RF Emission

HAC

TEST REPORT

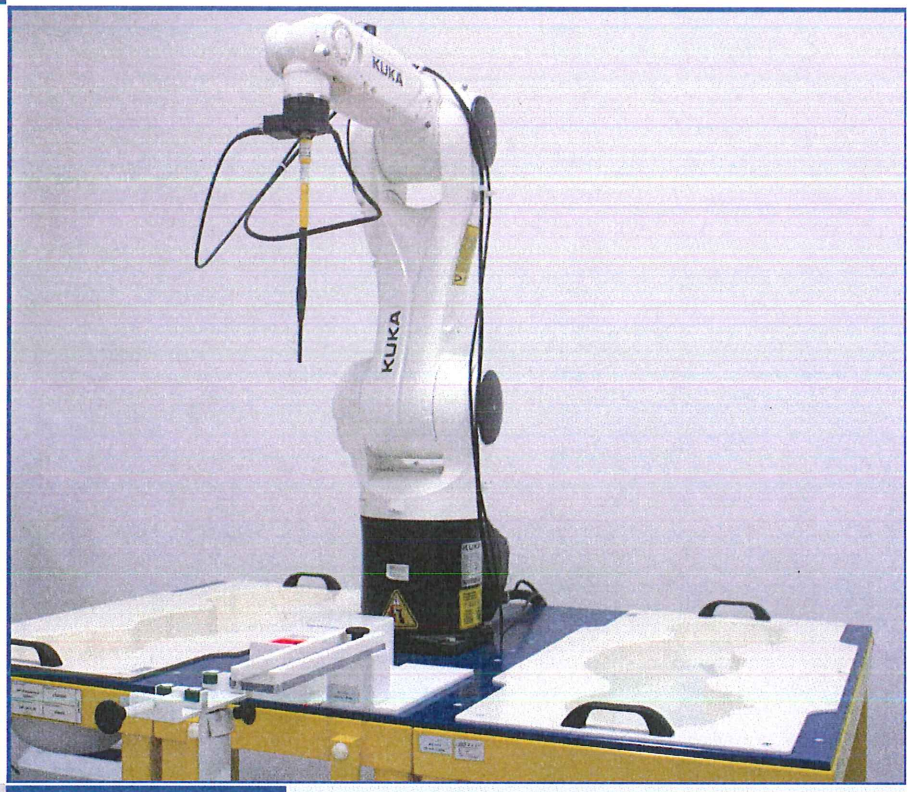
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Mobile Phone

ISSUED TO
vivo Mobile Communication Co., Ltd.

#283, BBK Road, Wusha, Chang'An, DongGuan City, China



Tested by: Zong Liyao
Date: Dec. 29, 2020

Approved by: Wei Yanquan
(Chief Engineer)
Date: Dec. 29, 2020

Report No:	BL-SZ20B0750-702
EUT Name:	Mobile Phone
Model Name:	V2035
Brand Name:	vivo
FCC ID:	2AUCY-V2035
Test Standard:	FCC 47 CFR Part 20.19 ANSI C63.19: 2011 KDB 285076 D01 HAC Guidance v05r01
M-Rating:	E-Field: M3
Test Conclusion:	Pass
Test Date:	Dec. 09, 2020 ~ Dec. 19, 2020
Date of Issue:	Dec. 29, 2020

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Dec. 25, 2020	Initial Issue
Rev. 02	Dec. 29, 2020	Updated the standard version number of KDB 285076 D01 HAC Guidance v05r01

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	20℃ to 23℃
Ambient Relative Humidity	37% to 50%
Ambient Pressure	100 KPa to 102 KPa

1.4 Announce

(1) The test report reference to the report template version v1.1.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	vivo Mobile Communication Co., Ltd.
Address	#283, BBK Road, Wusha, Chang'An, DongGuan City, China

2.2 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	#283, BBK Road, Wusha, Chang'An, DongGuan City, China

2.3 Factory Information

Factory	vivo Mobile Communication Co., Ltd.
Address	#283, BBK Road, Wusha, Chang'An, DongGuan City, China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	V2035
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	MP_0.1
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	vivo
	Model No.	B-O8
	Serial No.	N/A
	Capacity	Rated Capacity: 4910mAh/19.00Wh Typical Capacity: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
Ancillary Equipment 2	Headset	
	Model No.	N/A
	Length (Approx.)	1.2 m

2.6 Technical Information

Network and Wireless connectivity	2G Network GSM 850/1900 MHz 3G Network CDMA 1x Band Class 0 EVDO Rel. 0/Rev. A Band Class 0 WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/7 TDD LTE Band 38/41 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) 5G WIFI 802.11a, 802.11n(HT20/40) and 802.11ac(VHT20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, Galileo, SBAS, FM Receiver
Note : The EUT is a mobile phone, which supports dual SIM card under the same transceiver. Each SIM supports GSM, WCDMA and LTE, and both SIM share the same transmitting electro circuit, NV parameters, so only SIM1 was tested in this report.	

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	GSM, WCDMA, CDMA, LTE, WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	CDMA	TX: 824.025 ~ 848.985 MHz	RX: 869.025 ~ 893.985 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 38	TX: 2570 ~ 2620 MHz	RX: 2570 ~ 2620 MHz
	LTE Band 41	TX: 2535 ~ 2655 MHz	RX: 2535 ~ 2655 MHz
	802.11b/g/n(HT20)	2412 ~ 2462 MHz	
	802.11a/ /n(HT20/HT40) /ac(VHT20/VHT40 /VHT80)	5150 ~ 5250 MHz	
		5250 ~ 5350 MHz	
		5470 ~ 5725 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna		
Hotspot Function	Support		
Power Reduction	Support		
Exposure Category	General Population/Uncontrolled exposure		
EUT Stage	Portable Device		
Product	Type		

	☒ Production unit	☐ Identical prototype

Note:

1. The Power Reduction please refer to section 8.7.
2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
3. This device 2.4GHz WLAN/5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WiFi Direct (GC/GO), and 5.3GHz WLAN/5.5GHz WLAN supports WiFi Direct (GC only)
4. This device has two WWAN transmit antennas. WWAN down antenna is located at the bottom edge of the device, and WWAN up antenna is located at the top edge of the device. Up and Down antenna support the same WWAN frequency bands, and they can't transmit simultaneously.

2.7 EUT Air Interface description

Air Interface	Band	Type	C63.19 Tested	Simultaneous Transmitter	OTT	Power Reduction
GSM	850	VO	Yes	Bluetooth/WLAN	NA	Not Support
	1900	VO	Yes	Bluetooth/WLAN	NA	Not Support
	GPRS/EDGE	DT	No	Bluetooth/WLAN	Yes	Not Support
WCDMA	Band 2	VO	No	Bluetooth/WLAN	NA	Not Support
	Band 4	VO	No	Bluetooth/WLAN	NA	Not Support
	Band 5	VO	No	Bluetooth/WLAN	NA	Not Support
	HSUPA/HSDPA	VD	No	Bluetooth/WLAN	Yes	Not Support
CDMA	BC0	VD	No	Bluetooth/WLAN	Yes	Not Support
LTE	Band 2	VD	No	Bluetooth/WLAN	Yes	Not Support
	Band 4	VD	No	Bluetooth/WLAN	Yes	Not Support
	Band 5	VD	No	Bluetooth/WLAN	Yes	Not Support
	Band 7	VD	No	Bluetooth/WLAN	Yes	Not Support
	Band 38	VD	Yes	Bluetooth/WLAN	Yes	Not Support
	Band 41	VD	Yes	Bluetooth/WLAN	Yes	Not Support
2.4G WLAN	2412~2462MHz	DT	No	WWAN	Yes	Not Support
5G WLAN	5150~5250 MHz	DT	No	WWAN	Yes	Not Support
	5250~5350 MHz	DT	No	WWAN	Yes	Not Support
	5470~5725 MHz	DT	No	WWAN	Yes	Not Support
	5725~5850 MHz	DT	No	WWAN	Yes	Not Support
Bluetooth	2402~2480 MHz	DT	No	WWAN	NA	Not Support

VO=CMRS Voice Service
DT=Digital Transport
VD=CMRS IP Voice Service and Digital Transport
OTT= OTT VoIP Calling (eg. Volet, Wi-Fi calling and etc.)

Note1: The air interface is exempted from testing by low power exemption that its average antenna input power plus its MIF is ≤17 dBm, and is rated as M4.
Note2: According to ANSI C63.19 2011 -version, for the air interface technology of a device is exempt from testing whose peak antenna input power, averaged over intervals ≤50 μs, is ≤23 dBm. An RF air interface technology that is exempted from testing shall be rated as M4.

2.8 Power Reduction Description

1. This mobile phone device supports the receiver detection mechanism. This device uses the receiver to indicate whether the user is making a call in head.
2. When device is making call in head, the power reduction will applied for SAR compliance.
3. When device operating under hotspot mode, the power reduction will applied for SAR compliance.
4. This device uses the P-sensor to detect handheld state.
5. For WWAN Down antenna this product not support power reduced function.

WWAN Reduced Power Level Table

Reduced level	State	Antenna	Transmitting conditions	Power reduced bands
Level 1	Head (Receiver on)	Up	WWAN Use Only	GSM 850/1900
				WCDMA Band2/4
				LTE Band2/4/7/38/41
Level 2	Head (Receiver on)	Up	WWAN + WLAN 2.4G Or WLAN5G	GSM 850/1900
				WCDMA Band2/4/5
				LTE Band2/4/5/7/38/41
Level 3	Limbs (P-sensor On)	Up	WWAN Use Only	GSM 850/1900
				WCDMA Band2/4
				LTE Band2/4/7/38/41
Level 4	Limbs&Body (Hotspot on)	Up	WWAN + WLAN 2.4G Or WLAN5G	GSM 850/1900
				WCDMA Band2/4
				LTE Band2/4/7/38/41

WLAN Reduced Power Level Table

Reduced level	Receiver state	Transmitting conditions	Power reduced bands
Level 1	On (head scenario)	WLAN Use Only	WLAN 2.4G; WLAN 5G
Level 2	On (head scenario)	WWAN + WLAN 2.4G Or WLAN5G	WLAN 2.4G; WLAN 5G
Level 3	Limbs&Body (Hotspot on)	WWAN + WLAN 2.4G Or WLAN5G	WLAN 2.4G; WLAN 5G

WWAN Antenna Up Power Table

Mode	WWAN Up Antenna							
	Full Power	Head (Receiver on)		Body-worn		Hotspot on	Limbs	
		Standalone	Simultaneous transmission + WLAN/BT	Standalone	Simultaneous transmission + WLAN/BT		Standalone	Simultaneous transmission + WLAN/BT
		Level1	Level2	Off	Level4	Level4	Level3	Level4
GSM 850	33.5	27.5	27.5	33.5	27.5	27.5	27.5	27.5
GPRS850 1 Tx Slot	33.5	27.5	27.5	33.5	27.5	27.5	27.5	27.5
GPRS850 2 Tx Slots	31.5	25.5	25.5	31.5	25.5	25.5	25.5	25.5
GPRS850 3 Tx Slots	29.5	23.5	23.5	29.5	23.5	23.5	23.5	23.5
GPRS850 4 Tx Slots	28.5	23.5	23.5	28.5	23.5	23.5	23.5	23.5
EGPRS850 1 Tx Slot	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
EGPRS850 2 Tx Slots	26.0	25.5	25.5	26.0	25.5	25.5	25.5	25.5
EGPRS850 3 Tx Slots	24.5	23.5	23.5	24.5	23.5	23.5	23.5	23.5
EGPRS850 4 Tx Slots	22.5	21.5	21.5	22.5	21.5	21.5	21.5	21.5
GSM 1900	31.0	25.5	25.5	31.0	28.5	28.5	28.5	28.5
GPRS1900 1 Tx Slot	31.0	25.5	25.5	31.0	28.5	28.5	28.5	28.5
GPRS1900 2 Tx Slots	29.5	23.0	23.0	29.5	23.0	23.0	23.0	23.0
GPRS1900 3 Tx Slots	27.2	18.5	18.5	27.2	22.2	22.2	22.2	22.2
GPRS1900 4 Tx Slots	25.5	17.0	17.0	25.5	20.5	20.5	20.0	20.5
EGPRS1900 1 Tx Slot	27.6	25.5	25.5	27.6	26.1	26.1	27.1	26.1
EGPRS1900 2 Tx Slots	26.0	22.5	22.5	26.0	23.0	23.0	24.0	23.0
EGPRS1900 3 Tx Slots	24.0	20.0	20.0	24.0	21.5	21.5	22.0	21.5
EGPRS1900 4 Tx Slots	23.0	17.0	17.0	23.0	21.0	21.0	20.0	21.0
WCDMA Band2 RMC	24.0	15.0	15.0	24.0	18.0	18.0	18.0	18.0
HSDPA Subtest-1	23.0	14.0	14.0	23.0	17.0	17.0	17.0	17.0
HSDPA Subtest-2	23.0	14.0	14.0	23.0	17.0	17.0	17.0	17.0
HSDPA Subtest-3	22.6	13.6	13.6	22.6	16.6	16.6	16.6	16.6
HSDPA Subtest-4	22.6	13.6	13.6	22.6	16.6	16.6	16.6	16.6
HSUPA Subtest-1	23.2	14.2	14.2	23.2	17.2	17.2	17.2	17.2
HSUPA Subtest-2	21.0	12.0	12.0	21.0	15.0	15.0	15.0	15.0
HSUPA Subtest-3	22.0	13.0	13.0	22.0	16.0	16.0	16.0	16.0
HSUPA Subtest-4	21.0	12.0	12.0	21.0	15.0	15.0	15.0	15.0
HSUPA Subtest-5	23.0	14.0	14.0	23.0	17.0	17.0	17.0	17.0
WCDMA Band4 RMC	24.3	14.8	14.8	24.3	17.2	17.2	17.2	17.2
HSDPA Subtest-1	23.3	13.8	13.8	23.3	15.8	15.8	15.8	15.8
HSDPA Subtest-2	23.3	13.8	13.8	23.3	15.8	15.8	15.8	15.8
HSDPA Subtest-3	23.0	13.5	13.5	23.0	15.5	15.5	15.5	15.5
HSDPA Subtest-4	23.0	13.5	13.5	23.0	15.5	15.5	15.5	15.5
HSUPA Subtest-1	23.3	13.8	13.8	23.3	15.8	15.8	15.8	15.8
HSUPA Subtest-2	21.3	11.8	11.8	21.3	13.8	13.8	13.8	13.8

HSUPA Subtest-3	22.3	12.8	12.8	22.3	14.8	14.8	14.8	14.8
HSUPA Subtest-4	21.4	11.9	11.9	21.4	13.9	13.9	13.9	13.9
HSUPA Subtest-5	23.0	13.5	13.5	23.0	15.5	15.5	15.5	15.5
WCDMA Band5 RMC	23.5	23.5	20.5	23.5	23.5	23.5	23.5	23.5
HSDPA Subtest-1	22.5	22.5	19.5	22.5	22.5	22.5	22.5	22.5
HSDPA Subtest-2	22.5	22.5	19.5	22.5	22.5	22.5	22.5	22.5
HSDPA Subtest-3	22.0	22.0	19.0	22.0	22.0	22.0	22.0	22.0
HSDPA Subtest-4	22.0	22.0	19.0	22.0	22.0	22.0	22.0	22.0
HSUPA Subtest-1	22.5	22.5	19.5	22.5	22.5	22.5	22.5	22.5
HSUPA Subtest-2	20.5	20.5	17.5	20.5	20.5	20.5	20.5	20.5
HSUPA Subtest-3	21.5	21.5	18.5	21.5	21.5	21.5	21.5	21.5
HSUPA Subtest-4	20.5	20.5	17.5	20.5	20.5	20.5	20.5	20.5
HSUPA Subtest-5	22.5	22.5	19.5	22.5	22.5	22.5	22.5	22.5
CDMA BC0	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
LTE Band2	24.2	16.2	13.5	24.2	19.5	19.5	19.5	19.5
LTE Band4	24.5	14.5	14.5	24.5	18.6	18.6	18.6	18.6
LTE Band5	23.5	23.5	20.0	23.5	23.5	23.5	23.5	23.5
LTE Band7	25.2	16.7	14.7	25.2	19.7	19.7	19.7	19.7
LTE Band38	25.0	18.5	18.5	25.0	21.0	21.0	21.0	21.0
LTE Band41	24.8	18.7	18.7	24.8	20.7	20.7	20.7	20.7

WWAN Antenna Down Power Table

Mode	WWAN Down Antenna							
	Full Power	Head (Receiver on)		Body-worn		Hotspot on	Limbs	
		Standalone	Simultaneous transmission + WLAN/BT	Standalone	Simultaneous transmission + WLAN/BT		Standalone	Simultaneous transmission + WLAN/BT
		Off	Off	Off	Off	Off	Off	Off
GSM 850	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
GPRS850 1 Tx Slot	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
GPRS850 2 Tx Slots	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
GPRS850 3 Tx Slots	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
GPRS850 4 Tx Slots	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
EGPRS850 1 Tx Slot	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
EGPRS850 2 Tx Slots	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
EGPRS850 3 Tx Slots	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
EGPRS850 4 Tx Slots	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
GSM 1900	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
GPRS1900 1 Tx Slot	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
GPRS1900 2 Tx Slots	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
GPRS1900 3 Tx Slots	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2
GPRS1900 4 Tx Slots	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5

EGPRS1900 1 Tx Slot	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6
EGPRS1900 2 Tx Slots	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
EGPRS1900 3 Tx Slots	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
EGPRS1900 4 Tx Slots	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
WCDMA Band2 RMC	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
HSDPA Subtest-1	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
HSDPA Subtest-2	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
HSDPA Subtest-3	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
HSDPA Subtest-4	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
HSUPA Subtest-1	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
HSUPA Subtest-2	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
HSUPA Subtest-3	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
HSUPA Subtest-4	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
HSUPA Subtest-5	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
WCDMA Band4 RMC	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
HSDPA Subtest-1	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3
HSDPA Subtest-2	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3
HSDPA Subtest-3	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
HSDPA Subtest-4	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
HSUPA Subtest-1	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3
HSUPA Subtest-2	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
HSUPA Subtest-3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
HSUPA Subtest-4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
HSUPA Subtest-5	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
WCDMA Band5 RMC	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5
HSDPA Subtest-1	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
HSDPA Subtest-2	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
HSDPA Subtest-3	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
HSDPA Subtest-4	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
HSUPA Subtest-1	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
HSUPA Subtest-2	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
HSUPA Subtest-3	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
HSUPA Subtest-4	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
HSUPA Subtest-5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
CDMA BC0	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
LTE Band2	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2
LTE Band4	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
LTE Band5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5
LTE Band7	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
LTE Band38	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
LTE Band41	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8

WLAN and Bluetooth Antenna Power Table

Mode	WLAN Up Antenna							
	Full Power	Head (Receiver on)		Body-worn		Hotspot on	Limbs	
		Standalone	Simultaneous transmission + WLAN/BT	Standalone	Simultaneous transmission + WLAN/BT		Standalone	Simultaneous transmission + WLAN/BT
		Level1	Level2	Off	Level3	Level3	Off	Level3
2.4G WLAN 802.11b	19.5	17.0	15.0	19.5	15.0	15.0	19.5	15.0
2.4G WLAN 802.11g	18.0	15.5	13.5	18.0	13.5	13.5	18.0	13.5
2.4G WLAN 802.11n20	17.0	14.5	12.5	17.0	12.5	12.5	17.0	12.5
5.2G WLAN 802.11a	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.2G WLAN 802.11n20	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.2G WLAN 802.11n40	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.2G WLAN 802.11ac20	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.2G WLAN 802.11ac40	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.2G WLAN 802.11nac80	14.0	10.5	7.5	14.0	7.5	7.5	14.0	7.5
5.3G WLAN 802.11a	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.3G WLAN 802.11n20	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.3G WLAN 802.11n40	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.3G WLAN 802.11ac20	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.3G WLAN 802.11ac40	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.3G WLAN 802.11nac80	15.0	10.5	7.5	15.0	7.5	7.5	15.0	7.5
5.6G WLAN 802.11a	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.6G WLAN 802.11n20	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.6G WLAN 802.11n40	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.6G WLAN 802.11ac20	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.6G WLAN 802.11ac40	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.6G WLAN 802.11nac80	15.0	10.5	7.5	15.0	7.5	7.5	15.0	7.5
5.8G WLAN 802.11a	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.8G WLAN 802.11n20	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.8G WLAN 802.11n40	17.0	12.5	9.5	17.0	9.5	9.5	17.0	9.5
5.8G WLAN 802.11ac20	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.8G WLAN 802.11ac40	16.0	11.5	8.5	16.0	8.5	8.5	16.0	8.5
5.8G WLAN 802.11nac80	15.0	10.5	7.5	15.0	7.5	7.5	15.0	7.5
Bluetooth	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 20.19	Hearing aid-compatible mobile handsets.
2	ANSI C 63.19:2011	American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
3	KDB 285076 D01 HAC Guidance v05r01	Provides equipment authorization guidance for mobile handsets subject to the requirements of Section 20.19 for hearing aid compatibility

3.2 HAC Test Configuration and Setting

For HAC RF emission testing, the EUT was linked and controlled by wireless communication test set. Communication between the EUT and the wireless communication test set was established by air link. The distance between the EUT and the communicating antenna of the test set is larger than 50 cm and the output power radiated from the wireless communication test set antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the wireless communication test set to radiate maximum output power during HAC testing.

3.3 Summary Of HAC M-Rating

Band	Measurement Result		M-Rating
GSM 850	E-Field dB (V/m)	34.50	M4
GSM 1900	E-Field dB (V/m)	31.49	M4
CDMA BC0	E-Field dB (V/m)	15.36	M4
LTE Band 38	E-Field dB (V/m)	19.84	M4
LTE Band 41	E-Field dB (V/m)	20.27	M4

3.4 ANSI C63.19 HAC RF Categories

3.4.1 RF Emissions

The ANSI Standard presents performance requirements for acceptable interoperability of hearing with wireless communications devices. When these parameters are met, a hearing aid operates acceptably in close proximity to a wireless communications device.

WD RF audio interference level categories:

Category	Limits for E-Field Emission (V/m)	
	<960MHz	>960MHz
M1	50 to 55	40 to 45
M2	45 to 50	35 to 40
M3	40 to 45	30 to 35
M4	<40	<30

3.5 HAC Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in ANSI C 63.19:2011.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Uncertainty Component	Uncertainty Value	Prob. Dist.	Div.	Ci (E)	Ci (H)	Std. Unc. (+/- %)	
						E	H
Measurement System							
Probe calibration	6.00	N	1.000	1	1	6.00	6.00
Axial Isotropy	2.02	R	1.732		1	1.17	1.17
Sensor Displacement	14.30	R	1.732	1	0.217	8.26	1.79
Boundary effect	2.50	R	1.732	1	1	0.87	0.87
Phantom Boundary Effect	6.89	R	1.732	1	0	3.52	0.00
Linearity	2.58	R	1.732	1	1	1.49	1.49
Scaling tp PMR Calibration	9.02	N	1.000	1	1	9.02	9.02
System detection limits	1.30	R	1.732	1	1	0.75	0.75
Readout Electronics	0.25	R	1.732	1	1	0.14	0.14
Response Time	1.23	R	1.732	1	1	0.71	0.71
Integration Time	2.15	R	1.732	1	1	1.24	1.24
RF ambient Conditions	2.03	R	1.732	1	1	1.17	1.17
RF Reflections	9.09	R	1.732	1	1	5.25	5.25
Probe positioner	0.63	N	1.000	1	0.71	0.63	0.45
Probe positioning	3.12	N	1.000	1	0.71	3.12	2.22
Extrapolation and Interpolation	1.18	R	1.732	1	1	0.68	0.68
Test sample Related							
Test sample positioning Vertical	2.73	R	1.732	1	0.71	1.58	1.12
Test sample positioning Lateral	1.19	R	1.732	1	1	0.69	0.69
Device holder and Phantom	2.20	N	1.000	1	1	2.20	2.20
Power drift	4.08	R	1.732	1	1	2.36	2.36
Phantom and Setup Related							
Phantom Thickness	2.00	N	1.000	1	0.6	2.00	1,20
Combined Std. Uncertainty(k=1)						16.18	13.25
Expanded Uncertainty on Power						32.35	26.50
Expanded Uncertainty on Field						16.18	13.25

4 SATIMO HSC MEASUREMENT SYSTEM

4.1 Definition of Hearing Aid Compatibility (HAC)

On July 10.2003.the Federal Communications Commission (FCC) adopted new rules requiring wireless manufacturers and service providers to provide digital wireless phones that are compatible with hearing aids. The FCC has modified the exemption for wireless phones under the Hearing Aid Compatibility Act of 1998 (HAC Act) in WT Docket 01-309 RM-8658 to extend the benefits of wireless telecommunications to individuals with hearing disabilities. These benefits encompass business, social and emergency communications, which increase the value of the wireless network for everyone. An estimated more than 10% of the population in the United States show signs of hearing impairment and of that fraction, almost 80% use hearing aids. Approximately 500 million people worldwide suffer from hearing loss.

