

FCC Measurement/Technical Report on

SARA-S520BM10

FCC ID: XPYUBX24KM03 IC: 8595A-UBX24KM03

Test Report Reference: MDE_UBLOX_2412_FCC_01

Test Laboratory: 7layers GmbH Borsigstrasse 11 40880 Ratingen Germany



Note:

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1 APPLIED STANDARDS AND TEST SUMMARY

1.1 APPLIED STANDARDS

Type of Authorization

Certification for a cellular mobile device.

Applicable FCC Rules

Prepared in accordance with the requirements of FCC Rules and Regulations as listed in 47 CFR Ch.1 Parts 2 and 22, 24, 27, 90 (10-1-23 Edition). The following subparts are applicable to the results in this test report.

Part 2, Subpart J - Equipment Authorization Procedures, Certification

Part 22, Subpart H – Cellular Radiotelephone Service

§ 22.905 – Channels for cellular service

§ 22.913 – Effective radiated power limits

§ 22.917 – Emission limitations for cellular equipment

Part 24, Subpart E – Broadband PCS

§ 24.232 – Power and antenna height limits

§ 24.235 – Frequency stability

§ 24.238 – Emission limitations for Broadband PCS equipment

Part 27; Miscellaneous Wireless Communications Services Subpart C – Technical standards

§ 27.50 – Power and duty cycle limits

§ 27.53 – Emission limits

§ 27.54 – Frequency stability

Subpart P – Regulations Governing Licensing and Use of 900 MHz7 Broadband Service in the 897.5 – 900.5 MHz and 936.5 – 939.5 MHz Bands

§ 27.1506 – Frequencies

§ 27.1507 – Effective radiated power limits for 900 MHz broadband systems

§ 27.1508 – Field strength limit

§ 27.1509 – Emission limits



Part 90; Private Land Mobile Radio Services

Subpart S—REGULATIONS GOVERNING LICENSING AND USE OF FREQUENCIES IN THE 806-824, 851-869, 896-901, AND 935-940 MHZ BANDS

§ 90.635 – Limitations on power and antenna height

§ 90.669 – Emission limitations

§ 90.539 – Frequency stability

The tests were selected and performed with reference to:

- FCC Public Notice 971168 applying "Measurement guidance for certification of licensed digital transmitters" 971168 D01 v03r01, 2018-04-09
- If measurements procedures of the KDB 971168 have been used which deviate from the ANSI C63.26 this is explicitly marked with a *) in the FCC Final Result column in the measurement summary table in chapter 1.3
- ANSI C63.26: 2015



1.2 FCC-IC CORRELATION TABLE

Measurement	FCC reference	ISED reference
RF Output Power	§ 2.1046 § 22.913	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.12 RSS-132 Issue 4, 5.4
Peak-Average-Ratio	-	RSS 132 Issue 4: 5.4
Emission and Occupied bandwidth	§ 2.1049	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.7
Spurious Emission at Antenna Terminals	§ 2.1051 § 22.917	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-132 Issue 4, 5.5
Band Edge Compliance	§ 2.1051 § 22.917	RSS-GEN Issue 4, 6.13 RSS-132 Issue 4, 5.5
Frequency stability	§ 2.1055 § 22.355	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.11 RSS-132 Issue 4: 5.3
Field strength of spurious radiation	§ 2.1053 § 22.917	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-132 Issue 4: 5.5



Measurement	FCC reference	ISED reference
RF Output Power	§ 2.1046 § 24.232	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.12 RSS-133 Issue 7, 5.5
Peak-Average-Ratio	§ 24.232	RSS 133 Issue 7, 5.6
Emission and Occupied bandwidth	§ 2.1049	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.7
Spurious Emission at Antenna Terminals	§ 2.1051 § 24.238	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-133 Issue 7, 5.6
Band Edge Compliance	§ 2.1051 § 24.238	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-133 Issue 7, 5.6
Frequency stability	§ 2.1055 § 24.235	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.11 RSS-133 Issue 7, 5.4
Field strength of spurious radiation	§ 2.1053 § 24.236	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-133 Issue 7, 5.6



Measurement	FCC reference	ISED reference
RF Output Power	§ 2.1046 § 27.50	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.12 RSS-130 Issue 2, 4.6.2/4.6.3 RSS-139 Issue 4, 5.5 RSS-199 Issue 4, 5.5
Peak to Average-Ratio	§ 27.50	RSS-130 Issue 2: 4.6.1 RSS 139 Issue 4: 5.5 RSS-199 Issue 4, 5.5
Emission and Occupied bandwidth	§ 2.1049	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.7
Spurious Emission at Antenna Terminals	§ 2.1051 § 27.53	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-130 Issue 2: 4.7.1/4.7.2 RSS-139 Issue 4, 5.6 RSS-199 Issue 4, 5.6
Band Edge Compliance	§ 2.1051 § 27.53	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-130 Issue 2: 4.7.1/4.7.2 RSS-139 Issue 4, 5.6 RSS-199 Issue 4, 5.6
Frequency stability	§ 2.1055 § 27.54	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.11 RSS-130 Issue 2: 4.5 RSS-139 Issue 4: 5.4 RSS-199 Issue 4, 5.4
Field strength of spurious radiation	§ 2.1053 § 27.53	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-130 Issue 2: 4.7.1/4.7.2 RSS-139 Issue 4: 5.6 RSS-199 Issue 4, 5.6



Measurement	FCC reference	ISED reference
RF Output Power	§ 2.1046 § 90.635	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.12 RSS-140 Issue 1, 4.3
Peak to Average-Ratio	§ 90.635	RSS-140 Issue 1, 4.3
Emission and Occupied bandwidth	§ 2.1049	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.7
Spurious Emission at Antenna Terminals	§ 2.1051 § 90.543	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-140 Issue 1, 4.4
Band Edge Compliance	§ 2.1051 § 90.543	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-140 Issue 1, 4.4
Frequency stability	§ 2.1055 § 90.539	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.11 RSS-140 Issue 1, 4.2
Field strength of spurious radiation	§ 2.1053 § 90.543	RSS-GEN Issue 5 & AMD 1 & AMD 2, 6.13 RSS-140 Issue 1, 4.4



1.3 MEASUREMENT SUMMARY

47 CFR CHAPTER I FCC PART 22 Subpart H	§ 2.1046	§ 22.913		
RF Output Power The measurement was performed according to AN	Dutput Power measurement was performed according to ANSI C63.26: 2015;		Final Result	
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 10 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 3 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, high channel, 5 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 10 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 3 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 5 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 10 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 3 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 5 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed



RF Output Power				
The measurement was performed according to A	NSI C63.26	: 2015;	Final R	esult
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 10 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 10 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 3 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 3 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 5 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, high channel, 5 MHz, 6, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 10 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 10 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 10 MHz, 6, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 3 MHz, 1, conducted		2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, low channel, 3 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, low channel, 3 MHz, 6, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, low channel, 5 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, low channel, 5 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eEDD 26 OPSK, low channel, 5 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 10 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 10 MHz, 6, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 3 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 3 MHz, 3, conducted		2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, mid channel. 3 MHz. 6. conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, mid channel, 5 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, mid channel, 5 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 OPSK, mid channel, 5 MHz, 6, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed



RF Output Power				_
The measurement was performed according to AN	ISI C63.26	: 2015;	Final Res	sult
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, high channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, high channel, 10 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, high channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, high channel, 3 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16OAM, high channel, 5 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16OAM, high channel, 5 MHz, 5, conducted		2024-10-10	Passed	Passed
CAT-M1 eEDD 5 160AM low channel 1 4 MHz 1	S01 AA01	2024-10-10	Passed	Passed
conducted	501_/001	2021 10 10	l'usseu	russeu
CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16OAM, low channel, 10 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16OAM, low channel, 10 MHz, 5, conducted		2024-10-10	Passed	Passed
CAT-M1 eEDD 5 160AM low channel 3 MHz 1 conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1 eEDD 5 160AM low channel 3 MHz 5 conducted	S01_/01	2024-10-10	Passed	Passod
CAT M1, CEDD 5 160AM, low channel, 5 MHz, 5, conducted		2024 10 10	Passed	Daccod
CAT M1, eFDD 5 100AM, low channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, EFDD 5 16QAM, IOW challel, 5 MHZ, 5, conducted	SUI_AAUI	2024-10-10	Passed	Passeu
conducted	SUI_AAUI	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 10 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 3 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 5 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 10 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 10 MHz, 6, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 3 MHz, 1, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 OPSK, high channel, 3 MHz, 3, conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1, eEDD 5 OPSK, high channel, 3 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eEDD 5 OPSK, high channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1_eEDD_5_OPSK_high_channel_5_MHz_3_conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1_eEDD 5 OPSK_high channel 5 MHz 6 conducted	S01 AA01	2024-10-10	Passed	Passed
CAT-M1 eFDD 5 OPSK low channel 1.4 MHz 1 conducted		2024-10-10	Passed	Paccod
CAT-M1 aFDD 5 ODSK low channel 1.4 MHz 3 conducted		2027 10 10	Passod	Daccod
CAT_M1 aEDD 5 QESK low channel 1.4 MHz 6 conducted	S01_AAUI	2024-10-10	Decod	Decod
כהו היז, כו טע ט ערסג, וטא נוומווופו, ז.4 אוחב, ס, נטוומענופט	JULAAUI	2024-10-10	rasseu	rasseu



RF Output Power				
The measurement was performed according to AN	Final Result			
5.2.4.1, Wideband Signal: 5.2.4.4				
	. .	_ .		
OP-Mode	Setup	Date	FCC	IC
ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 5 QPSK, low channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 10 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 10 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 3 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 3 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 5 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 5 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 10 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 10 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 10 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 3 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 3 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 3 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 5 MHz, 1, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 5 MHz, 3, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 5 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed

47 CFR CHAPTER I FCC PART 22 Subpart H § 2.1055 § 22.355

Frequency Stability

The measurement was performed according to ANSI C63.26: 2015; 5.6 Final Result

OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-10	Passed	Passed

47 CFR CHAPTER I FCC PART 22 Subpart H § 2.1051 § 22.917

Spurious emissions at antenna terminals The measurement was performed according to ANSI C63.26: 2015; 5.7.4				Final Result	
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC	
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed	
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed	



47 CFR CHAPTER I FCC PART 22 Subpart H § 2.1051 § 22.917

Spurious emissions at antenna terminals The measurement was performed according to AN 5.7.4	Final Result			
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed

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47 CFR CHAPTER I FCC PART 22 Subpart H	§ 2.1053	§ 22.91/		
Field strength of spurious radiation The measurement was performed according to AN 5.5.2.3.1	Final Res	ult		
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-08	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed

47 CFR CHAPTER I FCC PART 22 Subpart H § 2.1049

Emission and occupied bandwidth The measurement was performed according to ANSI C63.26: 2015; 5.4.3 (relative meas. Procedure [26dB for GSM, EGDE, WCDMA, HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%))				sult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed



47 CFR CHAPTER I FCC PART 22 Subpart H § 2.1049

Emission and occupied bandwidth The measurement was performed according to Al 5.4.3 (relative meas. Procedure [26dB for GSM, E HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%))	Final Result			
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 6,	S01_AA01	2024-10-10	Passed	Passed
conducted				
conducted 47 CFR CHAPTER I FCC PART 22 Subpart H	§ 2.1051	§ 22.917		
47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3	§ 2.105 1 NSI C63.26	: 2015;	Final Re	esult
47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	§ 2.1051 NSI C63.26 Setup	§ 22.917 : 2015; Date	Final Re	esult IC
conducted 47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	§ 2.1051 NSI C63.26 Setup S01_AF01	§ 22.917 : 2015; Date 2024-10-25	Final Re FCC Passed	e sult IC Passed
47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	§ 2.1051 NSI C63.26 Setup S01_AF01 S01_AF01	§ 22.917 : 2015; Date 2024-10-25 2024-10-25	Final Re FCC Passed Passed	esult IC Passed Passed
conducted 47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	§ 2.1051 NSI C63.26 Setup S01_AF01 S01_AF01 S01_AF01	S S 22.917 : 2015; Date 2024-10-25 2024-10-25 2024-10-25	Final Re FCC Passed Passed Passed	esult IC Passed Passed Passed
47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	§ 2.1051 NSI C63.26 Setup S01_AF01 S01_AF01 S01_AF01 S01_AF01	 § 22.917 2015; Date 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25 	Final Re FCC Passed Passed Passed Passed	esult IC Passed Passed Passed Passed
47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted	§ 2.1051 NSI C63.26 Setup S01_AF01 S01_AF01 S01_AF01 S01_AF01 S01_AF01	S S 22.917 : 2015; Date 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25	Final Re FCC Passed Passed Passed Passed Passed	esult IC Passed Passed Passed Passed Passed
47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted	§ 2.1051 NSI C63.26 Setup S01_AF01 S01_AF01 S01_AF01 S01_AF01 S01_AF01 S01_AF01	S 22.917 : 2015; Date 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25	Final Re FCC Passed Passed Passed Passed Passed Passed	esult IC Passed Passed Passed Passed Passed Passed
 conducted 47 CFR CHAPTER I FCC PART 22 Subpart H Band edge compliance The measurement was performed according to Al 5.7.3 OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted 	§ 2.1051 NSI C63.26 Setup S01_AF01 S01_AF01 S01_AF01 S01_AF01 S01_AF01 S01_AF01 S01_AF01	 § 22.917 § 22.917 Date 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25 2024-10-25 	Final Re FCC Passed Passed Passed Passed Passed Passed Passed	esult IC Passed Passed Passed Passed Passed Passed Passed



