

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT



Applicant: Wistron Neweb Corporation
20 Park Avenue II Hsinchu Science Park, Hsinchu 308,
Taiwan

Manufacturer: Wistron Neweb Corporation
20 Park Avenue II Hsinchu Science Park, Hsinchu 308,
Taiwan

Product Name: DRMR-H01

Brand Name: WNC

Model No. / ISED HVIN: DRMR-H01

ISED PMN: DRMR-H01

Report Number: TERF2501000192ER

FCC ID NKR-DRMRH01

IC: 4441A-DRMRH01

Date of EUT Received: January 10, 2025

Date of Test: January 13, 2025~March 18, 2025

Issue Date: June 2, 2025



Approved By _____
Blue Yang

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.26-2015 and the energy emitted by the sample EUT comply with FCC rule part 2, 22H & 24E & 27 C and ISED RSS-Gen, 132, 133, 139.

The results of this report relate only to the sample identified in this report.

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Revision History					
Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2501000192ER	00	Original	May 12, 2025	Karen Huang	
TERF2501000192ER	01	Update section 1.3	June 2, 2025	Karen Huang	*

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.

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1 GENERAL PRODUCT INFORMATION

1.1 Product Description

Product Name:	DRMR-H01
Brand Name:	WNC
Model No. / ISED HVIN:	DRMR-H01
Hardware Version:	N/A
Firmware Version:	N/A
EUT Series No.:	355182430001716, 355182430001690
Power Supply:	3.3 Vdc
Test Software (Name/Version)	Connect with call box

1.2 Operation Frequency Range

Operating Frequency (MHz)			
WCDMA / HSPA+ Band II	1852.4	-	1907.6
WCDMA / HSPA+ Band IV	1712.4	-	1752.6
WCDMA / HSPA+ Band V	826.4	-	846.6

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1.3 Antenna Designation

Antenna Type	Part No.	Antenna No.
PIFA	260-29161	#12
	260-29158	#9
	260-29152	#3
Monopole	260-29143	#3
	260-29144	#4

Note: Transmission frequencies in this test report are only available by the above antenna(s).

Bands	Freq. (MHz)	Peak Antenna Gain (dBi)			
		Gain	PIFA Ant. No.	Gain	Monopole Ant. No.
WCDMA / HSPA+ Band II	1850-1910	3.60	12	3.45	3
WCDMA / HSPA+ Band IV	1710-1755	4.03	9	4.78	4
WCDMA / HSPA+ Band V	824-849	2.88	3	3.42	3

Note: Antenna information is provided by the applicant.

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1.4 Type of Emission & Max ERP/EIRP Power Measurement Result:

Mode	ERP / EIRP (dBm)	W	99%	Type of Emission
WCDMA Band II	26.61	EIRP	0.458	4M14F9W
HSDPA Band II	25.42	EIRP	0.348	4M16F9W
HSUPA Band II	25.49	EIRP	0.354	4M15F9W
WCDMA Band IV	27.48	EIRP	0.560	4M15F9W
HSDPA Band IV	26.35	EIRP	0.432	4M16F9W
HSUPA Band IV	25.75	EIRP	0.376	4M16F9W
WCDMA Band V	24.68	ERP	0.294	4M16F9W
HSDPA Band V	23.57	ERP	0.228	4M15F9W
HSUPA Band V	23.02	ERP	0.200	4M16F9W

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1.5 Test Methodology of Applied Standards

FCC 47 CFR Part 2, 22H, 24E, 27C

ISED RSS-GEN Issue 5 Amendment 2 Feb. 2021

ISED RSS-132 Issue 4 January 2023

ISED RSS-133 Issue 7 July 2024

ISED RSS-139 Issue 4 Amendment Oct. 2022

ANSI C63.26-2015

KDB971168 D01 Power Meas license Digital System v03r01

KDB941225 D01 SAR test for 3G devices v03r01 (SAR Measurement Procedures for 3G Devices, WCDMA / HSPA) was used for EUT and Base station setting.

KDB412172 D01 Determining ERP and EIRP v01r01

TS 151 010-1 is used to set, and measure the output power.

1.6 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1 SAC 2 SAC 3 Conduction 1 Conducted 1 Conducted 2 Conducted 3 Conducted 4 Conducted 5 Conducted 6	TW0027	TW3702
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C SAC C SAC D SAC G Conducted A Conducted B Conducted C Conducted D Conducted E Conducted F Conducted G	TW0028	

Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.

1.7 Special Accessories

No special accessories were used during testing.

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1.8 Equipment Modifications

There was no modifications incorporated into the EUT.

1.9 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

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2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Measurement at Antenna Port

The EUT is placed on a table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

2.3.2 Radiated Emissions (ERP/EIRP)

The EUT is placed on a turn table, for emission measurements below 1 GHz is 0.8 m above ground plane, for emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

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2.5 Final Amplifier Voltage and Current Information:

Test mode	DC voltage (V)	DC current (mA)
WCDMA B2	3.3	0.87
HSUPA B2	3.3	0.86
HSDPA B2	3.3	0.86
WCDMA B4	3.3	0.92
HSUPA B4	3.3	0.91
HSDPA B4	3.3	0.91
WCDMA B5	3.3	0.87
HSUPA B5	3.3	0.87
HSDPA B5	3.3	0.87

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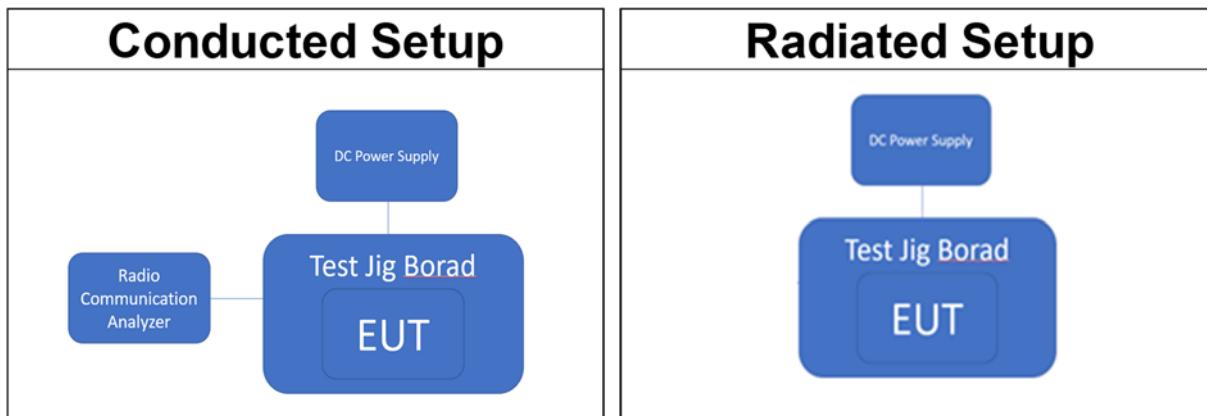
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3 TEST CONFIGURATION



Note: Radio Communication Analyzer is placed in remote side for radiated test.

