

TEST REPORT

FCC mmWave Test for SM-S931U
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2410-FC018

DATE OF ISSUE
October 22, 2024

Tested by
Beom Jin Cho



Technical Manager
Jong Seok Lee



HCT CO., LTD.
Bongjai Huh
BongJai Huh / CEO

**HCT CO.,LTD.**

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401

TEST REPORT

REPORT NO.

HCT-RF-2410-FC018

DATE OF ISSUE

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Additional Model

SM-S931U1

Applicant

SAMSUNG Electronics Co., Ltd.

129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Product Name

Mobile Phone

Model Name

SM-S931U

FCC ID

A3LSMS931U

FCC Classification

Part 30 Mobile Transmitter (5GM)

Date of Test

September 9, 2024 ~ October 22, 2024

Test Standard Used

ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 842590 D01 V01r02
FCC Rule Part(s) Part 30

Test Results

PASS

Location of Test

☒ Permanent Testing Lab ☐ On Site Testing Lab

(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	October 22, 2024	Initial Release

Notice

Content

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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1. EUT DESCRIPTION

Model	SM-S931U
Additional Model	SM-S931U1
EUT Type	Mobile Phone
Power Supply	DC 3.88 V
Band	n258a: 24,250 MHz ~ 24,450 MHz(TDD) n258b: 24,750 MHz ~ 25,250 MHz(TDD) n261: 27,500 MHz ~ 28,350 MHz(TDD) n260: 37,000 MHz ~ 40,000 MHz(TDD)
Channel Bandwidths	50 MHz/100 MHz
Carrier Specification	1CC, 2CC, 3CC, 4CC (EUT doesn't support 2cc, 3cc, 4cc, for 50MHz)
Multiple transmit	SISO, SISO Dual, MIMO
Channel	Low, Mid, High
SCS	120 kHz
OFDM	CP-OFDM, DFT-s-OFDM
RB size	1 RB(Offset: low, mid, high), half RB, Full RB
Modulation	PI/2 BPSK(DFT-s Only), QPSK, 16QAM, 64QAM
Antenna Specification	Antenna Designation - M patch: module 0 Antenna Size - 23.3 mm x 3.2 mm x 2.1 mm
Serial number	Radiated: XHK0109M

1.1. MAXIMUM EIRP POWER

n258a Band Antenna 0 (M patch)								
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO	M patch	50	1	24250 - 24450	0.516	27.13	46M1G7D	BPSK
SISO	M patch	50	1	24250 - 24450	0.555	27.44	46M0G7D	QPSK
SISO	M patch	50	1	24250 - 24450	0.548	27.39	46M1W7D	16QAM
SISO	M patch	50	1	24250 - 24450	0.267	24.26	46M0W7D	64QAM
SISO Dual	M patch	50	1	24250 - 24450	0.421	26.25	46M3G7D	BPSK
SISO Dual	M patch	50	1	24250 - 24450	0.427	26.30	46M5G7D	QPSK
SISO Dual	M patch	50	1	24250 - 24450	0.420	26.23	46M5W7D	16QAM
SISO Dual	M patch	50	1	24250 - 24450	0.207	23.16	46M3W7D	64QAM
SISO	M patch	100	1	24250 - 24450	0.526	27.21	91M3G7D	BPSK
SISO	M patch	100	1	24250 - 24450	0.628	27.98	94M3G7D	QPSK
SISO	M patch	100	1	24250 - 24450	0.548	27.39	94M2W7D	16QAM
SISO	M patch	100	1	24250 - 24450	0.261	24.16	94M2W7D	64QAM
SISO Dual	M patch	100	1	24250 - 24450	0.429	26.32	90M6G7D	BPSK
SISO Dual	M patch	100	1	24250 - 24450	0.443	26.46	93M1G7D	QPSK
SISO Dual	M patch	100	1	24250 - 24450	0.432	26.35	93M0W7D	16QAM
SISO Dual	M patch	100	1	24250 - 24450	0.217	23.37	92M7W7D	64QAM
SISO	M patch	100	2	24250 - 24450	0.438	26.41	194MG7D	BPSK
SISO	M patch	100	2	24250 - 24450	0.439	26.42	193MG7D	QPSK
SISO	M patch	100	2	24250 - 24450	0.397	25.99	194MW7D	16QAM
SISO	M patch	100	2	24250 - 24450	0.170	22.30	193MW7D	64QAM
SISO Dual	M patch	100	2	24250 - 24450	0.287	24.58	194MG7D	BPSK
SISO Dual	M patch	100	2	24250 - 24450	0.284	24.53	194MG7D	QPSK
SISO Dual	M patch	100	2	24250 - 24450	0.256	24.09	194MW7D	16QAM
SISO Dual	M patch	100	2	24250 - 24450	0.115	20.60	194MW7D	64QAM

n258b Band Antenna 0 (M patch)

Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO	M patch	50	1	24750 - 25250	0.505	27.03	46M1G7D	BPSK
SISO	M patch	50	1	24750 - 25250	0.502	27.01	46M1G7D	QPSK
SISO	M patch	50	1	24750 - 25250	0.449	26.52	46M1W7D	16QAM
SISO	M patch	50	1	24750 - 25250	0.222	23.46	46M0W7D	64QAM
SISO Dual	M patch	50	1	24750 - 25250	0.524	27.19	46M4G7D	BPSK
SISO Dual	M patch	50	1	24750 - 25250	0.485	26.86	46M3G7D	QPSK
SISO Dual	M patch	50	1	24750 - 25250	0.500	26.99	46M4W7D	16QAM
SISO Dual	M patch	50	1	24750 - 25250	0.247	23.92	46M3W7D	64QAM
SISO	M patch	100	1	24750 - 25250	0.527	27.22	91M4G7D	BPSK
SISO	M patch	100	1	24750 - 25250	0.528	27.23	94M3G7D	QPSK
SISO	M patch	100	1	24750 - 25250	0.474	26.76	94M2W7D	16QAM
SISO	M patch	100	1	24750 - 25250	0.231	23.64	94M3W7D	64QAM
SISO Dual	M patch	100	1	24750 - 25250	0.513	27.10	91M6G7D	BPSK
SISO Dual	M patch	100	1	24750 - 25250	0.533	27.27	92M9G7D	QPSK
SISO Dual	M patch	100	1	24750 - 25250	0.518	27.14	92M7W7D	16QAM
SISO Dual	M patch	100	1	24750 - 25250	0.251	24.00	92M7W7D	64QAM
SISO	M patch	100	2	24750 - 25250	0.420	26.23	194MG7D	BPSK
SISO	M patch	100	2	24750 - 25250	0.421	26.24	194MG7D	QPSK
SISO	M patch	100	2	24750 - 25250	0.375	25.74	194MW7D	16QAM
SISO	M patch	100	2	24750 - 25250	0.163	22.13	193MW7D	64QAM
SISO Dual	M patch	100	2	24750 - 25250	0.423	26.26	194MG7D	BPSK
SISO Dual	M patch	100	2	24750 - 25250	0.423	26.26	194MG7D	QPSK
SISO Dual	M patch	100	2	24750 - 25250	0.366	25.64	194MW7D	16QAM
SISO Dual	M patch	100	2	24750 - 25250	0.164	22.14	194MW7D	64QAM
SISO	M patch	100	3	24750 - 25250	0.233	23.67	294MG7D	BPSK
SISO	M patch	100	3	24750 - 25250	0.236	23.72	293MG7D	QPSK
SISO	M patch	100	3	24750 - 25250	0.183	22.63	294MW7D	16QAM
SISO	M patch	100	3	24750 - 25250	0.116	20.65	293MW7D	64QAM
SISO Dual	M patch	100	3	24750 - 25250	0.224	23.50	294MG7D	BPSK
SISO Dual	M patch	100	3	24750 - 25250	0.207	23.16	293MG7D	QPSK
SISO Dual	M patch	100	3	24750 - 25250	0.160	22.04	293MW7D	16QAM

n258b Band Antenna 0 (M patch)

Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO Dual	M patch	100	3	24750 - 25250	0.101	20.04	293MW7D	64QAM
SISO	M patch	100	4	24750 - 25250	0.238	23.77	394MG7D	BPSK
SISO	M patch	100	4	24750 - 25250	0.239	23.79	393MG7D	QPSK
SISO	M patch	100	4	24750 - 25250	0.191	22.81	393MW7D	16QAM
SISO	M patch	100	4	24750 - 25250	0.118	20.73	393MW7D	64QAM
SISO Dual	M patch	100	4	24750 - 25250	0.219	23.40	390MG7D	BPSK
SISO Dual	M patch	100	4	24750 - 25250	0.224	23.51	393MG7D	QPSK
SISO Dual	M patch	100	4	24750 - 25250	0.170	22.31	391MW7D	16QAM
SISO Dual	M patch	100	4	24750 - 25250	0.106	20.25	392MW7D	64QAM

n260 Band Antenna 0 (M patch)

Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO	M patch	50	1	37000 - 40000	0.448	26.51	46M2G7D	BPSK
SISO	M patch	50	1	37000 - 40000	0.444	26.47	46M3G7D	QPSK
SISO	M patch	50	1	37000 - 40000	0.408	26.11	46M4W7D	16QAM
SISO	M patch	50	1	37000 - 40000	0.208	23.19	46M5W7D	64QAM
SISO Dual	M patch	50	1	37000 - 40000	0.873	29.41	46M3G7D	BPSK
SISO Dual	M patch	50	1	37000 - 40000	0.813	29.10	46M4G7D	QPSK
SISO Dual	M patch	50	1	37000 - 40000	0.815	29.11	46M4W7D	16QAM
SISO Dual	M patch	50	1	37000 - 40000	0.408	26.11	46M3W7D	64QAM
SISO	M patch	100	1	37000 - 40000	0.431	26.34	91M9G7D	BPSK
SISO	M patch	100	1	37000 - 40000	0.441	26.44	92M3G7D	QPSK
SISO	M patch	100	1	37000 - 40000	0.440	26.43	95M2W7D	16QAM
SISO	M patch	100	1	37000 - 40000	0.223	23.48	95M0W7D	64QAM
SISO Dual	M patch	100	1	37000 - 40000	0.718	28.56	91M8G7D	BPSK
SISO Dual	M patch	100	1	37000 - 40000	0.706	28.49	94M8G7D	QPSK
SISO Dual	M patch	100	1	37000 - 40000	0.714	28.54	94M7W7D	16QAM
SISO Dual	M patch	100	1	37000 - 40000	0.348	25.41	94M9W7D	64QAM
SISO	M patch	100	2	37000 - 40000	0.366	25.63	193MG7D	BPSK
SISO	M patch	100	2	37000 - 40000	0.350	25.44	195MG7D	QPSK
SISO	M patch	100	2	37000 - 40000	0.310	24.92	195MW7D	16QAM
SISO	M patch	100	2	37000 - 40000	0.138	21.41	197MW7D	64QAM
SISO Dual	M patch	100	2	37000 - 40000	0.481	26.82	192MG7D	BPSK
SISO Dual	M patch	100	2	37000 - 40000	0.470	26.72	195MG7D	QPSK
SISO Dual	M patch	100	2	37000 - 40000	0.422	26.25	194MW7D	16QAM
SISO Dual	M patch	100	2	37000 - 40000	0.191	22.81	195MW7D	64QAM
SISO	M patch	100	3	37000 - 40000	0.195	22.89	293MG7D	BPSK
SISO	M patch	100	3	37000 - 40000	0.202	23.06	295MG7D	QPSK
SISO	M patch	100	3	37000 - 40000	0.157	21.96	295MW7D	16QAM
SISO	M patch	100	3	37000 - 40000	0.096	19.82	297MW7D	64QAM
SISO Dual	M patch	100	3	37000 - 40000	0.278	24.44	293MG7D	BPSK
SISO Dual	M patch	100	3	37000 - 40000	0.279	24.45	295MG7D	QPSK
SISO Dual	M patch	100	3	37000 - 40000	0.214	23.30	294MW7D	16QAM

n260 Band Antenna 0 (M patch)

Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO Dual	M patch	100	3	37000 - 40000	0.135	21.30	295MW7D	64QAM
SISO	M patch	100	4	37000 - 40000	0.189	22.76	395MG7D	BPSK
SISO	M patch	100	4	37000 - 40000	0.191	22.81	395MG7D	QPSK
SISO	M patch	100	4	37000 - 40000	0.152	21.82	396MW7D	16QAM
SISO	M patch	100	4	37000 - 40000	0.098	19.93	399MW7D	64QAM
SISO Dual	M patch	100	4	37000 - 40000	0.286	24.56	393MG7D	BPSK
SISO Dual	M patch	100	4	37000 - 40000	0.283	24.52	396MG7D	QPSK
SISO Dual	M patch	100	4	37000 - 40000	0.225	23.53	395MW7D	16QAM
SISO Dual	M patch	100	4	37000 - 40000	0.136	21.35	395MW7D	64QAM

n261 Band Antenna 0 (M patch)

Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO	M patch	50	1	27500 - 28350	0.488	26.88	46M1G7D	BPSK
SISO	M patch	50	1	27500 - 28350	0.479	26.80	46M1G7D	QPSK
SISO	M patch	50	1	27500 - 28350	0.433	26.36	46M2W7D	16QAM
SISO	M patch	50	1	27500 - 28350	0.219	23.41	46M1W7D	64QAM
SISO Dual	M patch	50	1	27500 - 28350	0.594	27.74	46M3G7D	BPSK
SISO Dual	M patch	50	1	27500 - 28350	0.627	27.97	46M4G7D	QPSK
SISO Dual	M patch	50	1	27500 - 28350	0.537	27.30	46M3W7D	16QAM
SISO Dual	M patch	50	1	27500 - 28350	0.316	24.99	46M3W7D	64QAM
SISO	M patch	100	1	27500 - 28350	0.516	27.13	91M5G7D	BPSK
SISO	M patch	100	1	27500 - 28350	0.469	26.71	94M4G7D	QPSK
SISO	M patch	100	1	27500 - 28350	0.422	26.25	94M4W7D	16QAM
SISO	M patch	100	1	27500 - 28350	0.203	23.08	94M4W7D	64QAM
SISO Dual	M patch	100	1	27500 - 28350	0.610	27.85	91M8G7D	BPSK
SISO Dual	M patch	100	1	27500 - 28350	0.582	27.65	94M5G7D	QPSK
SISO Dual	M patch	100	1	27500 - 28350	0.521	27.17	93M7W7D	16QAM
SISO Dual	M patch	100	1	27500 - 28350	0.269	24.29	93M5W7D	64QAM
SISO	M patch	100	2	27500 - 28350	0.371	25.69	194MG7D	BPSK
SISO	M patch	100	2	27500 - 28350	0.373	25.72	195MG7D	QPSK
SISO	M patch	100	2	27500 - 28350	0.330	25.19	194MW7D	16QAM
SISO	M patch	100	2	27500 - 28350	0.141	21.50	194MW7D	64QAM
SISO Dual	M patch	100	2	27500 - 28350	0.452	26.55	194MG7D	BPSK
SISO Dual	M patch	100	2	27500 - 28350	0.446	26.49	195MG7D	QPSK
SISO Dual	M patch	100	2	27500 - 28350	0.397	25.99	195MW7D	16QAM
SISO Dual	M patch	100	2	27500 - 28350	0.172	22.35	195MW7D	64QAM
SISO	M patch	100	3	27500 - 28350	0.199	22.98	293MG7D	BPSK
SISO	M patch	100	3	27500 - 28350	0.188	22.75	293MG7D	QPSK
SISO	M patch	100	3	27500 - 28350	0.147	21.66	293MW7D	16QAM
SISO	M patch	100	3	27500 - 28350	0.095	19.79	294MW7D	64QAM
SISO Dual	M patch	100	3	27500 - 28350	0.255	24.06	295MG7D	BPSK
SISO Dual	M patch	100	3	27500 - 28350	0.245	23.90	295MG7D	QPSK
SISO Dual	M patch	100	3	27500 - 28350	0.190	22.78	296MW7D	16QAM

n261 Band Antenna 0 (M patch)

Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	EIRP		Emission Designator	Modulation
					(W)	(dBm)		
SISO Dual	M patch	100	3	27500 - 28350	0.122	20.87	294MW7D	64QAM
SISO	M patch	100	4	27500 - 28350	0.185	22.66	393MG7D	BPSK
SISO	M patch	100	4	27500 - 28350	0.185	22.68	393MG7D	QPSK
SISO	M patch	100	4	27500 - 28350	0.147	21.67	394MW7D	16QAM
SISO	M patch	100	4	27500 - 28350	0.091	19.57	394MW7D	64QAM
SISO Dual	M patch	100	4	27500 - 28350	0.250	23.98	392MG7D	BPSK
SISO Dual	M patch	100	4	27500 - 28350	0.265	24.24	395MG7D	QPSK
SISO Dual	M patch	100	4	27500 - 28350	0.203	23.08	393MW7D	16QAM
SISO Dual	M patch	100	4	27500 - 28350	0.131	21.18	393MW7D	64QAM

2. FACILITIES AND ACCREDITATIONS

2.1. FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 (Version: 2014) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated March 11, 2024 (Registration Number: KR0032).