_	47 CFR CHAPTER I FCC PART 22 Subpart H	-				
Peak to Average Ratio The measurement was performed according to ANSI C63.26: 2015; 5.2.3.4 (broadband noise-like signal using CCDF [LTE, CAT-M1, NB- IoT]) 5.2.6 (alternative procedure for PAPR [GSM, EDGE, WCDMA, HSDPA, HSUPA])					Final Result	
	OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC	
	CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 5 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 5 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 5 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 5 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 5 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed	
	CAT-M1, eFDD 5 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed	
_	47 CFR CHAPTER I FCC PART 24 Subpart E	§ 2.1046	§ 24.232			
	RF Output Power The measurement was performed according to AN 5.2.4.1, Wideband Signal: 5.2.4.4	NSI C63.26	: 2015;	Final Re	sult	
	OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Passource Blocks, Massurement method	Setup	Date	FCC	IC	
	CAT-M1, eFDD 2 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
	CAT-M1, eFDD 2 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
	CAT-M1, eFDD 2 16QAM, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
	CAT-M1, eFDD 2 16QAM, high channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
	CAT-M1, eFDD 2 16QAM, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015;			Final Result	
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Satun	Date	FCC	τc
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date		IC
CAT-M1, eFDD 2 16QAM, high channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015;			Final Res	sult
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				_
CAT-M1, eFDD 2 QPSK, high channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4			Final Result	
OP-Mode Technology, Radio Technology, Operating Frequency,	Setup	Date	FCC	IC
CAT-M1, eFDD 2 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power				
The measurement was performed according to AN	ISI C63.26	2015;	Final Result	
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setun	Date	FCC	τc
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date		10
CAT-M1, eFDD 25 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power				
The measurement was performed according to AN	2015;	Final Result		
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed



Frequency Stability				
The measurement was performed according to AN	: 2015; 5.6	Final Re	sult	
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-24	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 1,	S01_AI01	2024-10-24	Passed	Passed
conducted				
47 CFR CHAPTER I FCC PART 24 Subpart E	§ 2.1051	§ 24.238		
Spurious emissions at antenna terminals The measurement was performed according to AN 5.7.4	ISI C63.26	: 2015;	Final Re	sult
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
4/ CFR CHAPTER I FCC PART 24 Subpart E	§ 2.1053	s § 24.236		
The measurement was performed according to AN 5.5.2.3.1	ISI C63.26	: 2015;	Final Re	sult
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	-			
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-15	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-15	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-15	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-17	Passed	Passed



47 CFR CHAPTER I FCC PART 24§ 2.1049Subpart E

Emission and occupied bandwidth The measurement was performed accordi 5.4.3 (relative meas, Procedure [26dB for	Final Result				
HSDPA, HSUPA]) 5.4.4 (Power bandwidth	(99%))	- ,			
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC	
CAT-M1, eFDD 2 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 2 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 2 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 25 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 25 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 25 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed	
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed	
47 CFR CHAPTER I FCC PART 24 § 2.1051 § 24.238 Subpart E					
Band edge compliance	na to ANCT CC	2 26, 2015.		I t	
The measurement was performed according	ne measurement was performed according to ANSI Co3.26: 2015; Final Kesuit				

5.7.3				
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 2 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed



47 CFR CHAPTER I FCC PART 24§ 2.1051 § 24.238Subpart EBand edge compliance

The measurement was performed according to ANSI C63.26: 2015; Final Result 5.7.3

OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-25	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-25	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-25	Passed	Passed
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-25	Passed	Passed

47 CFR CHAPTER I FCC PART 24 § 24.232 Subpart E

Peak to Average Ratio

The measurement was performed according to ANSI C63.26: 2015; I 5.2.3.4 (broadband noise-like signal using CCDF [LTE, CAT-M1, NB-IoT]) 5.2.6 (alternative procedure for PAPR [GSM, EDGE, WCDMA, HSDPA, HSUPA])

Final Result

OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 2 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 2 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 2 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 2 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 2 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 2 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 25 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 25 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 25 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 25 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed



47 CFR CHAPTER I FCC PART 24	§ 24.232			
Peak to Average Ratio The measurement was performed accordin 5.2.3.4 (broadband noise-like signal using IoT]) 5.2.6 (alternative procedure for PAPE HSDPA, HSUPA])	ng to ANSI C63.26 CCDF [LTE, CAT-I R [GSM, EDGE, W0	: 2015; M1, NB- CDMA,	Final Res	sult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 25 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 25 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
47 CFR CHAPTER I FCC PART 27 Subpart C	§ 2.1046 § 27.	50		
RF Output Power The measurement was performed accordin 5.2.4.1, Wideband Signal: 5.2.4.4	ng to ANSI C63.26	: 2015;	Final Res	sult
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	·			
CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 10 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 3 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 3	S01_AF01	2024-10-22	Passed	Passed

MHz, 1, conducted



RF Output Power				
The measurement was performed accordin	g to ANSI C63.26	: 2015;	Final Res	sult
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 12 16QAM, low channel, 3 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 3 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 16QAM, mid channel, 5 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 3 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4			Final Result	
OP-Mode	Setup	Date	FCC	IC
Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 12 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed



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The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4				Final Result	
OP-Mode	Setup	Date	FCC	IC	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method					
CAT-M1, eFDD 12 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 12 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 12 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, mid channel, 5 MHz 1 conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 16QAM, mid channel, 5 MHz 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 13 QPSK, high channel, 1.4	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 QPSK, high channel, 1.4	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 QPSK, high channel, 1.4	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 QPSK, high channel, 5	S01_AF01	2024-10-21	Passed	Passed	

CAT-M1, eFDD 13 QPSK, high channel, 5 S01_AF01

MHz, 1, conducted

MHz, 3, conducted

Passed

2024-10-21

Passed



RF Output Power				
The measurement was performed accordin	g to ANSI C63.26	: 2015;	Final Res	sult
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 13 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4		Final Result		
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 4 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 3 MHz, 1. conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 5 MHz,	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power				
The measurement was performed accordin	g to ANSI C63.26	: 2015;	Final Res	sult
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 4 QPSK, high channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed



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RF Output Power

The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4				Final Result	
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC	
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 4 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed	
CAT-M1, eFDD 66 16QAM, low channel, 1.4	S01_AF01	2024-10-21	Passed	Passed	

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Passed

Passed

Passed

Passed

Passed

Passed



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4			Final Result	
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 66 16QAM, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, low channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4			Final Result	
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 66 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz 3 conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 10 MHz 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 10	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 10	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 3 MHz,	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 5 MHz, 6. conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed



Subpart C	
RF Output Power	
The measurement was performed according to ANSI C63.26: 2015;	Final Result
5.2.4.1. Wideband Signal: 5.2.4.4	

5.2.4.1, Wideband Signal: 5.2.4.4	-	-		
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 66 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 3 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 3 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed



RF Output Power				
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4			Final Result	
OP-Mode	Setup	Date	FCC	IC
Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 71 16QAM, mid channel, 10 MHz. 1. conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 3 MHz 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 5 MHz 1 conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 5 MHz 5, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4 MHz 3 conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 10 MHz 3 conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 3 MHz 1 conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 3 MHz 3 conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 5 MHz 1 conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz 1 conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed


RF Output Power				
The measurement was performed according to ANSI C63.26: 2015;			Final Result	
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 71 QPSK, low channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	Passed
CAT-M1, eFDD 85 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed



RF Output Power					
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4		Final Result			
OP-Mode		Setup	Date	FCC	IC
Technology, Radio Technolo Frequency, ChBW, Ressour Measurement method	ogy, Operating ce Blocks,				
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	high channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	high channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	high channel, 3	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	high channel, 3	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	high channel, 5	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	high channel, 5	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	low channel, 1.4	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	low channel, 1.4	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	low channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	low channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	low channel, 3	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	low channel, 3	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	low channel, 5	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	low channel, 5	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	mid channel, 1.4	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	mid channel, 1.4	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	mid channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	mid channel, 10	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz. 1, conducted	mid channel, 3	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	mid channel, 3	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 1, conducted	mid channel, 5	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 16QAM, MHz, 5, conducted	mid channel, 5	S01_AF01	2024-10-22	Passed	Passed



RF Output Power				
The measurement was performed accordin	g to ANSI C63.26	: 2015;	Final Result	
5.2.4.1, Wideband Signal: 5.2.4.4				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 3 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 3 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 3 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 3 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed



RF Output Power					
The measurement was performed according to ANSI C63.26: 2015;				Final Result	
5.2.4.1, Wideband Signal: 5.2.4.4					
OP-Mode	Setup	Date	FCC	IC	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method					
CAT-M1, eFDD 85 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 85 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	

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Frequency Stability The measurement was performed according to ANSI C63.26: 2015; 5.6 Final Result

OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-24	Passed	Passed



The measurement was performed accordi	ng to ANSI C63.20	6: 2015; 5.6	Final Re	esult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed
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Spurious emissions at antenna terminals The measurement was performed accordi 5.7.4	ng to ANSI C63.20	6: 2015;	Final Re	esult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 13 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed



Spurious emissions at antenna terminals The measurement was performed accord 5.7.4	ing to ANSI C63	3.26: 2015;	Final Ro	esult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	Passed
47 CFR CHAPTER I FCC PART 27 Subpart C	§ 2.1053 §	27.53		
Field strength of spurious radiation The measurement was performed accord 5.5.2.3.1	ing to ANSI C63	3.26: 2015;	Final Re	esult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-12	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-15	Passed	Passed
CAT-M1, eFDD 13 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-12	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-15	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-16	Passed	Passed



Subpart C				
Field strength of spurious radiation The measurement was performed accordi	Final Re	esult		
515121511				
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 71 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-12	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-12	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-12	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-06	Passed	Passed
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-10-17	Passed	Passed
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Emission and occupied bandwidth		26.2015.	Einal D	
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth	ng to ANSI C63 GSM, EGDE, V (99%))	VCDMA,	Filldi Ke	suit
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	ng to ANSI C63 GSM, EGDE, W (99%)) Setup	Date	FCC	IC
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01	Date 2024-10-10	FIGAL RE	IC Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01	Date 2024-10-10 2024-10-10	FICC Passed Passed	IC Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01	Date 2024-10-10 2024-10-10 2024-10-10	FICC Passed Passed Passed	IC Passed Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01 S01_AA01	Date 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10	FIGAL REC Passed Passed Passed Passed	IC Passed Passed Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01	Date 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10	FICC Passed Passed Passed Passed Passed	IC Passed Passed Passed Passed Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 6, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01	Date 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10	FICC Passed Passed Passed Passed Passed Passed	IC Passed Passed Passed Passed Passed Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01	Date 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-28	FCC Passed Passed Passed Passed Passed Passed Passed Passed	IC Passed Passed Passed Passed Passed Passed Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 13 16QAM, low channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AF01 S01_AF01	Date Date 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-28 2024-10-28	FCC Passed Passed Passed Passed Passed Passed Passed Passed Passed	IC Passed Passed Passed Passed Passed Passed Passed Passed
The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 13 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 13 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 13 16QAM, mid channel, 1.4 MHz, 5, conducted	ng to ANSI C63 GSM, EGDE, W (99%)) Setup S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AA01 S01_AF01 S01_AF01 S01_AF01	Date Date 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-10 2024-10-28 2024-10-28 2024-10-28	FCC Passed Passed Passed Passed Passed Passed Passed Passed Passed Passed	IC Passed Passed Passed Passed Passed Passed Passed Passed Passed



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Emission and occupied bandwidth

The measurement was performed according to ANSI C63.26: 2015;	Final Result
5.4.3 (relative meas. Procedure [26dB for GSM, EGDE, WCDMA,	
HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%))	

OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-28	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 66 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 66 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
CAT-M1, eFDD 85 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed



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Emission and occupied bandwidth

The measurement was performed according to ANSI C63.26: 2015;	Final Result
5.4.3 (relative meas. Procedure [26dB for GSM, EGDE, WCDMA,	
HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%))	

OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating	-			
Frequency, ChBW, Ressource Blocks,				
Measurement method				
CAT-M1, eFDD 85 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed

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Band edge compliance					
5.7.3	IG TO ANSI C03.20	: 2015;	rinal Kes	Suit	
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC	
CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed	
CAT-M1, eFDD 12 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed	
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed	
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed	
CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-28	Passed	Passed	
CAT-M1, eFDD 4 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed	
CAT-M1, eFDD 4 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed	
CAT-M1, eFDD 4 QPSK, high channel, 1.4	S01_AF01	2024-10-23	Passed	Passed	

MHz, 6, conducted

CAT-M1, eFDD 4 QPSK, high channel, 1.4 S01_AF01



Band edge compliance The measurement was performed according to ANSI C63.26: 2015; Final Result				
5.7.3				
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 66 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 66 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	Passed
CAT-M1, eFDD 85 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-29	Passed	Passed
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Subpart C				
Peak to Average Ratio The measurement was performed accordin 5.2.3.4 (broadband noise-like signal using IoT]) 5.2.6 (alternative procedure for PAP HSDPA, HSUPA])	ng to ANSI C63.26 CCDF [LTE, CAT- R [GSM, EDGE, W	6: 2015; -M1, NB- /CDMA,	Final Re	esult
OP-Mode Technology, Radio Technology, Operating	Setup	Date	FCC	IC
Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 12 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 12 16QAM, low channel, 1.4	S01_AF02	2024-12-05	Passed	Passed