3.1 Control Unit(s)

N/A

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4 SUMMARY OF TEST RESULTS

FCC Rules	IC Rules	Description Of Test	Result
§2.1046(a)	RSS-GEN §6.12	RF Power Output	Compliant
§22.913(a)(5) §24.232(c) §27.50(d)(4)	RSS-132 §5.4 RSS-133 §5.5 RSS-139 §6.5	ERP/ EIRP measurement	Compliant
§2.1049(h)	RSS-GEN §6.7	99% & 26dB Occupied Bandwidth	Compliant
§2.1051 §22.917(a)(b) §24.238(a)(b) §27.53(h)(1)&(3)	RSS-GEN §6.13 RSS-132 §5.5 RSS-133 §6.5 RSS-139 §6.6	Out of Band Emissions at Antenna Terminals and Band Edge / Emission mask requirements	Compliant
§2.1053 §22.917(a)(b) §24.238(a)(b) §27.53(h)(1)&(3)	RSS-GEN §6.13 RSS-132 §5.5 RSS-133 §6.5 RSS-139 §6.6	Field Strength of Spurious Radiation	Compliant
§22.913(d) §24.232(d) §27.50(d)(5)	RSS-132 §5.4 RSS-133 §5.5 RSS-139 §5.5	Peak to Average Ratio	Compliant
§2.1055(a)(1) §22.355 §24.235 §27.54	RSS-132 §5.3 RSS-133 §5.4 RSS-139 §5.4	Frequency Stability	Compliant

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5 DESCRIPTION OF TEST MODES

5.1 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

5.2 Measurement Configuration

Test Items	WCDMA / HSPA Bands	Test Channel		
		L	M	H
ERP	Band V	V	V	V
EIRP	Bnad II	V	V	V
	Band IV	V	V	V
FREQUENCY STABILITY	Bnad II	-	V	-
	Band IV	-	V	-
	Band V	-	V	-
OCCUPIED BANDWIDTH	Bnad II	V	V	V
	Band IV	V	V	V
	Band V	V	V	V
PEAK TO AVERAGE RATIO	Bnad II	V	V	V
	Band IV	V	V	V
	Band V	V	V	V
BAND EDGE	Bnad II	V	-	V
	Band IV	V	-	V
	Band V	V	-	V
CONDUCETED EMISSION	Bnad II	V	V	V
	Band IV	V	V	V
	Band V	V	V	V
RADIATED EMISSION	Bnad II	V	V	V
	Band IV	V	V	V
	Band V	V	V	V

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6 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
Power Density	+/- 0.61 dB
Output Power measurement	+/- 0.97 dB
ERP/ EIRP measurement	+/- 2.16 dB
	+/- 2.16 dB
Emission Bandwidth	+/- 1.38 Hz
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 0.77 dB
Peak to Average Ratio	+/- 0.97 dB
Frequency Stability vs. Temperature	+/- 1.48 Hz
Frequency Stability vs. Voltage	+/- 1.48 Hz
Temperature	+/- 0.6 °C
Humidity	+/- 3 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty		
Polarization: Vertical	+/- 1.89 dB	9kHz~30MHz
	+/- 4.1 dB	30MHz - 1000MHz
	+/- 3.37 dB	1GHz - 18GHz
	+/- 3.83 dB	18GHz - 40GHz
Polarization: Horizontal	+/- 1.89 dB	9kHz~30MHz
	+/- 4.1 dB	30MHz - 1000MHz
	+/- 3.37 dB	1GHz - 18GHz
	+/- 3.83 dB	18GHz - 40GHz
Radiated Spurious Emission	+/- 2 dB	33GHz-50GHz
	+/- 1.59 dB	50GHz-60GHz
	+/- 1.71 dB	60GHz-90GHz
	+/- 1.64 dB	90GHz-140GHz
	+/- 3.84 dB	140GHz-220GHz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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7 MEASUREMENT EQUIPMENT USED

7.1 Conducted Measurement

Conducted Emission Test Site: Conducted 4					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL. (mm/dd/yyyy)	CAL DUE. (mm/dd/yyyy)
Attenuator	Mini-Circuits	BW-S10W2+	4	12/11/2024	12/10/2025
DC Block	Mini-Circuits	BLK-18-S+	12	12/11/2024	12/10/2025
DC Power Supply	Gwinsteck	SPS-3610	GEV856761	09/13/2024	09/12/2025
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY60240503	12/16/2024	12/15/2025
Radio Communication Analyzer	Anritsu	MT8820C	6201061014	08/29/2024	08/28/2025
Splitter	RF-LAMBAD	RFLT2W1G18G	11-JSPF412-017	12/11/2024	12/10/2025
Temperature Chamber	Giant Force	GTH-150-40-CP-AR	MAA0512-018	06/05/2024	06/04/2025
Test Software	WORLD PALLAS	Dr.E	Ver. 3.0	N.C.R	N.C.R

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7.2 Radiated Measurement

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL. (mm/dd/yyyy)	CAL DUE. (mm/dd/yyyy)
1G High Pass Filter	Micro-Tronics	HPM50108	32	12/11/2024	12/10/2025
2G High Pass Filter	Micro-Tronics	HPM50110	36	12/11/2024	12/10/2025
Attenuator	Mini-Circuits	BW-S10W2+	16	12/11/2024	12/10/2025
Band Reject Filter 1700-2000	EWT	EWT-54-0038	M1	12/11/2024	12/10/2025
Band Reject Filter 800-1000	EWT	EWT-54-0037	M3R	12/11/2024	12/10/2025
Bi-log Antenna	SCHWARZBECK	VULB9168	1208	07/17/2024	07/16/2025
Bi-log Antenna	SCHWARZBECK	VULB9168	378	08/09/2024	08/08/2025
Coaxial Cables	EMCI+Huber Suhner	EMC107-SM-SM-1000 +SUCAFLEX 104PEA +EMC107-SM-SM-1500 +SUCAFLEX 106	RX Cable 9K-18G (221110+MY4251/4 PEA+221106+76096 /6)	08/30/2024	08/29/2025
Coaxial Cables	Huber Suhner	SUCAFLEX 102	RX Cable 18G-40G MY2630/2+805062/2	08/30/2024	08/29/2025
Coaxial Cables	Huber Suhner	SUCAFLEX 102+SUCAFLEX 106	TX Cable 30M-40G 23051/2+76096/6+2 2962/2	08/30/2024	08/29/2025
DC Power Supply	Gwinstek	SPS-3610	GEV856733	12/04/2024	12/03/2025
EMI Test Receiver	R&S	ESCI 7	100759	08/28/2024	08/27/2025
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY63440386	02/05/2025	02/04/2026
Horn Antenna	RF SPIN	DRH0844	LE2D05A0844	07/10/2024	07/09/2025
Horn Antenna	SCHWARZBECK	BBHA9120D	1441	09/23/2024	09/22/2025
Horn Antenna	SCHWARZBECK	BBHA9120D	603	05/15/2024	05/14/2025
Horn Antenna	SCHWARZBECK	BBHA9170	184	12/20/2024	12/19/2025
Network Analyzer	R&S	ZNB 40	101842	05/16/2024	05/15/2025
Pre-Amplifier	EMCI	EMC118A45SEE	980868	08/30/2024	08/29/2025
Pre-Amplifier	EMCI	EMC184045SEE	9080939	08/30/2024	08/29/2025
Pre-Amplifier	HP	8447D	2944A07676	08/30/2024	08/29/2025
Radio Communication Analyzer	Anritsu	MT8820C	6201465317	03/26/2024	03/25/2025
Site Cal	SGS	SAC 3	N/A	08/30/2024	08/29/2025
Test Software	Audix	e3	Ver. 9.210616	N.C.R	N.C.R

NOTE: N.C.R refers to Not Calibrated Required.

