

TEST REPORT

FCC mmWave Test for SM-F741U Certification

APPLICANT SAMSUNG Electronics Co., Ltd.

REPORT NO. HCT-RF-2404-FC010

DATE OF ISSUE April 26, 2024

> **Tested by** Beom Jin Cho

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F-TP22-03(Rev.06)

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T E S T R E P O R T	REPORT NO. HCT-RF-2404-FC010 DATE OF ISSUE April 26, 2024
Applicant	SAMSUNG Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Product Name Model Name	Mobile Phone SM-F741U
FCC ID	A3LSMF741U
FCC Classification	Part 30 Mobile Transmitter (5GM)
Date of Test	February 26, 2024 ~ April 25, 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)



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

Revision No.	Date of Issue	Description
0	April 26, 2024	Initial Release

Notice

Content	
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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 ***.

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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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Model	SM-F741U
Additional Model	SM-F741U1
ЕИТ Туре	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 - K patch: module 0 (K only) Antenna Size - 23.3 mm x 3.2 mm x 2.1 mm
Serial number	Radiated: R3CX20KJSGF



1.1. MAXIMUM EIRP POWER

	n258a Band Antenna 0 (K patch)								
					E	IRP			
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	(W)	(dBm)	Emission Designator	Modulation	
SISO	K patch	50	1	24250 - 24450	0.436	26.39	46M1G7D	BPSK	
SISO	K patch	50	1	24250 - 24450	0.442	26.45	46M1G7D	QPSK	
SISO	K patch	50	1	24250 - 24450	0.387	25.88	46M0W7D	16QAM	
SISO	K patch	50	1	24250 - 24450	0.196	22.92	46M0W7D	64QAM	
SISO Dual	K patch	50	1	24250 - 24450	0.561	27.49	46M1G7D	BPSK	
SISO Dual	K patch	50	1	24250 - 24450	0.516	27.13	46M2G7D	QPSK	
SISO Dual	K patch	50	1	24250 - 24450	0.497	26.96	46M2W7D	16QAM	
SISO Dual	K patch	50	1	24250 - 24450	0.271	24.33	46M1W7D	64QAM	
SISO	K patch	100	1	24250 - 24450	0.475	26.77	91M5G7D	BPSK	
SISO	K patch	100	1	24250 - 24450	0.474	26.76	94M4G7D	QPSK	
SISO	K patch	100	1	24250 - 24450	0.417	26.20	94M4W7D	16QAM	
SISO	K patch	100	1	24250 - 24450	0.207	23.15	94M2W7D	64QAM	
SISO Dual	K patch	100	1	24250 - 24450	0.470	26.72	91M6G7D	BPSK	
SISO Dual	K patch	100	1	24250 - 24450	0.469	26.71	94M4G7D	QPSK	
SISO Dual	K patch	100	1	24250 - 24450	0.437	26.40	94M4W7D	16QAM	
SISO Dual	K patch	100	1	24250 - 24450	0.222	23.46	94M4W7D	64QAM	
SISO	K patch	100	2	24250 - 24450	0.371	25.69	191MG7D	BPSK	
SISO	K patch	100	2	24250 - 24450	0.383	25.83	194MG7D	QPSK	
SISO	K patch	100	2	24250 - 24450	0.347	25.40	194MW7D	16QAM	
SISO	K patch	100	2	24250 - 24450	0.146	21.65	194MW7D	64QAM	
SISO Dual	K patch	100	2	24250 - 24450	0.347	25.40	191MG7D	BPSK	
SISO Dual	K patch	100	2	24250 - 24450	0.364	25.61	194MG7D	QPSK	
SISO Dual	K patch	100	2	24250 - 24450	0.319	25.04	194MW7D	16QAM	
SISO Dual	K patch	100	2	24250 - 24450	0.137	21.37	194MW7D	64QAM	





					E	RP		
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	(W)	(dBm)	Emission Designator	Modulation
SISO	K patch	50	1	24750 - 25250	0.593	27.73	46M3G7D	BPSK
SISO	K patch	50	1	24750 - 25250	0.624	27.95	46M2G7D	QPSK
SISO	K patch	50	1	24750 - 25250	0.556	27.45	46M0W7D	16QAM
SISO	K patch	50	1	24750 - 25250	0.284	24.53	46M0W7D	64QAM
SISO Dual	K patch	50	1	24750 - 25250	0.522	27.18	45M9G7D	BPSK
SISO Dual	K patch	50	1	24750 - 25250	0.516	27.13	46M0G7D	QPSK
SISO Dual	K patch	50	1	24750 - 25250	0.459	26.62	46M0W7D	16QAM
SISO Dual	K patch	50	1	24750 - 25250	0.225	23.53	45M9W7D	64QAM
SISO	K patch	100	1	24750 - 25250	0.573	27.58	91M6G7D	BPSK
SISO	K patch	100	1	24750 - 25250	0.598	27.77	94M3G7D	QPSK
SISO	K patch	100	1	24750 - 25250	0.525	27.20	94M3W7D	16QAM
SISO	K patch	100	1	24750 - 25250	0.253	24.03	94M4W7D	64QAM
SISO Dual	K patch	100	1	24750 - 25250	0.516	27.13	91M4G7D	BPSK
SISO Dual	K patch	100	1	24750 - 25250	0.520	27.16	94M4G7D	QPSK
SISO Dual	K patch	100	1	24750 - 25250	0.456	26.59	94M3W7D	16QAM
SISO Dual	K patch	100	1	24750 - 25250	0.219	23.41	94M3W7D	64QAM
SISO	K patch	100	2	24750 - 25250	0.469	26.71	191MG7D	BPSK
SISO	K patch	100	2	24750 - 25250	0.451	26.54	194MG7D	QPSK
SISO	K patch	100	2	24750 - 25250	0.400	26.02	194MW7D	16QAM
SISO	K patch	100	2	24750 - 25250	0.173	22.39	193MW7D	64QAM
SISO Dual	K patch	100	2	24750 - 25250	0.456	26.59	191MG7D	BPSK
SISO Dual	K patch	100	2	24750 - 25250	0.411	26.14	194MG7D	QPSK
SISO Dual	K patch	100	2	24750 - 25250	0.347	25.40	194MW7D	16QAM
SISO Dual	K patch	100	2	24750 - 25250	0.138	21.41	194MW7D	64QAM
SISO	K patch	100	3	24750 - 25250	0.264	24.22	290MG7D	BPSK
SISO	K patch	100	3	24750 - 25250	0.268	24.28	293MG7D	QPSK
SISO	K patch	100	3	24750 - 25250	0.212	23.27	293MW7D	16QAM
SISO	K patch	100	3	24750 - 25250	0.133	21.25	293MW7D	64QAM
SISO Dual	K patch	100	3	24750 - 25250	0.227	23.56	290MG7D	BPSK
SISO Dual	K patch	100	3	24750 - 25250	0.229	23.59	293MG7D	QPSK
SISO Dual	K patch	100	3	24750 - 25250	0.180	22.55	293MW7D	16QAM

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n258b Band Antenna 0 (K patch)									
		Bandwidth	666		EIRP		Fmission		
Mode	Antenna	(MHz)	Active	(MHz)	(W)	(dBm)	Designator	Modulation	
SISO Dual	K patch	100	3	24750 - 25250	0.113	20.54	293MW7D	64QAM	
SISO	K patch	100	4	24750 - 25250	0.273	24.36	390MG7D	BPSK	
SISO	K patch	100	4	24750 - 25250	0.274	24.37	393MG7D	QPSK	
SISO	K patch	100	4	24750 - 25250	0.214	23.31	393MW7D	16QAM	
SISO	K patch	100	4	24750 - 25250	0.132	21.19	393MW7D	64QAM	
SISO Dual	K patch	100	4	24750 - 25250	0.230	23.62	390MG7D	BPSK	
SISO Dual	K patch	100	4	24750 - 25250	0.230	23.61	393MG7D	QPSK	
SISO Dual	K patch	100	4	24750 - 25250	0.179	22.53	393MW7D	16QAM	
SISO Dual	K patch	100	4	24750 - 25250	0.111	20.46	393MW7D	64QAM	





