HAC RF EMISSIONS TEST REPORT

FCC 47 CFR § 20.19
ANSI C63.19-2019

For
Smartphone

FCC ID: BCG-E8957A
Model Name: A3522

Report Number: 15496240-S5V6
Issue Date: 8/27/2025

Prepared for
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ACCREDITED
CERT #0751.05

Revision History

Rev.	Date	Revisions	Revised By
V1	7/17/2025	Initial Issue	--
V2	7/24/2025	Updated Sections 8 and 10	Kiara Davis
V3	7/31/2025	Updated Section 10	Miguel Llamas
V4	8/18/2025	Updated Section 10	Kiara Davis
V5	8/21/2025	Updated Sections 8 and 10	Kiara Davis
V6	8/27/2025	Updated Section 10	Kiara Davis

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1. Attestation of Test Results

Applicant Name	APPLE INC.
FCC ID	BCG-E8957A
Model Name	A3522
Applicable Standards	FCC 47 CFR § 20.19 ANSI C63.19-2019
Date Tested	7/14/2025
Test Results	Pass

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 can demonstrate compliance with the requirements as documented in this report.

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

The results documented in this report apply only to the sample tested, 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 considered 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 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. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government

Approved & Released By:	Prepared By:
	
Devin Chang Senior Laboratory Engineer UL Verification Services Inc.	Kiara Davis Laboratory Engineer UL Verification Services Inc.

2. Test Methodology

The tests documented in this report were performed in accordance with ANSI C63.19-2019 Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids and FCC Published procedure:

- KDB 285076 D01 HAC Guidance v06r04
- KDB 285076 D03 HAC FAQ v01r07
- TCB workshop updates

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

47266 Benicia Street
SAR Lab 16

UL Verification Services Inc. is accredited by A2LA, Certificate Number 0751.05

The Test Lab Conformity Assessment Body Identifier (CABID)

Location	CABID	Company Number
47173 Benicia Street, Fremont, CA, 94538 UNITED STATES	US0104	2324A
47266 Benicia Street, Fremont, CA, 94538 UNITED STATES		

4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Analog Signal Generator	Agilent	N5181A	MY50140630	1/31/2026
Power Meter	HP	437B	3125U11364	1/31/2026
Power Meter	HP	437B	3125U12345	1/31/2026
Power Sensor	HP	8481A	1926A27048	2/28/2026
Power Sensor	HP	8481A	3318A92374	1/31/2026
Amplifier	Mini-Circuits	ZHL-42W	001	N/A
Bi-directional coupler	Werlatone	C8060-102	2149	N/A
Data Acquisition Electronics	SPEAG	DAE4ip	1621	4/30/2026
E-Field Probe[1]	SPEAG	EF3DV3	4041	3/4/2026
Calibration Dipole	SPEAG	CD1880V3	1212	3/4/2026
Radio Communication Tester	R&S	CMW 500	170415-uw	2/19/2026

Note(s):

1. According to SPEAG's Technical Report, "MIF Verification", Doc # TR-FB-12.09.04-1, issued date: 9/4/2012. E-field probes are calibrated with specified uncertainty according to ISO 17025 as described in their calibration certificate. The MIF according to the definition in ANSI C63.19 is specific for a modulation and can therefore be used as a constant value if the probe has been PMR calibrated.

4.2. Measurement Uncertainty

Error Description	Uncertainty value (±%)	Probe Dist.	Div.	(Ci) E	Std. Unc.(±%) E
Measurement System					
Probe Calibration	5.1	N	1	1	5.1
Axial Isotropy	4.7	R	1.732	1	2.7
Sensor Displacement	7.2	R	1.732	1	4.2
Boundary Effects	2.4	R	1.732	1	1.4
Linearity	4.7	R	1.732	1	2.7
Scaling to Peak Power with MIF	0.0	R	1.732	1	0.0
System Detection Limit	1.0	R	1.732	1	0.6
Readout Electronics	0.3	N	1	1	0.3
Response Time	0.0	R	1.732	1	0.0
Integration Time	0.0	R	1.732	1	0.0
RF Ambient Conditions	3.0	R	1.732	1	1.7
RF Reflections	12.0	R	1.732	1	6.9
Probe Positioner	1.2	R	1.732	1	0.7
Probe Positioning	3.0	R	1.732	1	1.7
Extrapolation and Interpolation	1.0	R	1.732	1	0.6
Dipole Related					
Dist. Dipole - Scan Plane	5.2	R	1.732	1	3.0
Input Power	4.7	N	1	1	4.7
Combined Std. Uncertainty					12.1
Expanded Std. Uncertainty on Power (Coverage Factor for 95%, k = 2)					**24.2**
Expanded Std. Uncertainty on Field					**12.1**

Notesfor table

1. N - Nomal
2. R - Rectangular
3. Div. - Divisor used to obtain standard uncertainty
4. C_i - is the Sensitivity coefficient

Error Description	Uncertainty value (±%)	Probe Dist.	Div.	(Ci) E	Std. Unc.(±%) E
Measurement System					
Probe Calibration	5.1	N	1	1	5.1
Axial Isotropy	4.7	R	1.732	1	2.7
Sensor Displacement	7.2	R	1.732	0.5	2.1
Boundary Effects	2.4	R	1.732	1	1.4
Phantom Boundary Effect	7.2	R	1.732	1	4.2
Probe Linearity	4.7	R	1.732	1	2.7
Scaling to Peak Power with MIF	10.0	R	1.732	1	5.8
System Detection Limit	1.0	R	1.732	1	0.6
Readout Electronics	0.3	N	1	1	0.3
Response Time	0.8	R	1.732	0	0
Integration Time	2.6	R	1.732	0	0
RF Ambient Conditions	3.0	R	1.732	1	1.7
RF Reflections	12.0	R	1.732	1	6.9
Probe Positioner	1.2	R	1.732	1	0.7
Probe Positioning	3.0	R	1.732	1	1.7
Extrapolation and Interpolation	1.0	R	1.732	1	0.6
Test sample Related					
Device Positioning Vertical	4.7	R	1.732	1	2.7
Device Positioning Lateral	1.0	R	1.732	1	0.6
Device Holder and Phantom	2.4	R	1.732	1	1.4
Power Drift	5.0	R	1.732	1	2.9
Phantom and Setup Related					
Phantom Thickness	2.4	R	1.732	1	1.4
Combined Std. Uncertainty					13.1
Expanded Std. Uncertainty on Power (Coverage Factor for 95%, k = 2)					**26.3**
Expanded Std. Uncertainty on Field					**13.1**

Notesfor table

1. N - Nomal
2. R - Rectangular
3. Div. - Divisor used to obtain standard uncertainty
4. C_i - is the Sensitivity coefficient

5. System Specifications

E-field measurements are performed using the DASY6/8[1] automated dosimetric assessment system. The DASY6/8 is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland.

The DASY6/8 HAC Extension consists of the following parts:

Test Arch Phantom

The specially designed Test Arch allows high precision positioning of both the device and any of the validation dipoles.

EF3DV3 Isotropic E-Field Probe

Construction:	• One dipole parallel, two dipoles normal to probe axis • Built-in shielding against static charges • PEEK enclosure material
Calibration:	• In air from 100 MHz to 3.0 GHz (absolute accuracy ±6.0%, k=2) • ISO/IEC 17025 calibration service available.
Frequency:	• 40 MHz – >6 GHz (can be extended to < 20 MHz) • Linearity: ±0.2 dB (100 MHz – 3 GHz)
Directivity:	• ± 0.2 dB in air (rotation around probe axis) • ± 0.4 dB in air (rotation normal to probe axis)
Dynamic Range:	• 2 V/m to > 1000 V/m; Linearity: ± 0.2 dB
Dimensions:	• Overall length: 337 mm (Tip: 20 mm) • Tip diameter: 3.9 mm (Body: 12 mm) • Distance from probe tip to dipole centers: 1.5 mm • Sensor displacement to probe's calibration point: <0.7 mm
Application:	• General near-field measurements up to 6 GHz • HAC measurements up to 6 GHz • Field component measurements • Fast automatic scanning in phantoms

[1] DASY6: v1.2.0.1713 and older generations; DASY8: v1.0.0.1144 and older generations.