Seoicheon-ro
☒ Semi Chamber 1
☐ Semi Chamber 2
☐ Semi Chamber 3
☒ mmWave Chamber

The radiated test facilities consisted of an indoor 3 meters semi-anechoic chamber used for final measurements and exploratory measurements, when necessary for radiated emissions measurements in the spurious domain. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. 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. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the table to bring the total table height to 1.5m for measurements above 1GHz.

Radiated spurious emission measurements from 30MHz - 18GHz were performed in a semi anechoic chamber (SAC) conforming to the site validation requirements.

Radiated power (EIRP) measurements were performed according to ANSI C63.26_2015 in a full anechoic chamber (FAC).

* The test facility has been recognised by the FCC under registration number KR0032. The full scope of recognition can be viewed at

https://apps.fcc.gov/oetcf/eas/reports/ViewTestFirmAccredScopes.cfm?calledFromFrame=N&RequestTimeout=500®num_specified=N&test_firm_id=5749.

2.2. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

3. TEST SPECIFICATIONS

FCC Rule Parts	47 CFR FCC Part2, Part 30
Measurement standards	ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 662911 D01 v02r01, KDB 662911 D02 v01, KDB 842590 D01 v01r02

Note:

The EUT was tested per the guidance of ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 842590 D01 v01r02

EIRP Simulation data for all Beam IDs was used to determine the worst case Beam ID for SISO operation and Beam ID pair for SISO Dual/MIMO operation. These Beam ID's was used for final measurements.

All testing was performed using FTM software at continuous Tx operation(100 % duty cycle).

Patch antenna is comprised of two separate antenna feeds(H/V).

All modulations, RB size, CP-OFDM, DFT-s-OFDM and SCS were investigated and the worst case configuration results are reported.

In cases of SISO, SISO Dual, MIMO, CP-OFDM is supported.

In cases of SISO, SISO Dual, DFT-s-OFDM mode is supported.

Per 2.1057(a)(2), spurious emissions were investigated up to 200 GHz.(up to 100 GHz for n258, n261 band)

The radiated RF output power, band edge and all out-of-band emissions in the spurious domain are evaluated to the EIRP limits.

In case of band edge, if the band edge results do not comply the EIRP limit, the band edge results are converted to an equivalent conductive power by subtracting the known antenna gain from the EIRP measured at each frequency of interest. These emissions are compared to the 30.203 spurious emission limits as conductive power levels.

Beam IDs were selected based on which Beam ID produces the highest EIRP during EIRP simulation.

The radiated spurious emission was investigated in three orthogonal orientation x, y and z.

(worst case: y for n258a, y for n258b, y for n261, y for n260)

3.1. STANDARDS & TEST SUMMARY

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 2, Part 30

Description	Test Limit	Reference	Results
Occupied Bandwidth	N/A	§ 2.1049	Compliant
Equivalent Isotropic Radiated Power	43 dBm	§ 30.202 § 30.202	Compliant
Out-of-Band Emissions at the Band Edge	-13 dBm/MHz for all out-of-band emissions, -5 dBm/MHz from the band edge up to 10 % of the channel BW	§ 2.1051, § 30.203	Compliant
Radiated Spurious Emissions	-13 dBm/MHz for all out-of-band emissions	§ 2.1051, § 30.203	Compliant
Frequency Stability	Fundamental emissions stay within authorized frequency block	§ 2.1055	Compliant

3.2. HIGHEST E.I.R.P POSITION

Antenna 0(M patch) SISO

Band	Ch.	Beam ID	Beam Pol.	Ant. Pol.	Azimuth(°)	Roll(°)	Beam ID	Beam Pol.	Ant. Pol.	Azimuth(°)	Roll(°)
n258a	Low	274	H	V	32	178	12	V	V	30	75
	Mid	274	H	V	28	178	17	V	V	28	77
	High	274	H	V	28	182	17	V	V	31	73
n258b	Low	274	H	V	45	179	12	V	V	31	74
	Mid	274	H	V	44	167	17	V	V	31	73
	High	274	H	V	44	178	12	V	V	29	76
n261	Low	271	H	V	43	195	18	V	H	61	17
	Mid	271	H	V	46	196	18	V	H	75	15
	High	271	H	V	43	195	18	V	H	73	15
n260	Low	19	H	V	28	44	276	V	H	91	46
	Mid	15	H	V	47	43	274	V	H	61	346
	High	14	H	V	58	0	270	V	H	43	2

Antenna 0(M patch) SISO Dual, MIMO

Band	Ch.	Beam ID	Beam Pol.	Ant. Pol.	Azimuth(°)	Roll(°)	Beam ID	Beam Pol.	Ant. Pol.	Azimuth(°)	Roll(°)
n258a	Low	16/272	H+V	H	60	315	16/272	H+V	V	45	256
	Mid	16/272	H+V	H	58	313	16/272	H+V	V	43	255
	High	16/272	H+V	H	61	313	16/272	H+V	V	46	255
n258b	Low	16/272	H+V	H	44	302	16/272	H+V	V	47	269
	Mid	16/272	H+V	H	47	301	16/272	H+V	V	43	269
	High	16/272	H+V	H	43	300	16/272	H+V	V	47	268
n261	Low	15/271	H+V	H	62	346	15/271	H+V	V	43	197
	Mid	18/274	H+V	H	91	16	18/274	H+V	V	45	149
	High	18/274	H+V	H	74	14	18/274	H+V	V	43	151
n260	Low	15/271	H+V	H	90	43	15/271	H+V	V	43	44
	Mid	14/270	H+V	H	47	0	14/270	H+V	V	13	165
	High	13/269	H+V	H	76	329	13/269	H+V	V	58	330

3.3. MAXIMUM MEASUREMENT UNCERTAINTY

The value of the measurement uncertainty for the measurement of each parameter.

Coverage factor $k = 2$, Confidence levels of 95 %

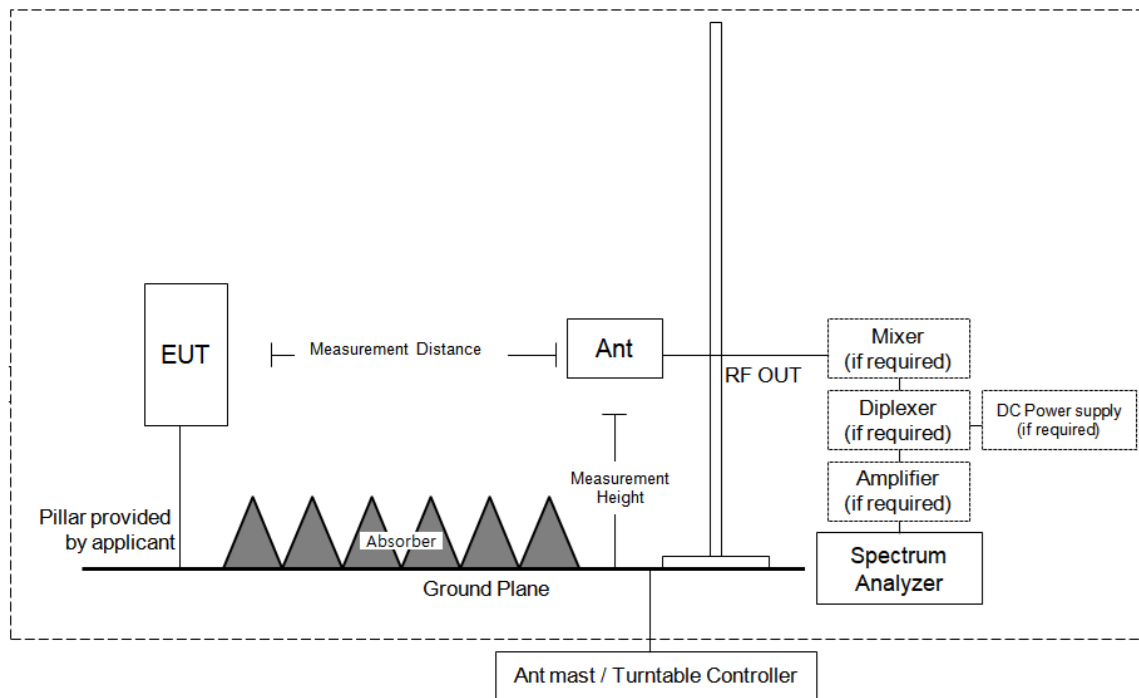
Description	Condition	Uncertainty
Occupied Bandwidth	-	± 0.31 MHz
Equivalent Isotropic Radiated Power	23.75 GHz ~ 25.70 GHz, 27.00 GHz ~ 28.80 GHz, 36.60 GHz ~ 40.02 GHz	± 5.66 dB
Band Edge		
Radiated Spurious Emissions	9 kHz ~ 30 MHz	± 4.36 dB
	30 MHz ~ 1 GHz	± 5.70 dB
	1 GHz ~ 18 GHz	± 5.52 dB
	18 GHz ~ 40 GHz	± 5.66 dB
	40 GHz ~ 200 GHz	± 5.58 dB
Frequency Stability	-	69.61 kHz

3.4. STANDARDS ENVIRONMENTAL TEST CONDITIONS

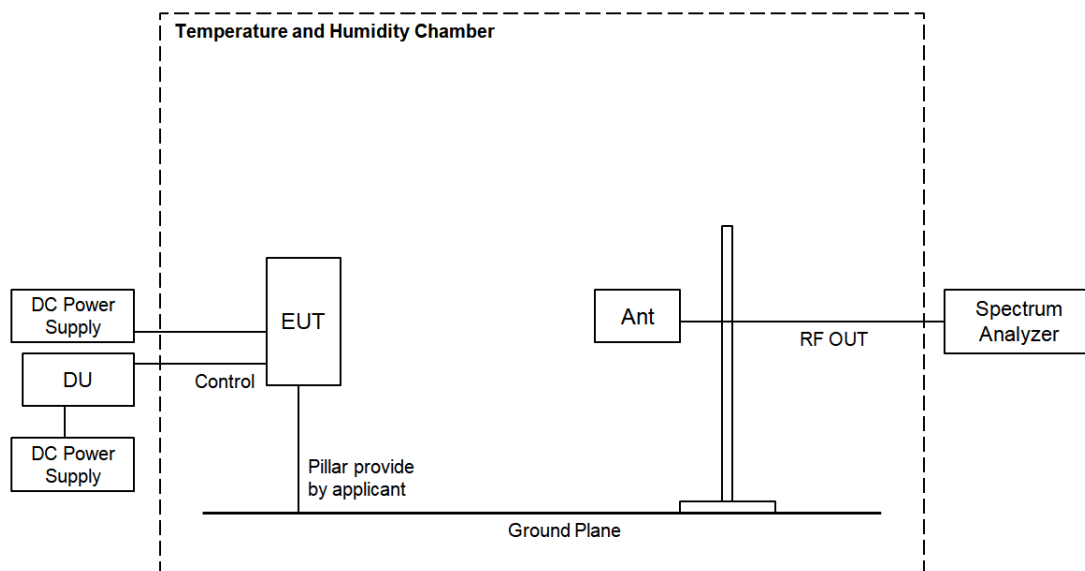
Temperature:	+15 °C to +35 °C
Relative humidity:	30 % to 60 %
Air pressure:	860 mbar to 1 060 mbar

3.5. TEST DIAGRAMS

Occupied Bandwidth / EIRP / Band Edge / RSE



Frequency stability



3.6. ADDITIONAL DESCRIPTIONS ABOUT TEST

- All tests are performed by radiated measurement and applied below conditions.

: Used measurement distance with far field of test such as EIRP, OBW and Band edge are as follow.

$$\text{Wavelength} = \text{Speed of light} / \text{Measurement frequency} = 30 / 4\,000 = 0.0075$$

$$(2 \times (\text{Max measured antenna dimension})^2) / \text{Wavelength} = (2 \times (0.09604686)^2) / 0.0075 = \mathbf{2.46\,m}$$

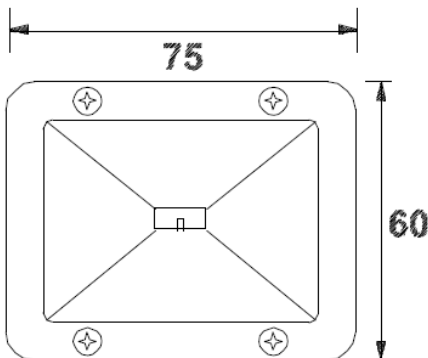
: Spurious emissions measurement distance is shown in table below(Reference : Measurement Antenna Dimension).

Frequency Range (GHz)	Wavelength (cm)	Far Field Distance (m)	Measurement Distance(m)
18 ~ 40	0.75	2.46	3.00
40 ~ 60	0.50	1.354	1.50
60 ~ 90	0.33	0.856	1.00
90 ~ 140	0.214	0.572	1.00
140 ~ 200	0.15	0.332	0.50

- Unwanted radiated emissions test was performed on state of all EUT antenna path is operated with a maximum output power level.

- In case of far-field distance for fundamental, we applied the measured antenna dimension because the measured antenna is bigger than the antenna of EUT.

- Dimension of measured(BBHA 9170) antenna: 0.096046 m



- Dimension of EUT antenna: 0.023612 m

- Below 18 GHz, measurement distance is 3.00 m.

4. TEST EQUIPMENTS

Manufacturer	Model / Equipment	Due to Calibration	Calibration Interval	Serial No.
Agilent	N9030A / PXA Signal Analyzer	02/23/2025	Annual	US51350313
Agilent	N9030B / PXA Signal Analyzer	04/26/2025	Annual	MY60070602
KIKUSUI	PWR800L / DC Power Supply	07/17/2025	Annual	RE002047
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Rohde&Schwarz	FSW85/ Spectrum Analyzer	10/02/2025	Annual	101256
Schwarzbeck	Loop Antenna	01/16/2025	Biennial	1513-175
Emco	2090 / Controller	N/A	N/A	060520
Ets	Turn Table	N/A	N/A	N/A
Schwarzbeck	VULB 9168 / Hybrid Antenna	08/28/2026	Biennial	9168-0895
Schwarzbeck	BBHA 9120D / Horn Antenna	01/03/2026	Biennial	9120D-1300
Schwarzbeck	BBHA 9170 / Horn Antenna	11/01/2025	Biennial	BBHA9170541
OML INC.	WR-19 / Horn Antenna	03/07/2026	Annual	M19RH-180423-1
OML INC.	WR-19 / Horn Antenna	03/07/2026	Annual	M19RH-180423-2
OML INC.	WR-12 / Horn Antenna	04/03/2026	Annual	M12RH-160419-1
OML INC.	WR-12 / Horn Antenna	04/03/2026	Annual	M12RH-160419-2
OML INC.	WR-08 / Horn Antenna	03/07/2026	Annual	M08RH-180501-1
OML INC.	WR-08 / Horn Antenna	03/07/2026	Annual	M08RH-180501-2
OML INC.	WR-05 / Horn Antenna	03/07/2026	Annual	M05RH-180501-1
OML INC.	WR-05 / Horn Antenna	03/07/2026	Annual	M05RH-180501-2
VDI	WR19SAX / Spectrum Analyzer Extension Module	03/06/2025	Annual	SAX771
VDI	WR12SAX / Spectrum Analyzer Extension Module	03/06/2025	Annual	SAX773
VDI	WR8.0SAX / Spectrum Analyzer Extension Module	03/06/2025	Annual	SAX779
VDI	WR5.1SAX / Spectrum Analyzer Extension Module	03/06/2025	Annual	SAX774
OML INC.	WR-19 / Source Module	07/12/2025	Annual	S19MS-A-160516-1
OML INC.	WR-12 / Source Module	07/12/2025	Annual	S12MS-A-160419-1
OML INC.	WR-08 / Source Module	07/12/2025	Annual	S08MS-A-160419-1
OML INC.	WR-05 / Source Module	07/12/2025	Annual	S05MS-A-160419-1
NANGYEUL CO., LTD.	NY-THR18750 / Temperature and Humidity Chamber	01/04/2025	Annual	NY-200912201A
Rohde & Schwarz	SMV100A / Signal Generator	07/26/2025	Annual	177633
Keysight	E7515B / UXM 5G Wireless Test Platform	12/19/2024	Annual	MY58300756
T&M SYSTEM	FBSR-04C / LNA1 thru(100M-18G)	04/11/2025	Annual	S4L4
SONOMA INSTRUMENT	310N / AMPLIFIER	02/14/2025	Annual	186169
TESTEK	TK-PA1840H / AMPLIFIER	10/11/2025	Annual	170011-L

Note:

- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
- Especially, all antenna(except WR 08, 05) for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. TEST RESULT

5.1. OCCUPIED BANDWIDTH

FCC Rules

Test Requirements:

§ 2.1049 Measurements required: Occupied bandwidth.

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the specified conditions of § 2.1049 (a) through (i) as applicable. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedures:

The measurement is performed in accordance with Section 5.4.3 and 5.4.4 of ANSI C63.26.

5.4.3 Occupied bandwidth—Relative measurement procedure

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times$ RBW.

- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.

NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.

- d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.

- e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

- f) Determine the reference value by either of the following:

- 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

- 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.

- g) Determine the “-X dB amplitude” as equal to (Reference Value - X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.

- h) If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).

- i) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive

frequency difference between the two markers. The spectral envelope can cross the “–X dB amplitude” at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “–X dB amplitude.”

j) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

5.4.4 Occupied bandwidth—Power bandwidth (99%) measurement procedure

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).

b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.

c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.

NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.

d) Set the detection mode to peak, and the trace mode to max-hold.

e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.

f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

Test Results:
Tabular Data of Occupied Bandwidth
n258a Band Antenna 0(M patch)

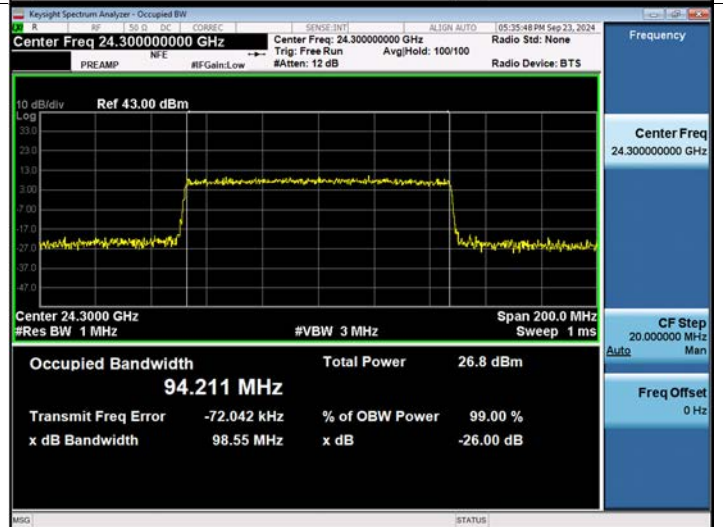
Antenna	Bandwidth [MHz]	CCs active	Modulation	OBW [MHz]
M patch	50	1	BPSK	46.308
			QPSK	46.450
			16QAM	46.500
			64QAM	46.347
	100	1	BPSK	91.268
			QPSK	94.340
			16QAM	94.199
			64QAM	94.211
	100	2	BPSK	194.35
			QPSK	194.44
			16QAM	194.49
			64QAM	194.25

Plot Data of RF Occupied Bandwidth n258a Band Antenna 0(M patch)

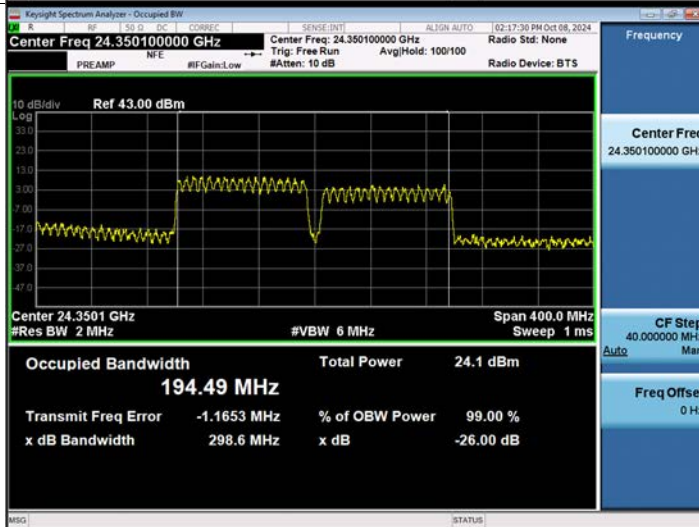
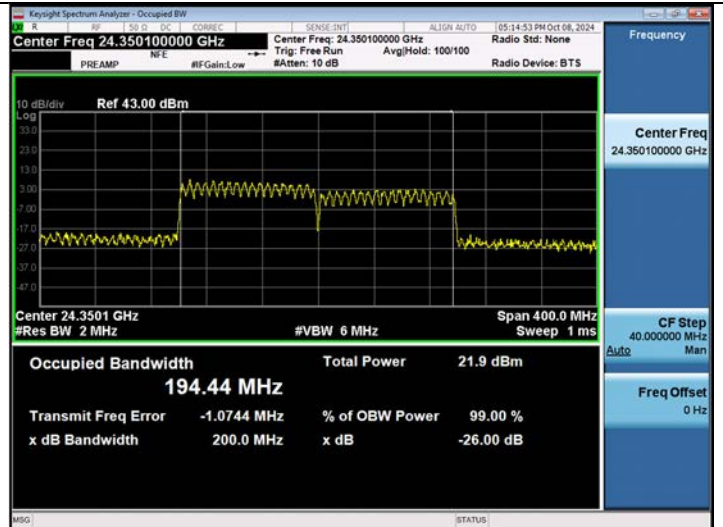
50 MHz, 1CC



100 MHz, 1CC



100 MHz, 2CC



Tabular Data of Occupied Bandwidth

n258b Band Antenna 0(M patch)

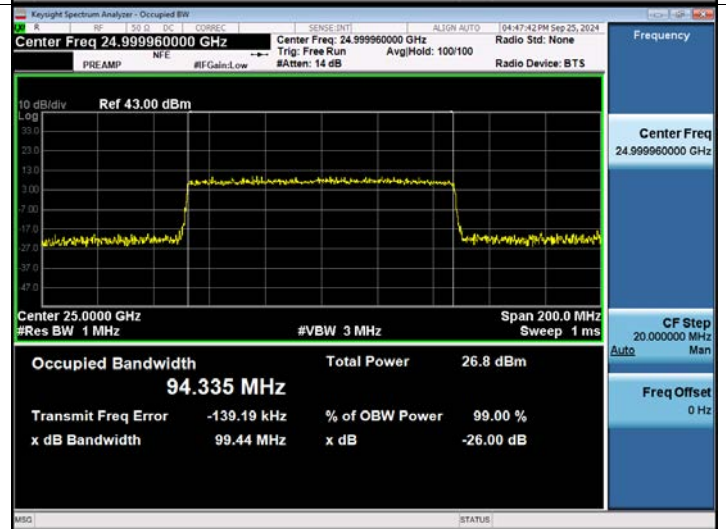
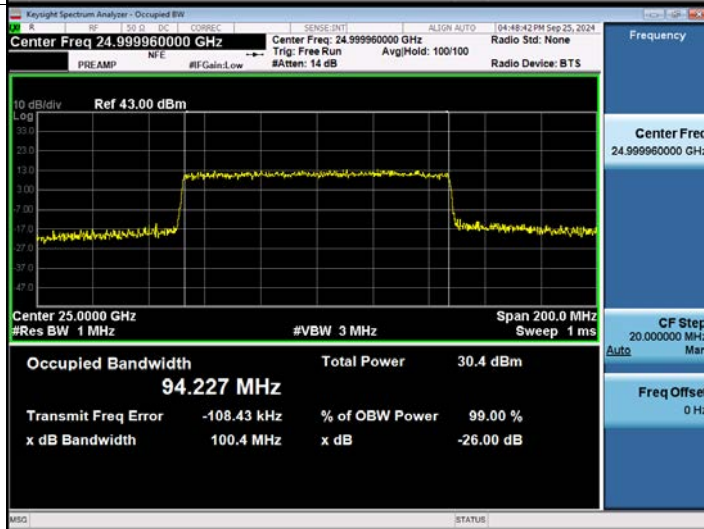
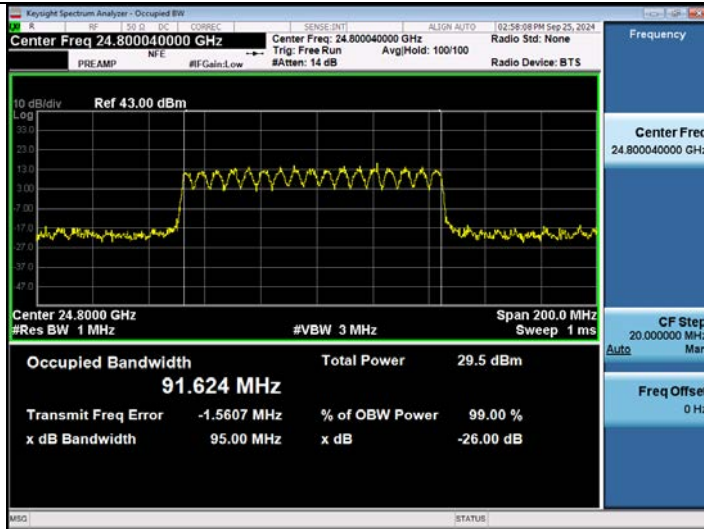
Antenna	Bandwidth [MHz]	CCs active	Modulation	OBW [MHz]
M patch	50	1	BPSK	46.440
			QPSK	46.347
			16QAM	46.365
			64QAM	46.327
	100	1	BPSK	91.624
			QPSK	94.328
			16QAM	94.227
			64QAM	94.335
	100	2	BPSK	194.10
			QPSK	194.25
			16QAM	194.36
			64QAM	193.93
	100	3	BPSK	294.08
			QPSK	293.38
			16QAM	293.72
			64QAM	293.30
	100	4	BPSK	393.73
			QPSK	392.74
			16QAM	392.92
			64QAM	392.64

Plot Data of RF Occupied Bandwidth n258b Band Antenna 0(M patch)

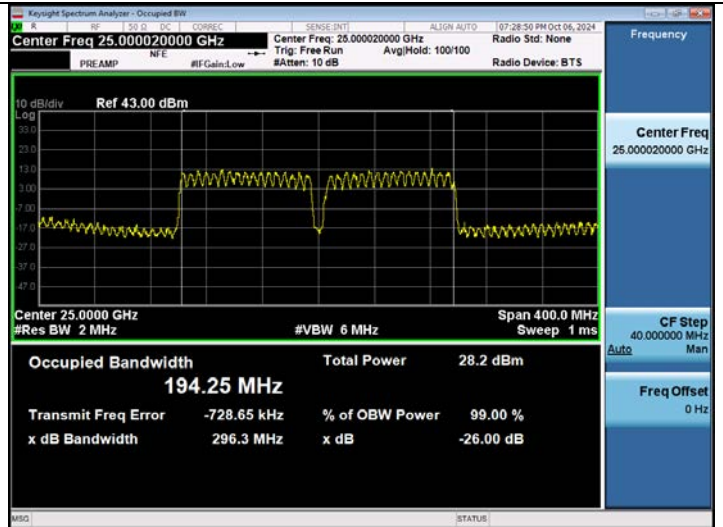
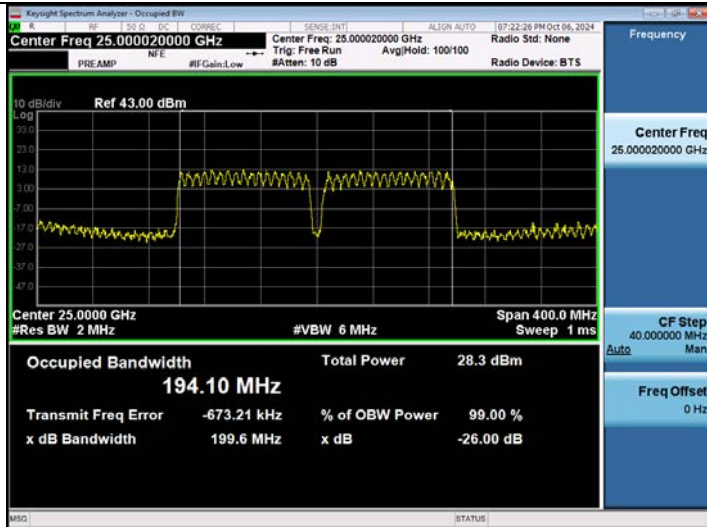
50 MHz, 1CC



100 MHz, 1CC



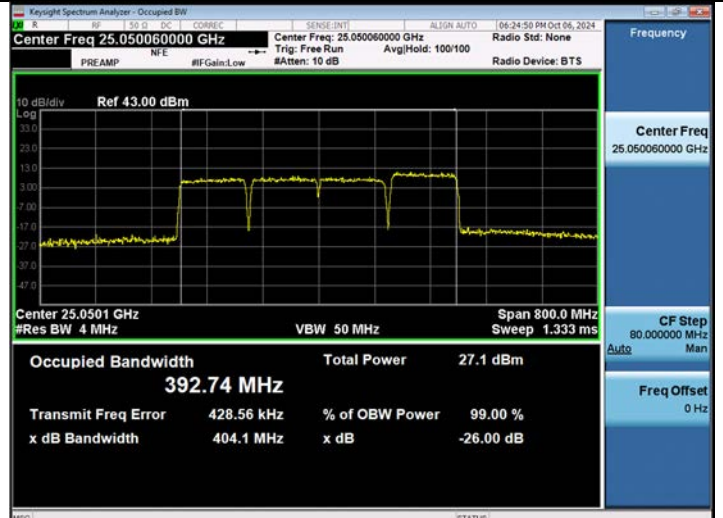
100 MHz, 2CC



100 MHz, 3CC



100 MHz, 4CC

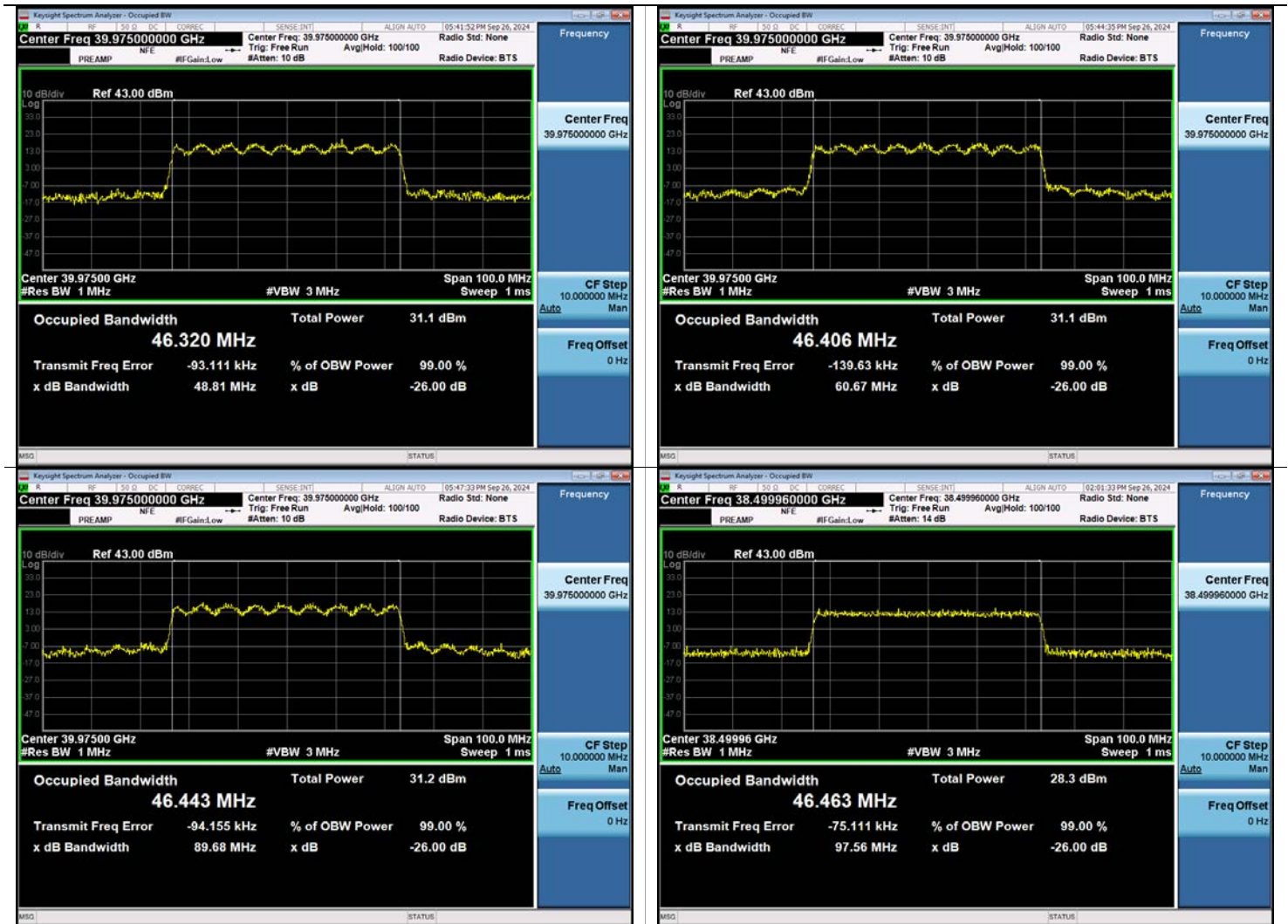


Tabular Data of Occupied Bandwidth
n260 Band Antenna 0(M patch)