					EIRP			
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	(W)	(dBm)	Emission Designator	Modulation
SISO	K patch	50	1	37000 - 40000	0.776	28.90	46M2G7D	BPSK
SISO	K patch	50	1	37000 - 40000	0.682	28.34	46M2G7D	QPSK
SISO	K patch	50	1	37000 - 40000	0.692	28.40	46M2W7D	16QAM
SISO	K patch	50	1	37000 - 40000	0.310	24.92	46M3W7D	64QAM
SISO Dual	K patch	50	1	37000 - 40000	1.151	30.61	46M1G7D	BPSK
SISO Dual	K patch	50	1	37000 - 40000	1.089	30.37	45M9G7D	QPSK
SISO Dual	K patch	50	1	37000 - 40000	1.072	30.30	46M0W7D	16QAM
SISO Dual	K patch	50	1	37000 - 40000	0.553	27.43	46M1W7D	64QAM
SISO	K patch	100	1	37000 - 40000	0.656	28.17	91M9G7D	BPSK
SISO	K patch	100	1	37000 - 40000	0.653	28.15	95M3G7D	QPSK
SISO	K patch	100	1	37000 - 40000	0.574	27.59	95M0W7D	16QAM
SISO	K patch	100	1	37000 - 40000	0.301	24.78	98M4W7D	64QAM
SISO Dual	K patch	100	1	37000 - 40000	0.721	28.58	91M6G7D	BPSK
SISO Dual	K patch	100	1	37000 - 40000	0.778	28.91	95M2G7D	QPSK
SISO Dual	K patch	100	1	37000 - 40000	0.796	29.01	95M0W7D	16QAM
SISO Dual	K patch	100	1	37000 - 40000	0.286	24.56	95M5W7D	64QAM
SISO	K patch	100	2	37000 - 40000	0.649	28.12	192MG7D	BPSK
SISO	K patch	100	2	37000 - 40000	0.637	28.04	195MG7D	QPSK
SISO	K patch	100	2	37000 - 40000	0.577	27.61	195MW7D	16QAM
SISO	K patch	100	2	37000 - 40000	0.243	23.85	195MW7D	64QAM
SISO Dual	K patch	100	2	37000 - 40000	0.736	28.67	191MG7D	BPSK
SISO Dual	K patch	100	2	37000 - 40000	0.782	28.93	196MG7D	QPSK
SISO Dual	K patch	100	2	37000 - 40000	0.697	28.43	196MW7D	16QAM
SISO Dual	K patch	100	2	37000 - 40000	0.319	25.04	195MW7D	64QAM
SISO	K patch	100	3	37000 - 40000	0.380	25.80	292MG7D	BPSK
SISO	K patch	100	3	37000 - 40000	0.318	25.02	295MG7D	QPSK
SISO	K patch	100	3	37000 - 40000	0.260	24.15	294MW7D	16QAM
SISO	K patch	100	3	37000 - 40000	0.163	22.13	295MW7D	64QAM
SISO Dual	K patch	100	3	37000 - 40000	0.356	25.52	292MG7D	BPSK
SISO Dual	K patch	100	3	37000 - 40000	0.385	25.85	294MG7D	QPSK
SISO Dual	K patch	100	3	37000 - 40000	0.301	24.78	295MW7D	16QAM

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		n26	0 Band A	ntenna 0 (K pato	:h)			
					EIRP			
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	(W)	(dBm)	Emission Designator	Modulation
SISO Dual	K patch	100	3	37000 - 40000	0.191	22.80	297MW7D	64QAM
SISO	K patch	100	4	37000 - 40000	0.334	25.24	393MG7D	BPSK
SISO	K patch	100	4	37000 - 40000	0.316	24.99	395MG7D	QPSK
SISO	K patch	100	4	37000 - 40000	0.250	23.98	395MW7D	16QAM
SISO	K patch	100	4	37000 - 40000	0.156	21.92	398MW7D	64QAM
SISO Dual	K patch	100	4	37000 - 40000	0.382	25.82	393MG7D	BPSK
SISO Dual	K patch	100	4	37000 - 40000	0.384	25.84	396MG7D	QPSK
SISO Dual	K patch	100	4	37000 - 40000	0.306	24.86	395MW7D	16QAM
SISO Dual	K patch	100	4	37000 - 40000	0.194	22.88	397MW7D	64QAM





n261	Band	Antenna	0 (K	patch)
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					EIRP			
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	(W)	(dBm)	Emission Designator	Modulation
SISO	K patch	50	1	27500 - 28350	1.109	30.45	46M1G7D	BPSK
SISO	K patch	50	1	27500 - 28350	1.089	30.37	46M0G7D	QPSK
SISO	K patch	50	1	27500 - 28350	0.989	29.95	46M1W7D	16QAM
SISO	K patch	50	1	27500 - 28350	0.490	26.90	45M9W7D	64QAM
SISO Dual	K patch	50	1	27500 - 28350	1.102	30.42	46M1G7D	BPSK
SISO Dual	K patch	50	1	27500 - 28350	1.009	30.04	46M1G7D	QPSK
SISO Dual	K patch	50	1	27500 - 28350	0.908	29.58	46M2W7D	16QAM
SISO Dual	K patch	50	1	27500 - 28350	0.429	26.32	46M1W7D	64QAM
SISO	K patch	100	1	27500 - 28350	1.102	30.42	91M6G7D	BPSK
SISO	K patch	100	1	27500 - 28350	1.117	30.48	94M5G7D	QPSK
SISO	K patch	100	1	27500 - 28350	0.993	29.97	94M5W7D	16QAM
SISO	K patch	100	1	27500 - 28350	0.484	26.85	94M3W7D	64QAM
SISO Dual	K patch	100	1	27500 - 28350	0.869	29.39	91M5G7D	BPSK
SISO Dual	K patch	100	1	27500 - 28350	0.841	29.25	94M7G7D	QPSK
SISO Dual	K patch	100	1	27500 - 28350	0.753	28.77	94M8W7D	16QAM
SISO Dual	K patch	100	1	27500 - 28350	0.414	26.17	94M3W7D	64QAM
SISO	K patch	100	2	27500 - 28350	0.841	29.25	191MG7D	BPSK
SISO	K patch	100	2	27500 - 28350	0.818	29.13	194MG7D	QPSK
SISO	K patch	100	2	27500 - 28350	0.740	28.69	194MW7D	16QAM
SISO	K patch	100	2	27500 - 28350	0.329	25.17	194MW7D	64QAM
SISO Dual	K patch	100	2	27500 - 28350	0.750	28.75	192MG7D	BPSK
SISO Dual	K patch	100	2	27500 - 28350	0.662	28.21	194MG7D	QPSK
SISO Dual	K patch	100	2	27500 - 28350	0.593	27.73	194MW7D	16QAM
SISO Dual	K patch	100	2	27500 - 28350	0.257	24.10	194MW7D	64QAM
SISO	K patch	100	3	27500 - 28350	0.454	26.57	291MG7D	BPSK
SISO	K patch	100	3	27500 - 28350	0.483	26.84	294MG7D	QPSK
SISO	K patch	100	3	27500 - 28350	0.372	25.71	293MW7D	16QAM
SISO	K patch	100	3	27500 - 28350	0.235	23.71	294MW7D	64QAM
SISO Dual	K patch	100	3	27500 - 28350	0.390	25.91	291MG7D	BPSK
SISO Dual	K patch	100	3	27500 - 28350	0.394	25.96	294MG7D	QPSK
SISO Dual	K patch	100	3	27500 - 28350	0.308	24.88	294MW7D	16QAM

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n261 Band Antenna 0 (K patch)

					EIRP			
Mode	Antenna	Bandwidth (MHz)	CCs Active	Tx Frequency (MHz)	(W)	(dBm)	Emission Designator	Modulation
SISO Dual	K patch	100	3	27500 - 28350	0.197	22.95	295MW7D	64QAM
SISO	K patch	100	4	27500 - 28350	0.467	26.69	392MG7D	BPSK
SISO	K patch	100	4	27500 - 28350	0.475	26.77	393MG7D	QPSK
SISO	K patch	100	4	27500 - 28350	0.373	25.72	394MW7D	16QAM
SISO	K patch	100	4	27500 - 28350	0.230	23.62	394MW7D	64QAM
SISO Dual	K patch	100	4	27500 - 28350	0.461	26.64	390MG7D	BPSK
SISO Dual	K patch	100	4	27500 - 28350	0.443	26.46	393MG7D	QPSK
SISO Dual	K patch	100	4	27500 - 28350	0.338	25.29	393MW7D	16QAM
SISO Dual	K patch	100	4	27500 - 28350	0.210	23.23	394MW7D	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 (Registratio n Number: KR0032).