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8 MAXIMUM OUTPUT POWER

8.1 Standard Applicable

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals.

According to FCC §2.1046

FCC 22.913(a)

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

FCC 24.232(c)

Mobile and portable stations are limited to 2 W EIRP.

FCC 27.50(d)

(4) Mobile, and portable (hand-held) stations operating in the 1710-1755 MHz, 1695-1710 MHz and 1755-1780 MHz bands are limited to 1W EIRP.

RSS-132 §5.4

The transmitter output power shall be measured in terms of average power. The equivalent radiated power (e.r.p.) shall not exceed 7 watts for mobile equipment and 3 watts for portable equipment.

The effective isotropic radiated power (e.i.r.p.) shall not exceed the limits specified in SRSP-503 for base station equipment.

RSS-133 §5.5

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

Table 2: Maximum power spectral density of equipment

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

RSS-139 §5.5

The maximum output power of the equipment shall comply with the limits specified below. In the tables, maximum power refers to the equivalent isotropically radiated power

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(e.i.r.p.) or total radiated power (TRP), measured in terms of average values.

The limits in this RSS are specified for the purpose of certification and may not apply to all deployment scenarios. Consult SRSP-513 and SRSP-519 for more details on the bands 2110-2180 MHz and 2180-2200 MHz respectively

Table 3: Maximum power of equipment in the band 1710-1780 MHz

Equipment type	Maximum power
Fixed station and base station	30 dBm e.i.r.p./channel bandwidth
Subscriber equipment	30 dBm e.i.r.p./channel bandwidth

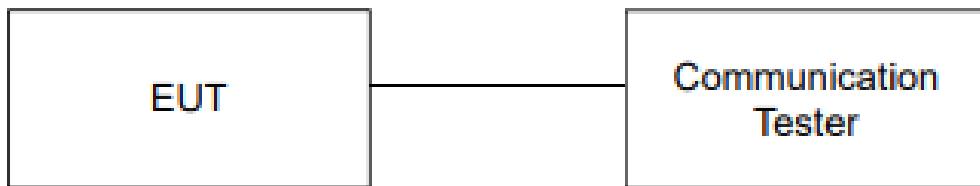
Table 4: Maximum power of equipment in the band 2110-2180 MHz

Equipment type	Maximum power
Non-AAS fixed station and base station	65 dBm e.i.r.p./MHz
AAS fixed station and base station	46 dBm TRP/MHz
Subscriber equipment	30 dBm e.i.r.p./channel bandwidth

Table 5: Maximum power of equipment in the band 2180-2200 MHz

Equipment type	Maximum power
Non-AAS base station	65 dBm e.i.r.p./MHz
AAS base station	46 dBm TRP/MHz

8.2 Test Set-up



Note: Measurement setup for testing on Antenna connector

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8.3 Output Power Measurement Applicable Guidance

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a communication tester.

Transmitter output was read off the communication tester in dBm.

The power output at the transmitter antenna port was determined by adding the value of the attenuator to the communication tester reading.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, (WCDMA/HSPA) was used for EUT and RMC 12.2kps is used for Base station setting.

KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results.

Conducted average power is obtained from the simulator telecommunication test set.

8.4 Determining ERP and/or EIRP from conducted RF output power measurements

According to KDB 412172 D01 Power Approach,

$$EIRP = P_T + G_T - L_c,$$

$$ERP = EIRP - 2.15,$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power (expressed in the same units as PT, typically dBW, dBm, or power spectral density (PSD)2), relative to either a dipole antenna (ERP) or an isotropic antenna (EIRP);

P_T = transmitter output power, expressed in dBW, dBm, or PSD;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_c = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

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8.5 Measurement Results

8.5.1 WCDMA & HSPA Measurement Results:

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm. RMC 12.2kps is used for this testing.

WCDMA/HSUPA/HSDPA Band II Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	1852.4	9262	22.88	3.60	24.33	26.48	33.00	-6.52
	1880.0	9400	22.93	3.60	24.38	26.53	33.00	-6.47
	1907.6	9538	23.01	3.60	24.46	26.61	33.00	-6.39
HSDPA	1852.4	9262	21.74	3.60	23.19	25.34	33.00	-7.66
	1880.0	9400	21.82	3.60	23.27	25.42	33.00	-7.58
	1907.6	9538	21.81	3.60	23.26	25.41	33.00	-7.59
HSUPA	1852.4	9262	21.17	3.60	22.62	24.77	33.00	-8.23
	1880.0	9400	21.35	3.60	22.80	24.95	33.00	-8.05
	1907.6	9538	21.89	3.60	23.34	25.49	33.00	-7.51

WCDMA/HSUPA/HSDPA Band IV Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	1712.4	1312	22.70	4.78	25.33	27.48	30.00	-2.52
	1732.6	1413	22.56	4.78	25.19	27.34	30.00	-2.66
	1752.6	1513	22.65	4.78	25.28	27.43	30.00	-2.57
HSDPA	1712.4	1312	21.57	4.78	24.20	26.35	30.00	-3.65
	1732.6	1413	21.46	4.78	24.09	26.24	30.00	-3.76
	1752.6	1513	21.50	4.78	24.13	26.28	30.00	-3.72
HSUPA	1712.4	1312	20.91	4.78	23.54	25.69	30.00	-4.31
	1732.6	1413	20.86	4.78	23.49	25.64	30.00	-4.36
	1752.6	1513	20.97	4.78	23.60	25.75	30.00	-4.25

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WCDMA/HSUPA/HSDPA Band V Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	826.4	4132	23.41	3.42	24.68	26.83	38.50	-11.67
	836.6	4183	23.32	3.42	24.59	26.74	38.50	-11.76
	846.6	4233	23.26	3.42	24.53	26.68	38.50	-11.82
HSDPA	826.4	4132	22.30	3.42	23.57	25.72	38.50	-12.78
	836.6	4183	22.28	3.42	23.55	25.70	38.50	-12.80
	846.6	4233	22.25	3.42	23.52	25.67	38.50	-12.83
HSUPA	826.4	4132	21.75	3.42	23.02	25.17	38.50	-13.33
	836.6	4183	21.72	3.42	22.99	25.14	38.50	-13.36
	846.6	4233	21.66	3.42	22.93	25.08	38.50	-13.42

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8.5.2 HSPA (HSDPA & HSUPA) Release 6:

The following 4 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C10.1.4 & C11.1.3 in the 3GPP TS34.121-1. RMC 12.2kps is used for this testing.

8.5.3 HSDPA SUB-TEST Setting

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

Note: The recommended HSDPA MPRs are implemented as per following sub-tests.