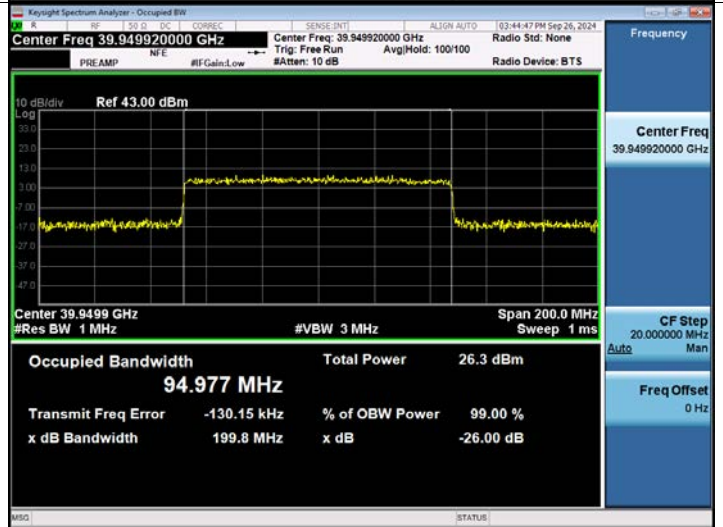
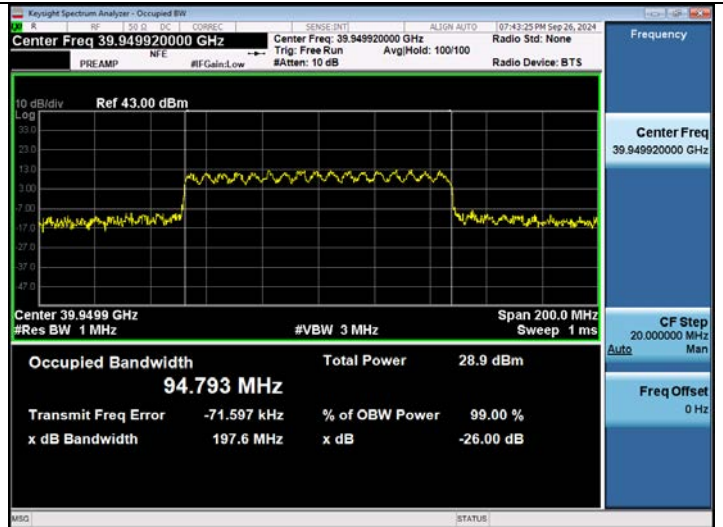
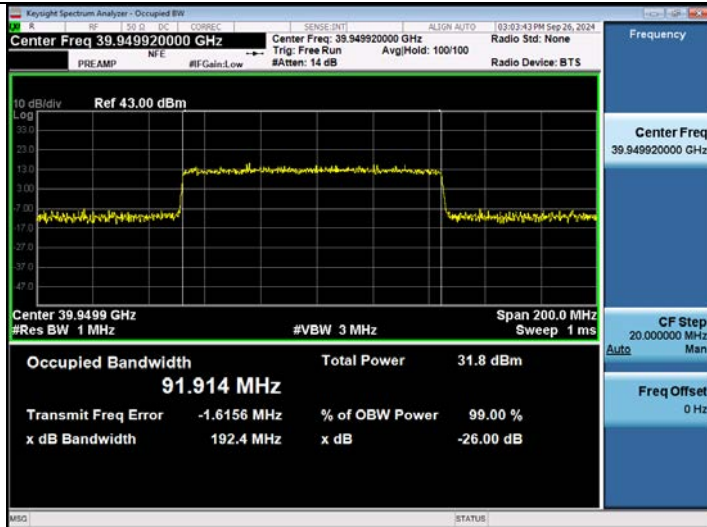
Antenna	Bandwidth [MHz]	CCs active	Modulation	OBW [MHz]
M patch	50	1	BPSK	46.320
			QPSK	46.406
			16QAM	46.443
			64QAM	46.463
	100	1	BPSK	91.914
			QPSK	94.793
			16QAM	95.158
			64QAM	94.977
	100	2	BPSK	193.26
			QPSK	194.79
			16QAM	194.65
			64QAM	196.89
	100	3	BPSK	293.29
			QPSK	295.28
			16QAM	295.43
			64QAM	296.64
	100	4	BPSK	395.23
			QPSK	395.88
			16QAM	395.53
			64QAM	398.79

Plot Data of RF Occupied Bandwidth n260 Band Antenna 0(M patch)

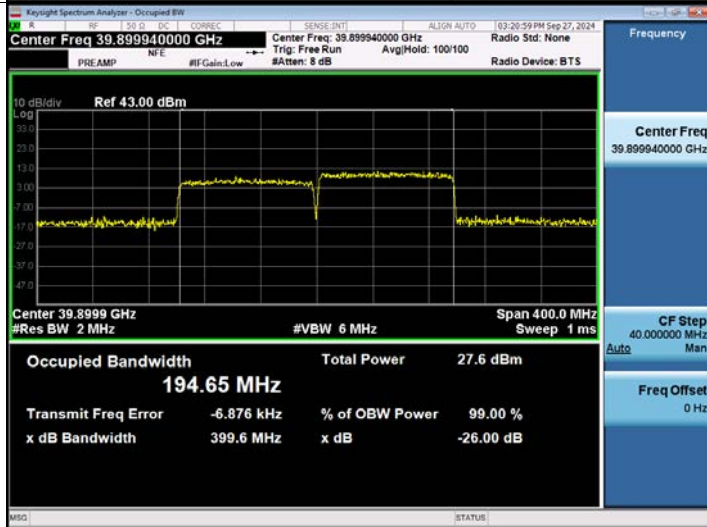
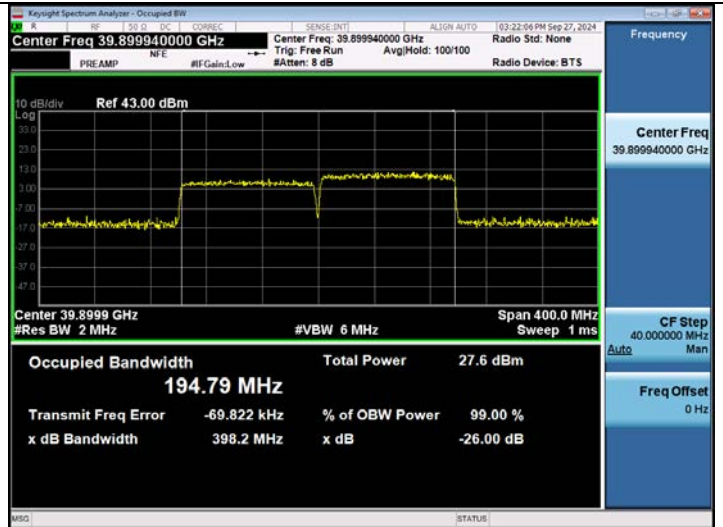
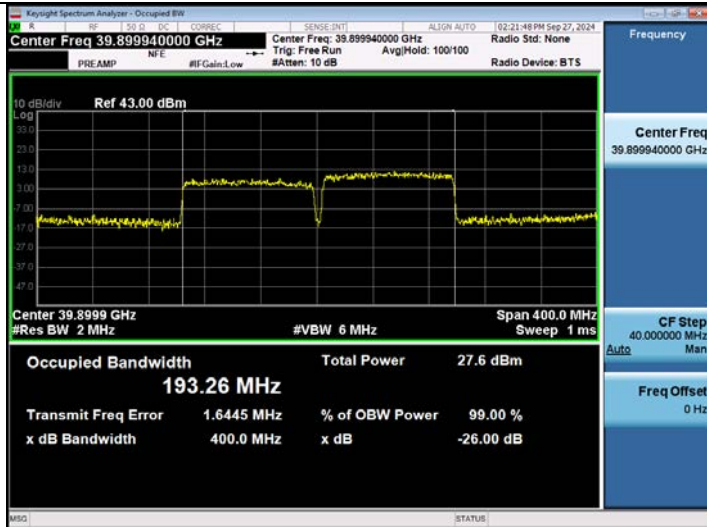
50 MHz, 1CC



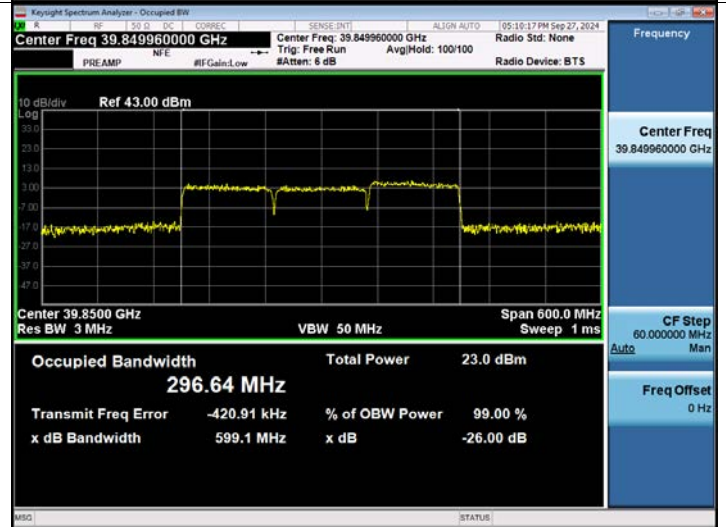
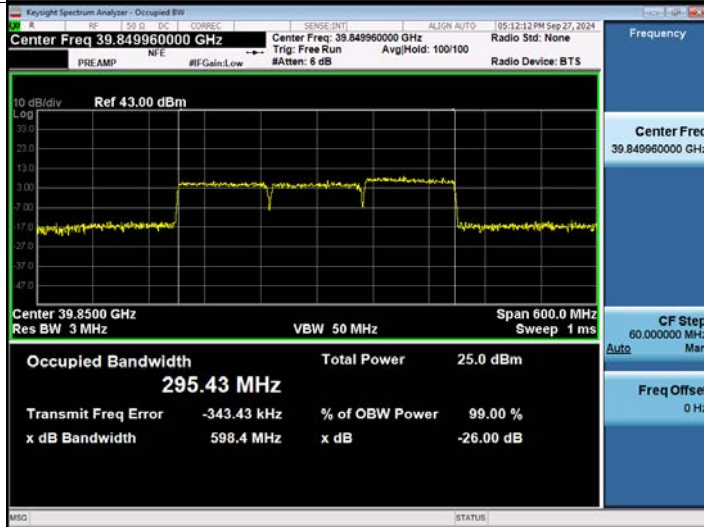
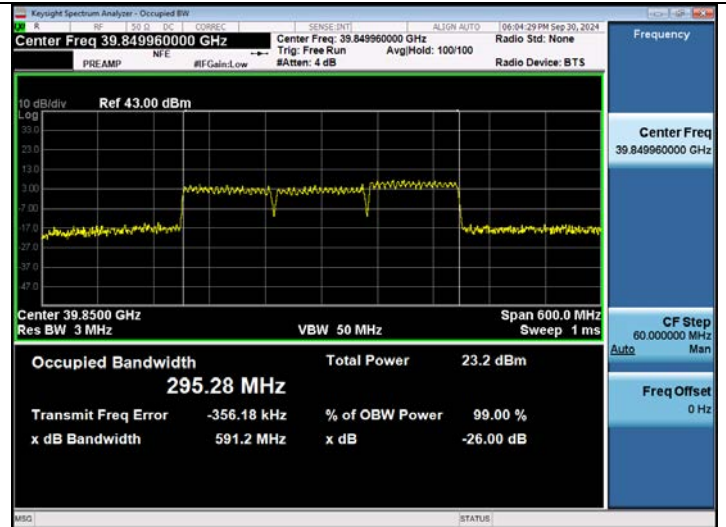
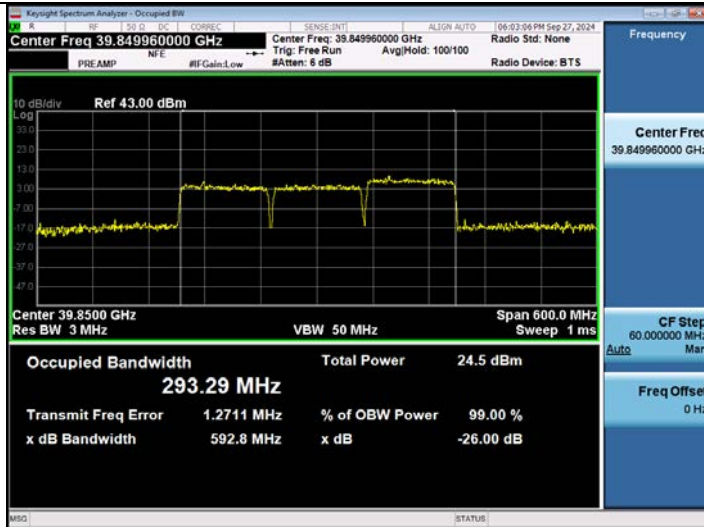
100 MHz, 1CC



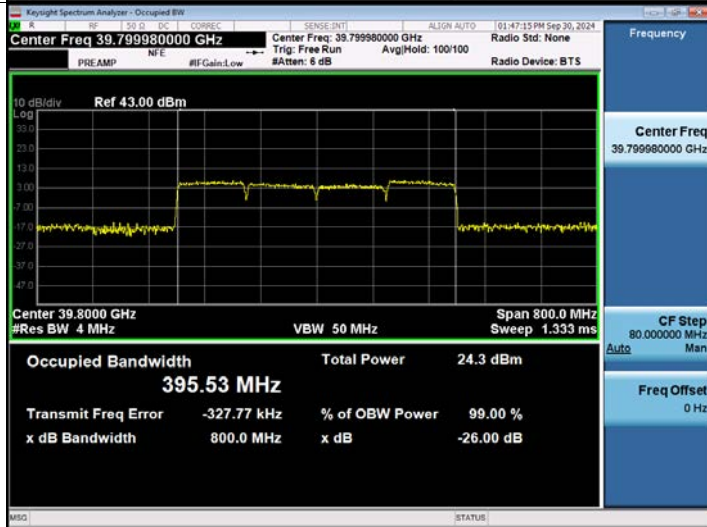
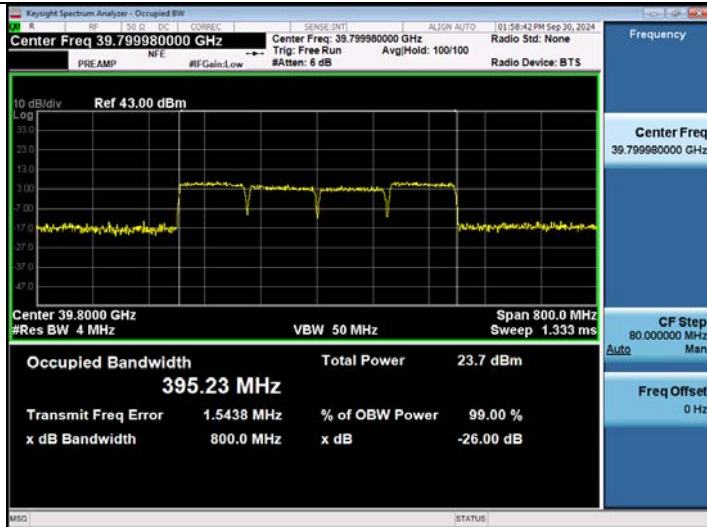
100 MHz, 2CC



100 MHz, 3CC



100 MHz, 4CC



Tabular Data of Occupied Bandwidth
n261 Band Antenna 0(M patch)

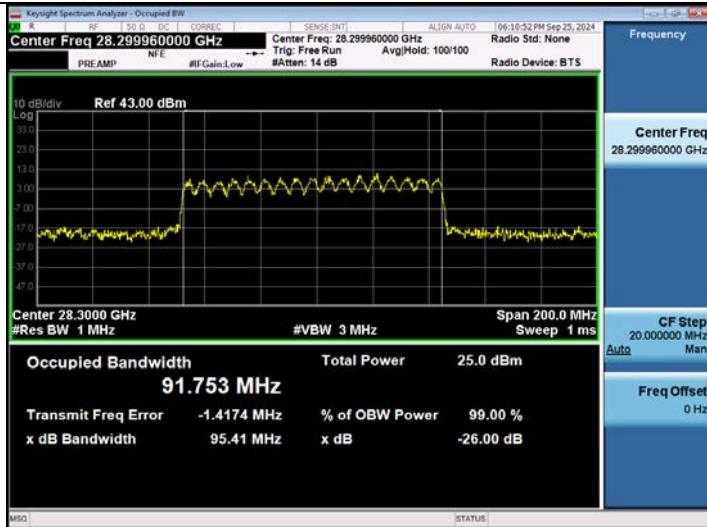
Antenna	Bandwidth [MHz]	CCs active	Modulation	OBW [MHz]
M patch	50	1	BPSK	46.323
			QPSK	46.399
			16QAM	46.317
			64QAM	46.341
	100	1	BPSK	91.753
			QPSK	94.533
			16QAM	94.354
			64QAM	94.366
	100	2	BPSK	194.32
			QPSK	194.84
			16QAM	194.95
			64QAM	194.63
	100	3	BPSK	294.87
			QPSK	295.38
			16QAM	295.64
			64QAM	294.29
	100	4	BPSK	393.01
			QPSK	394.71
			16QAM	393.56
			64QAM	393.60

Plot Data of RF Occupied Bandwidth
n261 Band Antenna 0(M patch)

