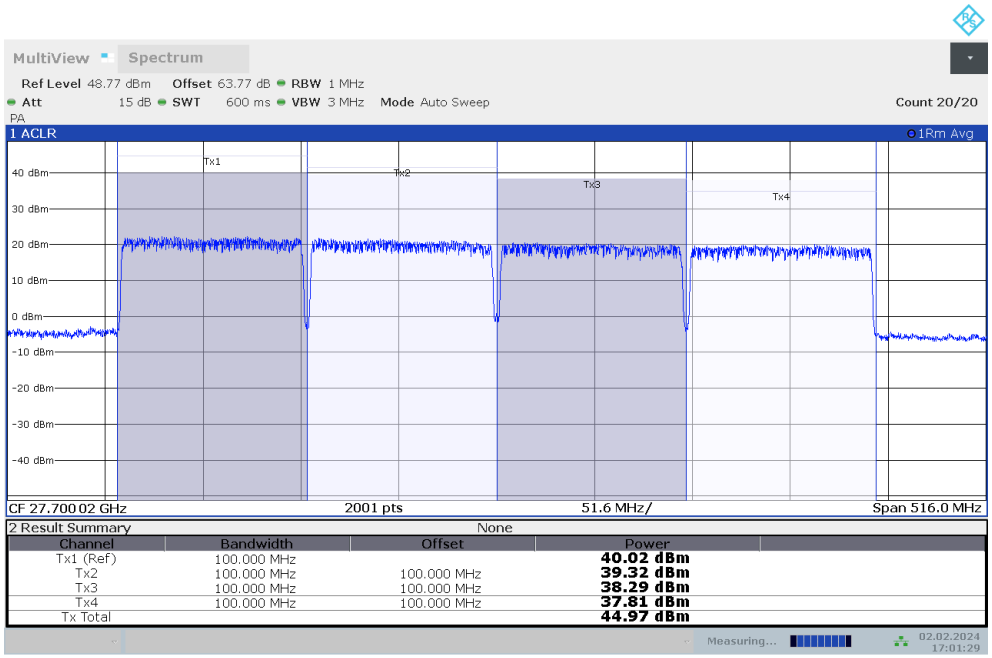
Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Mid	100	4	64QAM	264/0	45.41	75	29.59	H
					46.37	75	28.63	V



Radiated Output Power (n261, 4CC, 100MHz, FULL RB, 64QAM, middle channel, H)

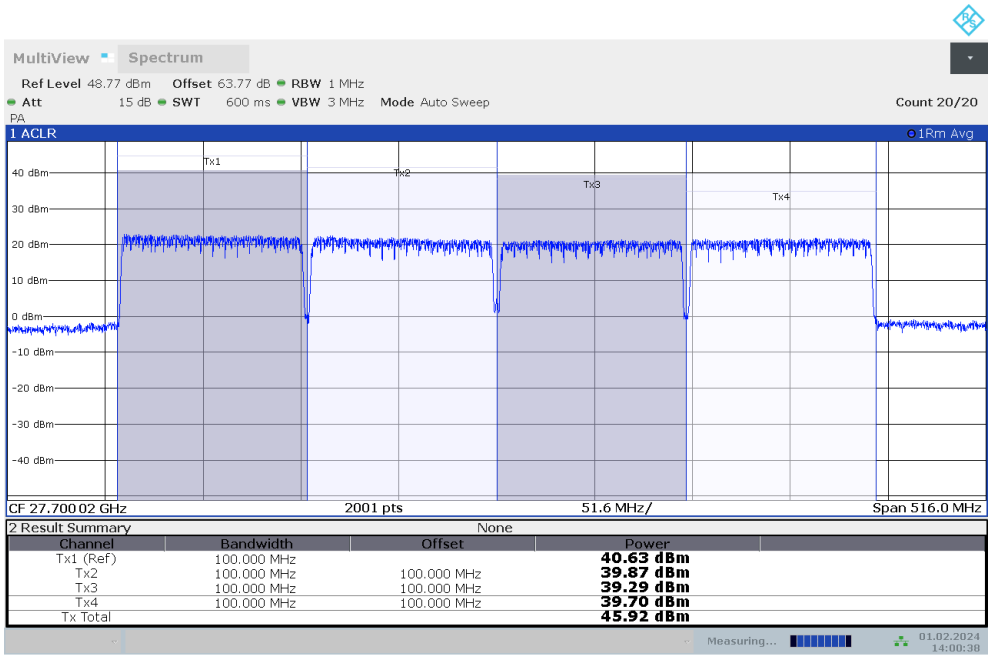
Radiated Output Power (n261, 4CC, 100MHz, FULL RB, 64QAM, middle channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
Low	100	4	64QAM	264/0	44.97	75	30.03	H
			QPSK	264/0	45.92	75	29.08	V