Mode	Sub test	Avg. Power (dBm)		
		Channel		
HSDPA II	1	9262	9400	9538
	2	21.74	21.82	21.81
	3	21.67	21.84	21.79
	4	21.24	21.28	21.37
HSDPA IV	1	21.21	21.42	21.30
	2	1312	1413	1513
	3	21.57	21.46	21.50
	4	21.58	21.38	21.40
	5	21.03	21.01	21.05
	6	20.98	20.96	20.97

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Mode	Sub test	Avg. Power (dBm)		
		4132	4183	4233
HSDPA V	1	22.30	22.28	22.25
	2	22.30	22.23	22.18
	3	21.83	21.70	21.72
	4	21.81	21.73	21.68

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8.5.4 HSPA SUB-TEST Setting

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS}	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (Code s)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}:$ 47/15 $\beta_{ed2}:$ 47/15	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

Note: The recommended HSUPA MPRs are implemented as per following sub-tests.

Mode	Sub test	Avg. Power (dBm)		
		Channel		
HSUPA II	1	21.17	21.35	21.89
	2	21.69	21.76	21.84
	3	20.65	20.78	20.82
	4	21.74	21.80	21.89
	5	20.67	20.70	20.82
HSUPA IV	Mode	Avg. Power (dBm)		
		Channel		
	1	1312	1413	1513
	2	20.91	20.86	20.97
	3	21.54	21.48	21.49
	4	20.53	20.51	20.47
	5	21.59	21.52	21.48

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Mode	Sub test	Avg. Power (dBm)		
		4132	4183	4233
HSUPA V	1	21.75	21.72	21.66
	2	22.27	22.23	22.20
	3	21.25	21.23	21.17
	4	22.26	22.19	22.21
	5	21.23	21.21	21.15

8.5.5 WCDMA/HSDPA/HSUPA band II, IV, V

The EUT output power was controlled by simulator and enter max rated power 24dBm. The EUT is going to be set to max output power to 24dBm then record the read. The min. power was measures by a function key “minimum power” then record the read. It is -52.3dBm. The power variation can be 0.1dB step by setting.

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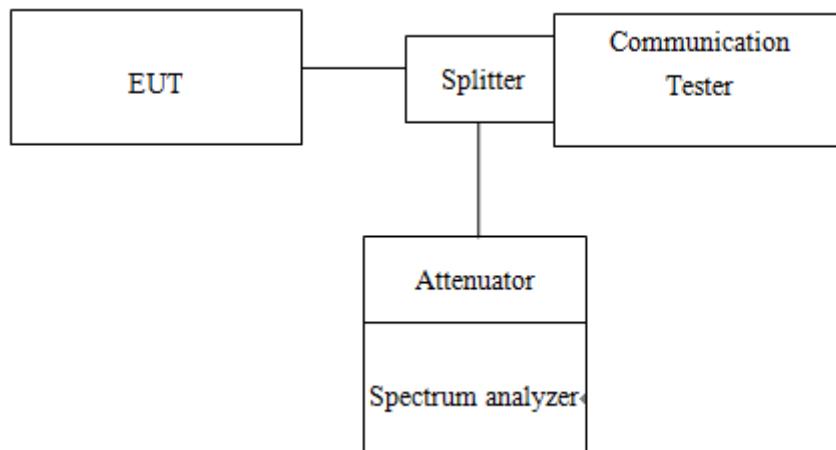
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9 OCCUPIED BANDWIDTH MEASUREMENT

9.1 Standard Applicable

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power.

9.2 Test Set-up



9.3 Measurement Procedure

99% & 26dB Bandwidth with detector peak

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -26dBc display line was placed on the screen (or 26dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1% ~ 5%, VBW \geq 3 * RBW, with span > 2 * Signal BW, set % Power = 99%.

9.4 Measurement Result

Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA II	HSDPA II	HSUPA II	WCDMA II	HSDPA II	HSUPA II
1852.40	9262	4.13860	4.14280	4.15060	4.664	4.657	4.660
1880.00	9400	4.12420	4.15990	4.12940	4.654	5.336	4.636
1907.60	9538	4.14080	4.13220	4.14720	4.659	4.641	4.654

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Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA IV	HSDPA IV	HSUPA IV	WCDMA IV	HSDPA IV	HSUPA IV
1712.40	1312	4.14520	4.16470	4.15300	4.641	4.647	4.730
1732.60	1413	4.14470	4.14300	4.15280	4.688	4.650	4.789
1752.60	1513	4.13880	4.13880	4.16090	4.659	4.859	4.696

Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA V	HSDPA V	HSUPA V	WCDMA V	HSDPA V	HSUPA V
826.40	4132	4.15850	4.14620	4.14290	4.654	4.643	4.643
836.60	4183	4.16120	4.12970	4.15550	4.676	4.645	4.636
846.60	4233	4.12770	4.13580	4.14710	4.671	4.641	4.634

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WCDMA_B2_HighCH9538-1907.6



HSDPA_B2_HighCH9538-1907.6



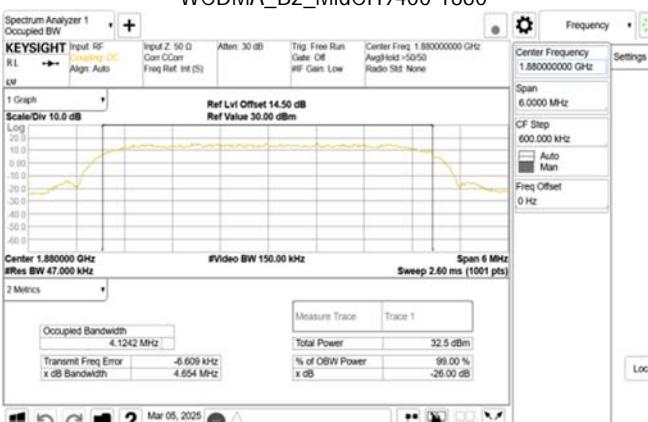
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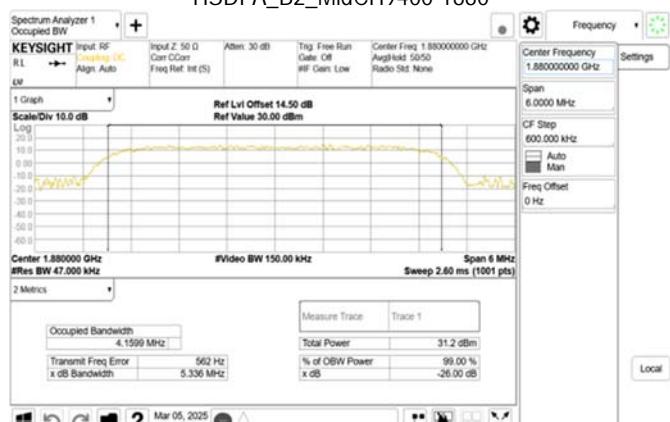
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WCDMA_B2_MidCH9400-1880



HSDPA_B2_MidCH9400-1880



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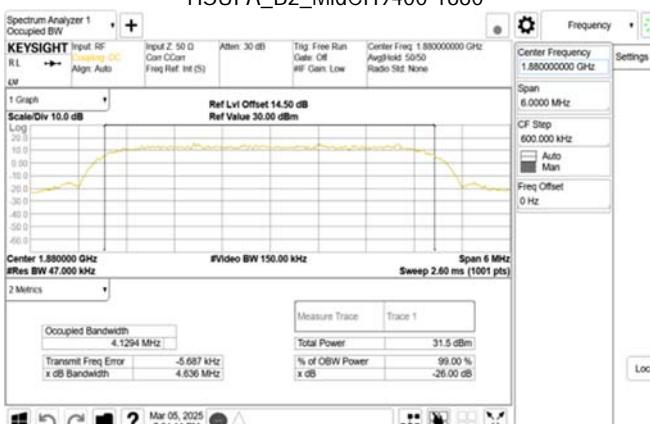
HSUPA_B2_LowCH9262-1852.4