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 fuction 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
Moasuromont standards	ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 662911 D01 v02r01,
Measurement standards	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)

The configuration of mechanical mode is foldable so testing was investigated where screen opened, screen halffolded and screen closed. The test results of worst case are shown in this report.



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	12 dBm	§ 30.202	Compliant
Radiated Power	45 UDIII	§ 30.202	Compliant
	-13 dBm/MHz for all out-of-		
Out of Pand Emissions at	band emissions, -5 dBm/MHz		Compliant
the Band Edge	from the band edge up to	§2.1051, §30.203	
the band Edge	10 %		
	of the channel BW		
Radiated Spurious	-13 dBm/MHz for all out-of-	8 2 1051 8 20 202	Compliant
Emissions	band emissions	92.1031, 930.205	Compliant
	Fundamental emissions stay		
Frequency Stability	within authorized frequency	§ 2.1055	Compliant
	block		



Band	СН	Beam ID	Beam Pol	Ant. Pol	Azimuth(°)	Roll(°)	Beam ID	Beam Pol	Ant. Pol	Azimuth(°)	Roll(°)
			FUI.	FUI.				FUI.	FUI.		
	Low	270	Н	V	46	61	15	V	Н	77	345
n258a	Mid	275	Н	V	59	43	15	V	V	75	14
	High	275	Н	V	60	59	15	V	V	91	344
Lo n258b Mi	Low	275	Н	V	13	75	19	V	V	61	346
	Mid	272	Н	V	43	60	15	V	Н	92	179
	High	272	Н	V	60	120	20	V	Н	77	164
	Low	269	Н	V	60	344	15	V	Н	58	328
n261	Mid	274	Н	V	91	2	15	V	Н	75	148
	High	274	Н	V	89	0	14	V	Н	76	181
	Low	19	Н	V	92	164	271	V	Н	59	164
n260	Mid	15	Н	V	91	194	274	V	Н	59	193
	High	15	Н	V	75	17	270	V	V	89	14

Antenna 0(K patch) SISO

Antenna 0(K patch) SISO Dual, MIMO

Band CH		H Beam ID	Beam	Ant.	Azimuth(°)	Roll(°)	Beam ID	Beam	Ant.	Azimuth(°)	Roll(°)
			Pol.	Pol.				Pol.	Pol.		
	Low	20/276	H+V	Н	60	346	20/276	H+V	V	74	211
n258a	Mid	20/276	H+V	Н	61	343	20/276	H+V	V	77	210
I	High	20/276	H+V	Н	59	347	20/276	H+V	V	74	225
n258b Mi	Low	20/276	H+V	Н	62	163	20/276	H+V	V	77	212
	Mid	20/276	H+V	Н	90	164	20/276	H+V	V	74	209
	High	19/275	H+V	Н	75	150	20/276	H+V	V	75	194
	Low	19/275	H+V	Н	75	167	19/275	H+V	V	74	193
n261	Mid	19/275	H+V	Н	60	344	19/275	H+V	V	77	210
	High	19/275	H+V	Н	92	346	19/275	H+V	V	75	208
	Low	18/274	H+V	Н	62	194	18/274	H+V	V	91	343
n260	Mid	17/273	H+V	Н	92	328	15/271	H+V	V	77	332
	High	14/270	H+V	Н	59	178	14/270	H+V	V	92	1



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	-	\pm 0.31 MHz
Equivalent Isotropic Radiated Power	23.75 GHz ~ 25.70 GHz,	
	27.00 GHz ~ 28.80 GHz,	\pm 5.66 dB
Band Edge	36.60 GHz ~ 40.02 GHz	
	9 kHz ~ 30 MHz	± 4.36 dB
	30 MHz ~ 1 GHz	\pm 5.70 dB
Radiated Spurious Emissions	1 GHz ~ 18 GHz	\pm 5.52 dB
	18 GHz ~ 40 GHz	\pm 5.66 dB
	40 GHz ~ 200 GHz	\pm 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





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.

```
Wavelength = Speed of light / Measurement frequency = 30 / 4 000 = 0.0075
```

(2 X (Max measured antenna dimension)²) / Wavelength = (2 X (0.09604686)²) / 0.0075=**2.46 m**

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

Frequency Rage (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	10/05/2024	Annual	MY60070602
KIKUSUI	PWR800L / DC Power Supply	07/17/2024	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	FSW / Spectrum Analyzer	10/13/2024	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	08/16/2024	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	07/19/2024	Annual	S19MS-A-160516-1
OML INC.	WR-12 / Source Module	07/19/2024	Annual	S12MS-A-160419-1
OML INC.	WR-08 / Source Module	07/19/2024	Annual	S08MS-A-160419-1
OML INC.	WR-05 / Source Module	07/19/2024	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	06/22/2024	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	10/20/2024	Annual	170011-L

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

2. 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 ≥ 3 × 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 × 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 × 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 (K patch)

Antenna	Bandwidth	CCs active	Modulation	OBW
Anternia	[MHz]		modulation	[MHz]
			BPSK	46.091
	50	1	QPSK	46.187
	50	L	16QAM	46.204
			64QAM	46.107
	100		BPSK	91.559
Knatch		1	QPSK	94.435
k paten			16QAM	94.397
			64QAM	94.446
			BPSK	190.650
	100	2	QPSK	194.140
	100	2	16QAM	194.220
			64QAM	194.270



Plot Data of RF Occupied Bandwidth

n258a Band Antenna 0 (K patch)







100 MHz, 1CC





100 MHz, 2CC

F-TP22-03 (Rev. 06)



Tabular Data of Occupied Bandwidth

n258b Band Antenna 0 (K patch)

Antenna	Bandwidth		Madulation	OBW
	[MHz]	CCS active	Modulation	[MHz]
	50	1	BPSK	46.273
			QPSK	46.199
			16QAM	46.043
			64QAM	46.041
			BPSK	91.558
	100	1	QPSK	94.369
			16QAM	94.322
			64QAM	94.373
			BPSK	190.89
Kaatch	100	2	QPSK	193.78
k pateri	100		16QAM	193.69
			64QAM	193.88
			BPSK	290.22
	100	2	QPSK	292.65
	100	3	16QAM	293.24
			64QAM	293.30
			BPSK	390.24
	100	4	QPSK	393.17
			16QAM	392.91
			64QAM	393.31



Plot Data of RF Occupied Bandwidth

n258b Band Antenna 0 (K patch)







100 MHz, 1CC







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Tabular Data of Occupied Bandwidth

n260 Band Antenna 0 (K patch)

Antenna	Bandwidth		Madulation	OBW
	[MHz]	CCS active	Modulation	[MHz]
	50	1	BPSK	46.206
			QPSK	46.164
			16QAM	46.190
			64QAM	46.257
	100	1	BPSK	91.911
			QPSK	95.280
			16QAM	95.009
			64QAM	98.386
	100	2	BPSK	192.10
Knatch			QPSK	195.97
k pateri	100	2	16QAM	195.93
			64QAM	195.41
			BPSK	292.32
	100	2	QPSK	294.99
	100	3	16QAM	294.85
			64QAM	296.54
	100	4	BPSK	393.41
			QPSK	395.74
			16QAM	395.12
			64QAM	397.99



Plot Data of RF Occupied Bandwidth

n260 Band Antenna 0 (K patch)