Compatibility Tests involved:

The standard calls for wireless communications devices to be measured for:

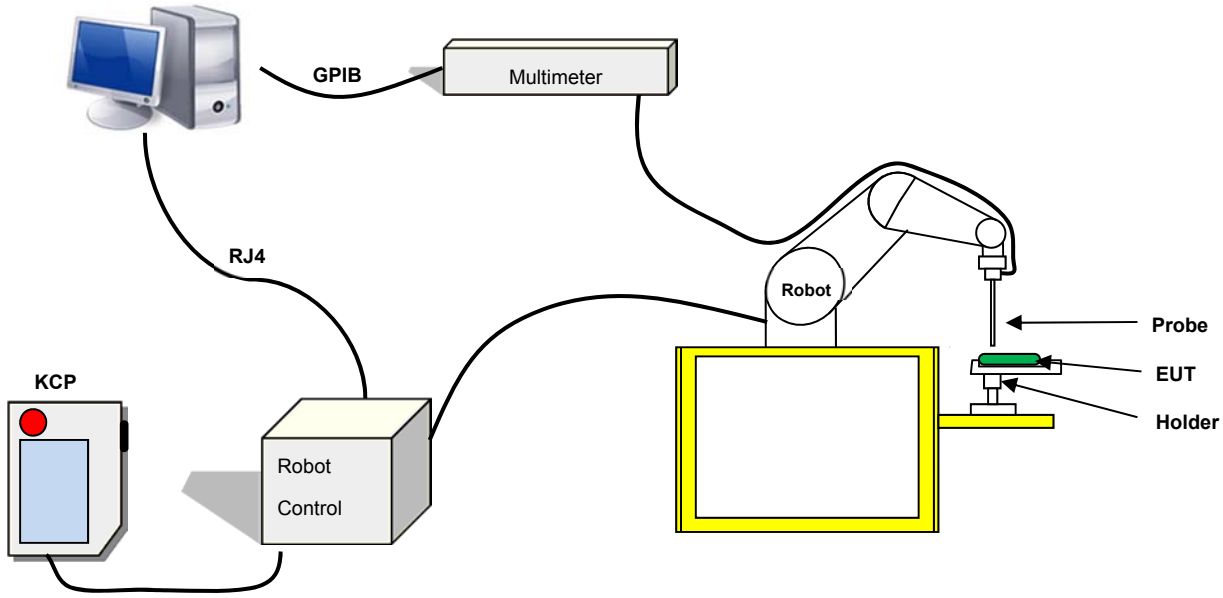
- RF Electric-field emissions.
- RF Magnetic- field emissions.
- T-coil mode, magnetic-signal strength in the audio band.
- T-coil mode, magnetic-signal frequency response through the audio band.
- T-coil mode, magnetic-signal and noise articulation index.

The hearing aid must be measured for:

- RF immunity in microphone mode
- RF immunity in T-coil mode

4.2 SATIMO HAC System

SATIMO HAC System Diagram:



4.2.1 Robot

The SATIMO HAC system uses the high precision robots from KUKA. For the 6-axis controller system, the robot controller version (KUKA) from KUKA is used. The KUKA robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

4.2.2 HAC E-Field Probe

Serial Number:	SN 24/13 EPH41
Frequency:	0.7GHz – 2.5GHz
Probe length:	330mm
Length of one dipole:	3.3mm
Maximum external diameter:	8mm
Probe extremity diameter:	5mm
Distance between dipoles/probe extremity:	3mm
Resistance of the three dipole (at the connector):	Dipole 1:R1=2.1807 MΩ Dipole 2:R1=2.0612 MΩ Dipole 3:R3=2.1892 MΩ
Connector (HIROSE series SR30)	6 wire male (Hirose SR30series)

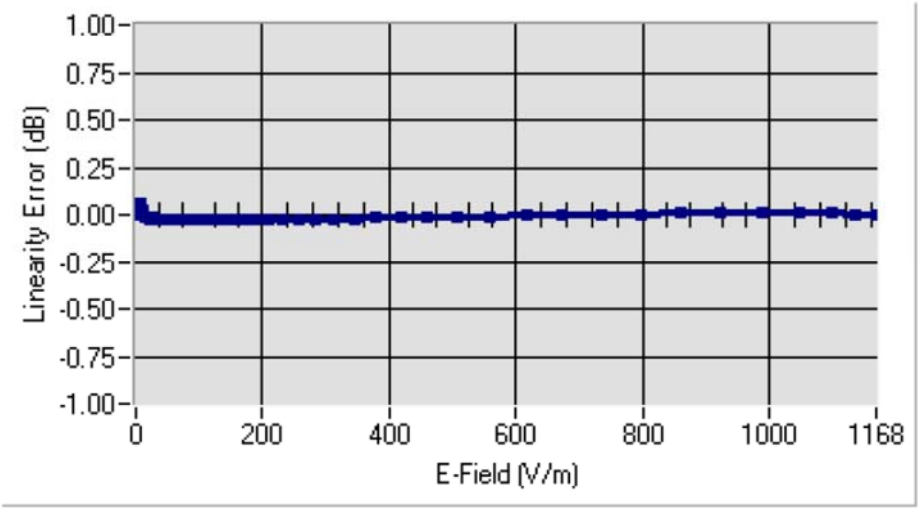
E-Field Probe Calibration Process

All methods used to perform the measurements and calibrations comply with the ANSI C63.19 and IEEE 1309 standards.

LINEARITY

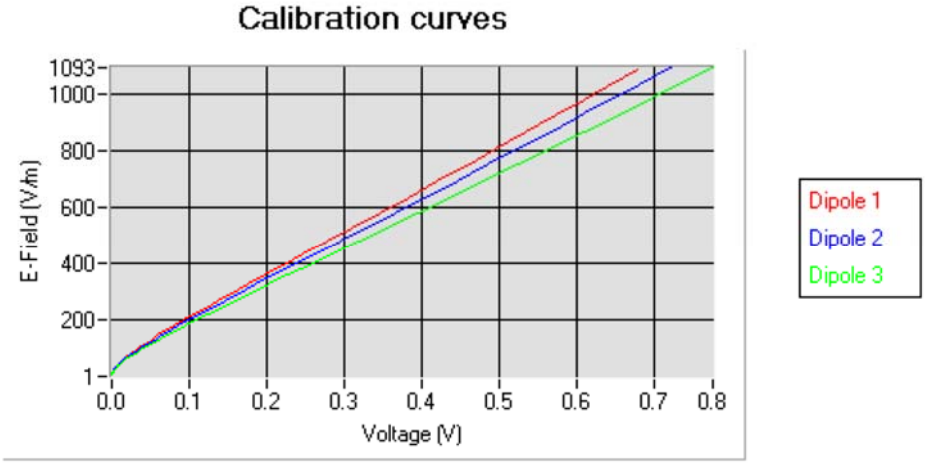
The linearity was determined using a standard dipole with the probe positioned 10 mm above the dipole. The input power of the dipole was adjusted from -15 to 36 dBm using a 1dB step (to cover the range 2V/m to 1000V/m).

Linearity: +/- 1.49% (+/- 0.07 dB)



SENSITIVITY

The sensitivity factors of the three dipoles were determined using the waveguide method outlined in the fore mentioned standards.

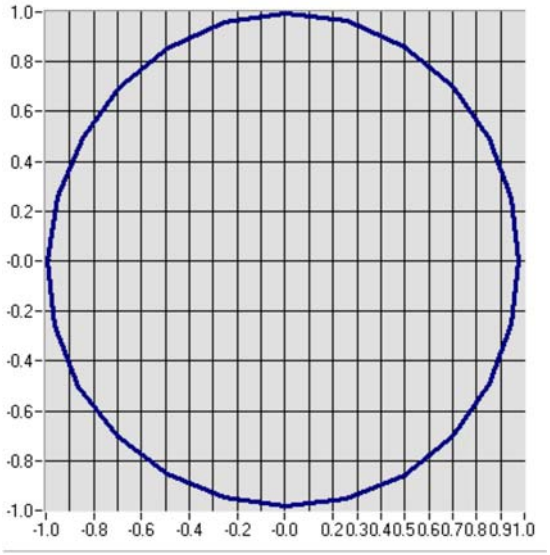


Frequency (GHz)	Normz dipole 1 (μV/(V/m)²)	Normz dipole 2 (μV/(V/m)²)	Normz dipole 3 (μV/(V/m)²)
0.7GHz-2.5GHz	6.54	4.86	5.80
Frequency (GHz)	**DCP dipole 1 (mV)**	**DCP dipole 2 (mV)**	**DCP dipole 3 (mV)**
0.7GHz-2.5GHz	96	96	92

ISOTROPY

The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole. The probe was rotated along its main axis from 0 - 360 degrees in 15 degree steps.

Isotropy: +/- 1.22% (+/- 0.05 dB)



4.2.3 HAC H-Field Probe

Serial Number:	SN 24/13 EPH49
Frequency:	0.7GHz – 2.5GHz
Probe length:	330mm
Length of one dipole:	3.3mm
Maximum external diameter:	8mm
Probe extremity diameter:	5mm
Distance between dipoles/probe extremity:	3mm
Resistance of the three dipole (at the connector):	Dipole 1:R1=0.289 MΩ Dipole 2:R1=0.287 MΩ Dipole 3:R3=0.281 MΩ
Connector (HIROSE series SR30)	6 wire male (Hirose SR30series)

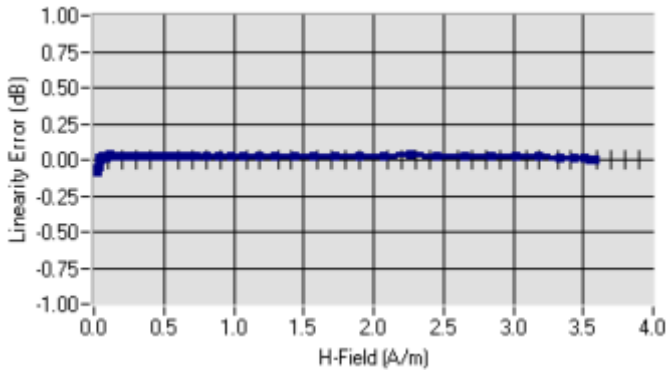
Calibration Method Procedure

All methods used to perform the measurements and calibrations comply with the ANSI C63.19 and IEEE 1309 standards.

LINEARITY

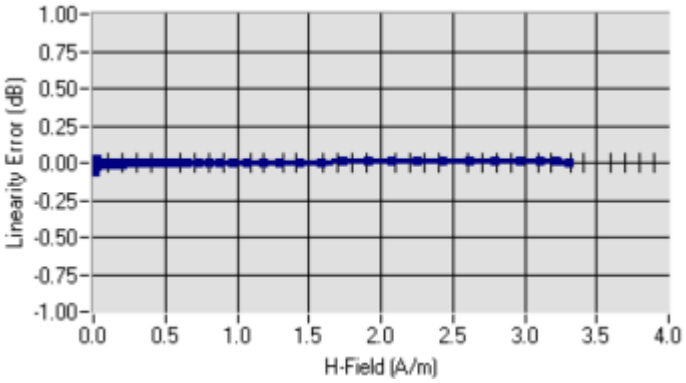
The linearity was determined using a standard dipole with the probe positioned 10 mm above the dipole. The input power of the dipole was adjusted from -15 to 36 dBm using a 1dB step (to cover the range 0.01A/m to 2A/m).

Linearity: +/- 1.83% (+/- 0.08 dB)



Linearity @ 835MHz

Linearity: +/- 1.36% (+/- 0.06 dB)

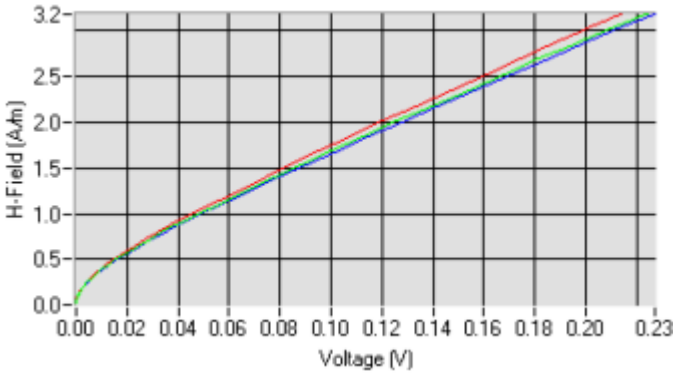


Linearity @ 1900MHz

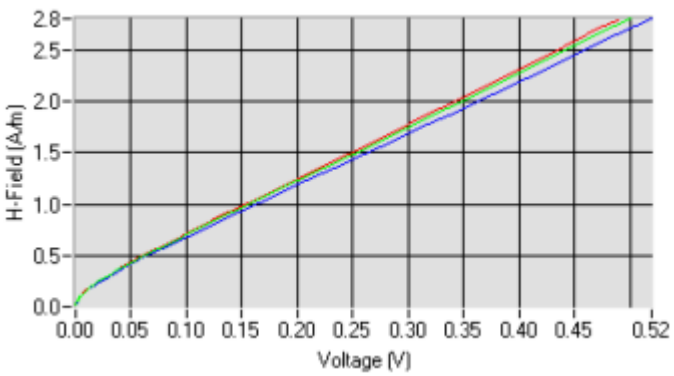
SENSITIVITY

The sensitivity factors of the three dipoles were determined using the waveguide method outlined in the fore mentioned standards.

Frequency (GHz)	Normz loop 1 (μV/(A/m)²)	Normz loop 2 (μV/(A/m)²)	Normz loop 3 (μV/(A/m)²)
0.7GHz-1.0GHz	0.062	0.072	0.068
1.7GHz-2.5GHz	0.35	0.41	0.37
Frequency (GHz)	**DCP dipole 1 (mV)**	**DCP dipole 2 (mV)**	**DCP dipole 3 (mV)**
0.7GHz-2.5GHz	112	102	106



Calibration Curves @ 835MHz

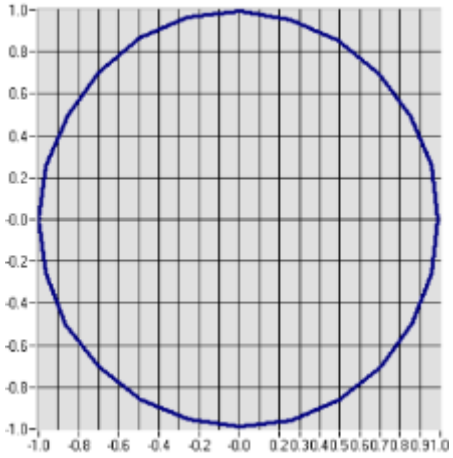


Calibration Curves @ 1900MHz

ISOTROPY

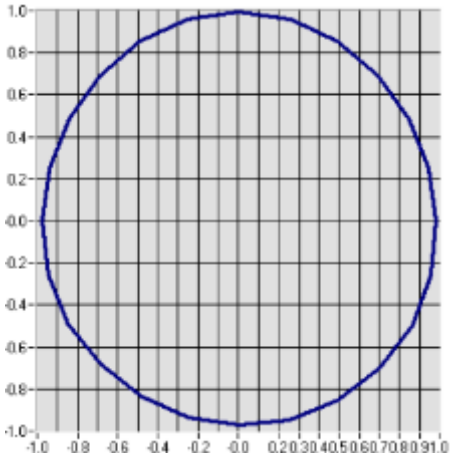
The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole. The probe was rotated along its main axis from 0 - 360 degrees in 15 degree steps.

Isotropy: +/- 1.22% (+/- 0.05 dB)



Isotropy @ 835MHz

Isotropy: +/- 1.22% (+/- 0.05 dB)



Isotropy @ 1900MHz

5 SYSTEM VERIFICATION

5.1 System Check Procedure

The input signal was an unmodulated continuous wave. The following points were taken into consideration in performing this check:

- Average Input Power P = 100mW RMS (20dBm RMS) after adjustment for return loss
- The test fixture must meet the 2 wavelength separation criterion
- The proper measurement of the 1 cm probe to dipole separation, which is measured from top surfaceof the dipole to the calibration reference point of the sensor, defined by the probe manufacturer is shown in the following diagram:

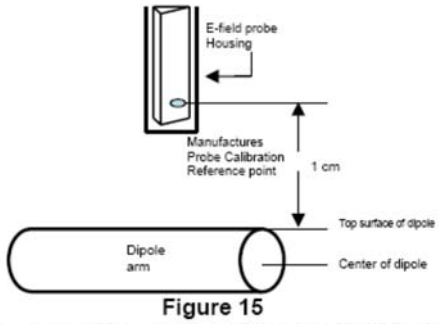


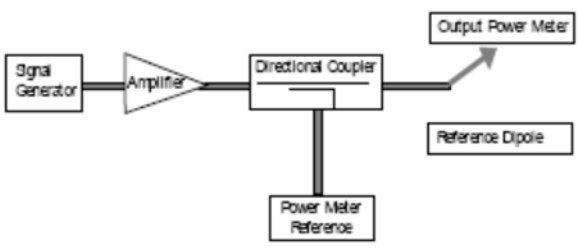
Figure 15
Separation Distance from Dipole to Field Probe

RF power was recorded using both an average reading meter and a peak reading meter. Readings of the probe are provided by the measurement system. To assure proper operation of the near-field measurement probe the input power to the dipole shall be commensurate with the full rated output power of the wireless device (e.g. - for a cellular phone wireless device the average peak antenna input power will be on the order of 100mW (i.e. - 20dBm) RMS after adjustment for any mismatch.

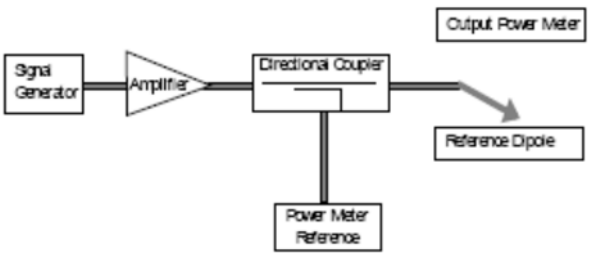
5.2 Validation Procedure

A dipole antenna meeting the requirements given in PC63.19 was placed in the position normally occupied by the WD. The length of the dipole was scanned with both E-field and H-field probes and the maximum values for each were recorde. Using the near-field measurement system, scan the antenna over the radiating dipole and record the greatest field reading observed. Due to the nature of E-fields about free-space dipoles, the two E-field peaks measured over the dipole are averaged to compensate for non-paralellity of the setup see manufacturer method on dipole calibration certificates, Field strength measurements shall be made only when the probe is stationary. RF power was recorded using both an average and a peak power reading meter.

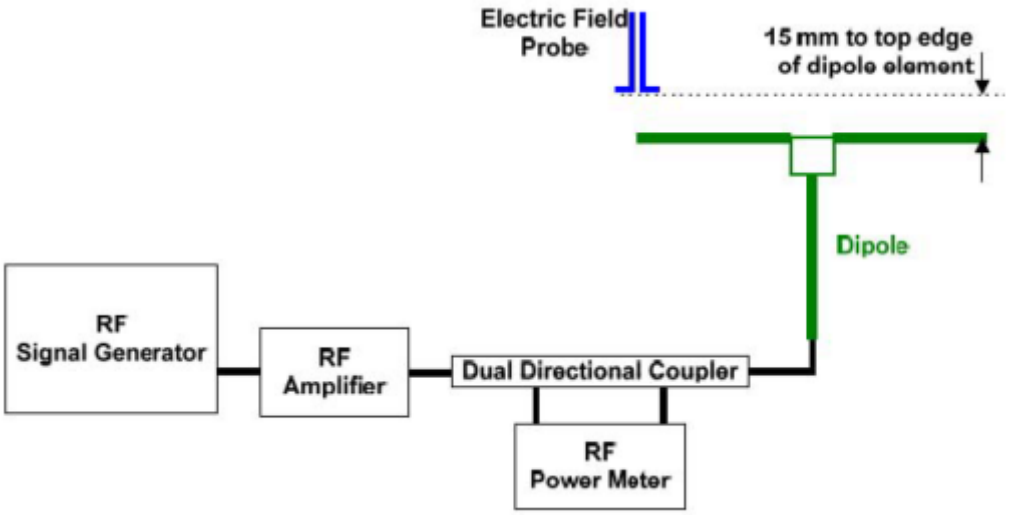
Setup for Desired Output Power to Dipole



Setup to Dipole



5.3 System Validation Setup



Using this setup configuration, the signal generator was adjusted for the desired output power 20dBm (100mW) at a specified frequency. The reference power from the coupled port of the directional coupler is recorded. Next, the output cable is connected to the reference dipole

5.4 System Validation Results

Comparing to the original HAC value provided by SATIMO, the validation data should be within its specification of 10 %.

Frequency	Input Power (dBm)	E-field Result (V/m)	Target Field (V/m)	Tolerance (%)	Date
835 MHz	20.0	225.03	220.4	2.10	12/9/2020
1900MHz	20.0	157.52	153.4	2.69	12/14/2020
2450MHz	20.0	136.81	130.08	5.17	12/19/2020

6 Modulation Interference Factor (MIF)

The HAC Standard ANSI C63.19-2011 defines a new scaling using the Modulation Interference Factor (MIF). For any specific fixed and repeatable modulated signal, a modulation interference factor (MIF, expressed in dB) may be developed that relates its interference potential to its steady-state rms signal level or average power level. This factor is a function only of the audio-frequency amplitude modulation characteristics of the signal and is the same for field-strength and conducted power measurements. It is important to emphasize that the MIF is valid only for a specific repeatable audio-frequency amplitude modulation characteristic. Any change in modulation characteristic requires determination and application of a new MIF.

The MIF may be determined using a radiated RF field, a conducted RF signal, or in a preliminary stage, a mathematical analysis of a modeled RF signal:

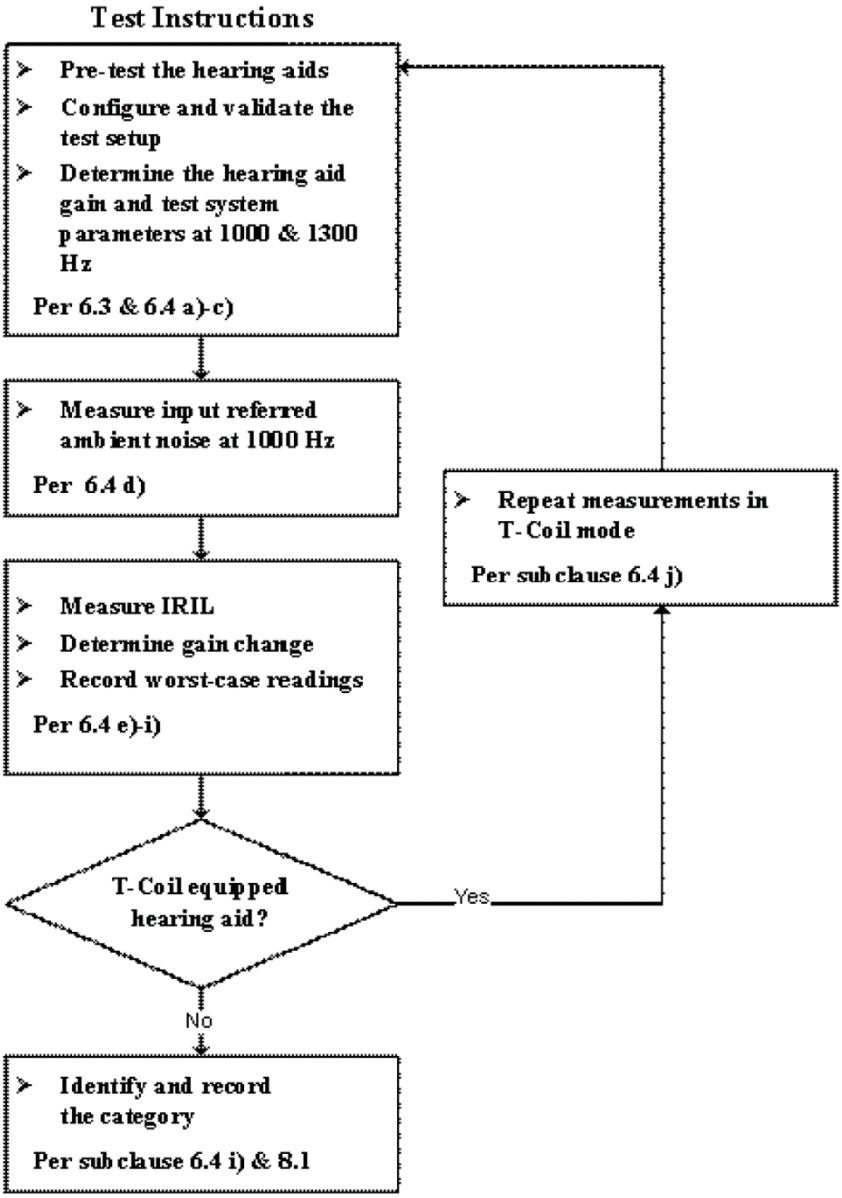
a) Verify the slope accuracy and dynamic range capability over the desired operating frequency band of a fast probe or sensor, square-law detector, as specified in D.3, and weighting system as specified in D.4 and D.5. For the probe and instrumentation included in the measurement of MIF, additional calibration and application of calibration factors are not required.
b) Using RF illumination or conducted coupling, apply the specific modulated signal in question to the measurement system at a level within its confirmed operating dynamic range.
c) Measure the steady-state rms level at the output of the fast probe or sensor.
d) Measure the steady-state average level at the weighting output.
e) Without changing the square-law detector or weighting system, and using RF illumination or conducted coupling, substitute for the specific modulated signal a 1kHz, 80% amplitude-modulated carrier at the same frequency and adjust its strength until the level at the weighting output equals the step d) measurement.
f) Without changing the carrier level from step e), remove the 1 kHz modulation and again measure the steady-state rms level indicated at the output of the fast probe or sensor.
g) The MIF for the specific modulation characteristic is provided by the ratio of the step f) measurement to the step c) measurement, expressed in dB (20 × log(step f))/step c)).

