TEST REPORT

Report Number: 14982436-E17V3

Applicant	:	APPLE, INC 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A3083
Brand	:	APPLE
FCC ID	:	BCG-E8666A
IC	:	579C-E8666A
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 2, PART 22H, 24E, AND 27L ISED RSS-GEN ISSUE 5, RSS-132 ISSUE 4, RSS-133 ISSUE 6, AND RSS-139 ISSUE 4

Date Of Issue:
2024-08-01

Prepared by:
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ACCREDITED
CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2024-06-27	Initial Review	--
V2	2024-07-06	Addressed TCB Questions at Section 2 and 8	Mengistu Mekuria
V3	2024-08-01	Addressed TCB Questions at Section 7	Eric Ting

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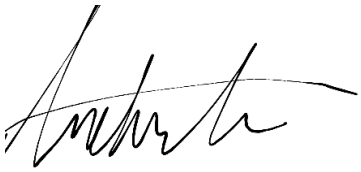
1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	A3083
Brand	APPLE
FCC ID	BCG-E8666A
IC	579C-E8666A
EUT Description	SMARTPHONE
Serial Number	Radiated: QM2WVQQ45T, L73Q9RQC46 Conducted: C07H5N000AB0000FDQ, C07H5R000J20000FDR
Sample Receipt Date	2023-11-14
Date Tested	2023-11-27 to 2024-06-07
Applicable Standards	FCC 47 CFR Part 2, Part 22, Part 24, and Part 27 ISED RSS-GEN ISSUE 5, RSS-132 Issue 4, RSS-133 Issue 6, RSS-139 Issue 4.
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc will constitute fraud and shall nullify the document.

Approved & Released By:	Reviewed By:	Prepared By:
		
Dan Coronia Operations Leader UL Verification Services Inc.	Eric Ting Senior Test Engineer UL Verification Services Inc.	Andrew Le Senior Laboratory Technician UL Verification Services Inc.

2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result	Remarks
RF Conducted Output Power	2.1046	-	Complies	
Effective Radiated Power	22.913 (a)(5)	RSS132§5.4	Complies	
Equivalent Isotropic Radiated power	24.232 (c), 27.50 (d) (4)	RSS133§6.4 & SRSP-510, 5.1.2 RSS139§5.5	Complies	
Occupied Bandwidth	2.1049	RSS132 RSS133§2.3 RSS139 RSS-GEN§6.7	Complies	
Band Edge and Emission Mask	2.1051, 22.917 (a), 24.238 (a), 27.53 (h)	RSS132§5.5 RSS133§6.5 RSS139§5.6	Complies	
Out of Band Emissions	2.1051, 22.917 (a), 24.238 (a), 27.53 (h)	RSS132§5.5 RSS133§6.5 RSS139§5.6	Complies	
Frequency Stability	2.1055, 22.355, 24.235, 27.54	RSS132§5.3 RSS133§6.3 RSS139§5.4	Complies	
Peak-to-Average Ratio	22.913 (d), 24.232 (d), 27.50 (d) (5)	RSS132§5.4 RSS133§6.4 RSS139§5.5	Complies	
Field Strength of Spurious Radiation	2.1053, 22.917 (a), 24.238 (a), 27.53 (h),	RSS132§5.5 RSS133§6.5 RSS139§5.6	Complies	

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, and Part 27.
- FCC KDB 971168 D01: Power Meas License Digital Systems
- FCC KDB 971168 D02: Misc Rev Approv License Devices
- FCC KDB 412172 D01: Determining ERP and EIRP
- ISED RSS-Gen Issue 5, RSS-132 Issue 4, RSS-133 Issue 6, RSS-139 Issue 4.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Conducted Antenna Port Emission Measurement	1.940
Power Spectral Density	2.466
Time Domain Measurements Using SA	3.39
RF Power Measurement Direct Method Using Power Meter	0.450 Peak; 1.300 Ave.
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 db
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 db
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 db
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 db
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 db
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 db
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 db

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, WCDMA, LTE, 5GNR1, 5GNR2, IEEE 802.11a/b/g/n/ac/ax/be, Bluetooth (BT), Ultra-Wideband (UWB), Global Positioning System (GPS), Near-Field Communication (NFC), Narrow-Band (NB) UNII, 802.15.4, 802.15.4ab-Narrow Band (NB), WPT and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible. This device is not user-serviceable and requires special tools to disassemble.

6.2. MAXIMUM OUTPUT POWER

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.6

ERP/EIRP = PMeas + GT − LC
where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);
PMeas = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers as follows:

GSM MODES

RSS 132 850MHz

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.2-848.8	GPRS	33.50	-5.90	3.0	25.45	0.351	244.9	245KGXW
	EGPRS	28.00			19.95	0.099	235.9	236KG7W

Part 22 850MHz

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824.2-848.8	GPRS	33.50	-5.90	3.0	25.45	0.351	244.9	245KGXW
	EGPRS	28.00			19.95	0.099	235.9	236KG7W

Part 24 / RSS 133 1900MHz

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1850.2-1909.8	GPRS	31.50	-2.60	2.0	28.90	0.776	243.0	243KGXW
	EGPRS	26.50			23.90	0.245	239.1	239KG7W

WCDMA MODE

RSS 132 Band 5

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824-849	REL 99	25.70	-5.90	3.0	17.65	0.058	4142	4M14F9W
	HSDPA	24.72			16.67	0.046	4150	4M15F9W

Part 22 Band 5

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	ERP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
824-849	REL 99	25.70	-5.90	3.0	17.65	0.058	4142	4M14F9W
	HSDPA	24.72			16.67	0.046	4150	4M15F9W

Part 24 / RSS 133 Band 2

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1850-1910	REL 99	25.50	-2.60	2.0	22.90	0.195	4140	4M14F9W
	HSDPA	24.50			21.90	0.155	4153	4M15F9W

Part 27 / RSS 139 Band 4

Frequency range (MHz)	Modulation	Conducted (Average) (dBm)	Antenna Gain (dBi)	Limit (W)	EIRP		99% BW (kHz)	Emission Designator
					(dBm)	(W)		
1710-1755	REL 99	25.50	-3.20	1.0	22.30	0.170	4148	4M15F9W
	HSDPA	24.49			21.29	0.135	4159	4M16F9W

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 0.02.01.

6.4. MAXIMUM ANTENNA GAIN

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

Frequency Band	ANT 1 Antenna Gain (dBi)	ANT 2 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	ANT 4 Antenna Gain (dBi)
GSM850 and WCDMA 5 824 – 849MHz	-5.9	-7.0		
GSM1900 and WCDMA 2 1850 – 1910 MHz	-5.3	-2.7	-2.6	-1.0
WCDMA 4 1710 – 1755 MHz	-4.3	-2.7	-3.2	-4.6

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X/Y/Z on all ANT 1, ANT2, ANT3 and ANT4 antennas to determine the worst-case orientation. The following table exhibits the worst-case orientation for different frequency bands. The full tests of the EUT have made upon the orientations that shown in the table below.

Frequency Bands	ANT1	ANT2	ANT3	ANT4
824 – 849 MHz	Z	Z	N/A	N/A
1710 – 1915 MHz	Y	X	Y	Y

Based on average conducted output power measurement investigations. The worst-case is Ant1 with the highest power. Therefore, Ant 1 was used to perform all conducted tests.

The worst-case scenario for all measurements as followed:
- GSM GPRS
- GSM EGPRS
- WCDMA REL 99
- WCDMA HSDPA

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GH WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies, and widest operation bandwidths. No noticeable new emission was found.

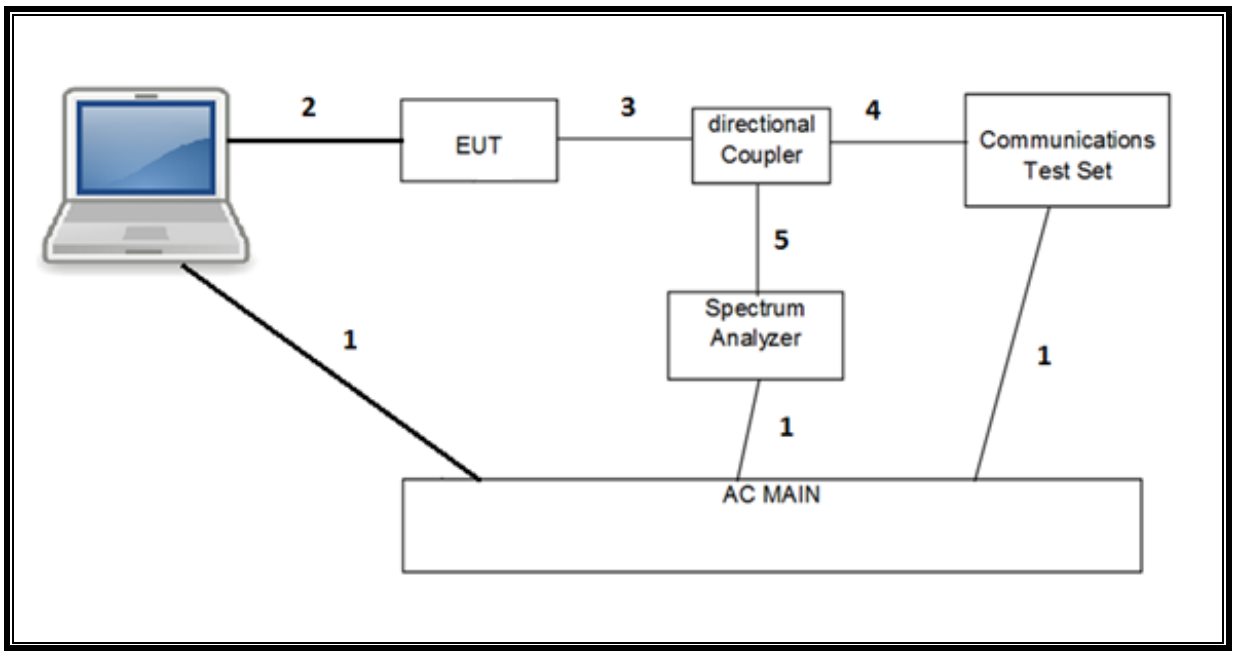
6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Apple	MacBook Pro	HRP082673	BCGA1708
AC/DC adapter	Apple	A1718	C4H64450HH3GN8RA6	--

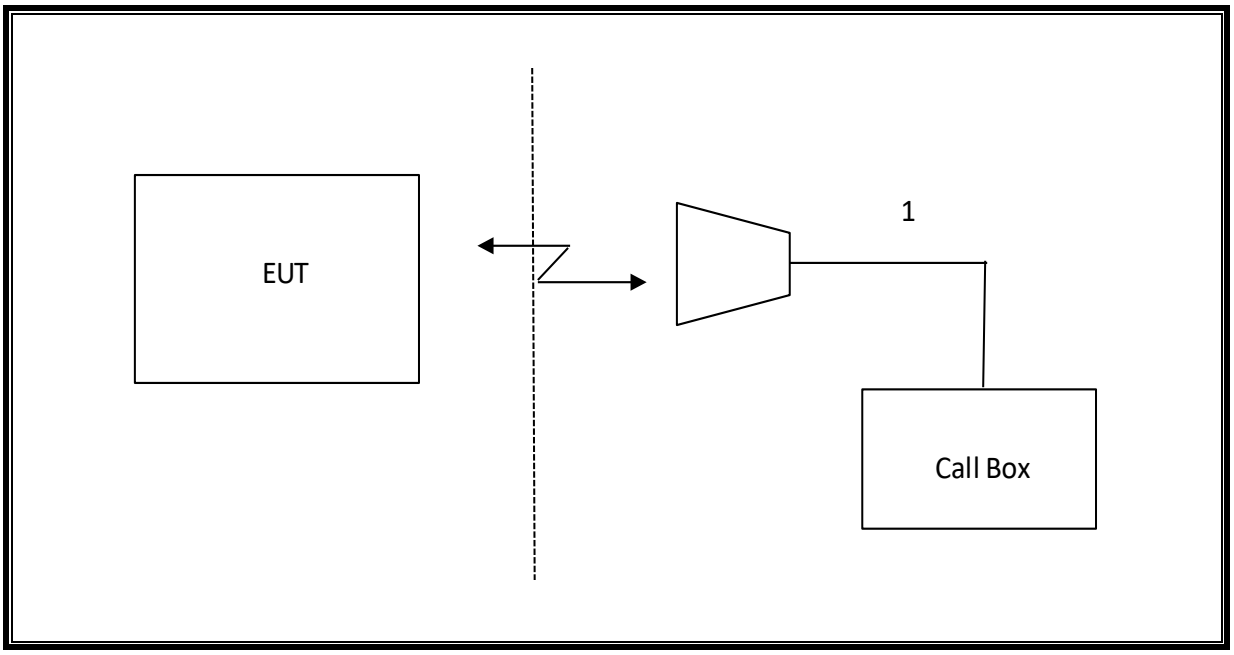
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	3	US 115V	Un-shielded	2.0	N/A
2	USB	1	DC	Un-shielded	1.0	N/A
3	RF In/Out	1	EUT	Un-shielded	0.6	N/A
4	RF In/Out	1	Communication Test Set	Un-shielded	1.2	N/A
5	RF In/Out	1	Barrel	N/A	N/A	N/A

I/O CABLES (RF RADIATED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF In/Out	1	Antenna	Un-shielded	5.0	N/A

CONDUCTED SETUP



RADIATED SETUP



7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80430	2024-08-31
Antenna, Horn 1-18GHz	ETS Lindgren	3117	79834	2024-06-30
Antenna, Broadband Hybrid, 30MHz to 3000MHz	SUNAR	JB3	222009	2024-10-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170014	2024-08-31
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170016	2024-08-31
RF Filter Box, 1-18GHz	UL-FR1	NA	217255	2024-10-31
RF Filter Box, 1-18GHz	UL-FR1	RATS 2	226781	2024-09-30
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	430250	2024-09-30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169936	2025-02-28
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169935	2025-02-28
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	85943	2025-02-28
Directional Coupler	KRYTAR	152610	198816	2024-10-31
Directional Coupler	KRYTAR	152610	231664	2025-01-22
Power Meter, P-series single channel	Keysight	N1912A	90719	2025-01-31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight	N1921A	81319	2025-01-31
Filter, HPF 1.2GHz	Wainwright Instruments GmbH	WHKX6-948-1.2/15G-40ST	99	2024-10-31
Spectrum Analyzer, PXA, 2Hz to 44GHz	Keysight	N9030B	231739	2025-01-31
Spectrum Analyzer, PXA, 2Hz to 44GHz	Keysight	N9030B	245120	2025-02-28
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	85212	2025-02-28
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	222793	2025-02-28
Wideband Communication Test Set, Call Box	R&S GmbH & Co. KG	CMW500	222797	2025-02-28
Chamber, Environmental	Thermotron Corp.	SM-16C Mini-Max	179936	2024-06-30
Transmitting Antenna, Horn Antenna	TEKBOX Digital Solutions	TBMA4	226709	C.N.R.
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	199659	2024-12-31
*Amplifier 18-26.5GHz, +5Vdc, -54dBm P1dB	AMPLICAL	AMP18G26.5-60	234683	2024-03-29
DC Power Supply	GWINSTEK	GPS18500	N/A	C.N.R.
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170014	2024-08-31
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170016	2024-08-31
UL AUTOMATION SOFTWARE				
CLT Software	UL	UL RF	V2023.11.21.0	
Power Measurement Software	UL	UL RF	V2023.08.14.0	
Radiated test software	UL	UL RF	Ver 9.5 2023-05-01	

NOTES:

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

8. RF OUTPUT POWER MEASUREMENT

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

8.1. GSM

Using CMW500 Communication Test Set
Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press **Connection control** to choose the different menus
Press **RESET** > choose all to reset all settings

Connection	Press **Signal Off** to turn off the signal and change settings Network Support > GSM+GPRS or GSM+EGPRS Main Service > Packet Data Service selection > Test Mode A – Auto Slot Config. off	
MS Signal	Press Slot Config bottom on the right twice to select and change the number of time slots and power setting	
	> Slot configuration	> Uplink/Gamma > 33 dBm for GPRS 850/900 > 27 dBm for EGPRS 850/900 > 30 dBm for GPRS1800/1900 > 26 dBm for EGPRS1800/1900
BS Signal	Enter the same channel number for TCH channel (test channel) and BCCH channel	
	Frequency Offset >	+ 0 Hz
	Mode >	BCCH and TCH
	BCCH Level >	-85 dBm (May need to adjust if link is not stable)
	BCCH Channel >	choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
	Channel Type >	Off
	P0>	4 dB
	Slot Config >	Unchanged (if already set under MS Signal)
	TCH >	choose desired test channel
	Hopping >	Off
	Main Timeslot >	3 (Default)
Network	Coding Scheme >	CS 1 (GPRS) and MCS5 (EGPRS)
	Bit Stream >	2E9-1PSR Bit Pattern
AF/RF	Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input	
Connection	Press **Signal On** to turn on the signal and change settings	

RESULT

8.1.1. GSM 850

Test Engineer ID:	39004	Test Date:	2023-11-27

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Conducted Average Power (dBm)	
					ANT 1	ANT 2
GPRS (GMSK)	CS1	1	128	824.2	33.19	32.32
			190	836.6	**33.50**	32.50
			251	848.8	33.49	32.25
		2	128	824.2	31.98	31.33
			190	836.6	32.26	31.41
			251	848.8	32.30	31.50
EGPRS (8PSK)	MCS5	1	128	824.2	27.80	26.94
			190	836.6	**28.00**	27.00
			251	848.8	27.91	26.87
		2	128	824.2	26.82	25.99
			190	836.6	27.00	25.95
			251	848.8	26.94	26.00

8.1.2. GSM 1900

Test Engineer ID:	39004	Test Date:	2023-11-27

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Conducted Average Power (dBm)			
					ANT 1	ANT 2	ANT 3	ANT 4
GPRS (GMSK)	CS1	1	512	1850.2	31.64	29.14	31.17	28.71
			661	1880.0	**32.00**	**29.50**	31.50	**29.00**
			810	1909.8	31.96	29.47	**31.50**	28.91
		2	512	1850.2	30.43	27.84	30.05	27.42
			661	1880.0	30.83	28.23	30.42	27.88
			810	1909.8	30.92	28.33	30.50	27.65
EGPRS (8PSK)	MCS5	1	512	1850.2	26.86	23.82	26.32	23.84
			661	1880.0	**27.00**	24.00	26.48	**24.00**
			810	1909.8	26.95	23.94	**26.50**	23.76
		2	512	1850.2	25.82	22.88	25.37	22.96
			661	1880.0	25.97	22.97	25.50	23.00
			810	1909.8	26.00	23.00	25.49	22.94

8.2. WCDMA

TEST PROCEDURE

The transmitter output was connected to the input terminal of Directional Coupler via calibrated coaxial cable. The output coupling terminal of the Directional Coupler was directly connected to a spectrum analyzer while the output through terminal connected to the communication test set via calibrated coaxial cable.

The output power was measured with the spectrum analyzer at the low, middle and high channel in each band.

- Set the spectrum analyzer span wide enough or greater than the modulated signal BW.
- Set a spectrum analyzer at peak detection mode with VBW ≥ RBW.≥ 26dB BW, typically 5MHz.
- Set a marker to point the corresponding peak value.

REL 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

HSDPA REL 5

The following 4 Sub-tests were completed according to Release 5 procedures in table C.10.1.4 of 3GPP TS 34.121-1 A summary of these settings are illustrated below:

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

HSPA REL 6 (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in table C.11.1.3 of 3GPP TS 34.121-1. A summary of these settings are illustrated below:

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 4) (Note 5)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c. For sub-test 5, Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 5/15 with β_{hs} = 5/15 * β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

DUAL CARRIER HSDPA (DC-HSDPA (REL 8, CAT 24)

The following 4 Sub-tests for DC-HSDPA were completed according to Release 8 procedures in table C08.1.12 of 3GPP TS 34.121-1. A summary of subtest settings are illustrated below:

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK

Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.

Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.