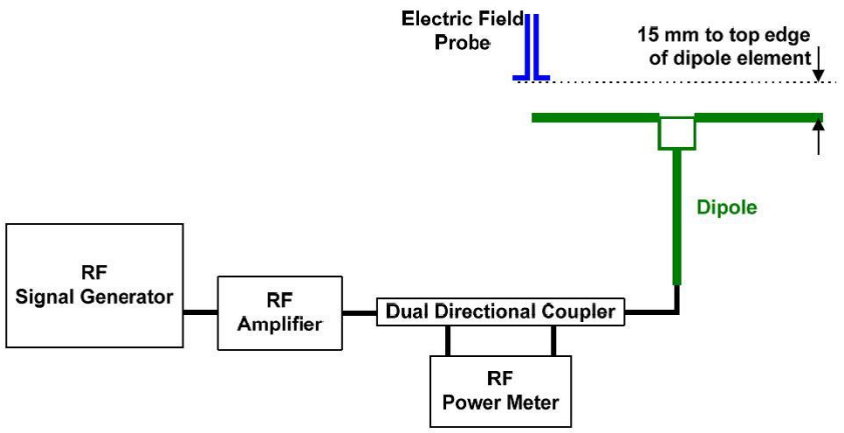
6. System Validation

The test setup was validated when first configured and verified periodically thereafter to ensure proper function. The procedure provided in this section is a validation procedure using dipole antennas for which the field levels were computed by numeric modeling.

Procedure:

- Place a dipole antenna meeting the requirements given in ANSI C63.19 in the normally occupied by the WD.
- The dipole antenna serves as a known source for electrical and magnetic output. Position the E-field probe so that the following occurs:
  - The probes and their cables are parallel to the coaxial feed of the dipole antenna
  - The probe cables and the coaxial feed of the dipole antenna approach the measurement area from opposite directions
  - The center point of the probe element(s) is 15 mm from the closest surface of the dipole elements.
- Scan the length of the dipole with the E-field probe and record the two maximum values found near the dipole ends. Average the two readings and compare the reading to the expected value in the calibration certificate or the expected value in this standard.

Setup diagram



6.1. System Validation Results

SAR Lab	Date	Dipole Type_Serial #_Center Freq.	Dipole Cal. Due Data	E-Field Measured (V/m)	E-Field Target (V/m) (From SPEAG)	E-Field[1] Delta ± %	Plot No.
16	7/14/2025	CD1880V3_SN:1212_(1880 MHz)	3/4/2026	86.8	86.50	0.35	1

Note(s):

1. Delta (Deviation) % = 100 * (Measured value minus Target value) divided by the Target value. Deltas within ±18% are acceptable, of which 12% is deviation and 13% is measurement uncertainty.

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7. Device Under Test

Normal operation	Held to head		
Back Cover	The Back Cover is not removable		
Test sample information	S/N	IMEI	Notes
	KGMC916V9C	N/A	HAC Sample

7.1. Air Interfaces and Operating Mode

Air Interface	Bands (MHz)	Type	C63.19 Tested	Simultaneous Transmitter	Name of Voice Service	Power Mode[3,4,5]	Power Reduction
GSM	850	VO	No[1]	Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	CMRS	Power State 1 Mode A	N/A
	1900		Yes[2]				N/A
	850 GPRS/EDGE	DT/VD	No[1]	Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	FaceTime	Power State 1 Mode A	N/A
	1900 GPRS/EDGE	DT/VD	Yes[2]				N/A
W-CDMA (UMTS)	850	VO	No[1]	Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	CMRS	Power State 1 Mode A	N/A
	1700						
	1900						
	HSPA	VD	No[1]	Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	FaceTime	Power State 1 Mode A	N/A
LTE - FDD	600 (B71)	VD	No[1]	5G NR, Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	CMRS FaceTime	Power State 1 Mode A	N/A
	700 (B12/13/14/17)						
	850 (B5/26)						
	1700 (B4/66)						
	1900 (B2/25)						
	2300 (B30)						
	2500 (B7)						
LTE - TDD	2500 (B53)	VD	No[1]	5G NR, Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	CMRS FaceTime	Power State 1 Mode A	N/A
	2600 (B41)						
	3600 (B48)						
5G NR(FR1) FDD	600 (n71)	VD	No[1]	LTE, Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	CMRS FaceTime	Power State 1 Mode A	N/A
	700 (n12/n14)						
	850 (n5/n26)						
	1700 (n66/n70)						
	1900 (n2/n25)						
	2300 (n30)						
	2500 (n7)						
5G NR(FR1) TDD	2500 (n53)	VD	No[1]	LTE, Wi-Fi, BT, NB U-NII, 802.15.4 & 802.15.4ab NB	CMRS FaceTime	Power State 1 Mode A	N/A
	2600 (n41)						
	3500 (n77 Block A)						
	3700 (n48)						
	3900 (n77 Block C)						
Wi-Fi	2450	VD	No[1]	WWAN, NB U-NII & 802.15.4ab	CMRS FaceTime	Power State 1 Mode A	N/A
	U-NII-1			WWAN, BT, 802.15.4, & 802.15.4ab NB			
	U-NII-2A						
	U-NII-2C						
	U-NII-3						
	U-NII-5 (SP, LPI, VLP)	VD	No[1]	WWAN, BT, 802.15.4, & 802.15.4ab NB	CMRS FaceTime	Power State 1 Mode A	N/A

	U-NII-6 (LPI, VLP)	VD	No[2]	WWAN, BT, 802.15.4, & 802.15.4ab NB	CMRS FaceTime	N/A	N/A
	U-NII-7 (SP, LPI, VLP)						
	U-NII-8 (LPI, VLP)						
NB U-NII	U-NII-1	DT	N/A	WWAN, Wi-Fi 2.4 GHz	N/A	N/A	N/A
	U-NII-3						
	U-NII-5						
802.15ab NB	U-NII-3	DT	N/A	WWAN, BT, 802.15.4 & Wi-Fi[2]	N/A	N/A	N/A
802.15.4	2450	DT	N/A	WWAN, 802.15.4ab NB & Wi-Fi 5/6G	N/A	N/A	N/A
BT	2450	DT	N/A	WWAN, 802.15.4ab NB & Wi-Fi 5/6G	N/A	N/A	N/A
MSS	1600	DT	N/A	N/A	N/A	N/A	N/A
NFC	13	DT	N/A	WWAN, BT, Wi-Fi 2.4G, Wi-Fi 5/6G, 802.15.4	N/A	N/A	N/A
UWB (Ultra-Wideband)	6500	DT	N/A	N/A	N/A	N/A	N/A
	8000						

Type
VO: Legacy Cellular Voice Service
DT: Digital Transport only (no voice)
VD: IP Voice Service over Digital Transport
CMRS: Commercial Mobile Radio Service

Note:
1. Evaluated for RF_{AIPL}. Refer to §10.
2. Supported Frequency > 6GHz. ANSI C63,19 2019 only requires HAC evaluations for Technologies/Frequencies < 6GHz.
3. For all air interfaces, the declared maximum output across all power tables, including held-to-head, off-body and body-worn, was used for the RF_{AIPL} evaluation. The declared maximum output power is Max Power for WWAN operating modes and Max Power for WLAN operating modes. Refer to §10 for RF_{AIPL} evaluations.
4. For all air interfaces, the maximum held-to-head output power was used for the RF_{AIL} evaluation. The maximum held-to-head output power is Power State 1 Mode A for WWAN operating modes and Power State 1 Mode A for WLAN operating modes. Refer to §11 for RF_{AIL} evaluations.
5. Refer to UL SAR FCC Report 15496240-S1 for WLAN Max Output power values.