17:01:29 02.02.2024

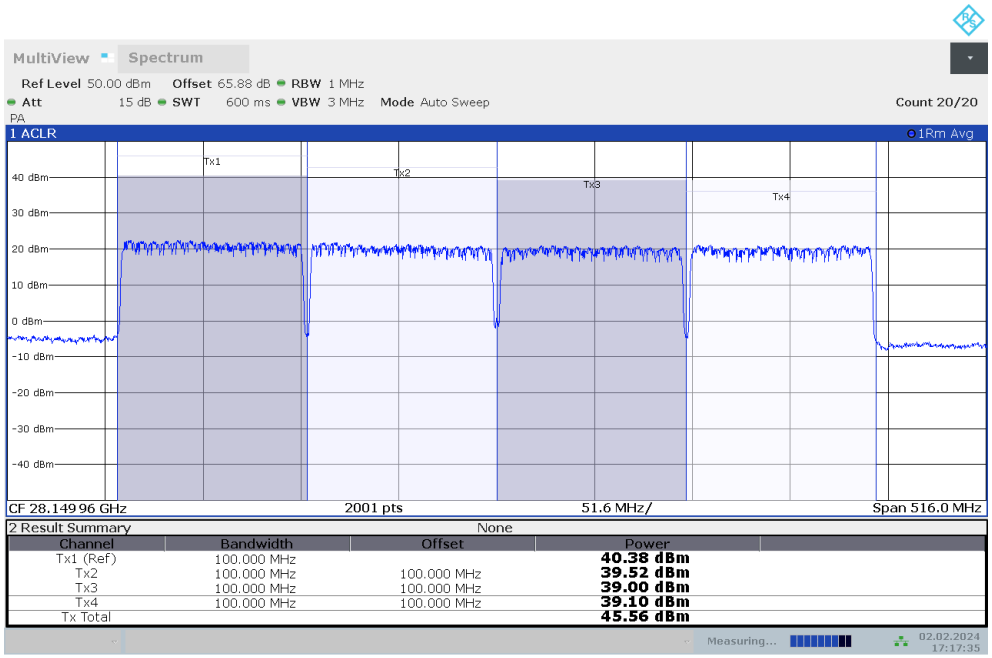
Radiated Output Power (n261, 4CC, 100MHz, FULL RB, 64QAM, low channel, H)



14:00:38 01.02.2024

Radiated Output Power (n261, 4CC, 100MHz, FULL RB, QPSK, low channel, V)

Channel	Bandwidth	CCs	Modulation	RB	Avg EIRP	Limit	Margin	Pol.
	(MHz)			(Size/Offset)	(dBm)	(dBm)	(dB)	
High	100	4	64QAM	264/0	45.56	75	29.44	H
			QPSK	264/0	48.01	75	26.99	V



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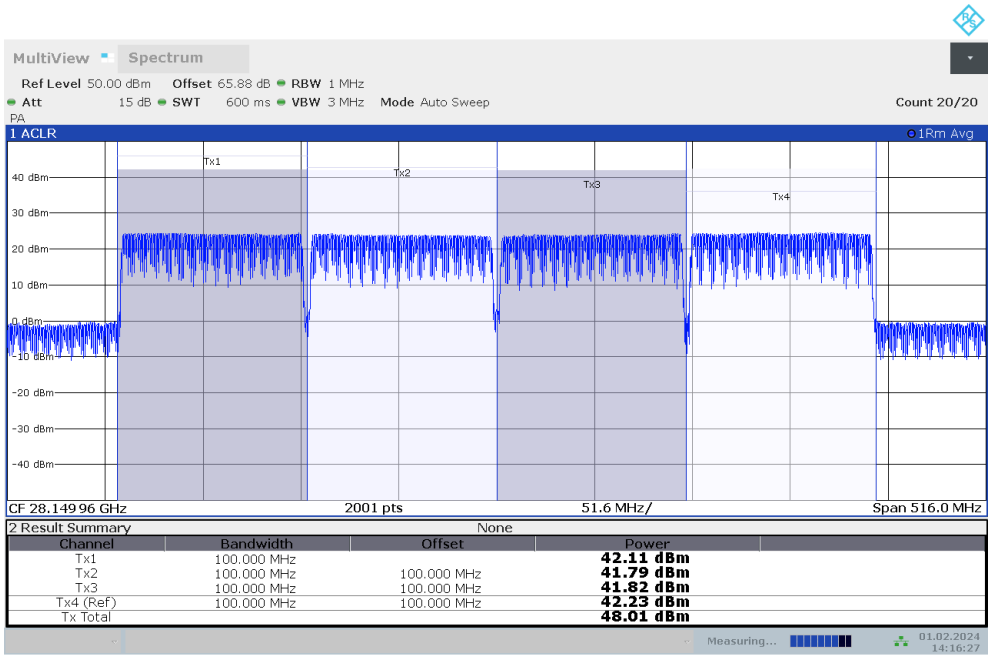
Radiated Output Power (n261, 4CC, 100MHz, FULL RB, 64QAM, high channel, H)