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			100 MHz	100			
Reysight Epectrum Analyzer - Occupied BW A BY SE D DC CORREC Press - Correct - Correct PREAMP NFE #FGain:Lo	Center Freq: 38.499960000 GHz Center Freq: 38.499960000 GHz Trig: Free Run Avg Hold: 10 w \$Atten: 16 dB	Ri 4070 01.47:35 PM Nar 25, 2024 Radio Std: None Radio Device: BTS	Frequency	Conter Freq 38.499960000 GHz	Center Freq: 38.499960000 GHz Trig: Free Run Avg Hold: 10 ow #Atten: 16 dB	N 4070 03:52:43 PM Mar 25, 2024 Radio Std: None 0/100 Radio Device: BTS	Frequency
Bidiv Ref 43.00 dBm				10 dB/div Ref 43.00 dBm			
30 30 30 30	9647999979909799097990999999999999999999		Center Freq 8.499960000 GHz	200 210 130			Center Freq 38.499960000 GHz
00 5747-000-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-		helistrapparatulphradist		300 700		homework allowed devices of the second devic	
				47.0			
enter 38.5000 GHz Res BW 1 MHz	#VBW 3 MHz	Span 200.0 MHz Sweep 1 ms	CF Step 20.000000 MHz	Center 38.5000 GHz #Res BW 1 MHz	#VBW 3 MHz	Span 200.0 MHz Sweep 1 ms	CF Step
Transmit Freq Error -1.643 x dB Bandwidth 192	26 MHz % of OBW Power 2.6 MHz x dB	99.00 % -26.00 dB	0 Hz	Transmit Freq Error -210 x dB Bandwidth 200	v.14 kHz % of OBW Power 0.0 MHz x dB	99.00 % -26.00 dB	0 Hz
0		STATUS		MSG		STATUS	
eteroper sectore advance to a consecutive enter Freq 37.05000000 GHz PREAMP REFAIL adBidity Ref 43.00 dBm	Concerter 27 27 20000000 Get Trig: Free Run Avg Hold: 10 #Atten: 16 dB	Radio Stati None Radio Stati None Radio Device: BTS Radio Device: BTS	Center Freq 7.05000000 GHz	Tripped landmanger Course La Marcardo Carter Course Carter	Lingen Million (1997) Center Freg 28.459560000 Trig: Free Run AvgiHold: 10 BAtten: 14 dB	1.1010 - 1019 stor i meno 21.3021 - 1019 stor i meno 21.3021 - 1019 Radio Stor None 1100 Radio Device: 815	Frequency Center Freq 38.499960000 GHz
Center 37.0500 GHz #Res BW 1 MHz	#VBW 3 MHz	Span 200.0 MHz Sweep 1 ms	CF Step	Center 38.5000 GHz #Res BW 1 MHz	#VBW 3 MHz	Span 200.0 MHz Sweep 1 ms	CF Step
Occupied Bandwidth 95.009	Total Power MHz	31.5 dBm	freq Offset	Occupied Bandwidth 98.386	Total Power MHz	28.2 dBm	Auto Man Freq Offset
Transmit Freq Error 29.4	16 kHz % of OBW Power	99.00 %	0 Hz	Transmit Freq Error -1.71	98 MHz % of OBW Power	99.00 %	0 Hz
x dB Bandwidth 192	2.8 MHz x dB	-26.00 dB		x dB Bandwidth 200	0.0 MHz x dB	-26.00 dB	
						atana a	






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Tabular Data of Occupied Bandwidth

n261 Band Antenna 0 (K patch)

Austana	Bandwidth		Madulation	OBW
Antenna	[MHz]	CCS active	Modulation	[MHz]
			BPSK	46.112
	50	1	QPSK	46.149
	50	T	16QAM	46.188
			64QAM	46.077
			BPSK	91.561
	100	1	QPSK	94.710
	100	I	16QAM	94.759
			64QAM	94.343
			BPSK	191.75
Knatch	100	2	QPSK	194.26
k patch	100	2	16QAM	194.29
			64QAM	193.97
			BPSK	291.23
	100	2	QPSK	294.00
	100	3	16QAM	293.99
			64QAM	294.91
			BPSK	391.71
	100	4	QPSK	393.42
		4	16QAM	393.56
			64QAM	393.98



Plot Data of RF Occupied Bandwidth

n261 Band Antenna 0 (K patch)





















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 × to 3 × the OBW.
- b) Set RBW = 1% to 5% of the OBW.
- c) Set VBW \geq 3 × RBW.
- d) Set number of measurement points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- e) Sweep time:

1) Set = auto-couple, or

2) Set \geq [10 × (number of points in sweep) × (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/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 (K patch) SISO

CCs	BW	Frequency	Channel	Beam		Aut Dal	RB	EIRP
active	[MHz]	[MHz]	Channel	Pol	Modulation	Ant. Pol	Size/Offset	[dBm]
		24275.04	Low	V	QPSK	Н	32/0	26.45
		24350.04	Mid	V	BPSK	V	32/0	26.32
1	50	24424.92	High	V	BPSK	V	32/0	25.96
T	50	24275.04	Low	V	BPSK	Н	16/16	26.39
		24275.04	Low	V	16QAM	Н	32/0	25.88
		24275.04	Low	V	64QAM	Н	1/0	22.92
		24300.00	Low	V	BPSK	Н	64/0	26.77
		24350.04	Mid	V	BPSK	V	64/0	26.43
1	100	24399.96	High	V	BPSK	V	32/32	26.36
T	100	24300.00	Low	V	QPSK	Н	64/0	26.76
		24300.00	Low	V	16QAM	Н	64/0	26.20
		24300.00	Low	V	64QAM	Н	1/0	23.15
		24350.04	Mid	V	QPSK	V	64/0	25.83
ſ	100	24350.04	Mid	V	BPSK	V	64/0	25.69
2	100	24350.04	Mid	V	16QAM	V	64/0	25.40
		24350.04	Mid	V	64QAM	V	64/0	21.65





SISO Dual

CCs	BW	Frequency	Channel	Beam	Madulation	Ant Dal	RB	EIRP
active	[MHz]	[MHz]	Channet	Pol	Modulation	Ant. Pot	Size/Offset	[dBm]
		24275.04	Low	H+V	BPSK	Н	1/11	27.49
		24350.04	Mid	H+V	BPSK	Н	1/11	27.14
1	50	24424.92	High	H+V	BPSK	Н	1/11	26.97
1	50	24275.04	Low	H+V	QPSK	Н	1/11	27.13
		24275.04	Low	H+V	16QAM	Н	1/11	26.96
		24275.04	Low	H+V	64QAM	Н	1/11	24.33
		24300.00	Low	H+V	BPSK	Н	64/0	26.72
		24350.04	Mid	H+V	BPSK	Н	64/0	26.56
1	100	24399.96	High	H+V	BPSK	Н	64/0	26.36
1	100	24300.00	Low	H+V	QPSK	Н	64/0	26.71
		24300.00	Low	H+V	16QAM	Н	64/0	26.40
		24300.00	Low	H+V	64QAM	Н	1/0	23.46
		24350.04	Mid	H+V	QPSK	Н	64/0	25.61
ſ	100	24350.04	Mid	H+V	BPSK	Н	64/0	25.40
2	100	24350.04	Mid	H+V	16QAM	Н	64/0	25.04
		24350.04	Mid	H+V	64QAM	Н	64/0	21.37



Plot Data of EIRP

n258a Band Antenna 0 (K patch)





Tabular Data of EIRP

n258b Band Antenna 0 (K patch)

SISO

CCs	BW	Frequency	Channel	al Room Dol Modulation Ant Do			RB	EIRP
active	[MHz]	[MHz]	Channel	Beam Pol	Modulation	Ant. Pol	Size/Offset	[dBm]
		24775.08	Low	V	BPSK	V	1/11	26.32
		24999.96	Mid	V	QPSK	Н	32/0	27.95
1	50	25224.96	High	V	BPSK	Н	32/0	27.54
T	50	24999.96	Mid	V	BPSK	Н	32/0	27.73
		24999.96	Mid	V	16QAM	Н	32/0	27.45
		24999.96	Mid	V	64QAM	Н	32/0	24.53
		24800.04	Low	V	BPSK	V	64/0	26.19
		24999.96	Mid	V	QPSK	Н	64/0	27.77
1	100	25200.00	High	V	BPSK	Н	64/0	27.37
T	100	24999.96	Mid	V	BPSK	Н	64/0	27.58
		24999.96	Mid	V	16QAM	Н	64/0	27.20
		24999.96	Mid	V	64QAM	Н	64/0	24.03
		24850.02	Low	V	BPSK	V	64/0	25.31
		25000.02	Mid	V	BPSK	Н	64/0	26.71
2	100	25150.02	High	V	BPSK	Н	64/0	26.45
Z	100	25000.02	Mid	V	QPSK	Н	64/0	26.54
		25000.02	Mid	V	16QAM	Н	64/0	26.02
		25000.02	Mid	V	64QAM	Н	64/0	22.39
		24900.00	Low	V	BPSK	V	64/0	22.96
		24999.96	Mid	V	QPSK	Н	64/0	24.28
2	100	25100.04	High	V	BPSK	Н	64/0	24.19
3	100	24999.96	Mid	V	BPSK	Н	64/0	24.22
		24999.96	Mid	V	16QAM	Н	64/0	23.27
		24999.96	Mid	V	64QAM	Н	1/65	21.25
		24949.98	Low	V	BPSK	V	64/0	23.44
		24999.90	Mid	V	QPSK	Н	64/0	24.37
Λ	100	25050.06	High	V	BPSK	Н	64/0	23.95
4	100	24999.90	Mid	V	BPSK	Н	64/0	24.36
	_	24999.90	Mid	V	16QAM	Н	64/0	23.31
		24999.90	Mid	V	64QAM	Н	64/0	21.19