8. Modulation Interference Factor (MIF)

A WD's interference potential is a function of both the WD's average in-use near-field field strength and of the signal's audio-frequency amplitude modulation characteristics. The portion of the interference potential attributable to the modulation characteristic can be evaluated independently of any particular WD. This evaluation of this interference potential relative to a signal's average field strength is described in D.7 and is termed its Modulation Interference Factor (MIF). The MIF may be determined through analysis and simulation, allowing evaluation of an RF technology's RF interference potential in advance of actual product development.

The evaluation method or the MIF is defined in ANSI C63.19 section D.7. Most MIF values were not tested by a probe or as specified in the standards but are based on analysis provided by SPEAG for all the air interfaces (GSM, WCDMA, LTE, 5G NR, and Wi-Fi). For operating modes in which SPEAG did not provide MIF values, test lab manually performed MIF measurements using procedure outlined in *SPEAG DASY6 Module HAC System Handbook §7.1 MIF Measurements with MAIA*. The data included in this report is for the worst case operating modes. The UIDs used are listed below:

UID	Communication System Name	MIF (dB)
10021-DAC	GSM-FDD (TDMA, GMSK)	3.63
10023-DAC	GPRS-FDD (TDMA, GMSK, TN 0)	3.80
10024-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	1.15
10011-CAC	UMTS-FDD (WCDMA)	-27.23
10225-CAC	UMTS-FDD (HSPA+)	-20.39
10170-CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16QAM)	-9.76
10182-CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16QAM)	-9.76
10176-CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16QAM)	-9.76
10173-CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16QAM)	-1.44
10235-CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16QAM)	-1.44
10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	-2.02
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	0.12
10069-CAE	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	-3.15
10317-AAE	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	-9.82
10591-AAD	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	-5.59
10636-AAE	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	-5.56
10671-AAC	IEEE 802.11ax/be (20MHz, MCS0, 90pc duty cycle)	-5.58
10797-AAF	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	-14.32
10803-AAF	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	-14.38
N/A*	5G NR PC2 (CP-OFDM, 1 RB, 70 MHz, QPSK, 30 kHz)	-1.62
10866-AAF	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	-16.69
N/A*	5G NR PC2 (DFT-s-OFDM, 1 RB, 60 MHz, BPSK, 30 kHz)	-1.14
N/A*	5G NR PC2 (DFT-s-OFDM, 1 RB, 70 MHz, QPSK, 30 kHz)	-1.14
10898-AAC	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	-16.68
10903-AAD	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	-16.68
10929-AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	-15.06
10930-AAC	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	-15.06
10931-AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	-15.06
10932-AAC	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	-15.06
10933-AAC	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	-15.06
10934-AAC	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	-15.07
10935-AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	-15.07

Note(s):

- Refer to Appendix G for RF-E UID Specifications summary provided by SPEAG.
- * Refer to Appendix H for MIF measurements conducted by test lab for 5G NR TDD Power Class 2

9. RF Emissions Measurement Criteria

The WD's conducted power must be at or below either the stated RF_{AIPL} (Table 4.1) or the stated peak power level (Table 4.2), or the average near-field emissions over the measurement area must be at or below the stated RF_{AIL} (Table 4.3), or the stated peak field strength (Table 4.4). The WD may demonstrate compliance by meeting any of these four requirements, but it must do so in each of its operating bands at its established worst-case normal speech-mode operating condition.

Table 4.1—Wireless device RF audio interference power level

Frequency Range (MHz)	RF_{AIPL} (dBm)
< 960	29
960 – 2000	26
> 2000	25

Table 4.2—Wireless device RF peak power level

Frequency Range (MHz)	$RF_{Peak\ Power}$ (dBm)
< 960	35
960 – 2000	32
> 2000	31

Table 4.3—Wireless device RF audio interference level

Frequency Range (MHz)	RF_{AIL} [dB(V/m)]
≤ 960	39
960 – 2000	36
> 2000	35

Table 4.4—Wireless device RF peak near-field level

Frequency Range (MHz)	RF_{peak} [dB(V/m)]
≤ 960	45
960 – 2000	42
> 2000	41

10. Evaluation for RF Audio Interference Power Level (RF_{AIPL})

An RF air interface technology of a device is exempt from testing when its average antenna input power plus its MIF is at or below the RF_{AIPL} listed in the table below (from ANSI C63.19 2019 §4.7) for any of its operating modes. If a device supports multiple RF air interfaces, each RF air interface shall be evaluated individually.

Table 4.1—Wireless device RF audio interference power level

Frequency Range (MHz)	RF_{AIPL} (dBm)
< 960	29
960 – 2000	26
> 2000	25

For all air interfaces, the declared maximum output across all power tables, including held-to-head, off-body and body-worn, was used for the RF_{AIPL} evaluation. The declared maximum output power is Max Power for WWAN operating modes and Max Power for WLAN operating modes.

ANT 1 WWAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
GSM1900 (1 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	29.0	12.5%	20.0	3.80	23.8	26	No	10023
GSM1900 (2 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	28.0	25.0%	22.0	1.15	23.1	26	No	10024
W-CDMA Band II	1850 - 1910	FDD	HSPA+	NA	NA	Max Power	24.2	100.0%	24.2	-20.39	3.8	26	No	10225
W-CDMA Band IV	1710 - 1755	FDD	HSPA+	NA	NA	Max Power	24.2	100.0%	24.2	-20.39	3.8	26	No	10225
LTE Band 2	1850 - 1910	FDD SC-FDMA	16-QAM	20	NA	Max Power	24.2	100.0%	24.2	-9.76	14.4	26	No	10170
LTE Band 4	1710 - 1755	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 7	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	24.2	100.0%	24.2	-9.76	14.4	25	No	10170
LTE Band 7 UL CA	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	24.5	100.0%	24.5	-9.76	14.7	25	No	10170
LTE Band 25	1850 - 1915	FDD SC-FDMA	16-QAM	20	NA	Max Power	24.2	100.0%	24.2	-9.76	14.4	26	No	10170
LTE Band 30	2305 - 2315	FDD SC-FDMA	16-QAM	10	NA	Max Power	24.2	100.0%	24.2	-9.76	14.4	25	No	10176
LTE Band 41 PC3	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	63.3%	23.7	-1.44	22.3	25	No	10173
LTE Band 41 PC3 UL CA	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	63.3%	24.0	-1.44	22.6	25	No	10173
LTE Band 41 PC2	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	28.7	43.3%	25.1	-1.44	23.6	25	No	10173
LTE Band 66	2110 - 2200	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10170
5G NR Band n2	1850 - 1910	FDD DFT-s-OFDM	QPSK	40	15	Max Power	24.2	100.0%	24.2	-15.07	9.1	26	No	10934
5G NR Band n7	2500 - 2570	FDD DFT-s-OFDM	QPSK	50	15	Max Power	24.2	100.0%	24.2	-15.07	9.1	25	No	10935
5G NR Band n25	1850 - 1915	FDD DFT-s-OFDM	QPSK	40	15	Max Power	24.2	100.0%	24.2	-15.07	9.1	26	No	10934
5G NR Band n30	2305 - 2315	FDD DFT-s-OFDM	QPSK	10	15	Max Power	24.2	100.0%	24.2	-15.06	9.1	25	No	10929
5G NR Band n41 PC3	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	25.7	49.2%	22.6	-1.14	21.5	25	No	N/A
5G NR Band n41 PC3	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	24.2	49.2%	21.1	-1.62	19.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n66	2110 - 2200	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	25	No	10934
5G NR Band n70	1695 - 1710	FDD DFT-s-OFDM	QPSK	25	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	26	No	10932
5G NR Band n71	617 - 652	FDD DFT-s-OFDM	QPSK	30	15	Max Power	25.2	100.0%	25.2	-15.06	10.1	29	No	10933