HSPA+ REL 7

The following 1 Sub-test was completed according to Release 7 procedures in table C.11.1.4 of 3GPP TS34.121. A summary of these settings are illustrated below:

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{ed}1$: 30/15 $\beta_{ed}2$: 30/15	$\beta_{ed}3$: 24/15 $\beta_{ed}4$: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

RESULT

8.2.1. WCDMA BAND 5

Test Engineer ID:	39004	Test Date:	2023-11-28

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average Power (dBm)	
						ANT 1	ANT 2
W-CDMA Band 5 (850MHz)	Rel 99	RMC, 12.2 kbps	4132	826.4	N/A	**25.70**	25.20
			4183	836.6	N/A	25.67	25.17
			4233	846.6	N/A	25.60	25.09
	HSDPA	Subtest 1	4132	826.4	0	24.70	24.21
			4183	836.6	0	24.68	24.18
			4233	846.6	0	24.58	24.08
		Subtest 2	4132	826.4	0	**24.72**	24.24
			4183	836.6	0	24.65	24.20
			4233	846.6	0	24.60	24.10
		Subtest 3	4132	826.4	0.5	24.20	23.72
			4183	836.6	0.5	24.13	23.67
			4233	846.6	0.5	24.07	23.59
		Subtest 4	4132	826.4	0.5	24.21	23.74
			4183	836.6	0.5	24.16	23.68
			4233	846.6	0.5	24.08	23.60
	HSPA (HSDPA & HSUPA)	Subtest 1	4132	826.4	0	**24.72**	24.25
			4183	836.6	0	24.68	24.20
			4233	846.6	0	24.58	24.12
		Subtest 2	4132	826.4	2	22.70	22.22
			4183	836.6	2	22.67	22.18
			4233	846.6	2	22.57	22.06
		Subtest 3	4132	826.4	1	23.69	23.20
			4183	836.6	1	23.64	23.14
			4233	846.6	1	23.55	23.10
		Subtest 4	4132	826.4	2	22.73	22.25
			4183	836.6	2	22.67	22.17
			4233	846.6	2	22.57	22.06
		Subtest 5	4132	826.4	0	24.27	23.80
			4183	836.6	0	24.24	23.77
			4233	846.6	0	24.17	23.67
	DC-HSDPA	Subtest 1	4132	826.4	0	24.68	24.21
			4183	836.6	0	24.66	24.16
			4233	846.6	0	24.58	24.09
		Subtest 2	4132	826.4	0	24.69	24.24
			4183	836.6	0	24.68	24.18
			4233	846.6	0	24.60	24.12
		Subtest 3	4132	826.4	0.5	24.19	23.72
			4183	836.6	0.5	24.15	23.67
			4233	846.6	0.5	24.07	23.59
		Subtest 4	4132	826.4	0.5	24.17	23.73
			4183	836.6	0.5	24.18	23.68
			4233	846.6	0.5	24.10	23.61

8.2.2. WCDMA BAND 2

Test Engineer ID:	39004	Test Date:	2023-11-28

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average Power (dBm)			
						ANT 1	ANT 2	ANT 3	ANT 4
W-CDMA Band 2 (1900MHz)	Rel 99	RMC, 12.2 kbps	9262	1852.4	N/A	25.67	23.29	25.33	22.90
			9400	1880.0	N/A	**25.70**	23.40	**25.50**	22.88
			9538	1907.6	N/A	25.61	23.30	25.35	22.81
	HSDPA	Subtest 1	9262	1852.4	0	24.70	22.34	24.34	21.92
			9400	1880.0	0	24.69	22.41	24.49	21.91
			9538	1907.6	0	24.61	22.29	24.36	21.79
		Subtest 2	9262	1852.4	0	24.69	22.32	24.33	21.92
			9400	1880.0	0	24.69	22.38	24.47	21.88
			9538	1907.6	0	24.59	22.29	24.35	21.80
		Subtest 3	9262	1852.4	0.5	24.19	21.83	23.84	21.36
			9400	1880.0	0.5	24.19	21.88	23.97	21.39
			9538	1907.6	0.5	24.09	21.77	23.85	21.29
		Subtest 4	9262	1852.4	0.5	24.20	21.82	23.82	21.42
			9400	1880.0	0.5	24.19	21.89	23.97	21.38
			9538	1907.6	0.5	24.09	21.79	23.83	21.30
	HSPA (HSDPA & HSUPA)	Subtest 1	9262	1852.4	0	24.67	22.34	24.32	21.89
			9400	1880.0	0	24.67	22.42	24.45	21.88
			9538	1907.6	0	24.59	22.30	24.35	21.82
		Subtest 2	9262	1852.4	2	22.73	20.34	22.35	19.95
			9400	1880.0	2	22.69	20.41	22.49	19.89
			9538	1907.6	2	22.63	20.31	22.39	19.81
		Subtest 3	9262	1852.4	1	23.72	21.34	11.74	20.92
			9400	1880.0	1	23.68	21.40	23.50	20.89
			9538	1907.6	1	23.61	21.31	23.37	20.82
		Subtest 4	9262	1852.4	2	22.66	20.31	22.31	19.92
			9400	1880.0	2	22.66	20.38	22.46	19.87
			9538	1907.6	2	22.61	20.28	22.36	19.79
		Subtest 5	9262	1852.4	0	24.25	21.87	23.86	21.48
			9400	1880.0	0	24.23	21.95	24.01	21.45
			9538	1907.6	0	24.16	21.85	23.91	21.36
	DC-HSDPA	Subtest 1	9262	1852.4	0	24.68	22.32	24.34	21.92
			9400	1880.0	0	**24.71**	22.42	**24.50**	21.89
			9538	1907.6	0	24.61	22.31	24.34	21.80
		Subtest 2	9262	1852.4	0	24.70	22.33	24.33	21.93
			9400	1880.0	0	24.69	22.39	24.47	21.87
			9538	1907.6	0	24.57	22.29	24.34	21.80
		Subtest 3	9262	1852.4	0.5	24.18	21.85	23.84	21.38
			9400	1880.0	0.5	24.21	21.90	23.99	21.39
			9538	1907.6	0.5	24.10	21.80	23.85	21.32
		Subtest 4	9262	1852.4	0.5	24.21	21.81	23.84	21.45
			9400	1880.0	0.5	24.20	21.91	23.98	21.41
			9538	1907.6	0.5	24.10	21.80	23.84	21.32

8.2.3. WCDMA BAND 4

Test Engineer ID:	39004	Test Date:	2023-11-29

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average Power (dBm)			
						ANT 1	ANT 2	ANT 3	ANT 4
W-CDMA Band 4 (1700MHz)	Rel 99	RMC, 12.2 kbps	1312	1712.4	N/A	**25.70**	23.40	**25.50**	22.90
			1413	1732.6	N/A	25.68	23.40	25.34	22.77
			1513	1752.6	N/A	25.65	23.25	25.37	22.67
	HSDPA	Subtest 1	1312	1712.4	0	**24.71**	22.43	24.47	21.95
			1413	1732.6	0	24.68	22.38	24.33	21.80
			1513	1752.6	0	24.64	22.26	24.33	21.70
		Subtest 2	1312	1712.4	0	24.67	22.38	24.44	21.91
			1413	1732.6	0	24.63	22.33	24.31	21.78
			1513	1752.6	0	24.64	22.23	24.34	21.66
		Subtest 3	1312	1712.4	0.5	24.21	21.93	23.99	21.40
			1413	1732.6	0.5	24.16	21.89	23.83	21.31
			1513	1752.6	0.5	24.15	21.77	23.85	21.16
		Subtest 4	1312	1712.4	0.5	24.17	21.90	23.96	21.39
			1413	1732.6	0.5	24.16	21.87	23.80	21.27
			1513	1752.6	0.5	24.12	21.73	23.84	21.14
	HSPA (HSDPA & HSUPA)	Subtest 1	1312	1712.4	0	24.68	22.36	**24.49**	21.88
			1413	1732.6	0	24.62	22.35	24.37	21.78
			1513	1752.6	0	24.63	22.24	24.36	21.65
		Subtest 2	1312	1712.4	2	22.72	20.42	22.51	19.91
			1413	1732.6	2	22.74	20.40	22.39	19.81
			1513	1752.6	2	22.66	20.30	22.41	19.72
		Subtest 3	1312	1712.4	1	23.02	21.41	12.94	20.89
			1413	1732.6	1	23.70	21.42	23.37	20.81
			1513	1752.6	1	23.66	21.26	23.43	20.70
		Subtest 4	1312	1712.4	2	22.70	20.41	22.47	19.88
			1413	1732.6	2	22.66	20.37	22.35	19.81
			1513	1752.6	2	22.64	20.28	22.40	19.69
		Subtest 5	1312	1712.4	0	24.28	21.95	24.04	21.46
			1413	1732.6	0	24.25	21.94	23.91	21.37
			1513	1752.6	0	24.21	21.87	23.94	21.36
	DC-HSDPA	Subtest 1	1312	1712.4	0	24.70	22.40	24.48	21.90
			1413	1732.6	0	24.67	22.39	24.33	21.82
			1513	1752.6	0	24.64	22.27	24.34	21.68
		Subtest 2	1312	1712.4	0	24.69	22.37	24.46	21.90
			1413	1732.6	0	24.65	22.37	24.29	21.78
			1513	1752.6	0	24.65	22.27	24.35	21.68
		Subtest 3	1312	1712.4	0.5	24.22	21.93	23.97	21.40
			1413	1732.6	0.5	24.18	21.88	23.83	21.32
			1513	1752.6	0.5	24.15	21.78	23.86	21.19
		Subtest 4	1312	1712.4	0.5	24.20	21.90	23.96	21.41
			1413	1732.6	0.5	24.16	21.87	23.84	21.28
			1513	1752.6	0.5	24.15	21.76	23.87	21.15

9. CONDUCTED TEST RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049
ISED: RSS132; RSS133§2.3; RSS139

LIMITS

For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was tested.

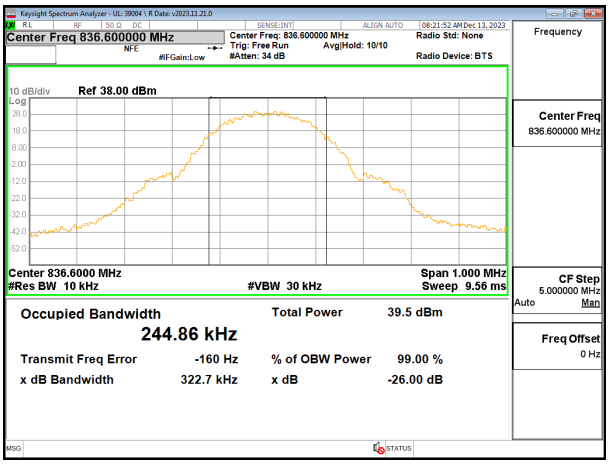
GSM

Band	Modulation	Channel	f(MHz)	99% BW (kHz)	-26dB BW (kHz)
850	GPRS	190	836.6	244.9	322.7
	EGPRS			235.9	308.1
1900	GPRS	661	1880.0	243.0	312.4
	EGPRS			239.1	315.9

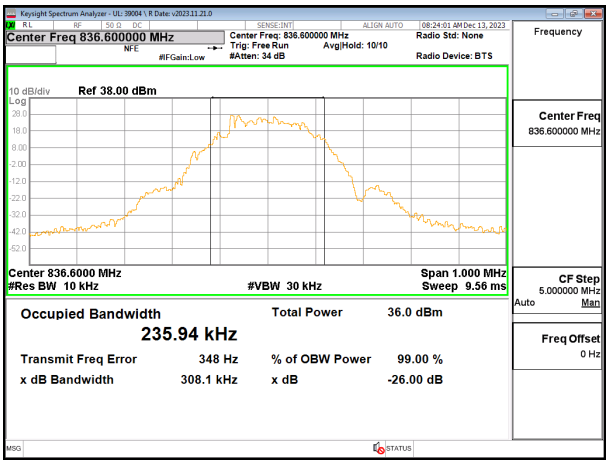
WCDMA

Band	Modulation	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
BAND 5	REL 99	4408	836.6	4.142	4.703
	HSDPA			4.150	4.698
BAND 2	REL 99	9800	1880.0	4.140	4.705
	HSDPA			4.153	4.709
BAND 4	REL 99	1638	1732.6	4.148	4.703
	HSDPA			4.159	4.700

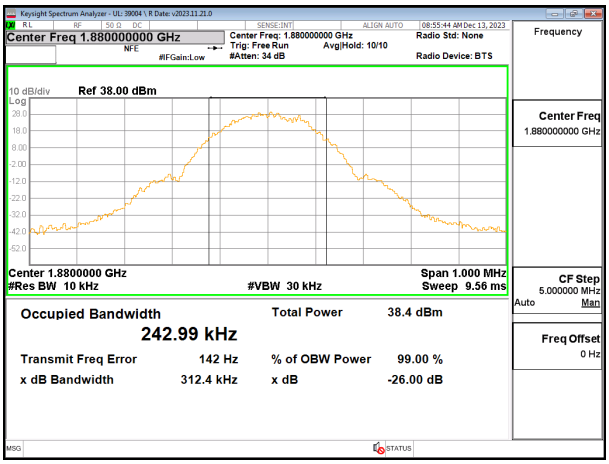
9.1.1. GSM



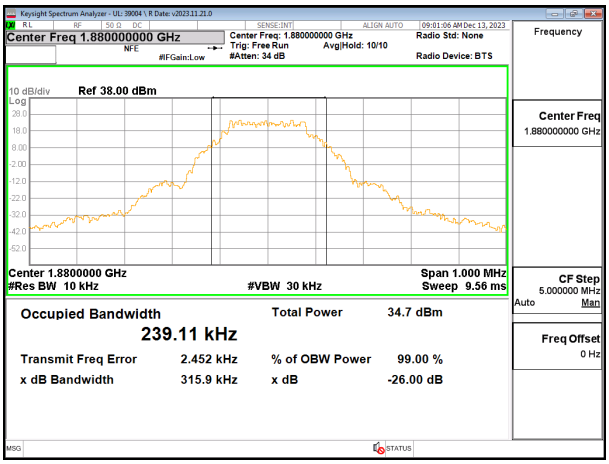
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel

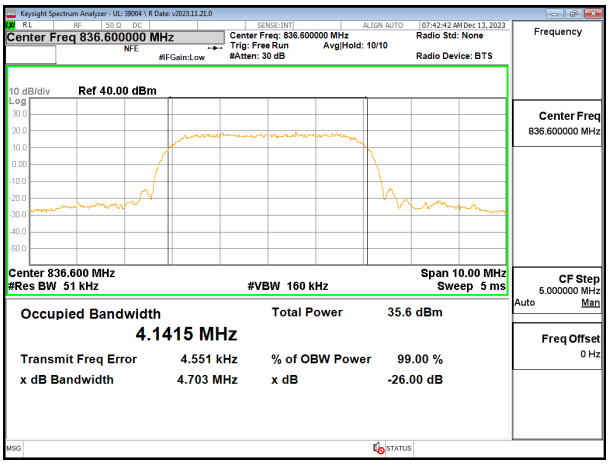


GSM 1900 GPRS Middle Channel

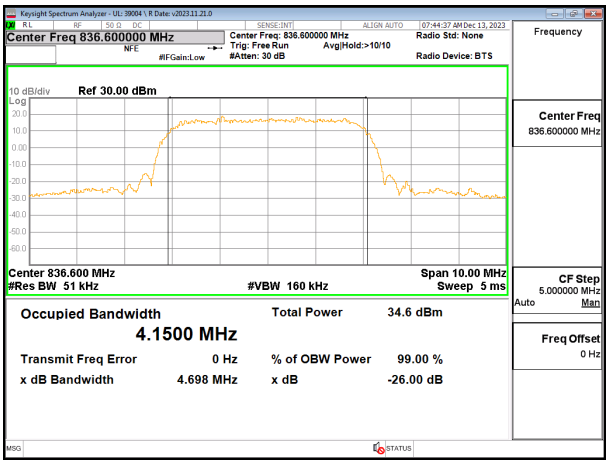


GSM 1900 EGPRS Middle Channel

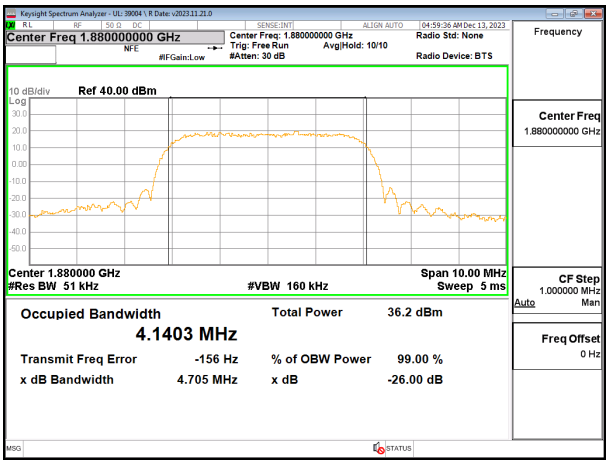
9.1.2. WCDMA



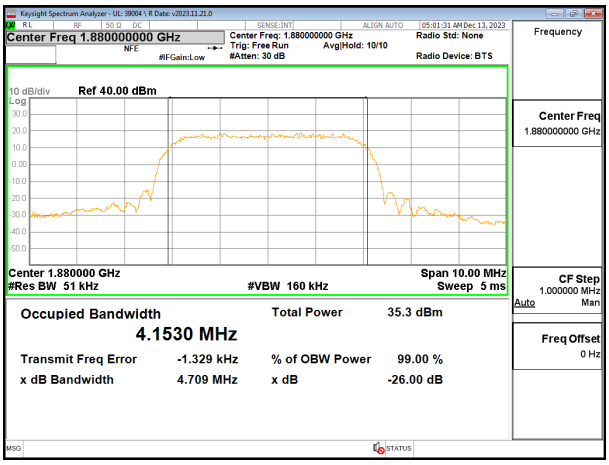
WCDMA Band 5 Rel 99 Middle Channel



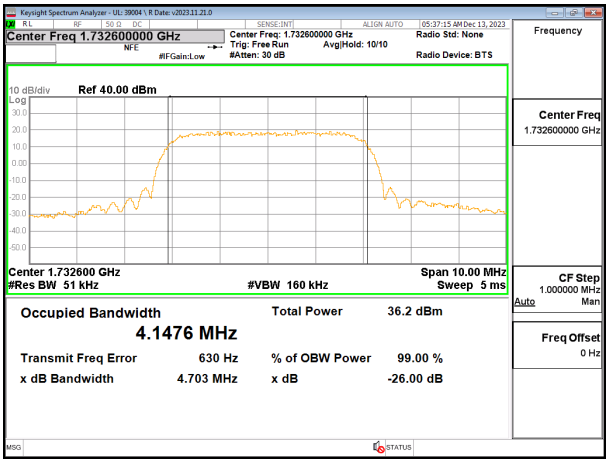
WCDMA Band 5 HSDPA Middle Channel



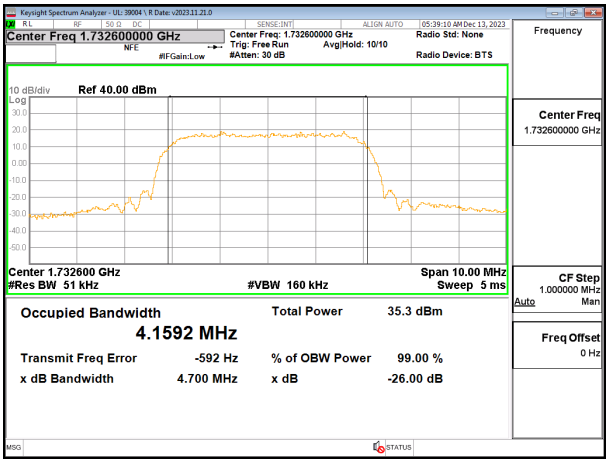
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

9.2. BAND EDGE AND EMISSION MASK

LIMITS

FCC: §22.917(a), §24.238, §27.53 (h)
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.

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

NOTE: According to 971168 D02 Misc Rev Approv License Devices v02r01, Section VIII (c):
For Section 90.691(a) compliance testing, use RBW = 300 Hz for offsets less than 37.5 kHz from a channel edge; RBW = 100 kHz is allowed for offsets greater than 37.5 kHz.

RSS132§5.5
Equipment shall meet the unwanted emission limits specified below:

(i) 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 below the transmitter output power P (dBW) by at least 43 + 10 log(p) dB.

(ii) 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 below the transmitter output power P (dBW) by at least 43 + 10 log(p) dB. If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

p is the output power specified in watts.

RSS133§6.5.1
Equipment shall comply with the limits in (i) and (ii) below.

(iii) In the 1.0 MHz bands immediately outside and adjacent to the equipment’s operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

(iv) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS139§5.6
Unwanted emissions shall be measured in terms of average values.
For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 4.

Table 6: Unwanted emission limits	
Offset from the edge of the frequency block or frequency block group	**Unwanted emission limits**
≤1 MHz	-13 dBm/(1% of B*)
>1 MHz	-13 dBm/MHz

*B is the frequency block or frequency block group.

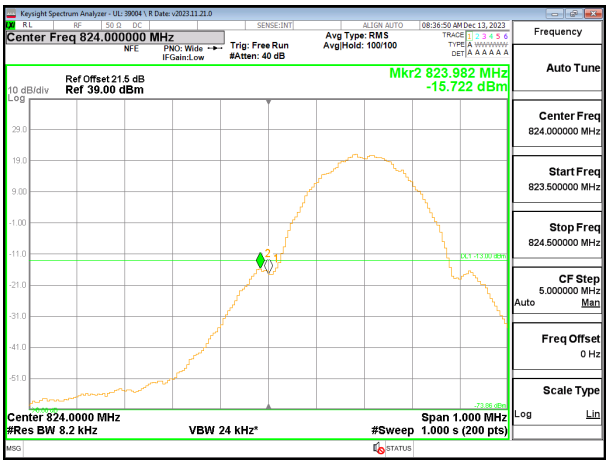
TEST PROCEDURE

The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.
For each band edge measurement:

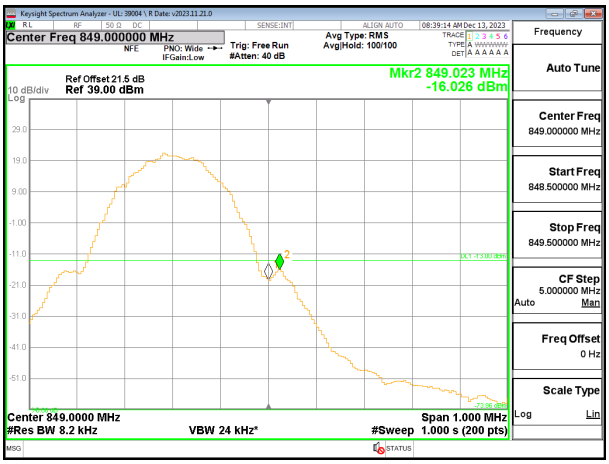
- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