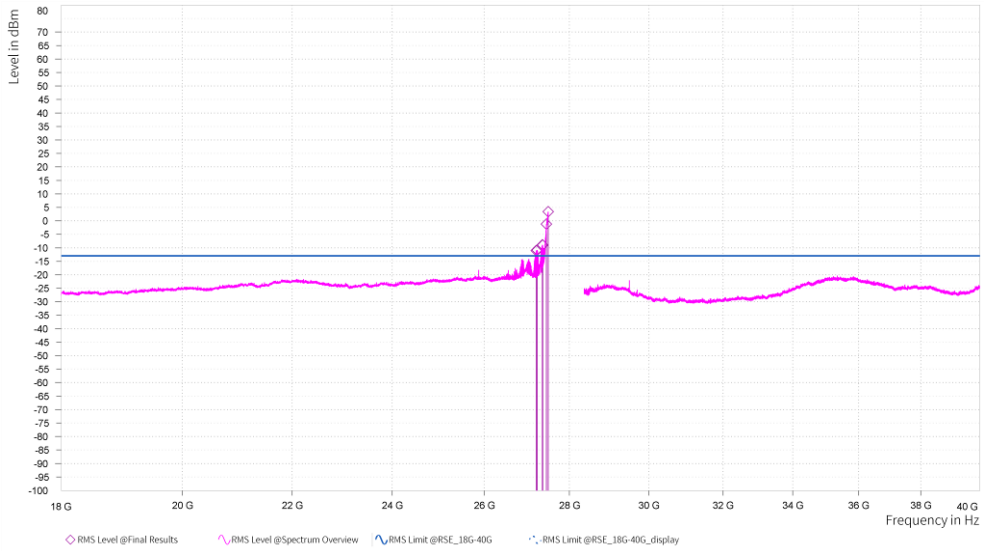
14:16:27 01.02.2024

Radiated Output Power (n261, 4CC, 100MHz, FULL RB, QPSK, high channel, V)