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Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
GSM850 (1 slot)	824.2 - 848.8	TDMA	GMSK	NA	NA	Max Power	32.5	12.5%	23.5	3.80	27.3	29	No	10023
GSM850 (2 slot)	824.2 - 848.8	TDMA	GMSK	NA	NA	Max Power	31.5	25.0%	25.5	1.15	26.6	29	No	10024
GSM1900 (1 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	31.0	12.5%	22.0	3.80	25.8	26	No	10023
GSM1900 (2 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	30.0	25.0%	24.0	1.15	25.1	26	No	10024
W-CDMA Band II	1850 - 1910	FDD	HSPA+	NA	NA	Max Power	25.7	100.0%	25.7	-20.39	5.3	26	No	10225
W-CDMA Band IV	1710 - 1755	FDD	HSPA+	NA	NA	Max Power	25.7	100.0%	25.7	-20.39	5.3	26	No	10225
W-CDMA Band V	824 - 849	FDD	HSPA+	NA	NA	Max Power	25.2	100.0%	25.2	-20.39	4.8	29	No	10225
LTE Band 2	1850 - 1910	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 4	1710 - 1755	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 5	824 - 849	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10176
LTE Band 5 UL CA	824 - 849	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10176
LTE Band 7	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10170
LTE Band 7 UL CA	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	100.0%	26.0	-9.76	16.2	25	No	10170
LTE Band 12	699 - 716	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10176
LTE Band 13	777 - 787	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10176
LTE Band 14	788 - 798	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10176
LTE Band 17	704 - 716	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10176
LTE Band 25	1850 - 1915	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 26	814 - 849	FDD SC-FDMA	16-QAM	15	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10182
LTE Band 30	2305 - 2315	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10176
LTE Band 41 PC3	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	63.3%	23.7	-1.44	22.3	25	No	10173
LTE Band 41 PC3 UL CA	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	63.3%	24.0	-1.44	22.6	25	No	10173
LTE Band 41 PC2	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	28.7	43.3%	25.1	-1.44	23.6	25	No	10173
LTE Band 66	2110 - 2200	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10170
LTE Band 71	617 - 652	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	29	No	10170
5G NR Band n2	1850 - 1910	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	26	No	10934
5G NR Band n5	824 - 849	FDD DFT-s-OFDM	QPSK	25	15	Max Power	25.4	100.0%	25.4	-15.06	10.3	29	No	10932
5G NR Band n7	2500 - 2570	FDD DFT-s-OFDM	QPSK	50	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	25	No	10935
5G NR Band n12	699 - 716	FDD DFT-s-OFDM	QPSK	15	15	Max Power	25.2	100.0%	25.2	-15.06	10.1	29	No	10930
5G NR Band n14	788 - 798	FDD DFT-s-OFDM	QPSK	10	15	Max Power	25.2	100.0%	25.2	-15.06	10.1	29	No	10929
5G NR Band n25	1850 - 1915	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	26	No	10934
5G NR Band n26	814 - 849	FDD DFT-s-OFDM	QPSK	30	15	Max Power	25.2	100.0%	25.2	-15.06	10.1	29	No	10933
5G NR Band n30	2305 - 2315	FDD DFT-s-OFDM	QPSK	10	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	25	No	10929
5G NR Band n41 PC3	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	25.7	49.2%	22.6	-1.14	21.5	25	No	N/A
5G NR Band n41 PC3	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	24.2	49.2%	21.1	-1.62	19.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n66	2110 - 2200	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	25	No	10934
5G NR Band n70	1695 - 1710	FDD DFT-s-OFDM	QPSK	25	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	26	No	10932
5G NR Band n71	617 - 652	FDD DFT-s-OFDM	QPSK	30	15	Max Power	25.2	100.0%	25.2	-15.06	10.1	29	No	10933

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Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
GSM850 (1 slot)	824.2 - 848.8	TDMA	GMSK	NA	NA	Max Power	33.5	12.5%	24.5	3.80	28.3	29	No	10023
GSM850 (2 slot)	824.2 - 848.8	TDMA	GMSK	NA	NA	Max Power	32.5	25.0%	26.5	1.15	27.6	29	No	10024
GSM1900 (1 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	32.0	12.5%	23.0	3.80	26.8	26	Yes	10023
GSM1900 (2 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	31.0	25.0%	25.0	1.15	26.1	26	Yes	10024
W-CDMA Band II	1850 - 1910	FDD	HSPA+	NA	NA	Max Power	25.7	100.0%	25.7	-20.39	5.3	26	No	10225
W-CDMA Band IV	1710 - 1755	FDD	HSPA+	NA	NA	Max Power	25.7	100.0%	25.7	-20.39	5.3	26	No	10225
W-CDMA Band V	824 - 849	FDD	HSPA+	NA	NA	Max Power	25.7	100.0%	25.7	-20.39	5.3	29	No	10225
LTE Band 2	1850 - 1910	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 4	1710 - 1755	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 5	824 - 849	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10176
LTE Band 5 UL CA	824 - 849	FDD SC-FDMA	16-QAM	10	NA	Max Power	26.0	100.0%	26.0	-9.76	16.2	29	No	10176
LTE Band 7	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10170
LTE Band 7 UL CA	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	100.0%	26.0	-9.76	16.2	25	No	10170
LTE Band 12	699 - 716	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10176
LTE Band 13	777 - 787	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10176
LTE Band 14	788 - 798	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10176
LTE Band 17	704 - 716	FDD SC-FDMA	16-QAM	10	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10176
LTE Band 25	1850 - 1915	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	26	No	10170
LTE Band 26	814 - 849	FDD SC-FDMA	16-QAM	15	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10182
LTE Band 30	2305 - 2315	FDD SC-FDMA	16-QAM	10	NA	Max Power	24.9	100.0%	24.9	-9.76	15.1	25	No	10176
LTE Band 41 PC3	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	63.3%	23.7	-1.44	22.3	25	No	10173
LTE Band 41 PC3 UL CA	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	63.3%	24.0	-1.44	22.6	25	No	10173
LTE Band 41 PC2	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	28.7	43.3%	25.1	-1.44	23.6	25	No	10173
LTE Band 53 PC3	2483.5 - 2495	TDD SC-FDMA	16-QAM	20	NA	Max Power	20.7	63.3%	18.7	-1.44	17.3	25	No	10173
LTE Band 66	2110 - 2200	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10170
LTE Band 71	617 - 652	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	29	No	10170
5G NR Band n2	1850 - 1910	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	26	No	10934
5G NR Band n5	824 - 849	FDD DFT-s-OFDM	QPSK	25	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	29	No	10932
5G NR Band n7	2500 - 2570	FDD DFT-s-OFDM	QPSK	50	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	25	No	10935
5G NR Band n12	699 - 716	FDD DFT-s-OFDM	QPSK	15	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	29	No	10930
5G NR Band n14	788 - 798	FDD DFT-s-OFDM	QPSK	10	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	29	No	10929
5G NR Band n25	1850 - 1915	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	26	No	10934
5G NR Band n26	814 - 849	FDD DFT-s-OFDM	QPSK	30	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	29	No	10933
5G NR Band n30	2305 - 2315	FDD DFT-s-OFDM	QPSK	10	15	Max Power	24.9	100.0%	24.9	-15.06	9.8	25	No	10929
5G NR Band n41 PC3	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	25.7	49.2%	22.6	-1.14	21.5	25	No	N/A
5G NR Band n41 PC3	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	24.2	49.2%	21.1	-1.62	19.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n53 PC3	2484 - 2495	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	20.7	49.2%	17.6	-1.14	16.5	25	No	N/A
5G NR Band n53 PC3	2484 - 2495	TDD CP-OFDM	QPSK	100	30	Max Power	19.2	49.2%	16.1	-1.62	14.5	25	No	N/A
5G NR Band n66	2110 - 2200	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.7	100.0%	25.7	-15.07	10.6	25	No	10934
5G NR Band n70	1695 - 1710	FDD DFT-s-OFDM	QPSK	25	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	26	No	10932
5G NR Band n71	617 - 652	FDD DFT-s-OFDM	QPSK	30	15	Max Power	25.7	100.0%	25.7	-15.06	10.6	29	No	10933