WCDMA_B4_LowCH1312-1712.4



HSUPA_B2_MidCH9400-1880



WCDMA_B4_MidCH1413-1732.6



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HSUPA_B4_HighCH1513-1752.6



HSDPA_B4_LowCH1312-1712.4



HSUPA_B4_LowCH1312-1712.4



HSDPA_B4_MidCH1413-1732.6



HSUPA_B4_MidCH1413-1732.6



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WCDMA_B5_HighCH4233-846.6



HSDPA_B5_HighCH4233-846.6



WCDMA_B5_LowCH4132-826.4



HSDPA_B5_LowCH4132-826.4



WCDMA_B5_MidCH4183-836.6



HSDPA_B5_MidCH4183-836.6



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HSUPA_B5_HighCH4233-846.6



HSUPA_B5_LowCH4132-826.4



HSUPA_B5_MidCH4183-836.6



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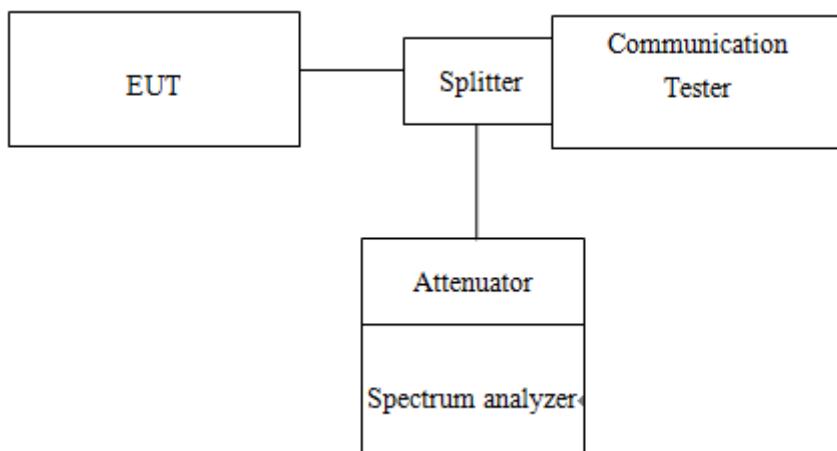
10 OUT OF BAND EMISSION AT ANTENNA TERMINALS

10.1 Standard Applicable

FCC §22.917(a), §24.238(a), §27.53(h) and RSS-132 §5.5, RSS-133 §5.6, RSS-139 §5.6

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

10.2 Test SET-UP



10.3 Measurement Procedure

10.3.1 Conducted Emission

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

1. To connect Antenna Port of EUT to Spectrum.
2. Set RBW = 1MHz & VBW = 1MHz on Spectrum.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

10.3.2 Band Edge

1. To connect Antenna Port of EUT to Spectrum.
2. The band edge of low and high channels for the highest RF powers was measured. Setting RBW $\geq 1\%$ EBW.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

10.4 Measurement Result:

Refer to next pages.

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Band Edge WCDMA_B2_LowCH9262-1852.4



Band Edge WCDMA_B2_HighCH9538-1907.6



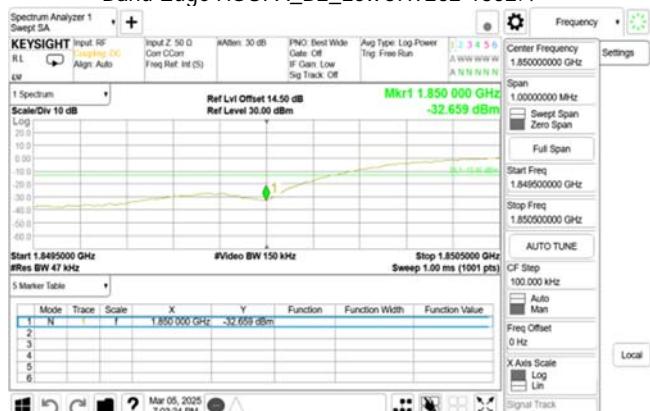
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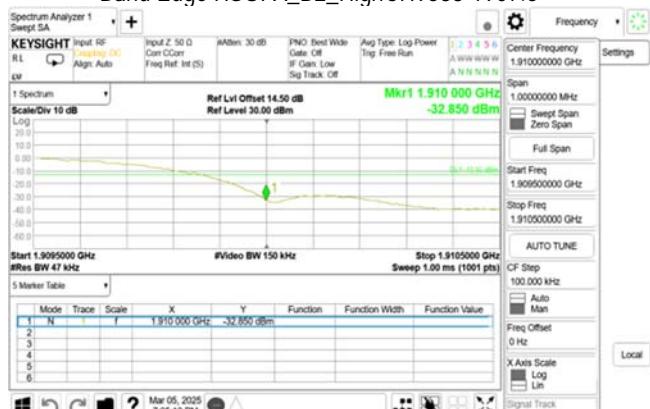
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Band Edge HSUPA_B2_LowCH9262-1852.4