In practice, step e) and step f) need not be repeated for each MIF determination if the relationship between the two measurements has been preestablished for the measurement system over the operating frequency and dynamic ranges.

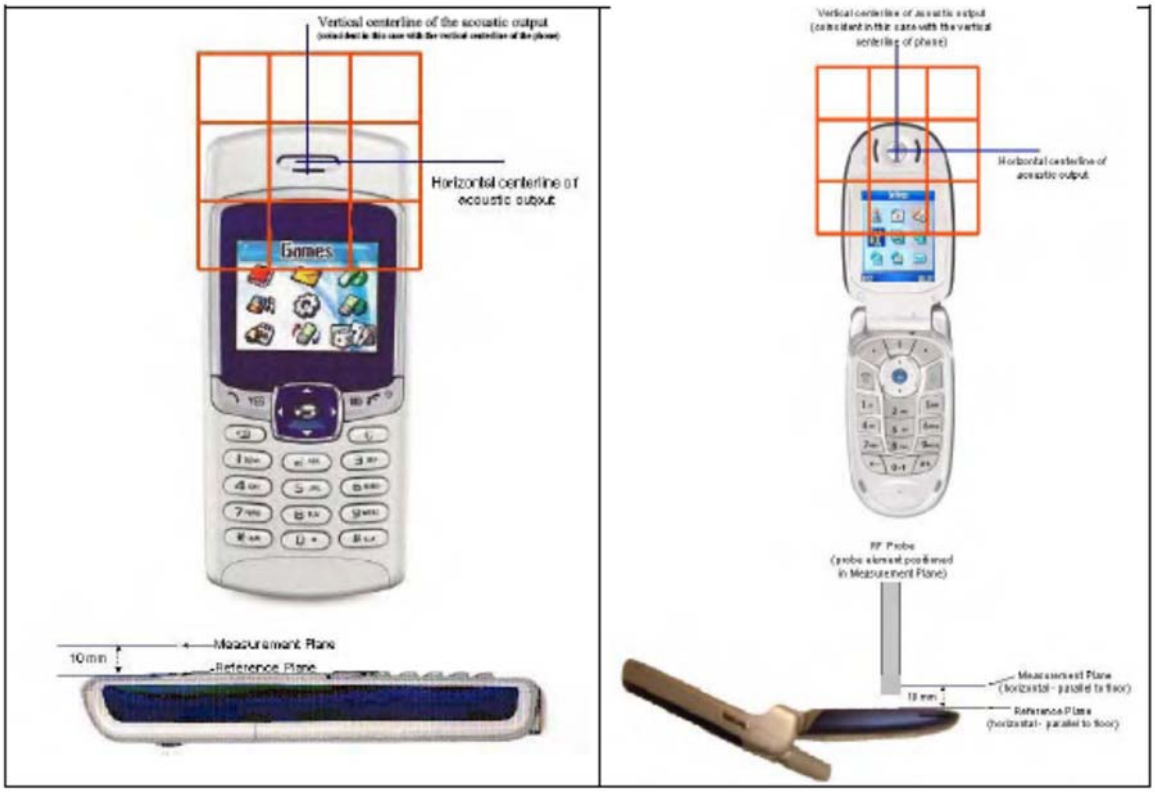
Probe	Signal Type	MIF
E-Field Probe	CW	-100.00
	GSM	3.63
	WCDMA	-27.23
	CDMA2000	-19.75
	TD-SCDMA	3.10

7 HAC RF IMMUNITY MEASUREMENT PROCEDURES

7.1 HAC Measurement Process Diagram



7.2 HAC RF Test Setup



Reference and plane for RF emission measurements

7.3 RF Emission Measurement Procedure

The following illustrate a typical RF emissions test scan over a wireless communications device:

a. Proper operation of the field probe, probe measurement system, other instrumentation, and the positioning system was confirmed.

b. WD is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.

c. The WD operation for maximum rated RF output power was configured and confirmed with the base station simulator, at the test channel and other normal operating parameters as intended for the test. The battery was ensured to be fully charged before each test.

d. The center sub-grid was centered over the center of the acoustic output (also audio band magnetic output, if applicable). The WD audio output was positioned tangent (as physically possible) to the measurement plane.

e. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the HAC Phantom.

f. The measurement system measured the field strength at the reference location.

8 CONDUCTED RF OUPUT POWER

8.1 GSM

GSM 850								
GSM850 Band	Burst Average Power(dBm)			Tune-up Limit (dBm)	Frame-Averaged power (dBm)			Tune-up Limit (dBm)
Channel	128	190	251		128	190	251	
GSM (GMSK, 1-Slot)	32.34	32.34	32.39	33.50	23.15	23.15	23.20	24.31
GPRS (GMSK, 1-Slot)	32.28	32.31	32.33	33.50	23.09	23.12	23.14	24.31
GPRS (GMSK, 2-Slots)	30.51	30.53	30.25	31.50	24.38	**24.40**	24.12	25.37
GPRS (GMSK, 3-Slots)	28.42	28.36	28.25	29.50	24.00	23.94	23.83	25.08
GPRS (GMSK, 4-Slots)	27.28	27.23	27.22	28.50	24.10	24.05	24.04	25.32
EGPRS (8PSK, 1-Slot)	26.95	26.73	26.67	27.50	17.76	17.54	17.48	18.31
EGPRS (8PSK, 2-Slots)	24.99	24.94	24.96	26.00	18.86	18.81	18.83	19.87
EGPRS (8PSK, 3-Slots)	23.39	23.27	23.23	24.50	18.97	18.85	18.81	20.08
EGPRS (8PSK, 4-Slots)	21.77	21.65	21.57	22.50	18.59	18.47	18.39	19.32
DTM (GMSK, 2-Slots)	30.20	30.19	29.85	31.00	24.07	24.06	23.72	24.87
DTM (GMSK, 3-Slots)	28.04	28.06	27.95	29.00	23.62	23.64	23.53	24.58
DTM (8PSK, 2-Slots)	28.27	28.18	28.03	29.50	22.14	22.05	21.90	23.37
DTM (8PSK, 3-Slots)	25.47	25.31	25.26	26.50	21.05	20.89	20.84	22.08
GSM 1900								
GSM900 Band	Burst Average Power(dBm)			Tune-up Limit (dBm)	Frame-Averaged power (dBm)			Tune-up Limit (dBm)
Channel	512	661	810		512	661	810	
GSM (GMSK, 1-Slot)	30.19	30.08	29.94	31.00	21.00	20.89	20.75	21.81
GPRS (GMSK, 1-Slot)	30.13	30.02	29.87	31.00	20.94	20.83	20.68	21.81
GPRS (GMSK, 2-Slots)	28.45	28.31	28.06	29.50	**22.32**	22.18	21.93	23.37
GPRS (GMSK, 3-Slots)	26.30	26.23	25.83	27.20	21.88	21.81	21.41	22.78
GPRS (GMSK, 4-Slots)	24.96	24.76	24.54	25.50	21.78	21.58	21.36	22.32
EGPRS (8PSK, 1-Slot)	26.67	26.66	26.22	27.60	17.48	17.47	17.03	18.41
EGPRS (8PSK, 2-Slots)	25.09	25.14	24.43	26.00	18.96	19.01	18.30	19.87
EGPRS (8PSK, 3-Slots)	22.99	22.96	22.52	24.00	18.57	18.54	18.10	19.58
EGPRS (8PSK, 4-Slots)	22.34	21.91	21.80	23.00	19.16	18.73	18.62	19.82
DTM (GMSK, 2-Slots)	27.97	27.97	27.98	29.00	21.84	21.84	21.85	22.87
DTM (GMSK, 3-Slots)	25.97	26.16	26.00	27.20	21.55	21.74	21.58	22.78
DTM (8PSK, 2-Slots)	26.71	26.87	26.81	28.00	20.58	20.74	20.68	21.87
DTM (8PSK, 3-Slots)	24.14	24.22	24.06	25.20	19.72	19.80	19.64	20.78

Note [1]: SAR testing was performed on the maximum frame-averaged power mode.

Note [2]: The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = Burst averaged power (1 Tx Slot) – 9.19 dB

Frame-averaged power = Burst averaged power (2 Tx Slots) – 6.13 dB

Frame-averaged power = Burst averaged power (3 Tx Slots) - 4.42dB

Frame-averaged power = Burst averaged power (4 Tx Slots) – 3.18 dB

8.2 WCDMA

WCDMA	Band 2				Band 4			
Channel	9262	9400	9538	Tune-up Limit (dBm)	1312	1412	1513	Tune-up Limit (dBm)
RMC 12.2Kbps	**23.01**	22.89	22.74	24.00	23.05	**23.37**	23.20	24.30
HSDPA Subtest-1	22.14	21.87	21.69	23.00	21.94	22.38	22.17	23.30
HSDPA Subtest-2	22.16	21.86	21.67	23.00	21.97	22.38	22.19	23.30
HSDPA Subtest-3	21.67	21.38	21.17	22.60	21.47	21.87	21.75	23.00
HSDPA Subtest-4	21.64	21.36	21.18	22.60	21.57	21.85	21.78	23.00
HSUPA Subtest-1	22.17	21.91	21.74	23.20	22.08	22.40	22.19	23.30
HSUPA Subtest-2	20.17	19.94	19.68	21.00	20.05	20.32	20.23	21.30
HSUPA Subtest-3	21.17	20.93	20.67	22.00	20.97	21.39	21.22	22.30
HSUPA Subtest-4	20.12	19.93	19.74	21.00	20.04	20.39	20.22	21.40
HSUPA Subtest-5	22.13	21.85	21.67	23.00	21.97	22.29	22.19	23.00
WCDMA	Band 5				-			
Channel	4132	4182	4233	Tune-up Limit (dBm)	-	-	-	-
RMC 12.2Kbps	22.40	22.39	**22.44**	23.50	-	-	-	-
HSDPA Subtest-1	21.39	21.37	21.41	22.50	-	-	-	-
HSDPA Subtest-2	21.40	21.40	21.41	22.50	-	-	-	-
HSDPA Subtest-3	20.89	20.90	20.91	22.00	-	-	-	-
HSDPA Subtest-4	20.90	20.89	20.94	22.00	-	-	-	-
HSUPA Subtest-1	21.41	21.40	21.41	22.50	-	-	-	-
HSUPA Subtest-2	19.40	19.41	19.40	20.50	-	-	-	-
HSUPA Subtest-3	20.36	20.36	20.41	21.50	-	-	-	-
HSUPA Subtest-4	19.42	19.41	19.40	20.50	-	-	-	-
HSUPA Subtest-5	21.35	21.29	21.32	22.50	-	-	-	-

8.3 CDMA

CDMA	BC0			
Channel	1013	384	777	Tune-up Limit (dBm)
1xRTT RC1 SO55	23.62	23.74	23.56	24.68
1xRTT RC3 SO55	23.57	23.68	23.54	24.68
1xRTT RC3 SO32 (FCH)	23.55	23.64	23.53	24.68
1xRTT RC3 SO32 (SCH)	23.58	23.64	23.53	24.68
1xEVDO Rel.0 RTAP 153.6kbps	23.56	23.64	23.49	24.68
1xEVDO Rel.A RETAP 4096	23.60	23.61	23.55	24.68

8.4 LTE

FDD LTE Band 2									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18700	18900	19100		18700	18900	19100	
20 MHz	1 (RB_Pos:0)	23.14	**23.32**	23.05	24.20	22.61	22.71	22.39	23.20
	1 (RB_Pos:50)	23.04	23.07	22.89	24.20	22.57	22.47	22.30	23.20
	1 (RB_Pos:99)	22.92	22.91	22.62	24.20	22.51	22.27	22.02	23.20
	50 (RB_Pos:0)	22.17	22.13	22.05	23.20	21.23	21.11	21.02	22.20
	50 (RB_Pos:25)	22.10	22.09	22.00	23.20	21.19	21.07	20.95	22.20
	50 (RB_Pos:50)	21.92	21.99	21.83	23.20	21.02	20.95	20.82	22.20
	100 (RB_Pos:0)	22.04	22.00	22.00	23.20	21.17	21.01	20.91	22.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18675	18900	19125		18675	18900	19125	
15 MHz	1 (RB_Pos:0)	23.28	23.34	23.17	24.20	22.61	22.32	22.58	23.20
	1 (RB_Pos:38)	23.02	22.95	22.88	24.20	22.41	21.91	22.28	23.20
	1 (RB_Pos:74)	23.23	23.16	22.94	24.20	22.57	22.11	22.39	23.20
	36 (RB_Pos:0)	22.09	22.10	22.03	23.20	21.19	21.11	21.04	22.20
	36 (RB_Pos:20)	22.08	22.06	21.98	23.20	21.07	21.09	21.01	22.20
	36 (RB_Pos:39)	22.01	22.00	21.88	23.20	21.06	21.01	20.91	22.20
	75 (RB_Pos:0)	22.10	22.08	21.97	23.20	21.09	21.00	20.94	22.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18650	18900	19150		18650	18900	19150	
10 MHz	1 (RB_Pos:0)	23.40	23.21	23.16	24.20	22.42	22.61	22.17	23.20
	1 (RB_Pos:25)	23.25	23.06	22.96	24.20	22.11	22.39	21.98	23.20
	1 (RB_Pos:49)	23.35	23.16	23.01	24.20	22.21	22.58	22.01	23.20
	25 (RB_Pos:0)	22.23	22.03	21.95	23.20	21.25	21.11	21.04	22.20
	25 (RB_Pos:12)	22.19	22.02	21.93	23.20	21.26	21.04	21.02	22.20
	25 (RB_Pos:25)	22.20	22.06	21.93	23.20	21.24	21.07	21.01	22.20
	50 (RB_Pos:0)	22.25	22.06	21.95	23.20	21.25	21.04	20.95	22.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18625	18900	19175		18625	18900	19175	
5 MHz	1 (RB_Pos:0)	23.29	23.24	23.04	24.20	22.52	22.68	22.16	23.20
	1 (RB_Pos:13)	23.23	23.10	22.91	24.20	22.37	22.58	22.05	23.20
	1 (RB_Pos:24)	23.17	23.05	22.85	24.20	22.37	22.57	21.99	23.20
	12 (RB_Pos:0)	22.26	22.08	21.99	23.20	21.40	21.26	21.09	22.20
	12 (RB_Pos:6)	22.22	22.04	21.92	23.20	21.34	21.18	20.98	22.20
	12 (RB_Pos:13)	22.22	21.97	21.92	23.20	21.32	21.14	20.94	22.20

	25 (RB_Pos:0)	22.27	22.10	21.94	23.20	21.29	21.13	20.89	22.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18615	18900	19185		18615	18900	19185	
3.0 MHz	1 (RB_Pos:0)	23.16	23.11	22.98	24.20	22.15	22.50	21.99	23.20
	1 (RB_Pos:8)	23.14	23.08	22.89	24.20	22.01	22.50	21.87	23.20
	1 (RB_Pos:14)	23.10	23.09	22.88	24.20	22.03	22.69	21.88	23.20
	8 (RB_Pos:0)	22.23	22.03	21.91	23.20	21.33	21.14	20.96	22.20
	8 (RB_Pos:3)	22.27	22.03	21.97	23.20	21.37	21.15	20.97	22.20
	8 (RB_Pos:7)	22.22	22.00	21.90	23.20	21.31	21.07	20.93	22.20
	15 (RB_Pos:0)	22.29	22.06	21.92	23.20	21.30	21.06	20.88	22.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18607	18900	19193		18607	18900	19193	
1.4 MHz	1 (RB_Pos:0)	23.19	23.07	22.92	24.20	22.20	22.50	21.82	23.20
	1 (RB_Pos:3)	23.20	23.01	22.96	24.20	22.21	22.42	21.88	23.20
	1 (RB_Pos:5)	23.13	23.02	22.91	24.20	22.24	22.39	21.86	23.20
	3 (RB_Pos:0)	23.15	22.98	22.90	24.20	22.20	22.23	22.00	23.20
	3 (RB_Pos:1)	23.21	23.03	23.04	24.20	22.22	22.22	22.10	23.20
	3 (RB_Pos:3)	23.12	22.95	22.87	24.20	22.19	22.15	22.07	23.20
	6 (RB_Pos:0)	22.19	22.01	21.85	23.20	21.34	20.93	20.98	22.20

FDD LTE Band 4									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20050	20175	20300		20050	20175	20300	
20 MHz	1 (RB_Pos:0)	23.32	23.47	23.37	24.50	22.88	22.90	22.79	23.50
	1 (RB_Pos:50)	23.19	23.39	23.25	24.50	22.72	22.78	22.66	23.50
	1 (RB_Pos:99)	23.47	**23.77**	23.70	24.50	22.99	23.19	23.07	23.50
	50 (RB_Pos:0)	22.23	22.41	22.32	23.50	21.28	21.43	21.30	22.50
	50 (RB_Pos:25)	22.17	22.39	22.40	23.50	21.23	21.36	21.45	22.50
	50 (RB_Pos:50)	22.36	22.52	22.44	23.50	21.41	21.56	21.46	22.50
	100 (RB_Pos:0)	22.34	22.46	22.39	23.50	21.40	21.39	21.38	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20025	20175	20325		20025	20175	20325	
15 MHz	1 (RB_Pos:0)	23.48	23.51	23.50	24.50	22.56	22.98	22.94	23.50
	1 (RB_Pos:38)	23.15	23.26	23.35	24.50	22.11	22.71	22.78	23.50
	1 (RB_Pos:74)	23.58	23.64	23.70	24.50	22.50	23.12	23.06	23.50
	36 (RB_Pos:0)	22.19	22.30	22.27	23.50	21.26	21.35	21.30	22.50

	36 (RB_Pos:20)	22.15	22.32	22.33	23.50	21.18	21.35	21.36	22.50
	36 (RB_Pos:39)	22.23	22.44	22.37	23.50	21.26	21.50	21.39	22.50
	75 (RB_Pos:0)	22.17	22.35	22.38	23.50	21.21	21.32	21.40	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20000	20175	20350		20000	20175	20350	
10 MHz	1 (RB_Pos:0)	23.17	23.29	23.34	24.50	22.28	22.84	22.46	23.50
	1 (RB_Pos:25)	22.89	23.07	23.20	24.50	21.96	22.58	22.31	23.50
	1 (RB_Pos:49)	23.28	23.49	23.52	24.50	22.33	22.91	22.53	23.50
	25 (RB_Pos:0)	22.07	22.19	22.29	23.50	21.09	21.21	21.45	22.50
	25 (RB_Pos:12)	22.09	22.16	22.28	23.50	21.12	21.22	21.40	22.50
	25 (RB_Pos:25)	22.11	22.23	22.40	23.50	21.14	21.22	21.51	22.50
	50 (RB_Pos:0)	22.09	22.20	22.33	23.50	21.09	21.18	21.34	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19975	20175	20375		19975	20175	20375	
5 MHz	1 (RB_Pos:0)	23.04	23.18	23.27	24.50	22.35	22.80	22.50	23.50
	1 (RB_Pos:13)	22.98	23.15	23.36	24.50	22.27	22.65	22.44	23.50
	1 (RB_Pos:24)	22.93	23.16	23.28	24.50	22.23	22.62	22.46	23.50
	12 (RB_Pos:0)	21.99	22.15	22.31	23.50	21.25	21.27	21.42	22.50
	12 (RB_Pos:6)	22.02	22.18	22.34	23.50	21.14	21.28	21.45	22.50
	12 (RB_Pos:13)	22.08	22.12	22.32	23.50	21.13	21.23	21.35	22.50
	25 (RB_Pos:0)	22.05	22.18	22.35	23.50	21.08	21.23	21.35	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19965	20175	20385		19965	20175	20385	
3.0 MHz	1 (RB_Pos:0)	22.97	23.06	23.33	24.50	22.06	22.61	22.48	23.50
	1 (RB_Pos:8)	22.88	23.11	23.27	24.50	21.98	22.49	22.35	23.50
	1 (RB_Pos:14)	22.97	23.09	23.33	24.50	22.02	22.54	22.23	23.50
	8 (RB_Pos:0)	22.06	22.10	22.35	23.50	21.19	21.20	21.40	22.50
	8 (RB_Pos:3)	21.97	22.10	22.33	23.50	21.09	21.22	21.40	22.50
	8 (RB_Pos:7)	21.96	22.09	22.30	23.50	21.10	21.19	21.32	22.50
	15 (RB_Pos:0)	21.98	22.15	22.33	23.50	21.01	21.15	21.32	22.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19957	20175	20393		19957	20175	20393	
1.4 MHz	1 (RB_Pos:0)	22.90	23.03	23.20	24.50	22.10	22.54	22.36	23.50
	1 (RB_Pos:3)	22.94	23.08	23.28	24.50	22.24	22.56	22.34	23.50
	1 (RB_Pos:5)	22.94	23.09	23.26	24.50	22.23	22.47	22.25	23.50
	3 (RB_Pos:0)	22.98	23.07	23.26	24.50	22.09	22.24	22.42	23.50
	3 (RB_Pos:1)	23.04	23.10	23.28	24.50	22.13	22.27	22.49	23.50

	3 (RB_Pos:3)	23.00	23.11	23.31	24.50	22.11	22.30	22.43	23.50
	6 (RB_Pos:0)	22.01	22.06	22.25	23.50	21.23	21.01	21.45	22.50

FDD LTE Band 5									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20450	20525	20600		20450	20525	20600	
10 MHz	1 (RB_Pos:0)	22.52	22.55	22.41	23.50	21.53	22.00	21.44	22.50
	1 (RB_Pos:25)	22.31	22.20	22.39	23.50	21.36	21.66	21.42	22.50
	1 (RB_Pos:49)	22.55	22.71	**22.79**	23.50	21.63	21.97	21.79	22.50
	25 (RB_Pos:0)	21.42	21.25	21.34	22.50	20.40	20.20	20.42	21.50
	25 (RB_Pos:12)	21.37	21.27	21.45	22.50	20.41	20.24	20.52	21.50
	25 (RB_Pos:25)	21.39	21.31	21.53	22.50	20.43	20.23	20.59	21.50
	50 (RB_Pos:0)	21.42	21.18	21.49	22.50	20.41	20.33	20.53	21.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20425	20525	20625		20425	20525	20625	
5 MHz	1 (RB_Pos:0)	22.45	22.40	22.45	23.50	21.62	21.95	21.57	22.50
	1 (RB_Pos:13)	22.47	22.30	22.46	23.50	21.65	21.66	21.58	22.50
	1 (RB_Pos:24)	22.38	22.31	22.44	23.50	21.56	21.82	21.65	22.50
	12 (RB_Pos:0)	21.38	21.32	21.41	22.50	20.51	20.38	20.49	21.50
	12 (RB_Pos:6)	21.41	21.29	21.40	22.50	20.48	20.29	20.48	21.50
	12 (RB_Pos:13)	21.41	21.27	21.43	22.50	20.48	20.29	20.48	21.50
	25 (RB_Pos:0)	21.40	21.26	21.48	22.50	20.44	20.24	20.39	21.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20415	20525	20635		20415	20525	20635	
3.0 MHz	1 (RB_Pos:0)	22.39	22.31	22.47	23.50	21.34	21.60	21.48	22.50
	1 (RB_Pos:8)	22.36	22.23	22.43	23.50	21.37	21.59	21.45	22.50
	1 (RB_Pos:14)	22.38	22.26	22.44	23.50	21.37	21.55	21.42	22.50
	8 (RB_Pos:0)	21.40	21.23	21.42	22.50	20.52	20.31	20.43	21.50
	8 (RB_Pos:3)	21.40	21.15	21.44	22.50	20.50	20.26	20.47	21.50
	8 (RB_Pos:7)	21.38	21.20	21.45	22.50	20.48	20.30	20.46	21.50
	15 (RB_Pos:0)	21.39	21.15	21.43	22.50	20.37	20.17	20.39	21.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20407	20525	20643		20407	20525	20643	
1.4 MHz	1 (RB_Pos:0)	22.35	22.21	22.38	23.50	21.49	21.55	21.45	22.50
	1 (RB_Pos:3)	22.43	22.19	22.51	23.50	21.59	21.49	21.48	22.50
	1 (RB_Pos:5)	22.38	22.10	22.41	23.50	21.46	21.53	21.46	22.50

	3 (RB_Pos:0)	22.36	22.09	22.37	23.50	21.43	21.32	21.62	22.50
	3 (RB_Pos:1)	22.40	22.13	22.48	23.50	21.43	21.33	21.62	22.50
	3 (RB_Pos:3)	22.38	22.10	22.47	23.50	21.41	21.27	21.60	22.50
	6 (RB_Pos:0)	21.33	21.08	21.37	22.50	20.53	20.04	20.56	21.50