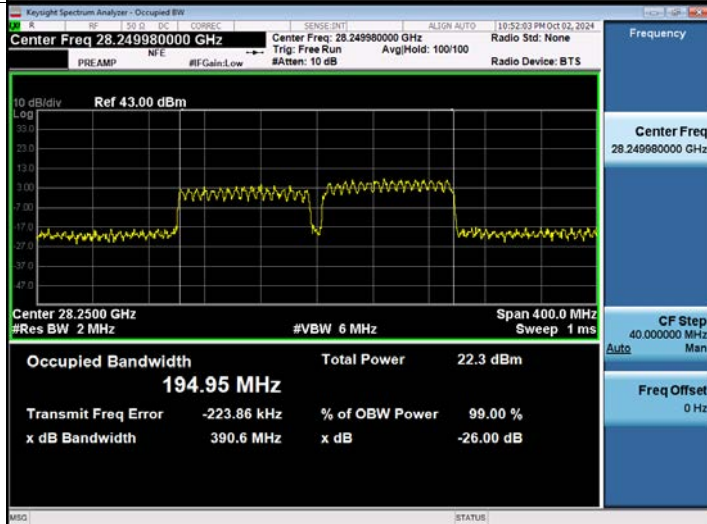
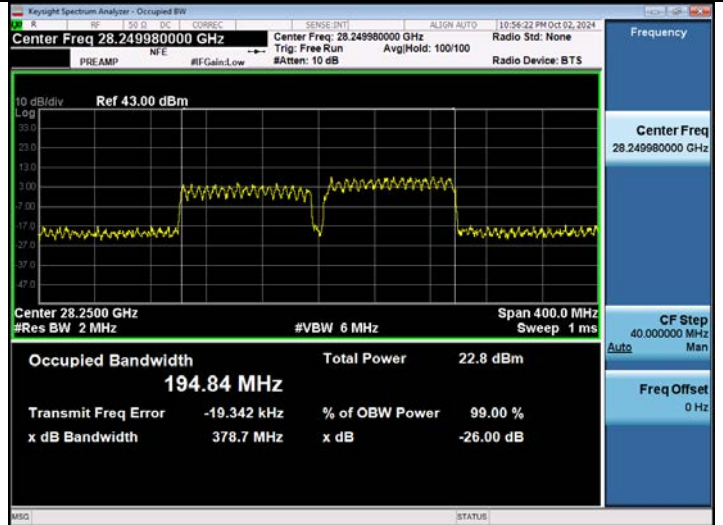
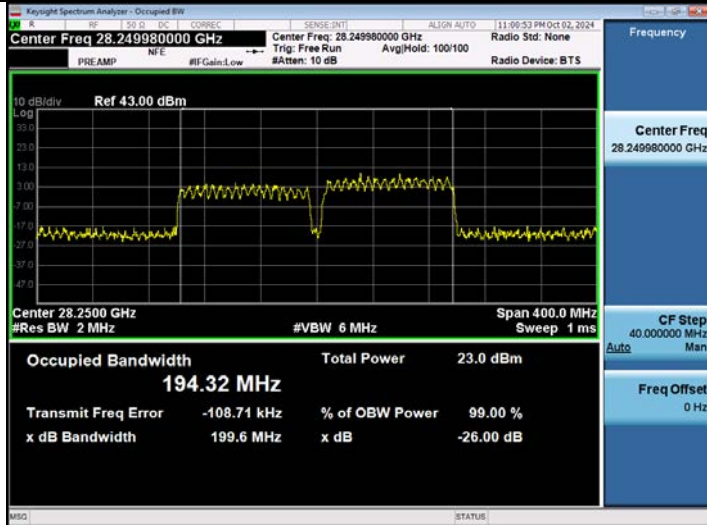
50 MHz, 1CC



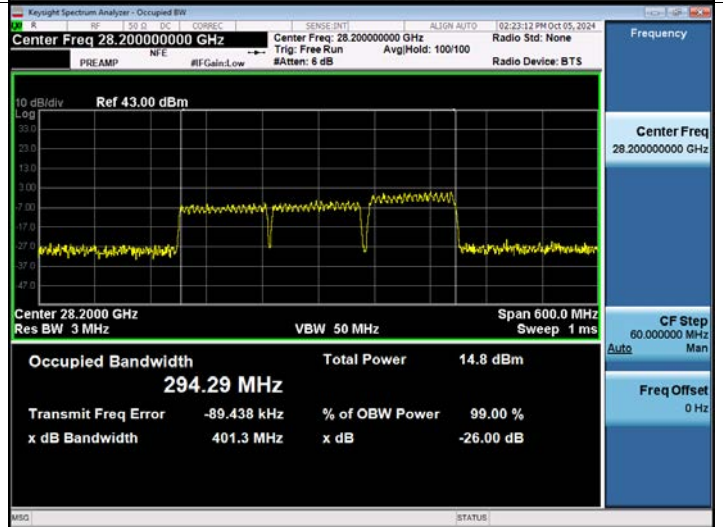
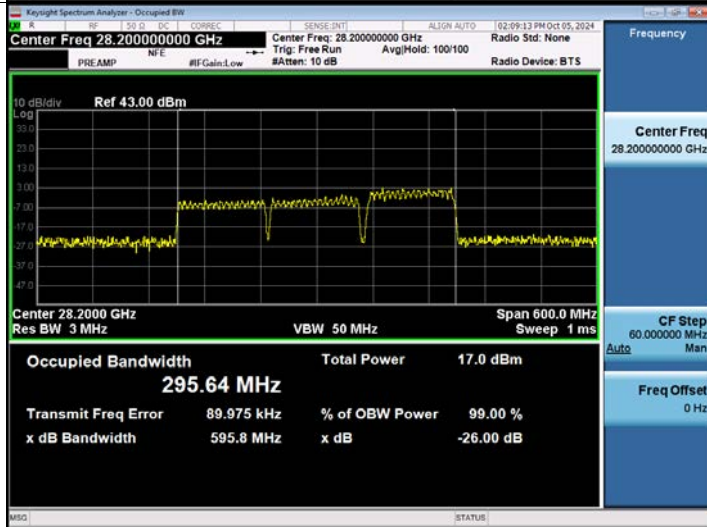
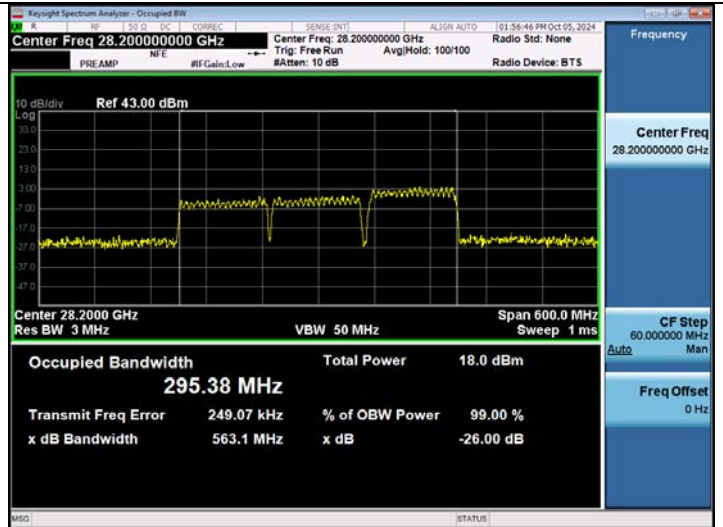
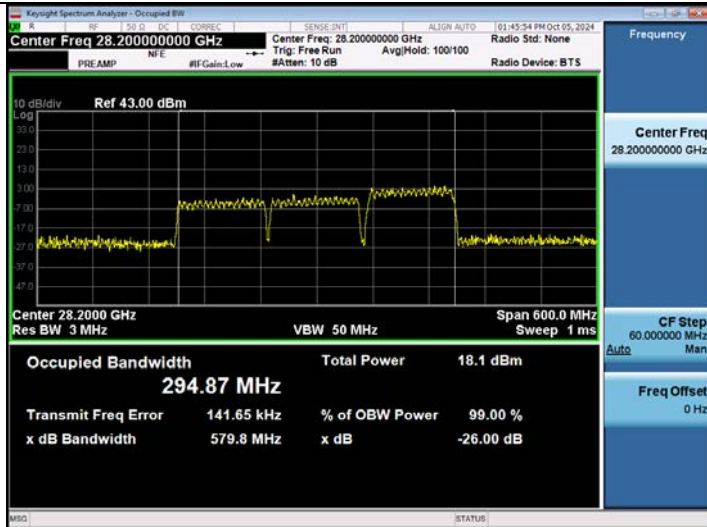
100 MHz, 1CC



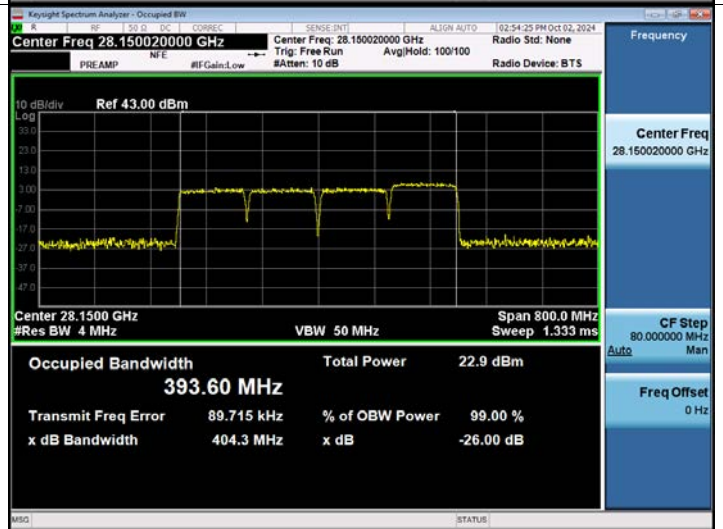
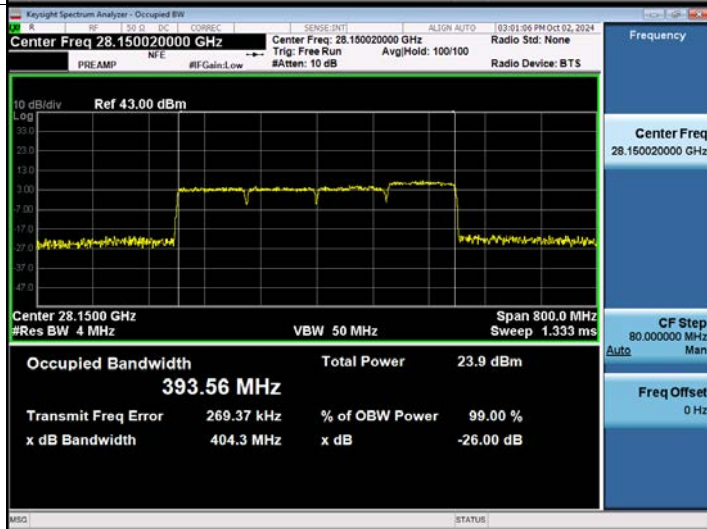
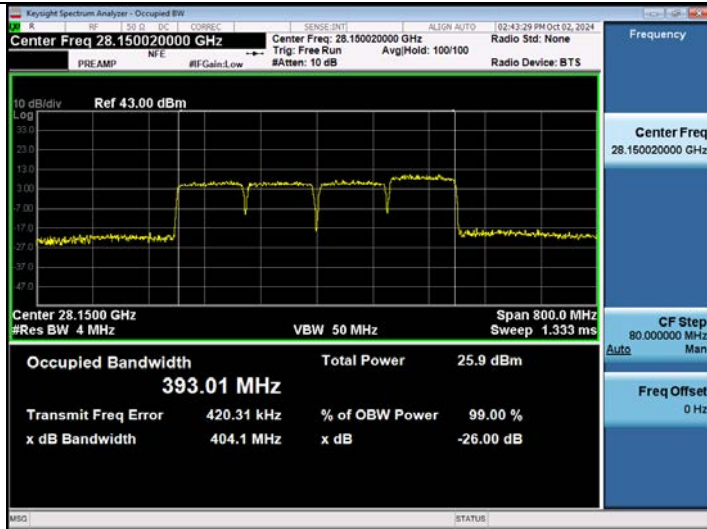
100 MHz, 2CC



100 MHz, 3CC



100 MHz, 4CC



5.2. EQUIVALENT ISOTROPIC RADIATED POWER

Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

The average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

FCC Rules

Test Requirements:

§ 30.202 Power limits.

- (b) For mobile stations, the average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

Test Procedures:

The measurement is performed in accordance with Section 5.2.4.4.2 of ANSI C63.26.

- a) Set span to $2 \times$ to $3 \times$ the OBW.
- b) Set RBW = 1% to 5% of the OBW.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
- e) Sweep time:
 - 1) Set = auto-couple, or
 - 2) Set $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ for single sweep (automation-compatible) measurement.
- f) Detector = power averaging (rms).
- g) Set sweep trigger to “free run.”
- h) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band or channel power measurement function with band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- j) Add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission.

Note:

1. The EUT was tested under rotating conditions and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
2. Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.
3. Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning. It was determined that H=0 degree and V=90 degree are the worst case positions when the EUT was transmitting horizontally and vertically polarized beams, respectively.

Test Results:

Tabular Data of EIRP

n258a Band Antenna 0(M patch)

SISO

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	Ant. Pol	RB Size/Offset	EIRP [dBm]
1	50	24275.04	Low	H	QPSK	V	1/16	27.44
		24350.04	Mid	H	BPSK	V	1/16	26.98
		24424.92	High	H	BPSK	V	1/16	26.71
		24275.04	Low	H	BPSK	V	1/16	27.13
		24275.04	Low	H	16QAM	V	1/16	27.39
		24275.04	Low	H	64QAM	V	1/16	24.26
1	100	24300.00	Low	H	QPSK	V	1/33	27.98
		24350.04	Mid	H	BPSK	V	1/33	26.98
		24399.96	High	H	16QAM	V	1/33	27.05
		24300.00	Low	H	BPSK	V	1/33	27.21
		24300.00	Low	H	16QAM	V	1/33	27.39
		24300.00	Low	H	64QAM	V	1/33	24.16
2	100	24350.04	Mid	H	QPSK	V	64/0	26.42
		24350.04	Mid	H	BPSK	V	64/0	26.41
		24350.04	Mid	H	16QAM	V	64/0	25.99
		24350.04	Mid	H	64QAM	V	64/0	22.30

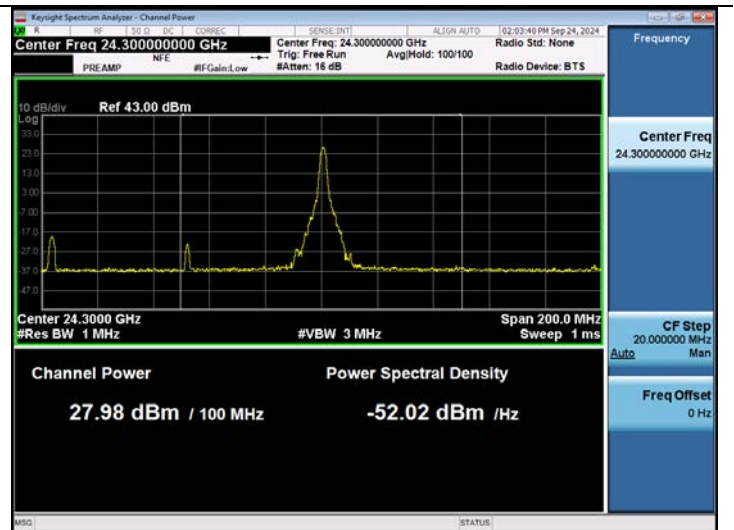
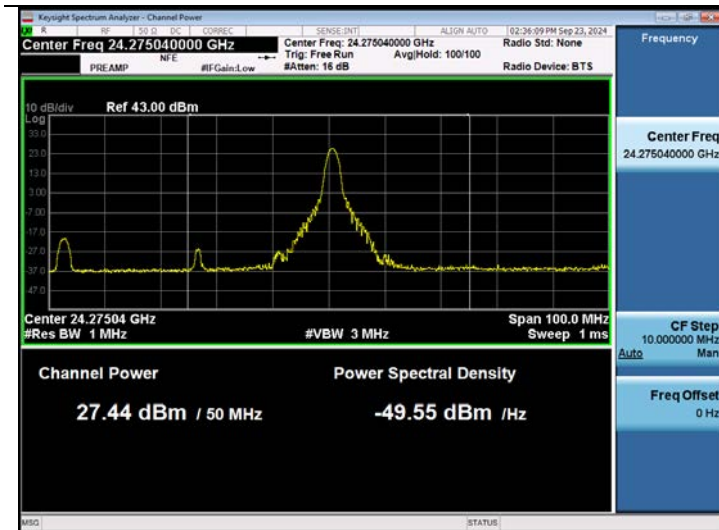
SISO Dual

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
1	50	24275.04	Low	H+V	BPSK	1/16	H	25.88	26.19
							V	14.63	
		24350.04	Mid	H+V	QPSK	1/16	H	26.02	26.30
							V	14.30	
		24424.92	High	H+V	BPSK	1/16	H	25.53	25.75
							V	12.74	
		24350.04	Mid	H+V	BPSK	1/16	H	25.97	26.25
							V	14.16	
		24350.04	Mid	H+V	16QAM	1/16	H	25.93	26.23
							V	14.53	
		24350.04	Mid	H+V	64QAM	1/16	H	22.87	23.16
							V	11.22	
1	100	24300.00	Low	H+V	BPSK	1/33	H	25.98	26.29
							V	14.60	
		24350.04	Mid	H+V	QPSK	1/33	H	26.17	26.46
							V	14.54	
		24399.96	High	H+V	BPSK	1/33	H	25.73	26.01
							V	14.04	
		24350.04	Mid	H+V	BPSK	1/33	H	26.03	26.32
							V	14.37	
		24350.04	Mid	H+V	16QAM	1/33	H	26.04	26.35
							V	14.76	
		24350.04	Mid	H+V	64QAM	1/33	H	23.09	23.37
							V	11.33	
2	100	24300.12	Mid	H+V	BPSK	64/0	H	22.99	24.58
							V	19.46	
		24300.12	Mid	H+V	QPSK	64/0	H	22.94	24.53
							V	19.41	
		24300.12	Mid	H+V	16QAM	64/0	H	22.50	24.09
							V	18.96	
		24300.12	Mid	H+V	64QAM	64/0	H	19.01	20.60
							V	15.45	

