

TEST REPORT

Report Number.: 14982479-E17V2

Applicant : APPLE, INC
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

Model : A3084

Brand : APPLE

FCC ID : BCG-E8684A

IC : 579C-E8684A

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:
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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2024-07-10	Initial Review	Eric Ting
V2	2024-08-14	Address TCB Feedback Selection 6,8,9	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	A3084	
Brand	APPLE	
FCC ID	BCG-E8684A	
IC	579C-E8684A	
EUT Description	SMARTPHONE	
Serial Number	Radiated: G9KF67HQTQ & F9NDW2CHY0 Conducted: HVHH6Q0009L0000HN2	
Sample Receipt Date	2024-02-02	
Date Tested	2024-02-05 to 2024-07-10	
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 Corona Operations Leader UL Verification Services Inc.	Eric Ting Senior Test Engineer UL Verification Services Inc	Chris He Laboratory Engineer 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 47 CFR 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	1.300 db Peak 0.450 db 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, 5G NR1, 5G NR2, 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

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

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

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)		
826.4-846.6	REL 99	25.70	-5.20	3.0	18.35	0.068	4132	4M13F9W
	HSDPA	24.75			17.40	0.055	4153	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)		
826.4-846.6	REL 99	25.70	-5.20	3.0	18.35	0.068	4132	4M13F9W
	HSDPA	24.75			17.40	0.055	4153	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)		
1852.4-1907.6	REL 99	25.50	-2.80	2.0	22.70	0.186	4144	4M14F9W
	HSDPA	24.55			21.75	0.150	4141	4M14F9W
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)		
1712.4-1752.6	REL 99	25.50	-3.30	1.0	22.20	0.166	4143	4M14F9W
	HSDPA	24.52			21.22	0.132	4155	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 Range (MHz)	ANT 1 Antenna Gain (dBi)	ANT 2 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	ANT 4 Antenna Gain (dBi)
824 - 849	-5.2	-6.3		
1850 - 1910	-4.1	-4.6	-2.8	-1.2
1710 - 1755	-3.8	-4.0	-3.3	-4.0

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	X	Z	N/A	N/A
1710 – 1915 MHz	X	X	X	X

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

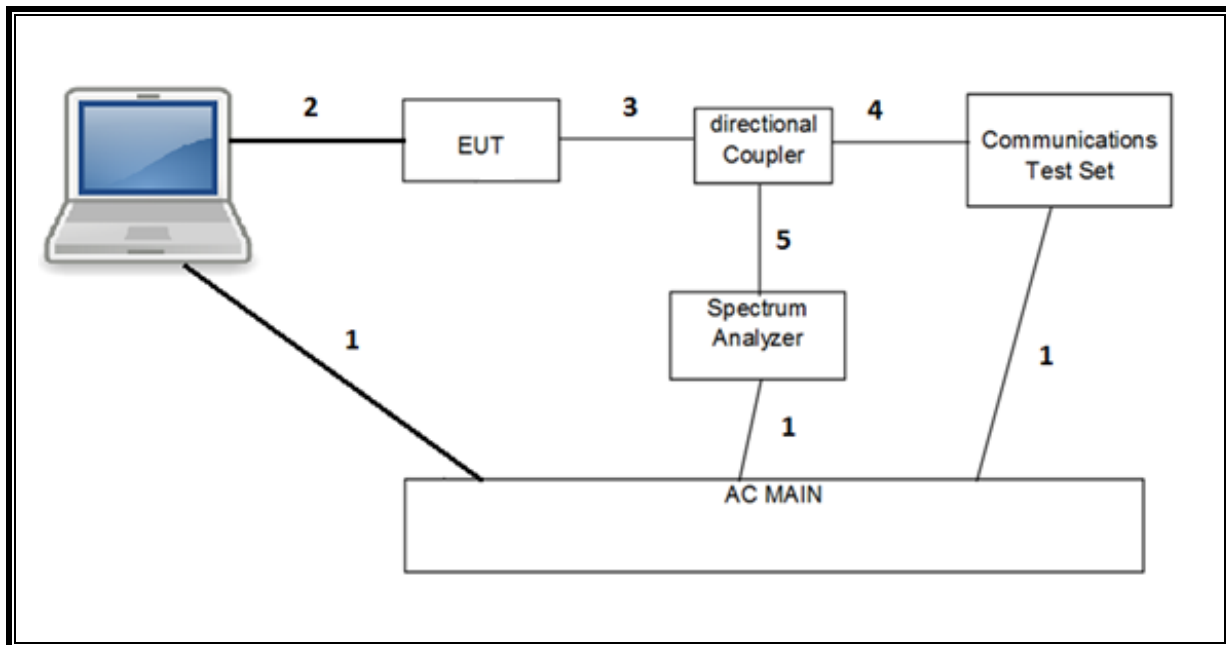
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz.

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.

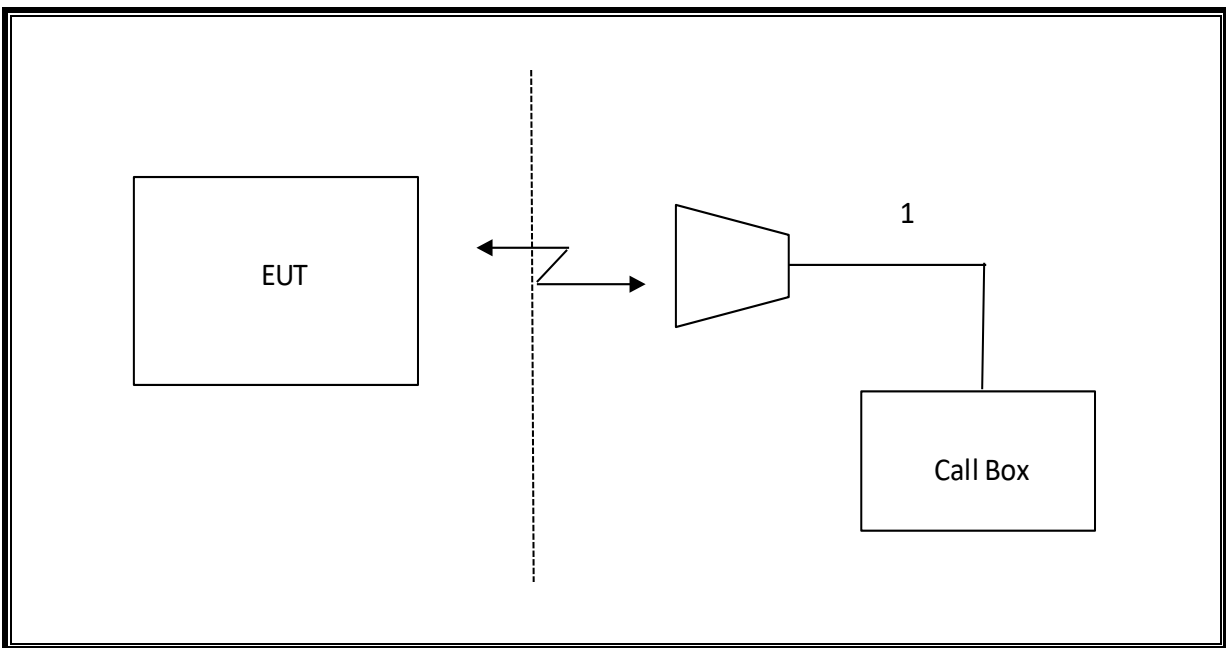
6.6. DESCRIPTION OF TEST SETUP

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.
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:

- * Testing is completed before equipment expiration date.
- ** 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 MEASUREMENTS

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:	2024-02-27
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Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Conducted Average Power (dBm)	
					ANT 1	ANT 2
GPRS (GMSK)	CS1	1	128	824.2	33.26	32.52
			190	836.6	33.25	32.50
			251	848.8	33.50	32.75
		2	128	824.2	32.04	31.33
			190	836.6	32.06	31.34
			251	848.8	32.29	31.50
EGPRS (8PSK)	MCS5	1	128	824.2	27.96	26.92
			190	836.6	28.00	27.00
			251	848.8	27.96	26.93
		2	128	824.2	26.80	25.80
			190	836.6	27.00	26.00
			251	848.8	26.84	25.80

8.1.2. GSM 1900

Test Engineer ID:	39004	Test Date:	2024-02-27
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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	31.66	29.19	31.22	29.03
			661	1880	31.98	29.49	31.46	28.23
			810	1909.8	32.00	29.50	31.50	29.00
		2	512	1850.2	30.40	27.94	29.97	27.77
			661	1880	30.78	28.29	30.21	27.65
			810	1909.8	30.80	28.30	30.27	27.55
EGPRS (8PSK)	MCS5	1	512	1850.2	26.87	23.72	26.38	23.84
			661	1880	26.94	23.95	26.50	23.95
			810	1909.8	27.00	24.00	26.45	24.00
		2	512	1850.2	25.73	22.89	25.40	22.56
			661	1880	25.78	22.95	25.26	23.00
			810	1909.8	25.83	23.00	25.25	22.49

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 $\geq$ RBW $\geq$ 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
	β_c/β_d	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_o/β_d	β_{hs} (Note 1, 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 $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

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 $\Delta_{NACK} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 24/15$ with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for $\beta_o/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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_o/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 $\beta_c = 11/15$ and $\beta_d = 15/15$.

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} (Note 1)	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	209/25	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	β_{ed1} : 47/15 β_{ed2} : 47/15	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 $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{hs} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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_{DF})	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 (Note 3)	β_d	β_{HS} (Note 1)	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	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105
Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$. 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 $\beta_d = 0$ 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:	2024-02-26
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Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Conducted Average	
						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	25.64	25.15
			4233	846.6	N/A	25.60	25.12
	HSDPA	Subtest 1	4132	826.4	0	24.72	24.24
			4183	836.6	0	24.63	24.15
			4233	846.6	0	24.59	24.12
		Subtest 2	4132	826.4	0	24.75	24.24
			4183	836.6	0	24.62	24.16
			4233	846.6	0	24.61	24.13
		Subtest 3	4132	826.4	0.5	24.16	23.74
			4183	836.6	0.5	24.15	23.65
			4233	846.6	0.5	24.09	23.61
		Subtest 4	4132	826.4	0.5	24.23	23.73
			4183	836.6	0.5	24.14	23.59
			4233	846.6	0.5	24.08	23.63
	HSPA (HSDPA & HSUPA)	Subtest 1	4132	826.4	0	24.72	24.22
			4183	836.6	0	24.64	24.17
			4233	846.6	0	24.61	24.13
		Subtest 2	4132	826.4	2	22.71	22.24
			4183	836.6	2	22.66	22.16
			4233	846.6	2	22.63	22.13
		Subtest 3	4132	826.4	1	23.71	23.23
			4183	836.6	1	23.68	23.40
			4233	846.6	1	23.59	23.12
		Subtest 4	4132	826.4	2	22.72	22.24
			4183	836.6	2	22.65	22.18
			4233	846.6	2	22.61	22.12
		Subtest 5	4132	826.4	0	24.28	23.80
			4183	836.6	0	24.22	23.74
			4233	846.6	0	24.19	23.68
	DC-HSDPA	Subtest 1	4132	826.4	0	24.70	24.23
			4183	836.6	0	24.64	24.16
			4233	846.6	0	24.61	24.13
		Subtest 2	4132	826.4	0	24.72	24.23
			4183	836.6	0	24.64	24.15
			4233	846.6	0	24.60	24.11
		Subtest 3	4132	826.4	0.5	24.25	23.72
			4183	836.6	0.5	24.14	23.65
			4233	846.6	0.5	24.09	23.61
		Subtest 4	4132	826.4	0.5	24.23	23.72
			4183	836.6	0.5	24.15	23.65
			4233	846.6	0.5	24.09	23.61

8.2.2. WCDMA BAND 2

Test Engineer ID:	39004	Test Date:	2024-03-26
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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	25.70	23.40	25.50	22.90
			9400	1880.0	N/A	25.58	23.29	25.46	22.87
			9538	1907.6	N/A	25.58	23.30	25.44	22.79
	HSDPA	Subtest 1	9262	1852.4	0	24.74	22.43	24.55	21.92
			9400	1880.0	0	24.57	22.29	24.46	21.87
			9538	1907.6	0	24.58	22.29	24.43	21.81
		Subtest 2	9262	1852.4	0	24.71	22.42	24.51	21.95
			9400	1880.0	0	24.57	22.29	24.50	21.91
			9538	1907.6	0	24.57	22.34	24.46	21.85
		Subtest 3	9262	1852.4	0.5	24.19	21.92	24.06	21.47
			9400	1880.0	0.5	24.07	21.78	23.97	21.42
			9538	1907.6	0.5	24.10	21.81	23.94	21.37
		Subtest 4	9262	1852.4	0.5	24.22	21.91	24.03	21.47
			9400	1880.0	0.5	24.08	21.79	23.98	21.48
			9538	1907.6	0.5	24.09	21.80	23.92	21.41
	HSPA (HSDPA & HSUPA)	Subtest 1	9262	1852.4	0	24.71	22.43	24.53	22.00
			9400	1880.0	0	24.61	22.30	24.48	21.92
			9538	1907.6	0	24.61	22.32	24.45	21.87
		Subtest 2	9262	1852.4	2	22.71	20.39	22.59	19.97
			9400	1880.0	2	22.60	20.28	22.50	19.93
			9538	1907.6	2	22.59	20.30	22.46	19.85
		Subtest 3	9262	1852.4	1	23.71	21.42	23.54	20.91
			9400	1880.0	1	23.62	21.30	23.49	20.89
			9538	1907.6	1	23.60	21.29	23.43	20.78
		Subtest 4	9262	1852.4	2	22.71	20.40	22.57	19.94
			9400	1880.0	2	22.59	20.30	22.51	19.88
			9538	1907.6	2	22.62	20.34	22.46	19.82
		Subtest 5	9262	1852.4	0	24.32	21.98	24.10	21.51
			9400	1880.0	0	24.19	21.91	24.04	21.48
			9538	1907.6	0	24.18	21.90	24.06	21.37
	DC-HSDPA	Subtest 1	9262	1852.4	0	24.70	22.42	24.57	21.92
			9400	1880.0	0	24.60	22.31	24.47	21.91
			9538	1907.6	0	24.58	22.30	24.47	21.84
		Subtest 2	9262	1852.4	0	24.73	22.43	24.53	21.93
			9400	1880.0	0	24.59	22.28	24.48	21.97
			9538	1907.6	0	24.60	22.30	24.45	21.91
		Subtest 3	9262	1852.4	0.5	24.20	21.91	24.03	21.48
			9400	1880.0	0.5	24.06	21.79	23.95	21.46
			9538	1907.6	0.5	24.10	21.82	23.95	21.43
		Subtest 4	9262	1852.4	0.5	24.23	21.92	24.02	21.51
			9400	1880.0	0.5	24.09	21.81	23.97	21.54
			9538	1907.6	0.5	24.11	21.82	23.92	21.47

8.2.3. WCDMA BAND 4

Test Engineer ID:	39004	Test Date:	2024-02-27
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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	25.40	23.13	25.50	22.90
			1413	1732.6	N/A	25.53	23.24	25.34	22.88
			1513	1752.6	N/A	25.70	23.40	25.29	22.88
	HSDPA	Subtest 1	1312	1712.4	0	24.40	22.13	24.52	21.96
			1413	1732.6	0	24.52	22.24	24.35	21.88
			1513	1752.6	0	24.72	22.39	24.30	21.86
		Subtest 2	1312	1712.4	0	24.45	22.13	24.52	21.95
			1413	1732.6	0	24.52	22.23	24.32	21.88
			1513	1752.6	0	24.70	22.39	24.28	21.85
		Subtest 3	1312	1712.4	0.5	23.92	21.65	23.98	21.42
			1413	1732.6	0.5	24.04	21.73	23.83	21.39
			1513	1752.6	0.5	24.18	21.89	23.78	21.36
		Subtest 4	1312	1712.4	0.5	23.89	21.62	24.01	21.45
			1413	1732.6	0.5	24.03	21.73	23.83	21.40
			1513	1752.6	0.5	24.17	21.89	23.80	21.35
	HSPA (HSDPA & HSUPA)	Subtest 1	1312	1712.4	0	24.41	22.12	24.51	21.94
			1413	1732.6	0	24.56	22.23	24.34	21.89
			1513	1752.6	0	24.72	22.45	24.34	21.89
		Subtest 2	1312	1712.4	2	22.42	20.14	22.50	19.99
			1413	1732.6	2	22.57	20.26	22.37	19.92
			1513	1752.6	2	22.70	20.42	22.34	19.92
		Subtest 3	1312	1712.4	1	23.42	21.12	23.49	20.91
			1413	1732.6	1	23.57	21.22	23.34	20.89
			1513	1752.6	1	23.73	21.40	23.29	20.87
		Subtest 4	1312	1712.4	2	22.43	20.14	22.49	19.91
			1413	1732.6	2	22.55	20.21	22.37	19.88
			1513	1752.6	2	22.74	20.39	22.34	19.89
		Subtest 5	1312	1712.4	0	23.97	21.71	24.05	21.49
			1413	1732.6	0	24.14	21.83	23.89	21.45
			1513	1752.6	0	24.29	21.97	23.93	21.43
	DC-HSDPA	Subtest 1	1312	1712.4	0	24.44	22.11	24.54	21.94
			1413	1732.6	0	24.56	22.24	24.36	21.90
			1513	1752.6	0	24.69	22.37	24.29	21.87
		Subtest 2	1312	1712.4	0	24.42	22.11	24.50	21.92
			1413	1732.6	0	24.54	22.21	24.35	21.88
			1513	1752.6	0	24.69	22.38	24.27	21.86
		Subtest 3	1312	1712.4	0.5	23.95	21.65	24.02	21.46
			1413	1732.6	0.5	24.05	21.71	23.87	21.39
			1513	1752.6	0.5	24.19	21.88	23.79	21.39
		Subtest 4	1312	1712.4	0.5	23.92	21.61	24.01	21.43
			1413	1732.6	0.5	24.03	21.73	23.87	21.41
			1513	1752.6	0.5	24.19	21.88	23.79	21.39

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.