FDD LTE Band 7									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20850	21100	21350		20850	21100	21350	
20 MHz	1 (RB_Pos:0)	24.15	**24.28**	23.80	25.20	23.69	23.67	23.18	24.20
	1 (RB_Pos:50)	24.05	24.11	23.67	25.20	23.62	23.64	23.10	24.20
	1 (RB_Pos:99)	24.09	23.93	23.52	25.20	23.56	23.39	22.93	24.20
	50 (RB_Pos:0)	23.30	23.24	22.95	24.20	22.16	22.18	21.86	23.20
	50 (RB_Pos:25)	23.21	23.08	22.83	24.20	22.16	22.08	21.78	23.20
	50 (RB_Pos:50)	23.14	23.05	22.81	24.20	22.13	22.05	21.77	23.20
	100 (RB_Pos:0)	23.14	23.06	22.83	24.20	22.20	22.04	21.83	23.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20825	21100	21375		20825	21100	21375	
15 MHz	1 (RB_Pos:0)	24.22	24.15	23.87	25.20	23.18	23.62	23.27	24.20
	1 (RB_Pos:38)	24.08	23.99	23.85	25.20	23.07	23.53	23.11	24.20
	1 (RB_Pos:74)	24.02	23.88	23.59	25.20	22.98	23.41	22.93	24.20
	36 (RB_Pos:0)	23.40	23.14	22.82	24.20	22.56	22.19	21.85	23.20
	36 (RB_Pos:20)	23.24	23.11	22.84	24.20	22.33	22.12	21.82	23.20
	36 (RB_Pos:39)	23.18	23.06	22.70	24.20	22.22	22.08	21.73	23.20
	75 (RB_Pos:0)	23.26	23.17	22.82	24.20	22.30	22.03	21.83	23.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20800	21100	21400		20800	21100	21400	
10 MHz	1 (RB_Pos:0)	24.44	24.17	23.96	25.20	23.43	23.61	23.03	24.20
	1 (RB_Pos:25)	24.07	23.99	23.74	25.20	23.00	23.36	22.70	24.20
	1 (RB_Pos:49)	24.23	23.96	23.84	25.20	23.20	23.43	22.91	24.20
	25 (RB_Pos:0)	23.07	23.00	22.83	24.20	22.16	22.03	21.95	23.20
	25 (RB_Pos:12)	23.12	22.96	22.79	24.20	22.21	21.95	21.88	23.20
	25 (RB_Pos:25)	23.12	22.92	22.83	24.20	22.19	21.93	21.91	23.20
	50 (RB_Pos:0)	23.17	22.99	22.82	24.20	22.10	21.98	21.86	23.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20775	21100	21425		20775	21100	21425	
5 MHz	1 (RB_Pos:0)	24.21	24.09	23.82	25.20	23.31	23.22	23.31	24.20

	1 (RB_Pos:13)	24.21	23.90	23.72	25.20	23.18	23.11	23.26	24.20
	1 (RB_Pos:24)	24.09	23.96	23.67	25.20	23.23	23.14	23.22	24.20
	12 (RB_Pos:0)	23.19	23.03	22.84	24.20	22.29	22.10	22.01	23.20
	12 (RB_Pos:6)	23.23	22.94	22.83	24.20	22.31	22.04	21.96	23.20
	12 (RB_Pos:13)	23.21	22.95	22.81	24.20	22.42	22.03	22.00	23.20
	25 (RB_Pos:0)	23.18	22.99	22.83	24.20	22.22	21.95	21.92	23.20

TDD LTE Band 38									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37850	38000	38150		37850	38000	38150	
20 MHz	1 (RB_Pos:0)	24.09	23.96	24.01	25.00	23.32	23.21	23.23	24.00
	1 (RB_Pos:50)	23.96	23.80	23.80	25.00	23.22	23.09	22.87	24.00
	1 (RB_Pos:99)	**24.16**	24.08	24.12	25.00	23.46	23.37	23.42	24.00
	50 (RB_Pos:0)	22.86	22.79	22.79	24.00	21.89	21.82	21.82	23.00
	50 (RB_Pos:25)	22.87	22.76	22.73	24.00	21.86	21.78	21.79	23.00
	50 (RB_Pos:50)	22.87	22.91	22.75	24.00	21.85	21.93	21.84	23.00
	100 (RB_Pos:0)	22.95	22.82	22.79	24.00	21.92	21.82	21.77	23.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37825	38000	38175		37825	38000	38175	
15 MHz	1 (RB_Pos:0)	24.15	24.05	24.00	25.00	23.38	23.53	23.36	24.00
	1 (RB_Pos:38)	23.83	23.75	23.70	25.00	23.10	23.14	23.02	24.00
	1 (RB_Pos:74)	24.10	24.21	24.04	25.00	23.39	23.59	23.41	24.00
	36 (RB_Pos:0)	22.81	22.76	22.63	24.00	21.82	21.73	21.73	23.00
	36 (RB_Pos:20)	22.86	22.73	22.66	24.00	21.84	21.72	21.72	23.00
	36 (RB_Pos:39)	22.92	22.83	22.72	24.00	21.91	21.80	21.76	23.00
	75 (RB_Pos:0)	22.88	22.77	22.57	24.00	21.91	21.78	21.72	23.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37800	38000	38200		37800	38000	38200	
10 MHz	1 (RB_Pos:0)	24.09	24.05	24.08	25.00	23.43	23.62	23.48	24.00
	1 (RB_Pos:25)	23.85	23.77	23.69	25.00	23.11	23.20	23.14	24.00
	1 (RB_Pos:49)	24.20	24.11	24.03	25.00	23.50	23.59	23.46	24.00
	25 (RB_Pos:0)	22.86	22.81	22.72	24.00	21.88	21.81	21.82	23.00
	25 (RB_Pos:12)	22.85	22.75	22.69	24.00	21.85	21.78	21.74	23.00
	25 (RB_Pos:25)	22.97	22.81	22.74	24.00	21.91	21.75	21.78	23.00
	50 (RB_Pos:0)	22.93	22.82	22.70	24.00	21.89	21.85	21.78	23.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit	16QAM			Tune up limit
	Channel	37775	38000	38225		37775	38000	38225	

					(dBm)				(dBm)
5 MHz	1 (RB_Pos:0)	23.96	23.93	23.70	25.00	23.29	23.32	22.94	24.00
	1 (RB_Pos:13)	23.92	23.81	23.65	25.00	23.18	23.15	22.84	24.00
	1 (RB_Pos:24)	23.91	23.85	23.61	25.00	23.12	23.18	22.83	24.00
	12 (RB_Pos:0)	22.92	22.87	22.65	24.00	21.94	22.01	21.72	23.00
	12 (RB_Pos:6)	22.82	22.78	22.62	24.00	21.83	21.89	21.73	23.00
	12 (RB_Pos:13)	22.78	22.76	22.66	24.00	21.81	21.87	21.67	23.00
	25 (RB_Pos:0)	22.85	22.72	22.63	24.00	21.90	21.78	21.68	23.00

TDD LTE Band 41									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40140	40640	41140		40140	40640	41140	
20 MHz	1 (RB_Pos:0)	**24.02**	23.90	23.84	24.80	23.24	23.22	23.08	23.80
	1 (RB_Pos:50)	23.84	23.68	23.60	24.80	23.16	23.00	22.76	23.80
	1 (RB_Pos:99)	23.91	23.73	23.63	24.80	23.20	23.06	22.92	23.80
	50 (RB_Pos:0)	22.94	22.72	22.62	23.80	21.93	21.71	21.68	22.80
	50 (RB_Pos:25)	22.86	22.62	22.55	23.80	21.86	21.64	21.61	22.80
	50 (RB_Pos:50)	22.87	22.66	22.52	23.80	21.85	21.65	21.57	22.80
	100 (RB_Pos:0)	22.87	22.65	22.62	23.80	21.87	21.64	21.59	22.80
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40115	40640	41165		40115	40640	41165	
15 MHz	1 (RB_Pos:0)	23.54	23.41	23.31	24.80	22.80	22.90	22.63	23.80
	1 (RB_Pos:38)	23.83	23.62	23.48	24.80	23.12	23.07	22.78	23.80
	1 (RB_Pos:74)	23.08	22.83	22.90	24.80	22.39	22.37	22.09	23.80
	36 (RB_Pos:0)	22.93	22.76	22.53	23.80	21.92	21.73	21.59	22.80
	36 (RB_Pos:20)	22.88	22.64	22.47	23.80	21.86	21.61	21.51	22.80
	36 (RB_Pos:39)	22.50	22.26	22.14	23.80	21.50	21.29	21.17	22.80
	75 (RB_Pos:0)	22.75	22.44	22.35	23.80	21.73	21.44	21.36	22.80
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40090	40640	41190		40090	40640	41190	
10 MHz	1 (RB_Pos:0)	23.84	23.70	23.51	24.80	23.11	23.15	22.96	23.80
	1 (RB_Pos:25)	23.61	23.36	23.23	24.80	22.89	22.82	22.56	23.80
	1 (RB_Pos:49)	23.76	23.66	23.39	24.80	23.05	23.05	22.88	23.80
	25 (RB_Pos:0)	22.67	22.40	22.23	23.80	21.68	21.42	21.25	22.80
	25 (RB_Pos:12)	22.66	22.38	22.19	23.80	21.68	21.38	21.26	22.80
	25 (RB_Pos:25)	22.66	22.47	22.17	23.80	21.65	21.46	21.25	22.80
	50 (RB_Pos:0)	22.66	22.53	22.21	23.80	21.68	21.55	21.26	22.80
Bandwidth	RB Set	Power (dBm)							

(MHz)		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40065	40640	41215		40065	40640	41215	
5 MHz	1 (RB_Pos:0)	23.75	23.44	23.33	24.80	23.10	22.73	22.59	23.80
	1 (RB_Pos:13)	23.69	23.36	23.22	24.80	23.02	22.60	22.47	23.80
	1 (RB_Pos:24)	23.63	23.42	23.10	24.80	23.04	22.67	22.43	23.80
	12 (RB_Pos:0)	22.75	22.41	22.19	23.80	21.84	21.47	21.23	22.80
	12 (RB_Pos:6)	22.70	22.37	22.22	23.80	21.74	21.38	21.26	22.80
	12 (RB_Pos:13)	22.65	22.39	22.15	23.80	21.77	21.43	21.21	22.80
	25 (RB_Pos:0)	22.63	22.44	22.21	23.80	21.67	21.45	21.23	22.80

8.5 WIFI

8.5.1 2.4G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	18.22	19.50	Yes
		6	2437	18.23	19.50	Yes
		11	2462	**18.35**	19.50	Yes
	802.11g	1	2412	17.22	18.00	No
		6	2437	17.38	18.00	No
		11	2462	17.42	18.00	No
	802.11n(HT20)	1	2412	16.01	17.00	No
		6	2437	16.12	17.00	No
		11	2462	16.22	17.00	No

8.5.2 5G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	16.49	17.00	No
		44	5220	16.51	17.00	No
		48	5240	16.48	17.00	No
	802.11n(HT20)	36	5180	16.30	17.00	No
		44	5220	16.32	17.00	No
		48	5240	16.30	17.00	No
	802.11n(HT40)	38	5190	14.22	15.00	No
		46	5230	16.09	17.00	No
	802.11ac(VHT20)	36	5180	15.33	16.00	No
		44	5220	15.36	16.00	No
		48	5240	15.42	16.00	No
	802.11ac(VHT40)	38	5190	15.53	16.00	No
		46	5230	15.63	16.00	No
	802.11ac(VHT80)	42	5210	12.92	14.00	No
5.3 (5.25~5.35)	802.11a	52	5260	16.64	17.00	No
		60	5300	16.79	17.00	No
		64	5320	16.86	17.00	No
	802.11n(HT20)	52	5260	16.57	17.00	No
		60	5300	16.61	17.00	No
		64	5320	13.22	14.00	No
	802.11n(HT40)	54	5270	**16.32**	17.00	Yes
		62	5310	14.70	15.00	Yes
	802.11ac(VHT20)	52	5260	15.51	16.00	No
		60	5300	15.71	16.00	No
		64	5320	13.61	15.00	No
	802.11ac(VHT40)	54	5270	15.63	16.00	No
		62	5310	13.95	15.00	No
	802.11ac(VHT80)	58	5290	14.05	15.00	No
5.6 (5.47~5.725)	802.11a	100	5500	16.53	17.00	No
		116	5580	16.57	17.00	No
		140	5700	16.27	17.00	No
		144	5720	16.20	17.00	No
	802.11n(HT20)	100	5500	16.37	17.00	No
		116	5580	16.34	17.00	No
		140	5700	16.13	17.00	No
		144	5720	16.08	17.00	No
	802.11n(HT40)	102	5510	15.55	16.00	Yes
		118	5590	**16.62**	17.00	Yes

		134	5670	16.40	17.00	Yes
		142	5710	16.20	17.00	Yes
	802.11ac(VHT20)	100	5500	15.74	16.00	No
		116	5580	15.70	16.00	No
		140	5700	15.68	16.00	No
		144	5720	15.60	16.00	No
	802.11ac(VHT40)	102	5510	15.63	16.00	No
		118	5590	15.64	16.00	No
		134	5670	15.43	16.00	No
		142	5710	15.25	16.00	No
	802.11ac(VHT80)	106	5530	14.16	15.00	No
		122	5610	14.63	15.00	No
		138	5690	14.32	15.00	No
5.8 (5.725~5.850)	802.11a	149	5745	16.11	17.00	No
		157	5785	16.31	17.00	No
		165	5825	16.72	17.00	No
	802.11n(HT20)	149	5745	15.93	17.00	No
		157	5785	16.15	17.00	No
		165	5825	16.52	17.00	No
	802.11n(HT40)	151	5755	16.00	17.00	Yes
		159	5795	**16.22**	17.00	Yes
	802.11ac(VHT20)	149	5745	15.01	16.00	No
		157	5785	15.26	16.00	No
		165	5825	15.54	16.00	No
	802.11ac(VHT40)	151	5755	14.95	16.00	No
		159	5795	15.27	16.00	No
	802.11ac(VHT80)	155	5775	14.17	15.00	No

8.6 Bluetooth

Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Conducted Power (dBm)	9.61	9.80	**11.44**	9.09	9.27	11.09
Tune-Up Limit (dBm)	11.00	11.00	12.00	11.00	11.00	12.00
Mode	8-DPSK			BLE		
Channel	0	39	78	0	19	39
Frequency (MHz)	2402	2441	2480	2402	2440	2480
Conducted Power (dBm)	9.27	9.46	11.22	2.09	2.09	5.12
Tune-Up Limit (dBm)	11.00	11.00	12.00	3.00	3.00	6.00

8.7 Power Reduction List

8.7.1 Power Reduced Level 1&2&3&4 of GSM 850

GSM 850								
GSM1900 Band	Burst Average Power(dBm)			Tune-up	Frame-Averaged power(dBm)			Tune-up
Channel	128	190	251	Limit (dBm)	128	190	251	Limit (dBm)
GSM (GMSK, 1-Slot)	26.26	26.26	26.28	27.50	17.07	17.07	17.09	18.31
GPRS (GMSK, 1-Slot)	26.55	26.52	26.55	27.50	17.36	17.33	17.36	18.31
GPRS (GMSK, 2-Slots)	24.28	24.25	24.17	25.50	18.15	18.12	18.04	19.37
GPRS (GMSK, 3-Slots)	22.09	22.07	22.10	23.50	17.67	17.65	17.68	19.08
GPRS (GMSK, 4-Slots)	22.49	22.28	22.36	23.50	**19.31**	19.10	19.18	20.32
EGPRS (8PSK, 1-Slot)	26.79	26.63	26.71	27.50	17.60	17.44	17.52	18.31
EGPRS (8PSK, 2-Slots)	24.56	24.51	24.36	25.50	18.43	18.38	18.23	19.37
EGPRS (8PSK, 3-Slots)	22.33	22.16	22.20	23.50	17.91	17.74	17.78	19.08
EGPRS (8PSK, 4-Slots)	20.69	20.47	20.45	21.50	17.51	17.29	17.27	18.32
DTM (GMSK, 2-Slots)	23.89	23.90	23.82	25.00	17.76	17.77	17.69	18.87
DTM (GMSK, 3-Slots)	21.73	21.65	21.81	23.00	17.31	17.23	17.39	18.58
DTM (8PSK, 2-Slots)	24.14	23.97	24.03	25.00	18.01	17.84	17.90	18.87
DTM (8PSK, 3-Slots)	21.86	21.75	21.84	23.00	17.44	17.33	17.42	18.58

8.7.2 Power Reduced Level 1&2 of GSM 1900

GSM 1900								
GSM1900 Band	Burst Average Power(dBm)			Tune-up	Frame-Averaged power(dBm)			Tune-up
Channel	512	661	810	Limit (dBm)	512	661	810	Limit (dBm)
GSM (GMSK, 1-Slot)	24.48	24.53	24.79	25.50	15.29	15.34	15.60	16.31
GPRS (GMSK, 1-Slot)	24.39	24.45	24.67	25.50	15.20	15.26	15.48	16.31
GPRS (GMSK, 2-Slots)	21.68	21.78	21.97	23.00	15.55	15.65	**15.84**	16.87
GPRS (GMSK, 3-Slots)	17.57	17.55	17.80	18.50	13.15	13.13	13.38	14.08
GPRS (GMSK, 4-Slots)	16.02	16.13	16.22	17.00	12.84	12.95	13.04	13.82
EGPRS (8PSK, 1-Slot)	24.42	24.49	24.67	25.50	15.23	15.30	15.48	16.31
EGPRS (8PSK, 2-Slots)	21.52	21.76	21.87	22.50	15.39	15.63	15.74	16.37
EGPRS (8PSK, 3-Slots)	18.98	18.85	19.17	20.00	14.56	14.43	14.75	15.58
EGPRS (8PSK, 4-Slots)	15.71	15.57	15.90	17.00	12.53	12.39	12.72	13.82
DTM (GMSK, 2-Slots)	21.32	21.42	21.61	22.50	15.19	15.29	15.48	16.37
DTM (GMSK, 3-Slots)	17.24	17.23	17.41	18.50	12.82	12.81	12.99	14.08
DTM (8PSK, 2-Slots)	21.27	21.43	21.69	22.50	15.14	15.30	15.56	16.37
DTM (8PSK, 3-Slots)	18.28	18.04	18.35	19.50	13.86	13.62	13.93	15.08

8.7.3 Power Reduced Level 3 of GSM 1900

GSM 1900								
GSM1900 Band	Burst Average Power(dBm)			Tune-up	Frame-Averaged power(dBm)			Tune-up
Channel	512	661	810	Limit (dBm)	512	661	810	Limit (dBm)
GSM (GMSK, 1-Slot)	27.34	27.30	27.47	28.50	18.15	18.11	18.28	19.31
GPRS (GMSK, 1-Slot)	27.37	27.33	27.50	28.50	18.18	18.14	**18.31**	19.31
GPRS (GMSK, 2-Slots)	21.68	21.78	21.97	23.00	15.55	15.65	15.84	16.87
GPRS (GMSK, 3-Slots)	20.95	21.04	21.23	22.20	16.53	16.62	16.81	17.78
GPRS (GMSK, 4-Slots)	18.88	18.93	18.97	20.00	15.70	15.75	15.79	16.82
EGPRS (8PSK, 1-Slot)	26.08	26.17	26.32	27.10	16.89	16.98	17.13	17.91
EGPRS (8PSK, 2-Slots)	23.19	23.10	23.27	24.00	17.06	16.97	17.14	17.87
EGPRS (8PSK, 3-Slots)	20.77	20.65	20.83	22.00	16.35	16.23	16.41	17.58
EGPRS (8PSK, 4-Slots)	18.93	18.92	19.12	20.00	15.75	15.74	15.94	16.82
DTM (GMSK, 2-Slots)	21.32	21.42	21.61	22.50	15.19	15.29	15.48	16.37
DTM (GMSK, 3-Slots)	17.24	17.23	17.41	18.50	12.82	12.81	12.99	14.08
DTM (8PSK, 2-Slots)	21.27	21.43	21.69	22.50	15.14	15.30	15.56	16.37
DTM (8PSK, 3-Slots)	20.45	20.48	20.65	21.50	16.03	16.06	16.23	17.08

8.7.4 Power Reduced Level 4 of GSM 1900

GSM 1900								
GSM1900 Band	Burst Average Power(dBm)			Tune-up	Frame-Averaged power(dBm)			Tune-up
Channel	512	661	810	Limit (dBm)	512	661	810	Limit (dBm)
GSM (GMSK, 1-Slot)	27.34	27.30	27.47	28.50	18.15	18.11	18.28	19.31
GPRS (GMSK, 1-Slot)	27.37	27.33	27.50	28.50	18.18	18.14	**18.31**	19.31
GPRS (GMSK, 2-Slots)	21.68	21.78	21.97	23.00	15.55	15.65	15.84	16.87
GPRS (GMSK, 3-Slots)	20.95	21.04	21.23	22.20	16.53	16.62	16.81	17.78
GPRS (GMSK, 4-Slots)	19.15	19.18	19.34	20.50	15.97	16.00	16.16	17.32
EGPRS (8PSK, 1-Slot)	25.28	25.28	25.46	26.10	16.09	16.09	16.27	16.91
EGPRS (8PSK, 2-Slots)	21.62	21.51	21.68	23.00	15.49	15.38	15.55	16.87
EGPRS (8PSK, 3-Slots)	20.30	20.30	20.43	21.50	15.88	15.88	16.01	17.08
EGPRS (8PSK, 4-Slots)	19.71	19.84	19.84	21.00	16.53	16.66	16.66	17.82
DTM (GMSK, 2-Slots)	21.32	21.42	21.61	22.50	15.19	15.29	15.48	16.37
DTM (GMSK, 3-Slots)	17.24	17.23	17.41	18.50	12.82	12.81	12.99	14.08
DTM (8PSK, 2-Slots)	20.91	20.88	21.02	22.00	14.78	14.75	14.89	15.87
DTM (8PSK, 3-Slots)	20.03	20.10	20.01	21.00	15.61	15.68	15.59	16.58

8.7.5 Power Reduced Level 1&2 of WCDMA Band 2

WCDMA	Band 2			
Channel	9262	9400	9538	Tune-up Limit (dBm)
RMC 12.2Kbps	**14.08**	14.01	13.78	15.00
HSDPA Subtest-1	13.10	12.99	12.77	14.00
HSDPA Subtest-2	13.12	13.05	12.77	14.00
HSDPA Subtest-3	12.60	12.53	12.26	13.60
HSDPA Subtest-4	12.61	12.51	12.27	13.60
HSUPA Subtest-1	13.00	13.00	12.69	14.20
HSUPA Subtest-2	11.11	11.12	10.85	12.00
HSUPA Subtest-3	12.09	12.09	11.87	13.00
HSUPA Subtest-4	11.23	11.00	10.82	12.00
HSUPA Subtest-5	13.08	13.02	12.79	14.00

8.7.6 Power Reduced Level 3&4 of WCDMA Band 2

WCDMA	Band 2			
Channel	9262	9400	9538	Tune-up Limit (dBm)
RMC 12.2Kbps	**17.09**	17.02	16.84	18.00
HSDPA Subtest-1	16.14	16.07	15.86	17.00
HSDPA Subtest-2	15.84	16.08	15.86	17.00
HSDPA Subtest-3	15.59	15.57	15.34	16.60
HSDPA Subtest-4	15.63	15.55	15.33	16.60
HSUPA Subtest-1	15.93	16.06	15.82	17.20
HSUPA Subtest-2	14.12	14.08	13.78	15.00
HSUPA Subtest-3	15.09	15.09	14.82	16.00
HSUPA Subtest-4	14.12	13.99	13.81	15.00
HSUPA Subtest-5	16.02	16.02	15.86	17.00

8.7.7 Power Reduced Level 1&2 of WCDMA Band 4

WCDMA	Band 4			
Channel	1312	1412	1513	Tune-up Limit (dBm)
RMC 12.2Kbps	13.94	**14.28**	13.98	14.80
HSDPA Subtest-1	12.98	13.23	13.00	13.80
HSDPA Subtest-2	12.97	13.20	12.98	13.80
HSDPA Subtest-3	12.48	12.84	12.49	13.50
HSDPA Subtest-4	12.48	12.80	12.48	13.50
HSUPA Subtest-1	12.87	13.25	13.00	13.80
HSUPA Subtest-2	11.01	11.18	11.00	11.80
HSUPA Subtest-3	11.95	12.23	12.02	12.80
HSUPA Subtest-4	10.96	11.26	10.96	11.90
HSUPA Subtest-5	12.94	13.16	12.94	13.50

8.7.8 Power Reduced Level 3&4 of WCDMA Band 4

WCDMA	Band 4			
Channel	1312	1412	1513	Tune-up Limit (dBm)
RMC 12.2Kbps	15.94	**16.29**	15.94	17.20
HSDPA Subtest-1	14.96	15.27	14.98	15.80
HSDPA Subtest-2	14.96	15.28	14.99	15.80
HSDPA Subtest-3	14.47	14.77	14.50	15.50
HSDPA Subtest-4	14.48	14.83	14.49	15.50
HSUPA Subtest-1	14.94	15.35	14.83	15.80
HSUPA Subtest-2	12.98	13.38	13.02	13.80
HSUPA Subtest-3	13.93	14.37	13.96	14.80
HSUPA Subtest-4	12.91	13.40	13.06	13.90
HSUPA Subtest-5	14.88	15.20	15.06	15.50

8.7.9 Power Reduced Level 2 of WCDMA Band 5

WCDMA	Band 5			
Channel	4132	4182	4233	Tune-up Limit (dBm)
RMC 12.2Kbps	19.31	19.35	**19.45**	20.50
HSDPA Subtest-1	18.54	18.46	18.48	19.50
HSDPA Subtest-2	18.42	18.56	18.50	19.50
HSDPA Subtest-3	17.99	18.02	17.98	19.00
HSDPA Subtest-4	18.00	18.05	17.99	19.00
HSUPA Subtest-1	18.40	18.49	18.46	19.50
HSUPA Subtest-2	16.51	16.43	16.50	17.50
HSUPA Subtest-3	17.44	17.41	17.45	18.50
HSUPA Subtest-4	16.43	16.55	16.49	17.50
HSUPA Subtest-5	18.33	18.32	18.40	19.50