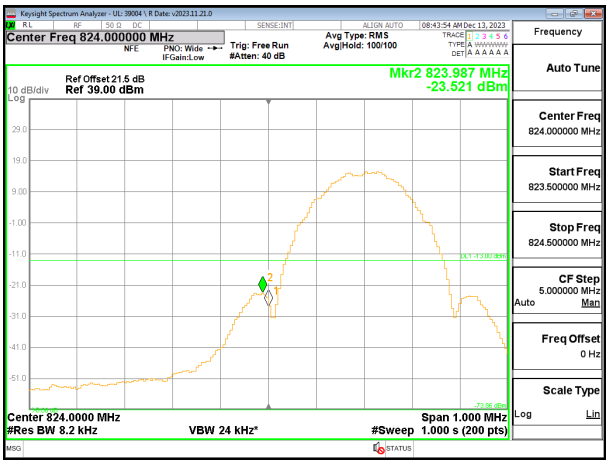
9.2.1. GSM 850



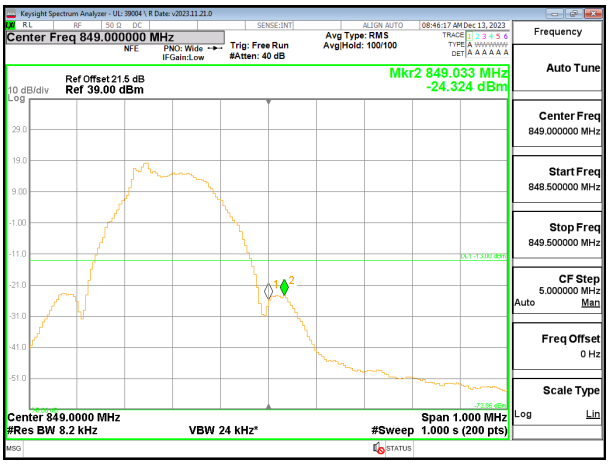
GSM 850 GPRS Low Channel



GSM 850 GPRS High Channel

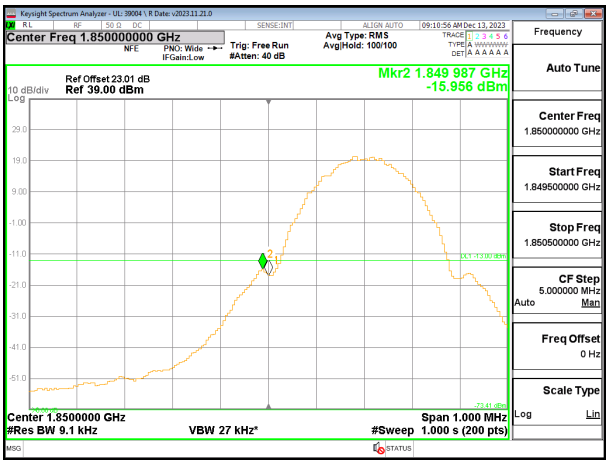


GSM 850 EGPRS Low Channel

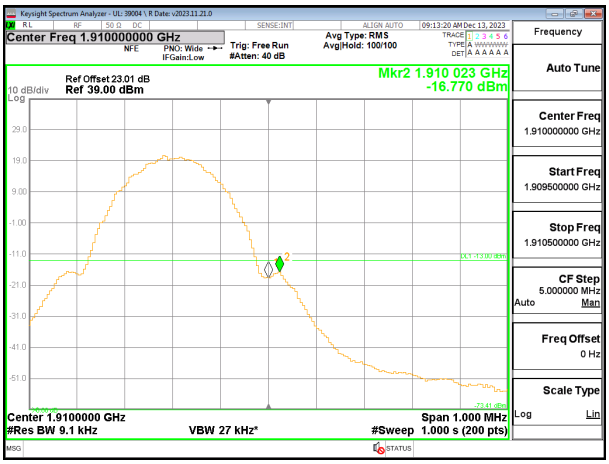


GSM 850 EGPRS High Channel

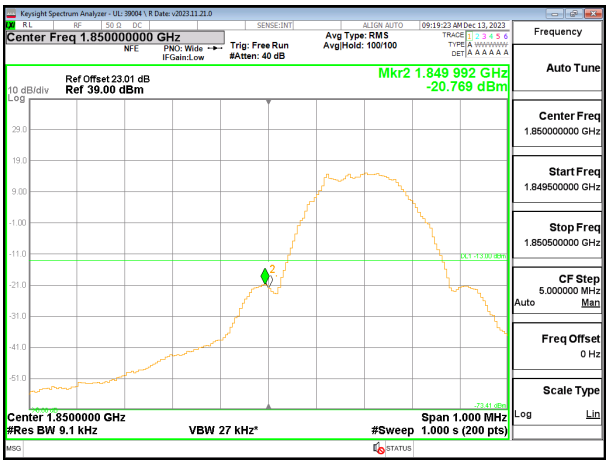
9.2.2. GSM 1900



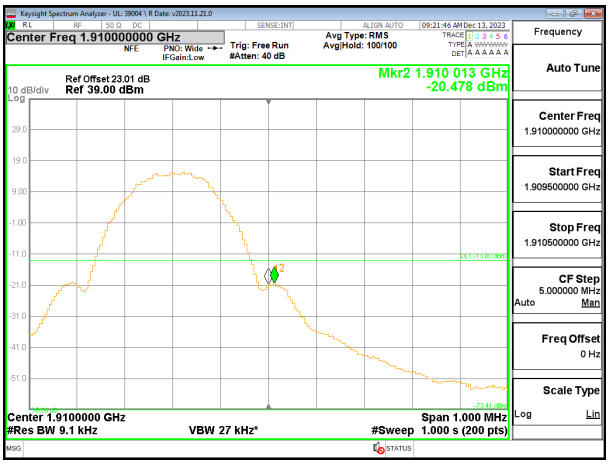
GSM 1900 GPRS Low Channel



GSM 1900 GPRS High Channel

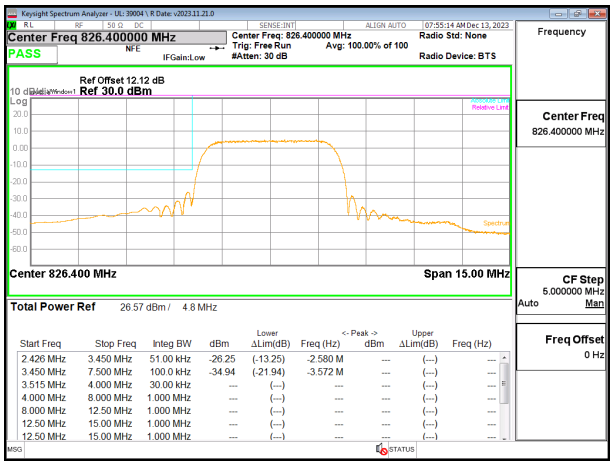


GSM 1900 EGPRS Low Channel

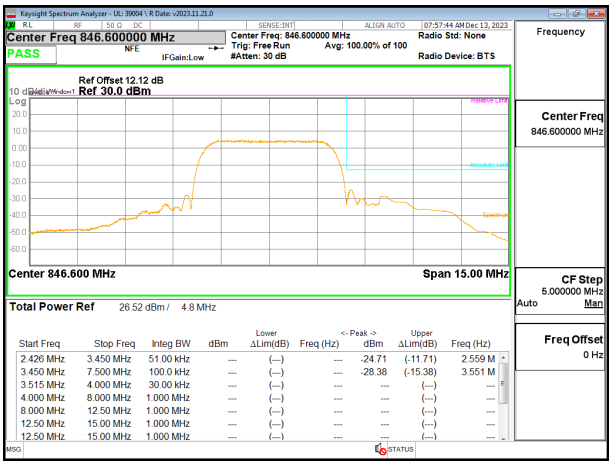


GSM 1900 EGPRS High Channel

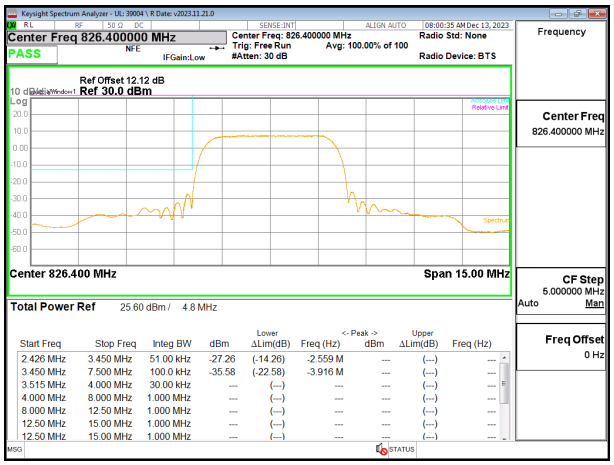
9.2.3. WCDMA BAND 5



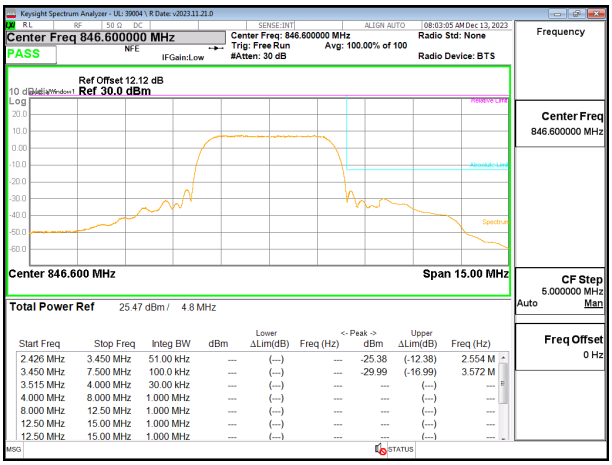
WCDMA Band 5 Rel 99 Low Channel



WCDMA Band 5 Rel 99 High Channel

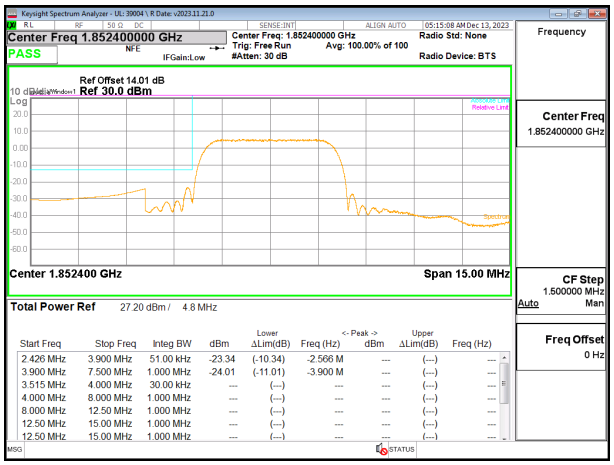


WCDMA Band 5 HSDPA Low Channel

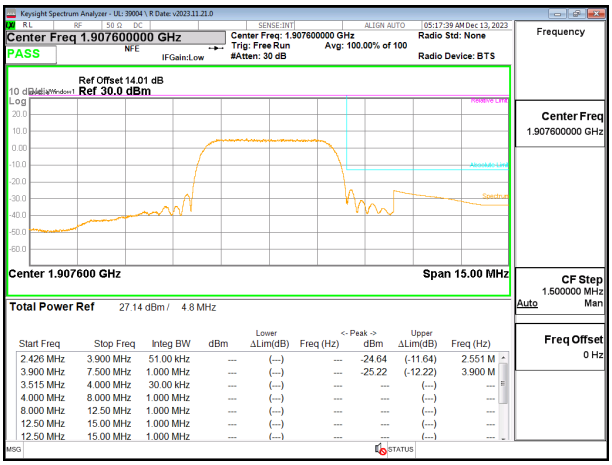


WCDMA Band 5 HSDPA High Channel

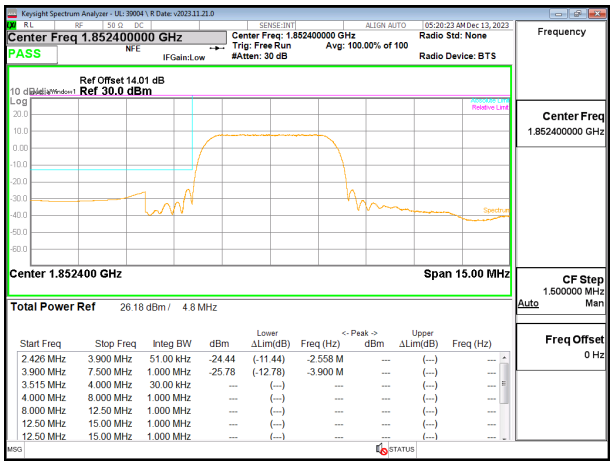
9.2.4. WCDMA BAND 2



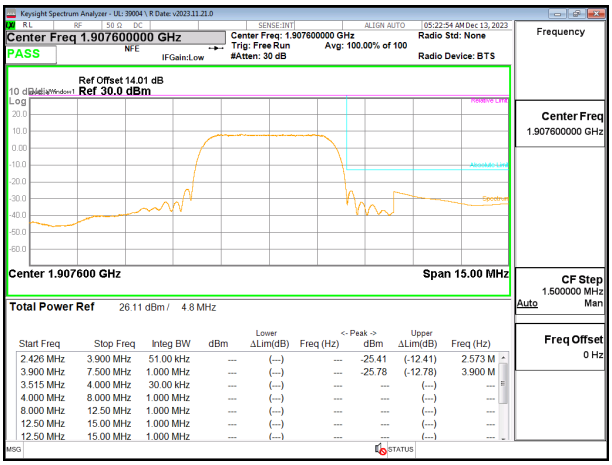
WCDMA Band 2 Rel 99 Low Channel



WCDMA Band 2 Rel 99 High Channel

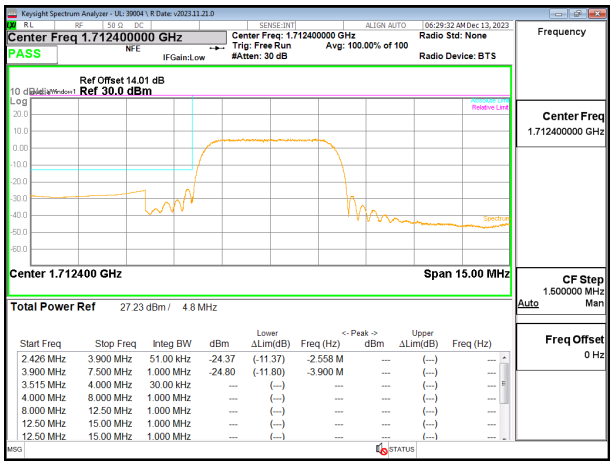


WCDMA Band 2 HSDPA Low Channel

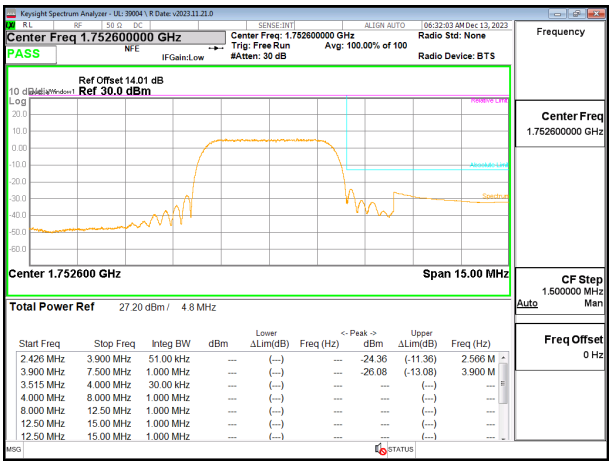


WCDMA Band 2 HSDPA High Channel

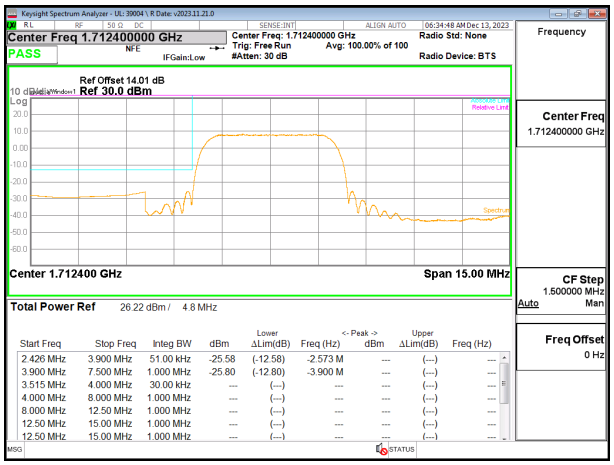
9.2.5. WCDMA BAND 4



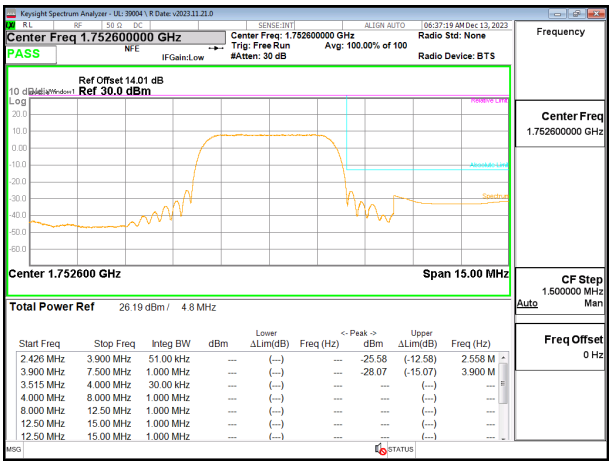
WCDMA Band 4 Rel 99 Low Channel



WCDMA Band 4 Rel 99 High Channel



WCDMA Band 4 HSDPA Low Channel



WCDMA Band 4 HSDPA High Channel

9.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.917, §24.238, and §27.53.
ISED: RSS132§5.5; RSS133§6.5 and RSS139§5.6

LIMITS

FCC: §22.917(a), §24.238, §27.53 (h).
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

RSS132§5.5, RSS133§6.5.1, RSS139§5.6
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

TEST PROCEDURE

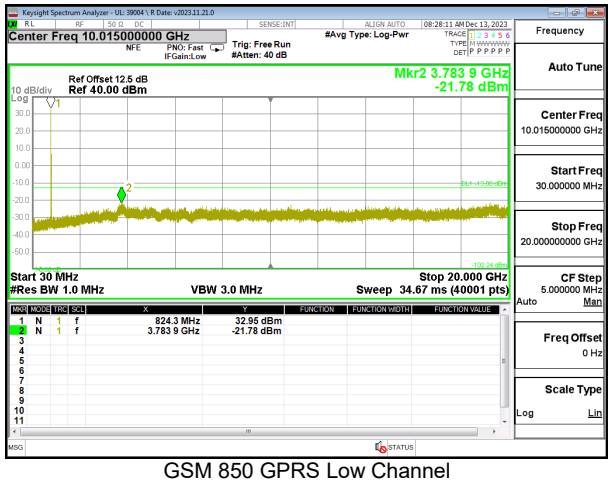
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

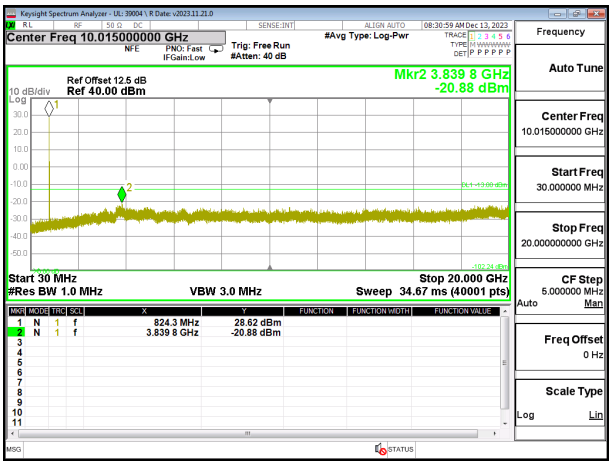
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz. (NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