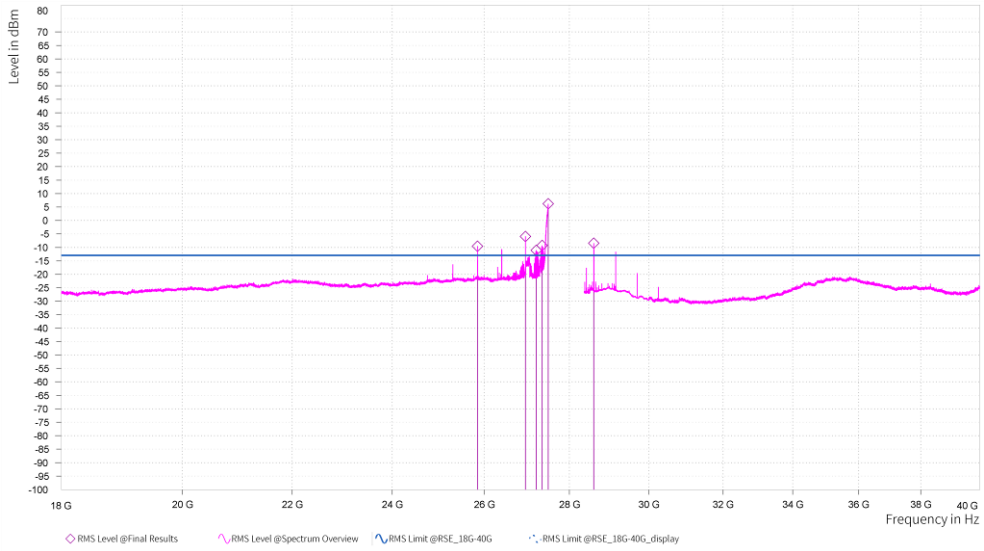
D.2 Emission Plots

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	27,201.50	100	1	QPSK	66/0	-11.04	22	-33.04	-13	20.04	H
low	27,225.23	100	1	QPSK	66/0	-10.85	22	-32.85	-13	19.85	H
low	27,345.75	100	1	QPSK	66/0	-8.92	22	-30.92	-13	17.92	H
low	27,355.72	100	1	QPSK	66/0	-8.97	22	-30.97	-13	17.97	H
low	27,445.40	100	1	QPSK	66/0	-1.2	22	-23.2	-13	10.2	H
low	27,487.63	100	1	QPSK	66/0	3.41	22	-18.59	-13	5.59	H

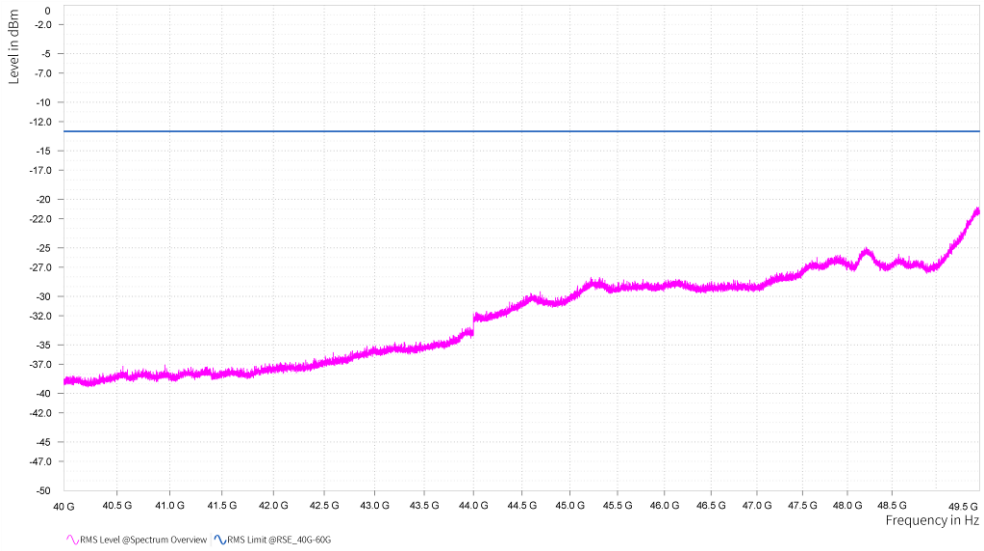
Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
low	25,850.13	100	1	QPSK	66/0	-9.55	22	-31.55	-13	18.55	V
low	26,950.02	100	1	QPSK	66/0	-5.92	22	-27.92	-13	14.92	V
low	27,203.88	100	1	QPSK	66/0	-11.07	22	-33.07	-13	20.07	V
low	27,342.43	100	1	QPSK	66/0	-9.28	22	-31.28	-13	18.28	V
low	27,489.53	100	1	QPSK	66/0	6.2	22	-15.8	-13	2.8	V
low	28,599.73	100	1	QPSK	66/0	-8.46	22	-30.46	-13	17.46	V