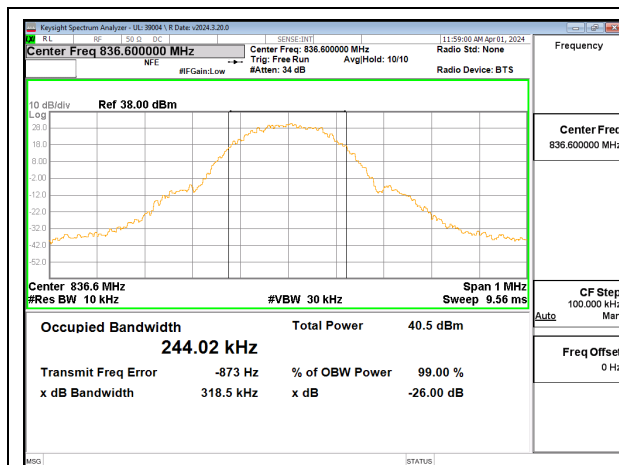
GSM

Band	Modulation	Channel	f(MHz)	99% BW (kHz)	-26dB BW (kHz)
850	GPRS	190	836.6	244.02	318.5
	EGPRS			241.43	297.7
1900	GPRS	661	1880.0	242.59	312.7
	EGPRS			242.54	311.2

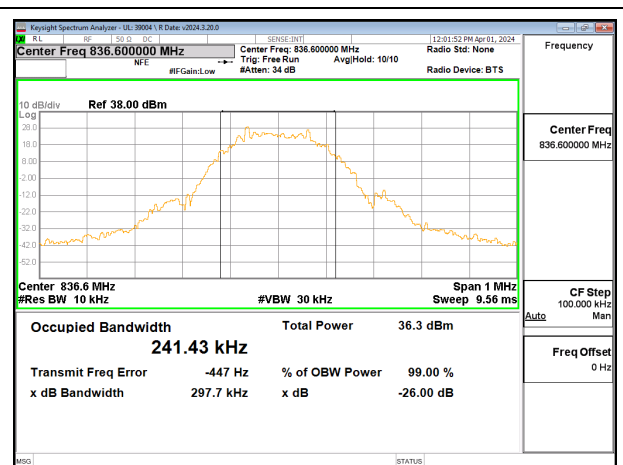
WCDMA

Band	Modulation	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
BAND 5	REL 99	4183	836.6	4.132	4.706
	HSDPA			4.153	4.698
BAND 2	REL 99	9400	1880.0	4.144	4.703
	HSDPA			4.141	4.685
BAND 4	REL 99	1413	1732.6	4.143	4.695
	HSDPA			4.155	4.709

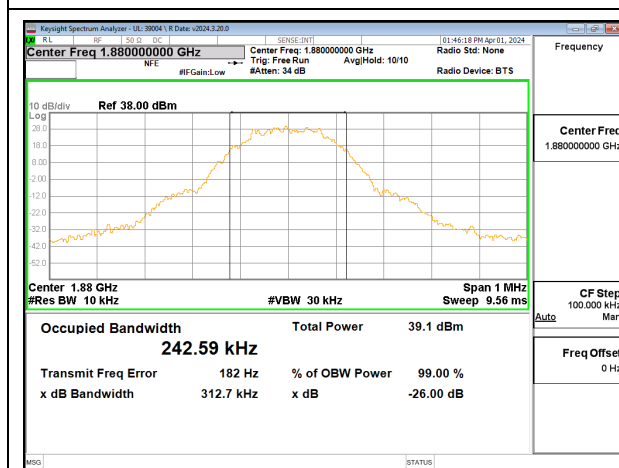
9.1.1. GSM



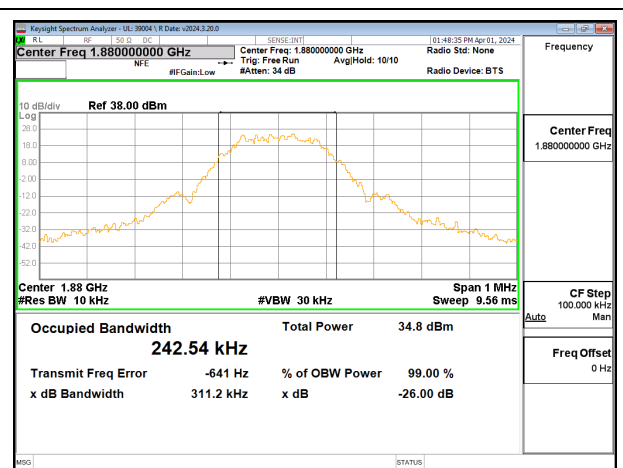
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel

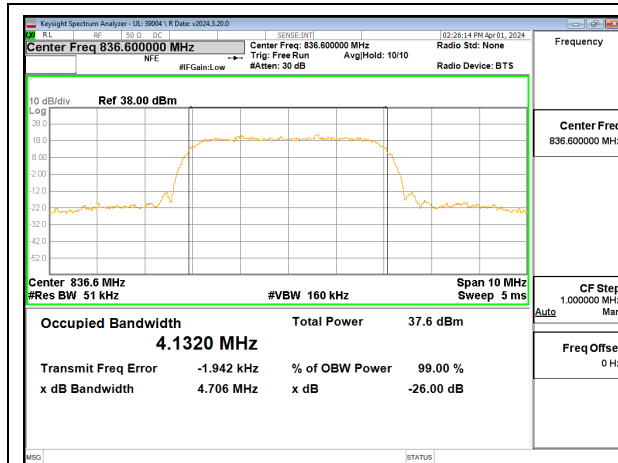


GSM 1900 GPRS Middle Channel

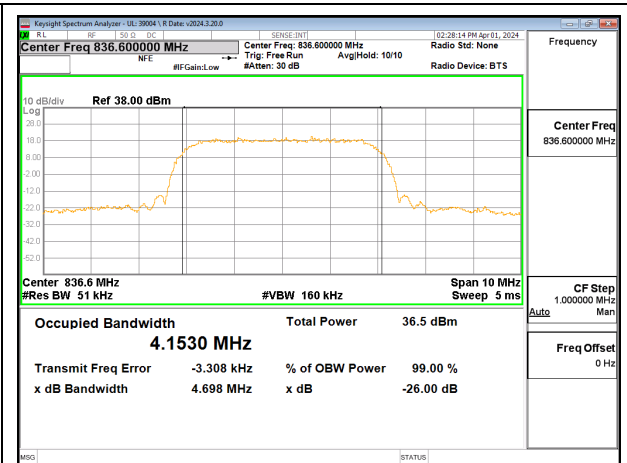


GSM 1900 EGPRS Middle Channel

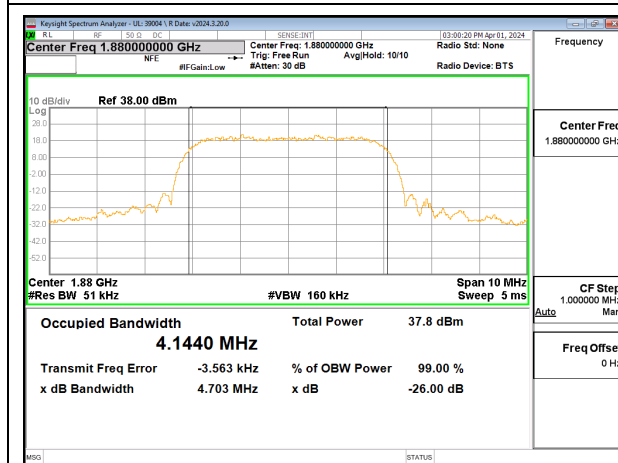
9.1.2. WCDMA



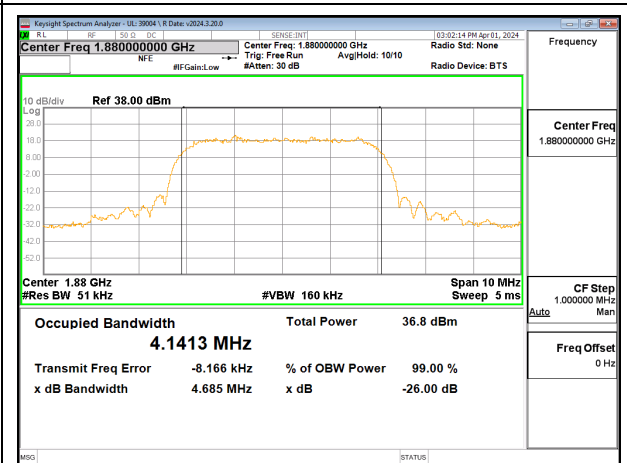
WCDMA Band 5 Rel 99 Middle Channel



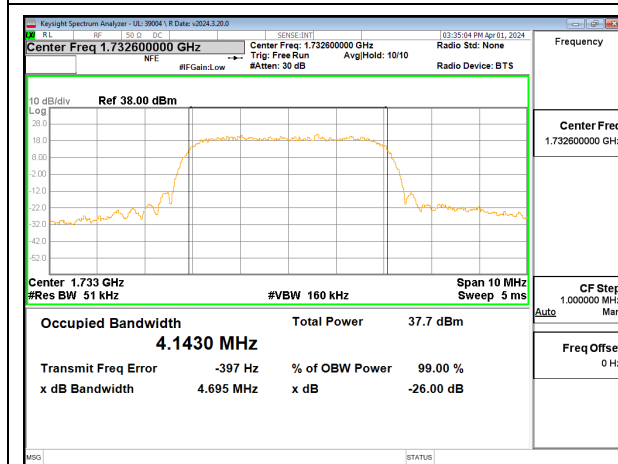
WCDMA Band 5 HSDPA Middle Channel



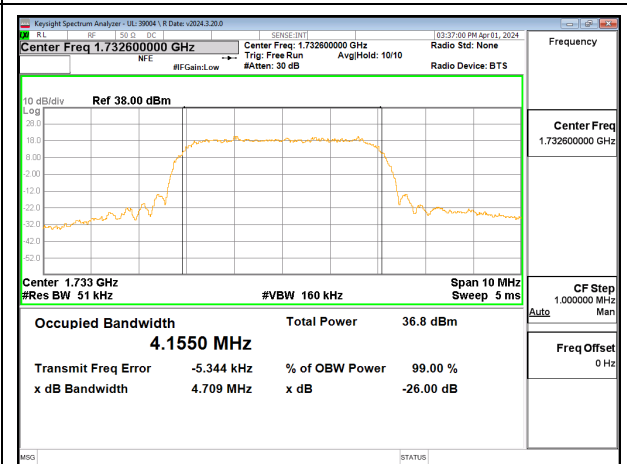
WCDMA Band 2 Rel 99 Middle Channel



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.

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(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 $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ 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 $43 + 10 \log_{10}(P)$ 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 for offsets greater than 37.5 kHz is allowed.

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 $43 + 10 \log_{10}(p(\text{watts}))$.
- (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 $43 + 10 \log_{10}(p(\text{watts}))$. 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

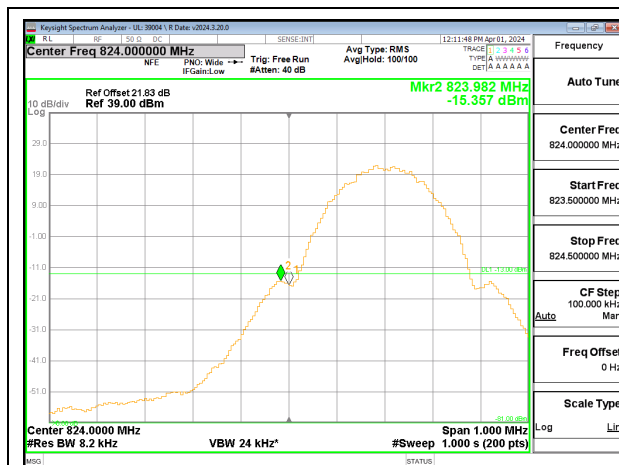
The transmitter output was connected to a R&S CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

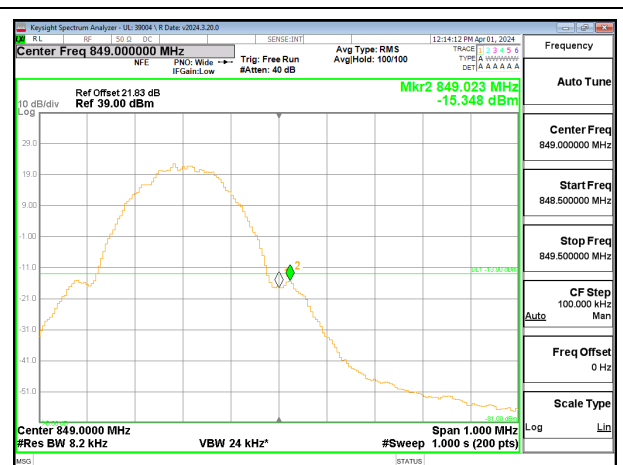
- Set the spectrum analyzer span to include the block edge frequency.
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