Band Edge HSUPA_B2_HighCH9538-1907.6

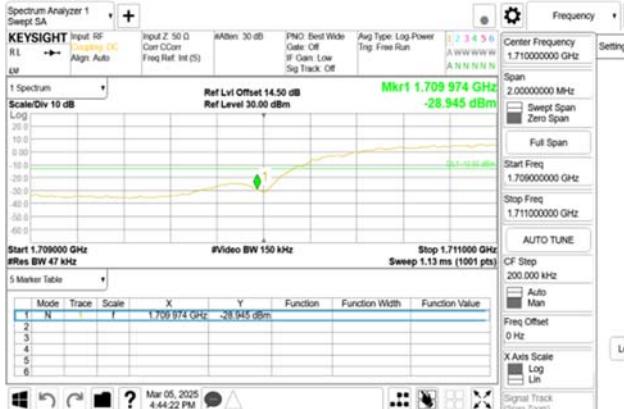


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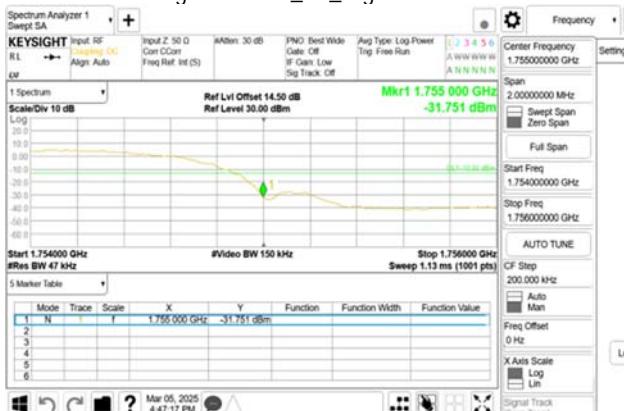
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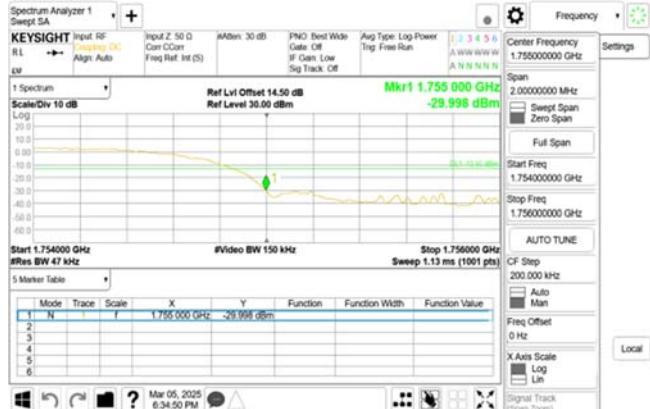
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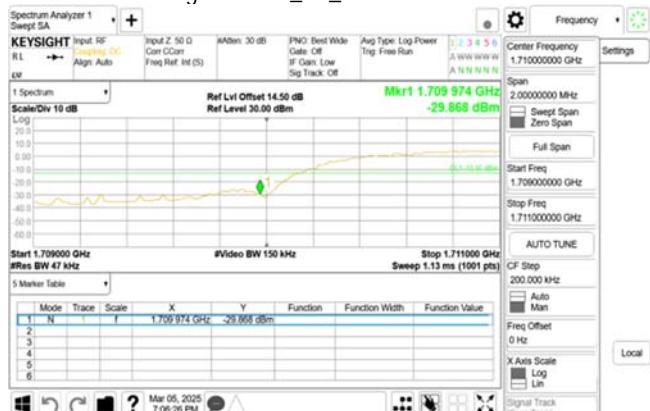
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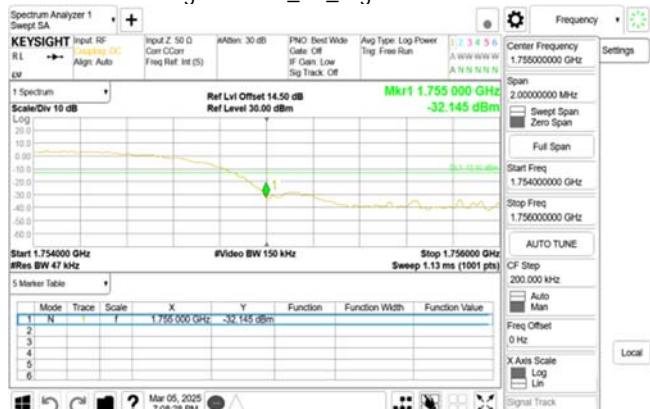
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Band Edge HSUPA_B4_LowCH1312-1712.4



Band Edge HSUPA_B4_HighCH1513-1752.6



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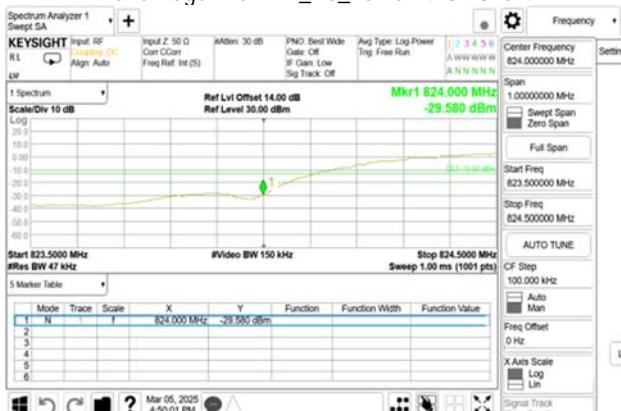
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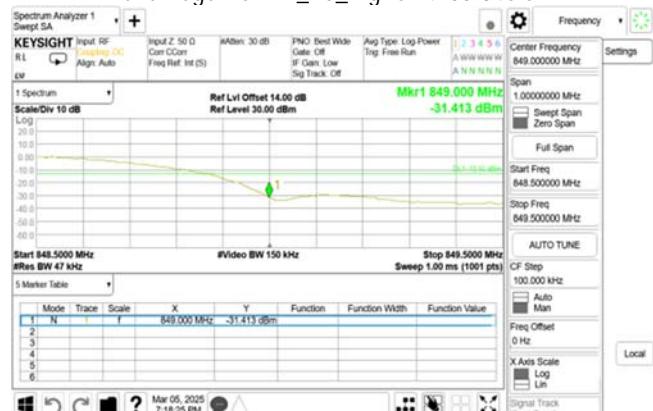
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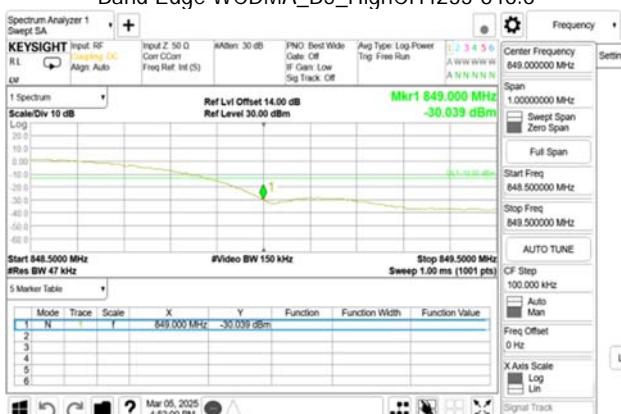
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Band Edge HSDPA_B5_HighCH4233-846.6



Band Edge WCDMA_B5_HighCH4233-846.6



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Band Edge HSDPA_B5_LowCH4132-826.4



Band Edge HSUPA_B5_HighCH4233-846.6



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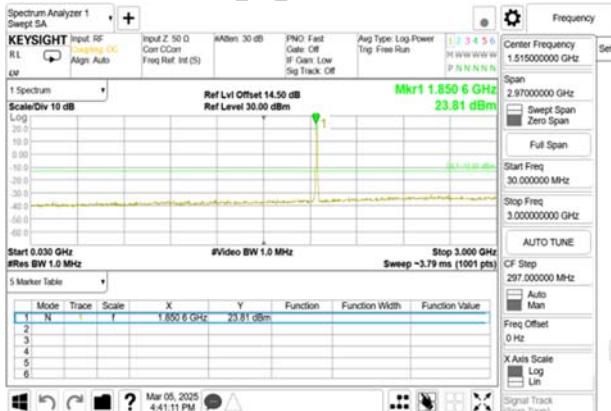
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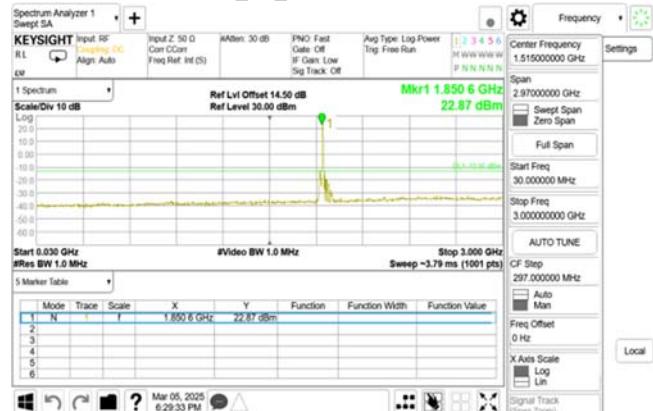