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Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
GSM1900 (1 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	29.5	12.5%	20.5	3.80	24.3	26	No	10023
GSM1900 (2 slot)	1850.2 - 1909.8	TDMA	GMSK	NA	NA	Max Power	28.5	25.0%	22.5	1.15	23.6	26	No	10024
W-CDMA Band II	1850 - 1910	FDD	HSPA+	NA	NA	Max Power	24.7	100.0%	24.7	-20.39	4.3	26	No	10225
W-CDMA Band IV	1710 - 1755	FDD	HSPA+	NA	NA	Max Power	24.7	100.0%	24.7	-20.39	4.3	26	No	10225
LTE Band 2	1850 - 1910	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	26	No	10170
LTE Band 4	1710 - 1755	FDD SC-FDMA	16-QAM	20	NA	Max Power	24.7	100.0%	24.7	-9.76	14.9	26	No	10170
LTE Band 7	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	24.7	100.0%	24.7	-9.76	14.9	25	No	10170
LTE Band 7 UL CA	2500 - 2570	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.0	100.0%	25.0	-9.76	15.2	25	No	10170
LTE Band 25	1850 - 1915	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.2	100.0%	25.2	-9.76	15.4	26	No	10170
LTE Band 30	2305 - 2315	FDD SC-FDMA	16-QAM	10	NA	Max Power	24.7	100.0%	24.7	-9.76	14.9	25	No	10176
LTE Band 41 PC3	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	63.3%	23.7	-1.44	22.3	25	No	10173
LTE Band 41 PC3 UL CA	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	63.3%	24.0	-1.44	22.6	25	No	10173
LTE Band 41 PC2	2496 - 2690	TDD SC-FDMA	16-QAM	20	NA	Max Power	28.7	43.3%	25.1	-1.44	23.6	25	No	10173
LTE Band 48 PC3	3550 - 3700	TDD SC-FDMA	16-QAM	20	NA	Max Power	25.8	63.3%	23.8	-1.44	22.4	25	No	10173
LTE Band 53 PC3	2483.5 - 2495	TDD SC-FDMA	16-QAM	20	NA	Max Power	20.7	63.3%	18.7	-1.44	17.3	25	No	10173
LTE Band 66	2110 - 2200	FDD SC-FDMA	16-QAM	20	NA	Max Power	25.7	100.0%	25.7	-9.76	15.9	25	No	10170
5G NR Band n2	1850 - 1910	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.2	100.0%	25.2	-15.07	10.1	26	No	10934
5G NR Band n7	2500 - 2570	FDD DFT-s-OFDM	QPSK	50	15	Max Power	24.7	100.0%	24.7	-15.07	9.6	25	No	10935
5G NR Band n25	1850 - 1915	FDD DFT-s-OFDM	QPSK	40	15	Max Power	25.2	100.0%	25.2	-15.07	10.1	26	No	10934
5G NR Band n30	2305 - 2315	FDD DFT-s-OFDM	QPSK	10	15	Max Power	24.7	100.0%	24.7	-15.06	9.6	25	No	10929
5G NR Band n41 PC3	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	25.7	49.2%	22.6	-1.14	21.5	25	No	N/A
5G NR Band n41 PC3	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	24.2	49.2%	21.1	-1.62	19.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n41 PC2	2496 - 2690	TDD CP-OFDM	QPSK	100	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n48 PC3	3550 - 3700	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	25.8	49.2%	22.7	-1.14	21.6	25	No	N/A
5G NR Band n48 PC3	3550 - 3700	TDD CP-OFDM	QPSK	100	30	Max Power	24.3	49.2%	21.2	-1.62	19.6	25	No	N/A
5G NR Band n53 PC3	2484 - 2495	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	20.7	49.2%	17.6	-1.14	16.5	25	No	N/A
5G NR Band n53 PC3	2484 - 2495	TDD CP-OFDM	QPSK	100	30	Max Power	19.2	49.2%	16.1	-1.62	14.5	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	27.7	49.2%	24.6	-1.14	23.5	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD CP-OFDM	QPSK	60	30	Max Power	26.2	49.2%	23.1	-1.62	21.5	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	27.7	49.2%	24.6	-1.14	23.5	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD CP-OFDM	QPSK	60	30	Max Power	26.2	49.2%	23.1	-1.62	21.5	25	No	N/A

ANT 7 WWAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
LTE Band 48 PC3	3550 - 3700	TDD SC-FDMA	16-QAM	20	NA	Max Power	26.0	63.3%	24.0	-1.44	22.6	25	No	10173
5G NR Band n48 PC3	3550 - 3700	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n48 PC3	3550 - 3700	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD CP-OFDM	QPSK	60	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD CP-OFDM	QPSK	60	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A

ANT 8 WWAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
LTE Band 48 PC3	3550 - 3700	TDD SC-FDMA	16-QAM	20	NA	Max Power	24.5	63.3%	22.5	-1.44	21.1	25	No	10173
5G NR Band n48 PC3	3550 - 3700	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	24.5	49.2%	21.4	-1.14	20.3	25	No	N/A
5G NR Band n48 PC3	3550 - 3700	TDD CP-OFDM	QPSK	100	30	Max Power	23.0	49.2%	19.9	-1.62	18.3	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD CP-OFDM	QPSK	60	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD CP-OFDM	QPSK	60	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A

ANT 9 WWAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
LTE Band 48 PC3	3550 - 3700	TDD SC-FDMA	16-QAM	20	NA	Max Power	24.3	63.3%	22.3	-1.44	20.9	25	No	10173
5G NR Band n48 PC3	3550 - 3700	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	14.3	49.2%	11.2	-1.14	10.1	25	No	N/A
5G NR Band n48 PC3	3550 - 3700	TDD CP-OFDM	QPSK	100	30	Max Power	12.8	49.2%	9.7	-1.62	8.1	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block A PC3	3450 - 3550	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n77 Block A PC2	3450 - 3550	TDD CP-OFDM	QPSK	60	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	100	30	Max Power	26.0	49.2%	22.9	-1.14	21.8	25	No	N/A
5G NR Band n77 Block C PC3	3700 - 3980	TDD CP-OFDM	QPSK	100	30	Max Power	24.5	49.2%	21.4	-1.62	19.8	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD DFT-s-OFDM	π/2 BPSK	80	30	Max Power	28.7	49.2%	25.6	-1.14	24.5	25	No	N/A
5G NR Band n77 Block C PC2	3700 - 3980	TDD CP-OFDM	QPSK	60	30	Max Power	27.2	49.2%	24.1	-1.62	22.5	25	No	N/A

Note(s):

- For 5GNR, as duty cycle (and frame power) decrease the MIF increases. At duty cycles less than 50% the reduction in frame power offsets the increase in MIF value, therefore the worst case RFAIPL value for a power class with a duty factor of 50% or less is at the maximum duty cycle supported. For power class 3, the worst case RFAIPL is with a duty cycle of 50% so the RFAIPL is calculated for power class 3 using the same 50% duty factor MIF value as for PC2.