SISO Dual

CCs	BW	Frequency	Channel	Beam		Aret Dal	RB	EIRP
active	[MHz]	[MHz]	Channet	Pol	Modulation	Ant. Pot	Size/Offset	[dBm]
		24775.08	Low	H+V	BPSK	V	1/11	27.02
		24999.96	Mid	H+V	BPSK	Н	32/0	27.18
1	50	25224.96	High	H+V	BPSK	Н	32/0	26.41
1	50	24999.96	Mid	H+V	QPSK	Н	32/0	27.13
		24999.96	Mid	H+V	16QAM	Н	32/0	26.62
		24999.96	Mid	H+V	64QAM	Н	32/0	23.53
		24800.04	Low	H+V	BPSK	V	64/0	26.36
		24999.96	Mid	H+V	QPSK	Н	64/0	27.16
	100	25200.00	High	H+V	BPSK	Н	64/0	25.68
1	100	24999.96	Mid	H+V	BPSK	Н	64/0	27.13
		24999.96	Mid	H+V	16QAM	Н	64/0	26.59
		24999.96	Mid	H+V	64QAM	Н	64/0	23.41
		24850.02	Low	H+V	BPSK	V	64/0	25.65
		25000.02	Mid	H+V	BPSK	Н	64/0	26.59
2	100	25150.02	High	H+V	BPSK	Н	64/0	25.44
2	100	25000.02	Mid	H+V	QPSK	Н	64/0	26.14
		25000.02	Mid	H+V	16QAM	Н	64/0	25.40
		25000.02	Mid	H+V	64QAM	Н	64/0	21.41
		24900.00	Low	H+V	BPSK	V	64/0	23.16
		24999.96	Mid	H+V	QPSK	Н	64/0	23.59
2	100	25100.04	High	H+V	BPSK	Н	64/0	22.90
3	100	24999.96	Mid	H+V	BPSK	Н	64/0	23.56
		24999.96	Mid	H+V	16QAM	Н	64/0	22.55
		24999.96	Mid	H+V	64QAM	Н	64/0	20.54
		24949.98	Low	H+V	BPSK	V	64/0	23.38
		24999.90	Mid	H+V	BPSK	Н	64/0	23.62
Α	100	25050.06	High	H+V	BPSK	Н	64/0	22.67
4	TOO	24999.90	Mid	H+V	QPSK	Н	64/0	23.61
		24999.90	Mid	H+V	16QAM	Н	64/0	22.53
		24999.90	Mid	H+V	64QAM	Н	64/0	20.46



Plot Data of EIRP

n258b Band Antenna 0 (K patch)









Tabular Data of EIRP

n260 Band Antenna 0 (K patch)

SISO

CCs	BW	Frequency	Charmel	Beam	Madulation	Aret Dal	RB	EIRP
active	[MHz]	[MHz]	Channel	Pol	Modulation	Ant. Pol	Size/Offset	[dBm]
		37025.04	Low	Н	BPSK	V	32/0	28.90
		38499.96	Mid	V	BPSK	Н	32/0	28.63
1	50	39975.00	High	V	BPSK	V	32/0	27.42
T	50	37025.04	Low	Н	QPSK	V	32/0	28.34
		37025.04	Low	Н	16QAM	V	32/0	28.40
		37025.04	Low	Н	64QAM	V	32/0	24.92
		37050.00	Low	Н	BPSK	V	64/0	27.99
		38499.96	Mid	V	BPSK	Н	64/0	28.17
1	100	39949.92	High	V	BPSK	V	64/0	27.88
T	100	38499.96	Mid	V	QPSK	Н	64/0	28.15
		38499.96	Mid	V	16QAM	Н	64/0	27.59
		38499.96	Mid	V	64QAM	Н	64/0	24.78
		37099.98	Low	Н	BPSK	V	64/0	27.24
		38500.02	Mid	V	BPSK	Н	64/0	28.12
2	100	39899.94	High	V	BPSK	V	64/0	27.07
Z	100	38500.02	Mid	V	QPSK	Н	64/0	28.04
		38500.02	Mid	V	16QAM	Н	64/0	27.61
		38500.02	Mid	V	64QAM	Н	64/0	23.85
		37149.96	Low	Н	BPSK	V	64/0	24.98
		38499.96	Mid	V	BPSK	Н	64/0	25.80
С	100	39849.96	High	V	BPSK	V	64/0	24.48
3	100	38499.96	Mid	V	QPSK	V	64/0	25.02
		38499.96	Mid	V	16QAM	V	64/0	24.15
		38499.96	Mid	V	64QAM	V	64/0	22.13
		37199.94	Low	Н	BPSK	V	64/0	25.24
		38499.90	Mid	V	BPSK	Н	64/0	25.10
Л	100	39799.98	High	V	BPSK	V	64/0	24.55
4	TOO	37199.94	Low	Н	QPSK	V	64/0	24.99
	_	37199.94	Low	Н	16QAM	V	64/0	23.98
		37199.94	Low	Н	64QAM	V	64/0	21.92





SISO Dual

CCs	BW	Frequency	Channel	Beam	Madulation	Ant Dal	RB	EIRP
active	[MHz]	[MHz]	Channet	Pol	Modulation	Ant. Pot	Size/Offset	[dBm]
		37025.04	Low	H+V	BPSK	Н	1/16	29.00
		38499.96	Mid	H+V	BPSK	Н	1/16	30.61
1	50	39975.00	High	H+V	BPSK	V	1/16	28.34
1	50	38499.96	Mid	H+V	QPSK	Н	1/16	30.37
		38499.96	Mid	H+V	16QAM	Н	1/16	30.30
		38499.96	Mid	H+V	64QAM	Н	1/16	27.43
		37050.00	Low	H+V	16QAM	Н	1/33	29.01
		38499.96	Mid	H+V	BPSK	Н	64/0	28.56
1	100	39949.92	High	H+V	BPSK	V	1/33	27.81
T	100	37050.00	Low	H+V	BPSK	Н	1/33	28.58
		37050.00	Low	H+V	QPSK	Н	1/33	28.91
		37050.00	Low	H+V	64QAM	Н	64/0	24.56
		37099.98	Low	H+V	BPSK	Н	64/0	27.15
		38500.02	Mid	H+V	QPSK	Н	64/0	28.93
2	100	39899.94	High	H+V	BPSK	V	64/0	27.21
2	100	38500.02	Mid	H+V	BPSK	Н	64/0	28.67
		38500.02	Mid	H+V	16QAM	Н	64/0	28.43
		38500.02	Mid	H+V	64QAM	Н	64/0	25.04
		37149.96	Low	H+V	BPSK	Н	64/0	23.82
		38499.96	Mid	H+V	QPSK	Н	64/0	25.85
C	100	39849.96	High	H+V	BPSK	V	64/0	24.77
3	100	38499.96	Mid	H+V	BPSK	Н	64/0	25.52
		38499.96	Mid	H+V	16QAM	Н	64/0	24.78
		38499.96	Mid	H+V	64QAM	Н	64/0	22.80
		37199.94	Low	H+V	BPSK	Н	64/0	24.66
		38499.90	Mid	H+V	QPSK	Н	64/0	25.84
Л	100	39799.98	High	H+V	BPSK	V	64/0	25.00
4	100	38499.90	Mid	H+V	BPSK	Н	64/0	25.82
		38499.90	Mid	H+V	16QAM	Н	64/0	24.86
		38499.90	Mid	H+V	64QAM	Н	64/0	22.88