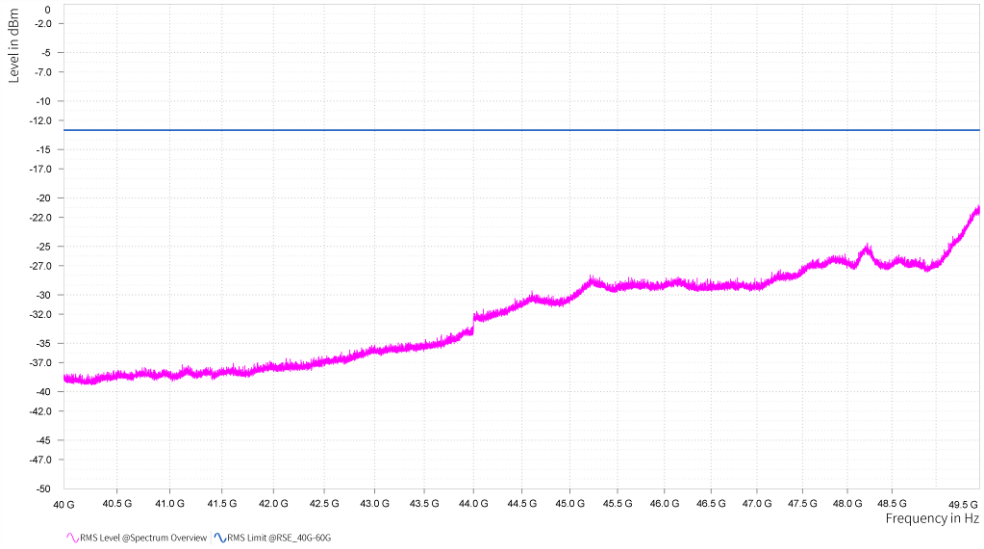
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Low channel, 18GHz-40GHz, H



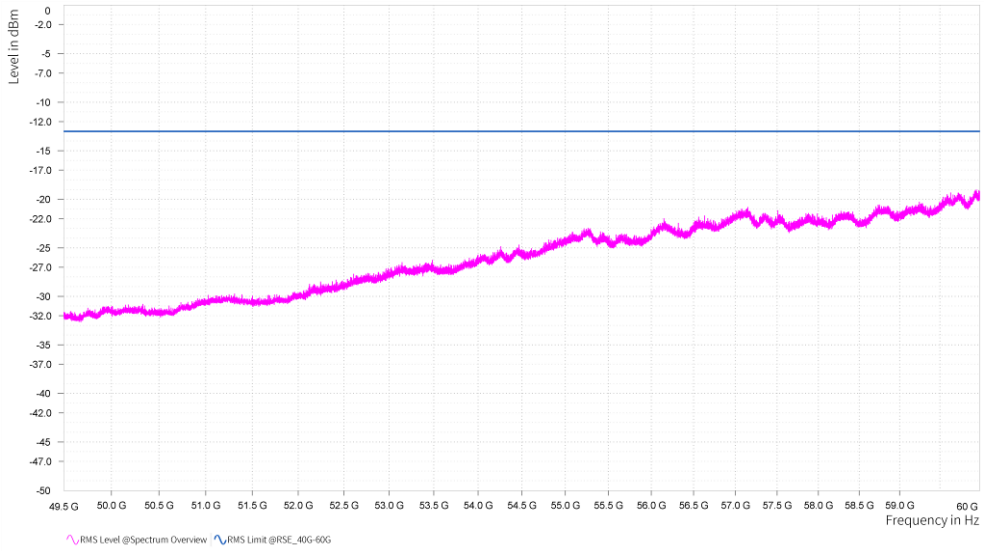
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Low channel, 18GHz-40GHz, V



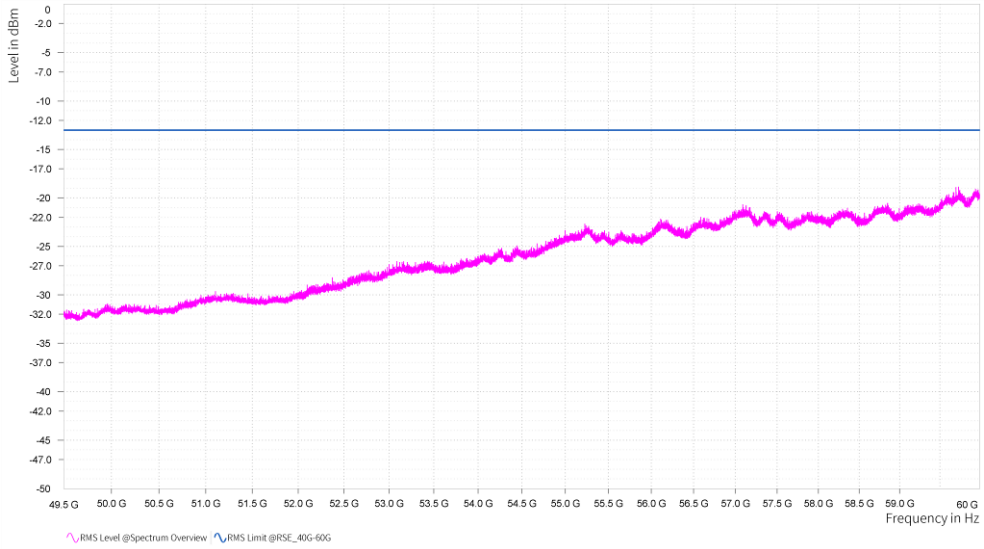
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Low channel, 40GHz-49.5GHz, H



n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Low channel, 40GHz-49.5GHz, V