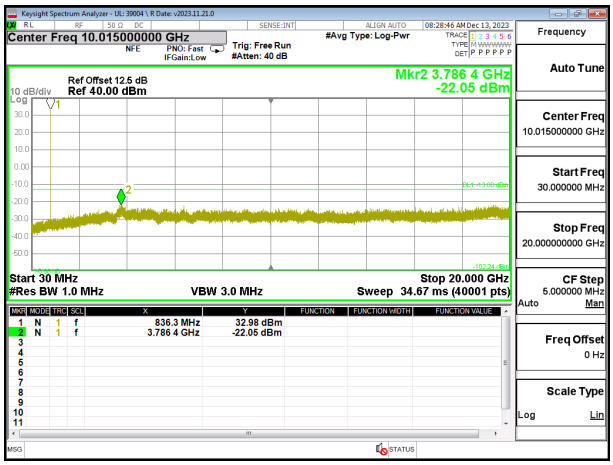
9.3.1. GSM 850



GSM 850 GPRS Low Channel

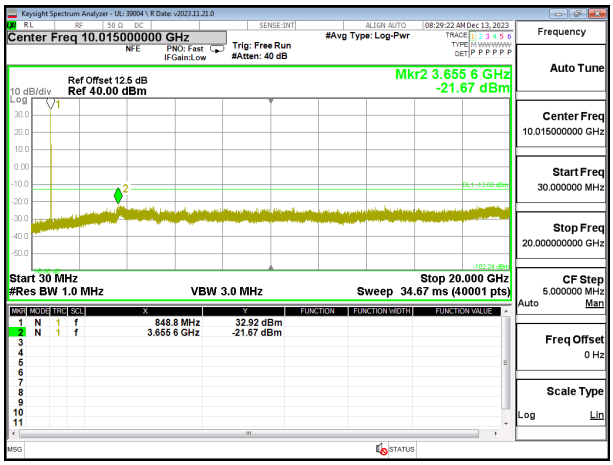


GSM 850 EGPRS Low Channel

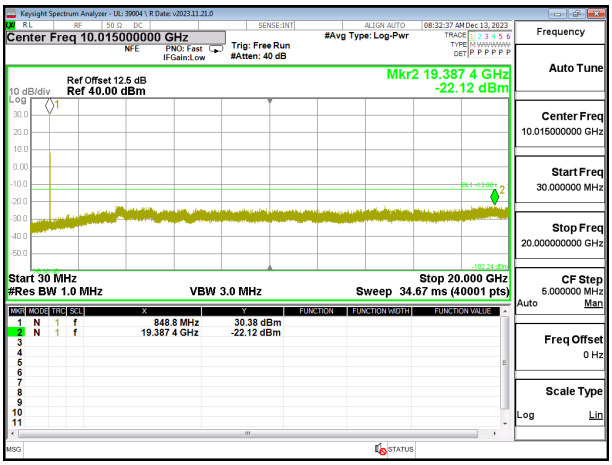


GSM 850 GPRS Middle Channel

GSM 850 EGPRS Middle Channel

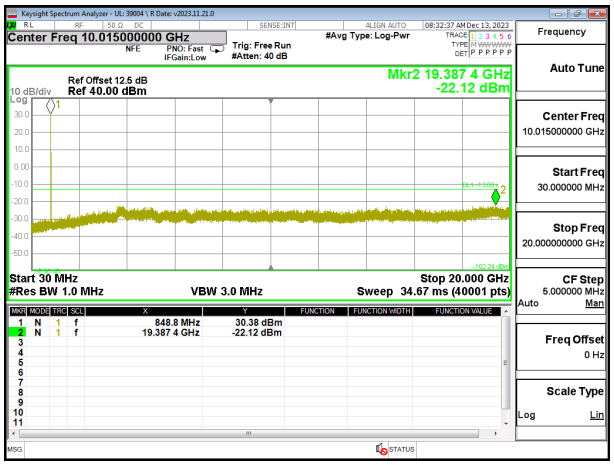


GSM 850 GPRS High Channel

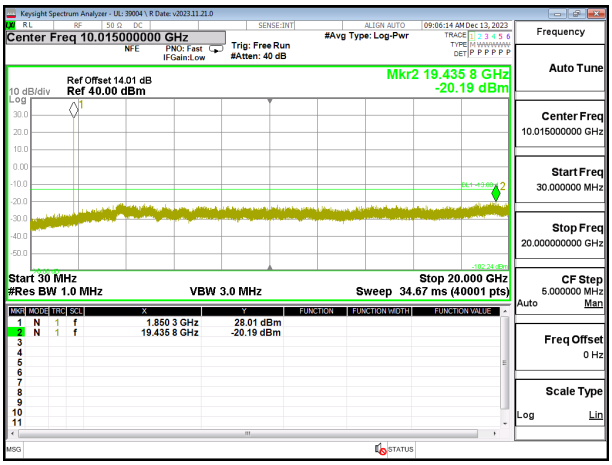


GSM 850 EGPRS High Channel

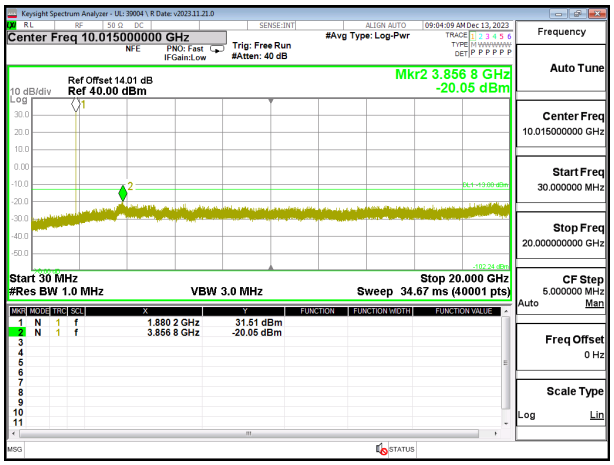
9.3.2. GSM 1900



GSM 1900 GPRS Low Channel

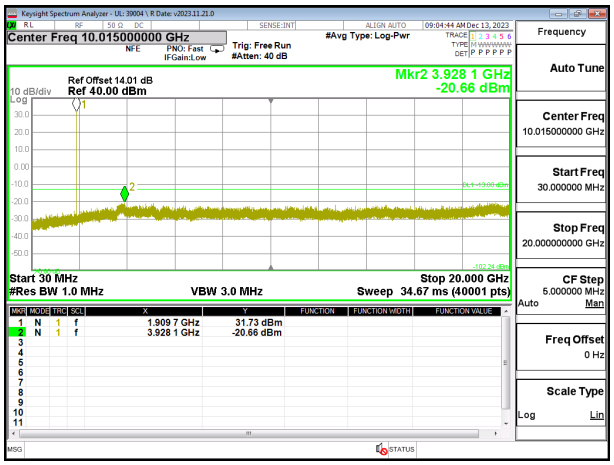


GSM 1900 EGPRS Low Channel

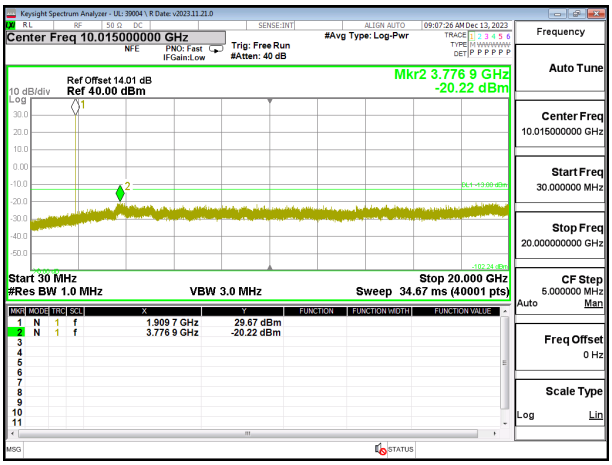


GSM 1900 GPRS Middle Channel

GSM 1900 EGPRS Middle Channel

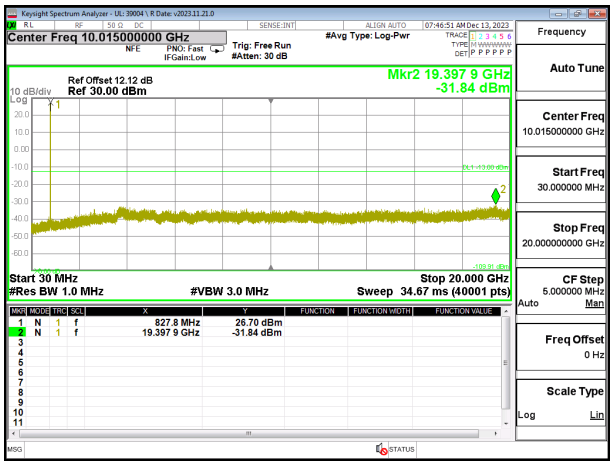


GSM 1900 GPRS High Channel

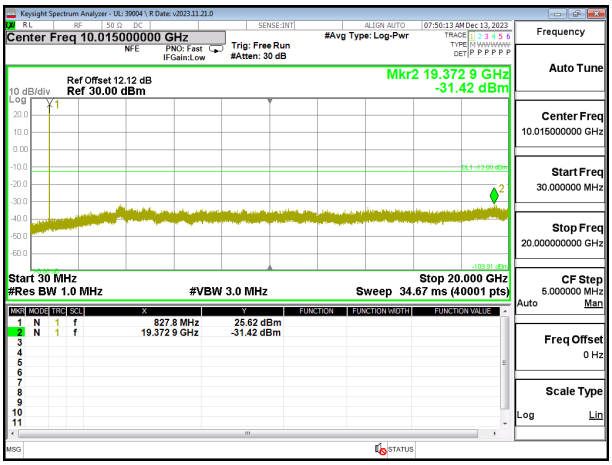


GSM 1900 EGPRS High Channel

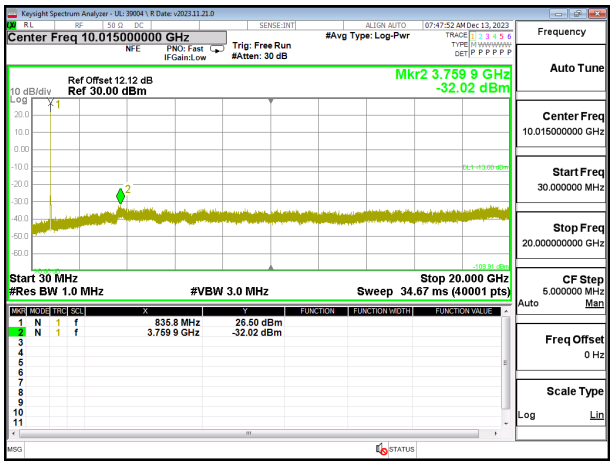
9.3.3. WCDMA BAND 5



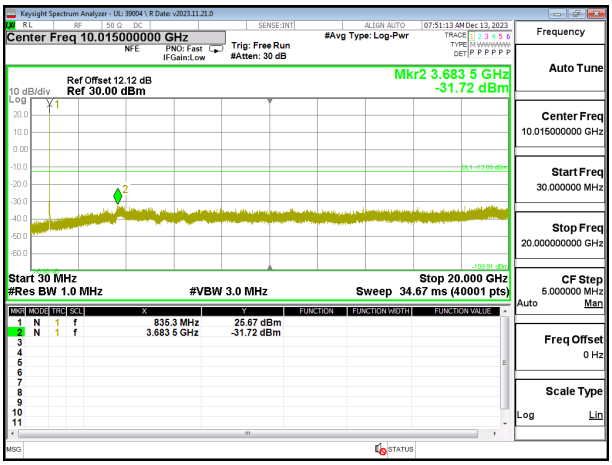
WCDMA Band 5 Rel 99 Low Channel



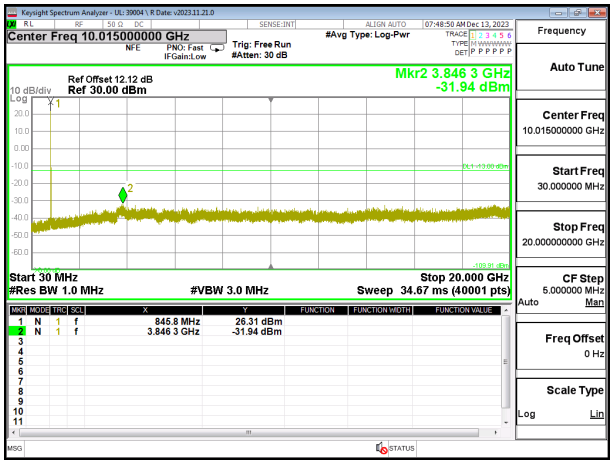
WCDMA Band 5 HSDPA Low Channel



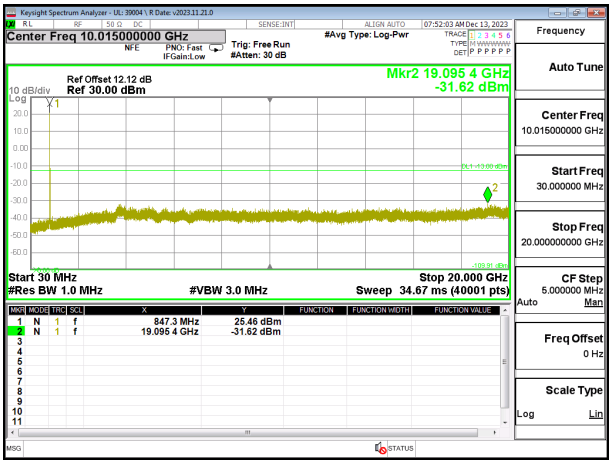
WCDMA Band 5 Rel 99 Middle Channel



WCDMA Band 5 HSDPA Middle Channel

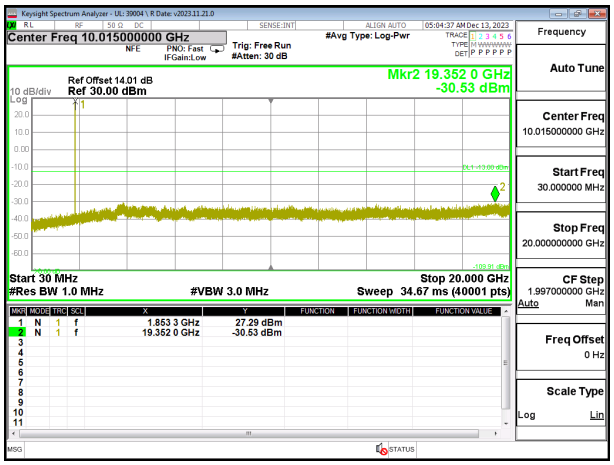


WCDMA Band 5 Rel 99 High Channel

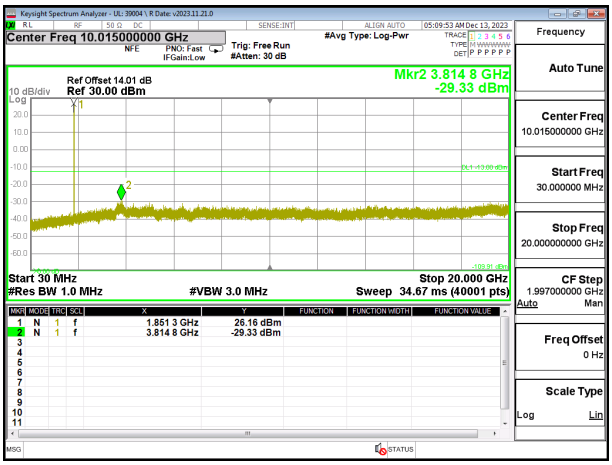


WCDMA Band 5 HSDPA High Channel

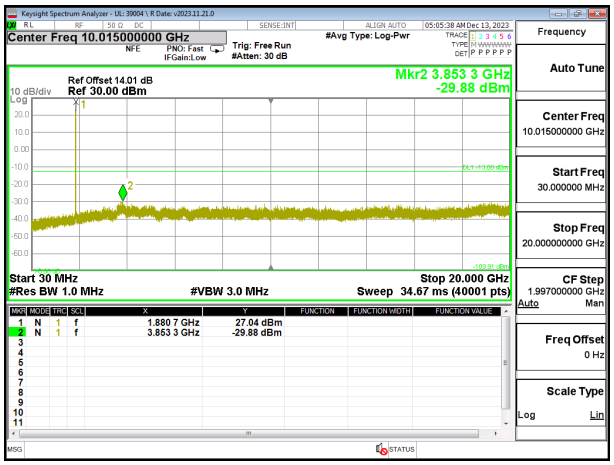
9.3.4. WCDMA BAND 2



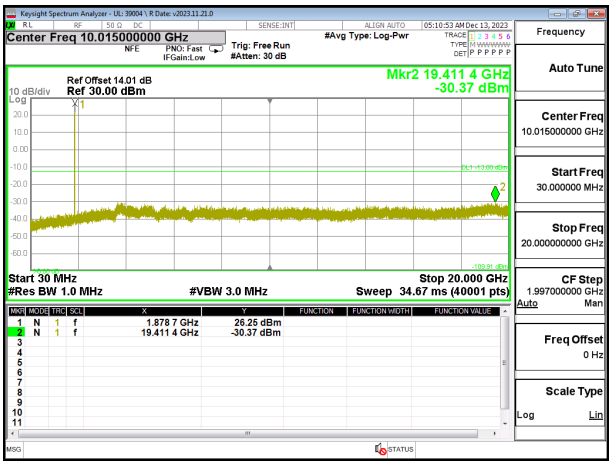
WCDMA Band 2 Rel 99 Low Channel



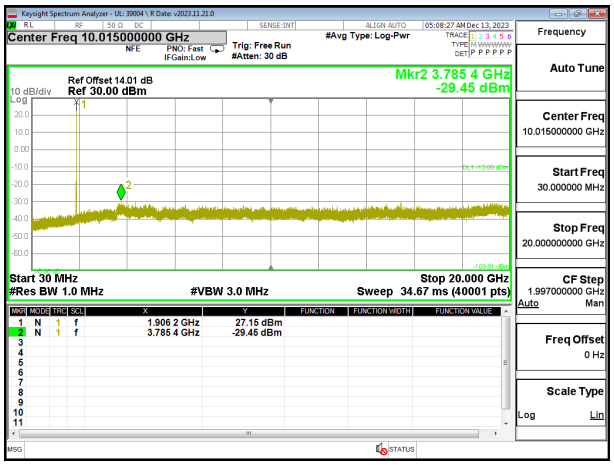
WCDMA Band 2 HSDPA Low Channel



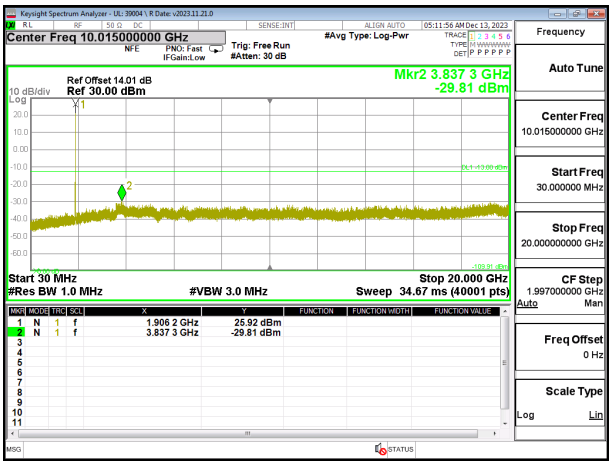
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel

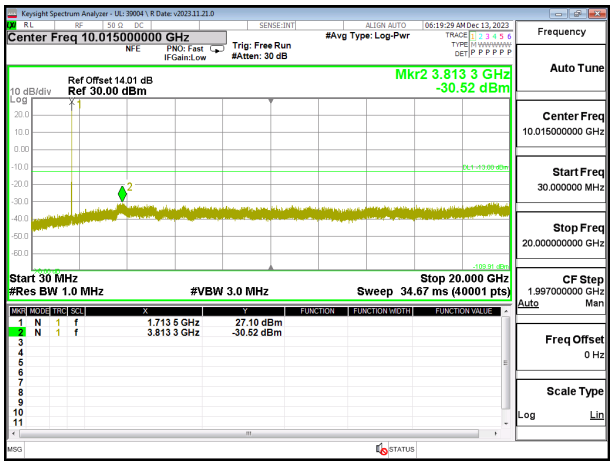


WCDMA Band 2 Rel 99 High Channel

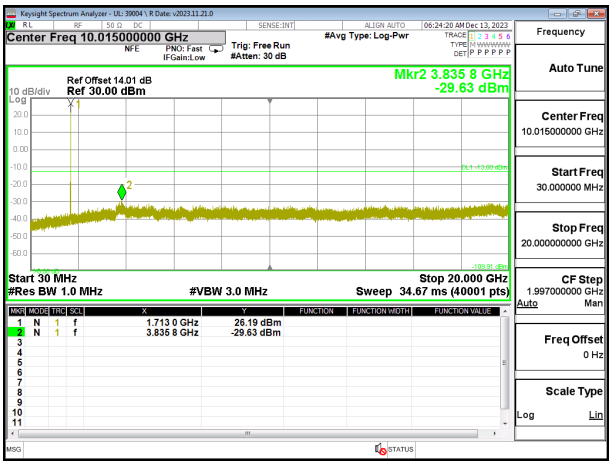


WCDMA Band 2 HSDPA High Channel

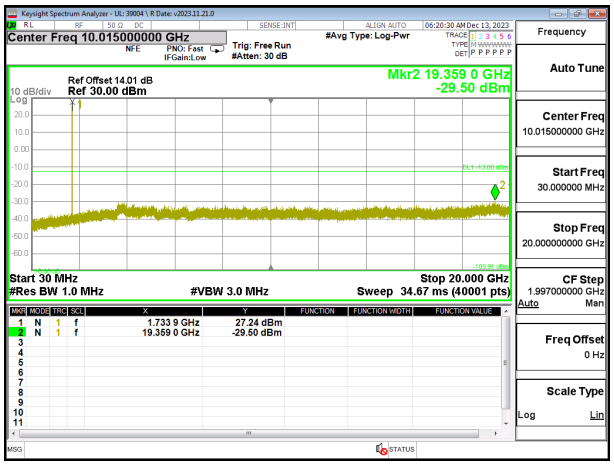
9.3.5. WCDMA BAND 4



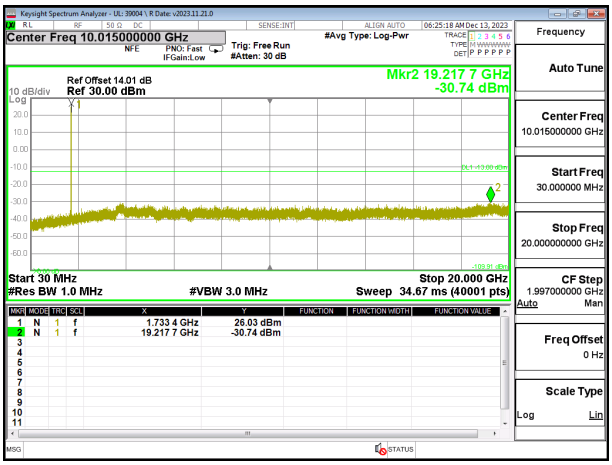
WCDMA Band 4 Rel 99 Low Channel



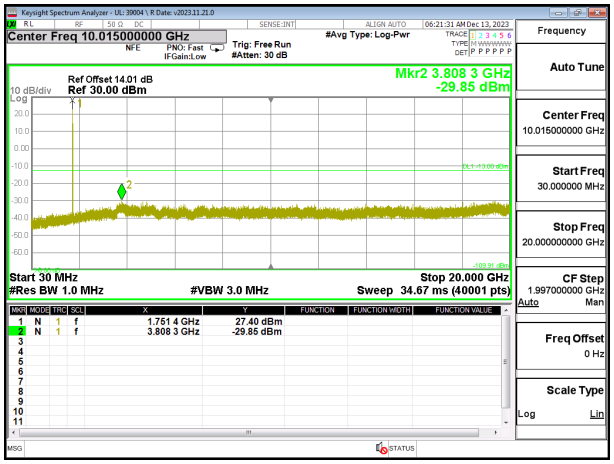
WCDMA Band 4 HSDPA Low Channel



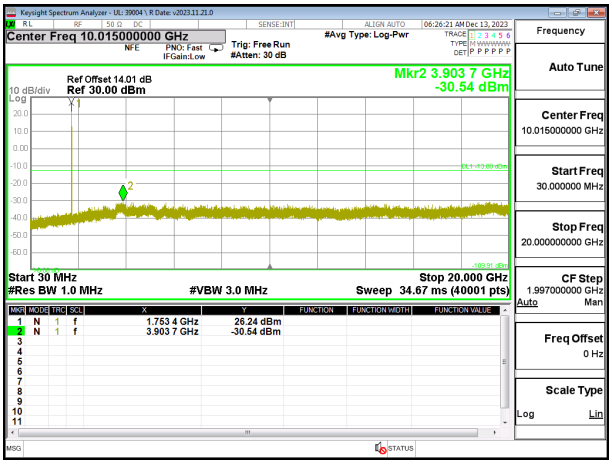
WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel



WCDMA Band 4 Rel 99 High Channel



WCDMA Band 4 HSDPA High Channel

9.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, and §27.54.
ISED: RSS132§5.3; RSS133§6.3 and RSS139§5.4

LIMITS

FCC §22.355
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

FCC §24.235 & §27.54
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

RSS132§5.3
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 SRSP for mobile stations and±1.5 ppm for base 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.

RSS133§6.3
The carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and±1.0 ppm for base stations.
In lieu of meeting the above stability values, the test report may show that the frequency stability is sufficient to ensure that the emission bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

RSS139§5.4
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.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = −30°C to +50°C
- Voltage = (85% - 115%)

  Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.
  End Voltage, 3.2VDC.