ANT 1 WLAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
802.11b	2402 - 2482	802.11b	DSSS	NA	NA	Max Power	21.0	100%	21.0	-2.02	18.98	25	No	10061
802.11g	2402 - 2482	802.11g	DSSS/OFDM	NA	NA	Max Power	21.0	100%	21.0	0.12	21.12	25	No	10077
802.11n	2402 - 2482	802.11n	MCS0	NA	NA	Max Power	21.0	100%	21.0	-5.59	15.41	25	No	10591
802.11ac	2402 - 2482	802.11ac	MCS0	NA	NA	Max Power	21.0	100%	21.0	-5.56	15.44	25	No	10636*
802.11ax	2402 - 2482	802.11ax	MCS0	NA	NA	Max Power	21.0	100%	21.0	-5.58	15.42	25	No	10671

ANT 2 WLAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
802.11b	2402 - 2482	802.11b	DSSS	NA	NA	Max Power	21.0	100%	21.0	-2.02	18.98	25	No	10061
802.11g	2402 - 2482	802.11g	DSSS/OFDM	NA	NA	Max Power	21.0	100%	21.0	0.12	21.12	25	No	10077
802.11n	2402 - 2482	802.11n	MCS0	NA	NA	Max Power	21.0	100%	21.0	-5.59	15.41	25	No	10591
802.11ac	2402 - 2482	802.11ac	MCS0	NA	NA	Max Power	21.0	100%	21.0	-5.56	15.44	25	No	10636*
802.11ax	2402 - 2482	802.11ax	MCS0	NA	NA	Max Power	21.0	100%	21.0	-5.58	15.42	25	No	10671

ANT 5 WLAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
802.11a/h	5150 - 5250	802.11a/h	OFDM	NA	NA	Max Power	20.5	100%	20.5	-3.15	17.4	25	No	10069
802.11a	5150 - 5250	802.11a	OFDM	NA	NA	Max Power	20.5	100%	20.5	-9.82	10.7	25	No	10317
802.11n	5150 - 5250	802.11n	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.59	14.9	25	No	10591
802.11ac	5150 - 5250	802.11ac	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.56	14.9	25	No	10636*
802.11ax	5150 - 5250	802.11ax	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.58	14.9	25	No	10671
802.11a/h	5250 - 5350	802.11a/h	OFDM	NA	NA	Max Power	20.5	100%	20.5	-3.15	17.4	25	No	10069
802.11a	5250 - 5350	802.11a	OFDM	NA	NA	Max Power	20.5	100%	20.5	-9.82	10.7	25	No	10317
802.11n	5250 - 5350	802.11n	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.59	14.9	25	No	10591
802.11ac	5250 - 5350	802.11ac	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.56	14.9	25	No	10636*
802.11ax	5250 - 5350	802.11ax	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.58	14.9	25	No	10671
802.11a/h	5470 - 5725	802.11a/h	OFDM	NA	NA	Max Power	20.5	100%	20.5	-3.15	17.4	25	No	10069
802.11a	5470 - 5725	802.11a	OFDM	NA	NA	Max Power	20.5	100%	20.5	-9.82	10.7	25	No	10317
802.11n	5470 - 5725	802.11n	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.59	14.9	25	No	10591
802.11ac	5470 - 5725	802.11ac	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.56	14.9	25	No	10636*
802.11ax	5470 - 5725	802.11ax	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.58	14.9	25	No	10671
802.11a/h	5725 - 5825	802.11a/h	OFDM	NA	NA	Max Power	20.5	100%	20.5	-3.15	17.4	25	No	10069
802.11a	5725 - 5825	802.11a	OFDM	NA	NA	Max Power	20.5	100%	20.5	-9.82	10.7	25	No	10317
802.11n	5725 - 5825	802.11n	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.59	14.9	25	No	10591
802.11ac	5725 - 5825	802.11ac	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.56	14.9	25	No	10636*
802.11ax	5725 - 5825	802.11ax	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.58	14.9	25	No	10671
802.11a/h	5835 - 5915	802.11a/h	OFDM	NA	NA	Max Power	20.5	100%	20.5	-3.15	17.4	25	No	10069
802.11a	5835 - 5915	802.11a	OFDM	NA	NA	Max Power	20.5	100%	20.5	-9.82	10.7	25	No	10317
802.11n	5835 - 5915	802.11n	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.59	14.9	25	No	10591
802.11ac	5835 - 5915	802.11ac	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.56	14.9	25	No	10636*
802.11ax	5835 - 5915	802.11ax	MCS0	NA	NA	Max Power	20.5	100%	20.5	-5.58	14.9	25	No	10671

ANT 6 WLAN

Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
802.11a/h	5150 - 5250	802.11a/h	OFDM	NA	NA	Max Power	20.0	100%	20.0	-3.15	16.9	25	No	10069
802.11a	5150 - 5250	802.11a	OFDM	NA	NA	Max Power	20.0	100%	20.0	-9.82	10.2	25	No	10317
802.11n	5150 - 5250	802.11n	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.59	14.4	25	No	10591
802.11ac	5150 - 5250	802.11ac	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.56	14.4	25	No	10636*
802.11ax	5150 - 5250	802.11ax	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.58	14.4	25	No	10671
802.11a/h	5250 - 5350	802.11a/h	OFDM	NA	NA	Max Power	20.0	100%	20.0	-3.15	16.9	25	No	10069
802.11a	5250 - 5350	802.11a	OFDM	NA	NA	Max Power	20.0	100%	20.0	-9.82	10.2	25	No	10317
802.11n	5250 - 5350	802.11n	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.59	14.4	25	No	10591
802.11ac	5250 - 5350	802.11ac	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.56	14.4	25	No	10636*
802.11ax	5250 - 5350	802.11ax	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.58	14.4	25	No	10671
802.11a/h	5470 - 5725	802.11a/h	OFDM	NA	NA	Max Power	20.0	100%	20.0	-3.15	16.9	25	No	10069
802.11a	5470 - 5725	802.11a	OFDM	NA	NA	Max Power	20.0	100%	20.0	-9.82	10.2	25	No	10317
802.11n	5470 - 5725	802.11n	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.59	14.4	25	No	10591
802.11ac	5470 - 5725	802.11ac	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.56	14.4	25	No	10636*
802.11ax	5470 - 5725	802.11ax	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.58	14.4	25	No	10671
802.11a/h	5725 - 5825	802.11a/h	OFDM	NA	NA	Max Power	20.0	100%	20.0	-3.15	16.9	25	No	10069
802.11a	5725 - 5825	802.11a	OFDM	NA	NA	Max Power	20.0	100%	20.0	-9.82	10.2	25	No	10317
802.11n	5725 - 5825	802.11n	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.59	14.4	25	No	10591
802.11ac	5725 - 5825	802.11ac	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.56	14.4	25	No	10636*
802.11ax	5725 - 5825	802.11ax	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.58	14.4	25	No	10671
802.11a/h	5835 - 5915	802.11a/h	OFDM	NA	NA	Max Power	20.0	100%	20.0	-3.15	16.9	25	No	10069
802.11a	5835 - 5915	802.11a	OFDM	NA	NA	Max Power	20.0	100%	20.0	-9.82	10.2	25	No	10317
802.11n	5835 - 5915	802.11n	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.59	14.4	25	No	10591
802.11ac	5835 - 5915	802.11ac	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.56	14.4	25	No	10636*
802.11ax	5835 - 5915	802.11ax	MCS0	NA	NA	Max Power	20.0	100%	20.0	-5.58	14.4	25	No	10671