Plot Data of EIRP

n260 Band Antenna 0 (K patch)









Tabular Data of EIRP

n261 Band Antenna 0 (K patch)

SISO

CCs	BW	Frequency	Channel	Beam	Modulation	Ant Pol	RB	EIRP
active	[MHz]	[MHz]	Channet	Pol	Modulation	Ant. FOI	Size/Offset	[dBm]
		27525.00	Low	V	BPSK	Н	1/16	28.57
		27924.96	Mid	V	BPSK	Н	1/16	29.49
1	50	28324.92	High	V	BPSK	Н	1/16	30.45
T	50	28324.92	High	V	QPSK	Н	1/16	30.37
		28324.92	High	V	16QAM	Н	1/16	29.95
		28324.92	High	V	64QAM	Н	1/16	26.90
		27550.08	Low	V	BPSK	Н	1/33	28.56
		27924.96	Mid	V	BPSK	Н	1/33	29.57
1	100	28299.96	High	V	QPSK	Н	1/33	30.48
T	100	28299.96	High	V	BPSK	Н	1/33	30.42
		28299.96	High	V	16QAM	Н	1/33	29.97
		28299.96	High	V	64QAM	Н	1/33	26.85
		27600.06	Low	V	BPSK	Н	64/0	27.61
		27925.02	Mid	V	BPSK	Н	64/0	28.41
2	100	28249.98	High	V	BPSK	Н	64/0	29.25
Z	100	28249.98	High	V	QPSK	Н	64/0	29.13
		28249.98	High	V	16QAM	Н	64/0	28.69
		28249.98	High	V	64QAM	Н	64/0	25.17
		27650.04	Low	V	BPSK	Н	64/0	25.32
		27924.96	Mid	V	BPSK	Н	64/0	26.02
2	100	28200.00	High	V	QPSK	Н	64/0	26.84
3	100	28200.00	High	V	BPSK	Н	64/0	26.57
		28200.00	High	V	16QAM	Н	64/0	25.71
		28200.00	High	V	64QAM	Н	64/0	23.71
		27700.02	Low	V	BPSK	Н	64/0	25.82
		27924.90	Mid	V	BPSK	Н	64/0	25.97
Λ	100	28150.02	High	V	QPSK	Н	64/0	26.77
4	TOO	28150.02	High	V	BPSK	Н	64/0	26.69
		28150.02	High	V	16QAM	Н	64/0	25.72
	_	28150.02	High	V	64QAM	Н	64/0	23.62



SISO Dual

CCs	BW	Frequency	Channel	Beam	Madulation	Ant Dal	RB	EIRP
active	[MHz]	[MHz]	Channel	Pol	Modulation	Ant. Pot	Size/Offset	[dBm]
		27525.00	Low	H+V	BPSK	Н	1/11	30.42
		27924.96	Mid	H+V	BPSK	Н	1/11	29.57
1	50	28324.92	High	H+V	BPSK	Н	32/0	28.13
T	50	27525.00	Low	H+V	QPSK	Н	1/11	30.04
		27525.00	Low	H+V	16QAM	Н	1/11	29.58
		27525.00	Low	H+V	64QAM	Н	1/11	26.32
		27550.08	Low	H+V	BPSK	Н	64/0	28.82
		27924.96	Mid	H+V	BPSK	Н	64/0	29.39
	100	28299.96	High	H+V	BPSK	Н	64/0	28.55
T	100	27924.96	Mid	H+V	QPSK	Н	64/0	29.25
		27924.96	Mid	H+V	16QAM	Н	64/0	28.77
		27924.96	Mid	H+V	64QAM	Н	64/0	26.17
		27600.06	Low	H+V	BPSK	Н	64/0	28.75
		27925.02	Mid	H+V	BPSK	Н	64/0	28.62
2	100	28249.98	High	H+V	BPSK	Н	64/0	27.59
2	100	27600.06	Low	H+V	QPSK	Н	64/0	28.21
		27600.06	Low	H+V	16QAM	Н	64/0	27.73
		27600.06	Low	H+V	64QAM	Н	64/0	24.10
		27650.04	Low	H+V	BPSK	Н	64/0	25.87
		27924.96	Mid	H+V	QPSK	Н	64/0	25.96
2	100	28200.00	High	H+V	BPSK	Н	64/0	25.19
3	100	27924.96	Mid	H+V	BPSK	Н	64/0	25.91
		27924.96	Mid	H+V	16QAM	Н	64/0	24.88
		27924.96	Mid	H+V	64QAM	Н	64/0	22.95
		27700.02	Low	H+V	BPSK	Н	64/0	26.24
		27924.90	Mid	H+V	BPSK	Н	64/0	26.64
4	100	28150.02	High	H+V	BPSK	Н	64/0	25.60
4	100	27924.90	Mid	H+V	QPSK	Н	64/0	26.46
		27924.90	Mid	H+V	16QAM	Н	64/0	25.29
		27924.90	Mid	H+V	64QAM	Н	64/0	23.23



Plot Data of EIRP

n261 Band Antenna 0 (K patch)









5.3. BAND EDGE

Test Overview

All out of band emissions are measured in a radiated setup while the EUT is operating at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is -13dBm/1MHz. 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.

FCC Rules

Test Requirements:

§ 30.203 Emission limits.

(a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be −13 dBm/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)(1) Compliance with this provision is based on the use of measurement instrumentation employing a
- resolution bandwidth of 1 megahertz or greater.

(2) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges as the design permits.

(3) The measurements of emission power can be expressed in peak or average values.

Test Procedures:

The measurement is performed in accordance with Section 5.7.3 of ANSI C63.26.

5.7.3 Out-of-band unwanted emissions measurements

a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.

b) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band. In some cases, it may be possible to set the center frequency and span so as to encompass the fundamental emission and the unwanted out-of-band (band-edge) emissions on either side of the authorized block, band, or channel. This can be accomplished with a single (slow) sweep, if adequate overload protection and sufficient dynamic range can be maintained.

c) Set the number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.

d) Sweep time should be auto for peak detection. For rms detection the sweep time should be set as follows:



1), 2) Omitted

3) If the device cannot be configured to transmit continuously (duty cycle < 98%) and a free running sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time > (number of points in sweep) × (transmitter period) (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by [10 log (1/duty cycle)]. This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation $\leq \pm 2\%$).

4) Omitted

e) The test report shall include the plots of the measuring instrument display and the measured data.

- The TRP measurement is performed in accordance with Section 4.4.2.4 of KDB 842590 v01r02 (2021-04). 4.4.2.4 Spherical Grid Method

a) Measure the antenna dimensions, i.e., depth (d), width (w), and height (h) (see Figure A.1 in Appendix A). If the antenna dimensions are not accessible use the mechanical dimensions of the entire device.

b) Calculate the spherical and cylindrical diameters (D and Dcyl) using Equations (A.1) and (A.2) in Appendix A in KDB 842590 v01r02.

c) For the highest frequency (smallest wavelength) of the frequency band measured, calculate the reference angular steps $\Delta\theta$ ref and $\Delta\theta$ ref using Equations (A.3) and (A.4) in Appendix A in KDB 842590 v01r02.

d) Set the grid spatial sampling step $\Delta \theta \leq \Delta \theta$ ref for the vertical angle and $\Delta \theta \leq \Delta \theta$ ref for the horizontal angle.

e) For each emission frequency, measure the total EIRP (sum of two orthogonal polarizations) on the selected grid.

f) For each emission frequency, calculate the TRP using weighted angular average value using numerical integration as described in Appendix B in KDB 842590 v01r02.

g) Compare measured TRP with the applicable TRP limit to make a pass/fail decision.