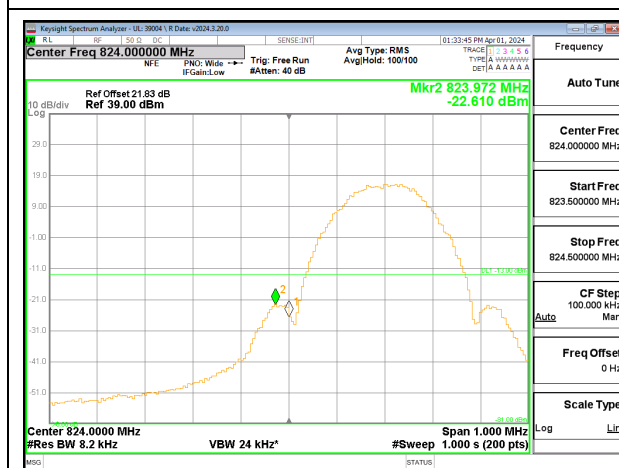
9.2.1. GSM 850



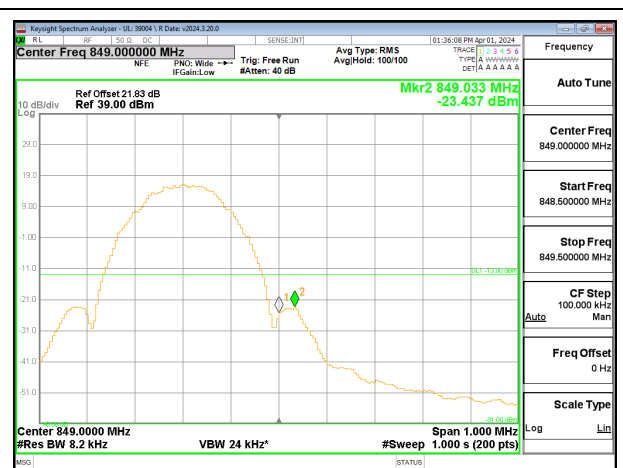
GSM 850 GPRS Low Channel



GSM 850 GPRS High Channel

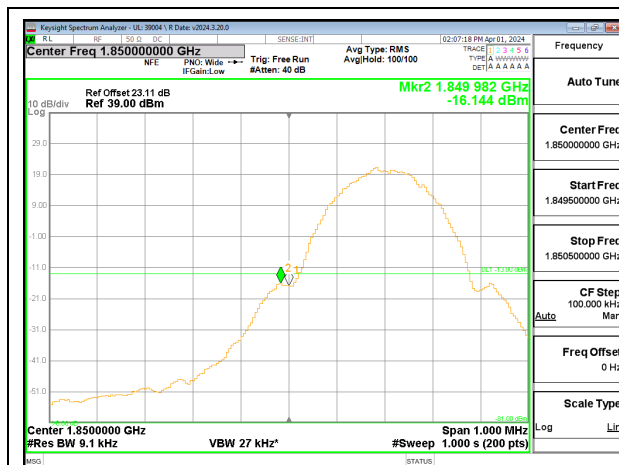


GSM 850 EGPRS Low Channel

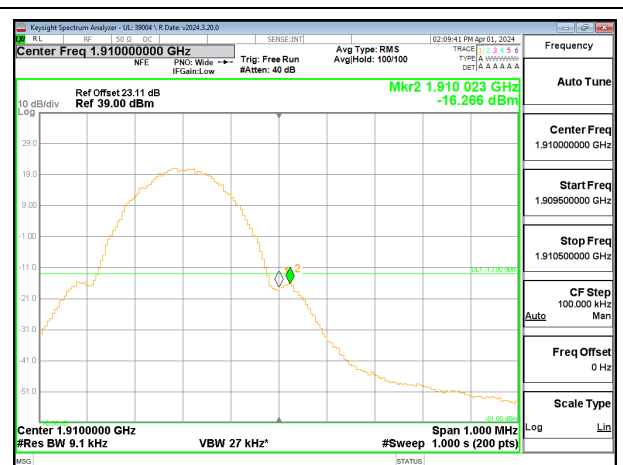


GSM 850 EGPRS High Channel

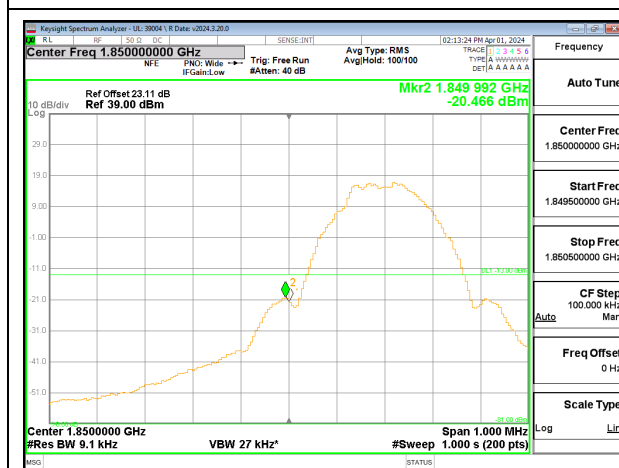
9.2.2. GSM 1900



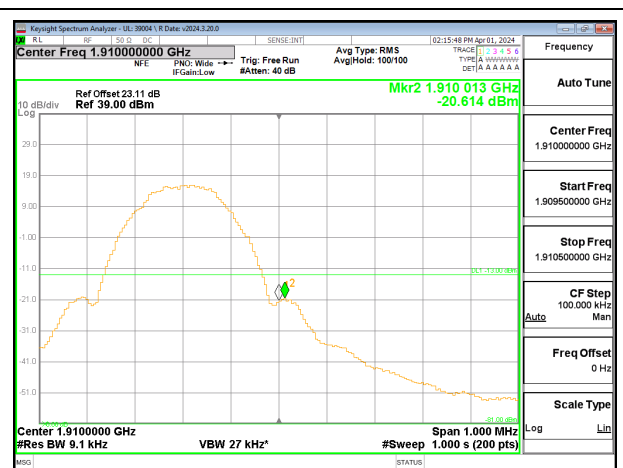
GSM 1900 GPRS Low Channel



GSM 1900 GPRS High Channel

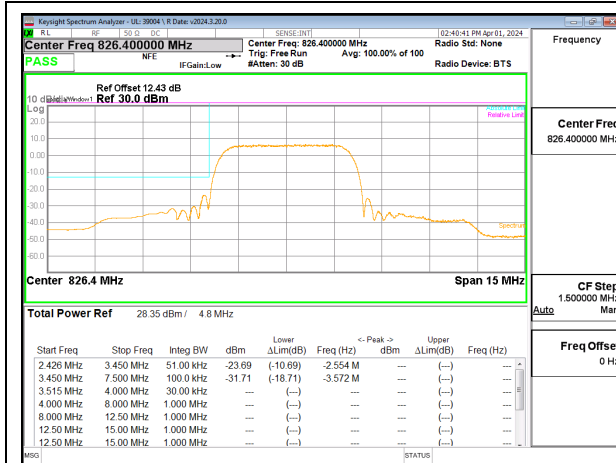


GSM 1900 EGPRS Low Channel

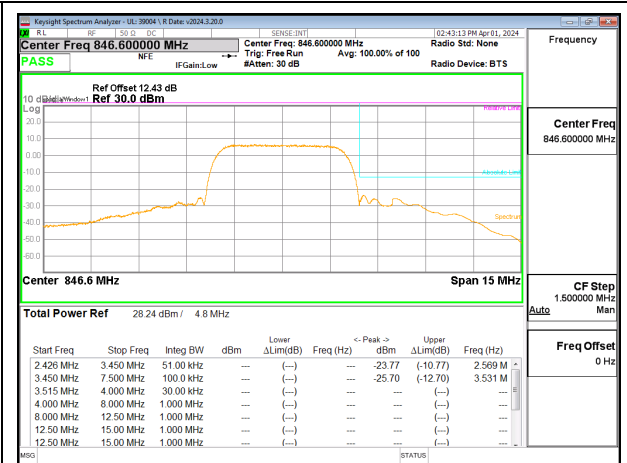


GSM 1900 EGPRS High Channel

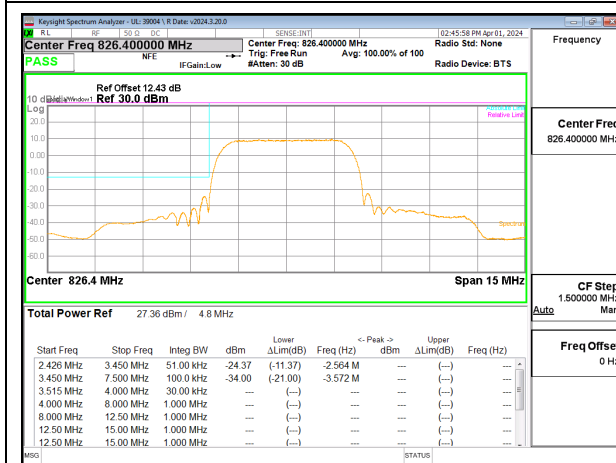
9.2.3. WCDMA BAND 5



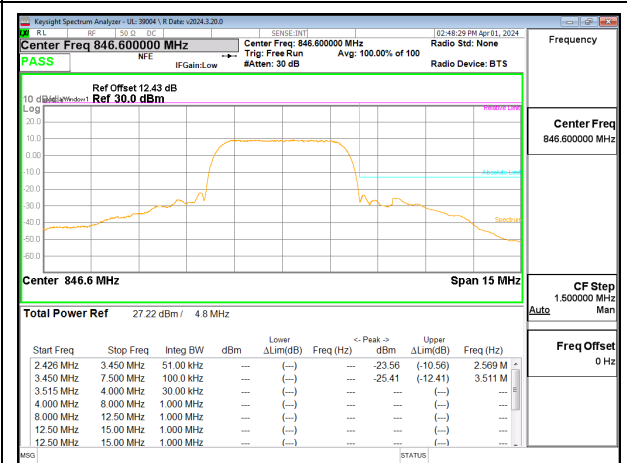
WCDMA Band 5 Rel 99 Low Channel



WCDMA Band 5 Rel 99 High Channel

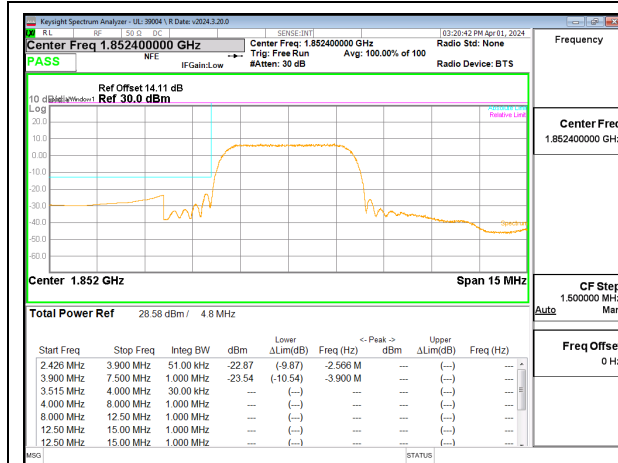


WCDMA Band 5 HSDPA Low Channel

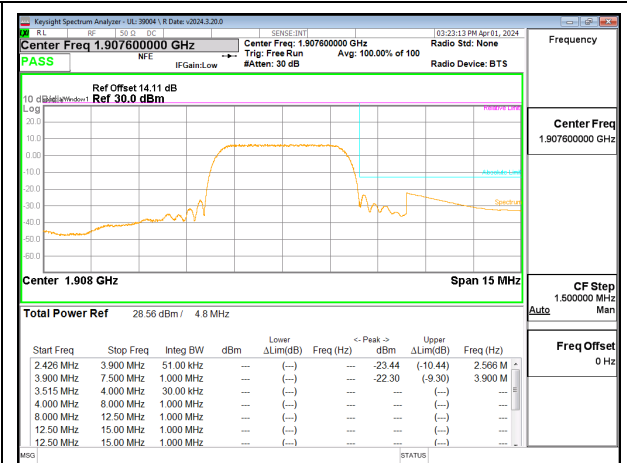


WCDMA Band 5 HSDPA High Channel

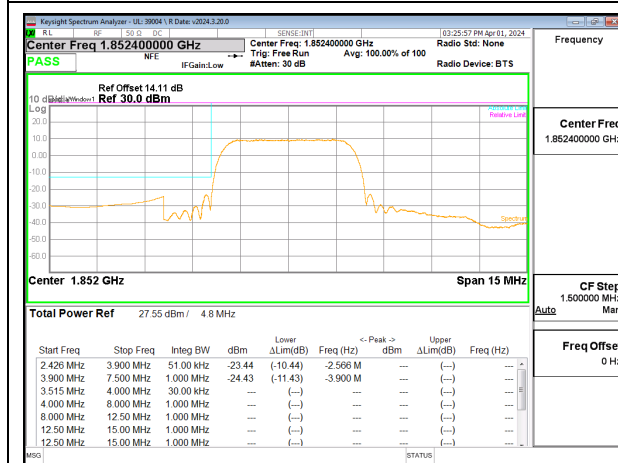
9.2.4. WCDMA BAND 2



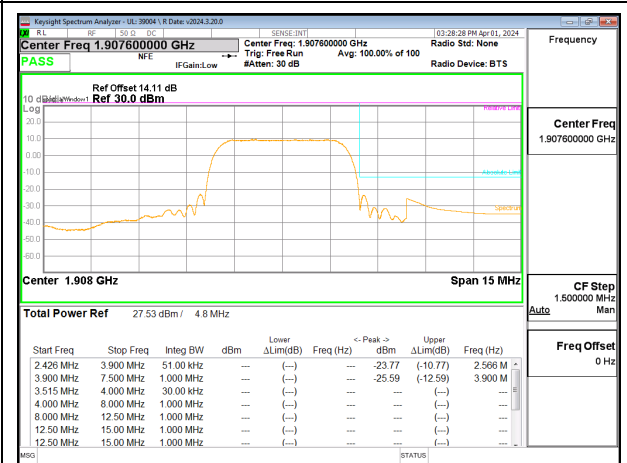
WCDMA Band 2 Rel 99 Low Channel



WCDMA Band 2 Rel 99 High Channel

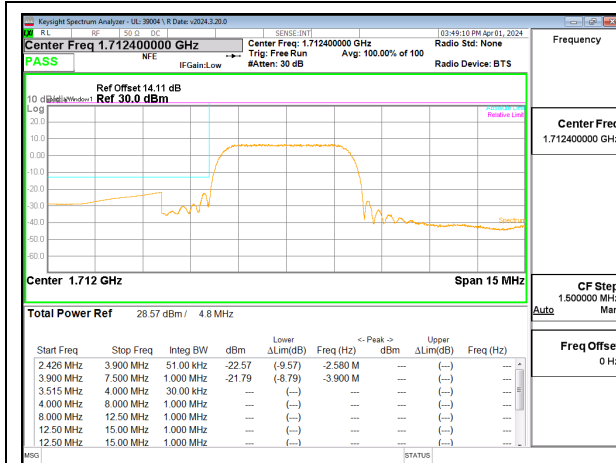


WCDMA Band 2 HSDPA Low Channel

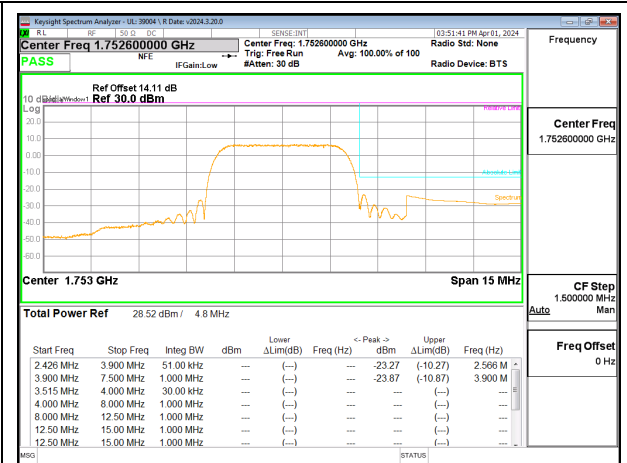


WCDMA Band 2 HSDPA High Channel

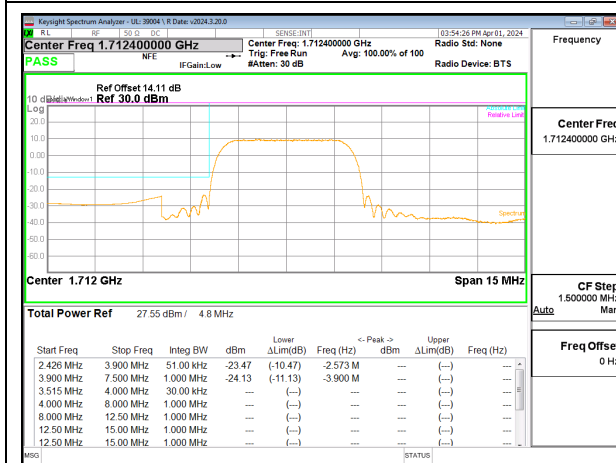
9.2.5. WCDMA BAND 4



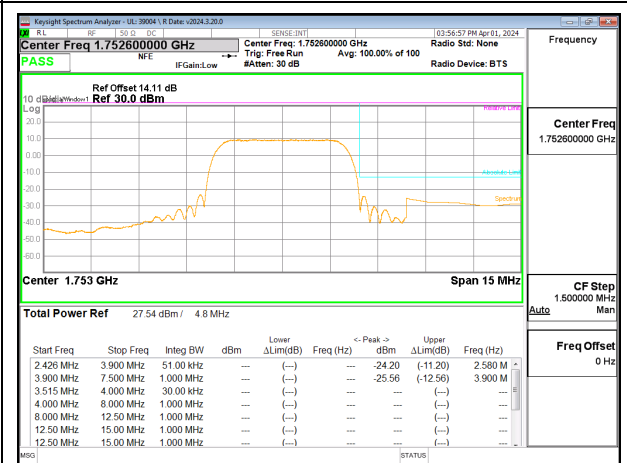
WCDMA Band 4 Rel 99 Low Channel



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

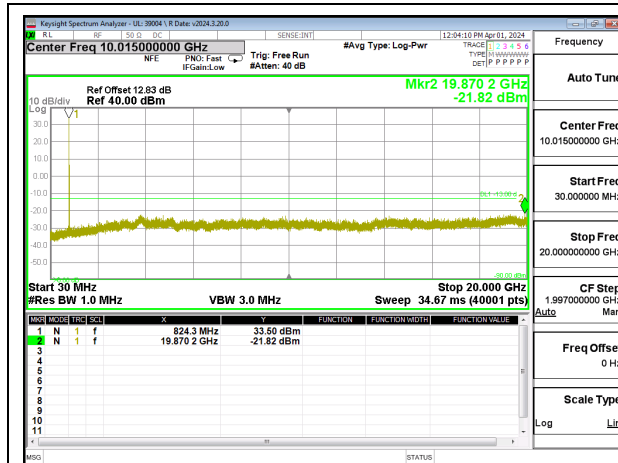
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case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

For each out of band emissions measurement:

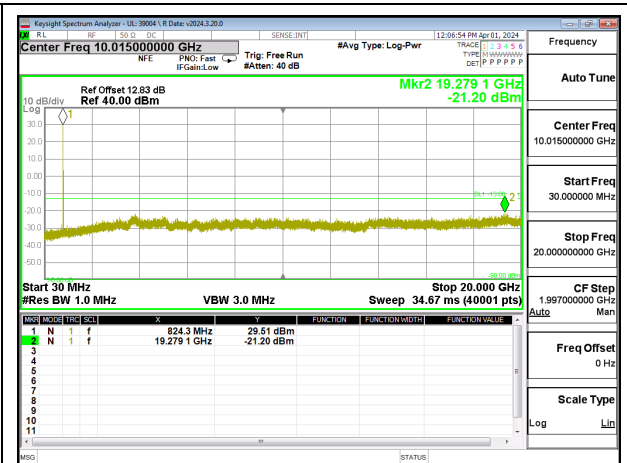
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