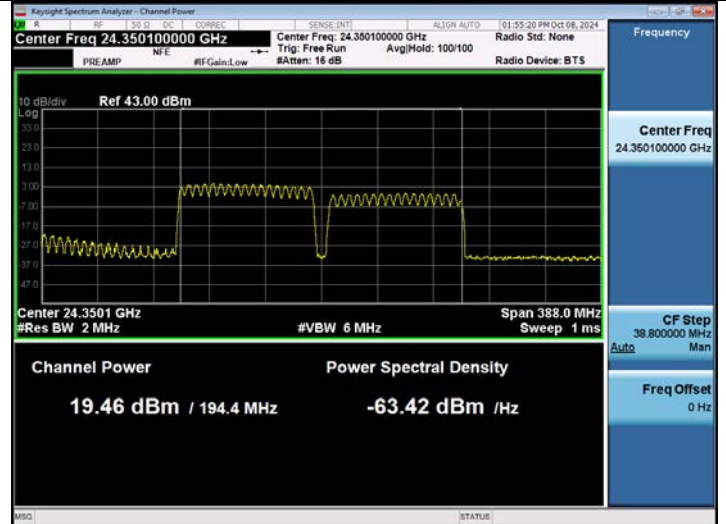
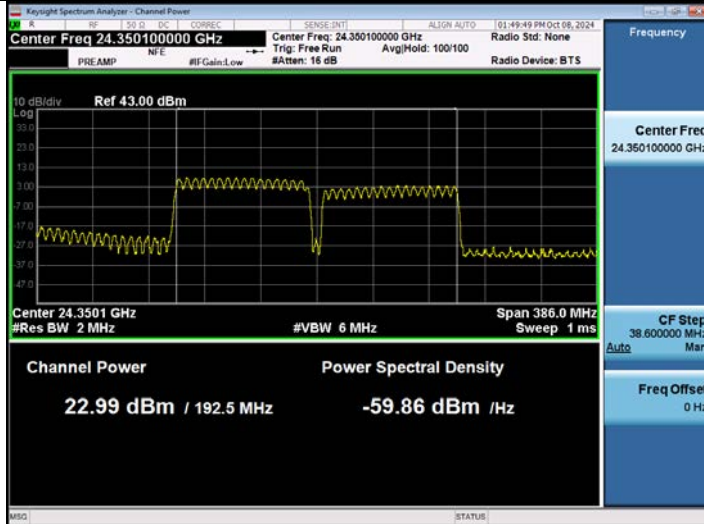
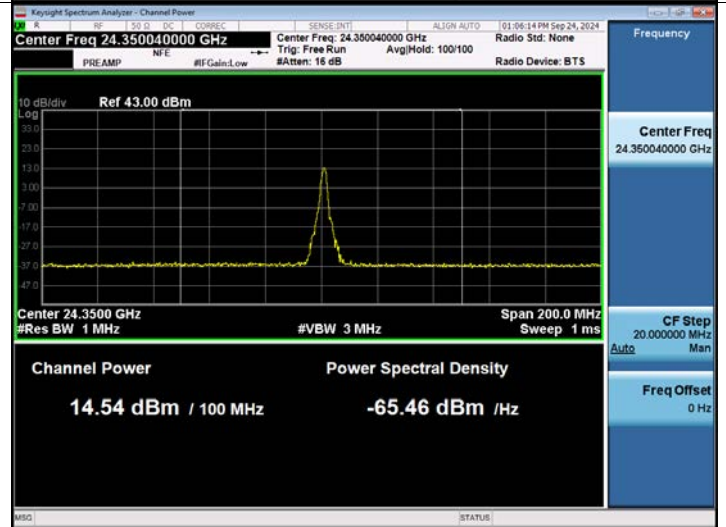
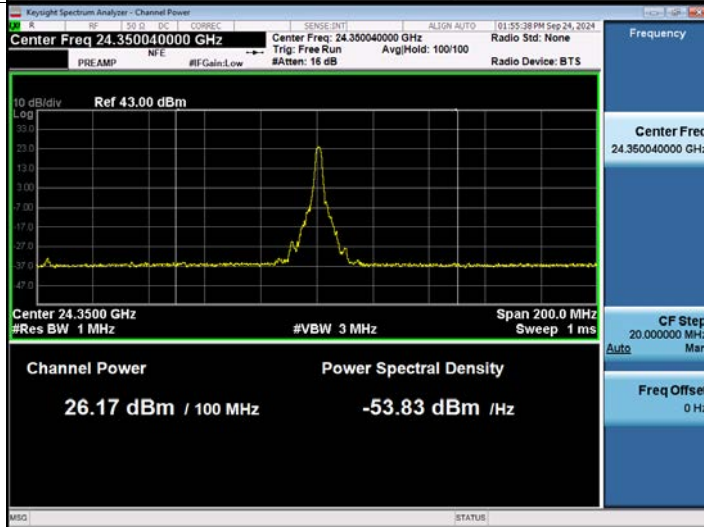
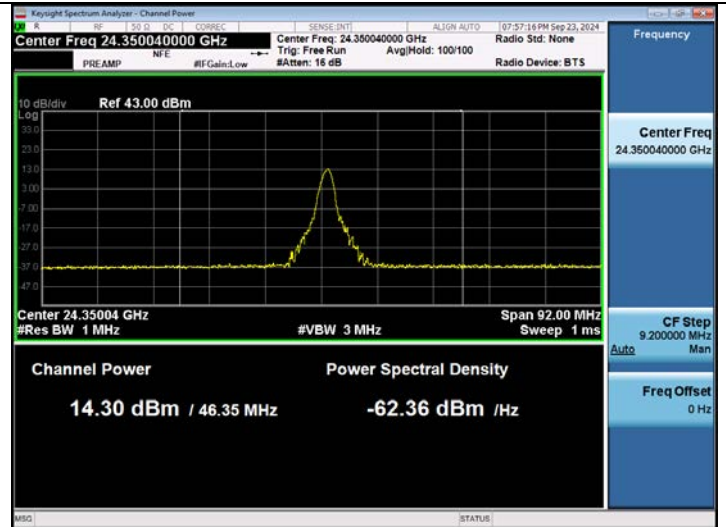
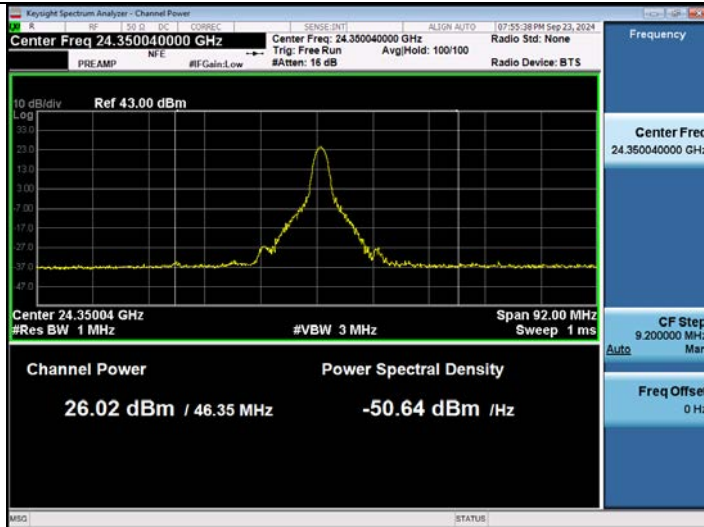
Plot Data of EIRP

n258a Band Antenna 0(M patch)

SISO



SISO Dual



Tabular Data of EIRP

n258b Band Antenna 0(M patch)

SISO

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	Ant. Pol	RB Size/Offset	EIRP [dBm]
1	50	24775.08	Low	H	BPSK	V	16/16	26.47
		24999.96	Mid	H	BPSK	V	16/16	27.01
		25224.96	High	H	BPSK	V	16/16	27.03
		25224.96	High	H	QPSK	V	32/0	27.01
		25224.96	High	H	16QAM	V	32/0	26.52
		25224.96	High	H	64QAM	V	16/16	23.46
1	100	24800.04	Low	H	BPSK	V	64/0	26.60
		24999.96	Mid	H	QPSK	V	64/0	27.23
		25200.00	High	H	QPSK	V	64/0	26.93
		24999.96	Mid	H	BPSK	V	64/0	27.22
		24999.96	Mid	H	16QAM	V	64/0	26.76
		24999.96	Mid	H	64QAM	V	64/0	23.64
2	100	24800.04	Low	H	BPSK	V	64/0	25.80
		24950.04	Mid	H	BPSK	V	64/0	24.34
		25200.00	High	H	QPSK	V	64/0	26.24
		25200.00	High	H	BPSK	V	64/0	26.23
		25200.00	High	H	16QAM	V	64/0	25.74
		25200.00	High	H	64QAM	V	64/0	22.13
3	100	24800.04	Low	H	BPSK	V	64/0	23.24
		24900.00	Mid	H	BPSK	V	64/0	21.34
		25200.00	High	H	QPSK	V	64/0	23.72
		25200.00	High	H	BPSK	V	64/0	23.67
		25200.00	High	H	16QAM	V	64/0	22.63
		25200.00	High	H	64QAM	V	64/0	20.65
4	100	24800.04	Low	H	BPSK	V	64/0	23.52
		24849.96	Mid	H	BPSK	V	64/0	21.47
		25200.00	High	H	QPSK	V	64/0	23.79
		25200.00	High	H	BPSK	V	64/0	23.77
		25200.00	High	H	16QAM	V	64/0	22.81
		25200.00	High	H	64QAM	V	64/0	20.73

SISO Dual

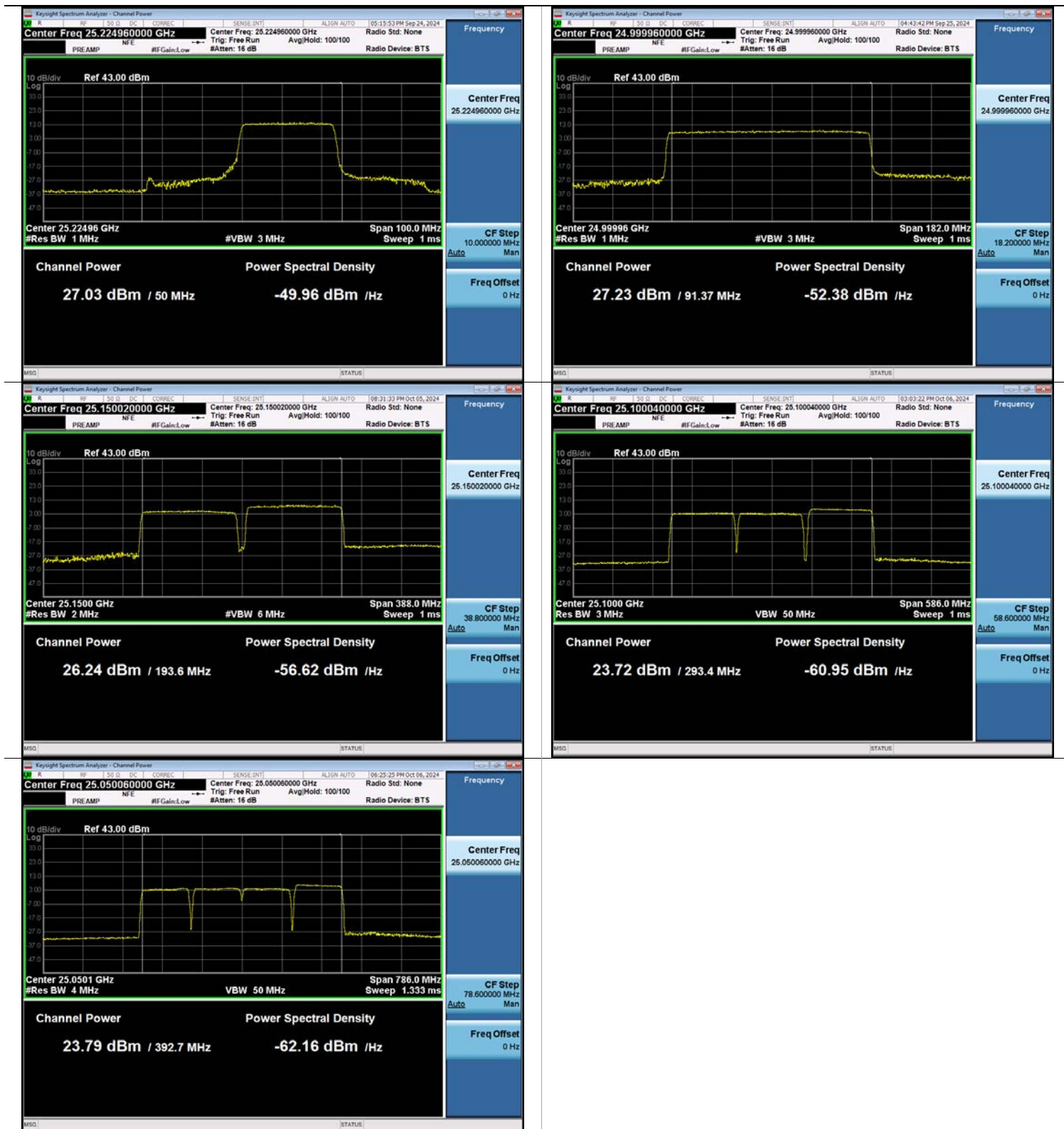
CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
1	50	24775.08	Low	H+V	BPSK	1/16	H	26.62	27.19
							V	18.12	
		24999.96	Mid	H+V	BPSK	1/16	H	26.09	26.68
							V	17.75	
		25224.96	High	H+V	BPSK	32/0	H	22.79	26.00
							V	23.19	
		24775.08	Low	H+V	QPSK	1/16	H	26.33	26.86
							V	17.48	
		24775.08	Low	H+V	16QAM	1/16	H	26.49	26.99
							V	17.37	
		24775.08	Low	H+V	64QAM	1/16	H	23.40	23.92
							V	14.43	
1	100	24800.04	Low	H+V	QPSK	1/33	H	26.69	27.27
							V	18.22	
		24999.96	Mid	H+V	BPSK	64/0	H	23.93	26.86
							V	23.76	
		25200.00	High	H+V	QPSK	64/0	H	23.22	26.37
							V	23.50	
		24800.04	Low	H+V	BPSK	1/33	H	26.59	27.10
							V	17.52	
		24800.04	Low	H+V	16QAM	1/33	H	26.59	27.14
							V	17.93	
		24800.04	Low	H+V	64QAM	1/33	H	23.41	24.00
							V	15.03	
2	100	24800.04	Low	H+V	BPSK	64/0	H	23.18	25.86
							V	22.49	
		24950.04	Mid	H+V	BPSK	64/0	H	23.35	26.26
							V	23.15	
		25200.00	High	H+V	BPSK	64/0	H	22.76	25.79
							V	22.79	
		24950.04	Mid	H+V	QPSK	64/0	H	23.36	26.26
							V	23.13	
		24950.04	Mid	H+V	16QAM	64/0	H	22.72	25.64
							V	22.54	
		24950.04	Mid	H+V	64QAM	64/0	H	19.33	22.14
							V	18.93	
3	100	24800.04	Low	H+V	BPSK	64/0	H	20.46	23.32
							V	20.15	
		24900.00	Mid	H+V	BPSK	64/0	H	20.55	23.50
							V	20.43	
		25200.00	High	H+V	BPSK	64/0	H	20.26	23.36
							V	20.43	
		24900.00	Mid	H+V	QPSK	64/0	H	20.30	23.16
							V	19.99	
		24900.00	Mid	H+V	16QAM	64/0	H	19.20	22.04
							V	18.86	
		24900.00	Mid	H+V	64QAM	64/0	H	17.17	20.04
							V	16.88	

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
4	100	24800.04	Low	H+V	BPSK	64/0	H	20.35	23.09
							V	19.80	
		24849.96	Mid	H+V	QPSK	64/0	H	20.55	23.51
							V	20.45	
		25200.00	High	H+V	BPSK	64/0	H	20.08	23.11
							V	20.12	
		24849.96	Mid	H+V	BPSK	64/0	H	20.53	23.40
							V	20.24	
		24849.96	Mid	H+V	16QAM	64/0	H	19.47	22.31
							V	19.13	
		24849.96	Mid	H+V	64QAM	64/0	H	17.49	20.25
							V	16.97	