Test Results:

Tabular Data of Band Edge

n258a Band Antenna 0 (K patch)

CCs active	BW [MHz]	Frequency [MHz]	Mode	Channel	Beam Pol	Modulation	Ant. Pol	RB Size/Offset	Result [dBm]	Limit [dBm]	Margin [dB]
		24275.04	SISO Dual	Low	H+V	16QAM	Н	1/0	-10.811	-5	5.8
		24275.04	SISO Dual	Low	H+V	BPSK	Н	1/0	-26.001	-13	13.0
		24275.04	SISO Dual	Low	H+V	QPSK	Н	32/0	-16.408	-5	11.4
1	50	24275.04	SISO Dual	Low	H+V	QPSK	Н	32/0	-17.432	-13	4.4
T	50	24424.92	SISO Dual	High	H+V	64QAM	Н	1/31	-13.732	-5	8.7
		24424.92	SISO Dual	High	H+V	BPSK	Н	1/31	-27.592	-13	14.6
		24424.92	SISO Dual	High	H+V	16QAM	Н	32/0	-14.402	-5	9.4
		24424.92	SISO Dual	High	H+V	QPSK	Н	32/0	-15.181	-13	2.2
		24300.00	SISO	Low	V	QPSK	Н	1/0	-10.732	-5	5.7
		24300.00	SISO	Low	V	64QAM	Н	1/0	-32.724	-13	19.7
		24300.00	SISO Dual	Low	H+V	QPSK	Н	64/0	-17.86	-5	12.9
1	100	24300.00	SISO Dual	Low	H+V	QPSK	Н	64/0	-19.509	-13	6.5
T	100	24399.96	SISO	High	V	BPSK	V	1/65	-13.908	-5	8.9
		24399.96	SISO	High	V	64QAM	V	1/65	-32.984	-13	20.0
		24399.96	SISO Dual	High	H+V	QPSK	Н	64/0	-16.735	-5	11.7
		24399.96	SISO Dual	High	H+V	QPSK	Н	64/0	-17.751	-13	4.8
		24350.04	SISO Dual	Low	H+V	64QAM	Н	1/0	-17.757	-5	12.8
		24350.04	SISO Dual	Low	H+V	64QAM	Н	1/0	-17.664	-13	4.7
		24350.04	SISO Dual	Low	H+V	QPSK	Н	64/0	-23.492	-5	18.5
C	100	24350.04	SISO Dual	Low	H+V	QPSK	Н	64/0	-14.824	-13	1.8*
Z	100	24350.04	SISO Dual	High	H+V	BPSK	Н	1/65	-17.683	-5	12.7
		24350.04	SISO	High	V	16QAM	V	1/65	-23.666	-13	10.7
		24350.04	SISO Dual	High	H+V	QPSK	Н	64/0	-22.146	-5	17.1
		24350.04	SISO Dual	High	H+V	BPSK	Н	64/0	-19.307	-13	6.3

* Note. TRP: -23.62 dBm



Plot data of Band Edge

n258a Band Antenna 0 (K patch)

t ₩ 56 B 0C 00 nter Freq 24.050000000 0 SS PREAMP	SREE SENSE INT GI-12 PRO: Fast FGein:Low #Atten: 16 dB	AUGN AUTO 09-56:37 PMMar 21, 2024 Avg Type: RMS Avg[Hold: 100/100 THACE 02 AUTO 2017 AVGINIC THACE 02 AUTO 2017 AVGINIC THACE 02 AUTO 2017 AVGINIC THACE OF THE THAT THAT THE THAT THAT THAT THAT T	Frequency Auto Tune	R F ISOR DC Center Freq 24.0500000 PASS PREAMP NFE	CORREC SENSE INT OO GHZ PNO: Fast IFGaincLow #Atten: 16 dB	ALIGN 4U/TO 00:04:42 PM Mar 21, 2024 Avg Type: RMS TRACE D 3 4 4 Avg/Hold: 100/100 Tree Common cet A ALIGN 100/100	Frequency Auto Tune
Bidiv Ref 43.00 dBm		-29.043 dBm		10 dB/div Ref 43.00 dBm		-26.001 dBm	
			Center Freq 24.050000000 GHz	23.0		24	Center Freq 050000000 GHz
		A	Start Freq 23.750000000 GHz	3.00		23.	Start Freq 75000000 GHz
us known dy wylen. Angleine the territory	Artematication and and a surger dynamic targer		Stop Freq	-17.0 -27.0 -37.0			Stop Freq
23 7500 CHz		Stop 24 3500 GHz	24.35000000 GHz	510 Shart 23 7500 CH2		Stop 24 3500 CHz	350000000 GHz
BW 1.0 MHz	#VBW 3.0 MHz*	Sweep 1.333 ms (10001 pts)	60.000000 MHz Auto Man	#Res BW 1.0 MHz	#VBW 3.0 MHz*	Sweep 1.333 ms (10001 pts)	60.000000 MHz Man
N 1 1 24.249 N 1 1 24.243	92 GHz -10.811 dBm 44 GHz -29.043 dBm		Freq Offset 0 Hz	1 N 1 1 24 2 N 1 7 24 3 4 5	249 74 GHz -11.586 dBm 243 02 GHz -26.001 dBm		Freq Offset 0 Hz
				6			
			Scale Type	7 8 9 10			Scale Type
		ITAUS	Scale Type Log <u>Lin</u>	7 8 9 10 11 11		STATUS .	Scale Type
Static Spectrum Analyzer - Swept SA NP 35.0 5C CC ter Freq 24.050000000 S PRCAMP III	SARC SINGLANT GHZ GHZ Trig: Free Run Gold.Cov Atten: 16 0B	100 M/00 1004 03 M/04 12 2004 Avg Type: RMS Truck 10 20 4 Avg Model: 1000 Truck 10 20 4 Mrt 2 24 . 244 7 0 GHz	Scale Type Log Lin Frequency Auto Tune	7 10 10 11		jetarus j	Scale Type
ogit Spectrum Andyser - Snegt SA ter Freq 24,0550000000 S PREAMP NEC 1 SIGUY Ref 43.00 dBm Trace 1 Pass	State: State: 16 db	Auto Auto Avg Type: RMS AvgHod: 10000 Trace 102 604 Mkr2 24.244 70 GHz -17.432 dBm	Scale Type	7 10 11 4 10		jatatus j	Scale Type
sigt Spectrum Andyser - Seept 3A 1 59 0 00 - 00 S PREAMP NFE 1 3x60/ Ref 43.00 dBm Trace 1 Pass	SAUCC State 2011 GHZ GHZ GHZ Free Run SAtter: 16 ob	Aug Marton Aug Type: RMS Avg Type: RMS Avg Type: RMS Mkr2 24,244 70 GHz -17,432 dBm	Scale Type Log Lin Frequency Auto Tune Center Freq 24.050000000 GHz Start Freq 23.750000000 GHz	10 10 4 4 10 4 10 4 10 4 10 4 10 4 10 4		ISTATUS CON	Scale Type
NING Spectrum Analyser - Sneet 5A. N 1910 - DC - DC IS PREAMP NC - U Etidory Ref 43.00 dBm Trace 1 Pass	State State and States	Avg Type: RMS Avg/Hold: 100100 MKr2 24-24 Type GHz -17.432 dBm	Scale Type Log Lin Frequency Auto Tune Center Freq 24.05000000 GHz Start Freq 23.75000000 GHz Stop Freq 24.35000000 GHz	10 10 +		STATUE LOG	Scale Type
opt Sector Adjust - See 14. 1000 - 1000 - 1000 - 1000 - 1000 1000 - 1000 - 1000 - 1000 - 1000 1000 - 1000 - 1000 - 1000 - 1000 1123.7500 GHz BW 1.0 MHz	State 21 State: 19 db State: 19 db State: 19 db State: 19 db	Augustatus Augustatus	Scale Type Log Lin Frequency Auto Tune Center Freq 24.05000000 GHz 23.75000000 GHz 24.35000000 GHz CF Step 60.00000 MHz			STATUS	Scale Type
IngH Sectors Andrew - Seept 5A Image: Sectors Andrew - Seept 5A Image: Sectors Andrew - Seept 5A Image: Sectors Andrew - S	State GMX2 (St) GHZ Trig: Free Run GMX2 (St) SAtten: 19 dB #VBW 3.0 MHz* State: -16 409 dBm -17 432 dBm	ALION AUTO Aug Type: R45 Avg Type: R45 Avg Type: R45 Mkr2 24,244 70 GHz -17.432 dBm Aug Type: R45 Mkr2 24,244 70 GHz -17.432 dBm Stop 24,3500 GHz Stop 24,3500 GHz	Scale Type Log Lin Frequency Auto Tune Center Freq 24.05000000 GHz 23.750000000 GHz 24.35000000 GHz 24.35000000 GHz CF Step 60.00000 MHz Auto Tune			(FIATUR)	Scale Type