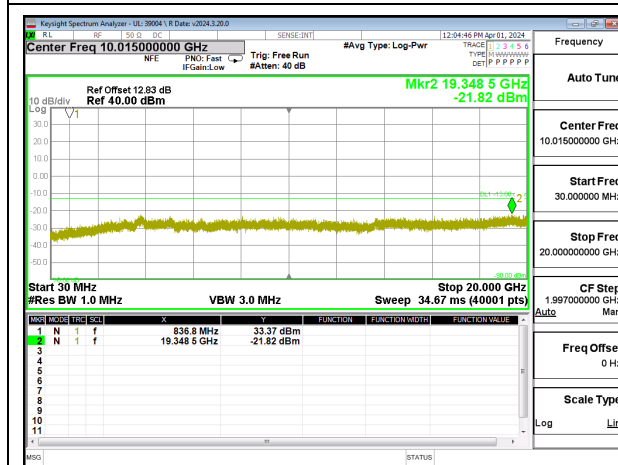
9.3.1. GSM 850



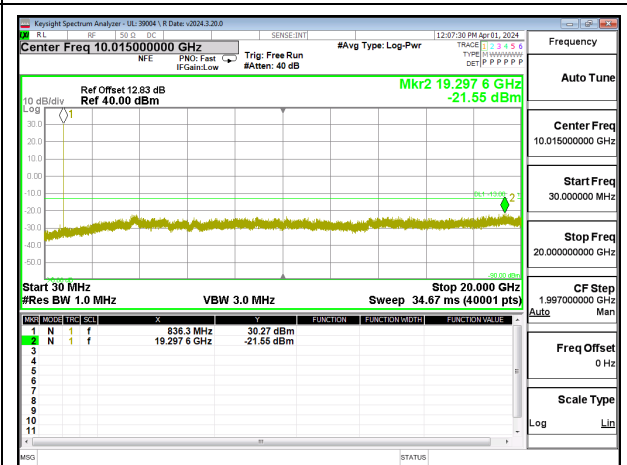
GSM 850 GPRS Low Channel



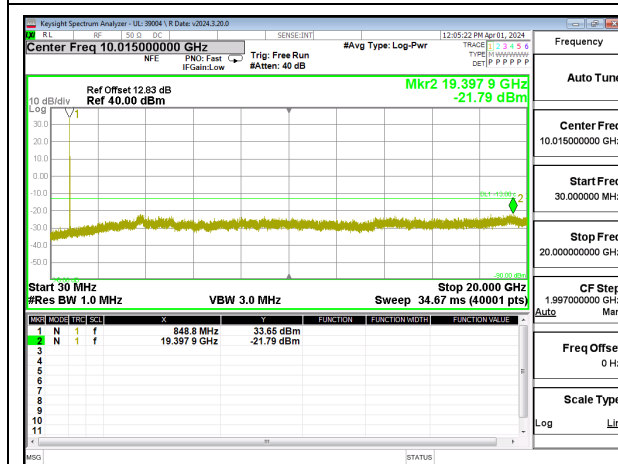
GSM 850 EGPRS Low Channel



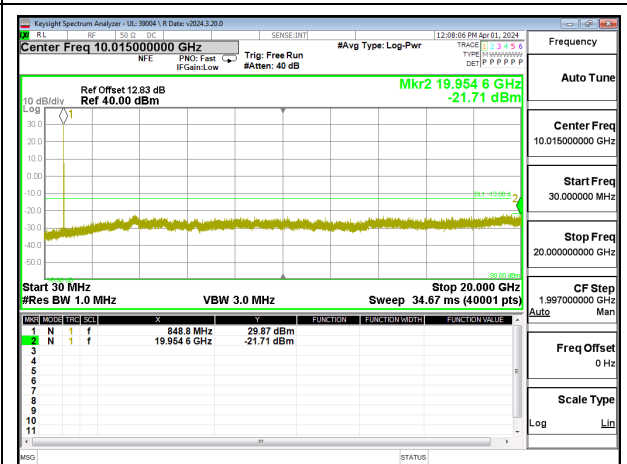
GSM 850 GPRS Middle Channel



GSM 850 EGPRS Middle Channel

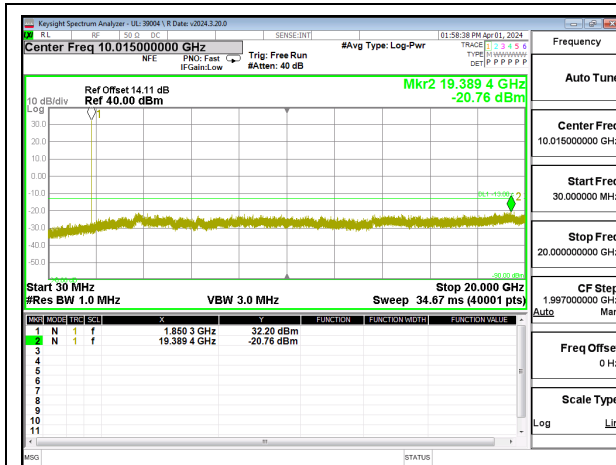


GSM 850 GPRS High Channel

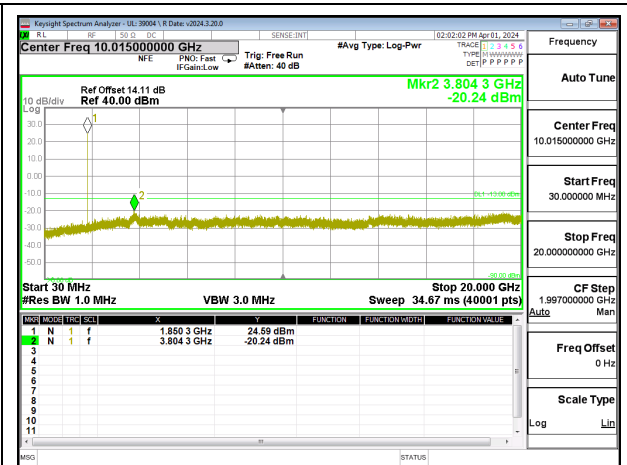


GSM 850 EGPRS High Channel

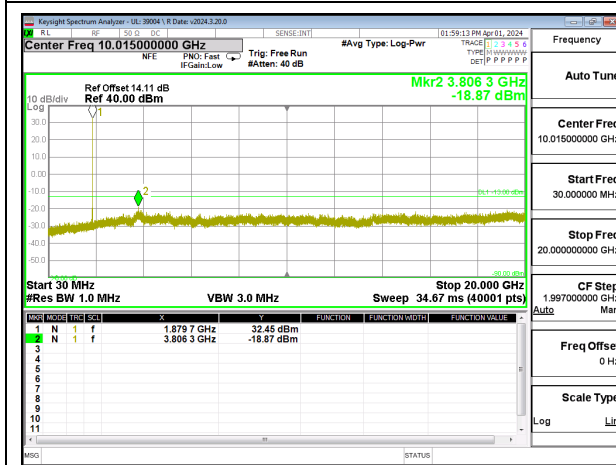
9.3.2. GSM 1900



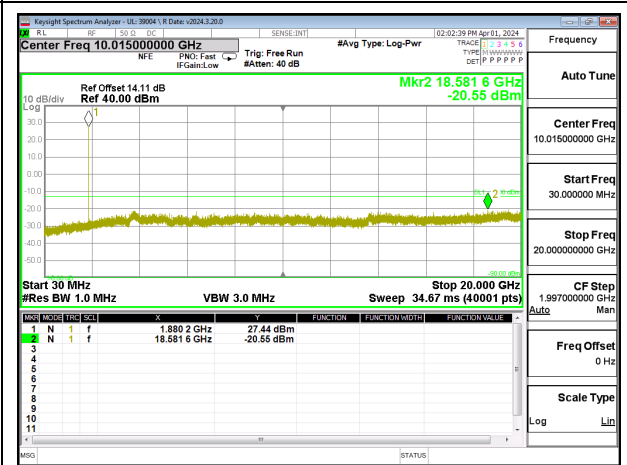
GSM 1900 GPRS Low Channel



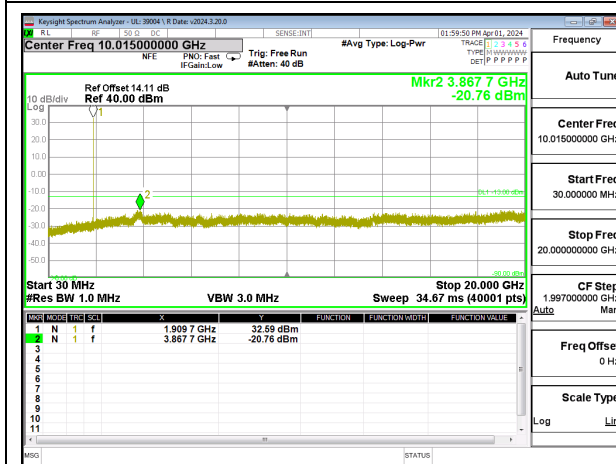
GSM 1900 EGPRS Low Channel



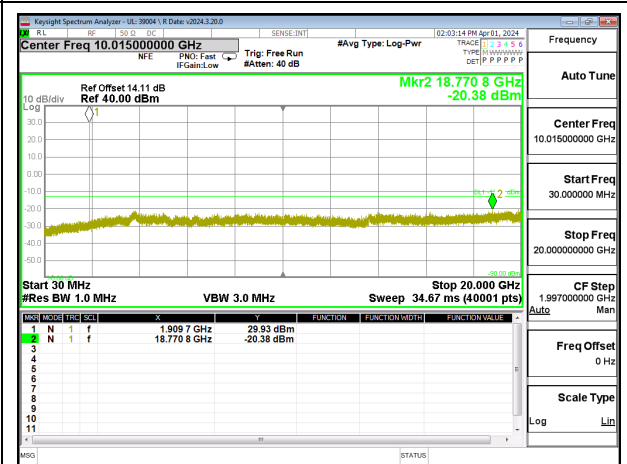
GSM 1900 GPRS Middle Channel



GSM 1900 EGPRS Middle Channel

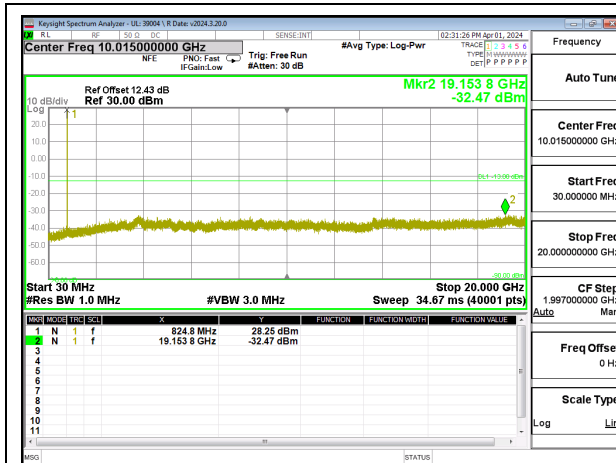


GSM 1900 GPRS High Channel

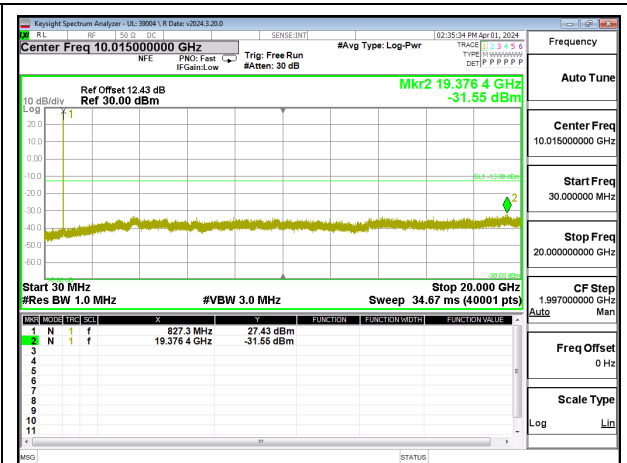


GSM 1900 EGPRS High Channel

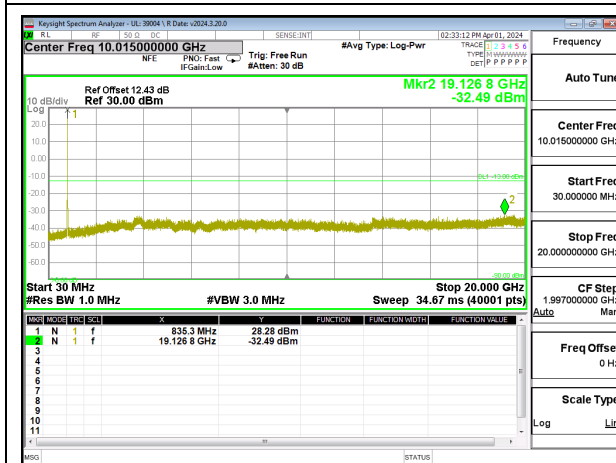
9.3.3. WCDMA BAND 5



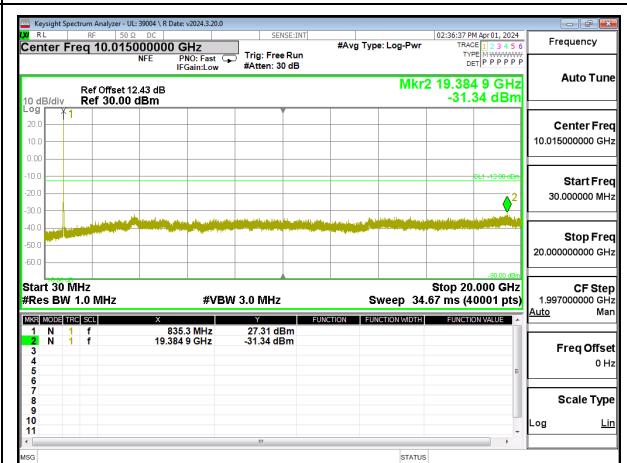
WCDMA Band 5 Rel 99 Low Channel



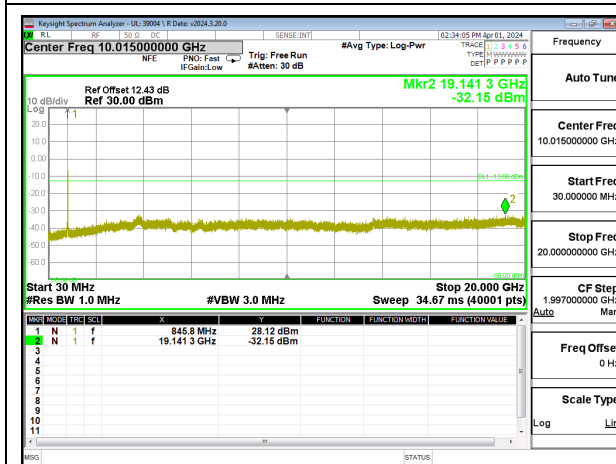
WCDMA Band 5 HSDPA Low Channel



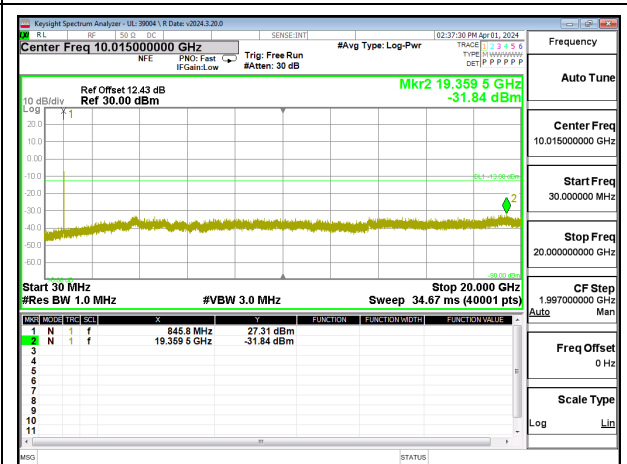
WCDMA Band 5 Rel 99 Middle Channel



WCDMA Band 5 HSDPA Middle Channel

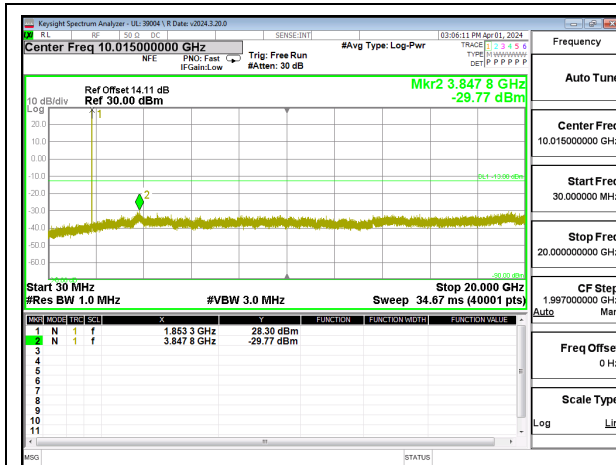


WCDMA Band 5 Rel 99 High Channel

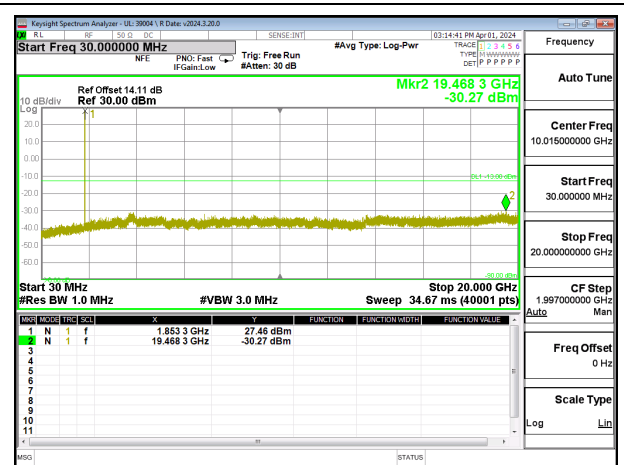


WCDMA Band 5 HSDPA High Channel

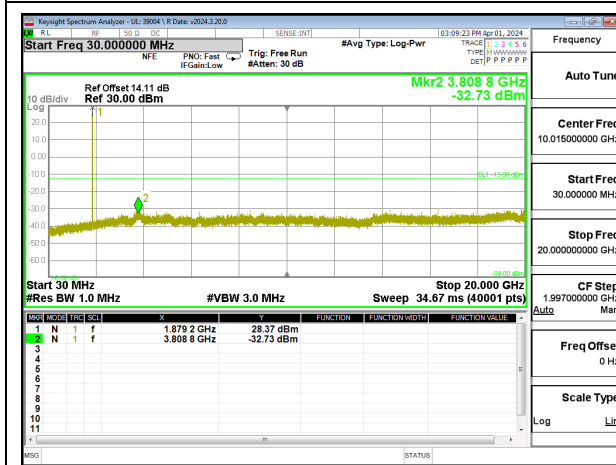
9.3.4. WCDMA BAND 2



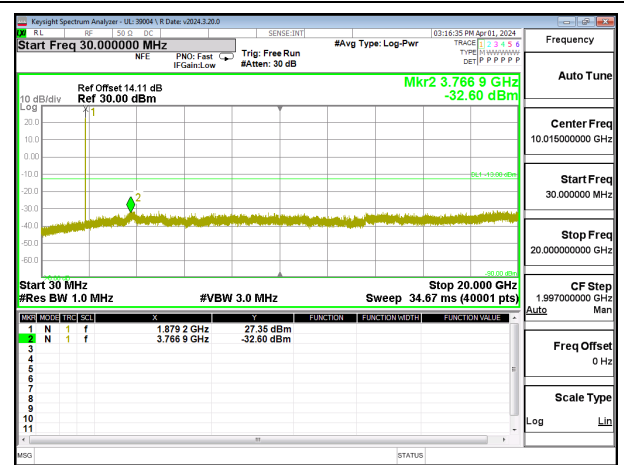
WCDMA Band 2 Rel 99 Low Channel



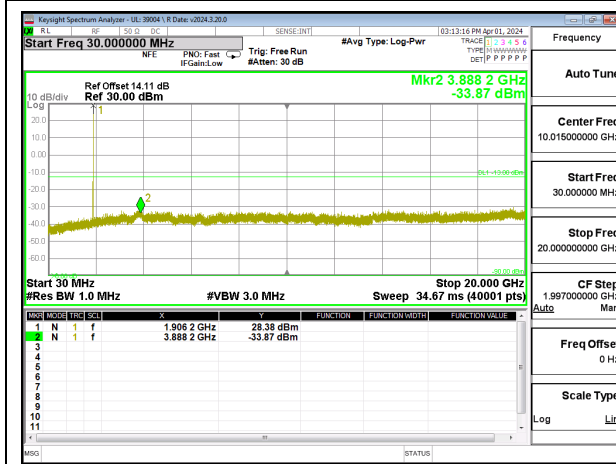
WCDMA Band 2 HSDPA Low Channel



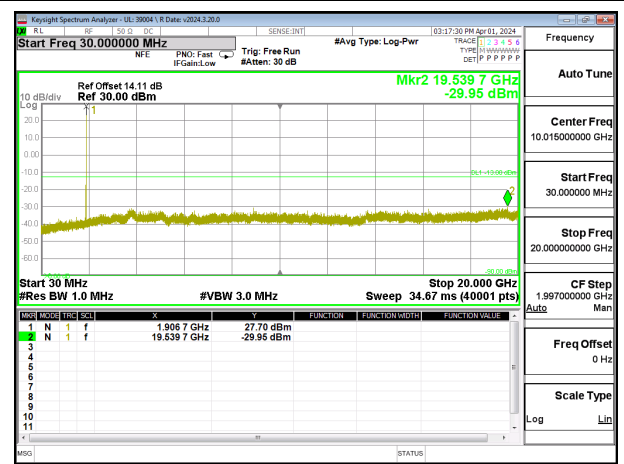
WCDMA Band 2 Rel 99 Middle Channel



WCDMA Band 2 HSDPA Middle Channel

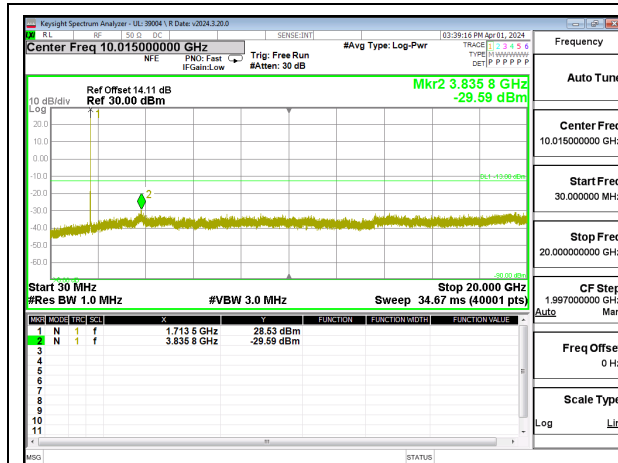


WCDMA Band 2 Rel 99 High Channel

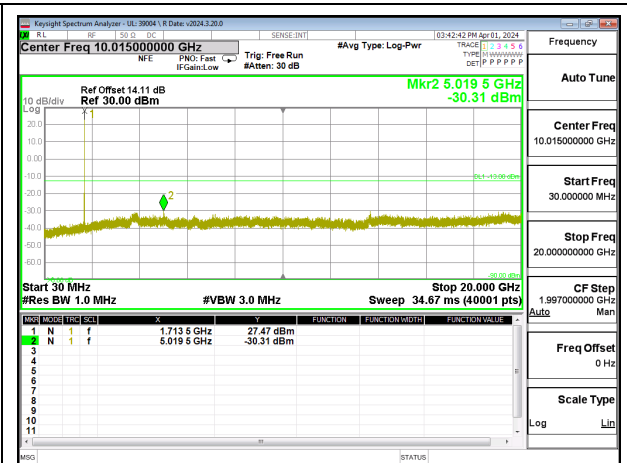


WCDMA Band 2 HSDPA High Channel

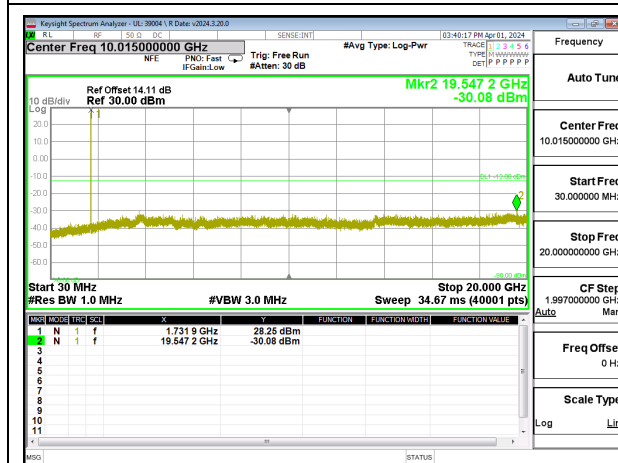
9.3.5. WCDMA BAND 4



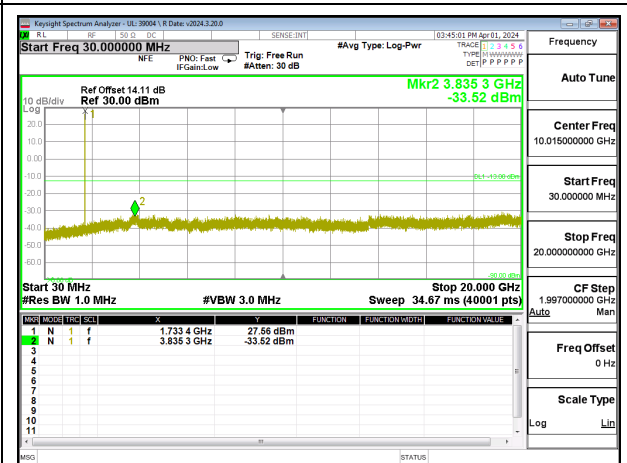
WCDMA Band 4 Rel 99 Low Channel



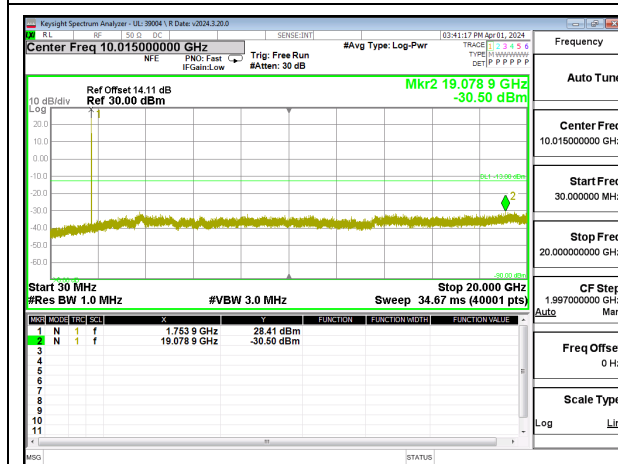
WCDMA Band 4 HSDPA Low Channel



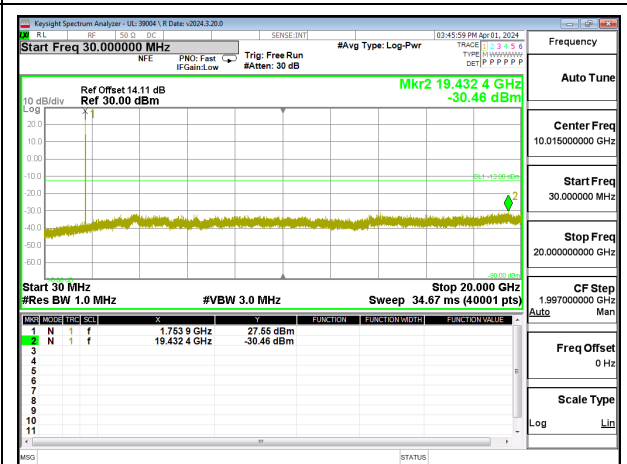
WCDMA Band 4 Rel 99 Middle Channel



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 frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at 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 $+50^{\circ}\text{C}$
- 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 placed inside a temperature chamber. The temperature is set to 20°C 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 $+50^{\circ}\text{C}$ 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:	2024-04-12
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GPRS 850

Band	850	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)			
Temperature	Voltage					
Normal (20°C)	Normal	824.0447	848.9513			
Extreme (50°C)		824.0447	848.9513	8.2	0.010	Yes
Extreme (40°C)		824.0447	848.9513	13.2	0.016	Yes
Extreme (30°C)		824.0447	848.9513	16.5	0.020	Yes
Extreme (10°C)		824.0447	848.9513	6.4	0.008	Yes
Extreme (0°C)		824.0447	848.9513	8.4	0.010	Yes
Extreme (-10°C)		824.0447	848.9513	10.9	0.013	Yes
Extreme (-20°C)		824.0447	848.9513	20.2	0.024	Yes
Extreme (-30°C)		824.0447	848.9513	15.2	0.018	Yes
20°C	15%	824.0447	848.9513	6.0	0.007	Yes
	-15%	824.0447	848.9513	5.7	0.007	Yes
	End Point Voltage	824.0447	848.9513	6.9	0.008	Yes

GPRS 1900

Band	1900	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1910		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)			
Temperature	Voltage					
Normal (20°C)	Normal	1850.0503	1909.9507			
Extreme (50°C)		1850.0503	1909.9507	10.5	0.006	Yes
Extreme (40°C)		1850.0503	1909.9507	8.3	0.004	Yes
Extreme (30°C)		1850.0503	1909.9507	18.1	0.010	Yes
Extreme (10°C)		1850.0503	1909.9507	8.2	0.004	Yes
Extreme (0°C)		1850.0503	1909.9507	10.7	0.006	Yes
Extreme (-10°C)		1850.0503	1909.9507	14.2	0.008	Yes
Extreme (-20°C)		1850.0503	1909.9507	18.4	0.010	Yes
Extreme (-30°C)		1850.0503	1909.9507	26.3	0.014	Yes
20°C	15%	1850.0503	1909.9507	9.4	0.005	Yes
	-15%	1850.0503	1909.9507	8.2	0.004	Yes
	End Point Voltage	1850.0503	1909.9507	9.7	0.005	Yes

9.4.2. WCDMA

Test Engineer ID:	39004	Test Date:	2024-04-16
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WCDMA REL 99 BAND 5

Band	5	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		824	849		2.5	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	
Temperature	Voltage					
Normal (20°C)	Normal	824.1246	848.8801			
Extreme (50°C)		824.1246	848.8801	1.3	0.002	Yes
Extreme (40°C)		824.1246	848.8801	2.6	0.003	Yes
Extreme (30°C)		824.1246	848.8801	1.8	0.002	Yes
Extreme (10°C)		824.1246	848.8801	2.5	0.003	Yes
Extreme (0°C)		824.1246	848.8801	1.2	0.001	Yes
Extreme (-10°C)		824.1246	848.8801	-0.5	-0.001	Yes
Extreme (-20°C)		824.1246	848.8801	-2.4	-0.003	Yes
Extreme (-30°C)		824.1246	848.8801	-3.8	-0.005	Yes
20°C	15%	824.1246	848.8801	2.6	0.003	Yes
	-15%	824.1246	848.8801	1.4	0.002	Yes
	End Point Voltage	824.1246	848.8801	3.2	0.004	Yes

WCDMA REL 99 BAND 2

Band	2	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1850	1910		2.5	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	
Temperature	Voltage					
Normal (20°C)	Normal	1850.1325	1909.8966			
Extreme (50°C)		1850.1325	1909.8966	8.3	0.004	Yes
Extreme (40°C)		1850.1325	1909.8966	7.5	0.004	Yes
Extreme (30°C)		1850.1325	1909.8966	6.8	0.004	Yes
Extreme (10°C)		1850.1325	1909.8966	5.7	0.003	Yes
Extreme (0°C)		1850.1325	1909.8966	3.8	0.002	Yes
Extreme (-10°C)		1850.1325	1909.8966	1.4	0.001	Yes
Extreme (-20°C)		1850.1325	1909.8966	-1.8	-0.001	Yes
Extreme (-30°C)		1850.1325	1909.8966	-3.0	-0.002	Yes
20°C	15%	1850.1325	1909.8966	6.1	0.003	Yes
	-15%	1850.1325	1909.8966	5.4	0.003	Yes
	End Point Voltage	1850.1325	1909.8966	4.6	0.002	Yes