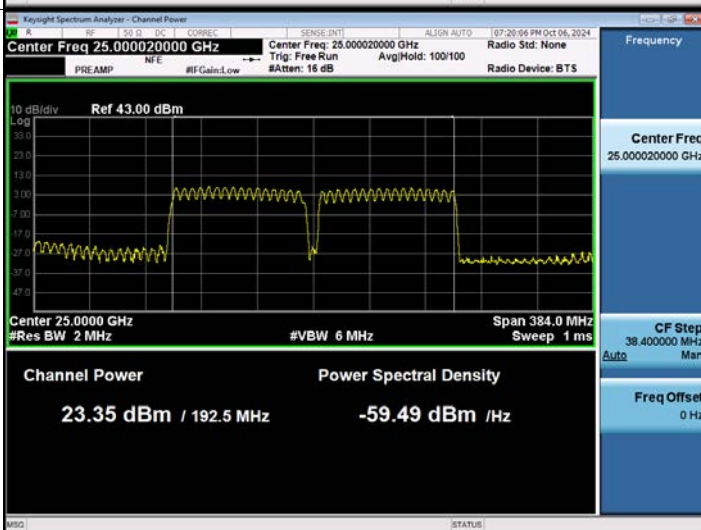
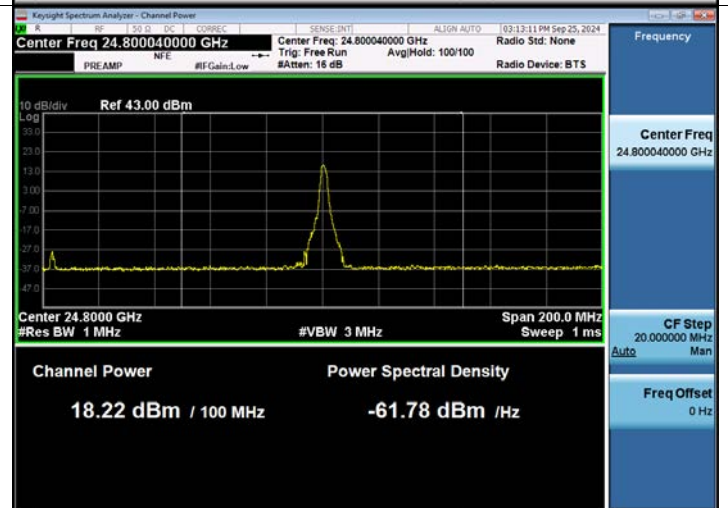
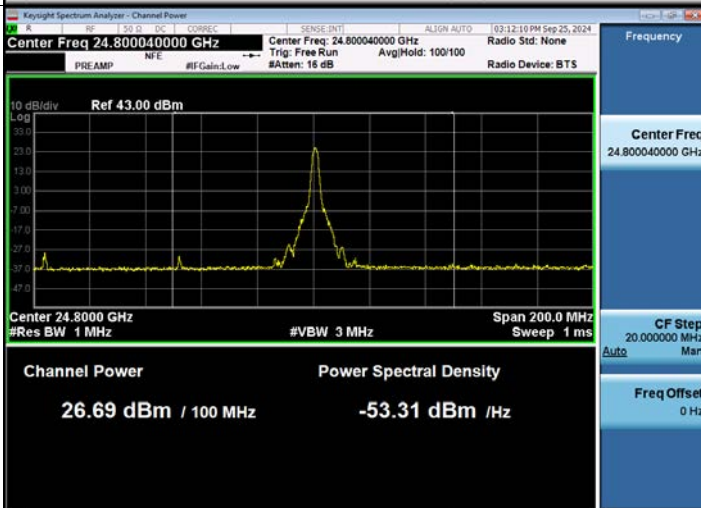
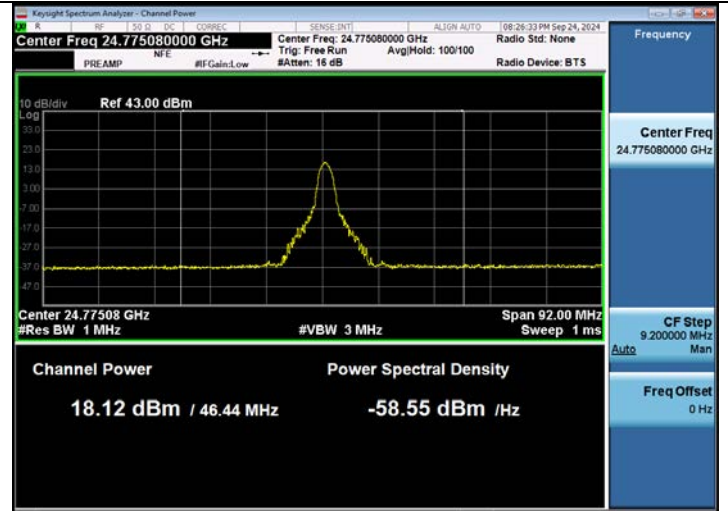
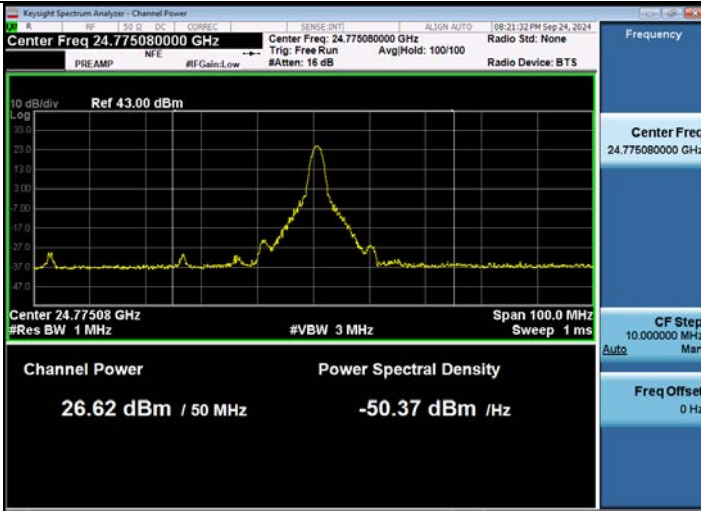
Plot Data of EIRP

n258b Band Antenna 0(M patch)

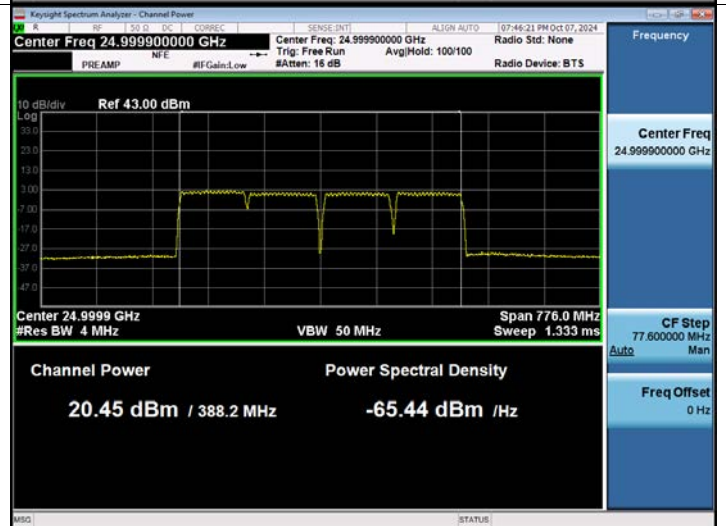
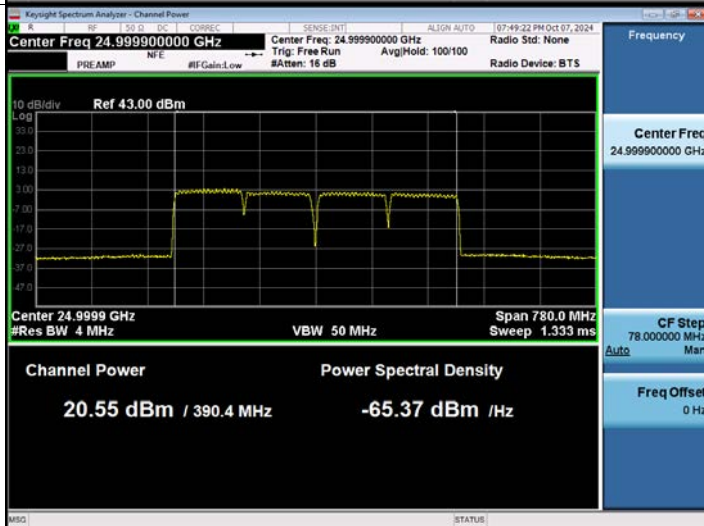
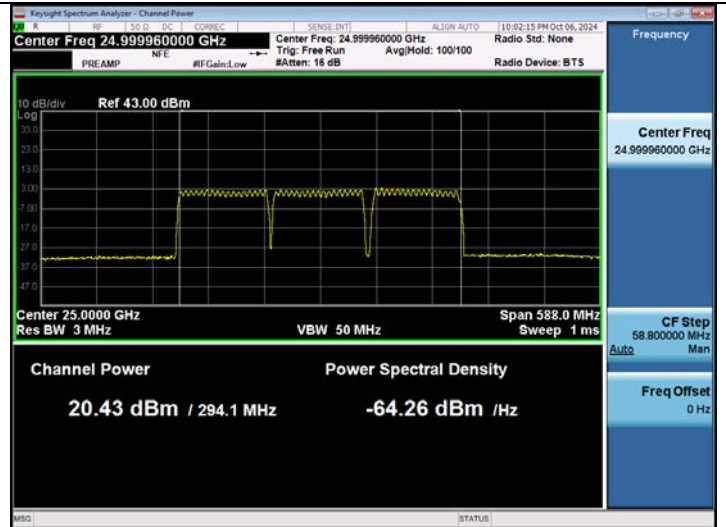
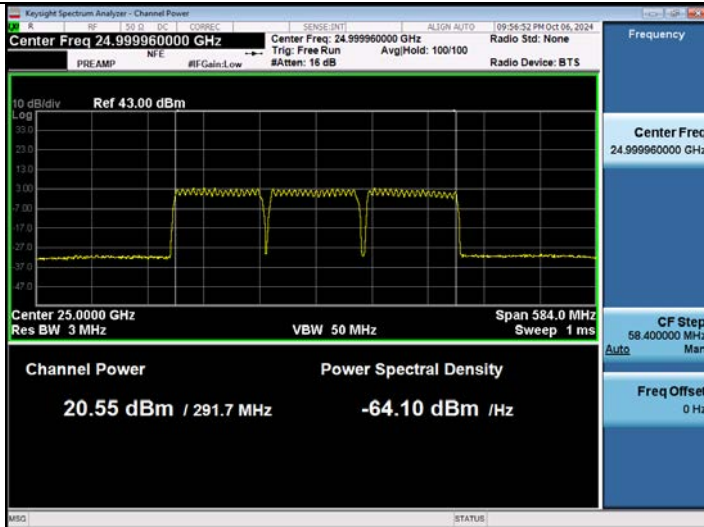
SISO



SISO Dual



SISO Dual



Tabular Data of EIRP

n260 Band Antenna 0(M patch)

SISO

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	Ant. Pol	RB Size/Offset	EIRP [dBm]
1	50	37025.04	Low	V	BPSK	H	1/16	26.00
		38499.96	Mid	H	BPSK	V	1/16	26.51
		39975.00	High	V	QPSK	H	1/16	26.02
		38499.96	Mid	H	QPSK	V	32/0	26.47
		38499.96	Mid	H	16QAM	V	32/0	26.11
		38499.96	Mid	H	64QAM	V	1/16	23.19
1	100	37050.00	Low	V	BPSK	H	64/0	25.50
		38499.96	Mid	H	BPSK	V	64/0	25.63
		39949.92	High	V	QPSK	H	1/33	26.44
		39949.92	High	V	BPSK	H	1/33	26.34
		39949.92	High	V	16QAM	H	1/33	26.43
		39949.92	High	V	64QAM	H	1/33	23.48
2	100	37050.00	Low	V	QPSK	H	64/0	25.16
		38450.04	Mid	H	BPSK	V	64/0	25.51
		39949.92	High	V	BPSK	H	64/0	25.63
		39949.92	High	V	QPSK	H	64/0	25.44
		39949.92	High	V	16QAM	H	64/0	24.92
		39949.92	High	V	64QAM	H	64/0	21.41
3	100	37050.00	Low	V	BPSK	H	64/0	22.29
		38400.00	Mid	H	BPSK	V	64/0	22.49
		39949.92	High	V	QPSK	H	64/0	23.06
		39949.92	High	V	BPSK	H	64/0	22.89
		39949.92	High	V	16QAM	H	64/0	21.96
		39949.92	High	V	64QAM	H	64/0	19.82
4	100	37050.00	Low	V	BPSK	H	64/0	22.02
		38349.96	Mid	H	BPSK	V	64/0	22.22
		39949.92	High	V	QPSK	H	64/0	22.81
		39949.92	High	V	BPSK	H	64/0	22.76
		39949.92	High	V	16QAM	H	64/0	21.82
		39949.92	High	V	64QAM	H	64/0	19.93

SISO Dual

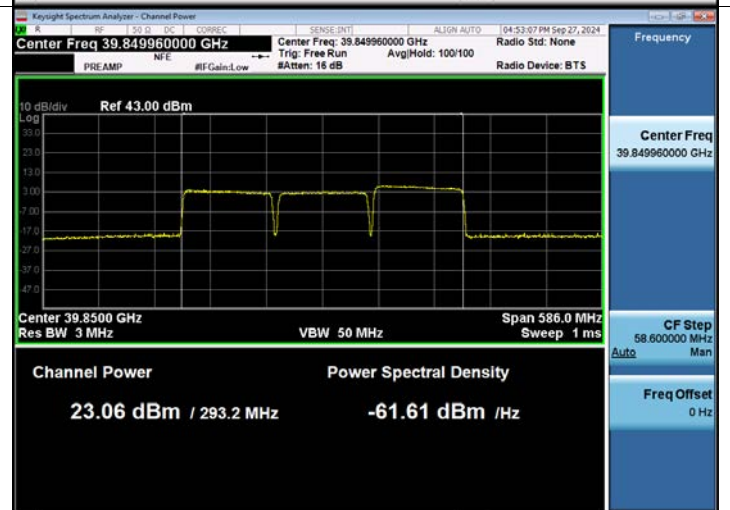
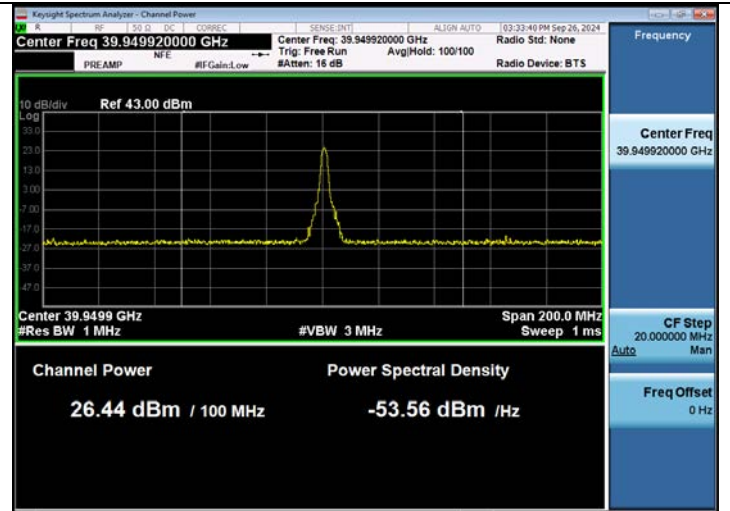
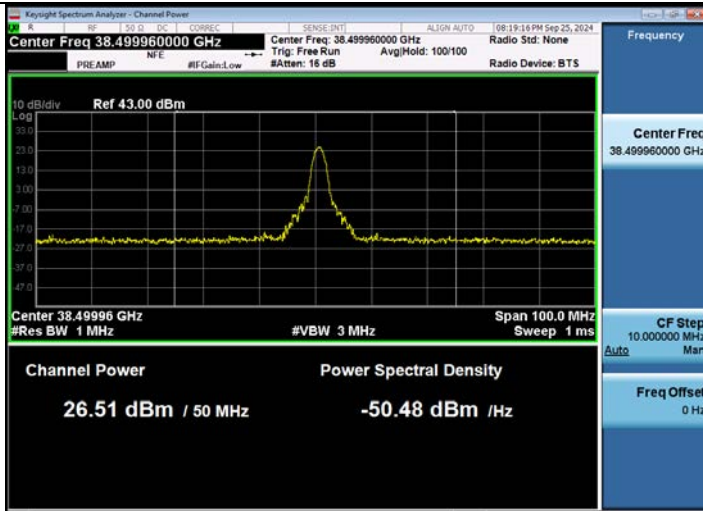
CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
1	50	37025.04	Low	H+V	BPSK	1/11	H	22.44	27.86
							V	26.39	
		38499.96	Mid	H+V	BPSK	1/11	H	26.90	27.78
							V	20.43	
		39975.00	High	H+V	BPSK	1/11	H	27.67	29.41
							V	24.59	
		39975.00	High	H+V	QPSK	1/11	H	27.32	29.10
							V	24.37	
		39975.00	High	H+V	16QAM	1/11	H	27.29	29.11
							V	24.45	
		39975.00	High	H+V	64QAM	1/11	H	24.29	26.11
							V	21.44	
1	100	37050.00	Low	H+V	BPSK	1/43	H	21.83	27.19
							V	25.69	
		38499.96	Mid	H+V	BPSK	1/43	H	26.72	27.88
							V	21.60	
		39949.92	High	H+V	BPSK	1/43	H	26.81	28.56
							V	23.77	
		39949.92	High	H+V	QPSK	1/43	H	26.74	28.49
							V	23.70	
		39949.92	High	H+V	16QAM	1/43	H	26.83	28.54
							V	23.67	
		39949.92	High	H+V	64QAM	1/43	H	23.52	25.41
							V	20.88	
2	100	37050.00	Low	H+V	BPSK	64/0	H	19.93	25.85
							V	24.56	
		38450.04	Mid	H+V	BPSK	64/0	H	25.16	26.37
							V	20.24	
		39949.92	High	H+V	BPSK	64/0	H	24.98	26.82
							V	22.20	
		39949.92	High	H+V	QPSK	64/0	H	24.89	26.72
							V	22.08	
		39949.92	High	H+V	16QAM	64/0	H	24.37	26.25
							V	21.71	
		39949.92	High	H+V	64QAM	64/0	H	20.97	22.81
							V	18.19	
3	100	37050.00	Low	H+V	BPSK	64/0	H	17.10	23.10
							V	21.85	
		38400.00	Mid	H+V	BPSK	64/0	H	22.67	23.87
							V	17.68	
		39949.92	High	H+V	QPSK	64/0	H	22.59	24.45
							V	19.86	
		39949.92	High	H+V	BPSK	64/0	H	22.60	24.44
							V	19.81	
		39949.92	High	H+V	16QAM	64/0	H	21.46	23.30
							V	18.68	
		39949.92	High	H+V	64QAM	64/0	H	19.46	21.30
							V	16.67	