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

9.4.1. GSM

Test Engineer ID:	39004	Test Date:	2024-01-26

GPRS 850

Band	850	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	824.0326	848.9642			
Extreme (50°C)		824.0326	848.9642	8.2	0.010	Yes
Extreme (40°C)		824.0326	848.9642	13.2	0.016	Yes
Extreme (30°C)		824.0326	848.9642	7.4	0.009	Yes
Extreme (10°C)		824.0326	848.9642	6.4	0.008	Yes
Extreme (0°C)		824.0326	848.9642	8.4	0.010	Yes
Extreme (-10°C)		824.0326	848.9642	10.9	0.013	Yes
Extreme (-20°C)		824.0326	848.9642	12.4	0.015	Yes
Extreme (-30°C)		824.0326	848.9642	15.2	0.018	Yes
20°C	15%	824.0326	848.9642	6.0	0.007	Yes
	-15%	824.0326	848.9642	5.7	0.007	Yes
	End Point Voltage	824.0326	848.9642	6.9	0.008	Yes

GPRS 1900

Band	1900	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1910			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	1850.0400	1909.9468			
Extreme (50°C)		1850.0400	1909.9468	10.5	0.006	Yes
Extreme (40°C)		1850.0400	1909.9468	8.3	0.004	Yes
Extreme (30°C)		1850.0400	1909.9468	11.5	0.006	Yes
Extreme (10°C)		1850.0400	1909.9468	8.2	0.004	Yes
Extreme (0°C)		1850.0400	1909.9468	10.7	0.006	Yes
Extreme (-10°C)		1850.0400	1909.9468	14.2	0.008	Yes
Extreme (-20°C)		1850.0400	1909.9468	15.2	0.008	Yes
Extreme (-30°C)		1850.0400	1909.9468	10.7	0.006	Yes
20°C	15%	1850.0400	1909.9468	9.4	0.005	Yes
	-15%	1850.0400	1909.9468	8.2	0.004	Yes
	End Point Voltage	1850.0400	1909.9468	9.7	0.005	Yes

9.4.2. WCDMA

Test Engineer ID:	39004	Test Date:	2024-01-26

WCDMA REL 99 BAND 5

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	824.1896	848.8347			
Extreme (50°C)		824.1896	848.8347	1.3	0.002	Yes
Extreme (40°C)		824.1896	848.8347	2.6	0.003	Yes
Extreme (30°C)		824.1896	848.8347	1.8	0.002	Yes
Extreme (10°C)		824.1896	848.8347	2.5	0.003	Yes
Extreme (0°C)		824.1896	848.8347	1.2	0.001	Yes
Extreme (-10°C)		824.1896	848.8347	-0.5	-0.001	Yes
Extreme (-20°C)		824.1896	848.8347	-2.4	-0.003	Yes
Extreme (-30°C)		824.1896	848.8347	-3.2	-0.004	Yes
20°C	15%	824.1896	848.8347	2.6	0.003	Yes
	-15%	824.1896	848.8347	1.4	0.002	Yes
	End Point Voltage	824.1896	848.8347	3.2	0.004	Yes

WCDMA REL 99 BAND 2

Band	2	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1910		2.5	
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1850.1875	1909.8879			
Extreme (50°C)		1850.1875	1909.8879	8.3	0.004	Yes
Extreme (40°C)		1850.1875	1909.8879	7.5	0.004	Yes
Extreme (30°C)		1850.1875	1909.8879	6.8	0.004	Yes
Extreme (10°C)		1850.1875	1909.8879	5.7	0.003	Yes
Extreme (0°C)		1850.1875	1909.8879	3.8	0.002	Yes
Extreme (-10°C)		1850.1875	1909.8879	2.4	0.001	Yes
Extreme (-20°C)		1850.1875	1909.8879	-1.8	-0.001	Yes
Extreme (-30°C)		1850.1875	1909.8879	-3.0	-0.002	Yes
20°C	15%	1850.1875	1909.8879	6.1	0.003	Yes
	-15%	1850.1875	1909.8879	5.4	0.003	Yes
	End Point Voltage	1850.1875	1909.8879	4.6	0.002	Yes

WCDMA REL 99 BAND 4

Band	4	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1755			
Temperature	Voltage	Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Normal (20°C)	Normal	1710.1369	1754.8717			
Extreme (50°C)		1710.1369	1754.8717	7.1	0.004	Yes
Extreme (40°C)		1710.1369	1754.8717	16.0	0.009	Yes
Extreme (30°C)		1710.1369	1754.8717	14.3	0.008	Yes
Extreme (10°C)		1710.1369	1754.8717	10.2	0.006	Yes
Extreme (0°C)		1710.1369	1754.8717	8.4	0.005	Yes
Extreme (-10°C)		1710.1369	1754.8717	4.3	0.002	Yes
Extreme (-20°C)		1710.1369	1754.8717	-7.4	-0.004	Yes
Extreme (-30°C)		1710.1369	1754.8717	-11.5	-0.007	Yes
20°C	15%	1710.1369	1754.8717	8.7	0.005	Yes
	-15%	1710.1369	1754.8717	8.2	0.005	Yes
	End Point Voltage	1710.1369	1754.8717	5.4	0.003	Yes

9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

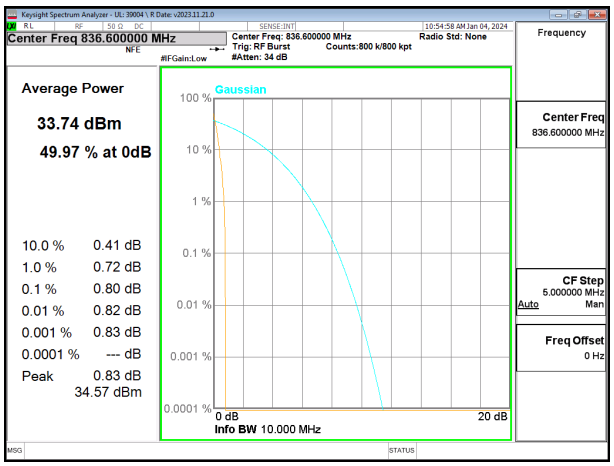
In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

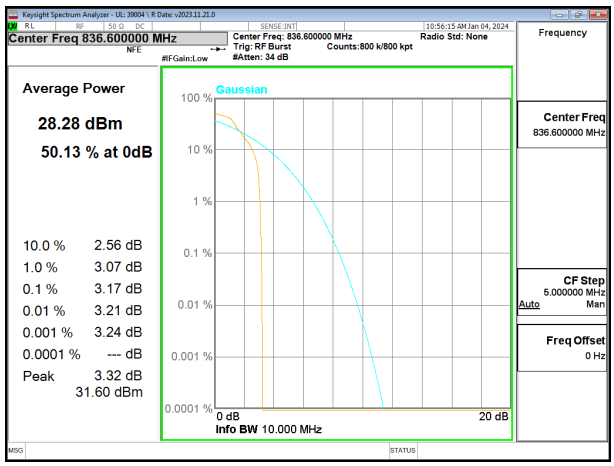
Ant 1 was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

Test Engineer ID:	39004	Test Date:	2023-12-12

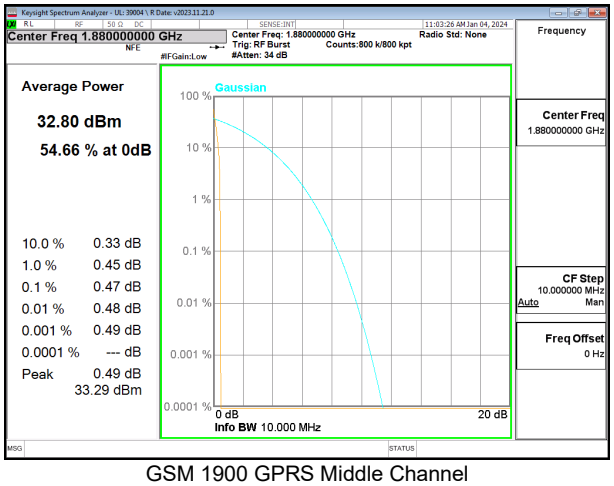
9.5.1. GSM



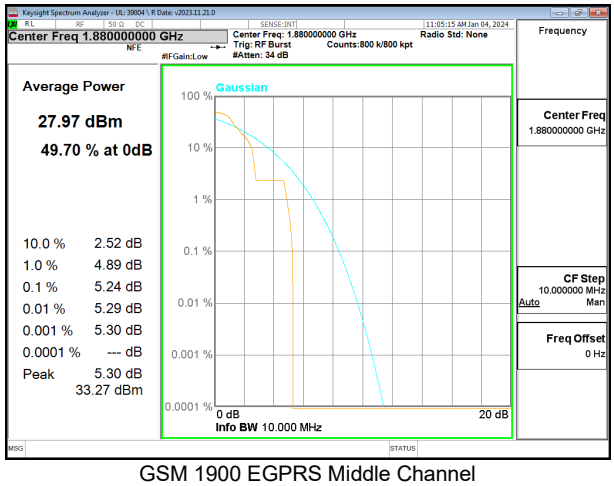
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel

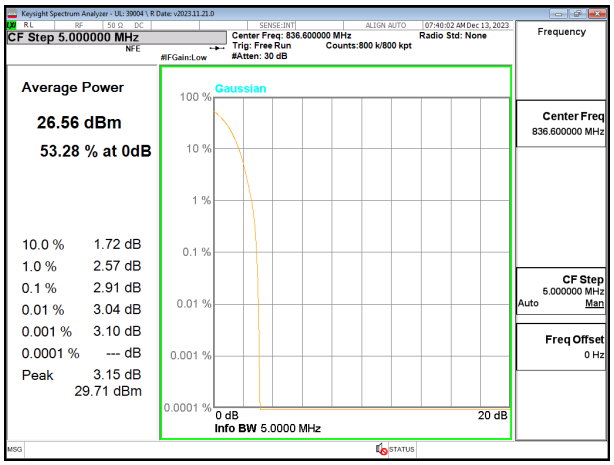


GSM 1900 GPRS Middle Channel

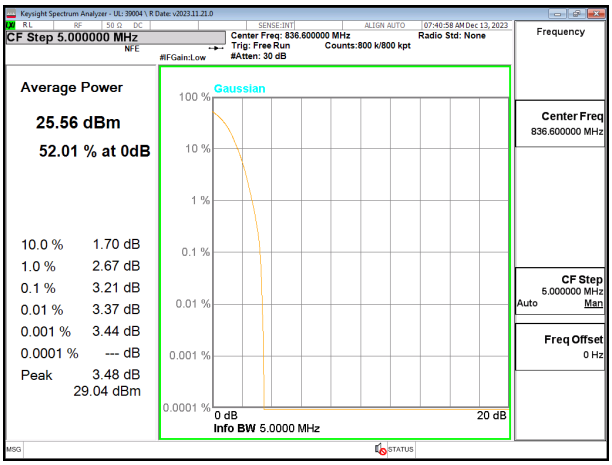


GSM 1900 EGPRS Middle Channel

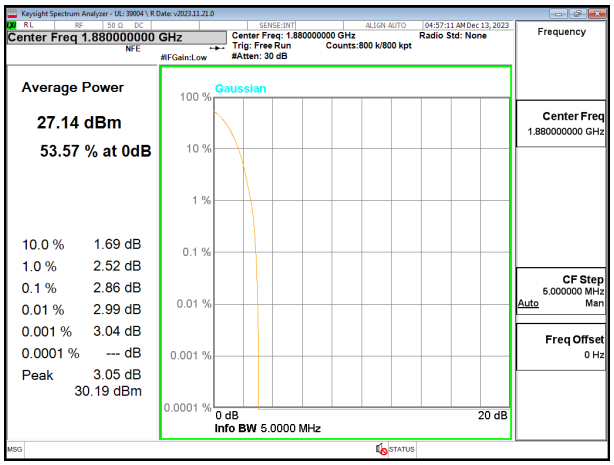
9.5.2. WCDMA



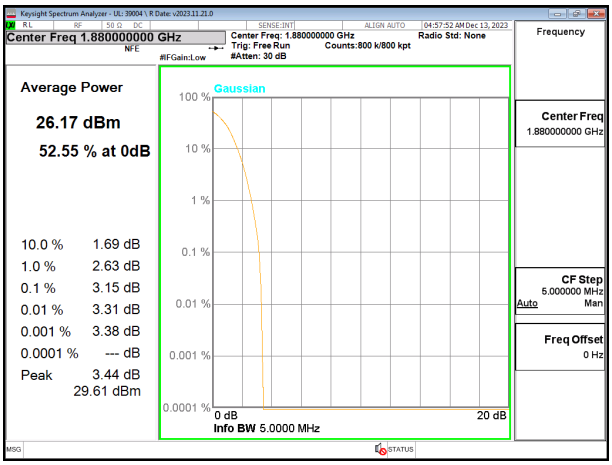
WCDMA Band 5 Rel 99 Middle Channel



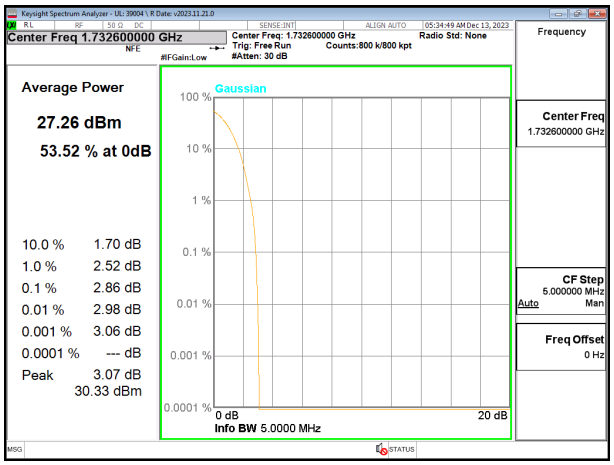
WCDMA Band 5 HSDPA Middle Channel



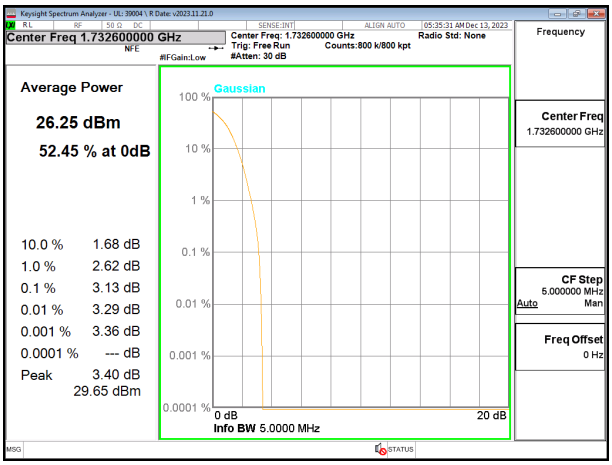
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel



WCDMA Band 4 Rel 99 Middle Channel



WCDMA Band 4 HSDPA Middle Channel

10. RADIATED TEST RESULTS

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, We measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement method.

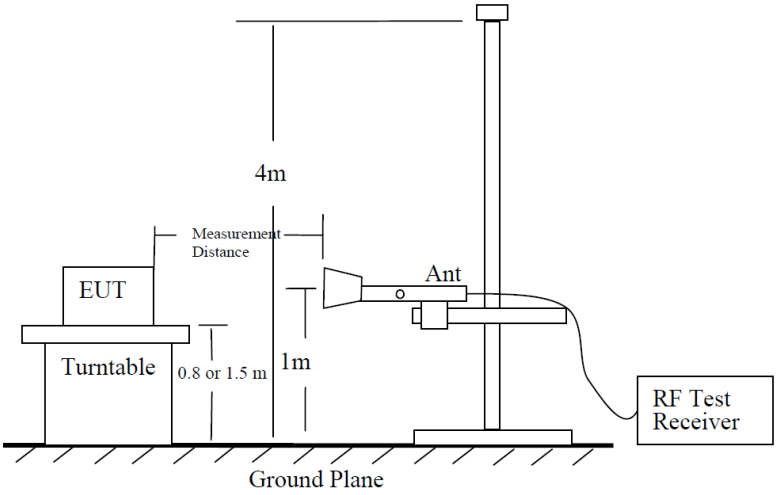


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Radiated Power Measurement Calculation According to ANSI C63.26-2015

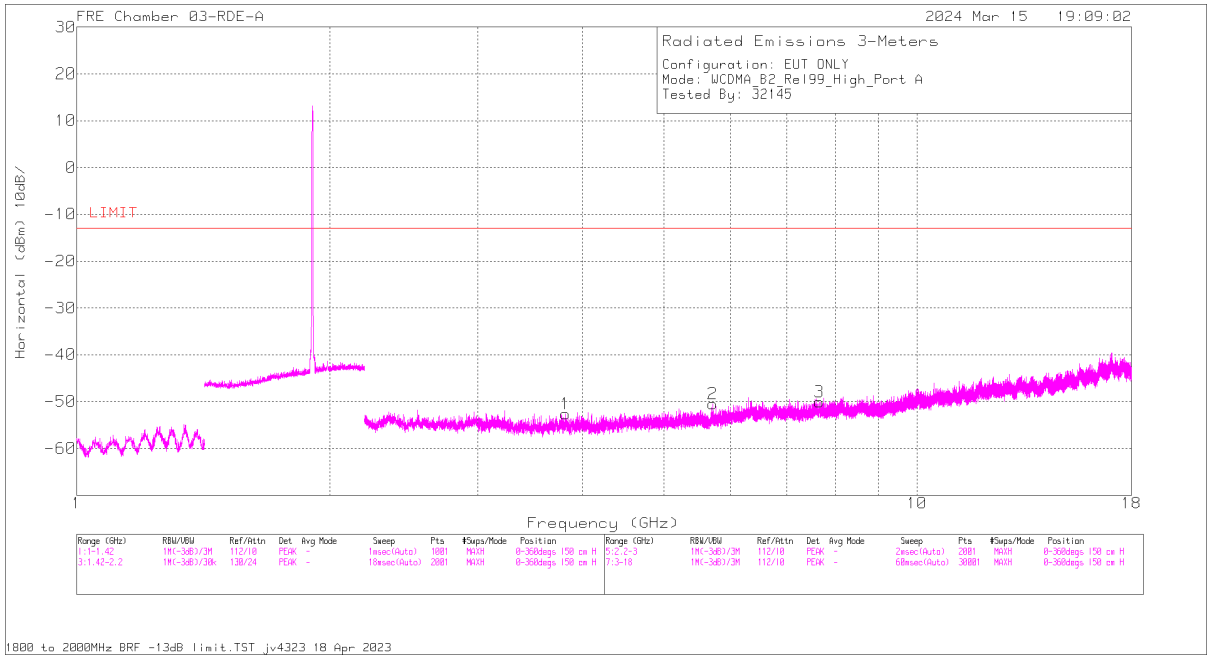
a) E (dBμV/m) = Measured amplitude level (dBμV) + Cable Loss (dB) + Antenna Factor (dB/m).
b) E (dBμV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).
c) E (dBμV/m) = EIRP (dBm) − 20log(D) + 104.8; where D is the measurement distance (in the far field region) in m.
d) EIRP (dBm) = E (dBμV/m) + 20log(D) − 104.8; where D is the measurement distance (in the far field region) in m.

So, from d)
The measuring distance is usually at 3m, then 20*Log(3)=9.5424

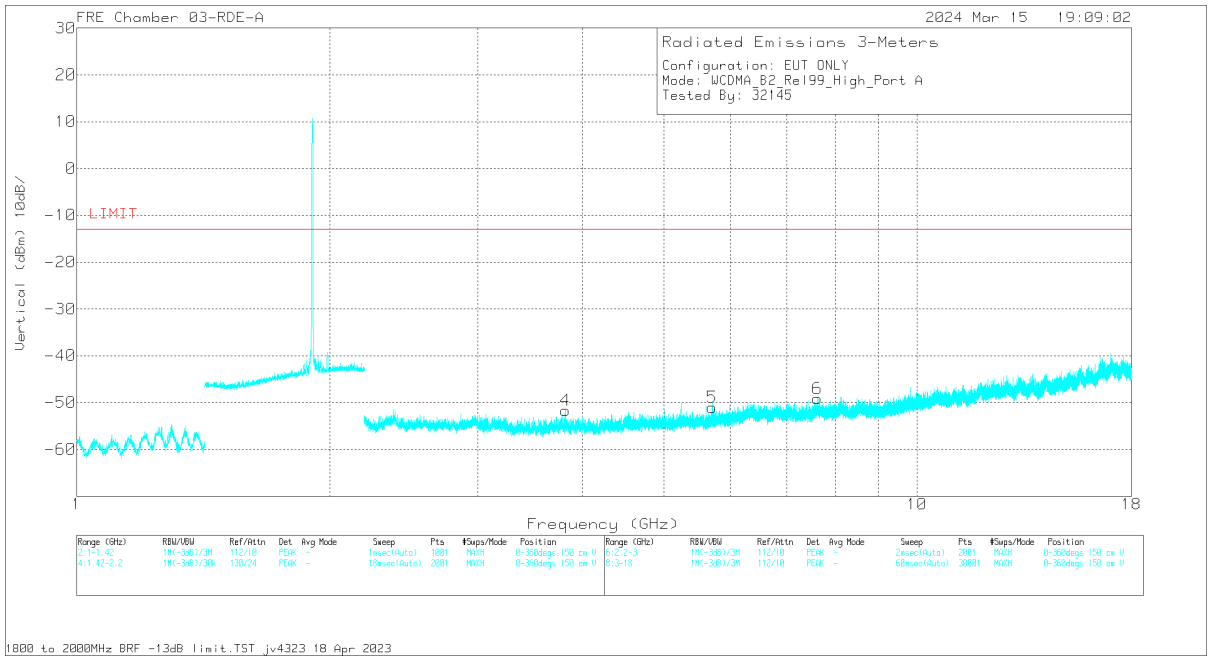
Then, EIRP (dBm) = E (dBμV/m) + 9.5424 − 104.8 = E (dBμV/m) – 95.2576

Note: Confidence check of each chamber is performed daily to see if any degradation from expected/normal reading reference data. Ambient check of each chamber is performed monthly.

Example Plot



Horizontal Polarity



Vertical Polarity

Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	Horn Antenna ACF(dB)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
3.816500	55.98	Pk	33.3	-95.2	-46.66	-52.58	-13	-39.58	H
3.817000	56.85	Pk	33.3	-95.2	-46.68	-51.73	-13	-38.73	V
5.713500	56.73	Pk	34.5	-95.2	-46.50	-50.47	-13	-37.47	H
5.704000	56.16	Pk	34.5	-95.2	-46.50	-51.04	-13	-38.04	V
7.646500	54.19	Pk	35.7	-95.2	-44.80	-50.11	-13	-37.11	H
7.617000	55.13	Pk	35.7	-95.2	-44.75	-49.12	-13	-36.12	V

10.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT1

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §27.53
ISED: RSS132§5.5; RSS133§6.5 and RSS139§5.6

LIMIT

FCC: §22.917(a), §24.238(a), §27.53 (h)
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.