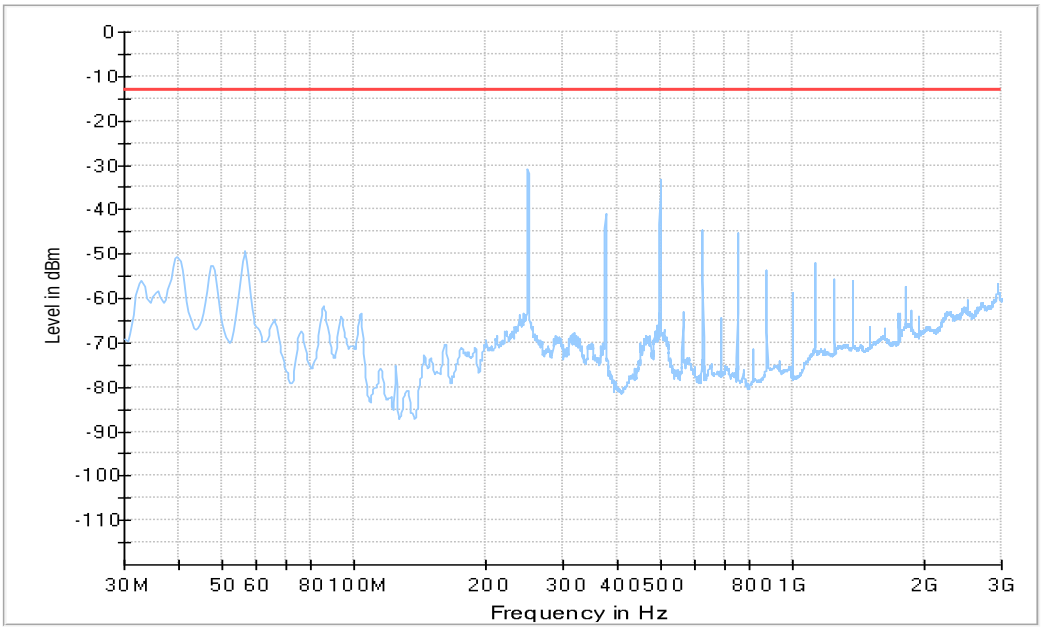
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Low channel, 49.5GHz-60GHz, H



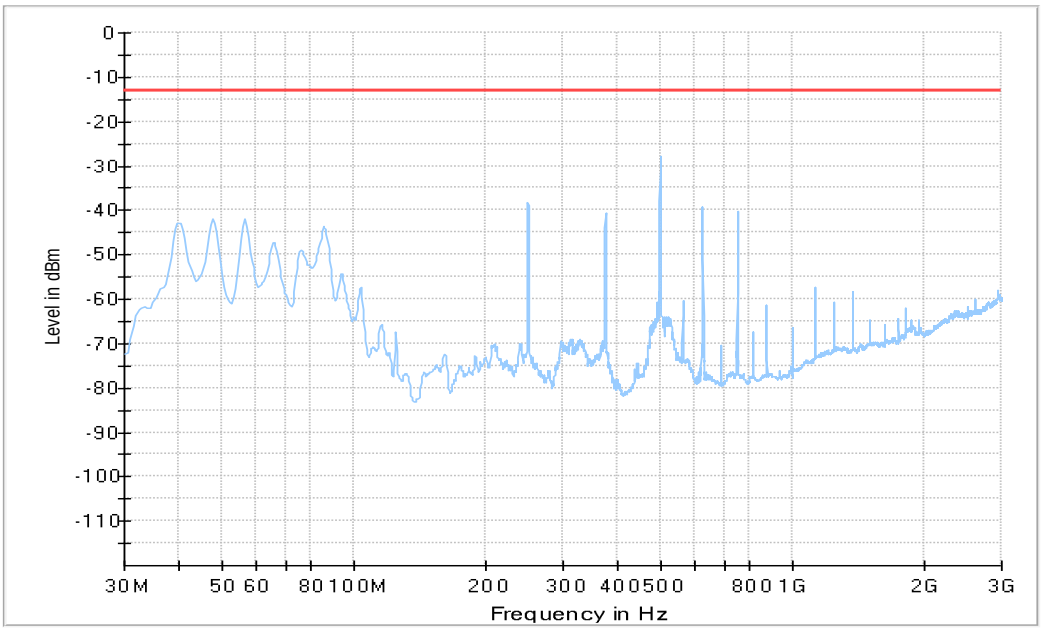
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Low channel, 49.5GHz-60GHz, V

Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
Middle	26,009.56	100	1	QPSK	66/0	-22.3	22	-44.3	-13	31.3	H
Middle	27,081.93	100	1	QPSK	66/0	-18.75	22	-40.75	-13	27.75	H
Middle	27,246.58	100	1	QPSK	66/0	-16.6	22	-38.6	-13	25.6	H
Middle	27,262.24	100	1	QPSK	66/0	-16.15	22	-38.15	-13	25.15	H
Middle	27,402.22	100	1	QPSK	66/0	-15.15	22	-37.15	-13	24.15	H
Middle	28,366.79	100	1	QPSK	66/0	-19.12	22	-41.12	-13	28.12	H

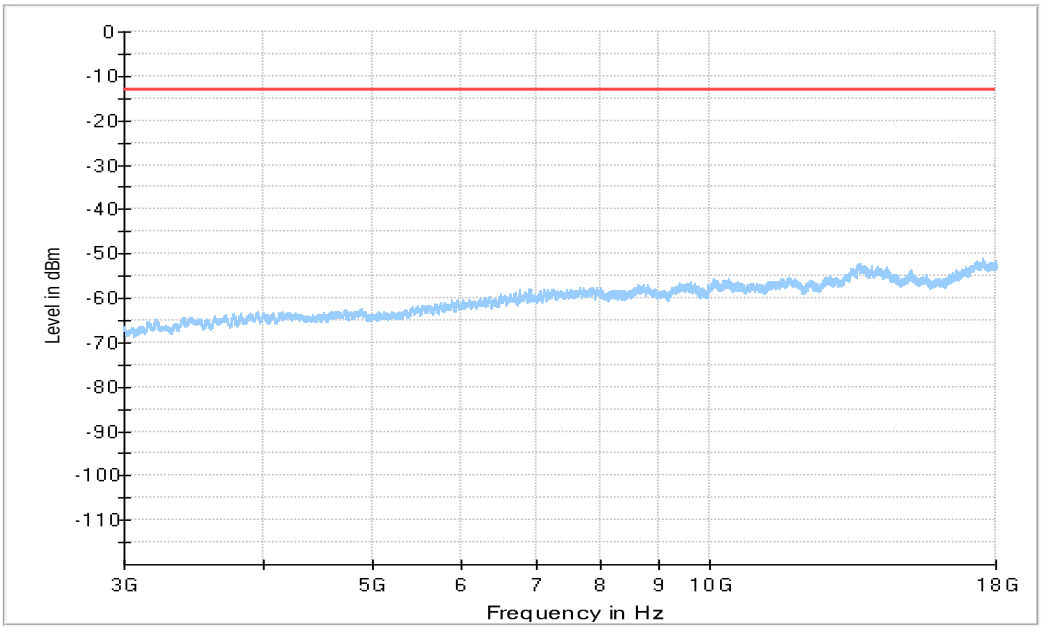
Channel	Freq.	BW	CCs	Modulation	RB	Avg EIRP	Anntenna Gain	Conduct EIRP	Conduct EIRP Limit	Margin	Pol.
	(MHz)	(MHz)				(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
Middle	26,202.68	100	1	QPSK	66/0	-11.41	22	-33.41	-13	20.41	V
Middle	26,760.22	100	1	QPSK	66/0	-11.50	22	-33.5	-13	20.5	V
Middle	27,317.28	100	1	QPSK	66/0	-7.71	22	-29.71	-13	16.71	V
Middle	28,431.87	100	1	QPSK	66/0	-6.96	22	-28.96	-13	15.96	V
Middle	28,989.95	100	1	QPSK	66/0	-10.46	22	-32.46	-13	19.46	V
Middle	29,547.55	100	1	QPSK	66/0	-13.13	22	-35.13	-13	22.13	V