Spurious Emission Low

WCDMA_B2_LowCH9262-1852.4



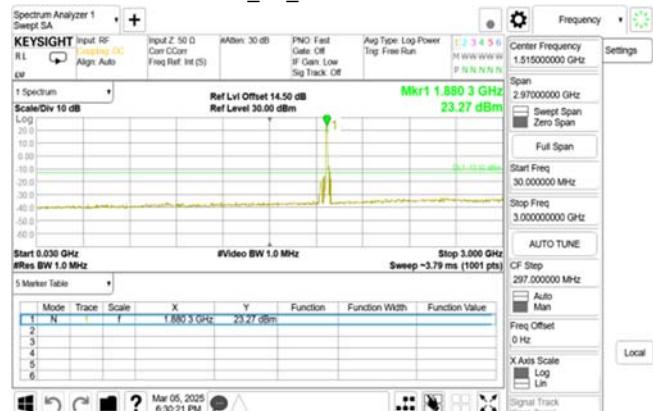
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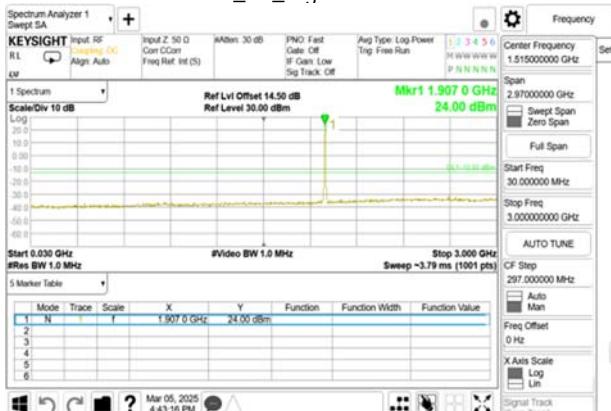
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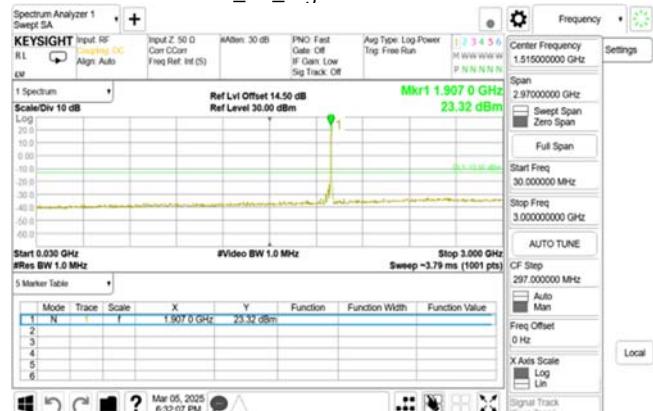
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WCDMA_B2_HighCH9538-1907.6



HSDPA_B2_HighCH9538-1907.6



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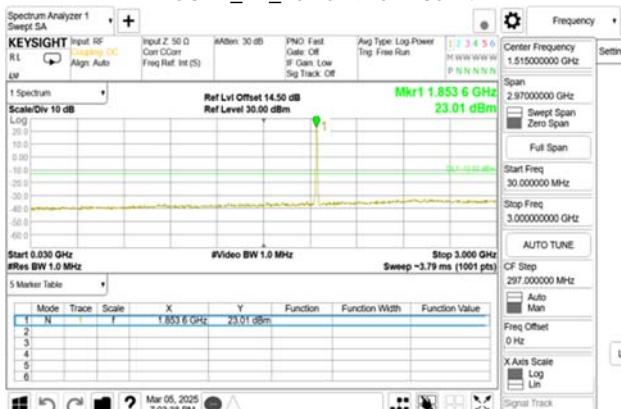
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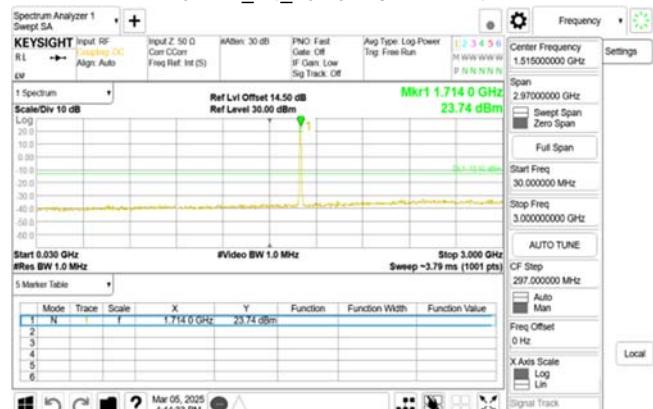
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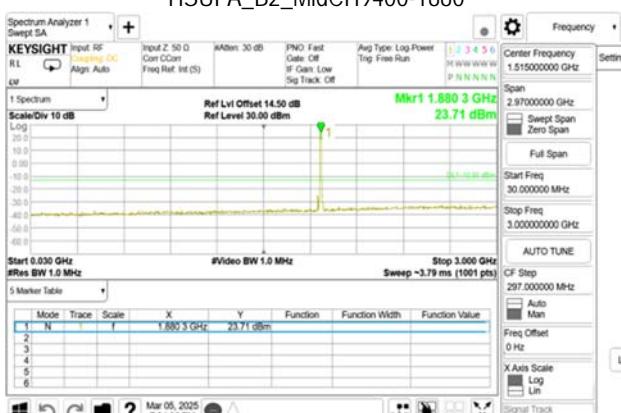
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WCDMA_B4_LowCH1312-1712.4



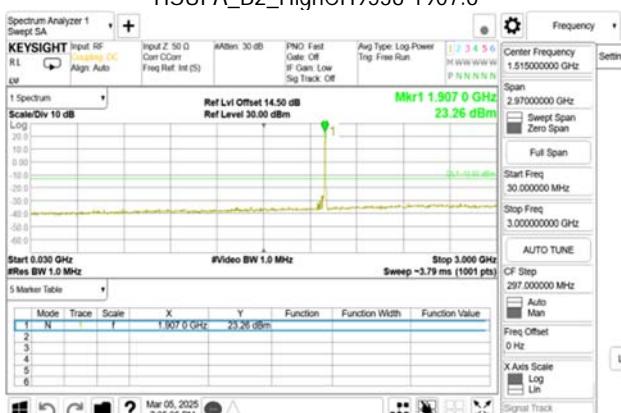
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WCDMA_B4_MidCH1413-1732.6