8.7.10 Power Reduced Level 1 of LTE Band 2

FDD LTE Band 2									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18700	18900	19100		18700	18900	19100	
20 MHz	1 (RB_Pos:0)	15.52	**15.56**	15.51	16.20	15.50	15.55	15.37	16.20
	1 (RB_Pos:50)	15.43	15.36	15.31	16.20	15.37	15.39	15.20	16.20
	1 (RB_Pos:99)	15.12	15.22	15.10	16.20	15.05	15.19	14.99	16.20
	50 (RB_Pos:0)	15.44	15.44	15.57	16.20	14.99	14.93	14.99	16.20
	50 (RB_Pos:25)	15.44	15.42	15.42	16.20	14.98	14.92	14.92	16.20
	50 (RB_Pos:50)	15.31	15.35	15.32	16.20	14.84	14.84	14.77	16.20
	100 (RB_Pos:0)	15.31	15.23	15.29	16.20	14.93	14.89	14.87	16.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18675	18900	19125		18675	18900	19125	
15 MHz	1 (RB_Pos:0)	15.39	15.42	15.44	16.20	15.10	15.47	15.62	16.20
	1 (RB_Pos:38)	15.16	15.10	15.12	16.20	14.82	15.14	15.31	16.20
	1 (RB_Pos:74)	15.36	15.31	15.27	16.20	15.08	15.37	15.47	16.20
	36 (RB_Pos:0)	15.22	15.20	15.26	16.20	14.96	14.98	14.93	16.20
	36 (RB_Pos:20)	15.24	15.21	15.24	16.20	14.94	14.98	14.90	16.20
	36 (RB_Pos:39)	15.24	15.19	15.15	16.20	14.89	14.94	14.86	16.20
	75 (RB_Pos:0)	15.16	15.18	15.22	16.20	14.93	14.91	14.89	16.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18650	18900	19150		18650	18900	19150	
10 MHz	1 (RB_Pos:0)	15.48	15.39	15.39	16.20	15.13	15.48	15.13	16.20
	1 (RB_Pos:25)	15.42	15.29	15.29	16.20	14.98	15.36	15.02	16.20
	1 (RB_Pos:49)	15.46	15.43	15.33	16.20	15.14	15.50	15.07	16.20
	25 (RB_Pos:0)	15.38	15.20	15.24	16.20	15.10	15.00	15.05	16.20
	25 (RB_Pos:12)	15.33	15.23	15.26	16.20	15.06	14.99	15.04	16.20
	25 (RB_Pos:25)	15.33	15.26	15.23	16.20	15.08	15.01	15.02	16.20
	50 (RB_Pos:0)	15.38	15.29	15.27	16.20	15.04	14.97	15.02	16.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18625	18900	19175		18625	18900	19175	
5 MHz	1 (RB_Pos:0)	15.57	15.43	15.42	16.20	15.42	15.58	15.25	16.20
	1 (RB_Pos:13)	15.45	15.28	15.25	16.20	15.31	15.48	15.09	16.20
	1 (RB_Pos:24)	15.39	15.29	15.23	16.20	15.27	15.49	15.05	16.20
	12 (RB_Pos:0)	15.43	15.29	15.31	16.20	15.22	15.14	15.13	16.20
	12 (RB_Pos:6)	15.36	15.28	15.29	16.20	15.18	15.12	15.04	16.20
	12 (RB_Pos:13)	15.36	15.22	15.24	16.20	15.13	15.05	15.01	16.20

	25 (RB_Pos:0)	15.39	15.30	15.29	16.20	15.11	15.03	14.98	16.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18615	18900	19185		18615	18900	19185	
3.0 MHz	1 (RB_Pos:0)	15.38	15.33	15.32	16.20	15.20	15.60	15.16	16.20
	1 (RB_Pos:8)	15.39	15.23	15.20	16.20	15.16	15.53	15.16	16.20
	1 (RB_Pos:14)	15.25	15.16	15.18	16.20	15.10	15.56	15.09	16.20
	8 (RB_Pos:0)	15.44	15.28	15.28	16.20	15.39	15.28	15.21	16.20
	8 (RB_Pos:3)	15.41	15.29	15.23	16.20	15.42	15.28	15.18	16.20
	8 (RB_Pos:7)	15.35	15.23	15.19	16.20	15.35	15.20	15.12	16.20
	15 (RB_Pos:0)	15.39	15.25	15.28	16.20	15.29	15.19	15.12	16.20
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18607	18900	19193		18607	18900	19193	
1.4 MHz	1 (RB_Pos:0)	15.34	15.24	15.20	16.20	15.38	15.25	15.55	16.20
	1 (RB_Pos:3)	15.39	15.24	15.26	16.20	15.47	15.37	15.59	16.20
	1 (RB_Pos:5)	15.31	15.21	15.17	16.20	15.30	15.28	15.54	16.20
	3 (RB_Pos:0)	15.35	15.25	15.16	16.20	15.48	15.37	15.45	16.20
	3 (RB_Pos:1)	15.37	15.25	15.26	16.20	15.50	15.31	15.45	16.20
	3 (RB_Pos:3)	15.34	15.19	15.23	16.20	15.46	15.27	15.40	16.20
	6 (RB_Pos:0)	15.30	15.24	15.21	16.20	15.51	15.34	15.09	16.20

8.7.11 Power Reduced Level 2 of LTE Band 2

FDD LTE Band 2									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18700	18900	19100		18700	18900	19100	
20 MHz	1 (RB_Pos:0)	12.30	**12.38**	12.29	13.50	12.52	12.53	12.61	13.50
	1 (RB_Pos:50)	12.22	12.18	12.19	13.50	12.46	12.58	12.53	13.50
	1 (RB_Pos:99)	11.94	12.03	11.94	13.50	12.38	12.48	12.31	13.50
	50 (RB_Pos:0)	12.28	12.30	12.34	13.50	12.30	12.29	12.35	13.50
	50 (RB_Pos:25)	12.10	12.26	12.26	13.50	12.30	12.26	12.26	13.50
	50 (RB_Pos:50)	12.14	12.19	12.13	13.50	12.19	12.21	12.14	13.50
	100 (RB_Pos:0)	12.21	12.19	12.20	13.50	12.27	12.23	12.20	13.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18675	18900	19125		18675	18900	19125	
15 MHz	1 (RB_Pos:0)	12.38	12.48	12.48	13.50	12.33	12.51	12.53	13.50
	1 (RB_Pos:38)	12.14	12.16	12.17	13.50	12.11	12.50	12.60	13.50
	1 (RB_Pos:74)	12.37	12.33	12.31	13.50	12.28	12.50	12.58	13.50

	36 (RB_Pos:0)	12.26	12.25	12.28	13.50	12.27	12.31	12.27	13.50
	36 (RB_Pos:20)	12.28	12.27	12.23	13.50	12.26	12.29	12.21	13.50
	36 (RB_Pos:39)	12.28	12.19	12.21	13.50	12.21	12.24	12.20	13.50
	75 (RB_Pos:0)	12.23	12.27	12.25	13.50	12.25	12.27	12.24	13.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18650	18900	19150		18650	18900	19150	
10 MHz	1 (RB_Pos:0)	12.53	12.42	12.47	13.50	12.44	12.59	12.47	13.50
	1 (RB_Pos:25)	12.39	12.26	12.36	13.50	12.27	12.53	12.37	13.50
	1 (RB_Pos:49)	12.50	12.40	12.36	13.50	12.47	12.52	12.35	13.50
	25 (RB_Pos:0)	12.40	12.27	12.25	13.50	12.41	12.33	12.34	13.50
	25 (RB_Pos:12)	12.37	12.26	12.24	13.50	12.42	12.31	12.33	13.50
	25 (RB_Pos:25)	12.41	12.31	12.25	13.50	12.43	12.35	12.36	13.50
	50 (RB_Pos:0)	12.39	12.28	12.26	13.50	12.40	12.33	12.29	13.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18625	18900	19175		18625	18900	19175	
5 MHz	1 (RB_Pos:0)	12.55	12.45	12.39	13.50	12.52	12.61	12.54	13.50
	1 (RB_Pos:13)	12.45	12.35	12.29	13.50	12.62	12.56	12.38	13.50
	1 (RB_Pos:24)	12.39	12.34	12.25	13.50	12.61	12.61	12.40	13.50
	12 (RB_Pos:0)	12.41	12.37	12.33	13.50	12.52	12.51	12.43	13.50
	12 (RB_Pos:6)	12.40	12.30	12.31	13.50	12.50	12.44	12.37	13.50
	12 (RB_Pos:13)	12.40	12.24	12.28	13.50	12.51	12.41	12.32	13.50
	25 (RB_Pos:0)	12.42	12.36	12.34	13.50	12.46	12.40	12.25	13.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18615	18900	19185		18615	18900	19185	
3.0 MHz	1 (RB_Pos:0)	12.42	12.35	12.32	13.50	12.35	12.58	12.36	13.50
	1 (RB_Pos:8)	12.34	12.30	12.27	13.50	12.29	12.58	12.29	13.50
	1 (RB_Pos:14)	12.30	12.24	12.27	13.50	12.24	12.53	12.25	13.50
	8 (RB_Pos:0)	12.41	12.31	12.30	13.50	12.52	12.39	12.34	13.50
	8 (RB_Pos:3)	12.42	12.30	12.28	13.50	12.48	12.41	12.30	13.50
	8 (RB_Pos:7)	12.35	12.28	12.26	13.50	12.50	12.34	12.28	13.50
	15 (RB_Pos:0)	12.42	12.31	12.30	13.50	12.44	12.29	12.21	13.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18607	18900	19193		18607	18900	19193	
1.4 MHz	1 (RB_Pos:0)	12.31	12.35	12.20	13.50	12.44	12.57	12.14	13.50
	1 (RB_Pos:3)	12.50	12.29	12.25	13.50	12.49	12.63	12.32	13.50
	1 (RB_Pos:5)	12.34	12.24	12.23	13.50	12.45	12.57	12.28	13.50
	3 (RB_Pos:0)	12.38	12.27	12.23	13.50	12.41	12.46	12.41	13.50

	3 (RB_Pos:1)	12.38	12.30	12.30	13.50	12.42	12.43	12.39	13.50
	3 (RB_Pos:3)	12.40	12.27	12.27	13.50	12.42	12.42	12.38	13.50
	6 (RB_Pos:0)	12.36	12.23	12.19	13.50	12.51	12.13	12.39	13.50

8.7.12 Power Reduced Level 3&4 of LTE Band 2

FDD LTE Band 2									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18700	18900	19100		18700	18900	19100	
20 MHz	1 (RB_Pos:0)	18.42	**18.49**	18.41	19.50	18.57	18.61	18.52	19.50
	1 (RB_Pos:50)	18.30	18.30	18.15	19.50	18.41	18.45	18.34	19.50
	1 (RB_Pos:99)	18.02	18.13	18.03	19.50	18.24	18.29	18.14	19.50
	50 (RB_Pos:0)	18.34	18.32	18.39	19.50	18.08	18.02	18.08	19.50
	50 (RB_Pos:25)	18.33	18.30	18.30	19.50	18.09	17.99	17.97	19.50
	50 (RB_Pos:50)	18.21	18.25	18.15	19.50	17.94	17.93	17.85	19.50
	100 (RB_Pos:0)	18.26	18.22	18.26	19.50	18.01	17.96	17.95	19.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18675	18900	19125		18675	18900	19125	
15 MHz	1 (RB_Pos:0)	18.46	18.53	18.56	19.50	18.17	18.59	18.64	19.50
	1 (RB_Pos:38)	18.22	18.21	18.19	19.50	17.86	18.31	18.41	19.50
	1 (RB_Pos:74)	18.46	18.42	18.42	19.50	18.10	18.48	18.59	19.50
	36 (RB_Pos:0)	18.30	18.30	18.30	19.50	18.02	18.06	18.02	19.50
	36 (RB_Pos:20)	18.32	18.30	18.28	19.50	18.01	18.05	17.96	19.50
	36 (RB_Pos:39)	18.30	18.26	18.23	19.50	17.98	18.01	17.94	19.50
	75 (RB_Pos:0)	18.32	18.30	18.30	19.50	18.02	17.99	17.95	19.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18650	18900	19150		18650	18900	19150	
10 MHz	1 (RB_Pos:0)	18.54	18.51	18.51	19.50	18.24	18.56	18.20	19.50
	1 (RB_Pos:25)	18.39	18.37	18.34	19.50	18.04	18.44	18.12	19.50
	1 (RB_Pos:49)	18.52	18.52	18.38	19.50	18.21	18.60	18.12	19.50
	25 (RB_Pos:0)	18.47	18.31	18.34	19.50	18.17	18.08	18.14	19.50
	25 (RB_Pos:12)	18.45	18.31	18.35	19.50	18.17	18.07	18.11	19.50
	25 (RB_Pos:25)	18.45	18.36	18.31	19.50	18.18	18.07	18.11	19.50
	50 (RB_Pos:0)	18.45	18.38	18.36	19.50	18.16	18.06	18.08	19.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18625	18900	19175		18625	18900	19175	
5 MHz	1 (RB_Pos:0)	18.64	18.55	18.48	19.50	18.50	18.63	18.37	19.50

	1 (RB_Pos:13)	18.48	18.41	18.36	19.50	18.38	18.56	18.18	19.50
	1 (RB_Pos:24)	18.47	18.44	18.30	19.50	18.36	18.57	18.18	19.50
	12 (RB_Pos:0)	18.52	18.40	18.42	19.50	18.34	18.25	18.21	19.50
	12 (RB_Pos:6)	18.49	18.35	18.38	19.50	18.29	18.18	18.14	19.50
	12 (RB_Pos:13)	18.47	18.28	18.32	19.50	18.25	18.14	18.08	19.50
	25 (RB_Pos:0)	18.47	18.39	18.39	19.50	18.20	18.14	18.02	19.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18615	18900	19185		18615	18900	19185	
3.0 MHz	1 (RB_Pos:0)	18.43	18.40	18.40	19.50	18.17	18.45	18.15	19.50
	1 (RB_Pos:8)	18.42	18.36	18.32	19.50	18.14	18.43	18.09	19.50
	1 (RB_Pos:14)	18.34	18.40	18.30	19.50	18.15	18.46	18.06	19.50
	8 (RB_Pos:0)	18.48	18.39	18.35	19.50	18.31	18.18	18.04	19.50
	8 (RB_Pos:3)	18.47	18.39	18.34	19.50	18.26	18.15	18.08	19.50
	8 (RB_Pos:7)	18.45	18.29	18.31	19.50	18.28	18.14	18.01	19.50
	15 (RB_Pos:0)	18.46	18.37	18.37	19.50	18.21	18.10	17.95	19.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	18607	18900	19193		18607	18900	19193	
1.4 MHz	1 (RB_Pos:0)	18.36	18.34	18.27	19.50	18.30	18.38	17.98	19.50
	1 (RB_Pos:3)	18.37	18.27	18.31	19.50	18.26	18.52	18.08	19.50
	1 (RB_Pos:5)	18.32	18.27	18.24	19.50	18.29	18.44	18.06	19.50
	3 (RB_Pos:0)	18.45	18.31	18.33	19.50	18.20	18.23	18.19	19.50
	3 (RB_Pos:1)	18.46	18.33	18.37	19.50	18.23	18.23	18.21	19.50
	3 (RB_Pos:3)	18.45	18.32	18.30	19.50	18.18	18.14	18.23	19.50
	6 (RB_Pos:0)	18.42	18.30	18.27	19.50	18.26	17.91	18.17	19.50

8.7.13 Power Reduced Level 1&2 of LTE Band 4

FDD LTE Band 4									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20050	20175	20300		20050	20175	20300	
20 MHz	1 (RB_Pos:0)	13.31	13.47	13.52	14.50	13.64	13.70	13.72	14.50
	1 (RB_Pos:50)	13.32	13.43	13.42	14.50	13.59	13.68	13.58	14.50
	1 (RB_Pos:99)	13.66	**13.81**	13.76	14.50	13.70	13.78	13.71	14.50
	50 (RB_Pos:0)	13.40	13.52	13.49	14.50	13.21	13.33	13.27	14.50
	50 (RB_Pos:25)	13.36	13.47	13.56	14.50	13.16	13.25	13.35	14.50
	50 (RB_Pos:50)	13.48	13.59	13.62	14.50	13.31	13.42	13.39	14.50
	100 (RB_Pos:0)	13.41	13.56	13.54	14.50	13.25	13.34	13.33	14.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up	16QAM			Tune up

	Channel	20025	20175	20325	limit (dBm)	20025	20175	20325	limit (dBm)
15 MHz	1 (RB_Pos:0)	13.56	13.68	13.63	14.50	13.35	13.76	13.73	14.50
	1 (RB_Pos:38)	13.30	13.33	13.48	14.50	13.05	13.52	13.73	14.50
	1 (RB_Pos:74)	13.71	13.72	13.81	14.50	13.51	13.92	13.68	14.50
	36 (RB_Pos:0)	13.35	13.44	13.46	14.50	13.17	13.27	13.22	14.50
	36 (RB_Pos:20)	13.37	13.40	13.52	14.50	13.23	13.24	13.30	14.50
	36 (RB_Pos:39)	13.45	13.52	13.52	14.50	13.31	13.33	13.31	14.50
	75 (RB_Pos:0)	13.45	13.46	13.52	14.50	13.24	13.22	13.36	14.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20000	20175	20350		20000	20175	20350	
10 MHz	1 (RB_Pos:0)	13.46	13.61	13.60	14.50	13.27	13.82	13.42	14.50
	1 (RB_Pos:25)	13.27	13.38	13.41	14.50	13.06	13.56	13.27	14.50
	1 (RB_Pos:49)	13.56	13.68	13.70	14.50	13.35	13.86	13.51	14.50
	25 (RB_Pos:0)	13.28	13.37	13.49	14.50	13.12	13.19	13.40	14.50
	25 (RB_Pos:12)	13.37	13.40	13.44	14.50	13.17	13.27	13.31	14.50
	25 (RB_Pos:25)	13.34	13.45	13.54	14.50	13.19	13.26	13.45	14.50
	50 (RB_Pos:0)	13.40	13.45	13.47	14.50	13.19	13.26	13.29	14.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19975	20175	20375		19975	20175	20375	
5 MHz	1 (RB_Pos:0)	13.46	13.49	13.55	14.50	13.40	13.74	13.45	14.50
	1 (RB_Pos:13)	13.31	13.46	13.47	14.50	13.27	13.71	13.46	14.50
	1 (RB_Pos:24)	13.29	13.39	13.42	14.50	13.29	13.65	13.30	14.50
	12 (RB_Pos:0)	13.30	13.45	13.47	14.50	13.24	13.39	13.33	14.50
	12 (RB_Pos:6)	13.23	13.40	13.49	14.50	13.13	13.34	13.39	14.50
	12 (RB_Pos:13)	13.33	13.35	13.46	14.50	13.21	13.33	13.32	14.50
	25 (RB_Pos:0)	13.25	13.45	13.51	14.50	13.06	13.27	13.30	14.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19965	20175	20385		19965	20175	20385	
3.0 MHz	1 (RB_Pos:0)	13.26	13.43	13.57	14.50	13.03	13.60	13.31	14.50
	1 (RB_Pos:8)	13.27	13.45	13.43	14.50	13.01	13.51	13.23	14.50
	1 (RB_Pos:14)	13.13	13.34	13.46	14.50	13.06	13.48	13.22	14.50
	8 (RB_Pos:0)	13.23	13.39	13.49	14.50	13.13	13.26	13.32	14.50
	8 (RB_Pos:3)	13.28	13.43	13.44	14.50	13.18	13.31	13.31	14.50
	8 (RB_Pos:7)	13.26	13.40	13.44	14.50	13.22	13.27	13.26	14.50
	15 (RB_Pos:0)	13.30	13.39	13.49	14.50	13.09	13.21	13.24	14.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit	16QAM			Tune up limit
	Channel	19957	20175	20393		19957	20175	20393	

					(dBm)				(dBm)
1.4 MHz	1 (RB_Pos:0)	13.23	13.28	13.41	14.50	13.30	13.70	13.37	14.50
	1 (RB_Pos:3)	13.32	13.39	13.42	14.50	13.44	13.72	13.55	14.50
	1 (RB_Pos:5)	13.24	13.33	13.38	14.50	13.29	13.72	13.45	14.50
	3 (RB_Pos:0)	13.26	13.32	13.43	14.50	13.36	13.54	13.60	14.50
	3 (RB_Pos:1)	13.36	13.38	13.49	14.50	13.39	13.55	13.63	14.50
	3 (RB_Pos:3)	13.25	13.36	13.42	14.50	13.23	13.54	13.57	14.50
	6 (RB_Pos:0)	13.26	13.38	13.43	14.50	13.43	13.29	13.60	14.50

8.7.14 Power Reduced Level 3&4 of LTE Band 4

FDD LTE Band 4									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20050	20175	20300		20050	20175	20300	
20 MHz	1 (RB_Pos:0)	17.38	17.46	17.54	18.60	17.77	17.92	17.84	18.60
	1 (RB_Pos:50)	17.36	17.43	17.43	18.60	17.65	17.81	17.74	18.60
	1 (RB_Pos:99)	17.71	**17.87**	17.79	18.60	17.89	17.94	17.90	18.60
	50 (RB_Pos:0)	17.44	17.53	17.48	18.60	17.45	17.54	17.46	18.60
	50 (RB_Pos:25)	17.40	17.46	17.61	18.60	17.41	17.47	17.58	18.60
	50 (RB_Pos:50)	17.51	17.59	17.61	18.60	17.52	17.63	17.60	18.60
	100 (RB_Pos:0)	17.45	17.53	17.59	18.60	17.49	17.53	17.57	18.60
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20025	20175	20325		20025	20175	20325	
15 MHz	1 (RB_Pos:0)	17.57	17.69	17.67	18.60	17.56	17.94	17.91	18.60
	1 (RB_Pos:38)	17.35	17.36	17.47	18.60	17.17	17.66	17.89	18.60
	1 (RB_Pos:74)	17.75	17.78	17.83	18.60	17.57	17.92	17.95	18.60
	36 (RB_Pos:0)	17.36	17.45	17.46	18.60	17.38	17.47	17.43	18.60
	36 (RB_Pos:20)	17.40	17.42	17.54	18.60	17.39	17.51	17.51	18.60
	36 (RB_Pos:39)	17.50	17.54	17.55	18.60	17.48	17.59	17.52	18.60
	75 (RB_Pos:0)	17.45	17.46	17.58	18.60	17.41	17.47	17.57	18.60
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20000	20175	20350		20000	20175	20350	
10 MHz	1 (RB_Pos:0)	17.41	17.55	17.54	18.60	17.39	17.92	17.58	18.60
	1 (RB_Pos:25)	17.23	17.31	17.33	18.60	17.16	17.67	17.36	18.60
	1 (RB_Pos:49)	17.49	17.65	17.63	18.60	17.47	17.63	17.64	18.60
	25 (RB_Pos:0)	17.23	17.29	17.40	18.60	17.22	17.35	17.48	18.60
	25 (RB_Pos:12)	17.30	17.32	17.37	18.60	17.31	17.41	17.46	18.60
	25 (RB_Pos:25)	17.26	17.38	17.47	18.60	17.28	17.38	17.54	18.60
	50 (RB_Pos:0)	17.32	17.37	17.42	18.60	17.26	17.42	17.45	18.60

Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19975	20175	20375		19975	20175	20375	
5 MHz	1 (RB_Pos:0)	17.38	17.46	17.50	18.60	17.52	17.89	17.62	18.60
	1 (RB_Pos:13)	17.22	17.34	17.43	18.60	17.40	17.82	17.54	18.60
	1 (RB_Pos:24)	17.24	17.31	17.35	18.60	17.44	17.79	17.51	18.60
	12 (RB_Pos:0)	17.24	17.38	17.38	18.60	17.34	17.52	17.46	18.60
	12 (RB_Pos:6)	17.19	17.35	17.40	18.60	17.28	17.47	17.46	18.60
	12 (RB_Pos:13)	17.21	17.28	17.38	18.60	17.34	17.45	17.45	18.60
	25 (RB_Pos:0)	17.21	17.38	17.43	18.60	17.21	17.41	17.39	18.60
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19965	20175	20385		19965	20175	20385	
3.0 MHz	1 (RB_Pos:0)	17.19	17.42	17.48	18.60	17.19	17.71	17.47	18.60
	1 (RB_Pos:8)	17.19	17.29	17.35	18.60	17.19	17.66	17.39	18.60
	1 (RB_Pos:14)	17.10	17.30	17.28	18.60	17.17	17.63	17.33	18.60
	8 (RB_Pos:0)	17.17	17.24	17.35	18.60	17.29	17.41	17.39	18.60
	8 (RB_Pos:3)	17.22	17.30	17.39	18.60	17.31	17.44	17.43	18.60
	8 (RB_Pos:7)	17.23	17.31	17.33	18.60	17.31	17.39	17.38	18.60
	15 (RB_Pos:0)	17.18	17.34	17.34	18.60	17.24	17.34	17.33	18.60
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	19957	20175	20393		19957	20175	20393	
1.4 MHz	1 (RB_Pos:0)	17.30	17.27	17.32	18.60	17.30	17.60	17.36	18.60
	1 (RB_Pos:3)	17.37	17.28	17.37	18.60	17.45	17.69	17.46	18.60
	1 (RB_Pos:5)	17.21	17.27	17.26	18.60	17.25	17.61	17.35	18.60
	3 (RB_Pos:0)	17.30	17.26	17.34	18.60	17.26	17.46	17.52	18.60
	3 (RB_Pos:1)	17.40	17.32	17.38	18.60	17.33	17.47	17.56	18.60
	3 (RB_Pos:3)	17.20	17.27	17.34	18.60	17.23	17.46	17.49	18.60
	6 (RB_Pos:0)	17.16	17.26	17.30	18.60	17.32	17.20	17.52	18.60