WLAN MIMO

Transmitter	Air-Interface	Frequency Range	Multiplex Scheme	Modulation	BW (MHz)	SCS (kHz)	Power Mode	Max Output Power (dBm)	Total Output Power (dBm)	Duty Cycle	Max Frame Output Power (dBm)	Worst Case MIF (dB)	RF_{AIPL} (dBm)	RF_{AIPL} Limit (dBm)	HAC Tested	UID
ANT 1	802.11b	2402 - 2482	802.11b	DSSS	NA	NA	Max Power	21.0	23.4	100.0%	23.4	-2.02	21.4	25	No	N/A
ANT 2	802.11b	2402 - 2482	802.11b	DSSS	NA	NA	Max Power	19.75								
ANT 1	802.11g	2402 - 2482	802.11g	DSSS/OFDM	NA	NA	Max Power	21.0	23.4	100.0%	23.4	0.12	23.6	25	No	N/A
ANT 2	802.11g	2402 - 2482	802.11g	DSSS/OFDM	NA	NA	Max Power	19.75								
ANT 1	802.11n	2402 - 2482	802.11n	MCS0	NA	NA	Max Power	21.0	23.4	100.0%	23.4	-5.59	17.8	25	No	N/A
ANT 2	802.11n	2402 - 2482	802.11n	MCS0	NA	NA	Max Power	19.75								
ANT 1	802.11ac	2402 - 2482	802.11ac	MCS0	NA	NA	Max Power	21.0	23.4	100.0%	23.4	-5.56	17.9	25	No	N/A
ANT 2	802.11ac	2402 - 2482	802.11ac	MCS0	NA	NA	Max Power	19.75								
ANT 1	802.11ax	2402 - 2482	802.11ax	MCS0	NA	NA	Max Power	21.0	23.4	100.0%	23.4	-5.58	17.9	25	No	N/A
ANT 2	802.11ax	2402 - 2482	802.11ax	MCS0	NA	NA	Max Power	19.75								
ANT 5	802.11n	5150 - 5250	802.11n	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.59	17.7	25	No	N/A
ANT 6	802.11n	5150 - 5250	802.11n	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ac	5150 - 5250	802.11ac	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.56	17.7	25	No	N/A
ANT 6	802.11ac	5150 - 5250	802.11ac	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ax	5150 - 5250	802.11ax	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.58	17.7	25	No	N/A
ANT 6	802.11ax	5150 - 5250	802.11ax	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11n	5250 - 5350	802.11n	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.59	17.7	25	No	N/A
ANT 6	802.11n	5250 - 5350	802.11n	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ac	5250 - 5350	802.11ac	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.56	17.7	25	No	N/A
ANT 6	802.11ac	5250 - 5350	802.11ac	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ax	5250 - 5350	802.11ax	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.58	17.7	25	No	N/A
ANT 6	802.11ax	5250 - 5350	802.11ax	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11n	5470 - 5725	802.11n	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.59	17.7	25	No	N/A
ANT 6	802.11n	5470 - 5725	802.11n	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ac	5470 - 5725	802.11ac	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.56	17.7	25	No	N/A
ANT 6	802.11ac	5470 - 5725	802.11ac	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ax	5470 - 5725	802.11ax	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.58	17.7	25	No	N/A
ANT 6	802.11ax	5470 - 5725	802.11ax	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11n	5725 - 5825	802.11n	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.59	17.7	25	No	N/A
ANT 6	802.11n	5725 - 5825	802.11n	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ac	5725 - 5825	802.11ac	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.56	17.7	25	No	N/A
ANT 6	802.11ac	5725 - 5825	802.11ac	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ax	5725 - 5825	802.11ax	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.58	17.7	25	No	N/A
ANT 6	802.11ax	5725 - 5825	802.11ax	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11n	5835 - 5915	802.11n	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.59	17.7	25	No	N/A
ANT 6	802.11n	5835 - 5915	802.11n	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ac	5835 - 5915	802.11ac	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.56	17.7	25	No	N/A
ANT 6	802.11ac	5835 - 5915	802.11ac	MCS0	NA	NA	Max Power	20.0								
ANT 5	802.11ax	5835 - 5915	802.11ax	MCS0	NA	NA	Max Power	20.5	23.3	100.0%	23.3	-5.58	17.7	25	No	N/A
ANT 6	802.11ax	5835 - 5915	802.11ax	MCS0	NA	NA	Max Power	20.0								

Note(s):

- Average Antenna Input power = Average Frame power to account for the Operating Duty cycles for each respective Air Interface.
- Worst Case MIF = the Highest MIF value for each respective RF Air Interface.
- For operating modes where Average Antenna Input power plus MIF is below RF_{AIPL}, they are compliant to RF_{AIPL} requirements.
  - For operating modes where Average Antenna Input power plus MIF is above RF_{AIPL}, they were evaluated to RF_{AIL} requirements. Refer to §11 for RF_{AIL} Evaluations.

11. Evaluation for RF Audio Interference Level (RF_{AIL})

11.1. RF Audio Interference Level (RF_{AIL}) Test Procedure

The following is a summary of the test procedure, taken from §4.5.3 of C63.19-2019:

a. Confirm proper operation of the field probe, probe measurement system, spectral and temporal weighting filters, and the positioning system.
b. Position the WD in its intended test position. A gauge block, depicted in A.1.2, can simplify this positioning.
c. Set the WD to transmit a fixed and repeatable combination of signal power and modulation characteristic that is representative of the worst case (highest interference potential) encountered in normal use. Transiently occurring start-up, changeover, or termination conditions, or other operation likely to occur less than 1% of the time during normal operation, may be excluded from consideration.[2]
d. The measurement area shall be centered on the acoustic output or the T-Coil mode measurement reference point, as appropriate. Locate the field probe at the initial test position in the 50 mm by 50 mm measurement area, which is contained in the measurement plane, described in 4.5.2 and illustrated in Figure A.1. If the field alignment method is used, align the probe for maximum field reception.
e. Record the reading at the output of the measurement system.
f. Scan the entire 50 mm by 50 mm measurement area in equally spaced step sizes and record the reading at each measurement point. The step size shall meet the specification for step size in 4.5.3.
g. Calculate the average of the measurements taken in Step f).[3]
h. Convert the average value found in Step g) to RF audio interference level, in volts per meter, by taking the square root of the reading and then dividing it by the measurement system transfer function, as established in 4.5.3.2.1 pre-test procedure. Convert the result to dB(V/m) by taking the base-10 logarithm and multiplying it by 20. Expressed as a formula:

$$RF\ audio\ interference\ level\ in\ dB\left({}^{V}/_{m}\right) = 20\ x \log\left(\frac{{R_{ave}}^{1/2}}{TF}\right)$$

where R_{ave} is the average reading

i. Compare this RF audio interference level to the limits in Table 4.3 below and record the result.
    a. Device is compliant if the average near-field emissions over the measurement area is at or below the stated RF_{AIL} (Table 4.3)

Table 4.3 - Wireless device RF audio interference level

Frequency Range (MHz)	RF_{AIL} [dB(V/m)]
≤ 960	39
960 – 2000	36
> 2000	35

Indirect Measurement Method

The measurement procedure using a probe and instrumentation chain with a response of <10 kHz (see 4.5.1) is identical to the direct measurement method of 4.5.3.2.2: however, because of the bandwidth limitations, it cannot include the direct use of the spectral and temporal weighting functions. The output of such measurement systems must be readings of steady state rms field strength in dB(V/m).

Replacing Step h) of 4.5.3.2.2: The RF audio interference level in dB(V/m) is obtained by adding the Modulation Interference Factor (in decibels) to the average steady state rms field strength reading over the measurement area, in dB(V/m), from Step g). Use this result to determine the WD's compliance per §4.7.

[2] Normally the amount of time a display remains on is a customer defined option. When this is true the display should not be illuminated during the test.
[3] Probe anisotropy may add significantly to the measurement uncertainty. This factor may be minimized by first moving the probe to the location of maximum measurement and then rotating the probe to align it for the maximum reading at that position. This rotation around the axis or shaft of the probe is recommended in order to minimize uncertainty due to anisotropy in the probe.