F-TP22-03 (Rev. 06)





50 MHz, 1CC, High



Report No. HCT-RF-2404-FC010



F-TP22-03 (Rev. 06)





100 MHz, 1CC, High



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Tabular Data of Band Edge

n258b Band Antenna 0 (K patch)

CCs	BW	Frequency	Mada	Channel	Beam	Madulatian	Ant Dal	RB	Result	Limit	Margin
active	[MHz]	[MHz]	моде	Channel	Pol	Modulation	Ant. Pol	Size/Offset	[dBm]	[dBm]	[dB]
		24775.08	SISO Dual	Low	H+V	64QAM	V	1/0	-11.696	-5	6.7
		24775.08	SISO Dual	Low	H+V	QPSK	V	1/0	-27.429	-13	14.4
		24775.08	SISO Dual	Low	H+V	16QAM	V	32/0	-15.391	-5	10.4
		24775.08	SISO Dual	Low	H+V	QPSK	V	32/0	-16.773	-13	3.8
1	50	25224.96	SISO	High	V	64QAM	н	1/31	-12.608	-5	7.6
		25224.96	SISO	High	V	16QAM	н	1/31	-26.222	-13	13.2
		25224.96	SISO Dual	High	H+V	QPSK	н	32/0	-15.55	-5	10.6
		25224.96	SISO Dual	High	H+V	QPSK	н	32/0	-16.78	-13	3.8
		24800.04	SISO	Low	V	64QAM	V	1/0	-12.979	-5	8.0
		24800.04	SISO Dual	Low	H+V	BPSK	V	1/0	-33.18	-13	20.2
		24800.04	SISO Dual	Low	H+V	QPSK	V	64/0	-18.993	-5	14.0
		24800.04	SISO Dual	Low	H+V	QPSK	V	64/0	-19.776	-13	6.8
1	100	25200.00	SISO Dual	High	H+V	BPSK	н	1/65	-12.709	-5	7.7
		25200.00	SISO	High	V	64QAM	Н	1/65	-29.78	-13	16.8
		25200.00	SISO Dual	High	H+V	QPSK	Н	64/0	-19.277	-5	14.3
		25200.00	SISO Dual	High	H+V	QPSK	Н	64/0	-20.105	-13	7.1
		24850.02	SISO	Low	V	64QAM	V	1/0	-17.675	-5	12.7
		24850.02	SISO Dual	Low	H+V	64QAM	V	1/0	-19.76	-13	6.8
		24850.02	SISO Dual	Low	H+V	QPSK	V	64/0	-22.503	-5	17.5
		24850.02	SISO Dual	Low	H+V	BPSK	V	64/0	-15.463	-13	2.5
2	100	25150.02	SISO	High	V	QPSK	Н	1/65	-17.714	-5	12.7
		25150.02	SISO Dual	High	H+V	BPSK	Н	1/65	-24.409	-13	11.4
		25150.02	SISO Dual	High	H+V	QPSK	Н	64/0	-22.156	-5	17.2
		25150.02	SISO Dual	High	H+V	BPSK	Н	64/0	-17.945	-13	4.9
		24900.00	SISO Dual	Low	H+V	64QAM	V	1/0	-18.034	-5	13.0
		24900.00	SISO Dual	Low	H+V	QPSK	V	1/0	-19.863	-13	6.9
		24900.00	SISO Dual	Low	H+V	QPSK	V	64/0	-30.075	-5	25.1
_		24900.00	SISO	Low	V	QPSK	V	64/0	-29.05	-13	16.1
3	100	25100.04	SISO Dual	High	H+V	64QAM	Н	1/65	-21.232	-5	16.2
		25100.04	SISO	High	V	QPSK	Н	1/65	-27.469	-13	14.5
		25100.04	SISO	High	V	QPSK	Н	64/0	-25.391	-5	20.4
		25100.04	SISO Dual	High	H+V	QPSK	Н	64/0	-29.014	-13	16.0
		24949.98	SISO Dual	Low	H+V	QPSK	V	1/0	-17.592	-5	12.6
		24949.98	SISO Dual	Low	H+V	BPSK	V	1/0	-20.74	-13	7.7
		24949.98	SISO Dual	Low	H+V	BPSK	V	64/0	-29.297	-5	24.3
		24949.98	SISO Dual	Low	H+V	QPSK	V	64/0	-27.205	-13	14.2
4	100	25050.06	SISO	High	V	BPSK	Н	1/65	-21.01	-5	16.0
		25050.06	SISO Dual	High	H+V	64QAM	Н	1/65	-26.554	-13	13.6
		25050.06	SISO Dual	High	H+V	QPSK	Н	64/0	-28.509	-5	23.5
		25050.06	SISO	High	V	BPSK	Н	64/0	-25.679	-13	12.7

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Plot data of Band Edge

n258b Band Antenna 0 (K patch)




Keysight Spectrum Analyzer - Swept SA	ALTER AUTO DATA AT DATA AND	10 0 10 10 10 10 10 10 10 10 10 10 10 10	Keysight Spectrum Analyzer - Swept SA	
nter Freq 25.400000000 GHz SS NFE PRO: Fast +++ Trig: Free Run	Aug Type: RMS TRACE 22.2024 Avg [Hold: 100/100 Trace 22.2024	Frequency	Center Freq 25.40000000 GHz PASS NFE PROFest	Avg Type: RMS TRAce 12: 2024 Avg Hold: 100/100 Tret Avg/Hold: 100/100
PREAMP IFGain:Low #Atten: 16 dB	Mkr2 25.267 22 GHz	Auto Tune	PREAMP IFGain:Low #Atten: 15 dB	Mkr2 25.267 10 GHz Auto Tu
alcider Ref 43.00 dBm		Center Freq 25.400000000 GHz	LogBidiry Ref 43.00 dBm	Center Fri 25.40000000 G
(a ¹		Start Freq 25.100000000 GHz	7 00	Start Fr 25.10000000 G
		Stop Freq 25.70000000 GHz		Stop Fre 25.70000000 GP
rt 25.1000 GHz es BW 1.0 MHz #VBW 3.0 MHz* MODE TRC: SCU X Y FU	Stop 25.7000 GHz Sweep 1.333 ms (10001 pts) ACTION [FUNCTION WIDTH] FUNCTION VALUE	CF Step 60.000000 MHz Auto Man	Start 25.1000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz* MMR MICEE TRC SCL X Y F	Stop 25.7000 GHz CF Ste Sweep 1.333 ms (10001 pts) 60.000000 MH JACTON FUNCTION WALK
N 1 f 25.250.36 GHz -12.608 dBm N 1 f 25.267 22 GHz -28.361 dBm		Freq Offset 0 Hz	1 N 1 f 25.250 48 GHz -15.849 dBm N 1 f 25.267 10 GHz -26.222 dBm 5	Freq Offs 01
		Scale Type	7 8 9 10	Scale Typ
	STATUS		and a second sec	STATUS
Organit Section Analyse: Sweet XA Store XA	Avg Type: RMS Avg Type: RMS Avg Type: RMS Avg Hold: 100/100 Per Avg Hold: 100/100 Mkr2 25.259 66 GHz -16.780 dBm	Frequency Auto Tune		
		Center Freq 25.40000000 GHz		
		26.10000000 GHz		
		25.70000000 GHz		
art 25,1000 GHz Res BW 1.0 MHz #VBW 3.0 MHz* R MODE TRC SCL X Y P I N 1 f 25 253 54 GHz 15 550 dBm	Stop 25,7000 GHz Sweep 1.333 ms (10001 pts)	CF Step 60.000000 MHz <u>Auto</u> Man		
N 1 1 25 259 66 GHz -16.780 dBm		Freq Offset 0 Hz		
		Scale Type		

50 MHz, 1CC, High

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100 MHz, 1CC, High





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