WCDMA REL 99 BAND 4

Band	4	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		1710	1755			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	1710.1313	1754.8736			
Extreme (50°C)		1710.1313	1754.8736	7.1	0.004	Yes
Extreme (40°C)		1710.1313	1754.8736	16.0	0.009	Yes
Extreme (30°C)		1710.1313	1754.8736	14.3	0.008	Yes
Extreme (10°C)		1710.1313	1754.8736	10.2	0.006	Yes
Extreme (0°C)		1710.1313	1754.8736	8.4	0.005	Yes
Extreme (-10°C)		1710.1313	1754.8736	-3.8	-0.002	Yes
Extreme (-20°C)		1710.1313	1754.8736	-7.4	-0.004	Yes
Extreme (-30°C)		1710.1313	1754.8736	-11.5	-0.007	Yes
20°C	15%	1710.1313	1754.8736	8.7	0.005	Yes
	-15%	1710.1313	1754.8736	8.2	0.005	Yes
	End Point Voltage	1710.1313	1754.8736	5.4	0.003	Yes

9.5. PEAK-TO-AVERAGE POWER RATIO

LIMIT

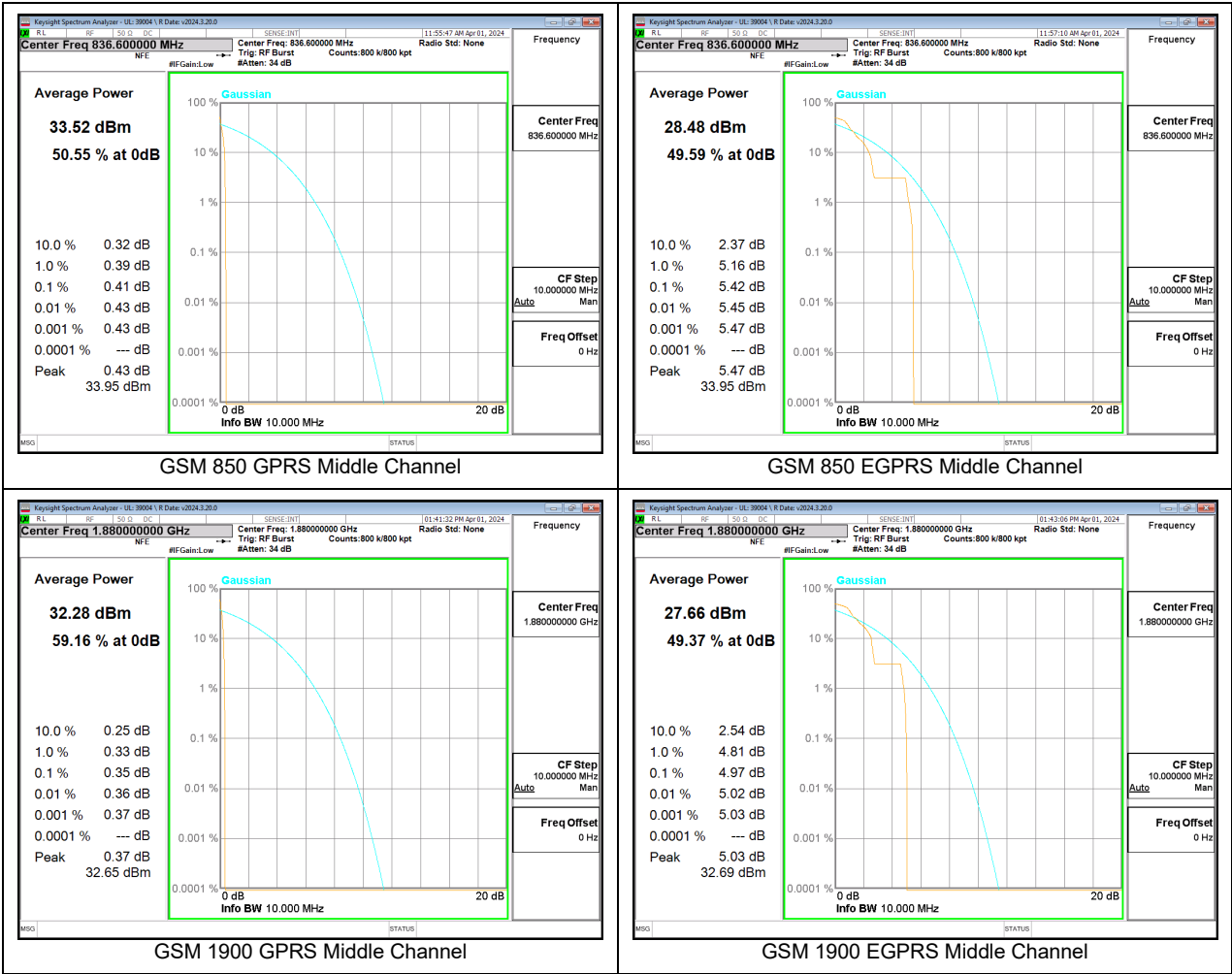
In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

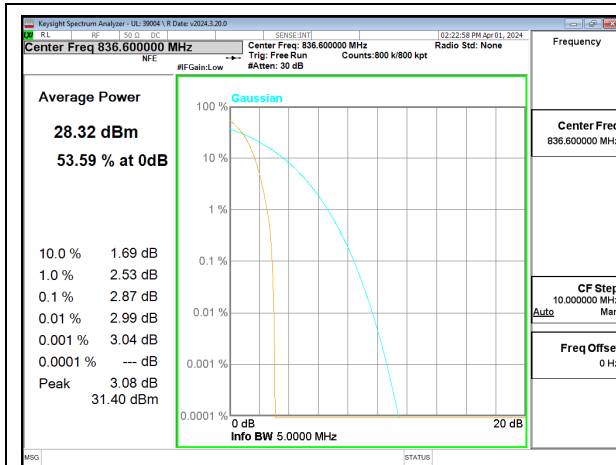
Ant 1 was used to measure as the worst case. The results from all CCDF plots are passed with 13dB peak-to-average power ratio criteria.

Test Engineer ID:	39004	Test Date:	2024-04-01
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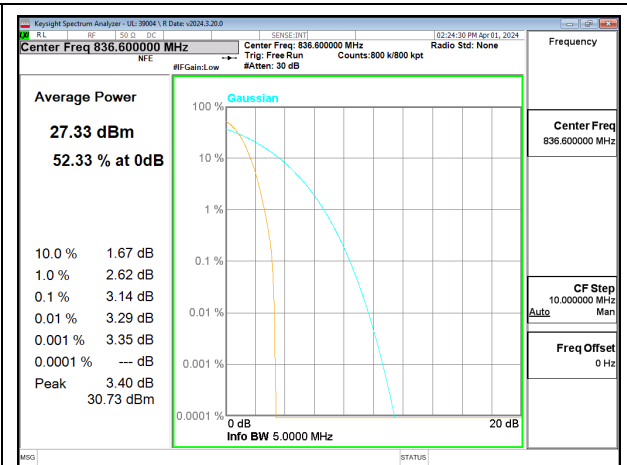
9.5.1. GSM



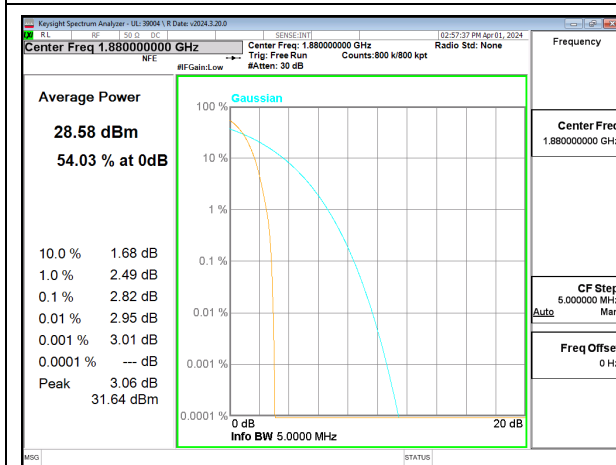
9.5.2. WCDMA



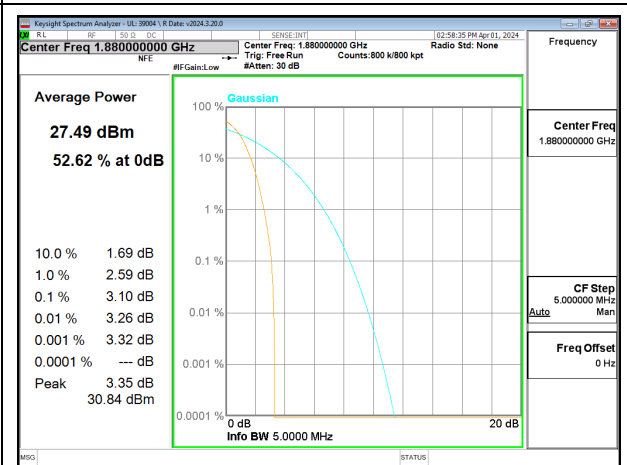
WCDMA Band 5 Rel 99 Middle Channel



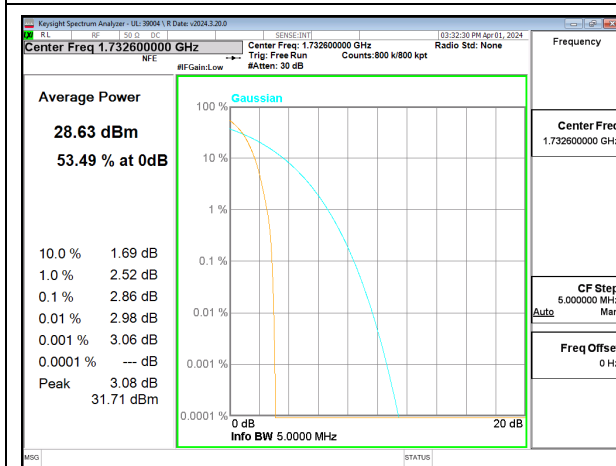
WCDMA Band 5 HSDPA Middle Channel



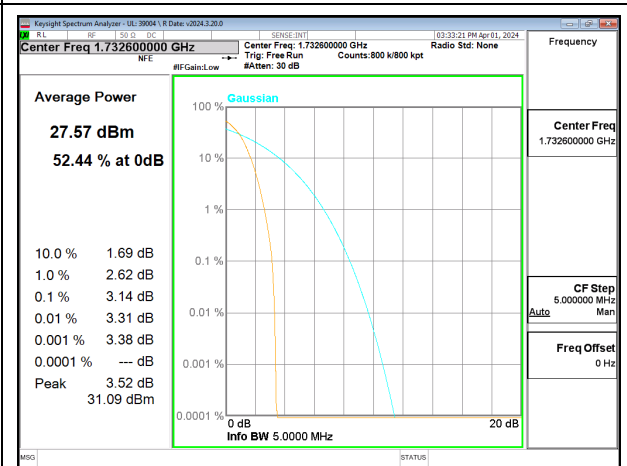
WCDMA Band 2 Rel 99 Middle Channel



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.

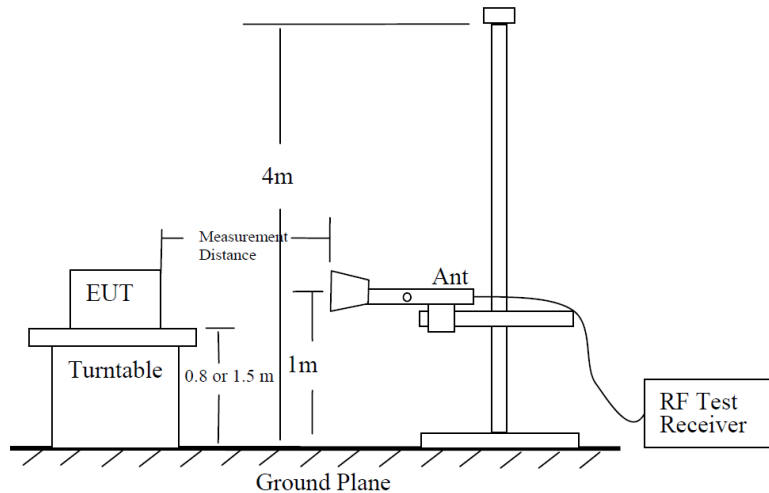


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

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

- a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance (in the far field region) in m.
- d) $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.

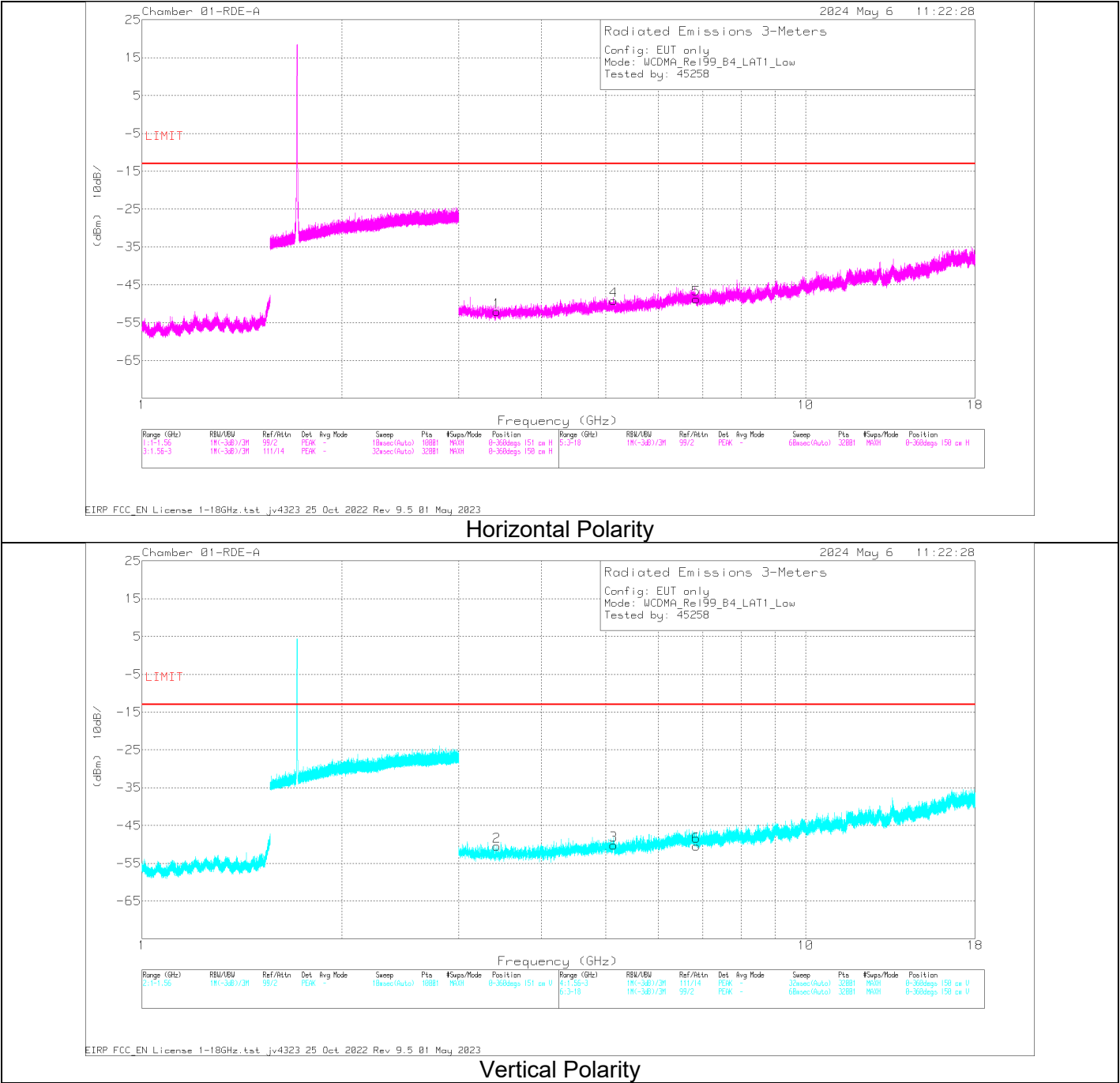
So, from d)

The measuring distance is usually at 3m, then $20 \cdot \log(3) = 9.5424$

Then, $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

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



Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
3.425625	35.29	Pk	32.8	-95.2	-24.9	-52.01	-13	-39.01	H
3.425625	36.78	Pk	32.8	-95.2	-24.9	-50.52	-13	-37.52	V
5.137031	33.57	Pk	34.1	-95.2	-21.7	-49.23	-13	-36.23	H
5.1375	32.64	Pk	34.1	-95.2	-21.7	-50.16	-13	-37.16	V
6.848906	30.14	Pk	35.6	-95.2	-19.29	-48.75	-13	-35.75	H
6.848906	28.47	Pk	35.6	-95.2	-19.29	-50.42	-13	-37.42	V

10.1. FIELD STRENGTH OF SPURIOUS RADIATION, Antenna 1

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 $43 + 10 \log_{10}p$ (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 $43 + 10 \log_{10}p$ (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 #:	14982479
Date:	4/25/2024
Test Engineer:	32934
Configuration:	EUT Only
Mode:	GPRS 850
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.648311	44.81	Pk	28.4	-95.2	-35.23	-57.92	-13	-44.92	H
1.648311	46.02	Pk	28.4	-95.2	-35.23	-56.71	-13	-43.71	V
2.472578	45.80	Pk	32.3	-95.2	-35.00	-52.60	-13	-39.60	H
2.472578	48.01	Pk	32.3	-95.2	-35.00	-50.39	-13	-37.39	V
3.307600	41.45	Pk	32.8	-95.2	-33.94	-55.29	-13	-42.29	H
3.299778	41.19	Pk	32.8	-95.2	-34.00	-55.61	-13	-42.61	V
Mid Channel, 836.6 MHz									
1.679600	42.79	Pk	28.7	-95.2	-35.14	-59.45	-13	-46.45	H
1.673245	43.22	Pk	28.6	-95.2	-35.30	-59.38	-13	-46.38	V
2.509245	45.95	Pk	32.3	-95.2	-35.02	-52.67	-13	-39.67	H
2.509734	47.10	Pk	32.3	-95.2	-35.07	-51.57	-13	-38.57	V
3.357467	40.69	Pk	32.8	-95.2	-33.80	-55.91	-13	-42.91	H
3.356489	41.00	Pk	32.8	-95.2	-33.85	-55.65	-13	-42.65	V
High Channel, 848.8 MHz									
1.697689	45.90	Pk	28.9	-95.2	-35.33	-56.33	-13	-43.33	H
1.697200	44.23	Pk	28.9	-95.2	-35.38	-58.05	-13	-45.05	V
2.546889	44.63	Pk	32.4	-95.2	-34.90	-53.67	-13	-40.67	H
2.546400	46.91	Pk	32.4	-95.2	-34.90	-51.39	-13	-38.39	V
3.413689	40.92	Pk	32.8	-95.2	-33.53	-55.41	-13	-42.41	H
3.419067	40.13	Pk	32.8	-95.2	-33.50	-56.17	-13	-43.17	V

EGPRS MODE

Project #:	14982479
Date:	4/25/2024
Test Engineer:	32934
Configuration:	EUT Only
Mode:	EGPRS 850
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.648311	43.77	Pk	28.4	-95.2	-35.23	-58.96	-13	-45.96	H
1.648311	44.25	Pk	28.4	-95.2	-35.23	-58.48	-13	-45.48	V
2.472578	43.24	Pk	32.3	-95.2	-35.00	-55.16	-13	-42.16	H
2.472578	45.90	Pk	32.3	-95.2	-35.00	-52.50	-13	-39.50	V
3.307112	42.27	Pk	32.8	-95.2	-33.99	-54.52	-13	-41.52	H
3.301245	41.97	Pk	32.8	-95.2	-34.00	-54.83	-13	-41.83	V
Mid Channel, 836.6 MHz									
1.679600	41.76	Pk	28.7	-95.2	-35.14	-60.48	-13	-47.48	H
1.676178	42.28	Pk	28.7	-95.2	-35.20	-60.02	-13	-47.02	V
2.509245	45.92	Pk	32.3	-95.2	-35.02	-52.70	-13	-39.70	H
2.509734	47.96	Pk	32.3	-95.2	-35.07	-50.71	-13	-37.71	V
3.340845	41.62	Pk	32.8	-95.2	-33.88	-55.06	-13	-42.06	H
3.352578	41.43	Pk	32.8	-95.2	-33.76	-55.13	-13	-42.13	V
High Channel, 848.8 MHz									
1.697200	46.31	Pk	28.9	-95.2	-35.38	-55.97	-13	-42.97	H
1.697200	44.89	Pk	28.9	-95.2	-35.38	-57.39	-13	-44.39	V
2.546889	44.28	Pk	32.4	-95.2	-34.90	-54.02	-13	-41.02	H
2.546400	46.71	Pk	32.4	-95.2	-34.90	-51.59	-13	-38.59	V
3.391689	40.30	Pk	32.8	-95.2	-33.70	-56.20	-13	-43.20	H
3.398534	40.59	Pk	32.8	-95.2	-33.60	-55.81	-13	-42.81	V