MHz, 5, conducted



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Peak to Average Ratio	
The measurement was performed according to ANSI C63.26: 2015;	Final Result
5.2.3.4 (broadband noise-like signal using CCDF [LTE, CAT-M1, NB-	
IoT]) 5.2.6 (alternative procedure for PAPR [GSM, EDGE, WCDMA,	
HSDPA, HSUPA])	

OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 12 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 12 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 12 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 12 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 13 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 13 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 13 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 13 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 13 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 13 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 4 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 4 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 4 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 4 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 4 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 4 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 66 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 66 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 66 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 66 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 66 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed



Peak	to Average Ratio	
The	measurement was performed according to ANSI C63.26: 2015;	Final Result
5.2.3	3.4 (broadband noise-like signal using CCDF [LTE, CAT-M1, NB-	
IoT]	5.2.6 (alternative procedure for PAPR [GSM, EDGE, WCDMA,	
HSD	PA, HSUPA])	

OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 66 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 71 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 71 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 71 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 71 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 71 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 71 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 85 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 85 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 85 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 85 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 85 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 85 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed

RF Output Power The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, **Final Result** Wideband Signal: 5.2.4.4

 47 CFR CHAPTER I FCC PART 27 Subpart P
 § 2.1046 § 27.1507

OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 16QAM, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A



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RF Output Power

The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Final Result Wideband Signal: 5.2.4.4

OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 8 16QAM, mid channel, 3 MHz, 5, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 3 MHz, 1, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 3 MHz, 3, conducted	S01_AF01	2024-10-21	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 3 MHz, 6, conducted	S01_AF01	2024-10-21	Passed	N/A

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				3 212000

Frequency Stability The measurement was performed according to ANSI	C63.26: 20	15; 5.6	Final F	Result
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	N/A
47 CFR CHAPTER I FCC PART 27 Subpart P	§ 2.1051	§ 27.1509		
Spurious emissions at antenna terminals The measurement was performed according to ANSI	C63.26: 20	15; 5.7.4	Final F	Result
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	N/A
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-11-06	Passed	N/A
47 CFR CHAPTER I FCC PART 27 Subpart P	§ 2.1053	§ 27.1508		
Field strength of spurious radiation The measurement was performed according to ANSI 5.5.2.3.1	C63.26: 20	15;	Final F	Result
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	N/A
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	N/A
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 1, radiated	S02_AF01	2024-11-07	Passed	N/A



47 CFR CHAPTER I FCC PART 27 Subpart P	§ 2.1049	§ 27.1506			
Emission and occupied bandwidth The measurement was performed according to ANS2 (relative meas. Procedure [26dB for GSM, EGDE, We 5.4.4 (Power bandwidth (99%))	I C63.26: 20 CDMA, HSDP	15; 5.4.3 A, HSUPA])	Final F	Result	
OP-Mode	Setup	Date	FCC	IC	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method					
CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	N/A	
CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	N/A	
CAT-M1, eFDD 8 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AA01	2024-10-10	Passed	N/A	
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	N/A	
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	N/A	
CAT-M1, eFDD 8 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	N/A	
47 CFR CHAPTER I FCC PART 27 Subpart P	§ 2.1051	§ 27.1509			
Band edge compliance					
The measurement was performed according to ANS	I C63.26: 20	15; 5.7.3	Final F	Result	
OP-Mode	Setup	Date	FCC	IC	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method					
CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	N/A	
CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-23	Passed	N/A	
CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	N/A	
CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-23	Passed	N/A	
47 CFR CHAPTER I FCC PART 27 Subpart P		§ 27.1507			
Peak to Average Ratio					
The measurement was performed according to ANS (broadband noise-like signal using CCDF [LTE, CAT- (alternative procedure for PAPR [GSM, EDGE, WCDN	I C63.26: 20 M1, NB-IoT] 1A, HSDPA, H	15; 5.2.3.4) 5.2.6 HSUPA])	Final F	Result	
OP-Mode	Setup	Date	FCC	IC	
	-				
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method					
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted	• S01_AF02	2024-12-05	Passed	N/A	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02 S01_AF02	2024-12-05 2024-12-05	Passed Passed	N/A N/A	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02 S01_AF02 S01_AF02	2024-12-05 2024-12-05 2024-12-05	Passed Passed Passed	N/A N/A N/A	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02 S01_AF02 S01_AF02 S01_AF02	2024-12-05 2024-12-05 2024-12-05 2024-12-05	Passed Passed Passed Passed	N/A N/A N/A N/A	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 8 16QAM, high channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, low channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 8 QPSK, high channel, 1.4 MHz, 6, conducted CAT-M1, eFDD 8 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02 S01_AF02 S01_AF02 S01_AF02 S01_AF02	2024-12-05 2024-12-05 2024-12-05 2024-12-05 2024-12-05	Passed Passed Passed Passed Passed	N/A N/A N/A N/A N/A	



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RF Output Power					
The measurement was performed according to ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4			Final Result		
OP-Mode	Setup	Date	FCC	IC	
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method					
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, high channel, 5 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, low channel, 5 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, mid channel, 10 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 16QAM, mid channel, 5 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, high channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, high channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, high channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed	
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed	



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RF Output Power				oult
5.2.4.1, Wideband Signal: 5.2.4.4		Final Result		
OP-Mode	Setun	Date	FCC	τc
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Secup	Butc		10
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 10 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 10 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 10 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 5 MHz, 1, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 5 MHz, 3, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, mid channel, 5 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
47 CFR CHAPTER I FCC PART 90 § 2.1055 § 90.539 Subpart S				
Frequency Stability The measurement was performed according	ng to ANSI C63.26	5: 2015; 5.6	Final Re	sult
OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 1, conducted	S01_AI01	2024-10-25	Passed	Passed



IC

Passed

Passed

Passed

IC

Passed

Passed

Passed

IC

Passed

Passed

Passed

Passed

Passed

47 CFR CHAPTER I FCC PART 90 § 2.1051 § 90.543 Subpart S Spurious emissions at antenna terminals The measurement was performed according to ANSI C63.26: 2015; Final Result 5.7.4 **OP-Mode** Setup Date FCC Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method 2024-11-06 CAT-M1, eFDD 26 QPSK, high channel, 1.4 S01_AF01 Passed MHz, 1, conducted 2024-11-06 CAT-M1, eFDD 26 QPSK, low channel, 1.4 S01_AF01 Passed MHz, 1, conducted CAT-M1, eFDD 26 QPSK, mid channel, 1.4 S01 AF01 2024-11-06 Passed MHz, 1, conducted **47 CFR CHAPTER I FCC PART 90** § 2.1053 § 90.543 Subpart S Field strength of spurious radiation The measurement was performed according to ANSI C63.26: 2015; Final Result 5.5.2.3.1 **OP-Mode** FCC Setup Date Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method 2024-11-06 CAT-M1, eFDD 26 QPSK, high channel, 1.4 S02_AF01 Passed MHz, 1, radiated 2024-11-06 CAT-M1, eFDD 26 QPSK, low channel, 1.4 S02_AF01 Passed MHz, 1, radiated CAT-M1, eFDD 26 QPSK, mid channel, 1.4 S02_AF01 2024-10-16 Passed MHz, 1, radiated **47 CFR CHAPTER I FCC PART 90** § 2.1049 Subpart S Emission and occupied bandwidth The measurement was performed according to ANSI C63.26: 2015; Final Result 5.4.3 (relative meas. Procedure [26dB for GSM, EGDE, WCDMA, HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%)) FCC **OP-Mode** Setup Date Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method CAT-M1, eFDD 26 16QAM, high channel, 1.4 S01_AA01 2024-10-10 Passed MHz, 5, conducted CAT-M1, eFDD 26 16QAM, low channel, 1.4 S01_AA01 2024-10-10 Passed MHz, 5, conducted S01_AA01 2024-10-10 Passed CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 5, conducted CAT-M1, eFDD 26 QPSK, high channel, 1.4 S01 AA01 2024-10-10 Passed MHz, 6, conducted CAT-M1, eFDD 26 QPSK, low channel, 1.4 S01_AA01 2024-10-10 Passed MHz, 6, conducted



47 CFR CHAPTER I FCC PART 90 Subpart S	§ 2.1049			
Emission and occupied bandwidth The measurement was performed accordi 5.4.3 (relative meas. Procedure [26dB for HSDPA, HSUPA]) 5.4.4 (Power bandwidth	ng to ANSI C63 GSM, EGDE, W0 (99%))	26: 2015; CDMA,	Final Re	esult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AA01	2024-10-10	Passed	Passed
47 CFR CHAPTER I FCC PART 90 Subpart S	§ 2.1051 § 9	0.543		
Band Edge The measurement was performed according to ANSI C63.26: 2015; 5.7.3		Final Re	esult	
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF01	2024-10-22	Passed	Passed
47 CFR CHAPTER I FCC PART 90 Subpart S	§ 90.635			
Peak to Average Ratio The measurement was performed accordi 5.2.3.4 (broadband noise-like signal using IoT]) 5.2.6 (alternative procedure for PAP HSDPA, HSUPA])	ng to ANSI C63.3 3 CCDF [LTE, CA 2R [GSM, EDGE, 1	26: 2015; T-M1, NB- WCDMA,	Final Re	esult
OP-Mode Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method	Setup	Date	FCC	IC
CAT-M1, eFDD 26 16QAM, high channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 26 16QAM, low channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 26 16QAM, mid channel, 1.4 MHz, 5, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 26 QPSK, high channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed
CAT-M1, eFDD 26 QPSK, low channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed



47 CFR CHAPTER I FCC PART 90§ 90.635Subpart SPeak to Average RatioThe measurement was performed according to ANSI C63.26: 2015;

The measurement was performed according to ANSI C63.26: 2015; Final Result 5.2.3.4 (broadband noise-like signal using CCDF [LTE, CAT-M1, NB-IoT]) 5.2.6 (alternative procedure for PAPR [GSM, EDGE, WCDMA, HSDPA, HSUPA])

OP-Mode	Setup	Date	FCC	IC
Technology, Radio Technology, Operating Frequency, ChBW, Ressource Blocks, Measurement method				
CAT-M1, eFDD 26 QPSK, mid channel, 1.4 MHz, 6, conducted	S01_AF02	2024-12-05	Passed	Passed

N/A: Not applicable

N/P: Not performed



2 REVISION HISTORY / SIGNATURES

Report version control			
Version	Release date	Change Description	Version validity
initial	2024-12-09		valid

COMMENT: -

hullik V

(responsible for accreditation scope) Marco Kullik

fithe

(responsible for testing and report) Mohamed Fraitat

layers

7 layers GmbH, Borsigstr. 11 40880 Ratingen, Germany Phone +49 (0)2102 749 0



3 ADMINISTRATIVE DATA

3.1 TESTING LABORATORY

Company Name.

7layers GmbH

Address:

Borsigstr. 11 40880 Ratingen Germany

The test facility is accredited by the following accreditation organisation:

Laboratory accreditation no:	DAkkS D-PL-12140-01-00
FCC Designation Number:	DE0015
FCC Test Firm Registration:	929146
ISED CAB Identifier	DE0007; ISED#: 3699A
Responsible for accreditation scope:	Marco Kullik
Report Template Version:	2023-09-29

3.2 PROJECT DATA

Responsible for testing and report:	Mohamed Fraitat
Employees who performed the tests:	documented internally at 7Layers
Date of Report:	2024-12-09
Testing Period:	2024-10-10 to 2024-12-05

3.3 APPLICANT DATA

Company Name:	u-blox AG
Address:	Zürcherstrasse 68 8800 Thalwil Switzerland
Contact Person:	Giulio Comar

3.4 MANUFACTURER DATA

Company Name:	please see Applicant Data
Address:	
Contact Person:	



4 TEST OBJECT DATA

4.1 GENERAL EUT DESCRIPTION

Kind of Device product description	Multimode module: LTE CAT-M1 and ORBCOMM satellite connectivity with GNSS positioning	
Product name	SARA-S520BM10	
Туре	SARA-S520BM10	
Declared EUT data by	the supplier	
General product description	The EUT is supporting LTE CAT-M1 and ORBCOMM satellite connectivity with GNSS positioning. It supports the following relevant bands for FCC/ISED approval: CAT-M1: - eFDD2 / LTE eFDD4 / eFDD5 / eFDD8 / eFDD12 / eFDD13 / eFDD25 / eFDD26 / eFDD66 /eFDD71 /eFDD85	
	Satellite: L-band - Uplink: 1626.5 - 1660.5 MHz Downlink: 1525 - 1559 MHz	
Voltage Level	3.8 V	
Voltage Type	DC	

4.2 EUT MAIN COMPONENTS

Sample Name	Sample Code	Description	
aa01	aa01	RF Sample	
Sample Parameter		Value	
Serial No.	351004470013639		
HW Version	UBX-443E03		
SW Version	06.00.A00.01		
Comment	-		

Sample Name	Sample Code	Description
af01	af01	Standard Sample
Sample Parameter		Value
Serial No.	351004470013605	
HW Version	UBX-443E03	
SW Version	06.00.A00.01	
Comment	-	

Sample Name	Sample Code	Description
af02	af02	Standard Sample
Sample Parameter		Value
Serial No.	351004470013605	
HW Version	UBX-443E03	
SW Version	06.01.A00.01	
Comment	-	



Sample Name	Sample Code	Description	
ai01	ai01	Standard Sample	
Sample Parameter		Value	
Serial No.	351004470013779		
HW Version	UBX-443E03		
SW Version	06.00.A00.01		
Comment	-		

NOTE: The short description is used to simplify the identification of the EUT in this test report.