8.7.15 Power Reduced Level 2 of LTE Band 5

FDD LTE Band 5									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20450	20525	20600		20450	20525	20600	
10 MHz	1 (RB_Pos:0)	**19.09**	19.05	19.08	20.00	19.05	18.90	18.95	20.00
	1 (RB_Pos:25)	19.08	19.05	19.05	20.00	19.06	18.93	19.03	20.00
	1 (RB_Pos:49)	19.01	19.04	19.03	20.00	19.04	19.08	18.95	20.00
	25 (RB_Pos:0)	18.98	19.02	19.01	20.00	19.04	19.02	19.05	20.00

	25 (RB_Pos:12)	18.98	19.02	19.02	20.00	18.97	18.89	18.92	20.00
	25 (RB_Pos:25)	18.99	19.02	19.03	20.00	19.02	18.89	18.91	20.00
	50 (RB_Pos:0)	18.99	19.03	18.98	20.00	18.97	18.95	18.87	20.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20425	20525	20625		20425	20525	20625	
5 MHz	1 (RB_Pos:0)	18.95	18.90	18.96	20.00	19.09	18.92	19.00	20.00
	1 (RB_Pos:13)	18.94	19.09	19.03	20.00	19.09	19.04	19.02	20.00
	1 (RB_Pos:24)	19.00	18.98	18.89	20.00	18.98	18.88	18.96	20.00
	12 (RB_Pos:0)	18.99	19.06	18.92	20.00	19.07	19.01	19.03	20.00
	12 (RB_Pos:6)	18.89	18.91	19.05	20.00	18.82	18.89	18.94	20.00
	12 (RB_Pos:13)	18.91	18.88	19.04	20.00	18.97	18.94	19.07	20.00
	25 (RB_Pos:0)	18.94	18.88	18.86	20.00	18.90	18.89	18.83	20.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20415	20525	20635		20415	20525	20635	
3.0 MHz	1 (RB_Pos:0)	18.97	18.99	19.10	20.00	19.09	19.04	19.13	20.00
	1 (RB_Pos:8)	19.01	18.91	18.92	20.00	19.08	19.09	18.96	20.00
	1 (RB_Pos:14)	18.92	19.02	18.91	20.00	18.91	19.00	19.04	20.00
	8 (RB_Pos:0)	18.93	18.98	19.01	20.00	18.91	18.93	18.94	20.00
	8 (RB_Pos:3)	19.01	18.88	19.06	20.00	18.86	19.03	19.03	20.00
	8 (RB_Pos:7)	18.88	18.91	18.98	20.00	18.87	18.88	18.95	20.00
	15 (RB_Pos:0)	18.90	19.02	19.03	20.00	18.97	18.93	18.88	20.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20407	20525	20643		20407	20525	20643	
1.4 MHz	1 (RB_Pos:0)	19.09	18.99	19.09	20.00	19.07	19.07	19.13	20.00
	1 (RB_Pos:3)	19.11	19.05	19.07	20.00	18.98	19.03	19.07	20.00
	1 (RB_Pos:5)	18.89	18.91	18.91	20.00	18.91	18.93	18.98	20.00
	3 (RB_Pos:0)	18.89	18.99	18.90	20.00	19.05	18.87	18.89	20.00
	3 (RB_Pos:1)	19.00	19.00	18.93	20.00	19.01	18.98	19.05	20.00
	3 (RB_Pos:3)	18.93	19.06	18.97	20.00	19.01	18.94	19.06	20.00
	6 (RB_Pos:0)	18.89	18.96	18.89	20.00	18.81	19.05	18.82	20.00

8.7.16 Power Reduced Level 1 of LTE Band 7

FDD LTE Band 7									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20850	21100	21350		20850	21100	21350	
20 MHz	1 (RB_Pos:0)	**15.43**	**15.43**	15.24	16.70	15.83	15.81	15.66	16.70
	1 (RB_Pos:50)	15.30	15.36	15.16	16.70	15.71	15.80	15.54	16.70
	1 (RB_Pos:99)	15.31	15.30	15.29	16.70	15.73	15.76	15.68	16.70
	50 (RB_Pos:0)	15.37	15.41	15.25	16.70	15.39	15.43	15.28	16.70
	50 (RB_Pos:25)	15.29	15.33	15.17	16.70	15.34	15.37	15.20	16.70
	50 (RB_Pos:50)	15.34	15.35	15.20	16.70	15.37	15.36	15.16	16.70
	100 (RB_Pos:0)	15.30	15.34	15.16	16.70	15.31	15.35	15.20	16.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20825	21100	21375		20825	21100	21375	
15 MHz	1 (RB_Pos:0)	15.53	15.35	15.26	16.70	15.44	15.69	15.74	16.70
	1 (RB_Pos:38)	15.33	15.28	15.17	16.70	15.31	15.68	15.64	16.70
	1 (RB_Pos:74)	15.36	15.26	15.26	16.70	15.25	15.62	15.74	16.70
	36 (RB_Pos:0)	15.45	15.38	15.20	16.70	15.48	15.39	15.17	16.70
	36 (RB_Pos:20)	15.47	15.36	15.22	16.70	15.46	15.42	15.20	16.70
	36 (RB_Pos:39)	15.44	15.35	15.28	16.70	15.49	15.41	15.31	16.70
	75 (RB_Pos:0)	15.44	15.37	15.22	16.70	15.43	15.38	15.23	16.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20800	21100	21400		20800	21100	21400	
10 MHz	1 (RB_Pos:0)	15.58	15.60	15.52	16.70	15.59	15.94	15.60	16.70
	1 (RB_Pos:25)	15.34	15.28	15.31	16.70	15.28	15.64	15.33	16.70
	1 (RB_Pos:49)	15.39	15.35	15.43	16.70	15.37	15.74	15.44	16.70
	25 (RB_Pos:0)	15.41	15.32	15.37	16.70	15.41	15.40	15.45	16.70
	25 (RB_Pos:12)	15.37	15.24	15.33	16.70	15.38	15.26	15.41	16.70
	25 (RB_Pos:25)	15.27	15.25	15.32	16.70	15.34	15.28	15.39	16.70
	50 (RB_Pos:0)	15.46	15.31	15.32	16.70	15.43	15.30	15.37	16.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20775	21100	21425		20775	21100	21425	
5 MHz	1 (RB_Pos:0)	15.46	15.42	15.38	16.70	15.62	15.89	15.52	16.70
	1 (RB_Pos:13)	15.45	15.31	15.34	16.70	15.60	15.78	15.46	16.70
	1 (RB_Pos:24)	15.36	15.27	15.30	16.70	15.55	15.72	15.45	16.70
	12 (RB_Pos:0)	15.38	15.22	15.37	16.70	15.46	15.41	15.41	16.70
	12 (RB_Pos:6)	15.36	15.26	15.33	16.70	15.46	15.39	15.39	16.70
	12 (RB_Pos:13)	15.35	15.26	15.27	16.70	15.43	15.41	15.40	16.70

	25 (RB_Pos:0)	15.38	15.28	15.37	16.70	15.41	15.37	15.31	16.70

8.7.17 Power Reduced Level 2 of LTE Band 7

FDD LTE Band 7									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20850	21100	21350		20850	21100	21350	
20 MHz	1 (RB_Pos:0)	13.40	**13.43**	13.23	14.70	13.87	13.84	13.59	14.70
	1 (RB_Pos:50)	13.40	13.39	13.15	14.70	13.87	13.81	13.52	14.70
	1 (RB_Pos:99)	13.39	13.26	13.29	14.70	13.84	13.73	13.67	14.70
	50 (RB_Pos:0)	13.40	13.41	13.28	14.70	13.43	13.46	13.28	14.70
	50 (RB_Pos:25)	13.40	13.40	13.22	14.70	13.42	13.42	13.19	14.70
	50 (RB_Pos:50)	13.45	13.32	13.18	14.70	13.47	13.37	13.14	14.70
	100 (RB_Pos:0)	13.36	13.34	13.22	14.70	13.39	13.38	13.21	14.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20825	21100	21375		20825	21100	21375	
15 MHz	1 (RB_Pos:0)	13.51	13.36	13.24	14.70	13.49	13.70	13.72	14.70
	1 (RB_Pos:38)	13.42	13.31	13.20	14.70	13.33	13.65	13.65	14.70
	1 (RB_Pos:74)	13.43	13.24	13.27	14.70	13.39	13.62	13.73	14.70
	36 (RB_Pos:0)	13.53	13.40	13.18	14.70	13.54	13.41	13.22	14.70
	36 (RB_Pos:20)	13.52	13.42	13.27	14.70	13.49	13.47	13.24	14.70
	36 (RB_Pos:39)	13.52	13.36	13.35	14.70	13.51	13.40	13.30	14.70
	75 (RB_Pos:0)	13.47	13.39	13.24	14.70	13.47	13.37	13.20	14.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20800	21100	21400		20800	21100	21400	
10 MHz	1 (RB_Pos:0)	13.61	13.58	13.56	14.70	13.61	13.95	13.58	14.70
	1 (RB_Pos:25)	13.37	13.25	13.34	14.70	13.26	13.61	13.35	14.70
	1 (RB_Pos:49)	13.50	13.40	13.42	14.70	13.45	13.76	13.48	14.70
	25 (RB_Pos:0)	13.48	13.35	13.36	14.70	13.47	13.39	13.45	14.70
	25 (RB_Pos:12)	13.38	13.25	13.31	14.70	13.40	13.27	13.38	14.70
	25 (RB_Pos:25)	13.42	13.28	13.33	14.70	13.38	13.28	13.40	14.70
	50 (RB_Pos:0)	13.51	13.32	13.36	14.70	13.44	13.31	13.40	14.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20775	21100	21425		20775	21100	21425	
5 MHz	1 (RB_Pos:0)	13.51	13.41	13.39	14.70	13.70	13.70	13.51	14.70
	1 (RB_Pos:13)	13.43	13.27	13.32	14.70	13.64	13.71	13.41	14.70
	1 (RB_Pos:24)	13.35	13.28	13.31	14.70	13.55	13.72	13.41	14.70

	12 (RB_Pos:0)	13.39	13.28	13.33	14.70	13.49	13.42	13.47	14.70
	12 (RB_Pos:6)	13.41	13.26	13.31	14.70	13.46	13.42	13.37	14.70
	12 (RB_Pos:13)	13.38	13.26	13.33	14.70	13.49	13.41	13.39	14.70
	25 (RB_Pos:0)	13.38	13.29	13.33	14.70	13.41	13.34	13.29	14.70

8.7.18 Power Reduced Level 3&4 of LTE Band 7

FDD LTE Band 7									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20850	21100	21350		20850	21100	21350	
20 MHz	1 (RB_Pos:0)	18.44	**18.50**	18.27	19.70	18.92	18.98	18.71	19.70
	1 (RB_Pos:50)	18.43	18.46	18.15	19.70	18.91	18.89	18.61	19.70
	1 (RB_Pos:99)	18.42	18.32	18.28	19.70	18.90	18.80	18.74	19.70
	50 (RB_Pos:0)	18.23	18.46	18.26	19.70	18.42	18.49	18.32	19.70
	50 (RB_Pos:25)	18.37	18.36	18.18	19.70	18.38	18.39	18.18	19.70
	50 (RB_Pos:50)	18.46	18.38	18.20	19.70	18.45	18.41	18.02	19.70
	100 (RB_Pos:0)	18.32	18.39	18.16	19.70	18.41	18.41	18.12	19.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20825	21100	21375		20825	21100	21375	
15 MHz	1 (RB_Pos:0)	18.51	18.37	18.28	19.70	18.47	18.80	18.77	19.70
	1 (RB_Pos:38)	18.43	18.33	18.13	19.70	18.40	18.74	18.60	19.70
	1 (RB_Pos:74)	18.50	18.31	18.35	19.70	18.44	18.68	18.68	19.70
	36 (RB_Pos:0)	18.51	18.39	18.21	19.70	18.52	18.45	18.14	19.70
	36 (RB_Pos:20)	18.44	18.39	18.23	19.70	18.47	18.44	18.29	19.70
	36 (RB_Pos:39)	18.52	18.37	18.29	19.70	18.52	18.43	18.42	19.70
	75 (RB_Pos:0)	18.54	18.39	18.18	19.70	18.46	18.43	18.43	19.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20800	21100	21400		20800	21100	21400	
10 MHz	1 (RB_Pos:0)	18.65	18.61	18.54	19.70	18.64	18.98	18.60	19.70
	1 (RB_Pos:25)	18.28	18.25	18.31	19.70	18.29	18.69	18.34	19.70
	1 (RB_Pos:49)	18.46	18.42	18.44	19.70	18.49	18.81	18.51	19.70
	25 (RB_Pos:0)	18.47	18.34	18.36	19.70	18.45	18.40	18.45	19.70
	25 (RB_Pos:12)	18.38	18.24	18.29	19.70	18.39	18.31	18.32	19.70
	25 (RB_Pos:25)	18.42	18.29	18.32	19.70	18.39	18.31	18.33	19.70
	50 (RB_Pos:0)	18.52	18.31	18.34	19.70	18.45	18.36	18.39	19.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	20775	21100	21425		20775	21100	21425	

5 MHz	1 (RB_Pos:0)	18.56	18.45	18.42	19.70	18.73	18.91	18.56	19.70
	1 (RB_Pos:13)	18.51	18.33	18.32	19.70	18.61	18.79	18.49	19.70
	1 (RB_Pos:24)	18.40	18.32	18.33	19.70	18.56	18.79	18.39	19.70
	12 (RB_Pos:0)	18.41	18.30	18.31	19.70	18.50	18.47	18.39	19.70
	12 (RB_Pos:6)	18.41	18.25	18.33	19.70	18.50	18.44	18.30	19.70
	12 (RB_Pos:13)	18.39	18.27	18.28	19.70	18.43	18.43	18.55	19.70
	25 (RB_Pos:0)	18.40	18.31	18.29	19.70	18.40	18.37	18.15	19.70

8.7.19 Power Reduced Level 1&2 of LTE Band 38

TDD LTE Band 38									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37850	38000	38150		37850	38000	38150	
20 MHz	1 (RB_Pos:0)	17.26	17.04	17.27	18.50	17.56	17.42	17.54	18.50
	1 (RB_Pos:50)	17.03	16.92	17.27	18.50	17.36	17.25	17.48	18.50
	1 (RB_Pos:99)	17.39	17.36	**17.66**	18.50	17.79	17.71	17.93	18.50
	50 (RB_Pos:0)	17.13	16.96	17.04	18.50	17.07	16.97	17.08	18.50
	50 (RB_Pos:25)	17.03	16.93	17.01	18.50	17.02	16.96	17.08	18.50
	50 (RB_Pos:50)	17.17	17.09	17.25	18.50	17.16	17.12	17.30	18.50
	100 (RB_Pos:0)	17.09	17.00	17.10	18.50	17.10	17.01	17.09	18.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37825	38000	38175		37825	38000	38175	
15 MHz	1 (RB_Pos:0)	17.38	17.35	17.41	18.50	17.72	17.83	17.70	18.50
	1 (RB_Pos:38)	17.05	16.98	17.17	18.50	17.35	17.47	17.45	18.50
	1 (RB_Pos:74)	17.43	17.48	17.61	18.50	17.75	17.90	17.90	18.50
	36 (RB_Pos:0)	17.04	16.95	17.03	18.50	17.07	16.93	17.10	18.50
	36 (RB_Pos:20)	17.06	16.95	17.14	18.50	17.05	16.94	17.15	18.50
	36 (RB_Pos:39)	17.09	17.05	17.19	18.50	17.09	17.06	17.24	18.50
	75 (RB_Pos:0)	17.07	16.94	17.17	18.50	17.09	16.96	17.15	18.50
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37800	38000	38200		37800	38000	38200	
10 MHz	1 (RB_Pos:0)	17.41	17.37	17.45	18.50	17.58	17.85	17.90	18.50
	1 (RB_Pos:25)	17.19	17.05	17.17	18.50	17.30	17.49	17.53	18.50
	1 (RB_Pos:49)	17.52	17.45	17.46	18.50	17.68	17.85	17.89	18.50
	25 (RB_Pos:0)	17.13	17.04	17.12	18.50	17.02	17.01	17.13	18.50
	25 (RB_Pos:12)	17.12	17.01	17.09	18.50	17.04	17.04	17.12	18.50
	25 (RB_Pos:25)	17.05	17.13	17.12	18.50	17.02	17.06	17.14	18.50
	50 (RB_Pos:0)	17.04	17.10	17.11	18.50	17.06	17.11	17.18	18.50
Bandwidth	RB Set	Power (dBm)							

(MHz)		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37775	38000	38225		37775	38000	38225	
5 MHz	1 (RB_Pos:0)	17.18	17.09	17.21	18.50	17.35	17.46	17.52	18.50
	1 (RB_Pos:13)	17.08	17.05	17.14	18.50	17.24	17.35	17.51	18.50
	1 (RB_Pos:24)	17.06	17.12	17.15	18.50	17.18	17.34	17.50	18.50
	12 (RB_Pos:0)	16.89	16.95	17.04	18.50	17.06	17.00	17.18	18.50
	12 (RB_Pos:6)	16.90	16.97	17.02	18.50	17.00	16.99	17.17	18.50
	12 (RB_Pos:13)	16.94	16.96	17.05	18.50	16.93	16.95	17.12	18.50
	25 (RB_Pos:0)	16.92	17.00	17.07	18.50	16.94	17.03	17.08	18.50

8.7.20 Power Reduced Level 3&4 of LTE Band 38

TDD LTE Band 38									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37850	38000	38150		37850	38000	38150	
20 MHz	1 (RB_Pos:0)	19.72	19.58	19.84	21.00	20.06	19.99	20.10	21.00
	1 (RB_Pos:50)	19.53	19.47	19.85	21.00	19.88	19.89	19.98	21.00
	1 (RB_Pos:99)	19.87	19.92	**20.23**	21.00	20.22	20.31	20.41	21.00
	50 (RB_Pos:0)	19.63	19.48	19.58	21.00	19.68	19.52	19.64	21.00
	50 (RB_Pos:25)	19.49	19.52	19.61	21.00	19.51	19.53	19.65	21.00
	50 (RB_Pos:50)	19.64	19.66	19.85	21.00	19.65	19.66	19.85	21.00
	100 (RB_Pos:0)	19.57	19.56	19.71	21.00	19.66	19.55	19.68	21.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37825	38000	38175		37825	38000	38175	
15 MHz	1 (RB_Pos:0)	19.88	19.89	19.95	21.00	20.19	20.32	20.35	21.00
	1 (RB_Pos:38)	19.48	19.53	19.73	21.00	19.86	19.98	20.12	21.00
	1 (RB_Pos:74)	19.89	19.96	20.21	21.00	20.22	20.41	20.16	21.00
	36 (RB_Pos:0)	19.49	19.50	19.66	21.00	19.52	19.49	19.68	21.00
	36 (RB_Pos:20)	19.50	19.46	19.69	21.00	19.49	19.49	19.74	21.00
	36 (RB_Pos:39)	19.56	19.67	19.78	21.00	19.58	19.61	19.81	21.00
	75 (RB_Pos:0)	19.55	19.54	19.71	21.00	19.56	19.53	19.74	21.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37800	38000	38200		37800	38000	38200	
10 MHz	1 (RB_Pos:0)	20.03	19.92	20.08	21.00	20.30	20.33	20.43	21.00
	1 (RB_Pos:25)	19.74	19.64	19.73	21.00	20.03	19.98	20.18	21.00
	1 (RB_Pos:49)	20.12	20.05	20.05	21.00	20.35	20.37	20.31	21.00
	25 (RB_Pos:0)	19.67	19.60	19.70	21.00	19.65	19.59	19.70	21.00
	25 (RB_Pos:12)	19.67	19.60	19.65	21.00	19.69	19.63	19.69	21.00

	25 (RB_Pos:25)	19.73	19.68	19.73	21.00	19.73	19.67	19.71	21.00
	50 (RB_Pos:0)	19.72	19.66	19.64	21.00	19.69	19.65	19.73	21.00
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	37775	38000	38225		37775	38000	38225	
5 MHz	1 (RB_Pos:0)	19.77	19.66	19.79	21.00	20.01	20.10	20.22	21.00
	1 (RB_Pos:13)	19.74	19.80	19.74	21.00	19.99	19.94	20.10	21.00
	1 (RB_Pos:24)	19.71	19.65	19.79	21.00	19.94	19.96	20.01	21.00
	12 (RB_Pos:0)	19.67	19.57	19.66	21.00	19.71	19.58	19.76	21.00
	12 (RB_Pos:6)	19.62	19.60	19.63	21.00	19.67	19.59	19.77	21.00
	12 (RB_Pos:13)	19.68	19.51	19.60	21.00	19.69	19.55	19.74	21.00
	25 (RB_Pos:0)	19.65	19.61	19.65	21.00	19.68	19.63	19.68	21.00

8.7.21 Power Reduced Level 1&2 of LTE Band 41

TDD LTE Band 41									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40140	40640	41140		40140	40640	41140	
20 MHz	1 (RB_Pos:0)	17.35	17.49	**17.79**	18.70	17.66	17.79	18.07	18.70
	1 (RB_Pos:50)	17.30	17.39	17.72	18.70	17.60	17.71	17.98	18.70
	1 (RB_Pos:99)	17.38	17.37	17.75	18.70	17.74	17.70	18.06	18.70
	50 (RB_Pos:0)	17.27	17.33	17.64	18.70	17.26	17.37	17.68	18.70
	50 (RB_Pos:25)	17.26	17.37	17.58	18.70	17.23	17.42	17.62	18.70
	50 (RB_Pos:50)	17.26	17.35	17.57	18.70	17.24	17.32	17.59	18.70
	100 (RB_Pos:0)	17.29	17.39	17.61	18.70	17.28	17.39	17.61	18.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40115	40640	41165		40115	40640	41165	
15 MHz	1 (RB_Pos:0)	16.92	17.15	17.33	18.70	17.19	17.59	17.60	18.70
	1 (RB_Pos:38)	17.16	17.30	17.59	18.70	17.47	17.78	17.88	18.70
	1 (RB_Pos:74)	16.46	16.55	16.79	18.70	16.76	17.02	17.08	18.70
	36 (RB_Pos:0)	17.20	17.35	17.58	18.70	17.18	17.37	17.59	18.70
	36 (RB_Pos:20)	17.19	17.35	17.55	18.70	17.16	17.35	17.58	18.70
	36 (RB_Pos:39)	16.86	16.90	17.20	18.70	16.83	16.90	17.20	18.70
	75 (RB_Pos:0)	17.01	17.17	17.42	18.70	17.03	17.19	17.42	18.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40090	40640	41190		40090	40640	41190	
10 MHz	1 (RB_Pos:0)	17.31	17.52	17.71	18.70	17.62	17.79	18.06	18.70
	1 (RB_Pos:25)	17.09	17.32	17.44	18.70	17.42	17.70	17.74	18.70

	1 (RB_Pos:49)	17.33	17.50	17.61	18.70	17.61	17.73	18.04	18.70
	25 (RB_Pos:0)	17.10	17.27	17.45	18.70	17.10	17.25	17.46	18.70
	25 (RB_Pos:12)	17.04	17.28	17.37	18.70	17.04	17.25	17.41	18.70
	25 (RB_Pos:25)	17.10	17.22	17.40	18.70	17.14	17.17	17.40	18.70
	50 (RB_Pos:0)	17.10	17.29	17.39	18.70	17.07	17.32	17.45	18.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40065	40640	41215		40065	40640	41215	
5 MHz	1 (RB_Pos:0)	17.27	17.34	17.42	18.70	17.48	17.74	17.70	18.70
	1 (RB_Pos:13)	17.13	17.22	17.46	18.70	17.40	17.61	17.59	18.70
	1 (RB_Pos:24)	17.19	17.22	17.42	18.70	17.40	17.56	17.58	18.70
	12 (RB_Pos:0)	17.10	17.18	17.34	18.70	17.08	17.27	17.41	18.70
	12 (RB_Pos:6)	17.05	17.18	17.35	18.70	17.08	17.33	17.39	18.70
	12 (RB_Pos:13)	17.02	17.13	17.49	18.70	17.02	17.27	17.38	18.70
	25 (RB_Pos:0)	17.06	17.23	17.45	18.70	17.11	17.27	17.36	18.70