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
4	100	37050.00	Low	H+V	BPSK	64/0	H	16.81	23.06
							V	21.89	
		38349.96	Mid	H+V	BPSK	64/0	H	22.73	23.94
							V	17.81	
		39949.92	High	H+V	BPSK	64/0	H	22.70	24.56
							V	19.97	
		39949.92	High	H+V	QPSK	64/0	H	22.67	24.52
							V	19.92	
		39949.92	High	H+V	16QAM	64/0	H	21.74	23.53
							V	18.82	
		39949.92	High	H+V	64QAM	64/0	H	19.55	21.35
							V	16.65	

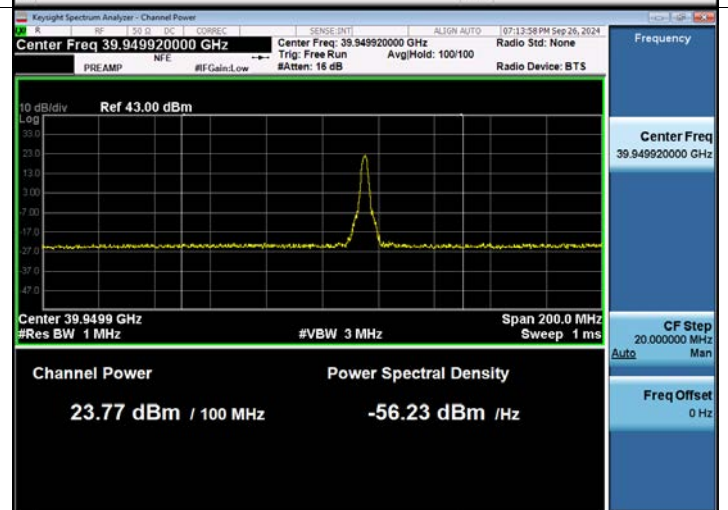
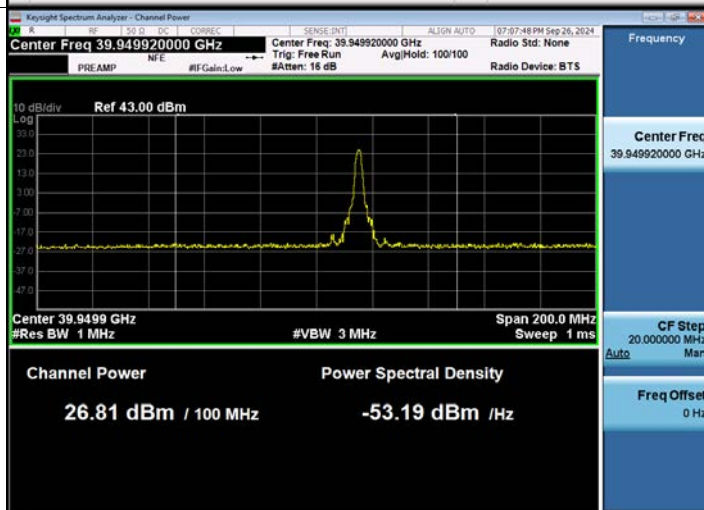
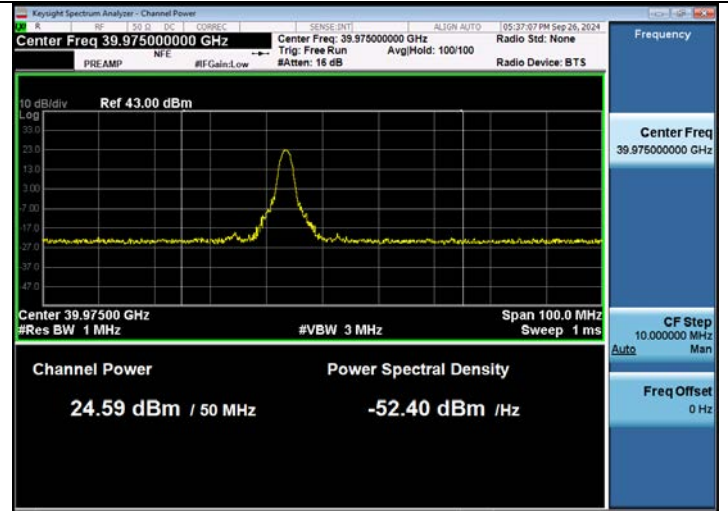
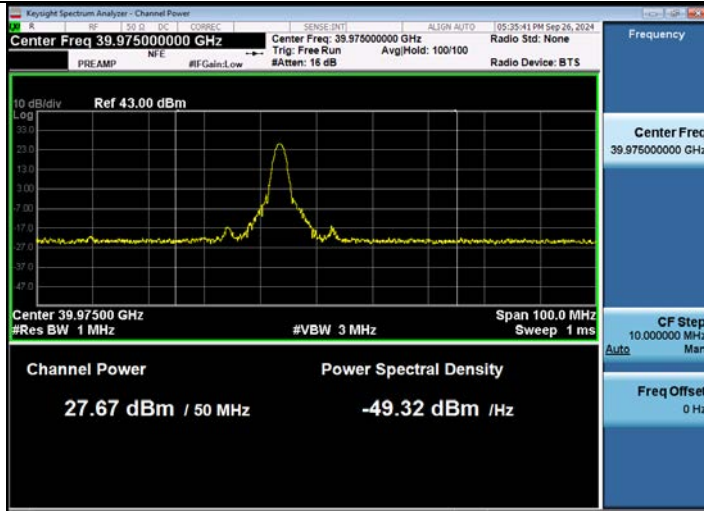
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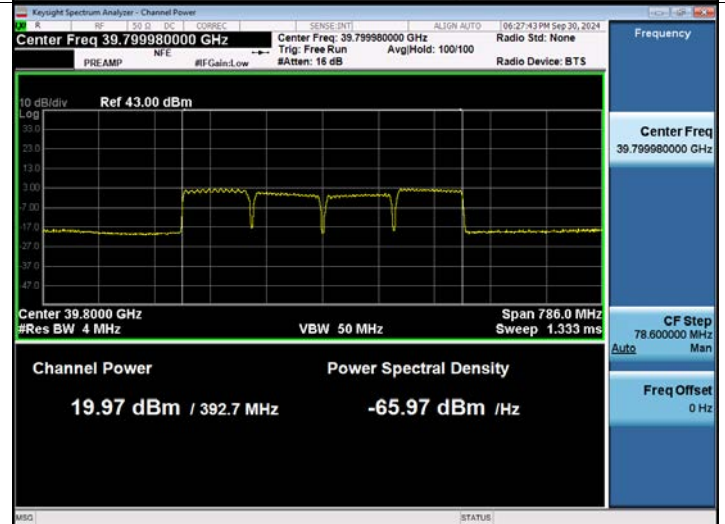
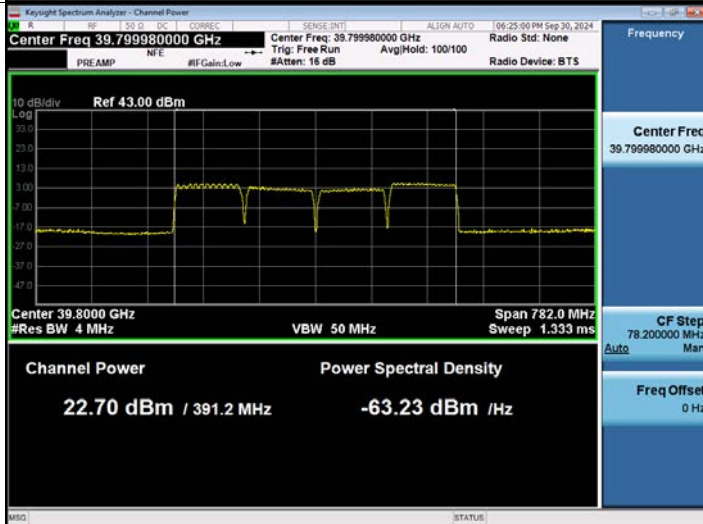
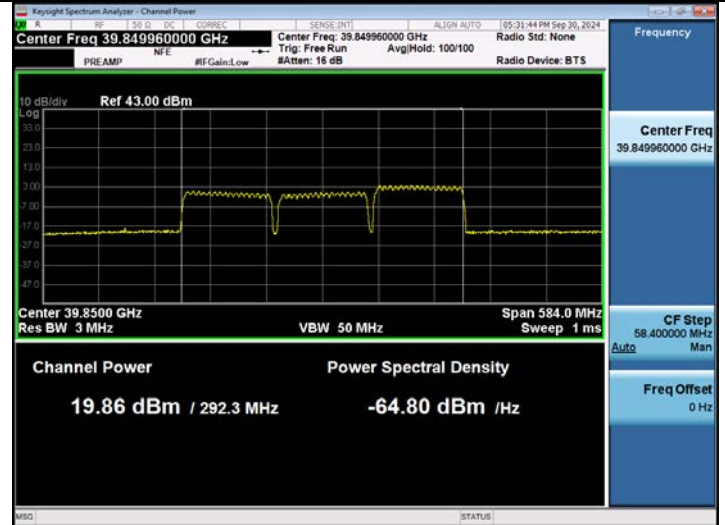
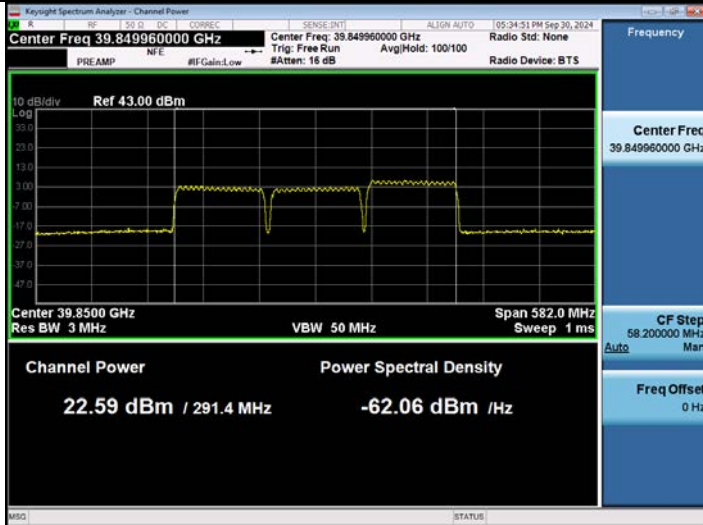
SISO



SISO Dual



SISO Dual



Tabular Data of EIRP

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SISO

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	Ant. Pol	RB Size/Offset	EIRP [dBm]
1	50	27525.00	Low	V	BPSK	H	1/16	25.50
		27924.96	Mid	H	BPSK	V	1/16	25.89
		28324.92	High	V	BPSK	H	1/16	26.88
		28324.92	High	V	QPSK	H	1/16	26.80
		28324.92	High	V	16QAM	H	1/16	26.36
		28324.92	High	V	64QAM	H	1/16	23.41
1	100	27550.08	Low	V	BPSK	H	1/33	25.66
		27924.96	Mid	H	BPSK	V	1/33	25.69
		28299.96	High	V	BPSK	H	1/33	27.13
		28299.96	High	V	QPSK	H	1/33	26.71
		28299.96	High	V	16QAM	H	1/33	26.25
		28299.96	High	V	64QAM	H	1/33	23.08
2	100	27600.06	Low	V	BPSK	H	64/0	24.35
		27925.02	Mid	V	BPSK	H	64/0	24.81
		28249.98	High	V	QPSK	H	64/0	25.72
		28249.98	High	V	BPSK	H	64/0	25.69
		28249.98	High	V	16QAM	H	64/0	25.19
		28249.98	High	V	64QAM	H	64/0	21.50
3	100	27650.04	Low	V	BPSK	H	64/0	21.94
		27924.96	Mid	H	BPSK	V	64/0	22.02
		28200.00	High	V	BPSK	H	64/0	22.98
		28200.00	High	V	QPSK	H	64/0	22.75
		28200.00	High	V	16QAM	H	64/0	21.66
		28200.00	High	V	64QAM	H	64/0	19.79
4	100	27700.02	Low	H	BPSK	V	64/0	21.79
		27924.90	Mid	H	BPSK	V	64/0	22.12
		28150.02	High	V	QPSK	H	64/0	22.68
		28150.02	High	V	BPSK	H	64/0	22.66
		28150.02	High	V	16QAM	H	64/0	21.67
		28150.02	High	V	64QAM	H	64/0	19.57

SISO Dual

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
1	50	27525.00	Low	H+V	BPSK	1/16	H	27.11	27.20
							V	10.50	
		27924.96	Mid	H+V	BPSK	1/16	H	13.75	26.15
							V	25.89	
		28324.92	High	H+V	QPSK	1/16	H	16.66	27.97
							V	27.64	
		28324.92	High	H+V	BPSK	1/16	H	16.48	27.74
							V	27.40	
		28324.92	High	H+V	16QAM	1/16	H	16.23	27.30
							V	26.95	
		28324.92	High	H+V	64QAM	1/31	H	15.62	24.99
							V	24.46	
1	100	27550.08	Low	H+V	BPSK	1/33	H	27.14	27.24
							V	10.64	
		27924.96	Mid	H+V	BPSK	1/33	H	14.17	26.62
							V	26.37	
		28299.96	High	H+V	BPSK	1/33	H	16.33	27.85
							V	27.53	
		28299.96	High	H+V	QPSK	1/33	H	16.24	27.65
							V	27.32	
		28299.96	High	H+V	16QAM	1/33	H	15.76	27.17
							V	26.84	
		28299.96	High	H+V	64QAM	1/33	H	13.12	24.29
							V	23.95	
2	100	27600.06	Low	H+V	BPSK	64/0	H	25.13	25.39
							V	12.95	
		27925.02	Mid	H+V	BPSK	64/0	H	14.82	26.20
							V	25.87	
		28249.98	High	H+V	BPSK	64/0	H	18.01	26.55
							V	25.90	
		28249.98	High	H+V	QPSK	64/0	H	17.80	26.49
							V	25.86	
		28249.98	High	H+V	16QAM	64/0	H	17.33	25.99
							V	25.35	
		28249.98	High	H+V	64QAM	64/0	H	13.67	22.35
							V	21.72	
3	100	27650.04	Low	H+V	BPSK	64/0	H	23.07	23.28
							V	9.95	
		27924.96	Mid	H+V	BPSK	64/0	H	13.03	23.41
							V	22.99	
		28200.00	High	H+V	BPSK	64/0	H	13.66	24.06
							V	23.65	
		28200.00	High	H+V	QPSK	64/0	H	13.56	23.90
							V	23.48	
		28200.00	High	H+V	16QAM	64/0	H	12.47	22.78
							V	22.36	
		28200.00	High	H+V	64QAM	64/0	H	10.45	20.87
							V	20.46	

CCs active	BW [MHz]	Frequency [MHz]	Channel	Beam Pol	Modulation	RB Size/Offset	Ant. Pol	EIRP [dBm]	EIRP_Sum [dBm]
4	100	27700.02	Low	H+V	BPSK	64/0	H	22.49	22.81
							V	11.29	
		27924.90	Mid	H+V	BPSK	64/0	H	10.87	23.77
							V	23.54	
		28150.02	High	H+V	QPSK	64/0	H	13.42	24.24
							V	23.86	
		28150.02	High	H+V	BPSK	64/0	H	13.30	23.98
							V	23.59	
		28150.02	High	H+V	16QAM	64/0	H	12.47	23.08
							V	22.68	
		28150.02	High	H+V	64QAM	64/0	H	10.28	21.18
							V	20.81	

Plot Data of EIRP

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SISO