4.3 ANCILLARY EQUIPMENT

For the purposes of this test report, ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Ancillary Equipment can influence the test results.

Device	Details (Manufacturer, Type Model, OUT Code)	Description
-	-	-

4.4 AUXILIARY EQUIPMENT

For the purposes of this test report, auxiliary equipment is defined as equipment which is used temporarily to enable operational and control features especially used for the tests of the EUT which is not used during normal operation or equipment that is used during the tests in combination with the EUT but is not subject of this test report. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Auxiliary Equipment can influence the test results.

But nevertheless Auxiliary Equipment can innuence the test results.

Device	Details (Manufacturer, Type Model, HW, SW, S/N)	Description
AUX01	Taoglass, Phoenix II, GSA.8835.A.101111, -, -,-	Cellular antenna
AUX02	Orbcomm, ST100368-NSA, -, -, in combination with RF cable SKYWAVE ST301044-ESC REV A (SMA male connectors, length 2.52m, attenuation 0.6dB in Uplink frequency range: 1626.5 - 1660.5 MHz)	Satellite antenna
AUX03	Evaluation Board (Ublox EVB-WL3, -, -, -, -, -,	Evaluation Board
AUX04	AC/DC Adapter (UNIFIVE, UUX324- 1215, -, F04-0269354	AC/DC Adapter



4.5 EUT SETUPS

This chapter describes the combination of EUTs and equipment used for testing. The rationale for selecting the EUTs, ancillary and auxiliary equipment and interconnecting cables, is to test a representative configuration meeting the requirements of the referenced standards.

Setup	Combination of EUTs	Description and Rationale
S01_AA01	aa01, AUX03, AUX04	Conducted setup
S01_AF01	af01, AUX03, AUX04	Conducted setup
S01_AF02	af02, AUX03, AUX04	Conducted setup
S02_AF01	af01, AUX01, AUX02, AUX03, AUX04	Radiated setup
S01_AI01	ai01, AUX03, AUX04	Conducted setup

4.6 OPERATING MODES / TEST CHANNELS

This chapter describes the operating modes of the EUTs used for testing.

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	18607	18900	19193	18615	18900	19185	18625	18900	19175
	f [MHz]	1850.7	1880.0	1909.3	1851.5	1880.0	1908.5	1852.5	1880.0	1907.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 2	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	18650	18900	19150	-	-	-	-	-	-
	f [MHz]	1855.0	1880.0	1905.0	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	19957	20175	20393	19965	20175	20385	19975	20175	20375
	f [MHz]	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 4	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	20000	20175	20350	-	-	-	-	-	-
	f [MHz]	1715.0	1732.5	1750.0	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	20407	20525	20643	20415	20525	20635	20425	20525	20625
	f [MHz]	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 5	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	20450	20525	20600	-	-	-	-	-	-
	f [MHz]	829.0	836.5	844.0	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	-	3	-	-	-	-
	CH no.	21632	21640	21648	-	20525	-	-	-	-
	f [MHz]	898.2	899.0	899.8	-	899.0	-	-	-	-
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 8	Cell BW [MHz]	-	-	-	-	-	-	-	-	-
	CH no.	-	-	-	-	-	-	-	-	-
	f [MHz]	-	-	-	-	-	-	-	-	-



		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	23017	23095	23173	23025	23095	23165	23035	23095	23155
	f [MHz]	699.7	707.5	715.3	700.5	707.5	714.5	701.5	707.5	713.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 12	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	23060	23095	23130	-	-	-	-	-	-
	f [MHz]	704.0	707.5	711.0	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	5	5	5	10	10	10	-	-	-
	CH no.	23205	23230	23255	-	23230	-	-	-	-
	f [MHz]	779.5	782.0	784.5	-	782.0	-	-	-	-
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 13	Cell BW [MHz]	-	-	-	-	-	-	-	-	-
	CH no.	-	-	-	-	-	-	-	-	-
	f [MHz]	-	-	-	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	26047	26365	26683	26055	26365	26675	26065	26365	26665
	f [MHz]	1850.7	1882.5	1914.3	1851.5	1882.5	1913.5	1852.5	1882.5	1912.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 25	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	26090	26365	26640	-	-	-	-	-	-
	f [MHz]	1855.0	1882.5	1910.0	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	26797	26915	27033	26805	26915	27025	26815	26915	27015
CAT-M1	f [MHz]	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
eFDD 26		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
(Part 22)	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	26840	26915	26990	-	-	-	-	-	-
	f [MHz]	829.0	836.5	844	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	26697	26740	26783	26705	26740	26776	26715	26740	26766
CAT-M1	f [MHz]	814.7	819.0	823.3	815.5	819.0	822.5	816.5	819.0	821.5
eFDD 26 (Part 90)		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	-	10	-	-	-	-	-	-	-
	CH no.	-	26740	-	-	-	-	-	-	-
	f [MHz]	-	819.0	-	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	131979	132322	132665	131987	132322	132657	131997	132322	132647
	f [MHz]	1710.7	1745.0	1779.3	1711.5	1745.0	1778.5	1712.5	1745.0	1777.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 66	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	132022	132322	132622	-	-	-	-	-	-
	f [MHz]	1715.0	1745.0	1775.0	-	-	-	-	-	-

		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	133129	133297	133465	133172	133297	133422	133197	133297	133397
	f [MHz]	663.7	680.5	697.3	668	680.5	693	670,5	680.5	690,5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 71	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	133222	133297	133372	-	-	-	-	-	-
	f [MHz]	673	680.5	688	-	-	-	-	-	-



		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
	Cell BW [MHz]	1.4	1.4	1.4	3	3	3	5	5	5
	CH no.	134009	134092	134175	134017	134092	134167	134027	134092	134157
	f [MHz]	698.7	707	715.3	699.5	707	714.5	700.5	707	713.5
CAT-M1		LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
eFDD 85	Cell BW [MHz]	10	10	10	-	-	-	-	-	-
	CH no.	134052	134092	134132	-	-	-	-	-	-
	f [MHz]	703	707	711	-	-	-	-	-	-

4.7 PRODUCT LABELLING

4.7.1 FCC ID LABEL

Please refer to the documentation of the applicant.

4.7.2 LOCATION OF THE LABEL ON THE EUT

Please refer to the documentation of the applicant.



5 TEST RESULTS

5.1 RF OUTPUT POWER

Standard FCC PART 22 Subpart H

The test was performed according to:

ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4

5.1.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable RF Output power test case per § 2.1046 and RSS-GEN 6.12. The limit and the requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; RF Output power

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.1.2 TEST REQUIREMENTS / LIMITS FCC Part 22, § 22.913

(a) *Maximum ERP.* The ERP of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

(5) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

TEST REPORT REFERENCE: MDE_UBLOX_2412_FCC_01



RSS-132; 5.4 Transmitter Output Power and Equivalent Isotropically Radiated Power

The transmitter output power shall be measured in terms of average power. The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.

5.1.3 TEST PROTOCOL

Ambient te	emperature:	20	- 28 °C								
Relative hu	umidity:	30	- 40 %								
Technology	Radio Technology	Channel	Ressource Blocks / Subcarrier	Bandwidth [MHz]	Peak Cond. Power [dBm]	Average Cond. Power [dBm]	RMS Cond. Power [dBm]	FCC ERP Limit [W]	IC EIRP Limit [W]	Max. Antenna Gain FCC [dBi]	Max. Antenna Gain IC [dBi]
CAT-M1	eFDD 5 OPSK	low	1	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 OPSK	low	3	1.4	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 5	low	6	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5	mid	1	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5	mid	3	1.4	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 5	mid	6	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5	high	1	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5	high	3	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5	high	6	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5	low	1	1.4	-	-	23.2	7	7	15.3	15.3
CAT-M1	eFDD 5 160AM	low	5	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 160AM	mid	1	1.4	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 160AM	mid	5	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 16QAM	high	1	1.4	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 5 16QAM	high	5	1.4	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 QPSK	low	1	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	low	3	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	low	6	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	mid	1	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	mid	3	3	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 5 QPSK	mid	6	3	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 5 QPSK	high	1	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 QPSK	high	3	3	-	-	23.6	7	7	14.9	14.9

CAT-M1	eFDD 5 QPSK	high	6	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 16QAM	low	1	3	-	-	23.2	7	7	15.3	15.3
CAT-M1	eFDD 5 16QAM	low	5	3	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 16QAM	mid	1	3	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 16QAM	mid	5	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 16QAM	high	1	3	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 16QAM	high	5	3	-	-	23.9	7	7	14.7	14.7
CAT-M1	eFDD 5 QPSK	low	1	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 QPSK	low	3	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 QPSK	low	6	5	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	mid	1	5	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	mid	3	5	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	mid	6	5	-	-	23.6	7	7	15.0	15.0
CAT-M1	eFDD 5 QPSK	high	1	5	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 QPSK	high	3	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 QPSK	high	6	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 16QAM	low	1	5	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 16QAM	low	5	5	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 16QAM	mid	1	5	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 16QAM	mid	5	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 16QAM	high	1	5	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 5 16QAM	high	5	5	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 QPSK	low	1	10	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 QPSK	low	3	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 5 QPSK	low	6	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 5 QPSK	mid	1	10	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 5 QPSK	mid	3	10	-	-	23.6	7	7	15.0	15.0
CAT-M1	eFDD 5 QPSK	mid	6	10	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 QPSK	high	1	10	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 QPSK	high	3	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 5 QPSK	high	6	10	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 5 16QAM	low	1	10	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 16QAM	low	5	10	-	-	23.7	7	7	14.8	14.8



CAT-M1	eFDD 5 16QAM	mid	1	10	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 5 16QAM	mid	5	10	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 5 16QAM	high	1	10	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 5 16QAM	high	5	10	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	low	1	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	low	3	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	low	6	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	mid	1	1.4	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 QPSK	mid	3	1.4	-	-	23.7	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	mid	6	1.4	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	high	1	1.4	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 OPSK	high	3	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	high	6	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 16QAM	low	1	1.4	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 26 16QAM	low	5	1.4	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 160AM	mid	1	1.4	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 26 160AM	mid	5	1.4	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 160AM	high	1	1.4	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 26 160AM	high	5	1.4	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 QPSK	low	1	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	low	3	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	low	6	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	mid	1	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	mid	3	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	mid	6	3	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 OPSK	high	1	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	high	3	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 OPSK	high	6	3	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 16OAM	low	1	3	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 26 160AM	low	5	3	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 160AM	mid	1	3	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 26 160AM	mid	5	3	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 16QAM	high	1	3	-	-	23.4	7	7	15.1	15.1

CAT-M1	eFDD 26 160AM	high	5	3	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 OPSK	low	1	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 OPSK	low	3	5	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 OPSK	low	6	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 OPSK	mid	1	5	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 OPSK	mid	3	5	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 26 OPSK	mid	6	5	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 OPSK	high	1	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 OPSK	high	3	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 OPSK	high	6	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 16QAM	low	1	5	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 26 16QAM	low	5	5	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 16QAM	mid	1	5	-	-	23.2	7	7	15.3	15.3
CAT-M1	eFDD 26 16QAM	mid	5	5	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 16QAM	high	1	5	-	-	23.4	7	7	15.1	15.1
CAT-M1	eFDD 26 16QAM	high	5	5	-	-	23.9	7	7	14.6	14.6
CAT-M1	eFDD 26 QPSK	low	1	10	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	low	3	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 26 QPSK	low	6	10	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	mid	1	10	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 QPSK	mid	3	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 26 QPSK	mid	6	10	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 QPSK	high	1	10	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 QPSK	high	3	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 26 QPSK	high	6	10	-	-	23.6	7	7	14.9	14.9
CAT-M1	eFDD 26 16QAM	low	1	10	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 26 16QAM	low	5	10	-	-	23.7	7	7	14.8	14.8
CAT-M1	eFDD 26 16QAM	mid	1	10	-	-	23.3	7	7	15.2	15.2
CAT-M1	eFDD 26 16QAM	mid	5	10	-	-	23.8	7	7	14.7	14.7
CAT-M1	eFDD 26 16QAM	high	1	10	-	-	23.5	7	7	15.0	15.0
CAT-M1	eFDD 26 16QAM	high	5	10	-	-	23.7	7	7	14.8	14.8

Comment: The max. antenna gain is regarding the output power not SAR / MPE. Remark: Please see next sub-clause for the measurement plot.