10.1.2. GSM 1900

GPRS MODE

Project #:	14982479
Date:	4/24/2024
Test Engineer:	32934
Configuration:	EUT Only
Mode:	GPRS 1900
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.682969	40.71	Pk	33.2	-95.2	-32.50	-53.79	-13	-40.79	H
3.675000	41.43	Pk	33.2	-95.2	-32.40	-52.97	-13	-39.97	V
5.550469	38.57	Pk	34.6	-95.2	-29.25	-51.28	-13	-38.28	H
5.550469	46.64	Pk	34.6	-95.2	-29.25	-43.21	-13	-30.21	V
7.384219	35.71	Pk	35.5	-95.2	-26.50	-50.49	-13	-37.49	H
7.543594	37.13	Pk	35.6	-95.2	-26.30	-48.77	-13	-35.77	V
Mid Channel, 1880MHz									
3.764531	40.21	Pk	33.4	-95.2	-32.05	-53.64	-13	-40.64	H
3.755625	40.81	Pk	33.4	-95.2	-32.16	-53.15	-13	-40.15	V
5.639531	38.82	Pk	34.7	-95.2	-30.00	-51.68	-13	-38.68	H
5.640000	47.77	Pk	34.7	-95.2	-30.00	-42.73	-13	-29.73	V
7.562344	37.35	Pk	35.7	-95.2	-26.37	-48.52	-13	-35.52	H
7.521563	35.94	Pk	35.6	-95.2	-26.30	-49.96	-13	-36.96	V
High Channel, 1909.8MHz									
3.862500	41.34	Pk	33.5	-95.2	-31.65	-52.01	-13	-39.01	H
3.866719	39.56	Pk	33.5	-95.2	-31.70	-53.84	-13	-40.84	V
5.728594	40.27	Pk	34.8	-95.2	-28.80	-48.93	-13	-35.93	H
5.729531	47.55	Pk	34.8	-95.2	-28.75	-41.60	-13	-28.60	V
7.618125	36.47	Pk	35.7	-95.2	-26.50	-49.53	-13	-36.53	H
7.621875	35.56	Pk	35.7	-95.2	-26.49	-50.43	-13	-37.43	V

EGPRS MODE

Project #:	14982479
Date:	4/24/2024
Test Engineer:	32934
Configuration:	EUT Only
Mode:	EGPRS 1900
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.682500	41.11	Pk	33.2	-95.2	-32.50	-53.39	-13	-40.39	H
3.656719	40.41	Pk	33.2	-95.2	-32.50	-54.09	-13	-41.09	V
5.550000	42.09	Pk	34.6	-95.2	-29.20	-47.71	-13	-34.71	H
5.550938	49.07	Pk	34.6	-95.2	-29.29	-40.82	-13	-27.82	V
7.421719	34.57	Pk	35.6	-95.2	-26.26	-51.29	-13	-38.29	H
7.417500	34.93	Pk	35.6	-95.2	-26.30	-50.97	-13	-37.97	V
Mid Channel, 1880MHz									
3.755156	40.31	Pk	33.4	-95.2	-32.12	-53.61	-13	-40.61	H
3.724688	40.44	Pk	33.3	-95.2	-32.16	-53.62	-13	-40.62	V
5.656406	38.92	Pk	34.7	-95.2	-29.84	-51.42	-13	-38.42	H
5.640469	43.58	Pk	34.7	-95.2	-29.91	-46.83	-13	-33.83	V
7.544531	34.96	Pk	35.6	-95.2	-26.30	-50.94	-13	-37.94	H
7.581563	35.83	Pk	35.7	-95.2	-26.24	-49.91	-13	-36.91	V
High Channel, 1909.8MHz									
3.804844	40.02	Pk	33.4	-95.2	-31.88	-53.66	-13	-40.66	H
3.825938	39.28	Pk	33.5	-95.2	-31.89	-54.31	-13	-41.31	V
5.737500	37.46	Pk	34.8	-95.2	-28.70	-51.64	-13	-38.64	H
5.729531	41.88	Pk	34.8	-95.2	-28.75	-47.27	-13	-34.27	V
7.622344	35.01	Pk	35.7	-95.2	-26.50	-50.99	-13	-37.99	H
7.654688	35.12	Pk	35.7	-95.2	-26.60	-50.98	-13	-37.98	V

10.1.3. WCDMA BAND 5

REL 99 MODE

Project #:	14982479								
Date:	5/6/2024								
Test Engineer:	32934								
Configuration:	EUT Only								
Mode:	REL 99 Band 5								
Chamber #:	01-RDE-B								
Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.649778	46.69	Pk	28.4	-95.2	-35.30	-56.11	-13	-43.11	H
1.650267	44.65	Pk	28.4	-95.2	-35.27	-58.12	-13	-45.12	V
2.482356	45.58	Pk	32.3	-95.2	-34.96	-52.88	-13	-39.88	H
2.481378	43.56	Pk	32.3	-95.2	-34.94	-54.88	-13	-41.88	V
3.299289	41.50	Pk	32.8	-95.2	-34.00	-55.30	-13	-42.30	H
3.307600	42.43	Pk	32.8	-95.2	-33.94	-54.31	-13	-41.31	V
Mid Channel, 836.6MHz									
1.670311	46.16	Pk	28.6	-95.2	-35.20	-56.34	-13	-43.34	H
1.675200	45.30	Pk	28.7	-95.2	-35.28	-57.08	-13	-44.08	V
2.512667	44.73	Pk	32.3	-95.2	-35.00	-53.77	-13	-40.77	H
2.512667	42.90	Pk	32.3	-95.2	-35.00	-55.6	-13	-42.60	V
3.343778	41.49	Pk	32.8	-95.2	-33.90	-55.21	-13	-42.21	H
3.354045	40.76	Pk	32.8	-95.2	-33.90	-55.94	-13	-42.94	V
High Channel, 846.6MHz									
1.694756	43.53	Pk	28.9	-95.2	-35.30	-58.67	-13	-45.67	H
1.694756	47.23	Pk	28.9	-95.2	-35.30	-54.97	-13	-41.97	V
2.539067	43.17	Pk	32.4	-95.2	-34.81	-54.94	-13	-41.94	H
2.524889	43.02	Pk	32.4	-95.2	-34.91	-55.09	-13	-42.09	V
3.385823	41.23	Pk	32.8	-95.2	-33.70	-55.27	-13	-42.27	H
3.386801	42.99	Pk	32.8	-95.2	-33.78	-53.59	-13	-40.59	V

HSDPA MODE

Project #:	14982479
Date:	3/15/2024
Test Engineer:	32934
Configuration:	EUT Only
Mode:	HSDPA Band 5
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.650267	45.70	Pk	28.4	-95.2	-35.27	-57.07	-13	-44.07	H
1.650756	44.97	Pk	28.4	-95.2	-35.22	-57.75	-13	-44.75	V
2.466223	43.35	Pk	32.3	-95.2	-35.00	-55.05	-13	-42.05	H
2.472578	42.98	Pk	32.3	-95.2	-35.00	-55.42	-13	-42.42	V
3.314445	41.90	Pk	32.8	-95.2	-33.89	-54.79	-13	-41.79	H
3.322756	42.91	Pk	32.8	-95.2	-33.88	-53.77	-13	-40.77	V
Mid Channel, 836.6MHz									
1.674711	45.26	Pk	28.7	-95.2	-35.3	-57.14	-13	-44.14	H
1.670311	45.66	Pk	28.6	-95.2	-35.2	-56.84	-13	-43.84	V
2.502400	42.53	Pk	32.3	-95.2	-34.94	-56.01	-13	-43.01	H
2.505823	42.60	Pk	32.3	-95.2	-35.00	-56.00	-13	-43.00	V
3.341334	42.00	Pk	32.8	-95.2	-33.90	-54.7	-13	-41.7	H
3.324712	41.49	Pk	32.8	-95.2	-33.90	-55.21	-13	-42.21	V
High Channel, 846.6MHz									
1.694756	43.76	Pk	28.9	-95.2	-35.30	-58.44	-13	-45.44	H
1.695245	47.82	Pk	28.9	-95.2	-35.28	-54.36	-13	-41.36	V
2.536623	42.58	Pk	32.4	-95.2	-34.84	-55.56	-13	-42.56	H
2.537600	42.82	Pk	32.4	-95.2	-34.92	-55.40	-13	-42.40	V
3.360889	41.53	Pk	32.8	-95.2	-33.79	-55.06	-13	-42.06	H
3.370178	41.20	Pk	32.8	-95.2	-33.70	-55.30	-13	-42.30	V

10.1.4. WCDMA BAND 2

REL 99 MODE

Project #:	14982479								
Date:	5/6/2024								
Test Engineer:	32934								
Configuration:	EUT Only								
Mode:	REL99 Band 2								
Chamber #:	03-RDE-B								
Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.720000	40.73	Pk	33.3	-95.2	-32.20	-53.37	-13	-40.37	H
3.719063	41.35	Pk	33.3	-95.2	-32.20	-52.75	-13	-39.75	V
5.553281	39.82	Pk	34.6	-95.2	-29.33	-50.11	-13	-37.11	H
5.555156	41.13	Pk	34.6	-95.2	-29.32	-48.79	-13	-35.79	V
7.401094	34.91	Pk	35.5	-95.2	-26.50	-51.29	-13	-38.29	H
7.392188	35.69	Pk	35.5	-95.2	-26.50	-50.51	-13	-37.51	V
Mid Channel, 1880MHz									
3.767344	39.88	Pk	33.4	-95.2	-32.07	-53.99	-13	-40.99	H
3.735938	41.26	Pk	33.4	-95.2	-32.10	-52.64	-13	-39.64	V
5.644219	39.09	Pk	34.7	-95.2	-30.00	-51.41	-13	-38.41	H
5.638594	40.26	Pk	34.7	-95.2	-30.00	-50.24	-13	-37.24	V
7.507031	35.42	Pk	35.6	-95.2	-26.30	-50.48	-13	-37.48	H
7.539375	34.55	Pk	35.6	-95.2	-26.30	-51.35	-13	-38.35	V
High Channel, 1907.6MHz									
3.821719	39.03	Pk	33.5	-95.2	-31.90	-54.57	-13	-41.57	H
3.806719	40.00	Pk	33.4	-95.2	-31.90	-53.70	-13	-40.70	V
5.725313	37.89	Pk	34.8	-95.2	-28.87	-51.38	-13	-38.38	H
5.727188	39.40	Pk	34.8	-95.2	-28.80	-49.80	-13	-36.80	V
7.632188	35.75	Pk	35.7	-95.2	-26.50	-50.25	-13	-37.25	H
7.618594	35.59	Pk	35.7	-95.2	-26.50	-50.41	-13	-37.41	V

HSDPA MODE

Project #:	14982479
Date:	5/7/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 2
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.705469	34.33	Pk	33.0	-95.2	-23.90	-51.77	-13	-38.77	H
3.705469	33.86	Pk	33.0	-95.2	-23.90	-52.24	-13	-39.24	V
5.558906	32.90	Pk	34.5	-95.2	-20.59	-48.39	-13	-35.39	H
5.557500	34.87	Pk	34.5	-95.2	-20.55	-46.38	-13	-33.38	V
7.409531	30.57	Pk	35.6	-95.2	-18.15	-47.18	-13	-34.18	H
7.409531	29.32	Pk	35.6	-95.2	-18.15	-48.43	-13	-35.43	V
Mid Channel, 1880MHz									
3.760313	32.93	Pk	33.2	-95.2	-23.70	-52.77	-13	-39.77	H
3.760313	33.89	Pk	33.2	-95.2	-23.70	-51.81	-13	-38.81	V
5.640000	30.49	Pk	34.6	-95.2	-20.10	-50.21	-13	-37.21	H
5.640000	31.42	Pk	34.6	-95.2	-20.10	-49.28	-13	-36.28	V
7.520625	30.17	Pk	35.7	-95.2	-18.14	-47.47	-13	-34.47	H
7.520625	29.26	Pk	35.7	-95.2	-18.14	-48.38	-13	-35.38	V
High Channel, 1907.6MHz									
3.815625	34.4	Pk	33.3	-95.2	-24.06	-51.56	-13	-38.56	H
3.815625	35.11	Pk	33.3	-95.2	-24.06	-50.85	-13	-37.85	V
5.722500	33.52	Pk	34.6	-95.2	-21.45	-48.53	-13	-35.53	H
5.726250	37.76	Pk	34.6	-95.2	-21.50	-44.34	-13	-31.34	V
7.629844	28.77	Pk	35.8	-95.2	-16.80	-47.43	-13	-34.43	H
7.629844	28.00	Pk	35.8	-95.2	-16.80	-48.20	-13	-35.20	V

10.1.5. WCDMA BAND 4

REL 99 MODE

Project #:	14982479								
Date:	5/6/2024								
Test Engineer:	45258								
Configuration:	EUT Only								
Mode:	Rel 99 Band 4								
Chamber #:	01-RDE-A								
Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.425625	35.29	Pk	32.8	-95.2	-24.90	-52.01	-13	-39.01	H
3.425625	36.78	Pk	32.8	-95.2	-24.90	-50.52	-13	-37.52	V
5.137031	33.57	Pk	34.1	-95.2	-21.70	-49.23	-13	-36.23	H
5.137500	32.64	Pk	34.1	-95.2	-21.70	-50.16	-13	-37.16	V
6.848906	30.14	Pk	35.6	-95.2	-19.29	-48.75	-13	-35.75	H
6.848906	28.47	Pk	35.6	-95.2	-19.29	-50.42	-13	-37.42	V
Mid Channel, 1732.6MHz									
3.465000	35.51	Pk	32.7	-95.2	-24.8	-51.79	-13	-38.79	H
3.465000	34.96	Pk	32.7	-95.2	-24.8	-52.34	-13	-39.34	V
5.201250	37.14	Pk	34.2	-95.2	-22.3	-46.16	-13	-33.16	H
5.194219	38.02	Pk	34.2	-95.2	-22.48	-45.46	-13	-32.46	V
6.930000	29.32	Pk	35.7	-95.2	-19.00	-49.18	-13	-36.18	H
6.930000	30.95	Pk	35.7	-95.2	-19.00	-47.55	-13	-34.55	V
High Channel, 1752.6MHz									
3.505781	34.77	Pk	32.8	-95.2	-24.30	-51.93	-13	-38.93	H
3.505781	33.67	Pk	32.8	-95.2	-24.30	-53.03	-13	-40.03	V
5.258438	33.18	Pk	34.2	-95.2	-21.96	-49.78	-13	-36.78	H
5.258438	32.73	Pk	34.2	-95.2	-21.96	-50.23	-13	-37.23	V
7.509844	29.95	Pk	35.7	-95.2	-18.20	-47.75	-13	-34.75	H
7.509844	29.39	Pk	35.7	-95.2	-18.20	-48.31	-13	-35.31	V

HSDPA MODE

Project #:	14982479
Date:	5/7/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.424688	35.26	Pk	32.8	-95.2	-24.93	-52.07	-13	-39.07	H
3.425156	35.12	Pk	32.8	-95.2	-24.90	-52.18	-13	-39.18	V
5.137031	31.99	Pk	34.1	-95.2	-21.70	-50.81	-13	-37.81	H
5.137031	33.08	Pk	34.1	-95.2	-21.70	-49.72	-13	-36.72	V
6.850313	29.27	Pk	35.6	-95.2	-19.30	-49.63	-13	-36.63	H
6.850313	30.09	Pk	35.6	-95.2	-19.30	-48.81	-13	-35.81	V
Mid Channel, 1732.6MHz									
3.465938	37.33	Pk	32.7	-95.2	-24.80	-49.97	-13	-36.97	H
3.465000	35.76	Pk	32.7	-95.2	-24.80	-51.54	-13	-38.54	V
5.198906	32.65	Pk	34.2	-95.2	-22.40	-50.75	-13	-37.75	H
5.198906	32.25	Pk	34.2	-95.2	-22.40	-51.15	-13	-38.15	V
6.930000	31.99	Pk	35.7	-95.2	-19.00	-46.51	-13	-33.51	H
6.930000	28.78	Pk	35.7	-95.2	-19.00	-49.72	-13	-36.72	V
High Channel, 1752.6MHz									
3.504844	35.17	Pk	32.8	-95.2	-24.30	-51.53	-13	-38.53	H
3.504844	34.06	Pk	32.8	-95.2	-24.30	-52.64	-13	-39.64	V
5.257969	32.67	Pk	34.2	-95.2	-22.00	-50.33	-13	-37.33	H
5.258438	33.03	Pk	34.2	-95.2	-21.96	-49.93	-13	-36.93	V
7.011094	30.91	Pk	35.6	-95.2	-18.21	-46.90	-13	-33.90	H
7.011094	28.59	Pk	35.6	-95.2	-18.21	-49.22	-13	-36.22	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, Antenna 2

10.2.1. GSM 850

GPRS MODE

Project #:	14982479
Date:	4/26/2024
Test Engineer:	104996
Configuration:	EUT Only
Mode:	GPRS 850
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.648450	56.55	Pk	28.3	-95.2	-49.7	-60.05	-13	-47.05	H
1.648450	58.17	Pk	28.3	-95.2	-49.7	-58.43	-13	-45.43	V
2.472400	59.72	Pk	32.3	-95.2	-49.9	-53.08	-13	-40.08	H
2.472400	58.06	Pk	32.3	-95.2	-49.9	-54.74	-13	-41.74	V
3.296800	55.81	Pk	33.0	-95.2	-48.2	-54.59	-13	-41.59	H
3.296800	54.57	Pk	33.0	-95.2	-48.2	-55.83	-13	-42.83	V
Mid Channel, 836.6 MHz									
1.672750	57.72	Pk	28.5	-95.2	-49.70	-58.68	-13	-45.68	H
1.672750	61.60	Pk	28.5	-95.2	-49.70	-54.80	-13	-41.80	V
3.346750	55.27	Pk	33.1	-95.2	-47.63	-54.46	-13	-41.46	H
3.346750	54.07	Pk	33.1	-95.2	-47.63	-55.66	-13	-42.66	V
2.509750	55.95	Pk	32.2	-95.2	-50.10	-57.15	-13	-44.15	H
2.509750	56.77	Pk	32.2	-95.2	-50.10	-56.33	-13	-43.33	V
High Channel, 848.8 MHz									
1.697950	55.61	Pk	28.9	-95.2	-49.80	-60.49	-13	-47.49	H
1.697950	67.97	Pk	28.9	-95.2	-49.80	-48.13	-13	-35.13	V
2.546650	61.16	Pk	32.3	-95.2	-50.20	-51.94	-13	-38.94	H
2.546650	58.10	Pk	32.3	-95.2	-50.20	-55.00	-13	-42.00	V
3.395350	54.83	Pk	33.2	-95.2	-47.47	-54.64	-13	-41.64	H
3.395350	52.84	Pk	33.2	-95.2	-47.47	-56.63	-13	-43.63	V

EGPRS MODE

Project #:	14982479
Date:	4/26/2024
Test Engineer:	104996
Configuration:	EUT Only
Mode:	EGPRS 850
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 824.2 MHz									
1.648900	57.20	Pk	28.3	-95.2	-49.70	-59.40	-13	-46.40	H
1.648900	56.21	Pk	28.3	-95.2	-49.70	-60.39	-13	-47.39	V
2.472400	57.65	Pk	32.3	-95.2	-49.90	-55.15	-13	-42.15	H
2.472400	56.16	Pk	32.3	-95.2	-49.90	-56.64	-13	-43.64	V
3.296800	54.82	Pk	33.0	-95.2	-48.20	-55.58	-13	-42.58	H
3.296800	55.67	Pk	33.0	-95.2	-48.20	-54.73	-13	-41.73	V
Mid Channel, 836.6 MHz									
1.673650	58.12	Pk	28.6	-95.2	-49.70	-58.18	-13	-45.18	H
1.673650	56.76	Pk	28.6	-95.2	-49.70	-59.54	-13	-46.54	V
3.346300	55.10	Pk	33.1	-95.2	-47.67	-54.67	-13	-41.67	H
3.346300	53.68	Pk	33.1	-95.2	-47.67	-56.09	-13	-43.09	V
2.509750	58.00	Pk	32.2	-95.2	-50.10	-55.10	-13	-42.10	H
2.509750	56.17	Pk	32.2	-95.2	-50.10	-56.93	-13	-43.93	V
High Channel, 848.8 MHz									
1.697500	55.90	Pk	28.9	-95.2	-49.80	-60.20	-13	-47.20	H
1.697275	67.71	Pk	28.9	-95.2	-49.80	-48.39	-13	-35.39	V
2.546650	58.17	Pk	32.3	-95.2	-50.20	-54.93	-13	-41.93	H
2.546650	58.34	Pk	32.3	-95.2	-50.20	-54.76	-13	-41.76	V
3.395350	54.58	Pk	33.2	-95.2	-47.47	-54.89	-13	-41.89	H
3.395350	53.02	Pk	33.2	-95.2	-47.47	-56.45	-13	-43.45	V