8.7.22 Power Reduced Level 3&4 of LTE Band 41

TDD LTE Band 41									
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40140	40640	41140		40140	40640	41140	
20 MHz	1 (RB_Pos:0)	19.40	19.52	**19.78**	20.70	19.78	19.89	20.03	20.70
	1 (RB_Pos:50)	19.36	19.43	19.71	20.70	19.68	19.75	19.94	20.70
	1 (RB_Pos:99)	19.44	19.44	19.74	20.70	19.82	19.76	20.04	20.70
	50 (RB_Pos:0)	19.34	19.38	19.64	20.70	19.32	19.42	19.70	20.70
	50 (RB_Pos:25)	19.32	19.44	19.60	20.70	19.33	19.45	19.63	20.70
	50 (RB_Pos:50)	19.31	19.35	19.58	20.70	19.31	19.37	19.65	20.70
	100 (RB_Pos:0)	19.33	19.42	19.62	20.70	19.35	19.42	19.62	20.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40115	40640	41165		40115	40640	41165	
15 MHz	1 (RB_Pos:0)	18.99	19.14	19.38	20.70	19.25	19.54	19.70	20.70
	1 (RB_Pos:38)	19.27	19.36	19.62	20.70	19.43	19.82	19.91	20.70
	1 (RB_Pos:74)	18.56	18.61	18.90	20.70	18.83	19.09	19.15	20.70
	36 (RB_Pos:0)	19.25	19.45	19.63	20.70	19.18	19.44	19.66	20.70
	36 (RB_Pos:20)	19.23	19.43	19.62	20.70	19.22	19.42	19.64	20.70
	36 (RB_Pos:39)	18.91	18.98	19.22	20.70	18.93	18.95	19.26	20.70
	75 (RB_Pos:0)	19.11	19.23	19.43	20.70	19.11	19.22	19.46	20.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit	16QAM			Tune up limit
	Channel	40090	40640	41190		40090	40640	41190	

					(dBm)				(dBm)
10 MHz	1 (RB_Pos:0)	19.37	19.49	19.75	20.70	19.58	19.95	20.20	20.70
	1 (RB_Pos:25)	19.05	19.33	19.46	20.70	19.44	19.66	19.84	20.70
	1 (RB_Pos:49)	19.45	19.56	19.62	20.70	19.61	19.79	20.10	20.70
	25 (RB_Pos:0)	19.06	19.28	19.43	20.70	19.01	19.31	19.49	20.70
	25 (RB_Pos:12)	19.04	19.27	19.42	20.70	19.02	19.32	19.45	20.70
	25 (RB_Pos:25)	19.08	19.15	19.40	20.70	19.03	19.24	19.42	20.70
	50 (RB_Pos:0)	19.07	19.22	19.42	20.70	18.99	19.32	19.46	20.70
Bandwidth (MHz)	RB Set	Power (dBm)							
		QPSK			Tune up limit (dBm)	16QAM			Tune up limit (dBm)
	Channel	40065	40640	41215		40065	40640	41215	
5 MHz	1 (RB_Pos:0)	19.25	19.26	19.51	20.70	19.35	19.62	19.89	20.70
	1 (RB_Pos:13)	19.20	19.26	19.43	20.70	19.33	19.59	19.83	20.70
	1 (RB_Pos:24)	19.16	19.26	19.40	20.70	19.15	19.43	19.78	20.70
	12 (RB_Pos:0)	19.15	19.11	19.45	20.70	19.13	19.19	19.55	20.70
	12 (RB_Pos:6)	19.06	19.17	19.33	20.70	19.07	19.15	19.54	20.70
	12 (RB_Pos:13)	19.05	19.07	19.32	20.70	19.03	19.14	19.47	20.70
	25 (RB_Pos:0)	18.98	19.21	19.41	20.70	19.03	19.20	19.42	20.70

8.7.23 Power Reduced Level 1 of 2.4G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	**15.79**	17.00	Yes
		6	2437	15.72	17.00	Yes
		11	2462	**15.79**	17.00	Yes
	802.11g	1	2412	14.61	15.50	No
		6	2437	14.77	15.50	No
		11	2462	14.98	15.50	No
	802.11n(HT20)	1	2412	13.51	14.50	No
		6	2437	13.72	14.50	No
		11	2462	13.58	14.50	No

8.7.24 Power Reduced Level 2&3 of 2.4G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	13.50	15.00	Yes
		6	2437	13.39	15.00	Yes
		11	2462	**13.52**	15.00	Yes
	802.11g	1	2412	12.59	13.50	No
		6	2437	12.63	13.50	No
		11	2462	12.81	13.50	No
	802.11n(HT20)	1	2412	11.58	12.50	No
		6	2437	11.69	12.50	No
		11	2462	11.60	12.50	No

8.7.25 Power Reduced Level 1 of 5G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	11.42	12.50	No
		44	5220	11.38	12.50	No
		48	5240	11.37	12.50	No
	802.11n(HT20)	36	5180	11.27	12.50	No
		44	5220	11.37	12.50	No
		48	5240	11.27	12.50	No
	802.11n(HT40)	38	5190	11.48	12.50	No
		46	5230	11.51	12.50	No
	802.11ac(VHT20)	36	5180	10.84	11.50	No
		44	5220	10.94	11.50	No
		48	5240	10.96	11.50	No
	802.11ac(VHT40)	38	5190	10.92	11.50	No
		46	5230	11.15	11.50	No
	802.11ac(VHT80)	42	5210	9.25	10.50	No
5.3 (5.25~5.35)	802.11a	52	5260	11.57	12.50	No
		60	5300	11.65	12.50	No
		64	5320	11.79	12.50	No
	802.11n(HT20)	52	5260	11.71	12.50	No
		60	5300	11.73	12.50	No
		64	5320	11.58	12.50	No
	802.11n(HT40)	54	5270	11.60	12.50	Yes
		62	5310	**11.79**	12.50	Yes
	802.11ac(VHT20)	52	5260	10.99	11.50	No
		60	5300	11.12	11.50	No
		64	5320	11.31	11.50	No
	802.11ac(VHT40)	54	5270	11.17	11.50	No
		62	5310	11.21	11.50	No
	802.11ac(VHT80)	58	5290	9.42	10.50	No
5.6 (5.47~5.725)	802.11a	100	5500	12.03	12.50	No
		116	5580	12.12	12.50	No
		140	5700	11.85	12.50	No
		144	5720	11.75	12.50	No
	802.11n(HT20)	100	5500	11.95	12.50	No
		116	5580	11.92	12.50	No
		140	5700	11.60	12.50	No
		144	5720	11.45	12.50	No
	802.11n(HT40)	102	5510	11.92	12.50	Yes
		118	5590	**12.16**	12.50	Yes

		134	5670	12.11	12.50	Yes
		142	5710	11.98	12.50	Yes
	802.11ac(VHT20)	100	5500	11.17	11.50	No
		116	5580	11.18	11.50	No
		140	5700	11.09	11.50	No
		144	5720	11.11	11.50	No
	802.11ac(VHT40)	102	5510	11.10	11.50	No
		118	5590	11.06	11.50	No
		134	5670	10.93	11.50	No
		142	5710	10.73	11.50	No
	802.11ac(VHT80)	106	5530	10.13	10.50	No
		122	5610	10.12	10.50	No
		138	5690	9.73	10.50	No
5.8 (5.725~5.850)	802.11a	149	5745	11.65	12.50	No
		157	5785	11.89	12.50	No
		165	5825	11.71	12.50	No
	802.11n(HT20)	149	5745	11.40	12.50	No
		157	5785	11.73	12.50	No
		165	5825	11.89	12.50	No
	802.11n(HT40)	151	5755	11.30	12.50	Yes
		159	5795	**11.66**	12.50	Yes
	802.11ac(VHT20)	149	5745	10.62	11.50	No
		157	5785	10.71	11.50	No
		165	5825	11.16	11.50	No
	802.11ac(VHT40)	151	5755	10.40	11.50	No
		159	5795	10.87	11.50	No
	802.11ac(VHT80)	155	5775	9.58	10.50	No

8.7.26 Power Reduced Level 2&3 of 5G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	8.46	9.50	No
		44	5220	8.43	9.50	No
		48	5240	8.33	9.50	No
	802.11n(HT20)	36	5180	8.23	9.50	No
		44	5220	8.43	9.50	No
		48	5240	8.24	9.50	No
	802.11n(HT40)	38	5190	8.49	9.50	Yes
		46	5230	**8.56**	9.50	Yes
	802.11ac(VHT20)	36	5180	7.88	8.50	No
		44	5220	7.93	8.50	No
		48	5240	8.00	8.50	No
	802.11ac(VHT40)	38	5190	7.89	8.50	No
		46	5230	8.10	8.50	No
	802.11ac(VHT80)	42	5210	6.24	7.50	No
5.3 (5.25~5.35)	802.11a	52	5260	8.54	9.50	No
		60	5300	8.62	9.50	No
		64	5320	8.77	9.50	No
	802.11n(HT20)	52	5260	8.67	9.50	No
		60	5300	8.66	9.50	No
		64	5320	8.61	9.50	No
	802.11n(HT40)	54	5270	8.60	9.50	Yes
		62	5310	**8.80**	9.50	Yes
	802.11ac(VHT20)	52	5260	8.01	8.50	No
		60	5300	8.15	8.50	No
		64	5320	8.28	8.50	No
	802.11ac(VHT40)	54	5270	8.19	8.50	No
		62	5310	8.15	8.50	No
	802.11ac(VHT80)	58	5290	6.36	7.50	No
5.6 (5.47~5.725)	802.11a	100	5500	9.07	9.50	No
		116	5580	9.15	9.50	No
		140	5700	8.88	9.50	No
		144	5720	8.79	9.50	No
	802.11n(HT20)	100	5500	8.91	9.50	No
		116	5580	8.94	9.50	No
		140	5700	8.53	9.50	No
		144	5720	8.42	9.50	No
	802.11n(HT40)	102	5510	8.92	9.50	Yes
		118	5590	**9.19**	9.50	Yes

		134	5670	9.14	9.50	Yes
		142	5710	8.93	9.50	Yes
	802.11ac(VHT20)	100	5500	8.22	8.50	No
		116	5580	8.21	8.50	No
		140	5700	8.06	8.50	No
		144	5720	8.16	8.50	No
	802.11ac(VHT40)	102	5510	8.10	8.50	No
		118	5590	8.09	8.50	No
		134	5670	7.87	8.50	No
		142	5710	7.68	8.50	No
	802.11ac(VHT80)	106	5530	7.14	7.50	No
		122	5610	7.13	7.50	No
		138	5690	6.78	7.50	No
5.8 (5.725~5.850)	802.11a	149	5745	8.60	9.50	No
		157	5785	8.91	9.50	No
		165	5825	8.67	9.50	No
	802.11n(HT20)	149	5745	8.43	9.50	No
		157	5785	8.72	9.50	No
		165	5825	8.95	9.50	No
	802.11n(HT40)	151	5755	8.29	9.50	Yes
		159	5795	**8.62**	9.50	Yes
	802.11ac(VHT20)	149	5745	7.62	8.50	No
		157	5785	7.74	8.50	No
		165	5825	8.20	8.50	No
	802.11ac(VHT40)	151	5755	7.40	8.50	No
		159	5795	7.84	8.50	No
	802.11ac(VHT80)	155	5775	6.59	7.50	No

9 LOW-POWER EXEMPTION

9.1 Tune-up Power

Mode	Antenna	Tune-up Limit power(dBm)
GSM 850	UAT	27.50
	DAT	33.50
EGPRS 850	UAT	27.50
	DAT	27.50
GSM 1900	UAT	25.50
	DAT	31.00
EGPRS 1900	UAT	25.50
	DAT	27.60
WCDMA Band2	UAT	15.00
	DAT	24.00
WCDMABand2 HSPA	UAT	14.00
	DAT	23.00
WCDMA Band4	UAT	14.80
	DAT	24.30
WCDMABand4 HSPA	UAT	13.80
	DAT	23.30
WCDMA Band5	UAT	23.50
	DAT	23.50
WCDMABand5 HSPA	UAT	22.50
	DAT	22.50
CDMA BC0 Full Frame Rate	UAT	24.68
	DAT	24.68
CDMA BC0 1/8th Frame Rate	UAT	24.68
	DAT	24.68
1XEvDo	UAT	24.68
	DAT	24.68
LTE Band2	UAT	16.20
	DAT	24.20
LTE Band4	UAT	14.50
	DAT	24.50
LTE Band5	UAT	23.50
	DAT	23.50

LTE Band7	UAT	16.70
	DAT	25.20
LTE Band38	UAT	18.50
	DAT	25.00
LTE Band41	UAT	18.70
	DAT	24.80

Mode	Tune-up Power (dBm)
2.4G WLAN 802.11b	17.00
2.4G WLAN 802.11g	15.50
2.4G WLAN 802.11n20	14.50
5G WLAN 802.11a	12.50
5G WLAN 802.11n20	12.5
5G WLAN 802.11n40	12.50
5G WLAN 802.11ac20	11.50
5G WLAN 802.11ac40	11.50
5G WLAN 802.11ac80	10.50
Note: According to ANSI C63.19 2011, for 2.4GHz or 5GHz WLAN RF emissions testing exemption shall be applied to an RF air interface technology in a device whose peak antenna input power, averaged over intervals ≤50 μs20, is ≤23 dBm.	

9.2 RF Emissions Lower Power Exemption

Mode	Antenna	Tune-up Limit power(dBm)	MIF	Power + MIF(dB)	C63.19 Test Required?
GSM 850	UAT	27.50	3.63	31.13	Yes
	DAT	33.50	3.63	37.13	Yes
EGPRS 850	UAT	27.50	3.75	31.25	Yes
	DAT	27.50	3.75	31.25	Yes
GSM 1900	UAT	25.50	3.63	29.13	Yes
	DAT	31.00	3.63	34.63	Yes
EGPRS 1900	UAT	25.50	3.75	29.25	Yes
	DAT	27.60	3.75	31.35	Yes
WCDMA Band2	UAT	15.00	-25.43	-10.43	No
	DAT	24.00	-25.43	-1.43	No
WCDMABand2 HSPA	UAT	14.00	-20.39	-6.39	No
	DAT	23.00	-20.39	2.61	No
WCDMA Band4	UAT	14.80	-25.43	-10.63	No
	DAT	24.30	-25.43	-1.13	No
WCDMABand4 HSPA	UAT	13.80	-20.39	-6.59	No
	DAT	23.30	-20.39	2.91	No
WCDMA Band5	UAT	23.50	-25.43	-1.93	No
	DAT	23.50	-25.43	-1.93	No
WCDMABand5 HSPA	UAT	22.50	-20.39	2.11	No
	DAT	22.50	-20.39	2.11	No
CDMA BC0 Full Frame Rate	UAT	24.68	-19.71	4.97	No
	DAT	24.68	-19.71	4.97	No
CDMA BC0 1/8th Frame Rate	UAT	24.68	3.26	27.94	Yes
	DAT	24.68	3.26	27.94	Yes
1XEvDo	UAT	24.68	-17.67	7.01	No
	DAT	24.68	-17.67	7.01	No
LTE Band2	UAT	16.20	-9.76	6.44	No
	DAT	24.20	-9.76	14.44	No
LTE Band4	UAT	14.50	-9.76	4.74	No
	DAT	24.50	-9.76	14.74	No
LTE Band5	UAT	23.50	-9.76	13.74	No
	DAT	23.50	-9.76	13.74	No
LTE Band7	UAT	16.70	-9.76	6.94	No

	DAT	25.20	-9.76	15.44	No
LTE Band38	UAT	18.50	-1.62	16.88	No
	DAT	25.00	-1.62	23.38	Yes
LTE Band41	UAT	18.70	-1.62	17.08	Yes
	DAT	24.80	-1.62	23.18	Yes

Note1：According to ANSI C63.19 2011-version, for the air interface technology of a device is exempt from testing when its average antenna input power plus its MIF is ≤17 dBm for any of its operating modes.

Note2：EGPRS data modes is not necessary due the GSM Voice mode is the worst case.

Note3：HAC RF rating is M4 for the air interface which meets the low power exemption.

10 HAC RF Emission Test Results

10.1 E-Filled Emission Test Results

Band	Mode	Antenna	Ch.	Freq. (MHz)	Peak E-Field dB (V/m)	M-Rating	Meas. No.
GSM 850	Voice	UAT	128	824.20	32.87	M4	1#
			190	836.60	33.14	M4	2#
			251	848.80	33.79	M4	3#
GSM 850	Voice	DAT	128	824.20	31.80	M4	4#
			190	836.60	31.91	M4	5#
			251	848.80	34.50	M4	6#
GSM 1900	Voice	UAT	512	1850.20	31.49	M3	7#
			661	1880.00	30.89	M3	8#
			810	1909.80	30.65	M3	9#
GSM 1900	Voice	DAT	512	1850.20	22.82	M4	10#
			661	1880.00	23.24	M4	11#
			810	1909.80	22.69	M4	12#
CDMA BC0	1xRTT, RC1 SO3	UAT	1013	824.70	14.42	M4	13#
			384	836.52	14.88	M4	14#
			777	848.31	15.36	M4	15#
CDMA BC0	1xRTT, RC1 SO3	DAT	1013	824.70	9.97	M4	16#
			384	836.52	9.90	M4	17#
			777	848.31	10.15	M4	18#
LTE Band 38	QPSK	DAT	37850	2580.00	19.49	M4	19#
			38000	2595.00	19.84	M4	20#
			38150	2610.00	19.74	M4	21#
LTE Band 41	QPSK	UAT	40140	2545.00	20.27	M4	22#
			40640	2595.00	19.66	M4	23#
			41140	2645.00	18.82	M4	24#
LTE Band 41	QPSK	DAT	40140	2545.00	18.15	M4	25#
			40640	2595.00	19.97	M4	26#
			41140	2645.00	18.66	M4	27#

11 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
800-950MHz Dipole	SATIMO	SIDB835	SN 18/12 DHA41	2020/10/15	2021/11/14
1700-2000MHz Dipole	SATIMO	SIDB1900	SN 18/12 DHB46	2020/10/15	2021/11/14
2100-2600MHZ Dipole	SATIMO	SIDB2450	SN 18/12 DHB48	2020/10/15	2021/11/14
E-Field Probe	SATIMO	SCE	SN 24/13 EPH41	2020/10/15	2021/11/14
Antenna	SATIMO	ANTA3	SN 17/13 ZNTA45	N/A	N/A
MultiMeter	Keithley	MultiMeter 2000	4024022	2020/06/11	2021/06/10
Signal Generator	R&S	SMB100A	177746	2020/06/08	2021/06/07
Power Meter	R&S	NRVD-B2	7250BJ-0112/2011	2020/09/25	2021/09/24
Power Sensor	R&S	NRV-Z4	100381	2020/09/25	2021/09/24
Power Sensor	R&S	NRV-Z2	100211	2020/09/25	2021/09/24
Wireless Communication Test Set	Agilent	8960-E5515C	MY47510286	2020/06/08	2021/06/07
Wireless Communication Test Set	R&S	CMW 500	151885	2020/06/08	2021/06/07
Directional coupler	AA-MCS	AAMCS-UDC	000272	N/A	N/A

12 REFERENCES

1 FCC 47 CFR Part 20.19 “Hearing aid-compatible mobile handsets.”

2 ANSI C 63.19:2011 “American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids”, 27 May 2011

3 KDB 285076 D01 HAC Guidance v05, “provides equipment authorization guidance for mobile handsets subject to the requirements of Section 20.19 for hearing aid compatibility

4 KDB 285076 D02, T-Coil testing for CMRS IP v01r01 provides guidance for T-Coil tests for voice-over-IP (e.g. LTE and Wi-Fi) CMRS based Telephone Services.

4 SATIMO COMOHAC_V4A

5 SATIMO OPENHAC_V4

ANNEX A HAC TEST RESULT OF SYSTEM VERIFICAION

ANNEX B E-Field System Check Data(835MHz)

Experimental conditions.

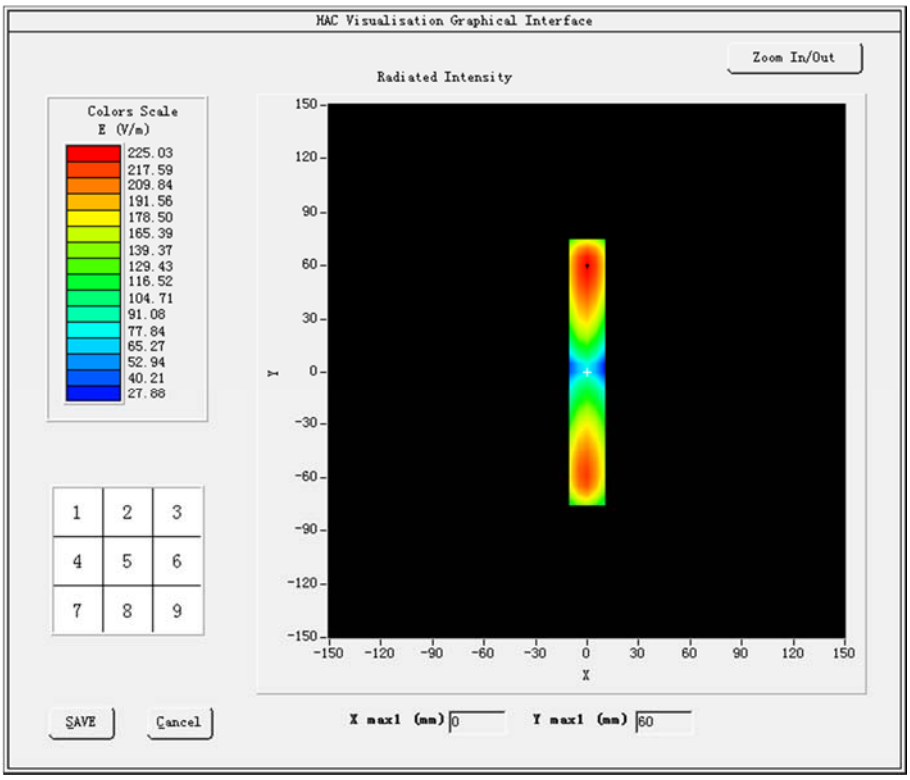
Grid size (mm x mm)	20.0, 150.0
Step (mm)	5
Band	835MHz
Channel	
Signal	CW
Date of measurement	12/9/2020

HAC Measurement Results

Frequency (MHz): 835.000000

Maximum value of total field = 225.03 V/m

SURFACE E-Field



E-Filed System Check Data (1900MHz)

Experimental conditions

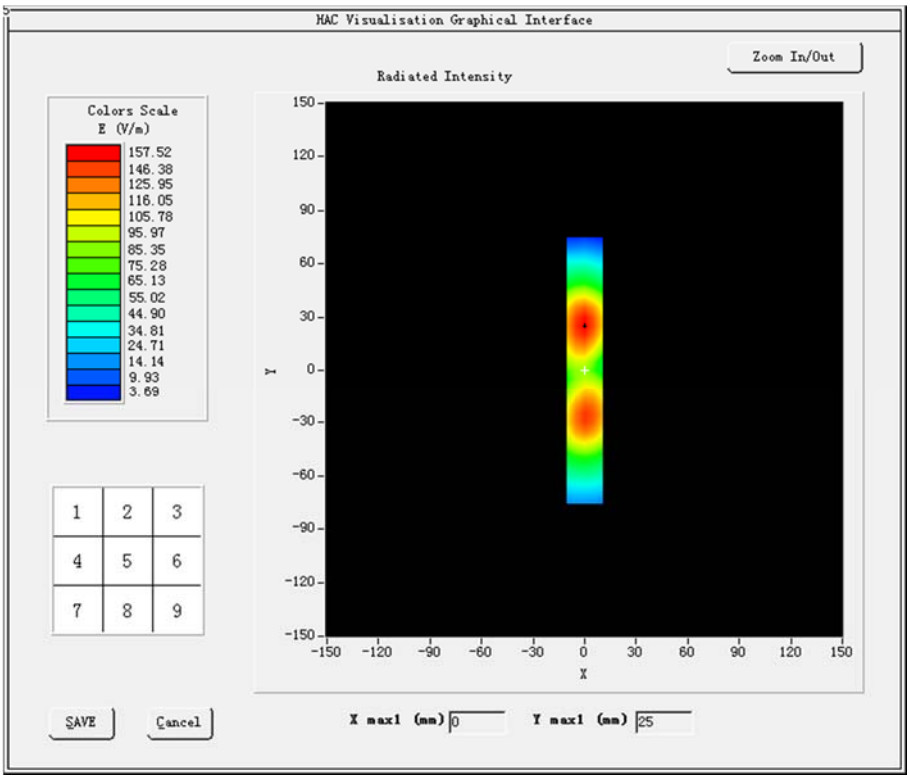
Grid size (mm x mm)	20.0, 150.0
Step (mm)	5
Band	1900 MHz
Channel	
Signal	CW
Date of measurement	12/14/2020

HAC Measurement Results

Frequency (MHz): 1900.000000

Maximum value of total field = 157.52 V/m

SURFACE HAC



E-Filed System Check Data (2450MHz)