5.1.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 5 16QAM, Operating Frequency = high channel, ChBW = 3 MHz, Ressource Blocks = 5 (S01_AA01)

Spectrum 🔆		
Ref Level 36.10 dBm Offs Att 20 dB SW1 SGL Count 100/100	et 26.10 dB RBW 30 kHz 1.5 ms e VBW 100 kHz Mode Auto FFT	x
●1Rm View		A.
30 dBm		
20 dBm		
10 dBm		
0 dBm		
-10 dBm		
-20 dBm		
-30 dBm		
-40 dBm		
-50 dBm		
-60 dBm		
CF 848.13 MHz	500 pts	Span 3.0 MHz
Channel Power		
Bandwidth 1.40 MHz	Power 23.85 dBm	Tx Total 23.85 dBm
	Ready 🚺	10.10.2024

Date: 10.OCT.2024 12:47:04



Technology = CAT-M1, Radio Technology = eFDD 26 16QAM, Operating Frequency = high channel, ChBW = 5 MHz, Ressource Blocks = 5 (S01_AA01)



Date: 10.OCT.2024 13:13:43

5.1.5 TEST EQUIPMENT USED

- Radio Lab



5.2 FREQUENCY STABILITY

Standard FCC PART 22 Subpart H

The test was performed according to: ANSI C63.26: 2015; 5.6

5.2.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable frequency stability test case per § 2.1055 and RSS-GEN 6.11. The limit and the requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; Frequency stability

The attenuation of the measuring / stimulus path is known for each measured frequency and are considered.

5.2.2 TEST REQUIREMENTS / LIMITS FCC Part 22, § 22.355

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1—Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range [MHz]	Mobile Devices > 3 W [ppm]	Mobile Devices ≤ 3 W [ppm]
25 – 50	20.0	50.0
50 - 450	5.0	50.0
450 - 512	5.0	5.0
821 - 896	2.5	2.5
928 - 929	n/a	n/a
929 – 960	n/a	n/a
2110 - 2220	n/a	n/a



RSS-132; 5.3 Frequency Stability

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the occupied bandwidth stays within each of the sub-bands (see Section 5.1) when tested to the temperature and supply voltage variations specified in RSS-Gen.

5.2.3 TEST PROTOCOL

Ambient temperature:20 - 28 °CRelative humidity:30 - 40 %

CAT-M1 eFDD5

Temp. °C	Duration min	Voltage	Limit Hz	Freq. error Average (Hz)	Freq. error Max. (Hz)	Verdict
-30	0			-6	-8	passed
-30	5	normal	2091.25	-2	-2	passed
-30	10			-7	-7	passed
-20	0			-28	37	passed
-20	5	normal	2091.25	-14	-21	passed
-20	10			-13	-19	passed
-10	0			0	1	passed
-10	5	normal	2091.25	-2	-4	passed
-10	10			0	14	passed
0	0			-9	-11	passed
0	5	normal	2091.25	-14	-16	passed
0	10			-21	-33	passed
10	0			-9	-10	passed
10	5	normal	2091.25	-19	-32	passed
10	10			-17	-20	passed
20	0			2	4	passed
20	5	low	2091.25	9	17	passed
20	10			5	20	passed
20	0			-1	-3	passed
20	5	normal	2091.25	-8	-11	passed
20	10			-8	-10	passed
20	0			0	3	passed
20	5	high	2091.25	0	1	passed
20	10			-5	-7	passed
30	0			2	3	passed
30	5	normal	2091.25	17	25	passed
30	10			3	4	passed
40	0			3	3	passed
40	5	normal	2091.25	13	18	passed
40	10			8	16	passed



50	0	normal	2091.25	-9	-25	passed
50	5			-5	-7	passed
50	10			-9	-10	passed

CAT-M1 e	FDD26					
Temp. °C	Duration min	Voltage	Limit Hz	Freq. error Average (Hz)	Freq. error Max. (Hz)	Verdict
-30	0			-8	-20	passed
-30	5	normal	2047.5	-4	-16	passed
-30	10			-8	-15	passed
-20	0			-3	-6	passed
-20	5	normal	2047.5	-6	-8	passed
-20	10			-9	-11	passed
-10	0			-5	-6	passed
-10	5	normal	2047.5	-4	-5	passed
-10	10			-6	-8	passed
0	0			-12	-13	passed
0	5	normal	2047.5	-17	-18	passed
0	10			3	11	passed
10	0			17	22	passed
10	5	normal	2047.5	-1	-6	passed
10	10			0	6	passed
20	0			-8	-9	passed
20	5	low	2047.5	-1	-2	passed
20	10			9	11	passed
20	0			-3	-5	passed
20	5	normal	2047.5	-4	-4	passed
20	10			-5	-6	passed
20	0			-4	-6	passed
20	5	high	2047.5	16	24	passed
20	10			-2	-4	passed
30	0			16	26	passed
30	5	normal	2047.5	1	1	passed
30	10			14	22	passed
40	0			0	4	passed
40	5	normal	2047.5	1	13	passed
40	10			10	26	passed
50	0			8	13	passed
50	5	normal	2047.5	11	20	passed
50	10			-4	-4	passed

5.2.4 TEST EQUIPMENT USED

- Radio Lab


5.3 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Standard FCC PART 22 Subpart H

The test was performed according to:

ANSI C63.26: 2015; 5.7.4

5.3.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable conducted spurious emission test case per § 2.1051 and RSS-GEN 6.13. The limit comes from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; Spurious Emissions at antenna terminal

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.3.2 TEST REQUIREMENTS / LIMITS

FCC Part 2.1051; Measurement required: Spurious emissions at antenna terminal:

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in §2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

Part 22, Subpart H – Cellular Radiotelephone Service

§22 917 – Emission limitations for cellular equipment



(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

RSS-132; 5.5 Transmitter Unwanted Emissions

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

- In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log₁₀p (watts).
- 2. After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log₁₀ p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

5.3.3 TEST PROTOCOL

Ambient temperature:20 - 28 °CRelative humidity:30 - 40 %

Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD5	low	rms	maxhold	100	5907.0	-36.7	-13	>13
CAT-M1 eFDD5	mid	rms	maxhold	100	5857.0	-36.8	-13	>13
CAT-M1 eFDD5	high	rms	maxhold	100	5989.0	-35.9	-13	>13
Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD26	low	rms	maxhold	100	6767.0	-36.5	-13	>13
CAT-M1 eFDD26	mid	rms	maxhold	100	6927.0	-37.0	-13	>13
CAT-M1 eFDD26	high	rms	maxhold	100	6995.0	-35.3	-13	>13

Remark: Please see next sub-clause for the measurement plot.



5.3.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 5, Operating Frequency = high channel (S01_AF01)







5.3.5 TEST EQUIPMENT USED - Radio Lab



5.4 FIELD STRENGTH OF SPURIOUS RADIATION

Standard FCC PART 22 Subpart H

The test was performed according to:

ANSI C63.26: 2015; 5.5.2.3.1

5.4.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable radiated spurious emission measurements per § 2.1053 and RSS-GEN 6.13. The limit and requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Frequency Range: 30 MHz – 1 GHz:

Test Setup; Spurious Emission Radiated (SAC), 30 MHz- 1GHz



Frequency Range: 1 GHz – 26.5 GHz



Test Setup; Spurious Emission Radiated (FAC), 1 GHz-26.5 GHz

The test set-up was made in accordance to the general provisions of ANSI C63.26 in a typical installation configuration. The Equipment Under Test (EUT) was set up on a non-conductive table $1.0 \times 2.0 \text{ m}^2$ in the semi-anechoic chamber. The influence of the EUT support table that is used between 30-1000 MHz was evaluated.

The measurement procedure is implemented into the EMI test software EMC32 from R&S. Exploratory tests are performed at 3 orthogonal axes to determine the worst-case orientation of a body-worn or handheld EUT. The final test on all kind of EUTs is also performed at 3 axes. A pre-check is performed while the EUT is powered from a DC power source.

1. Measurement above 30 MHz and up to 1 GHz

Step 1: Preliminary scan

This is a preliminary test to identify the highest amplitudes relative to the limit. Settings for step 1:

- Antenna distance: 3 m
- Detector: Peak
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep time: coupled
- Turntable angle range: -180° to 90°
- Turntable step size: 90°
- Height variation range: 1 3 m
- Height variation step size: 2 m
- Polarisation: Horizontal + Vertical

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: Adjustment measurement

In this step the accuracy of the turntable azimuth and antenna height will be improved. This is necessary to find out the maximum value of every frequency.



For each frequency, which was determined the turntable azimuth and antenna height will be adjusted. The turntable azimuth will slowly vary by \pm 45° around this value. During this action, the value of emission is continuously measured. The turntable azimuth at the highest emission will be recorded and adjusted. In this position, the antenna height will also slowly vary by \pm 100 cm around the antenna height determined. During this action, the value of emission is also continuously measured. The antenna height of the highest emission will also be recorded and adjusted.

- Detector: Peak
- Measured frequencies: in step 1 determined frequencies
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep time: coupled
- Turntable angle range: \pm 45 ° around the determined value
- Height variation range: \pm 100 cm around the determined value
- Antenna Polarisation: max. value determined in step 1

Step 3: Final measurement with RMS detector

With the settings determined in step 3, the final measurement will be performed: EMI receiver settings for step 4:

- Detector: RMQ
- Measured frequencies: in step 1 determined frequencies
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep time: 1 s

After the measurement a plot will be generated which contains a diagram with the results of the preliminary scan and a chart with the frequencies and values of the results of the final measurement.

3. Measurement above 1 GHz

The following modifications apply to the measurement procedure for the frequency range above 1 GHz:

Step 1:

The Equipment Under Test (EUT) was set up on a non-conductive support (tilt device) at 1.5 m height in the fully-anechoic chamber.

All steps were performed with one height (1.5 m) of the receiving antenna only.

The EUT is turned during the preliminary measurement across the elevation axis, with a step size of 90 °.

The turn table step size (azimuth angle) for the preliminary measurement is 45 °.

- Antenna distance: 3 m
- Detector: Peak
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep time: coupled
- Turntable angle range: -180° to 90°
- Turntable step size: 90°
- Polarisation: Horizontal + Vertical

Step 2:

Due to the fact, that in this frequency range the test is performed in a fully anechoic room, the height scan of the receiving antenna instep 2 is omitted. Instead of this, a maximum search with a step size \pm 45° for the elevation axis is performed.

The turn table azimuth will slowly vary by \pm 22.5°.

The elevation angle will slowly vary by $\pm 45^{\circ}$



EMI receiver settings (for all steps):

- Detector: Peak,
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep time: coupled

Step 3:

- Spectrum analyser settings for step 3:
- Detector: RMS
- Measured frequencies: in step 1 determined frequencies
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep Time: 1 s

5.4.2 TEST REQUIREMENTS / LIMITS

FCC Part 2.1053; Measurement required: Field strength of spurious radiation:

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of §2.1049, as appropriate.

Part 22, Subpart H – Cellular Radiotelephone Service

§ 22 917 – Emission limitations for cellular equipment

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

RSS-132; 5.5 Transmitter Unwanted Emissions

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

- In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log₁₀p (watts).
- After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log₁₀ p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.



5.4.3 TEST PROTOCOL

Ambient temperature:	20 - 28 °C
Relative humidity	30 - 40 %

Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD 5	low	rms	maxhold	20	823.9	-46.7	-13	33.7
CAT-M1 eFDD 5	mid	rms	maxhold	-	-	-	-13	> 20
CAT-M1 eFDD 5	high	rms	maxhold	50	849.0	-24.8	-13	11.8

Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD 26	low	rms	maxhold	50	823.9	-16.5	-13	3.5
CAT-M1 eFDD 26	mid	rms	maxhold	-	-	-	-13	> 20
CAT-M1 eFDD 26	high	rms	maxhold	100	849.0	-19.4	-13	6.4
CAT-M1 eFDD 26	high	rms	maxhold	100	850.2	-38.9	-13	25.9

Remark: Please see next sub-clause for the measurement plot.



5.4.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 5, Operating Frequency = high channel (S02_AF01)



Final_Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(dB)
849.007000	-24.77	-13.00	11.77	1000.0	50.000	104.0	Н	230.0	-62.6



1 GHz - 10 GHz



Final_Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Elevation	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(deg)	(dB)



^{6.8}Ţ 0. -5 -10-FCC 22 -15--20-Level in dBm -25--30--35--40 -45 all when the work -50-WWW Λł An -55--60-30M 50 60 80 100M 200 300 400 500 800 1G Frequency in Hz

Technology = CAT-M1, Radio Technology = eFDD 26, Operating Frequency = low channel (S02_AF01) 30 MHz - 1 GHz

Final_Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(dB)
823.999000	-16.49	-13.00	3.49	1000.0	50.000	197.0	Н	-105.0	-63.0



1 GHz - 10 GHz



Final Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Elevation	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(deg)	(dB)

5.4.5 TEST EQUIPMENT USED

- Radiated Emissions FAR: for measurements above 1GHz
- Radiated Emissions SAC: for measurements up to 1GHz in a semi anechoic room



5.5 EMISSION AND OCCUPIED BANDWIDTH

Standard FCC PART 22 Subpart H

The test was performed according to:

ANSI C63.26: 2015; 5.4.3 (relative meas. Procedure [26dB for GSM, EGDE, WCDMA, HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%))

5.5.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable conducted spurious emission test case per FCC §2.1049 and RSS-GEN 6.7. The limit and the requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setups according to the following diagram:



Test Setup FCC / ISED Cellular; Emission and occupied bandwidth

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.