10.2.2. GSM 1900

GPRS MODE

Project #:	14982479								
Date:	5/6/2024								
Test Engineer:	45258								
Configuration:	EUT Only								
Mode:	GPRS 1900								
Chamber #:	01-RDE-A								
Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.699844	34.51	Pk	33.0	-95.2	-24.02	-51.71	-13	-38.71	H
3.700313	33.96	Pk	33.0	-95.2	-23.97	-52.21	-13	-39.21	V
5.550000	33.86	Pk	34.5	-95.2	-20.80	-47.64	-13	-34.64	H
5.550000	31.93	Pk	34.5	-95.2	-20.80	-49.57	-13	-36.57	V
7.400156	30.90	Pk	35.6	-95.2	-18.10	-46.80	-13	-33.80	H
7.400625	30.99	Pk	35.6	-95.2	-18.10	-46.71	-13	-33.71	V
Mid Channel, 1880MHz									
3.760500	54.43	Pk	33.6	-95.2	-47.85	-55.02	-13	-42.02	H
3.760500	53.84	Pk	33.6	-95.2	-47.85	-55.61	-13	-42.61	V
7.521000	54.15	Pk	36.0	-95.2	-48.10	-53.15	-13	-40.15	H
7.521000	56.06	Pk	36.0	-95.2	-48.10	-51.24	-13	-38.24	V
5.640500	54.95	Pk	34.4	-95.2	-48.30	-54.15	-13	-41.15	H
5.640500	53.95	Pk	34.4	-95.2	-48.30	-55.15	-13	-42.15	V
High Channel, 1909.8MHz									
3.819500	55.88	Pk	33.6	-95.2	-47.80	-53.52	-13	-40.52	H
3.819500	54.87	Pk	33.6	-95.2	-47.80	-54.53	-13	-41.53	V
7.639000	52.78	Pk	35.9	-95.2	-47.30	-53.82	-13	-40.82	H
7.639000	54.04	Pk	35.9	-95.2	-47.30	-52.56	-13	-39.56	V
5.729500	56.77	Pk	34.5	-95.2	-48.0	-51.93	-13	-38.93	H
5.729500	57.48	Pk	34.5	-95.2	-48.0	-51.22	-13	-38.22	V

EGPRS MODE

Project #:	14982479
Date:	4/29/2024
Test Engineer:	104996
Configuration:	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.701000	53.91	Pk	33.5	-95.2	-47.2	-54.99	-13	-41.99	H
3.701000	52.98	Pk	33.5	-95.2	-47.2	-55.92	-13	-42.92	V
5.550000	55.25	Pk	34.4	-95.2	-48.6	-54.15	-13	-41.15	H
5.550000	57.54	Pk	34.4	-95.2	-48.6	-51.86	-13	-38.86	V
7.400500	53.81	Pk	35.9	-95.2	-47.8	-53.29	-13	-40.29	H
7.400500	53.26	Pk	35.9	-95.2	-47.8	-53.84	-13	-40.84	V
Mid Channel, 1880MHz									
3.761000	54.10	Pk	33.6	-95.2	-47.8	-55.30	-13	-42.30	H
3.761000	56.00	Pk	33.6	-95.2	-47.8	-53.40	-13	-40.40	V
5.640000	55.59	Pk	34.4	-95.2	-48.3	-53.51	-13	-40.51	H
5.640000	58.92	Pk	34.4	-95.2	-48.3	-50.18	-13	-37.18	V
7.520000	55.68	Pk	36.0	-95.2	-48.1	-51.62	-13	-38.62	H
7.520000	54.37	Pk	36.0	-95.2	-48.1	-52.93	-13	-39.93	V
High Channel, 1909.8MHz									
3.819000	54.39	Pk	33.6	-95.2	-47.8	-55.01	-13	-42.01	H
3.819000	55.82	Pk	33.6	-95.2	-47.8	-53.58	-13	-40.58	V
5.729000	55.37	Pk	34.5	-95.2	-48.0	-53.33	-13	-40.33	H
5.729000	58.25	Pk	34.5	-95.2	-48.0	-50.45	-13	-37.45	V
7.639500	53.12	Pk	35.9	-95.2	-47.35	-53.53	-13	-40.53	H
7.639500	53.57	Pk	35.9	-95.2	-47.35	-53.08	-13	-40.08	V

10.2.3. WCDMA BAND 5

REL 99 MODE

Project #:	14982479								
Date:	5/7/2024								
Test Engineer:	32934								
Configuration:	EUT Only								
Mode:	REL 99 Band 5								
Chamber #:	01-RDE-B								
Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.650267	44.64	Pk	28.4	-95.2	-35.27	-58.13	-13	-45.13	H
1.650267	44.47	Pk	28.4	-95.2	-35.27	-58.30	-13	-45.30	V
2.479423	43.18	Pk	32.3	-95.2	-34.94	-55.16	-13	-42.16	H
2.475511	42.85	Pk	32.3	-95.2	-34.90	-55.45	-13	-42.45	V
3.305645	42.09	Pk	32.8	-95.2	-33.94	-54.65	-13	-41.65	H
3.293423	41.73	Pk	32.8	-95.2	-34.00	-55.07	-13	-42.07	V
Mid Channel, 836.6MHz									
1.675689	43.98	Pk	28.7	-95.2	-35.23	-58.35	-13	-45.35	H
1.674711	43.92	Pk	28.7	-95.2	-35.3	-58.48	-13	-45.48	V
2.504845	42.88	Pk	32.3	-95.2	-35.0	-55.72	-13	-42.72	H
2.501423	42.57	Pk	32.3	-95.2	-34.9	-55.93	-13	-42.93	V
3.350134	40.68	Pk	32.8	-95.2	-33.8	-55.92	-13	-42.92	H
3.334978	41.74	Pk	32.8	-95.2	-33.9	-54.96	-13	-41.96	V
High Channel, 846.6MHz									
1.694267	43.62	Pk	28.9	-95.2	-35.30	-58.58	-13	-45.58	H
1.694756	46.25	Pk	28.9	-95.2	-35.30	-55.95	-13	-42.95	V
2.536134	42.30	Pk	32.4	-95.2	-34.89	-55.89	-13	-42.89	H
2.545911	44.10	Pk	32.4	-95.2	-34.90	-54.20	-13	-41.20	V
3.394623	41.68	Pk	32.8	-95.2	-33.70	-54.82	-13	-41.82	H
3.431289	42.53	Pk	32.9	-95.2	-33.60	-53.77	-13	-40.77	V

HSDPA MODE

Project #:	14982479
Date:	5/10/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA B5
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 826.4MHz									
1.652222	37.05	Pk	28.9	-95.2	-27.68	-56.13	-13	-43.13	H
1.652222	37.71	Pk	28.9	-95.2	-27.68	-55.47	-13	-42.47	V
2.479911	37.07	Pk	32.5	-95.2	-26.10	-51.23	-13	-38.23	H
2.479911	38.11	Pk	32.5	-95.2	-26.10	-50.19	-13	-37.19	V
3.305645	35.99	Pk	32.9	-95.2	-25.00	-50.61	-13	-37.61	H
3.305645	35.84	Pk	32.9	-95.2	-25.00	-50.76	-13	-37.76	V
Mid Channel, 836.6MHz									
1.673245	37.86	Pk	29.1	-95.2	-27.58	-55.12	-13	-42.12	H
1.673245	38.60	Pk	29.1	-95.2	-27.58	-54.38	-13	-41.38	V
2.510223	36.11	Pk	32.5	-95.2	-26.20	-52.09	-13	-39.09	H
2.510223	36.72	Pk	32.5	-95.2	-26.20	-51.48	-13	-38.48	V
3.346223	34.55	Pk	32.8	-95.2	-25.10	-52.45	-13	-39.45	H
3.346223	36.68	Pk	32.8	-95.2	-25.10	-50.32	-13	-37.32	V
High Channel, 846.6MHz									
1.693289	38.77	Pk	29.3	-95.2	-27.67	-54.10	-13	-41.10	H
1.692800	37.73	Pk	29.3	-95.2	-27.70	-55.17	-13	-42.17	V
2.540534	37.15	Pk	32.5	-95.2	-25.85	-50.70	-13	-37.70	H
2.540045	37.61	Pk	32.5	-95.2	-25.90	-50.29	-13	-37.29	V
3.387778	35.44	Pk	32.8	-95.2	-24.90	-51.26	-13	-38.26	H
3.387289	34.83	Pk	32.8	-95.2	-24.90	-51.87	-13	-38.87	V

10.2.4. WCDMA BAND 2

REL 99 MODE

Project #:	14982479								
Date:	5/7/2024								
Test Engineer:	32934								
Configuration:	EUT Only								
Mode:	REL 99 Band 2								
Chamber #:	01-RDE-B								
Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.706875	39.66	Pk	33.3	-95.2	-32.3	-54.54	-13	-41.54	H
3.697031	39.86	Pk	33.2	-95.2	-32.3	-54.44	-13	-41.44	V
5.563125	37.35	Pk	34.6	-95.2	-29.5	-52.75	-13	-39.75	H
5.542031	37.90	Pk	34.6	-95.2	-29.2	-51.90	-13	-38.90	V
7.417500	34.44	Pk	35.6	-95.2	-26.3	-51.46	-13	-38.46	H
7.410938	34.48	Pk	35.5	-95.2	-26.4	-51.62	-13	-38.62	V
Mid Channel, 1880MHz									
3.770156	39.36	Pk	33.4	-95.2	-32.00	-54.44	-13	-41.44	H
3.770625	39.79	Pk	33.4	-95.2	-32.00	-54.01	-13	-41.01	V
5.638594	38.44	Pk	34.7	-95.2	-30.00	-52.06	-13	-39.06	H
5.619375	36.99	Pk	34.6	-95.2	-29.86	-53.47	-13	-40.47	V
7.521563	35.47	Pk	35.6	-95.2	-26.3	-50.43	-13	-37.43	H
7.526719	35.32	Pk	35.6	-95.2	-26.33	-50.61	-13	-37.61	V
High Channel, 1907.6MHz									
3.817031	39.90	Pk	33.4	-95.2	-31.9	-53.80	-13	-40.80	H
3.793125	39.56	Pk	33.4	-95.2	-31.79	-54.03	-13	-41.03	V
5.720156	37.48	Pk	34.8	-95.2	-29.00	-51.92	-13	-38.92	H
5.718750	37.12	Pk	34.8	-95.2	-29.13	-52.41	-13	-39.41	V
7.620000	36.23	Pk	35.7	-95.2	-26.4	-49.67	-13	-36.67	H
7.640156	35.21	Pk	35.7	-95.2	-26.6	-50.89	-13	-37.89	V

HSDPA MODE

Project #:	14982479
Date:	5/7/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 2
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.705469	33.31	Pk	33.0	-95.2	-23.90	-52.79	-13	-39.79	H
3.705469	34.26	Pk	33.0	-95.2	-23.90	-51.84	-13	-38.84	V
5.557031	30.75	Pk	34.5	-95.2	-20.60	-50.55	-13	-37.55	H
5.557031	32.83	Pk	34.5	-95.2	-20.60	-48.47	-13	-35.47	V
7.409531	31.07	Pk	35.6	-95.2	-18.15	-46.68	-13	-33.68	H
7.410000	29.24	Pk	35.6	-95.2	-18.20	-48.56	-13	-35.56	V
Mid Channel, 1880MHz									
3.760781	33.87	Pk	33.2	-95.2	-23.70	-51.83	-13	-38.83	H
3.760781	34.58	Pk	33.2	-95.2	-23.70	-51.12	-13	-38.12	V
5.640000	30.44	Pk	34.6	-95.2	-20.10	-50.26	-13	-37.26	H
5.640000	30.30	Pk	34.6	-95.2	-20.10	-50.40	-13	-37.40	V
7.520156	30.12	Pk	35.7	-95.2	-18.18	-47.56	-13	-34.56	H
7.520156	28.23	Pk	35.7	-95.2	-18.18	-49.45	-13	-36.45	V
High Channel, 1907.6MHz									
3.815156	33.47	Pk	33.3	-95.2	-24.02	-52.45	-13	-39.45	H
3.815156	34.66	Pk	33.3	-95.2	-24.02	-51.26	-13	-38.26	V
5.721563	32.23	Pk	34.6	-95.2	-21.44	-49.81	-13	-36.81	H
5.721094	31.11	Pk	34.6	-95.2	-21.49	-50.98	-13	-37.98	V
7.630781	28.78	Pk	35.8	-95.2	-16.80	-47.42	-13	-34.42	H
7.630781	29.50	Pk	35.8	-95.2	-16.80	-46.70	-13	-33.70	V

10.2.5. WCDMA BAND 4

REL 99 MODE

Project #:	14982479								
Date:	5/6/2024								
Test Engineer:	45258								
Configuration:	EUT Only								
Mode:	Rel 99 B4								
Chamber #:	01-RDE-A								
Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.424219	37.52	Pk	32.8	-95.2	-24.98	-49.86	-13	-36.86	H
3.424688	35.08	Pk	32.8	-95.2	-24.93	-52.25	-13	-39.25	V
5.137500	32.66	Pk	34.1	-95.2	-21.7	-50.14	-13	-37.14	H
5.137500	32.05	Pk	34.1	-95.2	-21.7	-50.75	-13	-37.75	V
6.849844	31.10	Pk	35.6	-95.2	-19.3	-47.80	-13	-34.80	H
6.850313	31.25	Pk	35.6	-95.2	-19.3	-47.65	-13	-34.65	V
Mid Channel, 1732.6MHz									
3.465469	35.25	Pk	32.7	-95.2	-24.8	-52.05	-13	-39.05	H
3.465469	35.31	Pk	32.7	-95.2	-24.8	-51.99	-13	-38.99	V
5.197969	34.12	Pk	34.2	-95.2	-22.4	-49.28	-13	-36.28	H
5.197969	32.69	Pk	34.2	-95.2	-22.4	-50.71	-13	-37.71	V
6.930469	30.36	Pk	35.7	-95.2	-19	-48.14	-13	-35.14	H
6.930469	28.47	Pk	35.7	-95.2	-19	-50.03	-13	-37.03	V
High Channel, 1752.6MHz									
3.505313	35.3	Pk	32.8	-95.2	-24.30	-51.40	-13	-38.40	H
3.505313	34.10	Pk	32.8	-95.2	-24.30	-52.60	-13	-39.60	V
5.258438	33.11	Pk	34.2	-95.2	-21.96	-49.85	-13	-36.85	H
5.258438	31.89	Pk	34.2	-95.2	-21.96	-51.07	-13	-38.07	V
7.010625	29.15	Pk	35.6	-95.2	-18.20	-48.65	-13	-35.65	H
7.010625	29.69	Pk	35.6	-95.2	-18.20	-48.11	-13	-35.11	V

HSDPA MODE

Project #:	14982479
Date:	5/10/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSPDA B4
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.425625	35.52	Pk	32.8	-95.2	-24.90	-51.78	-13	-38.78	H
3.425625	35.24	Pk	32.8	-95.2	-24.90	-52.06	-13	-39.06	V
5.127188	31.72	Pk	34.2	-95.2	-21.40	-50.68	-13	-37.68	H
5.127188	32.13	Pk	34.2	-95.2	-21.40	-50.27	-13	-37.27	V
6.849375	29.8	Pk	35.6	-95.2	-19.30	-49.10	-13	-36.10	H
6.849375	30.26	Pk	35.6	-95.2	-19.30	-48.64	-13	-35.64	V
Mid Channel, 1732.6MHz									
3.465469	33.88	Pk	32.7	-95.2	-24.80	-53.42	-13	-40.42	H
3.465469	33.29	Pk	32.7	-95.2	-24.80	-54.01	-13	-41.01	V
5.198906	33.80	Pk	34.2	-95.2	-22.40	-49.60	-13	-36.60	H
5.198438	35.35	Pk	34.2	-95.2	-22.40	-48.05	-13	-35.05	V
6.930938	29.88	Pk	35.7	-95.2	-19	-48.62	-13	-35.62	H
6.930469	29.11	Pk	35.7	-95.2	-19	-49.39	-13	-36.39	V
High Channel, 1752.6MHz									
3.505313	34.16	Pk	32.8	-95.2	-24.30	-52.54	-13	-39.54	H
3.504844	33.42	Pk	32.8	-95.2	-24.30	-53.28	-13	-40.28	V
5.258906	32.94	Pk	34.2	-95.2	-21.91	-49.97	-13	-36.97	H
5.258906	31.65	Pk	34.2	-95.2	-21.91	-51.26	-13	-38.26	V
7.010156	29.74	Pk	35.6	-95.2	-18.20	-48.06	-13	-35.06	H
7.010156	29.34	Pk	35.6	-95.2	-18.20	-48.46	-13	-35.46	V

10.3. FIELD STRENGTH OF SPURIOUS RADIATION, Antenna 3

10.3.1. GSM 1900

GPRS MODE

Project #:	14982479								
Date:	4/30/2024								
Test Engineer:	104996								
Configuration:	EUT Only								
Mode:	GPRS 1900								
Chamber #:	03-RDE-B								
Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.700500	54.01	Pk	33.5	-95.2	-47.2	-54.89	-13	-41.89	H
3.700500	54.58	Pk	33.5	-95.2	-47.2	-54.32	-13	-41.32	V
5.550500	55.84	Pk	34.4	-95.2	-48.6	-53.56	-13	-40.56	H
5.550500	54.36	Pk	34.4	-95.2	-48.6	-55.04	-13	-42.04	V
7.400000	54.75	Pk	35.9	-95.2	-47.8	-52.35	-13	-39.35	H
7.400000	53.35	Pk	35.9	-95.2	-47.8	-53.75	-13	-40.75	V
Mid Channel, 1880MHz									
3.761000	55.17	Pk	33.6	-95.2	-47.8	-54.23	-13	-41.23	H
3.761000	53.98	Pk	33.6	-95.2	-47.8	-55.42	-13	-42.42	V
5.641000	54.37	Pk	34.4	-95.2	-48.3	-54.73	-13	-41.73	H
5.641000	53.96	Pk	34.4	-95.2	-48.3	-55.14	-13	-42.14	V
7.520500	53.68	Pk	36.0	-95.2	-48.1	-53.62	-13	-40.62	H
7.520500	54.18	Pk	36.0	-95.2	-48.1	-53.12	-13	-40.12	V
High Channel, 1909.8MHz									
3.819500	54.88	Pk	33.6	-95.2	-47.8	-54.52	-13	-41.52	H
3.819500	55.70	Pk	33.6	-95.2	-47.8	-53.70	-13	-40.70	V
5.730000	55.16	Pk	34.5	-95.2	-48	-53.54	-13	-40.54	H
5.730000	53.36	Pk	34.5	-95.2	-48	-55.34	-13	-42.34	V
7.639000	53.79	Pk	35.9	-95.2	-47.3	-52.81	-13	-39.81	H
7.639000	52.93	Pk	35.9	-95.2	-47.3	-53.67	-13	-40.67	V

EGPRS MODE

Project #:	14982479
Date:	5/1/2024
Test Engineer:	104996
Configuration:	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.701000	53.91	Pk	33.5	-95.2	-47.2	-54.99	-13	-41.99	H
3.701000	53.70	Pk	33.5	-95.2	-47.2	-55.20	-13	-42.20	V
5.550500	54.83	Pk	34.4	-95.2	-48.6	-54.57	-13	-41.57	H
5.550500	54.97	Pk	34.4	-95.2	-48.6	-54.43	-13	-41.43	V
7.400500	54.01	Pk	35.9	-95.2	-47.8	-53.09	-13	-40.09	H
7.400500	55.19	Pk	35.9	-95.2	-47.8	-51.91	-13	-38.91	V
Mid Channel, 1880MHz									
3.761000	53.44	Pk	33.6	-95.2	-47.8	-55.96	-13	-42.96	H
3.761000	55.61	Pk	33.6	-95.2	-47.8	-53.79	-13	-40.79	V
5.640500	53.62	Pk	34.4	-95.2	-48.3	-55.48	-13	-42.48	H
5.640500	54.59	Pk	34.4	-95.2	-48.3	-54.51	-13	-41.51	V
7.521000	55.52	Pk	36	-95.2	-48.1	-51.78	-13	-38.78	H
7.521000	54.62	Pk	36	-95.2	-48.1	-52.68	-13	-39.68	V
High Channel, 1909.8MHz									
3.820000	54.58	Pk	33.6	-95.2	-47.8	-54.82	-13	-41.82	H
3.820000	54.09	Pk	33.6	-95.2	-47.8	-55.31	-13	-42.31	V
5.729000	55.29	Pk	34.5	-95.2	-48	-53.41	-13	-40.41	H
5.729000	54.63	Pk	34.5	-95.2	-48	-54.07	-13	-41.07	V
7.639500	53.53	Pk	35.9	-95.2	-47.35	-53.12	-13	-40.12	H
7.639500	52.50	Pk	35.9	-95.2	-47.35	-54.15	-13	-41.15	V