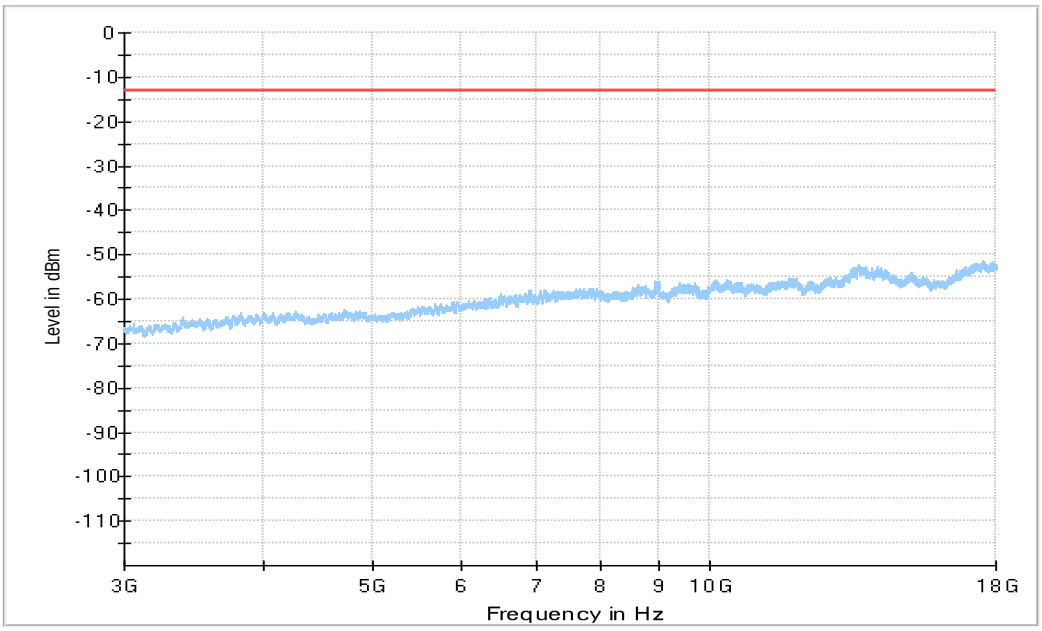
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Middle channel, 30MHz-1GHz, H



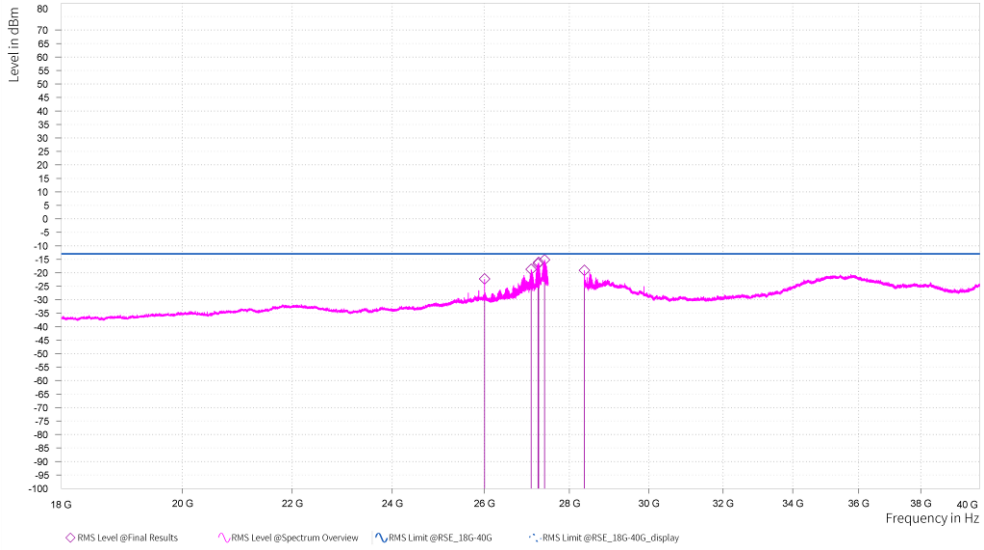
n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Middle channel, 30MHz-1GHz, V



n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Middle channel, 1GHz-18GHz, H



n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Middle channel, 1GHz-18GHz, V



n261, Module0, 100MHz, 1CC, QPSK, FULL RB, Middle channel, 18GHz-40GHz, H