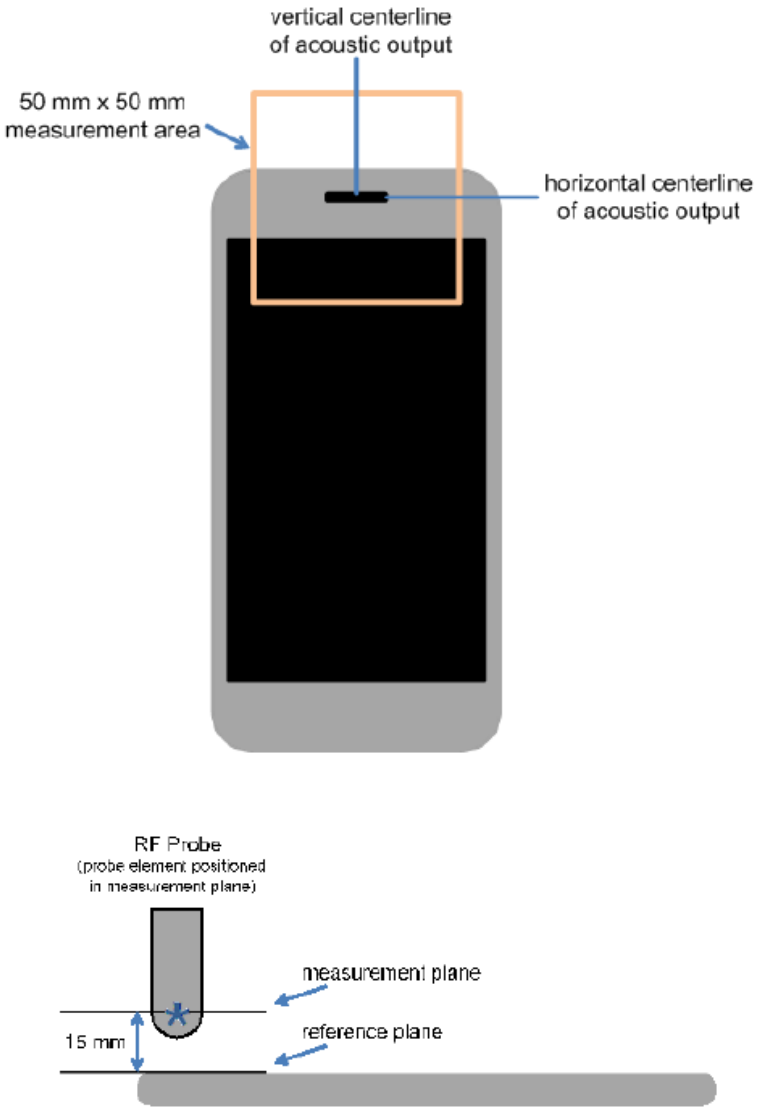
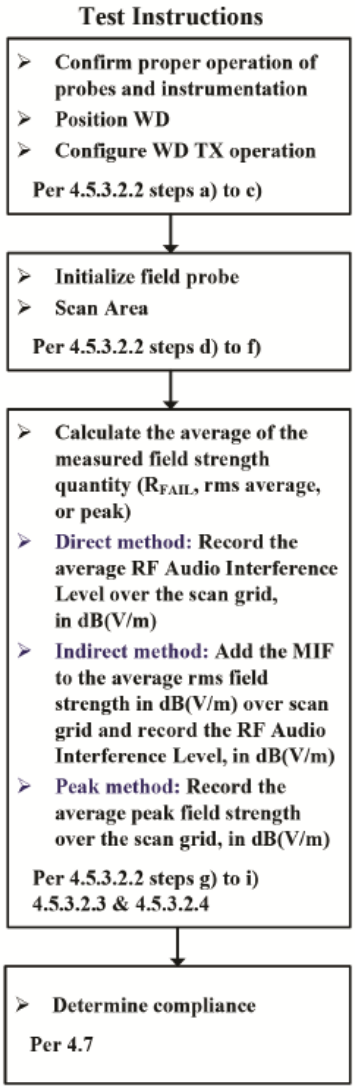


Figure 1 - WD reference and plane for RF emission measurements

Test flowchart Per ANSI-63.19-2019



11.2. RF Audio Interference Level (RF_{AIL}) Measured Results

MIF values were not tested by a probe or as specified in the standards but are based on analysis provided by SPEAG for the following User Identifiers and air interfaces. The data included in this report is for the worst-case operating modes. Refer to §8, Appendix D, G and H for the MIF values that represent the worst-case operating modes.

For all air interfaces, the maximum held-to-head output power was used for the RF_{AIL} evaluation. The maximum held-to-head output power is Power State 1 Mode A for WWAN operating modes and Power State 1 Mode A for WLAN operating modes.

Measured Results

Antenna	Power Mode	Air-Interface	Ch. No.	Freq. (MHz)	RF_{AIL} (dB V/m)	RF_{AIL} Limit (dBm)	Result	Margin	Plot No.
ANT 3	Mode A	GSM1900 1 Slot	512	1850.2	15.76	36	Pass	20.24	1
			661	1880	15.47	36	Pass	20.53	2
			810	1909.8	15.35	36	Pass	20.65	3
ANT 3	Mode A	GSM1900 2 Slots	512	1850.2	12.7	36	Pass	23.30	4
			661	1880	12.69	36	Pass	23.31	5
			810	1909.8	12.67	36	Pass	23.33	6

Note(s):

Measured RF_{AIL} results are below RF_{AIL} limits, therefore is compliant to RF_{AIL} requirements

11.3. Worst Case RF Emission Test Plot

UL Verification Services Inc. SAR Lab 16 **Date/Time:** July 14, 2025 at 11:41

PCS 1900 RF Interference Potential Test Report

Hardware Setup

Probe | Calibration Date	EF3DV3 - SN4041 | March 04, 2025
DAE | Calibration Date	DAE4ip Sn1621 | April 10, 2025
Software Version	1.2.6.2199

Communication Systems

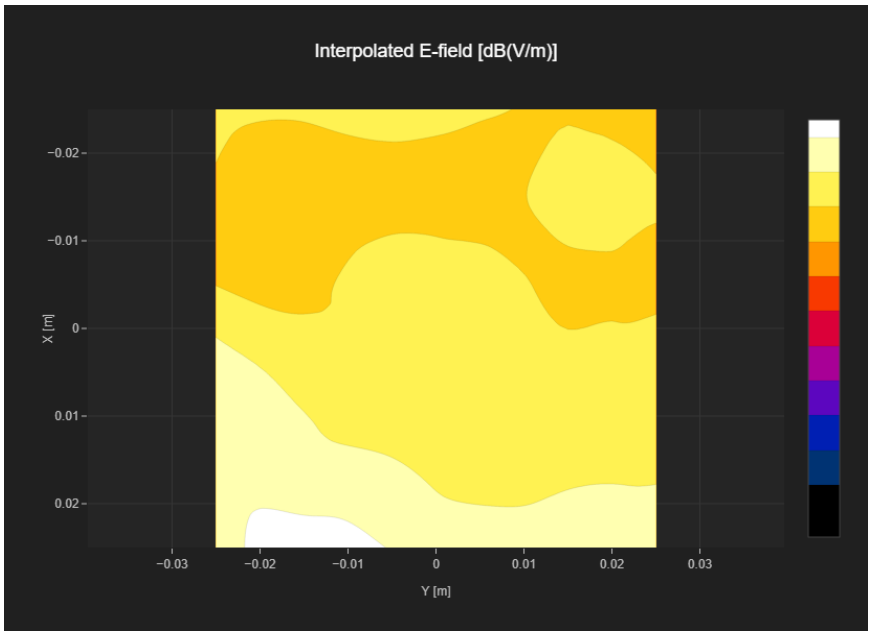
MIF	3.8
Channel | Frequency [MHz]	512 | 1850.2
Communication Systems' Name	GPRS-FDD (TDMA, GMSK, TN 0)

Grid Settings

Extent X [mm]	50.0	**Step X [mm]**	10.0
Extent Y [mm]	50.0	**Step Y [mm]**	10.0
Distance [mm]	15.0		

Results

Emax [dBV/m]	**14.31**	Eavg 50x50 Max [dBV/m]	**11.96**
Drift [dB]	**0.58**	RFail [dBV/m]	**15.76**



Appendixes

Refer to separate files for the following appendixes

Appendix A: RF-E Setup Photo

Appendix B: RF-E System Validation Plots

Appendix C: RF-E Test Plots

Appendix D: RF-E MIF Attestation Letter

Appendix E: RF-E Probe Certificates

Appendix F: RF-E Dipole Certificates

Appendix G: RF-E UID Specifications

Appendix H: RF-E MIF Measurements

END OF REPORT