RSS132§5.5
Equipment shall meet the unwanted emission limits specified below:

(i) 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 below the transmitter output power P (dBW) by at least 43 + 10 log(p) dB.

(ii) 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 below the transmitter output power P (dBW) by at least 43 + 10 log(p) dB. If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

p is the output power specified in watts.

RSS133§6.5.1
Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p(watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS139§5.6
Unwanted emissions shall be measured in terms of average values.
For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Table 6: Unwanted emission limits

Offset from the edge of the frequency block or frequency block group	Unwanted emission limits
≤1 MHz	-13 dBm/(1% of B*)
>1 MHz	-13 dBm/MHz

*B is the frequency block or frequency block group.

TEST PROCEDURE

KDB 971168 D01

RESULTS

10.1.1. GSM 850

GPRS MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	12491
Configuration;	EUT Only
Mode:	GPRS 850
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.648450	70.24	Pk	28.7	-95.2	-49.63	-45.89	-13	-32.89	H
1.648000	73.03	Pk	28.7	-95.2	-49.64	-43.11	-13	-30.11	V
2.472400	62.22	Pk	32.1	-95.2	-49.22	-50.10	-13	-37.10	H
2.471950	60.60	Pk	32.1	-95.2	-49.24	-51.74	-13	-38.74	V
3.295900	52.94	Pk	32.7	-95.2	-46.62	-56.18	-13	-43.18	H
3.295900	52.93	Pk	32.7	-95.2	-46.62	-56.19	-13	-43.19	V
Mid Channel, 836.6 MHz									
1.672750	69.64	Pk	29	-95.2	-49.46	-46.02	-13	-33.02	H
1.673200	73.10	Pk	29	-95.2	-49.47	-42.57	-13	-29.57	V
2.509750	63.52	Pk	32.2	-95.2	-48.67	-48.15	-13	-35.15	H
2.509300	63.91	Pk	32.2	-95.2	-48.7	-47.79	-13	-34.79	V
3.390850	57.60	Pk	32.6	-95.2	-47.07	-52.07	-13	-39.07	H
3.390400	54.32	Pk	32.6	-95.2	-47.04	-55.32	-13	-42.32	V
High Channel, 848.8 MHz									
1.697500	61.56	Pk	29.3	-95.2	-49.53	-53.87	-13	-40.87	H
1.697500	69.23	Pk	29.3	-95.2	-49.53	-46.2	-13	-33.20	V
2.546650	65.52	Pk	32.2	-95.2	-48.53	-46.01	-13	-33.01	H
2.546200	66.22	Pk	32.2	-95.2	-48.56	-45.34	-13	-32.34	V
3.236050	54.27	Pk	32.7	-95.2	-46.38	-54.61	-13	-41.61	H
3.235600	56.92	Pk	32.7	-95.2	-46.40	-51.98	-13	-38.98	V

EGPRS MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	12491
Configuration;	EUT Only
Mode:	EGPRS 850
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
3.688750	55.38	Pk	33	-95.2	-47.06	-53.88	-13	-40.88	H
3.689200	58.4	Pk	33	-95.2	-47.07	-50.87	-13	-37.87	V
1.648000	69.9	Pk	28.7	-95.2	-49.64	-46.24	-13	-33.24	H
1.648450	72.82	Pk	28.7	-95.2	-49.63	-43.31	-13	-30.31	V
2.472400	61.09	Pk	32.1	-95.2	-49.22	-51.23	-13	-38.23	H
2.472850	64.47	Pk	32.1	-95.2	-49.20	-47.83	-13	-34.83	V
Mid Channel, 836.6 MHz									
1.672750	69.88	Pk	29	-95.2	-49.46	-45.78	-13	-32.78	H
1.673200	71.41	Pk	29	-95.2	-49.47	-44.26	-13	-31.26	V
2.509300	63.76	Pk	32.2	-95.2	-48.70	-47.94	-13	-34.94	H
2.509750	64.1	Pk	32.2	-95.2	-48.67	-47.57	-13	-34.57	V
3.445750	53.53	Pk	32.7	-95.2	-46.63	-55.60	-13	-42.60	H
3.448900	54.62	Pk	32.7	-95.2	-46.78	-54.66	-13	-41.66	V
High Channel, 848.8 MHz									
1.697500	59.95	Pk	29.3	-95.2	-49.53	-55.48	-13	-42.48	H
1.697950	70.27	Pk	29.3	-95.2	-49.54	-45.17	-13	-32.17	V
2.546200	65.47	Pk	32.2	-95.2	-48.56	-46.09	-13	-33.09	H
2.546650	64.33	Pk	32.2	-95.2	-48.53	-47.20	-13	-34.20	V
3.419200	54.56	Pk	32.7	-95.2	-47.06	-55.00	-13	-42.0	H
3.419650	52.73	Pk	32.7	-95.2	-47.09	-56.86	-13	-43.86	V

10.1.2. GSM 1900

GPRS MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	12491
Configuration;	EUT Only
Mode:	GPRS 1900

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.662000	56.95	Pk	33	-95.2	-47.05	-52.30	-13	-39.30	H
3.663500	53.81	Pk	33	-95.2	-47.07	-55.46	-13	-42.46	V
7.387500	55.85	Pk	35.6	-95.2	-45.66	-49.41	-13	-36.41	H
7.389500	54.93	Pk	35.6	-95.2	-45.68	-50.35	-13	-37.35	V
5.550500	57.38	Pk	34.4	-95.2	-46.96	-50.38	-13	-37.38	H
5.550500	61.47	Pk	34.4	-95.2	-46.96	-46.29	-13	-33.29	V
Mid Channel, 1880MHz									
3.760000	53.88	Pk	33.2	-95.2	-47.00	-55.12	-13	-42.12	H
3.760500	54.65	Pk	33.2	-95.2	-46.97	-54.32	-13	-41.32	V
7.519500	52.03	Pk	35.7	-95.2	-45.48	-52.95	-13	-39.95	H
7.520000	51.51	Pk	35.7	-95.2	-45.45	-53.44	-13	-40.44	V
5.640000	55.88	Pk	34.4	-95.2	-46.73	-51.65	-13	-38.65	H
5.639500	60.29	Pk	34.4	-95.2	-46.71	-47.22	-13	-34.22	V
High Channel, 1909.8MHz									
3.727500	58.07	Pk	33.1	-95.2	-47.12	-51.15	-13	-38.15	H
3.898000	56.94	Pk	33.3	-95.2	-46.88	-51.84	-13	-38.84	V
7.638500	51.69	Pk	35.7	-95.2	-44.82	-52.63	-13	-39.63	H
7.638500	53.33	Pk	35.7	-95.2	-44.82	-50.99	-13	-37.99	V
5.728500	53.53	Pk	34.5	-95.2	-46.46	-53.63	-13	-40.63	H
5.728500	57.47	Pk	34.5	-95.2	-46.46	-49.69	-13	-36.69	V

EGPRS MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	12491
Configuration;	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.773500	54.35	Pk	33.2	-95.2	-46.87	-54.52	-13	-41.52	H
3.774000	54.68	Pk	33.2	-95.2	-46.90	-54.22	-13	-41.22	V
7.405500	54.96	Pk	35.6	-95.2	-45.57	-50.21	-13	-37.21	H
7.405500	52.35	Pk	35.6	-95.2	-45.57	-52.82	-13	-39.82	V
5.550500	56.66	Pk	34.4	-95.2	-46.96	-51.10	-13	-38.10	H
5.550000	55.98	Pk	34.4	-95.2	-46.93	-51.75	-13	-38.75	V
Mid Channel, 1880MHz									
3.732000	53.89	Pk	33.1	-95.2	-47.22	-55.43	-13	-42.43	H
3.732500	55.41	Pk	33.1	-95.2	-47.18	-53.87	-13	-40.87	V
7.561000	51.93	Pk	35.7	-95.2	-44.95	-52.52	-13	-39.52	H
7.560500	55.96	Pk	35.7	-95.2	-44.94	-48.48	-13	-35.48	V
5.640000	56.38	Pk	34.4	-95.2	-46.73	-51.15	-13	-38.15	H
5.640000	58.43	Pk	34.4	-95.2	-46.73	-49.10	-13	-36.10	V
High Channel, 1909.8MHz									
3.819500	55.16	Pk	33.3	-95.2	-46.87	-53.61	-13	-40.61	H
3.820000	55.03	Pk	33.3	-95.2	-46.91	-53.78	-13	-40.78	V
5.728500	53.79	Pk	34.5	-95.2	-46.46	-53.37	-13	-40.37	H
5.729000	53.54	Pk	34.5	-95.2	-46.45	-53.61	-13	-40.61	V
7.639500	52.54	Pk	35.7	-95.2	-44.79	-51.75	-13	-38.75	H
7.640500	53.36	Pk	35.7	-95.2	-44.78	-50.92	-13	-37.92	V

10.1.3. WCDMA BAND 5

REL 99 MODE

Project #:	14982436
Date:	2024-03-15
Test Engineer:	32894
Configuration;	EUT Only
Mode:	REL 99 Band 5
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.647550	56.76	Pk	28.2	-95.2	-49.66	-59.90	-13	-46.90	H
1.647550	55.52	Pk	28.2	-95.2	-49.66	-61.14	-13	-48.14	V
2.471950	55.95	Pk	32.3	-95.2	-49.90	-56.85	-13	-43.85	H
2.471950	57.45	Pk	32.3	-95.2	-49.90	-55.35	-13	-42.35	V
3.295450	54.98	Pk	33.0	-95.2	-48.20	-55.42	-13	-42.42	H
3.295450	57.21	Pk	33.0	-95.2	-48.20	-53.19	-13	-40.19	V
Mid Channel, 836.6MHz									
1.647550	57.37	Pk	28.2	-95.2	-49.66	-59.29	-13	-46.29	H
1.647550	56.01	Pk	28.2	-95.2	-49.66	-60.65	-13	-47.65	V
2.471950	57.94	Pk	32.3	-95.2	-49.90	-54.86	-13	-41.86	H
2.471950	56.64	Pk	32.3	-95.2	-49.90	-56.16	-13	-43.16	V
3.295450	54.45	Pk	33.0	-95.2	-48.20	-55.95	-13	-42.95	H
3.295450	55.60	Pk	33.0	-95.2	-48.20	-54.80	-13	-41.80	V
High Channel, 846.6MHz									
1.688050	57.88	Pk	28.7	-95.2	-49.70	-58.32	-13	-45.32	H
1.688050	56.73	Pk	28.7	-95.2	-49.70	-59.47	-13	-46.47	V
2.532700	58.11	Pk	32.3	-95.2	-50.17	-54.96	-13	-41.96	H
2.532700	57.74	Pk	32.3	-95.2	-50.17	-55.33	-13	-42.33	V
3.376450	55.10	Pk	33.1	-95.2	-47.6	-54.60	-13	-41.60	H
3.376450	53.28	Pk	33.1	-95.2	-47.6	-56.42	-13	-43.42	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-15
Test Engineer:	32894
Configuration;	EUT Only
Mode:	HSDPA Band 5
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.648000	55.85	Pk	28.3	-95.2	-49.7	-60.75	-13	-47.75	H
1.648000	56.12	Pk	28.3	-95.2	-49.7	-60.48	-13	-47.48	V
2.471950	55.94	Pk	32.3	-95.2	-49.9	-56.86	-13	-43.86	H
2.471950	57.19	Pk	32.3	-95.2	-49.9	-55.61	-13	-42.61	V
3.295450	56.06	Pk	33.0	-95.2	-48.2	-54.34	-13	-41.34	H
3.295450	54.69	Pk	33.0	-95.2	-48.2	-55.71	-13	-42.71	V
Mid Channel, 836.6MHz									
1.668250	57.16	Pk	28.5	-95.2	-49.70	-59.24	-13	-46.24	H
1.668250	57.60	Pk	28.5	-95.2	-49.70	-58.80	-13	-45.80	V
3.336400	54.83	Pk	33.1	-95.2	-47.86	-55.13	-13	-42.13	H
3.336400	54.48	Pk	33.1	-95.2	-47.86	-55.48	-13	-42.48	V
2.502550	56.16	Pk	32.2	-95.2	-50.00	-56.84	-13	-43.84	H
2.502550	56.14	Pk	32.2	-95.2	-50.00	-56.86	-13	-43.86	V
High Channel, 846.6MHz									
1.688050	56.55	Pk	28.7	-95.2	-49.70	-59.65	-13	-46.65	H
1.688050	56.73	Pk	28.7	-95.2	-49.70	-59.47	-13	-46.47	V
2.532700	59.74	Pk	32.3	-95.2	-50.17	-53.33	-13	-40.33	H
2.532700	56.83	Pk	32.3	-95.2	-50.17	-56.24	-13	-43.24	V
3.376450	55.31	Pk	33.1	-95.2	-47.60	-54.39	-13	-41.39	H
3.376450	54.43	Pk	33.1	-95.2	-47.60	-55.27	-13	-42.27	V

10.1.4. WCDMA BAND 2

REL 99 MODE

Project #:	14982436
Date:	2024-03-15
Test Engineer:	32145
Configuration;	EUT Only
Mode:	REL 99 Band 2
Chamber #:	03-RDE-A

Frequency	Meter	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected	LIMIT	Margin	Polarity
(GHz)	Reading					Reading		(dB)	
	(dBuV)					(dBm)			
Low Channel, 1852.4MHz									
3.770000	55.56	Pk	33.2	-95.2	-46.75	-53.19	-13	-40.19	H
3.706000	59.75	Pk	33	-95.2	-47.10	-49.55	-13	-36.55	V
5.554000	57.95	Pk	34.4	-95.2	-47.00	-49.85	-13	-36.85	H
5.560500	63.49	Pk	34.3	-95.2	-46.96	-44.37	-13	-31.37	V
7.432000	54.81	Pk	35.6	-95.2	-45.73	-50.52	-13	-37.52	H
7.420500	55.35	Pk	35.6	-95.2	-45.64	-49.89	-13	-36.89	V
Mid Channel, 1880MHz									
3.762000	58.05	Pk	33.2	-95.2	-46.89	-50.84	-13	-37.84	H
3.758500	60.09	Pk	33.2	-95.2	-47.11	-49.02	-13	-36.02	V
5.643500	56.16	Pk	34.4	-95.2	-46.83	-51.47	-13	-38.47	H
5.636000	59.2	Pk	34.4	-95.2	-46.77	-48.37	-13	-35.37	V
7.518000	54.54	Pk	35.7	-95.2	-45.54	-50.5	-13	-37.50	H
7.562500	54.07	Pk	35.7	-95.2	-44.91	-50.34	-13	-37.34	V
High Channel, 1907.6MHz									
3.816500	55.98	Pk	33.3	-95.2	-46.66	-52.58	-13	-39.58	H
3.817000	56.85	Pk	33.3	-95.2	-46.68	-51.73	-13	-38.73	V
5.713500	56.73	Pk	34.5	-95.2	-46.50	-50.47	-13	-37.47	H
5.704000	56.16	Pk	34.5	-95.2	-46.50	-51.04	-13	-38.04	V
7.646500	54.19	Pk	35.7	-95.2	-44.80	-50.11	-13	-37.11	H
7.617000	55.13	Pk	35.7	-95.2	-44.75	-49.12	-13	-36.12	V

HSDPA MODE

Project #:	14982436
Date:	2024-04-04
Test Engineer:	104996
Configuration;	EUT Only
Mode:	HSDPA Band 2

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.704000	53.74	Pk	33.5	-95.2	-47.2	-55.16	-13	-42.16	H
3.703500	55.57	Pk	33.5	-95.2	-47.25	-53.38	-13	-40.38	V
5.561000	62.25	Pk	34.4	-95.2	-48.7	-47.25	-13	-34.25	H
5.560500	65.35	Pk	34.4	-95.2	-48.7	-44.15	-13	-31.15	V
7.410000	54.32	Pk	35.9	-95.2	-47.8	-52.78	-13	-39.78	H
7.410000	55.27	Pk	35.9	-95.2	-47.8	-51.83	-13	-38.83	V
Mid Channel, 1880MHz									
3.761000	54.33	Pk	33.6	-95.2	-47.8	-55.07	-13	-42.07	H
3.761500	57.03	Pk	33.6	-95.2	-47.8	-52.37	-13	-39.37	V
5.636500	58.44	Pk	34.4	-95.2	-48.4	-50.76	-13	-37.76	H
5.642500	63.46	Pk	34.4	-95.2	-48.4	-45.74	-13	-32.74	V
7.521000	55.05	Pk	36	-95.2	-48.1	-52.25	-13	-39.25	H
7.522000	54.37	Pk	36	-95.2	-48	-52.83	-13	-39.83	V
High Channel, 1907.6MHz									
3.816500	56.54	Pk	33.6	-95.2	-47.9	-52.96	-13	-39.96	H
3.816500	58.4	Pk	33.6	-95.2	-47.9	-51.10	-13	-38.10	V
5.719500	57.5	Pk	34.5	-95.2	-48	-51.20	-13	-38.20	H
5.719000	60.66	Pk	34.5	-95.2	-48	-48.04	-13	-35.04	V
7.631000	55	Pk	35.9	-95.2	-47.3	-51.60	-13	-38.60	H
7.630000	55.46	Pk	35.9	-95.2	-47.4	-51.24	-13	-38.24	V

10.1.5. WCDMA BAND 4

REL 99 MODE

Project #:	14982436
Date:	2024-03-16
Test Engineer:	32145
Configuration;	EUT Only
Mode:	REL 99 Band 4

Frequency	Meter	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected	LIMIT	Margin	Polarity
(GHz)	Reading					Reading		(dB)	
	(dBuV)					(dBm)			
Low Channel, 1712.4MHz									
3.427000	55.91	Pk	32.7	-95.2	-46.59	-53.18	-13	-40.18	H
3.408000	55.47	Pk	32.6	-95.2	-46.69	-53.82	-13	-40.82	V
5.140000	55.78	Pk	34.1	-95.2	-47.54	-52.86	-13	-39.86	H
5.148500	55.69	Pk	34.1	-95.2	-47.53	-52.94	-13	-39.94	V
6.854000	54.23	Pk	35.6	-95.2	-45.00	-50.37	-13	-37.37	H
6.870000	54.16	Pk	35.6	-95.2	-45.20	-50.64	-13	-37.64	V
Mid Channel, 1732.6MHz									
3.475500	55.86	Pk	32.7	-95.2	-46.79	-53.43	-13	-40.43	H
3.488000	55.54	Pk	32.7	-95.2	-46.74	-53.70	-13	-40.70	V
5.193000	56.87	Pk	34.1	-95.2	-47.57	-51.80	-13	-38.80	H
5.167000	56.33	Pk	34.1	-95.2	-47.42	-52.19	-13	-39.19	V
6.969000	55.48	Pk	35.7	-95.2	-45.94	-49.96	-13	-36.96	H
6.978000	54.41	Pk	35.7	-95.2	-45.88	-50.97	-13	-37.97	V
High Channel, 1752.6MHz									
3.502500	55.47	Pk	32.8	-95.2	-46.69	-53.62	-13	-40.62	H
3.498500	55.74	Pk	32.8	-95.2	-46.56	-53.22	-13	-40.22	V
5.254000	63.27	Pk	34.3	-95.2	-47.63	-45.26	-13	-32.26	H
5.254500	61.87	Pk	34.3	-95.2	-47.64	-46.67	-13	-33.67	V
7.028000	54.76	Pk	35.6	-95.2	-45.16	-50.00	-13	-37.00	H
6.998000	54.33	Pk	35.7	-95.2	-45.69	-50.86	-13	-37.86	V

HSDPA MODE

Project #:	14982436
Date:	2024-04-08
Test Engineer:	104996
Configuration;	EUT Only
Mode:	HSDPA Band 4
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.424500	54.69	Pk	33.2	-95.2	-47.7	-55.01	-13	-42.01	H
3.424500	53.47	Pk	33.2	-95.2	-47.7	-56.23	-13	-43.23	V
5.254000	67.19	Pk	34.4	-95.2	-49.1	-42.71	-13	-29.71	H
5.254000	65.91	Pk	34.4	-95.2	-49.1	-43.99	-13	-30.99	V
6.849000	52.84	Pk	35.7	-95.2	-47.4	-54.06	-13	-41.06	H
6.849500	53.84	Pk	35.7	-95.2	-47.4	-53.06	-13	-40.06	V
Mid Channel, 1732.6MHz									
3.466000	54.95	Pk	33.2	-95.2	-47.4	-54.45	-13	-41.45	H
3.466000	54.56	Pk	33.2	-95.2	-47.4	-54.84	-13	-41.84	V
5.197000	54.45	Pk	34.4	-95.2	-49.3	-55.65	-13	-42.65	H
5.197000	56.75	Pk	34.4	-95.2	-49.3	-53.35	-13	-40.35	V
6.930500	53.50	Pk	35.7	-95.2	-46.9	-52.90	-13	-39.90	H
6.930000	54.14	Pk	35.7	-95.2	-46.9	-52.26	-13	-39.26	V
High Channel, 1752.6MHz									
3.505500	53.06	Pk	33.2	-95.2	-47.05	-55.99	-13	-42.99	H
3.505500	53.86	Pk	33.2	-95.2	-47.05	-55.19	-13	-42.19	V
5.257500	55.87	Pk	34.4	-95.2	-49.2	-54.13	-13	-41.13	H
5.258000	56.70	Pk	34.4	-95.2	-49.2	-53.30	-13	-40.30	V
7.011000	53.71	Pk	35.8	-95.2	-47.3	-52.99	-13	-39.99	H
7.011000	54.74	Pk	35.8	-95.2	-47.3	-51.96	-13	-38.96	V