HSUPA_B2_HighCH9538-1907.6



WCDMA_B4_HighCH1513-1752.6



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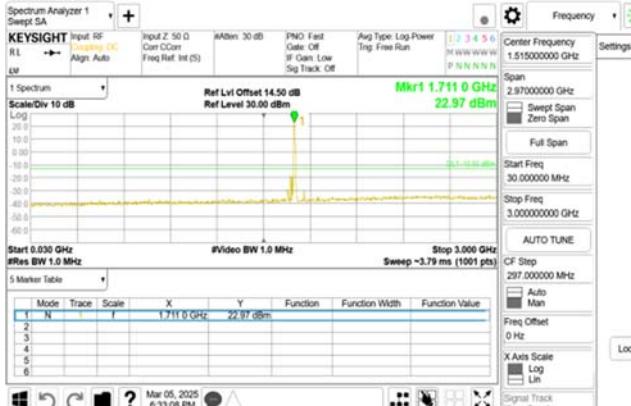
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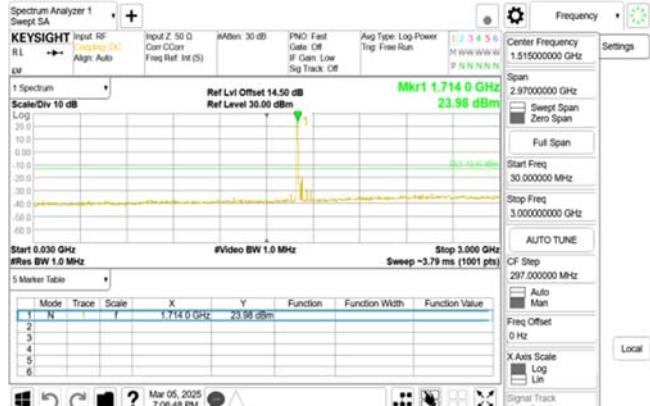
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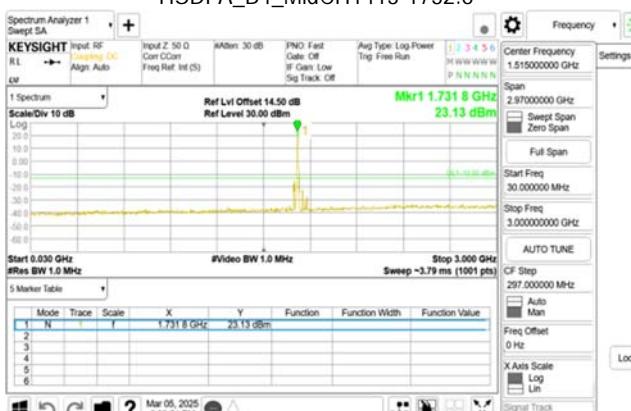
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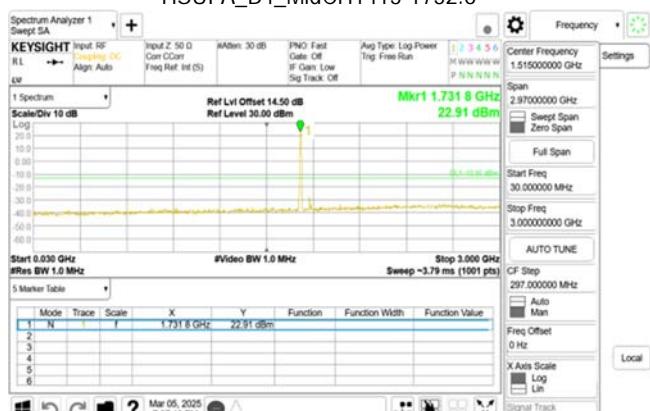
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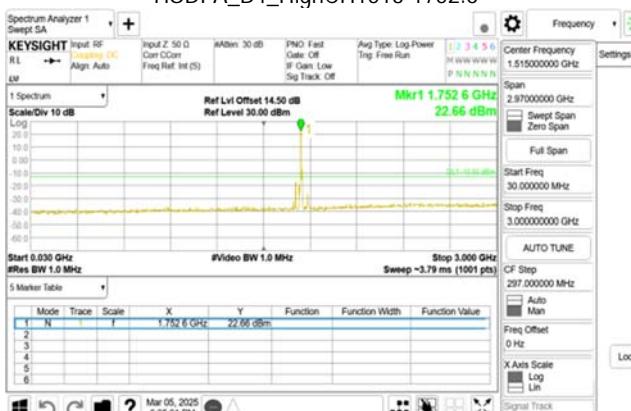
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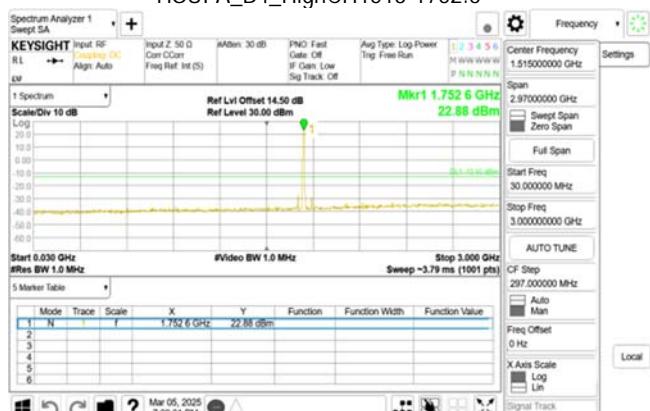
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HSDPA_B4_HighCH1513-1752.6



HSUPA_B4_HighCH1513-1752.6



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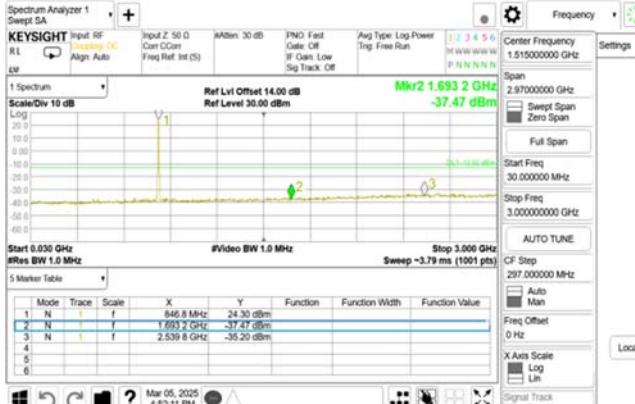
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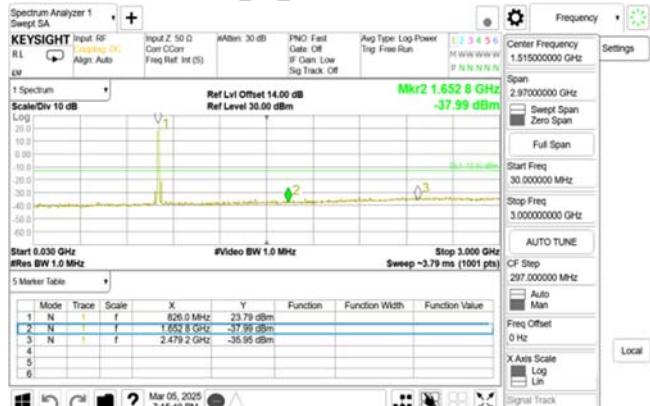
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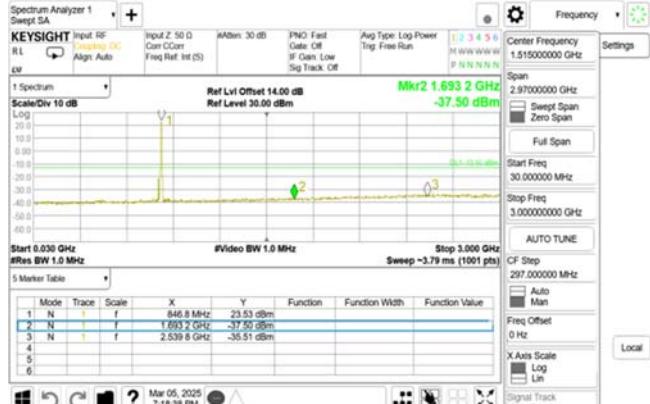
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