5.5.2 TEST REQUIREMENTS / LIMITS

FCC Part 2.1049; 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 following conditions as applicable:

(h) Transmitters employing digital modulation techniques—when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudo-random generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at the discretion of the user.

(i) Transmitters designed for other types of modulation—when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal should be supplied.

RSS-GEN; 6.6 Occupied Bandwidth

The emission bandwidth (×dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated × dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least $3 \times$ the resolution bandwidth.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured.

5.5.3 TEST PROTOCOL

Technology	Radio Technology	Channel	Ressource Blocks / Subcarrier	Bandwidth [MHz]	Nominal BW [MHz]	26 dB BW [kHz]	99 % BW [kHz]
CAT-M1	eFDD 5 QPSK	low	6	1.4	1.4	-	1110.0
CAT-M1	eFDD 5 QPSK	mid	6	1.4	1.4	-	1110.0
CAT-M1	eFDD 5 QPSK	high	6	1.4	1.4	-	1122.0
CAT-M1	eFDD 5 16QAM	low	5	1.4	1.4	-	954.0
CAT-M1	eFDD 5 16QAM	mid	5	1.4	1.4	-	948.0
CAT-M1	eFDD 5 16QAM	high	5	1.4	1.4	-	948.0
CAT-M1	eFDD 26 QPSK	low	6	1.4	1.4	-	1116.0
CAT-M1	eFDD 26 QPSK	mid	6	1.4	1.4	-	1110.0
CAT-M1	eFDD 26 QPSK	high	6	1.4	1.4	-	1122.0
CAT-M1	eFDD 26 16QAM	low	5	1.4	1.4	-	948.0
CAT-M1	eFDD 26 16QAM	mid	5	1.4	1.4	-	954.0
CAT-M1	eFDD 26 16QAM	high	5	1.4	1.4	-	954.0

Remark: Please see next sub-clause for the measurement plot.



5.5.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Ref Level	' 36.10 dBm	Offset	26.10 dB	RBW 30	kHz				(~
Att	20 dB	SWT	10 s 👄	VBW 100	kHz Mode	Auto Swee	эр		
SGL Count	5/5						30		
●1Pk Max			1		11.2010	1/1014 (H-1010)			
20 dp					M	1[1]		047	18.37 dBm
30 UBIII						е Вш		847.0	87100 MH2 00000 MH2
			M1		0	.0 011		1.1220	
20 dBm			phallonal	Malinbury	www.unh	www.wh/M			
10 dBm			7						
0 dBm		· · · · /	/			1	u		
-10 dBm		كمرير					W.		
	MAAMA	WWW WW					"Whyle	Mphala	4. A how hit
AZKANAMAT	<u>к И Лонини</u>							<u> </u>	
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
Start 846.	8 MHz	I	1	500	pts			Stop 8	49.8 MHz

Technology = CAT-M1, Radio Technology = eFDD 5 QPSK, Operating Frequency = high channel (S01_AA01)

Date: 10.OCT.2024 15:27:12



Technology = CAT-M1, Radio Technology = eFDD 26 QPSK, Operating Frequency = high channel (S01_AA01)

Spectrum	*								₽
Ref Level 🔅	36.10 dBm	Offset	26.10 dB	RBW 30	kHz				
🖷 Att	20 dB	🔵 SWT	10 s 👄	VBW 100	kHz Mode	: Auto Swei	эр		
SGL Count 5,	/5								
●1Pk Max									
					М	1[1]			19.25 dBm
30 dBm								1 1000	50700 MHZ
					M1		Ĩ	1.1220	
20 dBm			1. 1. 1. 1	term dia a	tu I.	si k			
10 -10			T#	Mayanahan	wernen werden werden New der	ראיזאיטאע 12			
			Y			آ آ			
			ļ			t			
o ubiii		\mathcal{N}					No.		
-10 dBm		N^~					WWW WALL		
	MANNAM						՝ ՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝՝	When the work	44A.L
1,29,98,999,044	hañaa						· · · · · ·	<u>լ պաշտպ</u>	Colling of the second s
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
Start 821.8	MHz			500	pts			Stop 8	24.8 MHz
	Υ					eady			0.10.2024

Date: 10.OCT.2024 16:18:45

5.5.5 TEST EQUIPMENT USED

- Radio Lab



5.6 BAND EDGE COMPLIANCE

Standard FCC PART 22 Subpart H

The test was performed according to: ANSI C63.26: 2015; 5.7.3

5.6.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable conducted spurious emission test case per § 2. 1051 and RSS-GEN 6.13. The limit comes from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; Band edge compliance

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.6.2 TEST REQUIREMENTS / LIMITS

FCC Part 2.1051; Measurement required: Spurious emissions at antenna terminal:

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in §2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.



Part 22, Subpart H – Cellular Radiotelephone Service

§22 917 – Emission limitations for cellular equipment

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

RSS-132; 5.5 Transmitter Unwanted Emissions

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

- In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log₁₀p (watts).
- After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log₁₀ p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

5.6.3 TEST PROTOCOL

Ambient temper Relative humidit	Ambient temperature:20 - 28 °CRelative humidity:30 - 40 %											
Technology	Radio Technology	Channel	Ressource Blocks / Subcarrier	Bandwidth [MHz]	RMS [dBm]	Limit [dBm]	Margin to Limit [dB]					
CAT-M1	eFDD 5 QPSK	low	6	1.4	-28.4	-13	15.4					
CAT-M1	eFDD 5 QPSK	high	6	1.4	-29.4	-13	16.4					
CAT-M1	eFDD 5 16QAM	low	5	1.4	-27.0	-13	14.0					
CAT-M1	eFDD 5 16QAM	high	5	1.4	-33.0	-13	20.0					
CAT-M1	eFDD 26 QPSK	low	6	1.4	-28.4	-13	15.4					
CAT-M1	eFDD 26 QPSK	high	6	1.4	-29.2	-13	16.2					
CAT-M1	eFDD 26 16QAM	low	5	1.4	-27.1	-13	14.1					
CAT-M1	eFDD 26 16QAM	high	5	1.4	-33.0	-13	20.0					

Remark: Please see next sub-clause for the measurement plot.



5.6.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 5 16QAM, Operating Frequency = low channel (S01_AF01)

Spectrum	Ì							E
Ref Level 36.10 Att SGL Count 3/3) dBm Offset 20 dB 🖷 SWT	26.10 dB 👄 20 s 👄	RBW 20 k VBW 100 k	Hz Hz Mode	Auto Swee	эр		
●1Rm View								
Limit Check 30 dBi ne BEC		PA PA	88 8 8	M:	1[1]		- 824.	26.98 dBm 00000 MHz
20 dBm								
10 dBm								
0 dBm								
-10 dBm								
-20 dBm		м	1, V				- And a second	Mun and a start of the start of
-40 dBm	mannen	mour						www.
-50 dBm								
FljdBm		F	2					
Start 823.0 MHz	•		500 p	ots			Stop 8	325.5 MHz
				R	eady			14-11-10 /

Date: 25.OCT.2024 14:41:40



Technology = CAT-M1, Radio Technology = eFDD 26 16QAM, Operating Frequency = low channel (S01_AF01)

Spectrum						₽
Ref Level 36.10 dBn	n Offset 26.10 dB	RBW 20 ki	Hz			
🖷 Att 20 da	B 🔵 SWT 20 s	🔵 VBW 100 ki	Hz Mode Auto Sw	/еер		
SGL Count 3/3						
●1Rm View						
Limit Check	P	ASS	M1[1]		-	27.14 dBm
30 dBine BEC	P	ASS			824.0	00000 MHz
20 dBm						
10 dBm						
o abin					7	
		1 ()				
-10 dBm-						
BEC						
-20 dBm					- L	
					n n	~
-30 dBm		4				No.
	1 Martin					and the second
-40 dBm	- man and a second					
and and a second second						
-50 dBm						
F1 bidnes						
Start 823.0 MHz		500 p	ots		Stop 8	25.5 MHz
			Ready			5.10.2024

Date: 25.0CT.2024 15:04:58

5.6.5 TEST EQUIPMENT USED

- Radio Lab



5.7 PEAK TO AVERAGE RATIO

Standard FCC PART 22 Subpart H

The test was performed according to:

ANSI C63.26: 2015; 5.2.3.4 (broadband noise-like signal using CCDF [LTE, CAT-M1, NB-IoT]) 5.2.6 (alternative procedure for PAPR [GSM, EDGE, WCDMA, HSDPA, HSUPA])

5.7.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance of the EUT to the peak-to-average limits and requirements of the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; Peak-average ratio

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams. The internal CCDF (complementary cumulative distribution function) of the spectrum analyser is used for this measurement

5.7.2 TEST REQUIREMENTS / LIMITS FCC Part 22, § 22.913

There exists no applicable limit



RSS-132; 5.4 Transmitter Output Power and Equivalent Isotropically Radiated Power

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

5.7.3 TEST PROTOCOL

Ambient temperature:	20 - 28 °C					
Relative humidity:	30 - 40 %					
Technology	Radio Technology	Channel	Ressource Blocks / Subcarrier	Bandwidth [MHz]	Peak to Average Ratio [dB]	Limit (IC) [dB]
CAT-M1	eFDD 5 QPSK	low	6	1.4	9.7	13
CAT-M1	eFDD 5 QPSK	mid	6	1.4	9.7	13
CAT-M1	eFDD 5 QPSK	high	6	1.4	9.8	13
CAT-M1	eFDD 5 16QAM	low	5	1.4	10.1	13
CAT-M1	eFDD 5 16QAM	mid	5	1.4	10.1	13
CAT-M1	eFDD 5 16QAM	high	5	1.4	10.2	13
CAT-M1	eFDD 26 QPSK	low	6	1.4	9.7	13
CAT-M1	eFDD 26 QPSK	mid	6	1.4	9.7	13
CAT-M1	eFDD 26 QPSK	high	6	1.4	9.7	13
CAT-M1	eFDD 26 16QAM	low	5	1.4	10.1	13
CAT-M1	eFDD 26 16QAM	mid	5	1.4	10.1	13
CAT-M1	eFDD 26 16QAM	high	5	1.4	10.2	13

Remark: Please see next sub-clause for the measurement plot.



5.7.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

₩ Spectrum Ref Level 36.10 dBm Offset 26.10 dB 30 dB 117.2 ms 👄 RBW 2 MHz Att AQT TRG: IFP Controlled by EMC32 🕒1Sa View Π.1 0.01 1E-03 CF 848.3 MHz Mean Pwr + 20.00 dB **Complementary Cumulative Distribution Function** Samples: 5000000 Mean Peak Crest 10%1% 0.1%0.01% 8.87 dB 18.55 dBm 30.25 dBm 11.70 dB 5.94 dB 10.17 dB 10.84 dB Trace 1

Technology = CAT-M1, Radio Technology = eFDD 5 16QAM, Operating Frequency = high channel (S01_AF02)

Date: 5.DEC.2024 10:01:12





Technology = CAT-M1, Radio Technology = eFDD 26 16QAM, Operating Frequency = high channel (S01 AF02)

Date: 5.DEC.2024 10:11:52

5.7.5 TEST EQUIPMENT USED

- Radio Lab



5.8 RF OUTPUT POWER

Standard FCC PART 24 Subpart E

The test was performed according to:

ANSI C63.26: 2015; 5.2.4.1, Wideband Signal: 5.2.4.4

5.8.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable RF Output power test case per § 2.1046 and RSS-GEN 6.12. The limit and the requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; RF Output power

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.8.2 TEST REQUIREMENTS / LIMITS FCC Part 24, § 24.232

(c) Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.



RSS-133, 5.5 Transmitter output power

The maximum power spectral density of the equipment, measured in terms of average values, shall comply with the limits specified in table 2. These limits are either specified in terms of equivalent isotropically radiated power (e.i.r.p.) or TRP for the purpose of certification and may not apply to all deployment scenarios. Consult SRSP-510 for more deployment details in the bands 1850-1915 MHz and 1930-1995 MHz.

AAS equipment with eight antenna elements or less can demonstrate compliance with the e.i.r.p limit specified for non-AAS equipment in table 2, instead of the TRP limit.

Table 2: Maximum power spectral density of equipment

Equipment type	Maximum power spectral density
Non-AAS fixed station and base station	3280 W/MHz e.i.r.p
AAS fixed station and base station	46 dBm/MHz TRP
Subscriber equipment	2 W /channel bandwidth e.i.r.p

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.