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT2

10.2.1. GSM 850

GPRS MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	12491
Configuration;	EUT Only
Mode:	GPRS 850
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.643950	57.72	Pk	28.6	-95.2	-49.49	-58.37	-13	-45.37	H
1.644400	56.6	Pk	28.6	-95.2	-49.48	-59.48	-13	-46.48	V
2.471500	56.39	Pk	32.1	-95.2	-49.22	-55.93	-13	-42.93	H
2.471500	56.86	Pk	32.1	-95.2	-49.22	-55.46	-13	-42.46	V
3.288250	54.92	Pk	32.7	-95.2	-46.45	-54.03	-13	-41.03	V
3.290950	53.38	Pk	32.7	-95.2	-46.39	-55.51	-13	-42.51	H
Mid Channel, 836.6 MHz									
1.673200	67.66	Pk	29	-95.2	-49.47	-48.01	-13	-35.01	H
1.672750	72.09	Pk	29	-95.2	-49.46	-43.57	-13	-30.57	V
1.763200	58.94	Pk	29.9	-95.2	-49.68	-56.04	-13	-43.04	H
1.763200	68.05	Pk	29.9	-95.2	-49.68	-46.93	-13	-33.93	V
2.509300	67.87	Pk	32.2	-95.2	-48.7	-43.83	-13	-30.83	H
2.509750	65.91	Pk	32.2	-95.2	-48.67	-45.76	-13	-32.76	V
High Channel, 848.8 MHz									
1.696600	59.28	Pk	29.3	-95.2	-49.52	-56.14	-13	-43.14	H
1.697050	64	Pk	29.3	-95.2	-49.51	-51.41	-13	-38.41	V
2.546200	65.82	Pk	32.2	-95.2	-48.56	-45.74	-13	-32.74	H
2.546200	63.5	Pk	32.2	-95.2	-48.56	-48.06	-13	-35.06	V
3.287800	53.45	Pk	32.7	-95.2	-46.48	-55.53	-13	-42.53	H
3.287800	53.9	Pk	32.7	-95.2	-46.48	-55.08	-13	-42.08	V

EGPRS MODE

Project #:	14982436
Date:	2024-03-20
Test Engineer:	12491
Configuration;	EUT Only
Mode:	EGPRS 850
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.648450	69.39	Pk	28.7	-95.2	-49.63	-46.74	-13	-33.74	H
1.648000	74.86	Pk	28.7	-95.2	-49.64	-41.28	-13	-28.28	V
2.471500	63.11	Pk	32.1	-95.2	-49.22	-49.21	-13	-36.21	H
2.472850	69.75	Pk	32.1	-95.2	-49.20	-42.55	-13	-29.55	V
3.291850	52.54	Pk	32.7	-95.2	-46.45	-56.41	-13	-43.41	H
3.291850	53.93	Pk	32.7	-95.2	-46.45	-55.02	-13	-42.02	V
Mid Channel, 836.6 MHz									
1.672750	71.03	Pk	29	-95.2	-49.46	-44.63	-13	-31.63	H
1.673200	73.23	Pk	29	-95.2	-49.47	-42.44	-13	-29.44	V
2.509750	67.11	Pk	32.2	-95.2	-48.67	-44.56	-13	-31.56	H
2.509750	71.27	Pk	32.2	-95.2	-48.67	-40.40	-13	-27.40	V
3.346750	53.92	Pk	32.6	-95.2	-47.00	-55.68	-13	-42.68	H
3.346750	54.94	Pk	32.6	-95.2	-47.00	-54.66	-13	-41.66	V
High Channel, 848.8 MHz									
1.697050	59.34	Pk	29.3	-95.2	-49.51	-56.07	-13	-43.07	H
1.697500	66.79	Pk	29.3	-95.2	-49.53	-48.64	-13	-35.64	V
2.545750	65.83	Pk	32.2	-95.2	-48.59	-45.76	-13	-32.76	H
2.546200	70.38	Pk	32.2	-95.2	-48.56	-41.18	-13	-28.18	V
3.395350	54.22	Pk	32.6	-95.2	-47.28	-55.66	-13	-42.66	H
3.395125	54.5	Pk	32.6	-95.2	-47.29	-55.39	-13	-42.39	V

10.2.2. GSM 1900

GPRS MODE

Project #:	14982436
Date:	2024-03-20
Test Engineer:	12491
Configuration;	EUT Only
Mode:	GPRS 1900

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.703000	54.17	Pk	33.0	-95.2	-47.29	-55.32	-13	-42.32	H
3.703000	56.13	Pk	33.0	-95.2	-47.29	-53.36	-13	-40.36	V
5.504000	53.66	Pk	34.4	-95.2	-47.07	-54.21	-13	-41.21	H
5.504000	53.65	Pk	34.4	-95.2	-47.07	-54.22	-13	-41.22	V
7.401500	52	Pk	35.6	-95.2	-45.72	-53.32	-13	-40.32	H
7.401500	50.77	Pk	35.6	-95.2	-45.72	-54.55	-13	-41.55	V
Mid Channel, 1880MHz									
3.757500	54.67	Pk	33.2	-95.2	-47.12	-54.45	-13	-41.45	H
3.757500	52.45	Pk	33.2	-95.2	-47.12	-56.67	-13	-43.67	V
5.639500	52.45	Pk	34.4	-95.2	-46.71	-55.06	-13	-42.06	H
5.639500	52.82	Pk	34.4	-95.2	-46.71	-54.69	-13	-41.69	V
7.519000	52.85	Pk	35.7	-95.2	-45.51	-52.16	-13	-39.16	H
7.519000	52.88	Pk	35.7	-95.2	-45.51	-52.13	-13	-39.13	V
High Channel, 1909.8MHz									
3.819000	53.62	Pk	33.3	-95.2	-46.83	-55.11	-13	-42.11	H
3.819000	52.77	Pk	33.3	-95.2	-46.83	-55.96	-13	-42.96	V
7.638500	52.78	Pk	35.7	-95.2	-44.82	-51.54	-13	-38.54	H
7.638500	51.55	Pk	35.7	-95.2	-44.82	-52.77	-13	-39.77	V
5.730000	52.19	Pk	34.5	-95.2	-46.47	-54.98	-13	-41.98	H
5.730000	53.33	Pk	34.5	-95.2	-46.47	-53.84	-13	-40.84	V

EGPRS MODE

Project #:	14982436
Date:	2024-03-20
Test Engineer:	12491
Configuration;	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.707000	53.16	Pk	33.0	-95.2	-47.05	-56.09	-13	-43.09	H
3.707000	53.1	Pk	33.0	-95.2	-47.05	-56.15	-13	-43.15	V
5.549000	53.3	Pk	34.4	-95.2	-46.90	-54.40	-13	-41.40	H
5.549000	53.24	Pk	34.4	-95.2	-46.90	-54.46	-13	-41.46	V
7.401500	52.26	Pk	35.6	-95.2	-45.72	-53.06	-13	-40.06	H
7.401500	52.33	Pk	35.6	-95.2	-45.72	-52.99	-13	-39.99	V
Mid Channel, 1880MHz									
3.699000	53.85	Pk	33.0	-95.2	-47.05	-55.40	-13	-42.40	H
3.699000	53.37	Pk	33.0	-95.2	-47.05	-55.88	-13	-42.88	V
5.636500	52.48	Pk	34.4	-95.2	-46.75	-55.07	-13	-42.07	H
5.636500	52.65	Pk	34.4	-95.2	-46.75	-54.90	-13	-41.90	V
7.520000	52.85	Pk	35.7	-95.2	-45.45	-52.10	-13	-39.10	H
7.520000	53.01	Pk	35.7	-95.2	-45.45	-51.94	-13	-38.94	V
High Channel, 1909.8MHz									
3.819500	54.07	Pk	33.3	-95.2	-46.87	-54.70	-13	-41.70	H
3.819500	53.02	Pk	33.3	-95.2	-46.87	-55.75	-13	-42.75	V
5.727000	52.74	Pk	34.5	-95.2	-46.49	-54.45	-13	-41.45	H
5.727000	52.95	Pk	34.5	-95.2	-46.49	-54.24	-13	-41.24	V
7.636000	51.8	Pk	35.7	-95.2	-44.87	-52.57	-13	-39.57	H
7.638000	51.87	Pk	35.7	-95.2	-44.84	-52.47	-13	-39.47	V

10.2.3. WCDMA BAND 5

REL 99 MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	32894
Configuration;	EUT Only
Mode:	REL 99 Band 5
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.648000	56.30	Pk	28.3	-95.2	-49.7	-60.30	-13	-47.30	H
1.648000	57.86	Pk	28.3	-95.2	-49.7	-58.74	-13	-45.74	V
2.471950	57.25	Pk	32.3	-95.2	-49.9	-55.55	-13	-42.55	H
2.471950	57.10	Pk	32.3	-95.2	-49.9	-55.70	-13	-42.70	V
3.295450	54.85	Pk	33	-95.2	-48.2	-55.55	-13	-42.55	H
3.295450	55.55	Pk	33	-95.2	-48.2	-54.85	-13	-41.85	V
Mid Channel, 836.6MHz									
1.668250	57.88	Pk	28.5	-95.2	-49.70	-58.52	-13	-45.52	H
1.668250	58.23	Pk	28.5	-95.2	-49.70	-58.17	-13	-45.17	V
2.502550	56.23	Pk	32.2	-95.2	-50.00	-56.77	-13	-43.77	H
2.502550	56.16	Pk	32.2	-95.2	-50.00	-56.84	-13	-43.84	V
3.336400	53.90	Pk	33.1	-95.2	-47.86	-56.06	-13	-43.06	H
3.336400	54.82	Pk	33.1	-95.2	-47.86	-55.14	-13	-42.14	V
High Channel, 846.6MHz									
1.688500	57.11	Pk	28.7	-95.2	-49.70	-59.09	-13	-46.09	H
1.688500	55.88	Pk	28.7	-95.2	-49.70	-60.32	-13	-47.32	V
2.532250	58.42	Pk	32.3	-95.2	-50.13	-54.61	-13	-41.61	H
2.532250	57.30	Pk	32.3	-95.2	-50.13	-55.73	-13	-42.73	V
3.376450	54.10	Pk	33.1	-95.2	-47.60	-55.60	-13	-42.60	H
3.376450	53.84	Pk	33.1	-95.2	-47.60	-55.86	-13	-42.86	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	32894
Configuration;	EUT Only
Mode:	HSDPA Band 5

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.647550	58.03	Pk	28.2	-95.2	-49.66	-58.63	-13	-45.63	H
1.647550	55.99	Pk	28.2	-95.2	-49.66	-60.67	-13	-47.67	V
2.471500	56.48	Pk	32.3	-95.2	-49.90	-56.32	-13	-43.32	H
2.471500	57.72	Pk	32.3	-95.2	-49.90	-55.08	-13	-42.08	V
3.295900	56.45	Pk	33.0	-95.2	-48.20	-53.95	-13	-40.95	H
3.295900	55.93	Pk	33.0	-95.2	-48.20	-54.47	-13	-41.47	V
Mid Channel, 836.6MHz									
1.668250	58.09	Pk	28.5	-95.2	-49.70	-58.31	-13	-45.31	H
1.668250	58.18	Pk	28.5	-95.2	-49.70	-58.22	-13	-45.22	V
2.502550	56.91	Pk	32.2	-95.2	-50.00	-56.09	-13	-43.09	H
2.502550	56.52	Pk	32.2	-95.2	-50.00	-56.48	-13	-43.48	V
3.336400	55.22	Pk	33.1	-95.2	-47.86	-54.74	-13	-41.74	H
3.336400	55.62	Pk	33.1	-95.2	-47.86	-54.34	-13	-41.34	V
High Channel, 846.6MHz									
1.688050	58.04	Pk	28.7	-95.2	-49.70	-58.16	-13	-45.16	H
1.688050	57.97	Pk	28.7	-95.2	-49.70	-58.23	-13	-45.23	V
2.532250	59.24	Pk	32.3	-95.2	-50.13	-53.79	-13	-40.79	H
2.532250	58.59	Pk	32.3	-95.2	-50.13	-54.44	-13	-41.44	V
3.376450	53.46	Pk	33.1	-95.2	-47.60	-56.24	-13	-43.24	H
3.376450	54.18	Pk	33.1	-95.2	-47.60	-55.52	-13	-42.52	V

10.2.4. WCDMA BAND 2

REL 99 MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32894
Configuration;	EUT Only
Mode:	REL 99 Band 2
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.700000	53.29	Pk	33.5	-95.2	-47.2	-55.61	-13	-42.61	H
3.700000	53.18	Pk	33.5	-95.2	-47.2	-55.72	-13	-42.72	V
5.550000	54.98	Pk	34.4	-95.2	-48.6	-54.42	-13	-41.42	H
5.550000	54.45	Pk	34.4	-95.2	-48.6	-54.95	-13	-41.95	V
7.399000	53.80	Pk	35.9	-95.2	-47.8	-53.30	-13	-40.30	H
7.399000	54.52	Pk	35.9	-95.2	-47.8	-52.58	-13	-39.58	V
Mid Channel, 1880MHz									
3.771500	55.61	Pk	33.6	-95.2	-47.85	-53.84	-13	-40.84	H
3.762500	56.97	Pk	33.6	-95.2	-47.8	-52.43	-13	-39.43	V
5.651000	56.23	Pk	34.4	-95.2	-48.3	-52.87	-13	-39.87	H
5.637000	56.94	Pk	34.4	-95.2	-48.4	-52.26	-13	-39.26	V
7.485500	58.43	Pk	35.9	-95.2	-48.2	-49.07	-13	-36.07	H
7.530000	57.20	Pk	36.0	-95.2	-48.0	-50.00	-13	-37.00	V
High Channel, 1907.6MHz									
3.810000	56.19	Pk	33.6	-95.2	-47.8	-53.21	-13	-40.21	H
3.810000	56.47	Pk	33.6	-95.2	-47.8	-52.93	-13	-39.93	V
5.715000	53.96	Pk	34.5	-95.2	-48.1	-54.84	-13	-41.84	H
5.715000	54.57	Pk	34.5	-95.2	-48.1	-54.23	-13	-41.23	V
7.620000	54.12	Pk	35.9	-95.2	-47.2	-52.38	-13	-39.38	H
7.620000	53.67	Pk	35.9	-95.2	-47.2	-52.83	-13	-39.83	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32894
Configuration;	EUT Only
Mode:	HSDPA Band 2

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.700000	53.11	Pk	33.5	-95.2	-47.2	-55.79	-13	-42.79	H
3.700000	53.26	Pk	33.5	-95.2	-47.2	-55.64	-13	-42.64	V
5.550000	55.19	Pk	34.4	-95.2	-48.6	-54.21	-13	-41.21	H
5.550000	54.01	Pk	34.4	-95.2	-48.6	-55.39	-13	-42.39	V
7.400000	53.31	Pk	35.9	-95.2	-47.8	-53.79	-13	-40.79	H
7.400000	53.65	Pk	35.9	-95.2	-47.8	-53.45	-13	-40.45	V
Mid Channel, 1880MHz									
3.755000	54.7	Pk	33.6	-95.2	-47.7	-54.60	-13	-41.60	H
3.755000	54.14	Pk	33.6	-95.2	-47.7	-55.16	-13	-42.16	V
5.632500	54.24	Pk	34.4	-95.2	-48.4	-54.96	-13	-41.96	H
5.632500	53.83	Pk	34.4	-95.2	-48.4	-55.37	-13	-42.37	V
7.510000	54.19	Pk	36.0	-95.2	-48.2	-53.21	-13	-40.21	H
7.510000	54.19	Pk	36.0	-95.2	-48.2	-53.21	-13	-40.21	V
High Channel, 1907.6MHz									
3.810500	54.30	Pk	33.6	-95.2	-47.8	-55.10	-13	-42.10	H
3.810500	55.04	Pk	33.6	-95.2	-47.8	-54.36	-13	-41.36	V
5.715500	56.01	Pk	34.5	-95.2	-48.1	-52.79	-13	-39.79	H
5.715500	54.82	Pk	34.5	-95.2	-48.1	-53.98	-13	-40.98	V
7.620500	54.08	Pk	35.9	-95.2	-47.2	-52.42	-13	-39.42	H
7.620500	55.04	Pk	35.9	-95.2	-47.2	-51.46	-13	-38.46	V

10.2.5. WCDMA BAND 4

REL 99 MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32894
Configuration;	EUT Only
Mode:	REL 99 Band 4
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.420000	54.45	Pk	33.2	-95.2	-47.8	-55.35	-13	-42.35	H
3.420000	53.37	Pk	33.2	-95.2	-47.8	-56.43	-13	-43.43	V
5.130000	55.30	Pk	34.3	-95.2	-49.4	-55.00	-13	-42.00	H
5.130000	55.62	Pk	34.3	-95.2	-49.4	-54.68	-13	-41.68	V
6.839500	54.37	Pk	35.7	-95.2	-47.45	-52.58	-13	-39.58	H
6.839500	53.99	Pk	35.7	-95.2	-47.45	-52.96	-13	-39.96	V
Mid Channel, 1732.6MHz									
3.460000	54.19	Pk	33.2	-95.2	-47.5	-55.31	-13	-42.31	H
3.460000	53.63	Pk	33.2	-95.2	-47.5	-55.87	-13	-42.87	V
5.190000	54.73	Pk	34.4	-95.2	-49.3	-55.37	-13	-42.37	H
5.190000	56.12	Pk	34.4	-95.2	-49.3	-53.98	-13	-40.98	V
6.920000	54.24	Pk	35.7	-95.2	-46.9	-52.16	-13	-39.16	H
6.920000	53.81	Pk	35.7	-95.2	-46.9	-52.59	-13	-39.59	V
High Channel, 1752.6MHz									
3.500000	54.53	Pk	33.2	-95.2	-47.2	-54.67	-13	-41.67	H
3.500000	52.87	Pk	33.2	-95.2	-47.2	-56.33	-13	-43.33	V
5.250000	53.78	Pk	34.4	-95.2	-49.1	-56.12	-13	-43.12	H
5.250000	54.32	Pk	34.4	-95.2	-49.1	-55.58	-13	-42.58	V
7.000000	53.92	Pk	35.8	-95.2	-47.1	-52.58	-13	-39.58	H
7.000000	54.32	Pk	35.8	-95.2	-47.1	-52.18	-13	-39.18	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	32145
Configuration;	EUT Only
Mode:	HSDPA Band 4

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.419500	53.53	Pk	32.7	-95.2	-46.7	-55.67	-13	-42.67	H
3.423000	53.64	Pk	32.7	-95.2	-46.87	-55.73	-13	-42.73	V
5.027500	54.12	Pk	33.9	-95.2	-47.88	-55.06	-13	-42.06	H
4.969000	54.5	Pk	33.8	-95.2	-47.99	-54.89	-13	-41.89	V
6.875000	52.86	Pk	35.7	-95.2	-45.28	-51.92	-13	-38.92	H
6.846000	51.97	Pk	35.6	-95.2	-44.92	-52.55	-13	-39.55	V
Mid Channel, 1732.6MHz									
3.471000	53.01	Pk	32.7	-95.2	-46.66	-56.15	-13	-43.15	H
3.511500	55.15	Pk	32.8	-95.2	-46.73	-53.98	-13	-40.98	V
5.185000	54.25	Pk	34.1	-95.2	-47.40	-54.25	-13	-41.25	H
5.174000	54.09	Pk	34.1	-95.2	-47.59	-54.60	-13	-41.60	V
6.941000	52.47	Pk	35.7	-95.2	-45.98	-53.01	-13	-40.01	H
6.948500	53.65	Pk	35.7	-95.2	-45.98	-51.83	-13	-38.83	V
High Channel, 1752.6MHz									
3.513500	55.46	Pk	32.8	-95.2	-46.81	-53.75	-13	-40.75	H
3.509500	54.57	Pk	32.8	-95.2	-46.57	-54.40	-13	-41.40	V
5.285500	56.30	Pk	34.4	-95.2	-47.53	-52.03	-13	-39.03	H
5.287000	56.36	Pk	34.4	-95.2	-47.53	-51.97	-13	-38.97	V
7.013000	54.63	Pk	35.6	-95.2	-45.47	-50.44	-13	-37.44	H
6.997500	54.81	Pk	35.7	-95.2	-45.69	-50.38	-13	-37.38	V

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT3

10.3.1. GSM 1900

GPRS MODE

Project #:	14982436
Date:	2024-03-20
Test Engineer:	32145
Configuration;	EUT Only
Mode:	GPRS 1900
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.729000	53.94	Pk	33.1	-95.2	-47.27	-55.43	-13	-42.43	H
3.721000	53.71	Pk	33.1	-95.2	-47.26	-55.65	-13	-42.65	V
5.558000	53.34	Pk	34.4	-95.2	-46.88	-54.34	-13	-41.34	H
5.487500	54.33	Pk	34.4	-95.2	-47.13	-53.60	-13	-40.60	V
7.406500	52.26	Pk	35.6	-95.2	-45.58	-52.92	-13	-39.92	H
7.430000	52.33	Pk	35.6	-95.2	-45.79	-53.06	-13	-40.06	V
Mid Channel, 1880MHz									
3.752500	54.25	Pk	33.1	-95.2	-46.93	-54.78	-13	-41.78	H
3.752500	54.05	Pk	33.1	-95.2	-46.93	-54.98	-13	-41.98	V
5.639500	53.10	Pk	34.4	-95.2	-46.71	-54.41	-13	-41.41	H
5.639500	56.88	Pk	34.4	-95.2	-46.71	-50.63	-13	-37.63	V
7.514500	52.86	Pk	35.7	-95.2	-45.55	-52.19	-13	-39.19	H
7.514500	51.56	Pk	35.7	-95.2	-45.55	-53.49	-13	-40.49	V
High Channel, 1909.8MHz									
3.819000	53.49	Pk	33.3	-95.2	-46.83	-55.24	-13	-42.24	H
3.819000	54.67	Pk	33.3	-95.2	-46.83	-54.06	-13	-41.06	V
5.729500	57.15	Pk	34.5	-95.2	-46.46	-50.01	-13	-37.01	H
5.729000	65.03	Pk	34.5	-95.2	-46.45	-42.12	-13	-29.12	V
7.640000	53.52	Pk	35.7	-95.2	-44.77	-50.75	-13	-37.75	H
7.640000	52.02	Pk	35.7	-95.2	-44.77	-52.25	-13	-39.25	V