10.3.2. WCDMA BAND 2

REL 99 MODE

Project #:	14982479								
Date:	5/7/2024								
Test Engineer:	31300								
Configuration:	EUT Only								
Mode:	REL 99 Band 2								
Chamber #:	01-RDE-A								
Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.705938	36.60	Pk	33	-95.2	-23.90	-49.50	-13	-36.50	H
3.705938	33.53	Pk	33	-95.2	-23.90	-52.57	-13	-39.57	V
5.557031	31.76	Pk	34.5	-95.2	-20.60	-49.54	-13	-36.54	H
5.557031	31.78	Pk	34.5	-95.2	-20.60	-49.52	-13	-36.52	V
7.409063	29.41	Pk	35.6	-95.2	-18.11	-48.30	-13	-35.30	H
7.409063	28.74	Pk	35.6	-95.2	-18.11	-48.97	-13	-35.97	V
Mid Channel, 1880MHz									
3.760781	35.04	Pk	33.2	-95.2	-23.70	-50.66	-13	-37.66	H
3.760781	34.85	Pk	33.2	-95.2	-23.70	-50.85	-13	-37.85	V
5.639063	31.72	Pk	34.6	-95.2	-20.10	-48.98	-13	-35.98	H
5.639063	30.84	Pk	34.6	-95.2	-20.10	-49.86	-13	-36.86	V
7.519688	30.80	Pk	35.7	-95.2	-18.20	-46.90	-13	-33.90	H
7.519688	29.61	Pk	35.7	-95.2	-18.20	-48.09	-13	-35.09	V
High Channel, 1907.6MHz									
3.814219	35.48	Pk	33.3	-95.2	-24.00	-50.42	-13	-37.42	H
3.814219	34.91	Pk	33.3	-95.2	-24.00	-50.99	-13	-37.99	V
5.722031	32.57	Pk	34.6	-95.2	-21.40	-49.43	-13	-36.43	H
5.722031	30.50	Pk	34.6	-95.2	-21.40	-51.50	-13	-38.50	V
7.631250	28.80	Pk	35.8	-95.2	-16.83	-47.43	-13	-34.43	V
7.631719	29.09	Pk	35.8	-95.2	-16.87	-47.18	-13	-34.18	H

HSDPA MODE

Project #:	14982479
Date:	5/13/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 2
Chamber #:	01-RDE-A

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									
3.705469	34.57	Pk	33	-95.2	-23.90	-51.53	-13	-38.53	H
3.705469	34.98	Pk	33	-95.2	-23.90	-51.12	-13	-38.12	V
5.557031	30.70	Pk	34.5	-95.2	-20.60	-50.60	-13	-37.60	H
5.557031	31.64	Pk	34.5	-95.2	-20.60	-49.66	-13	-36.66	V
7.410469	29.40	Pk	35.6	-95.2	-18.20	-48.40	-13	-35.40	H
7.410469	27.85	Pk	35.6	-95.2	-18.20	-49.95	-13	-36.95	V
Mid Channel, 1880MHz									
3.760313	35.33	Pk	33.2	-95.2	-23.70	-50.37	-13	-37.37	H
3.760313	33.47	Pk	33.2	-95.2	-23.70	-52.23	-13	-39.23	V
5.640469	31.00	Pk	34.6	-95.2	-20.05	-49.65	-13	-36.65	H
5.640469	30.94	Pk	34.6	-95.2	-20.05	-49.71	-13	-36.71	V
7.519688	30.11	Pk	35.7	-95.2	-18.20	-47.59	-13	-34.59	H
7.520156	29.39	Pk	35.7	-95.2	-18.18	-48.29	-13	-35.29	V
High Channel, 1907.6MHz									
3.815156	33.42	Pk	33.3	-95.2	-24.02	-52.50	-13	-39.50	H
3.815156	35.27	Pk	33.3	-95.2	-24.02	-50.65	-13	-37.65	V
5.723438	31.86	Pk	34.6	-95.2	-21.50	-50.24	-13	-37.24	H
5.723438	31.52	Pk	34.6	-95.2	-21.50	-50.58	-13	-37.58	V
7.630781	29.37	Pk	35.8	-95.2	-16.80	-46.83	-13	-33.83	H
7.630781	28.36	Pk	35.8	-95.2	-16.80	-47.84	-13	-34.84	V

10.3.3. WCDMA BAND 4

REL 99 MODE

Project #:	14982479								
Date:	5/7/2024								
Test Engineer:	31300								
Configuration:	EUT Only								
Mode:	REL 99 Band 4								
Chamber #:	01-RDE-A								
Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.424688	37.18	Pk	32.8	-95.2	-24.93	-50.15	-13	-37.15	H
3.424688	35.14	Pk	32.8	-95.2	-24.93	-52.19	-13	-39.19	V
5.137500	31.98	Pk	34.1	-95.2	-21.70	-50.82	-13	-37.82	H
5.137500	32.66	Pk	34.1	-95.2	-21.70	-50.14	-13	-37.14	V
6.849844	30.52	Pk	35.6	-95.2	-19.30	-48.38	-13	-35.38	H
6.849844	30	Pk	35.6	-95.2	-19.30	-48.90	-13	-35.9	V
Mid Channel, 1732.6MHz									
3.465469	35.87	Pk	32.7	-95.2	-24.80	-51.43	-13	-38.43	H
3.465938	36.85	Pk	32.7	-95.2	-24.80	-50.45	-13	-37.45	V
5.198438	34.47	Pk	34.2	-95.2	-22.40	-48.93	-13	-35.93	H
5.198438	32.49	Pk	34.2	-95.2	-22.40	-50.91	-13	-37.91	V
6.931406	30.42	Pk	35.7	-95.2	-19	-48.08	-13	-35.08	H
6.931875	31.59	Pk	35.7	-95.2	-19	-46.91	-13	-33.91	V
High Channel, 1752.6MHz									
3.505781	36.10	Pk	32.8	-95.2	-24.30	-50.60	-13	-37.6	H
3.505313	33.64	Pk	32.8	-95.2	-24.30	-53.06	-13	-40.06	V
5.256563	31.73	Pk	34.2	-95.2	-22	-51.27	-13	-38.27	H
5.256563	34.93	Pk	34.2	-95.2	-22	-48.07	-13	-35.07	V
7.011563	29.34	Pk	35.6	-95.2	-18.26	-48.52	-13	-35.52	H
7.011563	29.30	Pk	35.6	-95.2	-18.26	-48.56	-13	-35.56	V

HSDPA MODE

Project #:	14982479
Date:	5/13/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.425156	36.99	Pk	32.8	-95.2	-24.90	-50.31	-13	-37.31	H
3.425156	34.88	Pk	32.8	-95.2	-24.90	-52.42	-13	-39.42	V
5.134688	38.27	Pk	34.1	-95.2	-21.60	-44.43	-13	-31.43	H
5.135156	35.5	Pk	34.1	-95.2	-21.60	-47.2	-13	-34.20	V
6.849844	30.89	Pk	35.6	-95.2	-19.30	-48.01	-13	-35.01	H
6.849844	30.25	Pk	35.6	-95.2	-19.30	-48.65	-13	-35.65	V
Mid Channel, 1732.6MHz									
3.468281	37.63	Pk	32.7	-95.2	-24.77	-49.64	-13	-36.64	H
3.467344	35.93	Pk	32.7	-95.2	-24.80	-51.37	-13	-38.37	V
5.197969	32.94	Pk	34.2	-95.2	-22.40	-50.46	-13	-37.46	H
5.197969	33.48	Pk	34.2	-95.2	-22.40	-49.92	-13	-36.92	V
6.930469	30.29	Pk	35.7	-95.2	-19.00	-48.21	-13	-35.21	H
6.930469	29.61	Pk	35.7	-95.2	-19.00	-48.89	-13	-35.89	V
High Channel, 1752.6MHz									
3.505313	35.21	Pk	32.8	-95.2	-24.30	-51.49	-13	-38.49	H
3.505313	33.49	Pk	32.8	-95.2	-24.30	-53.21	-13	-40.21	V
5.255625	37.79	Pk	34.2	-95.2	-22.00	-45.21	-13	-32.21	H
5.259375	34.38	Pk	34.2	-95.2	-21.90	-48.52	-13	-35.52	V
7.011563	28.67	Pk	35.6	-95.2	-18.26	-49.19	-13	-36.19	H
7.011563	31.42	Pk	35.6	-95.2	-18.26	-46.44	-13	-33.44	V

10.4. FIELD STRENGTH OF SPURIOUS RADIATION, Antenna 4

10.4.1. GSM 1900

GPRS MODE

Project #:	14982479
Date:	4/30/2024
Test Engineer:	104996
Configuration:	EUT Only
Mode:	GPRS 1900
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.700500	53.50	Pk	33.5	-95.2	-47.20	-55.40	-13	-42.40	H
3.700500	54.59	Pk	33.5	-95.2	-47.20	-54.31	-13	-41.31	V
5.550500	53.95	Pk	34.4	-95.2	-48.60	-55.45	-13	-42.45	H
5.550500	54.21	Pk	34.4	-95.2	-48.60	-55.19	-13	-42.19	V
7.400500	53.10	Pk	35.9	-95.2	-47.80	-54.00	-13	-41.00	H
7.400500	54.51	Pk	35.9	-95.2	-47.80	-52.59	-13	-39.59	V
Mid Channel, 1880MHz									
3.760000	53.80	Pk	33.6	-95.2	-47.90	-55.70	-13	-42.70	H
3.760000	54.45	Pk	33.6	-95.2	-47.90	-55.05	-13	-42.05	V
5.641000	54.33	Pk	34.4	-95.2	-48.30	-54.77	-13	-41.77	H
5.641000	55.52	Pk	34.4	-95.2	-48.30	-53.58	-13	-40.58	V
7.521000	54.51	Pk	36.0	-95.2	-48.10	-52.79	-13	-39.79	H
7.521000	53.52	Pk	36.0	-95.2	-48.10	-53.78	-13	-40.78	V
High Channel, 1909.8MHz									
3.819500	55.77	Pk	33.6	-95.2	-47.80	-53.63	-13	-40.63	H
3.819500	55.34	Pk	33.6	-95.2	-47.80	-54.06	-13	-41.06	V
5.729500	55.89	Pk	34.5	-95.2	-48.00	-52.81	-13	-39.81	H
5.729500	54.12	Pk	34.5	-95.2	-48.00	-54.58	-13	-41.58	V
7.639500	55.40	Pk	35.9	-95.2	-47.35	-51.25	-13	-38.25	H
7.639500	53.16	Pk	35.9	-95.2	-47.35	-53.49	-13	-40.49	V

Pk - Peak detector

EGPRS MODE

Project #:	14982479
Date:	4/30/2024
Test Engineer:	104996
Configuration:	EUT Only
Mode:	EGPRS 1900
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF 3m (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1850.2MHz									
3.701000	52.72	Pk	33.5	-95.2	-47.2	-56.18	-13	-43.18	H
3.701000	54.09	Pk	33.5	-95.2	-47.2	-54.81	-13	-41.81	V
5.550500	54.85	Pk	34.4	-95.2	-48.6	-54.55	-13	-41.55	H
5.550500	55.19	Pk	34.4	-95.2	-48.6	-54.21	-13	-41.21	V
7.400000	54.60	Pk	35.9	-95.2	-47.8	-52.50	-13	-39.50	H
7.400000	53.07	Pk	35.9	-95.2	-47.8	-54.03	-13	-41.03	V
Mid Channel, 1880MHz									
3.761000	54.68	Pk	33.6	-95.2	-47.8	-54.72	-13	-41.72	H
3.761000	54.02	Pk	33.6	-95.2	-47.8	-55.38	-13	-42.38	V
5.640000	53.49	Pk	34.4	-95.2	-48.3	-55.61	-13	-42.61	H
5.640000	55.52	Pk	34.4	-95.2	-48.3	-53.58	-13	-40.58	V
7.520500	53.83	Pk	36.0	-95.2	-48.1	-53.47	-13	-40.47	H
7.520500	55.11	Pk	36.0	-95.2	-48.1	-52.19	-13	-39.19	V
High Channel, 1909.8MHz									
3.819500	54.37	Pk	33.6	-95.2	-47.8	-55.03	-13	-42.03	H
3.819500	56.11	Pk	33.6	-95.2	-47.8	-53.29	-13	-40.29	V
5.729000	52.98	Pk	34.5	-95.2	-48.0	-55.72	-13	-42.72	H
5.729000	54.20	Pk	34.5	-95.2	-48.0	-54.50	-13	-41.50	V
7.640000	54.10	Pk	35.9	-95.2	-47.4	-52.60	-13	-39.60	H
7.640000	53.23	Pk	35.9	-95.2	-47.4	-53.47	-13	-40.47	V

10.4.2. WCDMA BAND 2

REL 99 MODE

Project #:	14982479								
Date:	5/15/2024								
Test Engineer:	32934								
Configuration:	EUT Only								
Mode:	REL 99 Band 2								
Chamber #:	01-RDE-B								
Frequency (GHz)	Meter Reading (dBuV)	Det	226671 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.719063	40.53	Pk	33.3	-95.2	-32.20	-53.57	-13	-40.57	H
3.697031	40.88	Pk	33.2	-95.2	-32.30	-53.42	-13	-40.42	V
5.556563	37.75	Pk	34.6	-95.2	-29.40	-52.25	-13	-39.25	H
5.571094	39.13	Pk	34.6	-95.2	-29.60	-51.07	-13	-38.07	V
7.417031	34.81	Pk	35.6	-95.2	-26.30	-51.09	-13	-38.09	H
7.438125	34.47	Pk	35.6	-95.2	-26.29	-51.42	-13	-38.42	V
Mid Channel, 1880MHz									
3.771563	40.60	Pk	33.4	-95.2	-32.00	-53.20	-13	-40.20	H
3.770156	40.47	Pk	33.4	-95.2	-32.00	-53.33	-13	-40.33	V
5.653594	37.96	Pk	34.7	-95.2	-29.80	-52.34	-13	-39.34	H
5.634375	38.06	Pk	34.7	-95.2	-30.00	-52.44	-13	-39.44	V
7.532344	34.74	Pk	35.6	-95.2	-26.30	-51.16	-13	-38.16	H
7.530938	35.74	Pk	35.6	-95.2	-26.21	-50.07	-13	-37.07	V
High Channel, 1907.6MHz									
3.742031	41.96	Pk	33.4	-95.2	-32.20	-52.04	-13	-39.04	H
3.793594	40.14	Pk	33.4	-95.2	-31.74	-53.40	-13	-40.40	V
5.706563	37.78	Pk	34.8	-95.2	-29.44	-52.06	-13	-39.06	H
5.677031	38.07	Pk	34.7	-95.2	-29.70	-52.13	-13	-39.13	V
7.639688	35.47	Pk	35.7	-95.2	-26.60	-50.63	-13	-37.63	H
7.618594	34.80	Pk	35.7	-95.2	-26.50	-51.20	-13	-38.20	V

HSDPA MODE

Project #:	14982479
Date:	5/13/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 2
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1852.4MHz									
3.705469	33.73	Pk	33.0	-95.2	-23.90	-52.37	-13	-39.37	H
3.705000	34.60	Pk	33.0	-95.2	-23.90	-51.50	-13	-38.50	V
5.557031	30.33	Pk	34.5	-95.2	-20.60	-50.97	-13	-37.97	H
5.557031	30.67	Pk	34.5	-95.2	-20.60	-50.63	-13	-37.63	V
7.410000	29.25	Pk	35.6	-95.2	-18.20	-48.55	-13	-35.55	H
7.410000	27.71	Pk	35.6	-95.2	-18.20	-50.09	-13	-37.09	V
Mid Channel, 1880MHz									
3.760781	33.51	Pk	33.2	-95.2	-23.70	-52.19	-13	-39.19	H
3.760781	33.56	Pk	33.2	-95.2	-23.70	-52.14	-13	-39.14	V
5.640000	31.72	Pk	34.6	-95.2	-20.10	-48.98	-13	-35.98	H
5.640469	30.65	Pk	34.6	-95.2	-20.05	-50.00	-13	-37.00	V
7.520625	31.17	Pk	35.7	-95.2	-18.14	-46.47	-13	-33.47	H
7.520625	29.20	Pk	35.7	-95.2	-18.14	-48.44	-13	-35.44	V
High Channel, 1907.6MHz									
3.816094	34.05	Pk	33.3	-95.2	-24.09	-51.94	-13	-38.94	H
3.816094	35.14	Pk	33.3	-95.2	-24.09	-50.85	-13	-37.85	V
5.722969	31.91	Pk	34.6	-95.2	-21.50	-50.19	-13	-37.19	H
5.722969	32.81	Pk	34.6	-95.2	-21.50	-49.29	-13	-36.29	V
7.630313	28.30	Pk	35.8	-95.2	-16.80	-47.90	-13	-34.90	H
7.630313	28.75	Pk	35.8	-95.2	-16.80	-47.45	-13	-34.45	V

10.4.3. WCDMA BAND 4

REL 99 MODE

Project #:	14982479								
Date:	5/15/2024								
Test Engineer:	32934								
Configuration:	EUT Only								
Mode:	REL 99 Band 4								
Chamber #:	01-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									
3.437344	40.56	Pk	32.9	-95.2	-33.03	-54.77	-13	-41.77	H
3.437344	40.49	Pk	32.9	-95.2	-33.03	-54.84	-13	-41.84	V
5.317031	40.19	Pk	34.5	-95.2	-30.00	-50.51	-13	-37.51	H
5.193281	40.03	Pk	34.2	-95.2	-29.10	-50.07	-13	-37.07	V
6.950156	35.04	Pk	35.6	-95.2	-26.52	-51.08	-13	-38.08	H
6.869063	34.52	Pk	35.6	-95.2	-26.70	-51.78	-13	-38.78	V
Mid Channel, 1732.6MHz									
3.467813	40.11	Pk	32.9	-95.2	-33.00	-55.19	-13	-42.19	H
3.462656	41.02	Pk	32.9	-95.2	-33.07	-54.35	-13	-41.35	V
5.192344	38.32	Pk	34.2	-95.2	-29.10	-51.78	-13	-38.78	H
5.192344	37.45	Pk	34.2	-95.2	-29.10	-52.65	-13	-39.65	V
6.997969	37.09	Pk	35.6	-95.2	-26.40	-48.91	-13	-35.91	H
6.997969	34.57	Pk	35.6	-95.2	-26.40	-51.43	-13	-38.43	V
High Channel, 1752.6MHz									
3.511406	41.08	Pk	33.0	-95.2	-33.00	-54.12	-13	-41.12	H
3.509531	40.40	Pk	33.0	-95.2	-32.95	-54.75	-13	-41.75	V
5.253281	37.72	Pk	34.4	-95.2	-28.93	-52.01	-13	-39.01	H
5.242031	37.19	Pk	34.3	-95.2	-28.80	-52.51	-13	-39.51	V
7.023281	35.55	Pk	35.6	-95.2	-26.73	-50.78	-13	-37.78	H
7.011094	35.57	Pk	35.6	-95.2	-26.61	-50.64	-13	-37.64	V

HSDPA MODE

Project #:	14982479
Date:	5/13/2024
Test Engineer:	45258
Configuration:	EUT Only
Mode:	HSDPA Band 4
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 1712.4MHz									
3.425156	33.61	Pk	32.8	-95.2	-24.90	-53.69	-13	-40.69	H
3.425156	34.92	Pk	32.8	-95.2	-24.90	-52.38	-13	-39.38	V
5.137031	32.54	Pk	34.1	-95.2	-21.70	-50.26	-13	-37.26	H
5.137031	31.84	Pk	34.1	-95.2	-21.70	-50.96	-13	-37.96	V
6.850313	30.67	Pk	35.6	-95.2	-19.30	-48.23	-13	-35.23	H
6.850313	29.96	Pk	35.6	-95.2	-19.30	-48.94	-13	-35.94	V
Mid Channel, 1732.6MHz									
3.465938	35.48	Pk	32.7	-95.2	-24.80	-51.82	-13	-38.82	H
3.465469	34.62	Pk	32.7	-95.2	-24.80	-52.68	-13	-39.68	V
5.197969	33.32	Pk	34.2	-95.2	-22.40	-50.08	-13	-37.08	H
5.199375	32.79	Pk	34.2	-95.2	-22.40	-50.61	-13	-37.61	V
6.930469	29.81	Pk	35.7	-95.2	-19.00	-48.69	-13	-35.69	H
6.930469	28.48	Pk	35.7	-95.2	-19.00	-50.02	-13	-37.02	V
High Channel, 1752.6MHz									
3.505781	34.86	Pk	32.8	-95.2	-24.30	-51.84	-13	-38.84	H
3.505781	33.29	Pk	32.8	-95.2	-24.30	-53.41	-13	-40.41	V
5.258438	30.83	Pk	34.2	-95.2	-21.96	-52.13	-13	-39.13	H
5.257969	31.60	Pk	34.2	-95.2	-22.00	-51.40	-13	-38.40	V
7.010625	29.15	Pk	35.6	-95.2	-18.20	-48.65	-13	-35.65	H
7.010625	28.61	Pk	35.6	-95.2	-18.20	-49.19	-13	-36.19	V

Pk - Peak detector

11. SETUP PHOTOS

Please refer to 14892479-EP1V1 for the Setup Photo Report for setup photos.

END OF REPORT