5.8.3 TEST PROTOCOL

Ambient temperature: 20 - 28 °C

Relative humidity:

Relative hu	imidity:	30 - 40 %	6			-	-			-	
Technology	Radio Technology	Channel	Ressource Blocks / Subcarrier	Bandwidth [MHz]	Peak Cond. Power [dBm]	Average Cond. Power [dBm]	RMS Cond. Power [dBm]	FCC EIRP Limit [W]	IC EIRP Limit [W]	Max. Antenna Gain FCC [dBi]	Max. Antenna Gain IC [dBi]
CAT-M1	eFDD 2 QPSK	low	1	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	low	3	1.4	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2 QPSK	low	6	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	mid	1	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	mid	3	1.4	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2 QPSK	mid	6	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	1	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	3	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	6	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 16QAM	low	1	1.4	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 2 16QAM	low	5	1.4	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2 16QAM	mid	1	1.4	-	-	24.1	2	2	8.9	8.9
CAT-M1	eFDD 2 16QAM	mid	5	1.4	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 16QAM	high	1	1.4	-	-	24.1	2	2	8.9	8.9
CAT-M1	eFDD 2 16QAM	high	5	1.4	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 QPSK	low	1	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	low	3	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	low	6	3	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2 QPSK	mid	1	3	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2 QPSK	mid	3	3	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2 QPSK	mid	6	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	1	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	3	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	6	3	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2 16QAM	low	1	3	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 2 16QAM	low	5	3	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 16QAM	mid	1	3	-	-	24.0	2	2	9.0	9.1
CAT-M1	eFDD 2 16QAM	mid	5	3	-	-	24.6	2	2	8.5	8.5
CAT-M1	eFDD 2 16QAM	high	1	3	-	-	24.1	2	2	8.9	8.9

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CAT-M1	eFDD 2 160AM	high	5	3	-	-	24.7	2	2	8.4	8.4
CAT-M1	eFDD 2	low	1	5	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2	low	3	5	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2	low	6	5	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2	mid	1	5	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2	mid	3	5	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2	mid	6	5	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 OPSK	high	1	5	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2 OPSK	high	3	5	-	-	24.5	2	2	8.6	8.6
CAT-M1	eFDD 2 OPSK	high	6	5	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2 16QAM	low	1	5	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 2 16QAM	low	5	5	-	-	24.7	2	2	8.4	8.4
CAT-M1	eFDD 2 16QAM	mid	1	5	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 2 16QAM	mid	5	5	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 16QAM	high	1	5	-	-	24.2	2	2	8.8	8.8
CAT-M1	eFDD 2 16QAM	high	5	5	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 QPSK	low	1	10	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2 QPSK	low	3	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	low	6	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	mid	1	10	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 2 QPSK	mid	3	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	mid	6	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	1	10	-	-	24.7	2	2	8.3	8.3
CAT-M1	eFDD 2 QPSK	high	3	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 QPSK	high	6	10	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 2 16QAM	low	1	10	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 2 16QAM	low	5	10	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 16QAM	mid	1	10	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 2 16QAM	mid	5	10	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 2 16QAM	high	1	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 2 16QAM	high	5	10	-	-	24.7	2	2	8.3	8.3
CAT-M1	eFDD 25 QPSK	low	1	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 QPSK	low	3	1.4	-	-	24.5	2	2	8.5	8.5



24.4	2	2	8.6	8.6
24.4	2	2	8.6	8.6
		Pa	nge 101 of	292

CAT-M1	eFDD 25 OPSK	low	6	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 OPSK	mid	1	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 OPSK	mid	3	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 OPSK	mid	6	1.4	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 OPSK	high	1	1.4	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 OPSK	high	3	1.4	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 OPSK	high	6	1.4	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 16QAM	low	1	1.4	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 25 16QAM	low	5	1.4	-	-	24.7	2	2	8.3	8.3
CAT-M1	eFDD 25 16QAM	mid	1	1.4	-	-	24.1	2	2	8.9	8.9
CAT-M1	eFDD 25 16QAM	mid	5	1.4	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 16QAM	high	1	1.4	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 25 16QAM	high	5	1.4	-	-	24.7	2	2	8.3	8.3
CAT-M1	eFDD 25 QPSK	low	1	3	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 QPSK	low	3	3	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 QPSK	low	6	3	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 QPSK	mid	1	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 QPSK	mid	3	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 QPSK	mid	6	3	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 QPSK	high	1	3	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 QPSK	high	3	3	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 QPSK	high	6	3	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 16QAM	low	1	3	-	-	24.1	2	2	8.9	8.9
CAT-M1	eFDD 25 16QAM	low	5	3	-	-	24.8	2	2	8.2	8.2
CAT-M1	eFDD 25 16QAM	mid	1	3	-	-	24.0	2	2	9.0	9.0
CAT-M1	eFDD 25 16QAM	mid	5	3	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 16QAM	high	1	3	-	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 25 16QAM	high	5	3	-	-	24.8	2	2	8.2	8.2
CAT-M1	eFDD 25 QPSK	low	1	5	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25 QPSK	low	3	5	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 QPSK	low	6	5	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 QPSK	mid	1	5	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25 QPSK	mid	3	5	-	-	24.4	2	2	8.6	8.6
			•	•						•	





CAT-M1	eFDD 25 OPSK	mid	6	5	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25	high	1	5	-	-	24.6	2	2	8.4	8.4
	QPSK						•	_	_	011	0
CAT-M1	eFDD 25 OPSK	high	3	5	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25	high	6	5	-	-	24.6	2	2	84	84
	QPSK						21.0	2	2	0.1	0.1
CAT-M1	eFDD 25 160AM	low	1	5	-	-	24.2	2	2	8.8	8.8
CAT-M1	eFDD 25	low	5	5	-	-	24.8	2	2	8.2	8.2
	16QAM						-			-	-
CAT-M1	eFDD 25 16QAM	mid	1	5	-	-	24.1	2	2	8.9	8.9
CAT-M1	eFDD 25	mid	5	5	-	-	24.6	2	2	8.4	8.4
CAT M1		high	1	F							
CAT-MI	16QAM	nign	T	5	_	-	24.3	2	2	8.7	8.7
CAT-M1	eFDD 25 16OAM	high	5	5	-	-	24.8	2	2	8.2	8.2
CAT-M1	eFDD 25	low	1	10	-	-					
	QPSK	1011	-	10			24.5	2	2	8.5	8.5
CAT-M1	eFDD 25	low	3	10	-	-	24.5	2	2	8.5	8.5
		law	6	10							
CAT-MI	QPSK	1010	0	10	-	-	24.6	2	2	8.4	8.4
CAT-M1	eFDD 25	mid	1	10	-	-	24.4	2	2	8.6	8.6
	QPSK		2	10					_		
CAT-MI	OPSK	mia	3	10	-	-	24.4	2	2	8.6	8.6
CAT-M1	eFDD 25	mid	6	10	-	-	24 5	2	2	0 5	0 5
	QPSK			1.0			24.5	2	2	0.5	0.5
CAI-M1	eFDD 25 QPSK	high	1	10	-	-	24.9	2	2	8.1	8.1
CAT-M1	eFDD 25	high	3	10	-	-	24.6	2	2	8.4	8.4
CAT-M1		hiah	6	10	-	_					
CATINI	QPSK	nign	0	10			24.6	2	2	8.4	8.4
CAT-M1	eFDD 25 16OAM	low	1	10	-	-	24.1	2	2	8.9	8.9
CAT-M1	eFDD 25	low	5	10	-	_		_			
0,11,112	16QAM		J. J				24.7	2	2	8.3	8.3
CAT-M1	eFDD 25	mid	1	10	-	-	2/1 1	2	2	80	80
	16QAM						24.1	۷	2	0.9	0.9
CAT-M1	eFDD 25	mid	5	10	-	-	24.6	2	2	8.4	8.4
CATIN				10							
CAI-M1	eFDD 25 16QAM	high	1	10	-	-	24.5	2	2	8.5	8.5
CAT-M1	eFDD 25	high	5	10	-	-	24.0	n	n	0 7	0.7
	16QAM	-					24.8	2	2	ð.Z	ð.2

Comment: The max. antenna gain is regarding the output power not SAR / MPE. Remark: Please see next sub-clause for the measurement plot.



5.8.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 2 16QAM, Operating Frequency = high channel, ChBW = 10 MHz, Ressource Blocks = 5 (S01_AF01)

MultiView Spect	rum 🏾 🐣				
Ref Level 36.60 dBm	Offset 26.60 dB •	RBW 30 kHz Made A	uta EET		SGL
GAT:RFP	5WI I.5 ms (~9.0 ms) 🖷	VEW IOUKHZ MODE A	uto FFI		Count 100/100
1 ACLR					●1Rm View
20 d0m					
30 dBm			¥1		
20 dBm					
and the second second					
10 dBm					
0 dBm					
1944 - 1916					
-10 dBm					
-20 dBm-					
-30 dBm					
-40 dBm			<u>,</u>		
-50 dBm					
-60 dBm					
CF 1.908 78 GHz		500 pts	300.0 kHz/		Span 3.0 MHz
2 Result Summary	Pandwidth-	Offect	ne		
Tx1 (Ref)	1.400 MHz	Unset	24.68 dB	m	
Tx Total			24.68 dB	m	
				- Ready	2024-10-21

12:35:57 PM 10/21/2024



Technology = CAT-M1, Radio Technology = eFDD 25 16QAM, Operating Frequency = high channel, ChBW = 10 MHz, Ressource Blocks = 1 (S01_AF01)

MultiView Spect	trum 😽						(
Ref Level 36.60 dBm	Offset 26.60	dB = RBW 30 ki	Hz Hz Mada Auto	FET			SGL
GAT:RFP	SWI Sms(~1/m	IS) - VBW 100 Kr	nz Mode Auto				Count 100/100
1 ACLR						1.6	●1Rm View
30 dBm							
			т	*1			
20 dBm							
100 10 10 10 10 10 10 10 10 10 10 10 10							
10 dBm		1					
0 dBm							
2017 Watch0000960							
-10 dBm			/				
-20 dBm							
-30 dBm							
-40 dBm				N			
-50 dBm							
-60 dBm			,				
CF 1.91423 GHz		500 pts		30	0.0 kHz/		Span 3.0 MH
2 Result Summary			No	ne			
Channel Tyl (Pof)	Bandwidth		Offset		Power		
Tx Total	1.400 MHZ				24.86 dBm		
τ.					~	Ready	2024-10-2

02:36:23 PM 10/21/2024

5.8.5 TEST EQUIPMENT USED

- Radio Lab



5.9 FREQUENCY STABILITY

Standard FCC PART 24 Subpart E

The test was performed according to: ANSI C63.26: 2015; 5.6

5.9.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable frequency stability test case per § 2.1055 and RSS-GEN 6.11. The limit and the requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; Frequency stability

The attenuation of the measuring / stimulus path is known for each measured frequency and are considered.

5.9.2 TEST REQUIREMENTS / LIMITS

FCC Part 24, § 24.235

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

RSS-133, 5.4 Frequency Stability

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.



5.9.3 TEST PROTOCOL

Ambient temperature:20 - 28 °CRelative humidity:30 - 40 %

CAT-M1 eFDD2

Temp. °C	Duration min	Voltage	Limit Hz	Freq. error Average (Hz)	Freq. error Max. (Hz)	Verdict
-30	0			-8	-14	passed
-30	5	normal	4700	-10	-15	passed
-30	10			-6	-10	passed
-20	0			-21	-25	passed
-20	5	normal	4700	-10	-13	passed
-20	10			-11	-17	passed
-10	0			-8	-14	passed
-10	5	normal	4700	-4	-7	passed
-10	10			-9	-12	passed
0	0			-27	-28	passed
0	5	normal	4700	-21	-28	passed
0	10			-31	-52	passed
10	0			-5	-25	passed
10	5	normal	4700	-8	-8	passed
10	10			-7	-11	passed
20	0			-4	-11	passed
20	5	low	4700	-6	-7	passed
20	10			-6	-6	passed
20	0			-11	-13	passed
20	5	normal	4700	-13	-15	passed
20	10			-9	-9	passed
20	0			-4	-8	passed
20	5	high	4700	7	9	passed
20	10			-6	-10	passed
30	0			9	10	passed
30	5	normal	4700	13	16	passed
30	10			8	10	passed
40	0			6	9	passed
40	5	normal	4700	2	3	passed
40	10			22	28	passed
50	0			-22	-24	passed
50	5	normal	4700	-11	-13	passed
50	10			-6	-9	passed



CAT-M1 e	FDD25					
Temp. °C	Duration min	Voltage	Limit Hz	Freq. error Average (Hz)	Freq. error Max. (Hz)	Verdict
-30	0			-26	-35	passed
-30	5	normal	4706.25	-11	-13	passed
-30	10			-8	-12	passed
-20	0			-8	-10	passed
-20	5	normal	4706.25	-31	-32	passed
-20	10			-5	-11	passed
-10	0			3	8	passed
-10	5	normal	4706.25	-5	-7	passed
-10	10			6	15	passed
0	0			-33	-35	passed
0	5	normal	4706.25	-32	-32	passed
0	10			-20	-23	passed
10	0			-6	-8	passed
10	5	normal	4706.25	3	6	passed
10	10			-4	-5	passed
20	0			-6	-14	passed
20	5	low	4706.25	-13	-14	passed
20	10			-1	4	passed
20	0			-5	-7	passed
20	5	normal	4706.25	-14	-30	passed
20	10			-3	-5	passed
20	0			-7	-10	passed
20	5	high	4706.25	-11	-13	passed
20	10			-9	-10	passed
30	0			-3	-11	passed
30	5	normal	4706.25	14	15	passed
30	10			8	10	passed
40	0			4	7	passed
40	5	normal	4706.25	2	8	passed
40	10			4	8	passed
50	0			-25	-27	passed
50	5	normal	4706.25	-9	-13	passed
50	10			-13	-27	passed

Note:

Taking into account the maximum measured frequency drift, the measured maximum occupied bandwidth for the lowest channel will still be within the defined and allowed frequency range of the operating band.

Taking into account the maximum measured frequency drift, the measured maximum occupied bandwidth for the highest channel will still be within the defined and allowed frequency range of the operating band.