EGPRS MODE

Project #:	14982436
Date:	2024-03-20
Test Engineer:	32145
Configuration;	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.705000	54.16	Pk	33.0	-95.2	-47.20	-55.24	-13	-42.24	H
3.685500	53.26	Pk	33.0	-95.2	-47.27	-56.21	-13	-43.21	V
5.558000	53.92	Pk	34.4	-95.2	-46.88	-53.76	-13	-40.76	H
5.551750	53.97	Pk	34.4	-95.2	-47.00	-53.83	-13	-40.83	V
7.406500	52.90	Pk	35.6	-95.2	-45.58	-52.28	-13	-39.28	H
7.446000	53.69	Pk	35.7	-95.2	-45.90	-51.71	-13	-38.71	V
Mid Channel, 1880MHz									
3.710000	56.12	Pk	33.0	-95.2	-47.10	-53.18	-13	-40.18	H
3.708000	55.96	Pk	33.0	-95.2	-47.01	-53.25	-13	-40.25	V
5.554500	56.06	Pk	34.4	-95.2	-46.98	-51.72	-13	-38.72	H
5.639500	63.08	Pk	34.4	-95.2	-46.71	-44.43	-13	-31.43	V
7.376500	55.80	Pk	35.6	-95.2	-45.66	-49.46	-13	-36.46	H
7.342000	54.14	Pk	35.6	-95.2	-45.62	-51.08	-13	-38.08	V
High Channel, 1909.8MHz									
3.830500	55.61	Pk	33.3	-95.2	-46.86	-53.15	-13	-40.15	H
3.833500	55.09	Pk	33.3	-95.2	-46.73	-53.54	-13	-40.54	V
5.726500	56.05	Pk	34.5	-95.2	-46.50	-51.15	-13	-38.15	H
5.728500	61.46	Pk	34.5	-95.2	-46.46	-45.70	-13	-32.70	V
7.654500	54.43	Pk	35.7	-95.2	-44.86	-49.93	-13	-36.93	H
7.652000	54.12	Pk	35.7	-95.2	-44.82	-50.20	-13	-37.20	V

10.3.2. WCDMA BAND 2

REL 99 MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	12501
Configuration;	EUT Only
Mode:	REL 99 Band 2
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.424000	55.09	Pk	33.2	-95.2	-47.7	-54.61	-13	-41.61	H
3.424500	54.44	Pk	33.2	-95.2	-47.7	-55.26	-13	-42.26	V
5.138000	54.70	Pk	34.3	-95.2	-49.5	-55.70	-13	-42.70	H
5.138000	55.37	Pk	34.3	-95.2	-49.5	-55.03	-13	-42.03	V
6.849500	52.68	Pk	35.7	-95.2	-47.4	-54.22	-13	-41.22	H
6.849500	53.89	Pk	35.7	-95.2	-47.4	-53.01	-13	-40.01	V
Mid Channel, 1880MHz									
3.465500	54.49	Pk	33.2	-95.2	-47.4	-54.91	-13	-41.91	H
3.465500	55.31	Pk	33.2	-95.2	-47.4	-54.09	-13	-41.09	V
5.197500	55.10	Pk	34.4	-95.2	-49.3	-55.00	-13	-42.00	H
5.197500	56.25	Pk	34.4	-95.2	-49.3	-53.85	-13	-40.85	V
6.930500	52.97	Pk	35.7	-95.2	-46.9	-53.43	-13	-40.43	H
6.930500	54.29	Pk	35.7	-95.2	-46.9	-52.11	-13	-39.11	V
High Channel, 1907.6MHz									
3.810000	54.50	Pk	33.6	-95.2	-47.8	-54.90	-13	-41.90	H
3.810000	56.21	Pk	33.6	-95.2	-47.8	-53.19	-13	-40.19	V
5.720000	55.82	Pk	34.5	-95.2	-48.0	-52.88	-13	-39.88	H
5.720000	59.10	Pk	34.5	-95.2	-48.0	-49.60	-13	-36.60	V
7.620500	56.18	Pk	35.9	-95.2	-47.2	-50.32	-13	-37.32	H
7.620500	54.20	Pk	35.9	-95.2	-47.2	-52.30	-13	-39.30	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	32894
Configuration;	EUT Only
Mode:	HSDPA Band 2
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.700000	53.52	Pk	33.5	-95.2	-47.2	-55.38	-13	-42.38	H
3.700000	53.79	Pk	33.5	-95.2	-47.2	-55.11	-13	-42.11	V
5.550000	55.73	Pk	34.4	-95.2	-48.6	-53.67	-13	-40.67	H
5.550000	54.92	Pk	34.4	-95.2	-48.6	-54.48	-13	-41.48	V
7.399500	55.38	Pk	35.9	-95.2	-47.8	-51.72	-13	-38.72	H
7.399500	53.69	Pk	35.9	-95.2	-47.8	-53.41	-13	-40.41	V
Mid Channel, 1880MHz									
3.755000	53.87	Pk	33.6	-95.2	-47.7	-55.43	-13	-42.43	H
3.755000	52.87	Pk	33.6	-95.2	-47.7	-56.43	-13	-43.43	V
5.632500	54.49	Pk	34.4	-95.2	-48.4	-54.71	-13	-41.71	H
5.632500	54.27	Pk	34.4	-95.2	-48.4	-54.93	-13	-41.93	V
7.510000	54.11	Pk	36.0	-95.2	-48.2	-53.29	-13	-40.29	H
7.510000	54.76	Pk	36.0	-95.2	-48.2	-52.64	-13	-39.64	V
High Channel, 1907.6MHz									
3.810000	54.83	Pk	33.6	-95.2	-47.8	-54.57	-13	-41.57	H
3.810000	54.57	Pk	33.6	-95.2	-47.8	-54.83	-13	-41.83	V
5.715000	53.78	Pk	34.5	-95.2	-48.1	-55.02	-13	-42.02	H
5.715000	55.70	Pk	34.5	-95.2	-48.1	-53.10	-13	-40.10	V
7.620500	54.68	Pk	35.9	-95.2	-47.2	-51.82	-13	-38.82	H
7.620500	53.50	Pk	35.9	-95.2	-47.2	-53.00	-13	-40.00	V

10.3.3. WCDMA BAND 4

REL 99 MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	12501
Configuration;	EUT Only
Mode:	REL 99 Band 4

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.425000	54.59	Pk	33.2	-95.2	-47.7	-55.11	-13	-42.11	H
3.425000	53.91	Pk	33.2	-95.2	-47.7	-55.79	-13	-42.79	V
5.137000	54.72	Pk	34.3	-95.2	-49.5	-55.68	-13	-42.68	H
5.137500	56.52	Pk	34.3	-95.2	-49.5	-53.88	-13	-40.88	V
6.850000	54.34	Pk	35.7	-95.2	-47.4	-52.56	-13	-39.56	H
6.850000	53.17	Pk	35.7	-95.2	-47.4	-53.73	-13	-40.73	V
Mid Channel, 1732.6MHz									
3.465000	54.47	Pk	33.2	-95.2	-47.4	-54.93	-13	-41.93	H
3.471000	54.83	Pk	33.2	-95.2	-47.4	-54.57	-13	-41.57	V
5.192500	55.14	Pk	34.4	-95.2	-49.3	-54.96	-13	-41.96	H
5.210500	55.53	Pk	34.4	-95.2	-49.2	-54.47	-13	-41.47	V
6.922000	54.24	Pk	35.7	-95.2	-46.9	-52.16	-13	-39.16	H
6.910000	54.01	Pk	35.7	-95.2	-46.9	-52.39	-13	-39.39	V
High Channel, 1752.6MHz									
3.505000	53.47	Pk	33.2	-95.2	-47.1	-55.63	-13	-42.63	H
3.505000	54.49	Pk	33.2	-95.2	-47.1	-54.61	-13	-41.61	V
5.257500	54.85	Pk	34.4	-95.2	-49.2	-55.15	-13	-42.15	H
5.258000	55.41	Pk	34.4	-95.2	-49.2	-54.59	-13	-41.59	V
7.010500	53.47	Pk	35.8	-95.2	-47.3	-53.23	-13	-40.23	H
7.010500	54.11	Pk	35.8	-95.2	-47.3	-52.59	-13	-39.59	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	12501
Configuration;	EUT Only
Mode:	HSDPA Band 4
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.425000	55.92	Pk	33.2	-95.2	-47.7	-53.78	-13	-40.78	H
3.425000	54.01	Pk	33.2	-95.2	-47.7	-55.69	-13	-42.69	V
5.138000	55.69	Pk	34.3	-95.2	-49.5	-54.71	-13	-41.71	H
5.138000	56.79	Pk	34.3	-95.2	-49.5	-53.61	-13	-40.61	V
6.850000	54.34	Pk	35.7	-95.2	-47.4	-52.56	-13	-39.56	H
6.850000	53.31	Pk	35.7	-95.2	-47.4	-53.59	-13	-40.59	V
Mid Channel, 1732.6MHz									
3.465000	53.45	Pk	33.2	-95.2	-47.4	-55.95	-13	-42.95	H
3.453000	55.09	Pk	33.2	-95.2	-47.6	-54.51	-13	-41.51	V
5.192500	55.60	Pk	34.4	-95.2	-49.3	-54.50	-13	-41.50	H
5.183500	54.36	Pk	34.4	-95.2	-49.4	-55.84	-13	-42.84	V
6.922000	52.78	Pk	35.7	-95.2	-46.9	-53.62	-13	-40.62	H
6.862500	53.20	Pk	35.7	-95.2	-47.4	-53.70	-13	-40.70	V
High Channel, 1752.6MHz									
3.501000	54.92	Pk	33.2	-95.2	-47.2	-54.28	-13	-41.28	H
3.494500	52.91	Pk	33.2	-95.2	-47.2	-56.29	-13	-43.29	V
5.246500	54.24	Pk	34.4	-95.2	-49.1	-55.66	-13	-42.66	H
5.255500	54.87	Pk	34.4	-95.2	-49.2	-55.13	-13	-42.13	V
7.018000	53.61	Pk	35.8	-95.2	-47.4	-53.19	-13	-40.19	H
7.042000	53.84	Pk	35.8	-95.2	-47.6	-53.16	-13	-40.16	V

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT4

10.4.1. GSM 1900

GPRS MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32145
Configuration;	EUT Only
Mode:	GPRS 1900
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.700500	55.92	Pk	33	-95.2	-47.16	-53.44	-13	-40.44	H
3.715500	55.93	Pk	33.1	-95.2	-47.09	-53.26	-13	-40.26	V
5.528000	56.06	Pk	34.4	-95.2	-47.09	-51.83	-13	-38.83	H
5.519000	55.76	Pk	34.4	-95.2	-47.12	-52.16	-13	-39.16	V
7.415000	54.65	Pk	35.6	-95.2	-45.70	-50.65	-13	-37.65	H
7.379000	55.5	Pk	35.6	-95.2	-45.66	-49.76	-13	-36.76	V
Mid Channel, 1880MHz									
3.755500	53.54	Pk	33.2	-95.2	-47.04	-55.50	-13	-42.50	H
3.743250	53.55	Pk	33.1	-95.2	-47.00	-55.55	-13	-42.55	V
5.634000	52.62	Pk	34.4	-95.2	-46.82	-55.00	-13	-42.00	H
5.628000	53.39	Pk	34.3	-95.2	-46.79	-54.30	-13	-41.30	V
7.550000	52.42	Pk	35.7	-95.2	-45.03	-52.11	-13	-39.11	H
7.550000	52.78	Pk	35.7	-95.2	-45.03	-51.75	-13	-38.75	V
High Channel, 1909.8MHz									
3.770500	55.60	Pk	33.2	-95.2	-46.75	-53.15	-13	-40.15	H
3.762000	54.65	Pk	33.2	-95.2	-46.89	-54.24	-13	-41.24	V
5.746500	54.99	Pk	34.6	-95.2	-46.47	-52.08	-13	-39.08	H
5.711500	55.12	Pk	34.5	-95.2	-46.44	-52.02	-13	-39.02	V
7.630000	54.41	Pk	35.7	-95.2	-44.79	-49.88	-13	-36.88	H
7.596000	54.27	Pk	35.7	-95.2	-44.48	-49.71	-13	-36.71	V

EGPRS MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32145
Configuration;	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.720500	56.42	Pk	33.1	-95.2	-47.25	-52.93	-13	-39.93	H
3.719500	55.61	Pk	33.1	-95.2	-47.20	-53.69	-13	-40.69	V
5.519500	55.15	Pk	34.4	-95.2	-47.10	-52.75	-13	-39.75	H
5.494000	55.85	Pk	34.4	-95.2	-47.03	-51.98	-13	-38.98	V
7.429500	54.75	Pk	35.6	-95.2	-45.80	-50.65	-13	-37.65	H
7.467000	54.43	Pk	35.7	-95.2	-45.87	-50.94	-13	-37.94	V
Mid Channel, 1880MHz									
3.772000	55.87	Pk	33.2	-95.2	-46.77	-52.90	-13	-39.90	H
3.748000	56.09	Pk	33.1	-95.2	-47.26	-53.27	-13	-40.27	V
5.631500	55.61	Pk	34.3	-95.2	-46.77	-52.06	-13	-39.06	H
5.651500	54.83	Pk	34.4	-95.2	-46.71	-52.68	-13	-39.68	V
7.530000	54.35	Pk	35.7	-95.2	-45.32	-50.47	-13	-37.47	H
7.508500	54.70	Pk	35.7	-95.2	-45.69	-50.49	-13	-37.49	V
High Channel, 1909.8MHz									
3.834500	55.22	Pk	33.3	-95.2	-46.73	-53.41	-13	-40.41	H
3.829000	55.34	Pk	33.3	-95.2	-46.81	-53.37	-13	-40.37	V
5.700000	55.18	Pk	34.5	-95.2	-46.51	-52.03	-13	-39.03	H
5.661000	55.42	Pk	34.4	-95.2	-46.77	-52.15	-13	-39.15	V
7.648000	53.95	Pk	35.7	-95.2	-44.77	-50.32	-13	-37.32	H
7.603000	53.85	Pk	35.7	-95.2	-44.54	-50.19	-13	-37.19	V

10.4.2. WCDMA BAND 2

REL 99 MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32145
Configuration;	EUT Only
Mode:	REL 99 Band 2
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.707500	53.91	Pk	33.0	-95.2	-47.03	-55.32	-13	-42.32	H
3.739500	54.51	Pk	33.1	-95.2	-47.23	-54.82	-13	-41.82	V
5.568500	53.74	Pk	34.3	-95.2	-46.95	-54.11	-13	-41.11	H
5.544500	54.45	Pk	34.4	-95.2	-47.06	-53.41	-13	-40.41	V
7.415000	52.4	Pk	35.6	-95.2	-45.7	-52.9	-13	-39.90	H
7.352000	51.43	Pk	35.6	-95.2	-45.62	-53.79	-13	-40.79	V
Mid Channel, 1880MHz									
3.775500	55.59	Pk	33.2	-95.2	-46.92	-53.33	-13	-40.33	H
3.775500	53.72	Pk	33.2	-95.2	-46.92	-55.20	-13	-42.20	V
5.634000	54.28	Pk	34.4	-95.2	-46.82	-53.34	-13	-40.34	H
5.640000	53.54	Pk	34.4	-95.2	-46.73	-53.99	-13	-40.99	V
7.534000	52.48	Pk	35.7	-95.2	-45.23	-52.25	-13	-39.25	H
7.550000	51.96	Pk	35.7	-95.2	-45.03	-52.57	-13	-39.57	V
High Channel, 1907.6MHz									
3.816000	53.73	Pk	33.3	-95.2	-46.63	-54.80	-13	-41.80	H
3.820000	53.9	Pk	33.3	-95.2	-46.90	-54.90	-13	-41.90	V
5.730500	54.4	Pk	34.5	-95.2	-46.49	-52.79	-13	-39.79	H
5.700500	52.22	Pk	34.5	-95.2	-46.49	-54.97	-13	-41.97	V
7.631000	53.08	Pk	35.7	-95.2	-44.8	-51.22	-13	-38.22	H
7.598500	51.65	Pk	35.7	-95.2	-44.55	-52.40	-13	-39.40	V

HSDPA MODE

Project #:	14982436
Date:	2024-03-19
Test Engineer:	32894
Configuration;	EUT Only
Mode:	HSDPA Band 2
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.700000	54.18	Pk	33.5	-95.2	-47.2	-54.72	-13	-41.72	H
3.700000	54.16	Pk	33.5	-95.2	-47.2	-54.74	-13	-41.74	V
5.550500	56.70	Pk	34.4	-95.2	-48.6	-52.70	-13	-39.70	H
5.550500	55.67	Pk	34.4	-95.2	-48.6	-53.73	-13	-40.73	V
7.400000	54.43	Pk	35.9	-95.2	-47.8	-52.67	-13	-39.67	H
7.400000	53.42	Pk	35.9	-95.2	-47.8	-53.68	-13	-40.68	V
Mid Channel, 1880MHz									
3.755000	54.95	Pk	33.6	-95.2	-47.7	-54.35	-13	-41.35	H
3.755000	54.74	Pk	33.6	-95.2	-47.7	-54.56	-13	-41.56	V
5.632500	54.68	Pk	34.4	-95.2	-48.4	-54.52	-13	-41.52	H
5.632500	53.95	Pk	34.4	-95.2	-48.4	-55.25	-13	-42.25	V
7.510000	54.35	Pk	36.0	-95.2	-48.2	-53.05	-13	-40.05	H
7.510000	54.12	Pk	36.0	-95.2	-48.2	-53.28	-13	-40.28	V
High Channel, 1907.6MHz									
3.810000	54.34	Pk	33.6	-95.2	-47.8	-55.06	-13	-42.06	H
3.810000	54.98	Pk	33.6	-95.2	-47.8	-54.42	-13	-41.42	V
5.715500	54.76	Pk	34.5	-95.2	-48.1	-54.04	-13	-41.04	H
5.715500	56.82	Pk	34.5	-95.2	-48.1	-51.98	-13	-38.98	V
7.620500	55.01	Pk	35.9	-95.2	-47.2	-51.49	-13	-38.49	H
7.620500	54.44	Pk	35.9	-95.2	-47.2	-52.06	-13	-39.06	V

10.4.3. WCDMA BAND 4

REL 99 MODE

Project #:	14982436
Date:	2024-03-18
Test Engineer:	3215
Configuration;	EUT Only
Mode:	REL 99 Band 4

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.423500	55.82	Pk	32.7	-95.2	-46.85	-53.53	-13	-40.53	H
3.440500	55.61	Pk	32.7	-95.2	-46.81	-53.70	-13	-40.70	V
5.125500	55.89	Pk	34.1	-95.2	-47.55	-52.76	-13	-39.76	H
5.087500	55.80	Pk	33.9	-95.2	-47.52	-53.02	-13	-40.02	V
6.831500	53.93	Pk	35.6	-95.2	-45.00	-50.67	-13	-37.67	H
6.793000	53.87	Pk	35.6	-95.2	-44.70	-50.43	-13	-37.43	V
Mid Channel, 1732.6MHz									
3.438500	54.92	Pk	32.7	-95.2	-46.66	-54.24	-13	-41.24	H
3.435000	55.57	Pk	32.7	-95.2	-46.51	-53.44	-13	-40.44	V
5.177000	56.83	Pk	34.1	-95.2	-47.35	-51.62	-13	-38.62	H
5.144000	56.79	Pk	34.1	-95.2	-47.55	-51.86	-13	-38.86	V
6.950000	54.69	Pk	35.7	-95.2	-45.97	-50.78	-13	-37.78	H
6.935000	54.10	Pk	35.7	-95.2	-45.85	-51.25	-13	-38.25	V
High Channel, 1752.6MHz									
3.510500	55.44	Pk	32.8	-95.2	-46.64	-53.60	-13	-40.60	H
3.522000	55.40	Pk	32.8	-95.2	-46.85	-53.85	-13	-40.85	V
5.252000	56.19	Pk	34.3	-95.2	-47.5	-52.21	-13	-39.21	H
5.230500	56.66	Pk	34.2	-95.2	-47.51	-51.85	-13	-38.85	V
7.030500	54.55	Pk	35.6	-95.2	-45.17	-50.22	-13	-37.22	H
7.029500	54.19	Pk	35.6	-95.2	-45.17	-50.58	-13	-37.58	V

HSDPA MODE

Project #:	14982436
Date:	3/18/2024
Test Engineer:	32145
Configuration;	EUT Only
Mode:	HSDPA Band 4
Chamber #:	03-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	200897 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.427000	55.78	Pk	32.7	-95.2	-46.59	-53.31	-13	-40.31	H
3.434500	56.35	Pk	32.7	-95.2	-46.57	-52.72	-13	-39.72	V
5.115000	55.74	Pk	34.0	-95.2	-47.47	-52.93	-13	-39.93	H
5.131500	55.88	Pk	34.1	-95.2	-47.54	-52.76	-13	-39.76	V
6.824000	53.62	Pk	35.6	-95.2	-45.04	-51.02	-13	-38.02	H
6.757000	53.57	Pk	35.6	-95.2	-45.03	-51.06	-13	-38.06	V
Mid Channel, 1732.6MHz									
3.500000	55.17	Pk	32.8	-95.2	-46.56	-53.79	-13	-40.79	H
3.493500	55.66	Pk	32.7	-95.2	-46.67	-53.51	-13	-40.51	V
5.060500	56.28	Pk	33.9	-95.2	-47.57	-52.59	-13	-39.59	H
5.051000	56.47	Pk	33.9	-95.2	-47.64	-52.47	-13	-39.47	V
6.953000	54.27	Pk	35.7	-95.2	-45.93	-51.16	-13	-38.16	H
6.977000	53.89	Pk	35.7	-95.2	-45.90	-51.51	-13	-38.51	V
High Channel, 1752.6MHz									
3.507500	55.63	Pk	32.8	-95.2	-46.53	-53.30	-13	-40.30	H
3.517500	54.71	Pk	32.8	-95.2	-46.60	-54.29	-13	-41.29	V
5.233000	56.77	Pk	34.2	-95.2	-47.48	-51.71	-13	-38.71	H
5.223500	56.42	Pk	34.2	-95.2	-47.47	-52.05	-13	-39.05	V
7.024000	54.48	Pk	35.6	-95.2	-45.27	-50.39	-13	-37.39	H
6.995500	53.85	Pk	35.7	-95.2	-45.77	-51.42	-13	-38.42	V

11. SETUP PHOTOS

Please refer to 14982436-EP1V1 for Setup Photo Report for setup photos.

END OF REPORT