5.9.4 TEST EQUIPMENT USED

- Radio Lab



5.10 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Standard FCC PART 24 Subpart E

The test was performed according to: ANSI C63.26: 2015; 5.7.4

5.10.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable conducted spurious emission test case per § 2.1051 and RSS-GEN 6.13. The limit comes from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:



Test Setup FCC Part 22/24/27/90 Cellular; Spurious Emissions at antenna terminal

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.10.2 TEST REQUIREMENTS / LIMITS

FCC Part 2.1051; Measurement required: Spurious emissions at antenna terminal:

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in §2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.


Part 24, Subpart E – Broadband PCS; Band 2

§24.238 – Emission limitations for Broadband PCS equipment

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

RSS-133, 5.6 Unwanted Emissions Limits

Unwanted emissions shall be measured in terms of average values while the transmitter is operating at the manufacturer's rated power and modulated as specified in RSS-Gen.

Equipment shall meet the unwanted emission limits, specified in table 3, outside each frequency block group. For each channel bandwidth supported by the equipment under test, the unwanted emissions shall be measured and reported for two channel frequencies: one located as close as possible to the low end and one located as close as possible to the high end of the equipment's operating frequency range.

For the unwanted emission limits, in the 1 MHz bands immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth (OBW). Beyond these 1 MHz bands, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% of the OBW, as applicable.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table 3.

Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dBm/(1% of OBW)
> 1	-13 dBm/MHz

Table 3: Unwanted emission limits for all equipment



5.10.3 TEST PROTOCOL

Ambient temperature: Relative humidity:	20 - 28 ° 30 - 40 %	C %						
Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD2	low	rms	maxhold	1000	19308.5	-34.5	-13	>13
CAT-M1 eFDD2	mid	rms	maxhold	1000	19598.6	-35.6	-13	>13
CAT-M1 eFDD2	high	rms	maxhold	1000	19140.2	-35.7	-13	>13
Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD25	low	rms	maxhold	1000	19307.0	-36.0	-13	>13
CAT-M1 eFDD25	mid	rms	maxhold	1000	19624.5	-35.4	-13	>13
CAT-M1 eFDD25	high	rms	maxhold	1000	19947.4	-36.5	-13	>13

Remark: Please see next sub-clause for the measurement plot.



5.10.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)



Technology = CAT-M1, Radio Technology = eFDD 2, Operating Frequency = low channel (S01_AF01)





5.10.5 TEST EQUIPMENT USED - Radio Lab

TEST REPORT REFERENCE: MDE_UBLOX_2412_FCC_01



5.11 FIELD STRENGTH OF SPURIOUS RADIATION

Standard FCC PART 24 Subpart E

The test was performed according to: ANSI C63.26: 2015; 5.5.2.3.1

5.11.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable radiated spurious emission measurements per § 2.1053 and RSS-GEN 6.13. The limit and requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setup according to the following diagram:

Frequency Range: 30 MHz – 1 GHz:



Test Setup; Spurious Emission Radiated (SAC), 30 MHz- 1GHz



Frequency Range: 1 GHz – 26.5 GHz



Test Setup; Spurious Emission Radiated (FAC), 1 GHz-26.5 GHz

The test set-up was made in accordance to the general provisions of ANSI C63.26 in a typical installation configuration. The Equipment Under Test (EUT) was set up on a non-conductive table $1.0 \times 2.0 \text{ m}^2$ in the semi-anechoic chamber. The influence of the EUT support table that is used between 30-1000 MHz was evaluated.

The measurement procedure is implemented into the EMI test software EMC32 from R&S. Exploratory tests are performed at 3 orthogonal axes to determine the worst-case orientation of a body-worn or handheld EUT. The final test on all kind of EUTs is also performed at 3 axes. A pre-check is performed while the EUT is powered from a DC power source.

1. Measurement above 30 MHz and up to 1 GHz

Step 1: Preliminary scan

This is a preliminary test to identify the highest amplitudes relative to the limit. Settings for step 1:

- Antenna distance: 3 m
- Detector: Peak
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep time: coupled
- Turntable angle range: -180° to 90°
- Turntable step size: 90°
- Height variation range: 1 3 m
- Height variation step size: 2 m
- Polarisation: Horizontal + Vertical

Intention of this step is, to determine the radiated EMI-profile of the EUT. Afterwards the relevant emissions for the final measurement are identified.

Step 2: Adjustment measurement

In this step the accuracy of the turntable azimuth and antenna height will be improved. This is necessary to find out the maximum value of every frequency.



For each frequency, which was determined the turntable azimuth and antenna height will be adjusted. The turntable azimuth will slowly vary by \pm 45° around this value. During this action, the value of emission is continuously measured. The turntable azimuth at the highest emission will be recorded and adjusted. In this position, the antenna height will also slowly vary by \pm 100 cm around the antenna height determined. During this action, the value of emission is also continuously measured. The antenna height of the highest emission will also be recorded and adjusted.

- Detector: Peak
- Measured frequencies: in step 1 determined frequencies
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep time: coupled
- Turntable angle range: \pm 45 ° around the determined value
- Height variation range: \pm 100 cm around the determined value
- Antenna Polarisation: max. value determined in step 1

Step 3: Final measurement with RMS detector

With the settings determined in step 3, the final measurement will be performed: EMI receiver settings for step 4:

- Detector: RMQ
- Measured frequencies: in step 1 determined frequencies
- RBW: 100 kHz
- VBW: 300 kHz
- Sweep time: 1 s

After the measurement a plot will be generated which contains a diagram with the results of the preliminary scan and a chart with the frequencies and values of the results of the final measurement.

3. Measurement above 1 GHz

The following modifications apply to the measurement procedure for the frequency range above 1 GHz:

Step 1:

The Equipment Under Test (EUT) was set up on a non-conductive support (tilt device) at 1.5 m height in the fully-anechoic chamber.

All steps were performed with one height (1.5 m) of the receiving antenna only.

The EUT is turned during the preliminary measurement across the elevation axis, with a step size of 90 °.

The turn table step size (azimuth angle) for the preliminary measurement is 45 °.

- Antenna distance: 3 m
- Detector: Peak
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep time: coupled
- Turntable angle range: -180° to 90°
- Turntable step size: 90°
- Polarisation: Horizontal + Vertical

Step 2:

Due to the fact, that in this frequency range the test is performed in a fully anechoic room, the height scan of the receiving antenna instep 2 is omitted. Instead of this, a maximum search with a step size \pm 45° for the elevation axis is performed.

The turn table azimuth will slowly vary by \pm 22.5°.

The elevation angle will slowly vary by $\pm 45^{\circ}$



EMI receiver settings (for all steps):

- Detector: Peak,
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep time: coupled

Step 3:

- Spectrum analyser settings for step 3:
- Detector: RMS
- Measured frequencies: in step 1 determined frequencies
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep Time: 1 s

5.11.2 TEST REQUIREMENTS / LIMITS

FCC Part 2.1053; Measurement required: Field strength of spurious radiation:

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of §2.1049, as appropriate.

Part 24, Subpart E – Broadband PCS

§ 24 238 – Emission limitations for Broadband PCS equipment

- a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
- b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RSS-133; 5.6 Unwanted Emissions Limits

Unwanted emissions shall be measured in terms of average values while the transmitter is operating at the manufacturer's rated power and modulated as specified in RSS-Gen.

Equipment shall meet the unwanted emission limits, specified in table 3, outside each frequency block group. For each channel bandwidth supported by the equipment under test,



the unwanted emissions shall be measured and reported for two channel frequencies: one located as close as possible to the low end and one located as close as possible to the high end of the equipment's operating frequency range.

For the unwanted emission limits, in the 1 MHz bands immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth (OBW). Beyond these 1 MHz bands, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% of the OBW, as applicable.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the table 3.

Offset frequency from the edge of the frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dBm/(1% of OBW)
> 1	-13 dBm/MHz

Table 3: Unwanted emission limits for all equipment

5.11.3 TEST PROTOCOL

Ambient temperature:	20 - 28 °C
Relative humidity:	30 - 40 %

Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	Peak Value /dBm	Limit /dBm	Margin to Limit /dB
CAT-M1 eFDD 2	low	rms	maxhold	20	1850.0	-18.4	-13	5.4
CAT-M1 eFDD 2	mid	rms	maxhold	-	-	-	-13	> 20
CAT-M1 eFDD 2	high	rms	maxhold	100	1910.0	-20.0	-13	7.0

Radio Technology	Channel	Detector	Trace	Resolution Bandwidth /kHz	Frequency /MHz	ency Peak Lin Hz /dBm /dE		Margin to Limit /dB
CAT-M1 eFDD 25	low	rms	maxhold	20	1849.9	-22.4	-13	9.4
CAT-M1 eFDD 25	low	rms	maxhold	20	1850.0	-21.7	-13	8.7
CAT-M1 eFDD 25	mid	rms	maxhold	-	-	-	-13	> 20
CAT-M1 eFDD 25	high	rms	maxhold	20	1915.0	-20.3	-13	7.3

Remark: Please see next sub-clause for the measurement plot.



5.11.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 2, Operating Frequency = low channel (S02_AF01) 30 MHz - 1 GHz



Final_Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(dB)







re-measurement at band edge



Final_Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Elevation	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(deg)	(dB)
1849.999	-18.4	-13.00	5.35	3000.0	20.000	150.0	V	-135.0	90.0	-66.1





Technology = CAT-M1, Radio Technology = eFDD 25, Operating Frequency = high channel (S02_AF01) 30 MHz - 1 GHz

Final	Result

Frequency	RMS	Limit	Margin	Meas. Time	Bandwidth	Height	Pol	Azimuth	Corr.
(MHz)	(dBm)	(dBm)	(dB)	(ms)	(kHz)	(cm)		(deg)	(dB)

1	GHz	- 20	GHz
-	0.12		<u> </u>





re-measurement at band edge



Final_Result

i illa _ iteealt										
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1915.002	-20.3	-13.00	7.34	3000.0	20.000	150.0	V	-135.0	90.0	-65.9

5.11.5 TEST EQUIPMENT USED

- Radiated Emissions FAR: for measurements above 1GHz
- Radiated Emissions SAC: for measurements up to 1GHz in a semi anechoic room



5.12 EMISSION AND OCCUPIED BANDWIDTH

Standard FCC PART 24 Subpart E

The test was performed according to:

ANSI C63.26: 2015; 5.4.3 (relative meas. Procedure [26dB for GSM, EGDE, WCDMA, HSDPA, HSUPA]) 5.4.4 (Power bandwidth (99%))

5.12.1 TEST DESCRIPTION

This test case is intended to demonstrate compliance to the applicable conducted spurious emission test case per FCC §2.1049 and RSS-GEN 6.7. The limit and the requirements come from the applicable rule part and ISED RSS-Standard for the operating band of the cellular device.

The EUT was connected to the test setups according to the following diagram:



Test Setup FCC / ISED Cellular; Emission and occupied bandwidth

The attenuation of the measuring and stimulus path are known for each measured frequency and are considered.

The Spectrum Analyzer settings can be directly found in the measurement diagrams.

5.12.2 TEST REQUIREMENTS / LIMITS **FCC Part 2.1049; 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

TEST REPORT REFERENCE: MDE_UBLOX_2412_FCC_01



mean power radiated by a given emission shall be measured under the following conditions as applicable:

(h) Transmitters employing digital modulation techniques—when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudo-random generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at the discretion of the user.

(i) Transmitters designed for other types of modulation—when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal should be supplied.

RSS-GEN; 6.7 Occupied Bandwidth (or 99% emission bandwidth) and x dB bandwidth

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span. The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.

The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest



frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

5.12.3 TEST PROTOCOL

Ambient temperature: 20 - 28 °C											
_ Relative humidity: 30 - 40 %											
Technology	Radio Technology	Channel	Ressource Blocks / Subcarrier	Bandwidth [MHz]	Nominal BW [MHz]	26 dB BW [kHz]	99 % BW [kHz]				
CAT-M1	eFDD 2 QPSK	low	6	1.4	1.4	-	1116.0				
CAT-M1	eFDD 2 QPSK	mid	6	1.4	1.4	-	1116.0				
CAT-M1	eFDD 2 QPSK	high	6	1.4	1.4	-	1110.0				
CAT-M1	eFDD 2 16QAM	low	5	1.4	1.4	-	954.0				
CAT-M1	eFDD 2 16QAM	mid	5	1.4	1.4	-	954.0				
CAT-M1	eFDD 2 16QAM	high	5	1.4	1.4	-	948.0				
CAT-M1	eFDD 25 QPSK	low	6	1.4	1.4	-	1116.0				
CAT-M1	eFDD 25 QPSK	mid	6	1.4	1.4	-	1116.0				
CAT-M1	eFDD 25 QPSK	high	6	1.4	1.4	-	1110.0				
CAT-M1	eFDD 25 16QAM	low	5	1.4	1.4	-	960.0				
CAT-M1	eFDD 25 16QAM	mid	5	1.4	1.4	-	954.0				
CAT-M1	eFDD 25 16QAM	high	5	1.4	1.4	-	960.0				

Remark: Please see next sub-clause for the measurement plot.



5.12.4 MEASUREMENT PLOT (EXAMPLE PLOT, SHOWING WORST CASE, IF APPLICABLE)

Technology = CAT-M1, Radio Technology = eFDD 2 QPSK, Operating Frequency = low channel (S01_AA01)

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