Experimental conditions

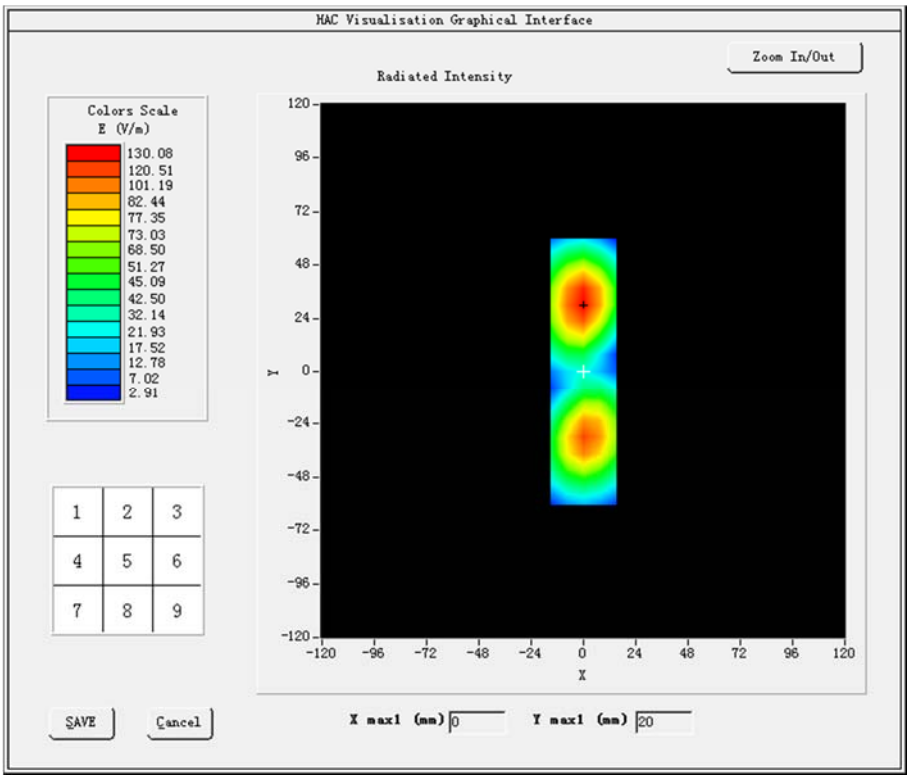
Grid size (mm x mm)	20.0, 80.0
Step (mm)	5
Band	2450 MHz
Channel	
Signal	CW
Date of measurement	12/19/2020

HAC Measurement Results

Frequency (MHz): 2450.000000

Maximum value of total field = 130.08 V/m

SURFACE HAC



ANNEX B HAC RF MEASUREMENT RESULT

MEASUREMENT 1

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM850
Channel	Low
Signal	GSM
Date of measurement	12/9/2020

HAC Measurement Results

Lower Band (Channel 128):

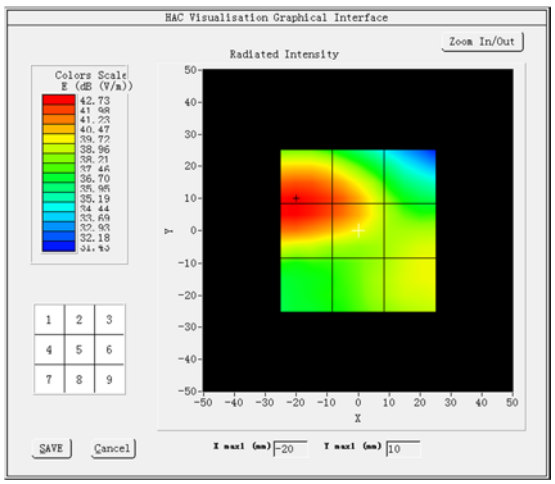
Frequency (MHz): 824.200000

Maximum value of total field = 32.87 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 33.69	**Grid 2: 32.80**	Grid 3: 29.10
Grid 4: 33.83	**Grid 5: 32.87**	Grid 6: 30.34
Grid 7: 29.12	Grid 8: 29.71	Grid 9: 30.45

MEASUREMENT 2

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM850
Channel	Middle
Signal	GSM
Date of measurement	12/9/2020

HAC Measurement Results

Middle Band (Channel 190):

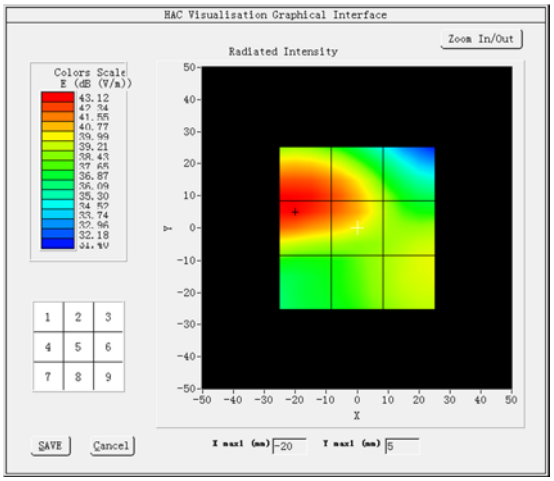
Frequency (MHz): 836.600000

Maximum value of total field = 33.14 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 34.07	Grid 2: 33.09	Grid 3: 29.34
Grid 4: 34.20	Grid 5: 33.14	Grid 6: 30.45
Grid 7: 29.21	Grid 8: 29.78	Grid 9: 30.63

MEASUREMENT 3

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM850
Channel	High
Signal	GSM
Date of measurement	12/9/2020

HAC Measurement Results

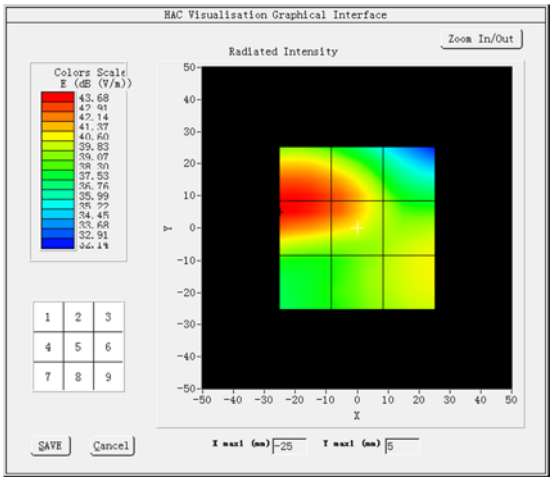
Higher Band (Channel 251):

Frequency (MHz): 848.800000

Maximum value of total field = 33.79 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC



E in dB (V/m)

Grid 1: 34.57	Grid 2: 33.69	Grid 3: 29.83
Grid 4: 34.77	Grid 5: 33.79	Grid 6: 31.31
Grid 7: 29.82	Grid 8: 30.59	Grid 9: 31.46

MEASUREMENT 4

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM850
Channel	Low
Signal	GSM
Date of measurement	12/9/2020

HAC Measurement Results

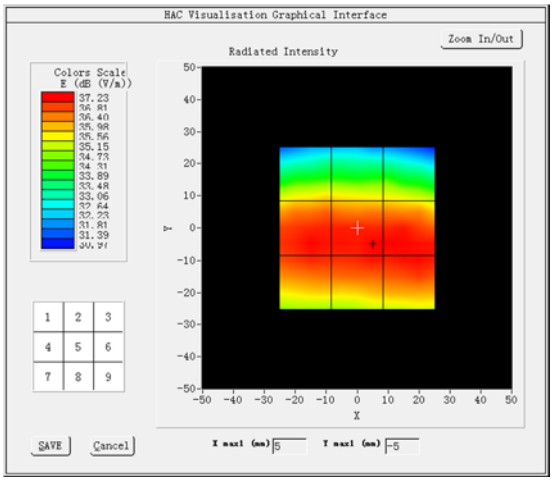
Lower Band (Channel 128):

Frequency (MHz): 824.200000

Maximum value of total field = 31.80 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC



E in dB (V/m)

Grid 1: 30.24	Grid 2: 30.19	Grid 3: 29.98
Grid 4: 31.78	Grid 5: 31.80	Grid 6: 31.79
Grid 7: 31.67	Grid 8: 31.76	Grid 9: 31.76

MEASUREMENT 5

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM850
Channel	Middle
Signal	GSM
Date of measurement	12/9/2020

HAC Measurement Results

Middle Band (Channel 190):

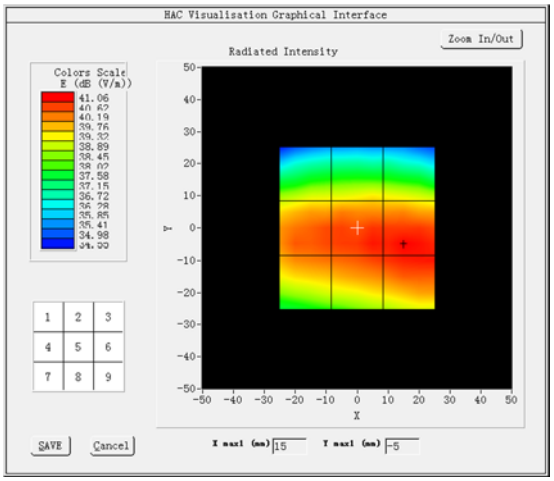
Frequency (MHz): 836.600000

Maximum value of total field = 31.91 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 30.07	Grid 2: 30.37	Grid 3: 30.23
Grid 4: 31.65	Grid 5: 31.91	Grid 6: 32.06
Grid 7: 31.44	Grid 8: 31.78	Grid 9: 31.98

MEASUREMENT 6

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM850
Channel	High
Signal	GSM
Date of measurement	12/9/2020

HAC Measurement Results

Higher Band (Channel 251):

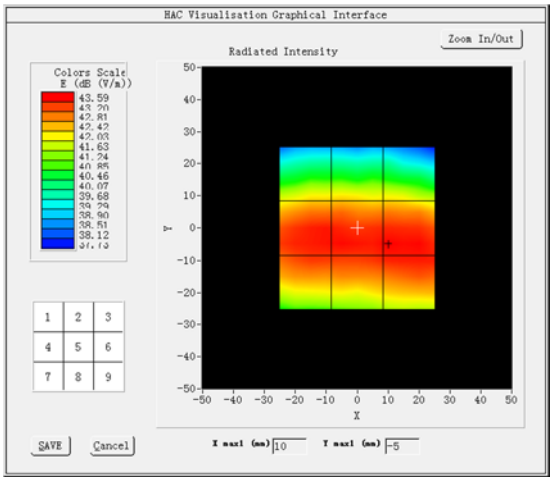
Frequency (MHz): 848.800000

Maximum value of total field = 34.50 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 32.98	Grid 2: 33.03	Grid 3: 32.88
Grid 4: 34.46	Grid 5: 34.50	Grid 6: 34.52
Grid 7: 34.29	Grid 8: 34.42	Grid 9: 34.45

MEASUREMENT 7

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM1900
Channel	Low
Signal	GSM
Date of measurement	12/14/2020

HAC Measurement Results

Lower Band (Channel 512):

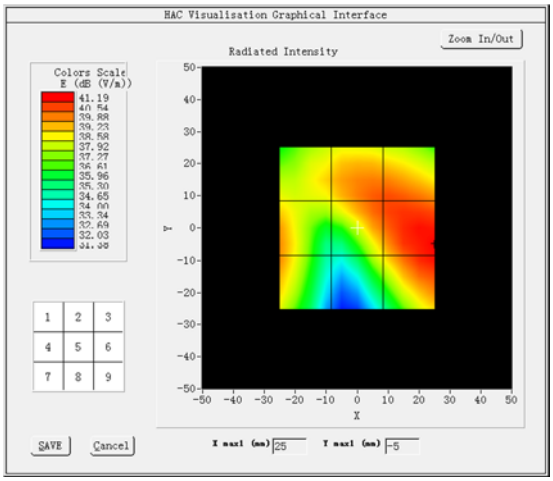
Frequency (MHz): 1850.200000

Maximum value of total field = 31.49 dB (V/m)

Hearing Aid Near-Field Category: M3

SURFACE HAC

E in dB (V/m)



Grid 1: 30.15	Grid 2: 31.41	Grid 3: 31.42
Grid 4: 30.76	Grid 5: 31.49	Grid 6: 32.19
Grid 7: 30.77	Grid 8: 30.01	Grid 9: 32.14

MEASUREMENT 8

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM1900
Channel	Middle
Signal	GSM
Date of measurement	12/14/2020

HAC Measurement Results

Middle Band (Channel 661):

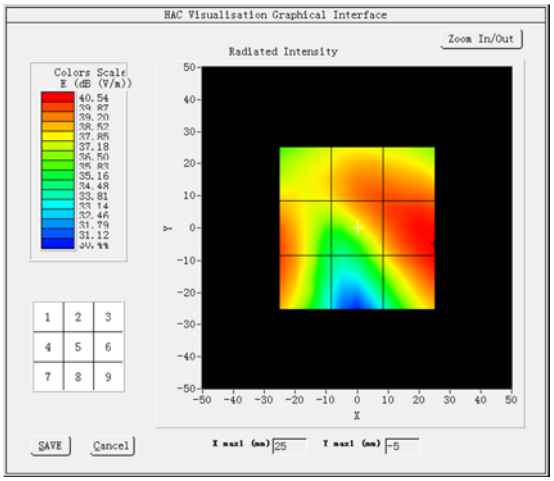
Frequency (MHz): 1880.000000

Maximum value of total field = 30.89 dB (V/m)

Hearing Aid Near-Field Category: M3

SURFACE HAC

E in dB (V/m)



Grid 1: 29.38	Grid 2: 30.71	Grid 3: 30.71
Grid 4: 30.85	Grid 5: 30.83	Grid 6: 31.54
Grid 7: 30.89	Grid 8: 29.09	Grid 9: 31.52

MEASUREMENT 9

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM1900
Channel	High
Signal	GSM
Date of measurement	12/14/2020

HAC Measurement Results

Higher Band (Channel 810):

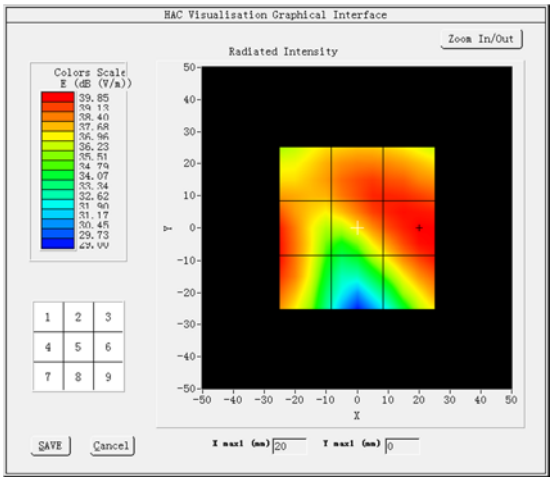
Frequency (MHz): 1909.800000

Maximum value of total field = 30.65 dB (V/m)

Hearing Aid Near-Field Category: M3

SURFACE HAC

E in dB (V/m)



Grid 1: 29.26	Grid 2: 30.48	Grid 3: 30.46
Grid 4: 30.65	Grid 5: 30.52	Grid 6: 30.88
Grid 7: 30.65	Grid 8: 28.20	Grid 9: 30.70

MEASUREMENT 10

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM1900
Channel	Low
Signal	GSM
Date of measurement	12/14/2020

HAC Measurement Results

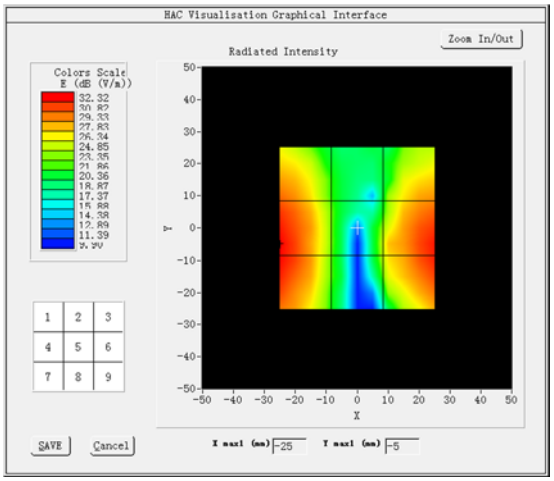
Lower Band (Channel 512):

Frequency (MHz): 1850.200000

Maximum value of total field = 22.82 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC



E in dB (V/m)

Grid 1: 20.73	Grid 2: 13.47	Grid 3: 19.60
Grid 4: 23.33	Grid 5: 17.72	Grid 6: 22.82
Grid 7: 23.26	Grid 8: 17.30	Grid 9: 22.73

MEASUREMENT 11

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM1900
Channel	Middle
Signal	GSM
Date of measurement	12/14/2020

HAC Measurement Results

Middle Band (Channel 661):

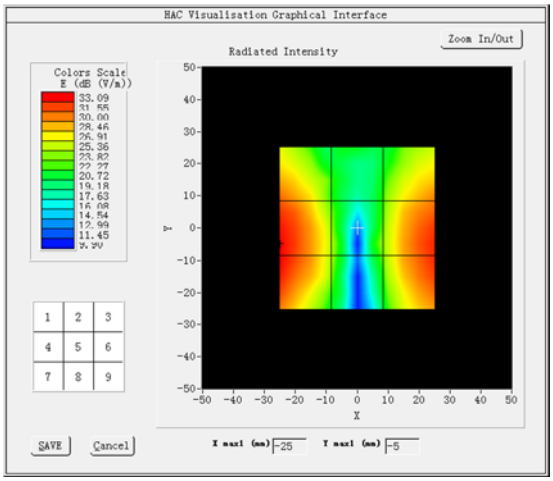
Frequency (MHz): 1880.000000

Maximum value of total field = 23.24 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 21.40	Grid 2: 14.48	Grid 3: 20.73
Grid 4: 24.14	Grid 5: 15.90	Grid 6: 23.24
Grid 7: 24.13	Grid 8: 15.70	Grid 9: 23.21

MEASUREMENT 12

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	GSM1900
Channel	High
Signal	GSM
Date of measurement	12/14/2020

HAC Measurement Results

Higher Band (Channel 810):

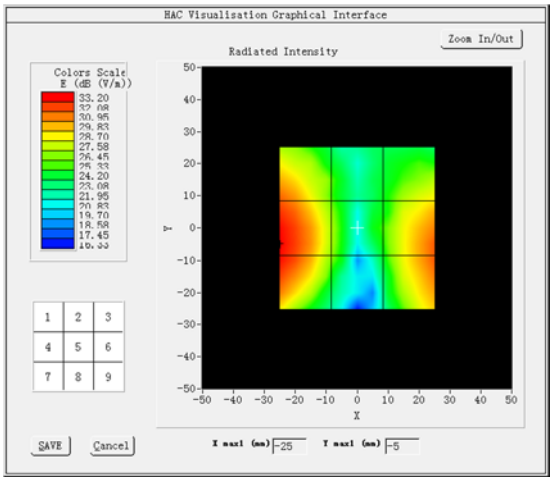
Frequency (MHz): 1909.800000

Maximum value of total field = 22.69 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 22.31	Grid 2: 16.61	Grid 3: 19.46
Grid 4: 24.20	Grid 5: 17.62	Grid 6: 22.69
Grid 7: 24.10	Grid 8: 17.25	Grid 9: 22.69

MEASUREMENT 13

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	BC0_US_Cellular
Channel	Low
Signal	CDMA
Date of measurement	12/14/2020

HAC Measurement Results

Lower Band (Channel 1013):

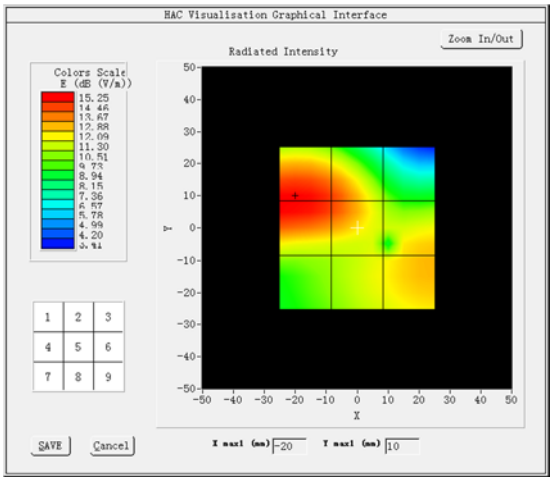
Frequency (MHz): 824.700000

Maximum value of total field = 14.42 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 15.28	Grid 2: 14.35	Grid 3: 10.15
Grid 4: 15.38	Grid 5: 14.42	Grid 6: 12.78
Grid 7: 11.06	Grid 8: 12.23	Grid 9: 12.93

MEASUREMENT 14

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	BC0_US_Cellular
Channel	Middle
Signal	CDMA
Date of measurement	12/9/2020

HAC Measurement Results

Middle Band (Channel 384):

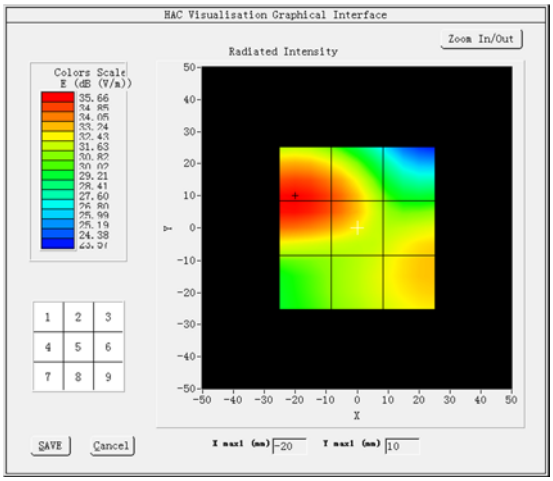
Frequency (MHz): 836.520000

Maximum value of total field = 14.88 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 15.92	Grid 2: 14.01	Grid 3: 10.48
Grid 4: 16.00	Grid 5: 14.88	Grid 6: 13.25
Grid 7: 11.45	Grid 8: 12.50	Grid 9: 13.41

MEASUREMENT 15

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	BC0_US_Cellular
Channel	High
Signal	CDMA
Date of measurement	12/9/2020

HAC Measurement Results

Higher Band (Channel 777):

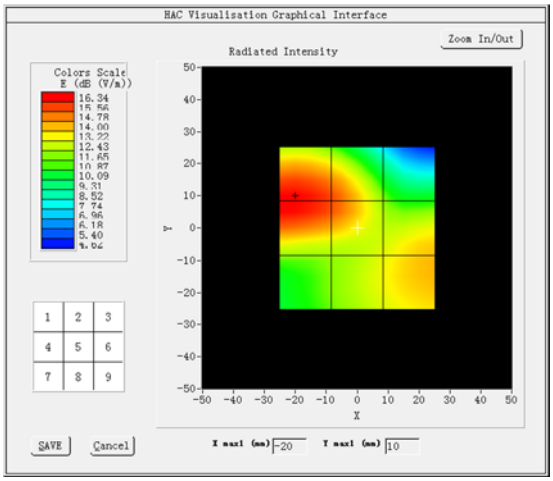
Frequency (MHz): 848.310000

Maximum value of total field = 15.36 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 16.37	Grid 2: 15.29	Grid 3: 11.11
Grid 4: 16.47	Grid 5: 15.36	Grid 6: 13.87
Grid 7: 11.96	Grid 8: 13.12	Grid 9: 14.04

MEASUREMENT 16

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	BC0_US_Cellular
Channel	Low
Signal	CDMA
Date of measurement	12/9/2020

HAC Measurement Results

Lower Band (Channel 1013):

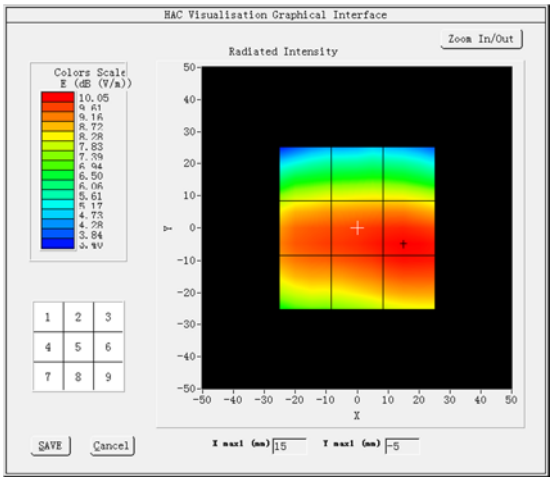
Frequency (MHz): 824.700000

Maximum value of total field = 9.97 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 8.09	Grid 2: 8.21	Grid 3: 8.18
Grid 4: 9.65	Grid 5: 9.97	Grid 6: 10.06
Grid 7: 9.54	Grid 8: 9.91	Grid 9: 10.03

MEASUREMENT 17

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	BC0_US_Cellular
Channel	Middle
Signal	CDMA
Date of measurement	12/9/2020

HAC Measurement Results

Middle Band (Channel 384):

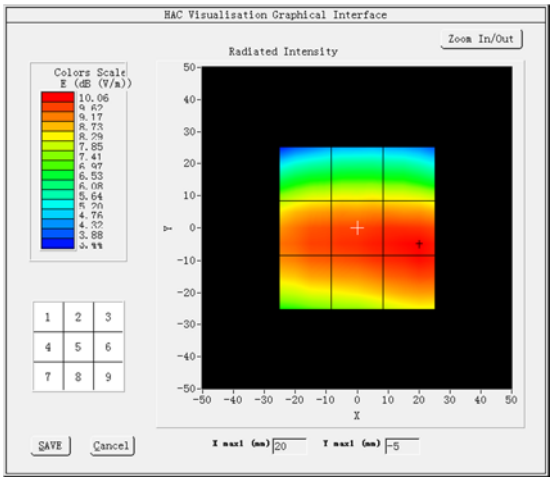
Frequency (MHz): 836.520000

Maximum value of total field = 9.90 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 8.10	Grid 2: 8.23	Grid 3: 8.12
Grid 4: 9.66	Grid 5: 9.90	Grid 6: 10.07
Grid 7: 9.55	Grid 8: 9.84	Grid 9: 10.04

MEASUREMENT 18

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	BC0_US_Cellular
Channel	High
Signal	CDMA
Date of measurement	12/9/2020

HAC Measurement Results

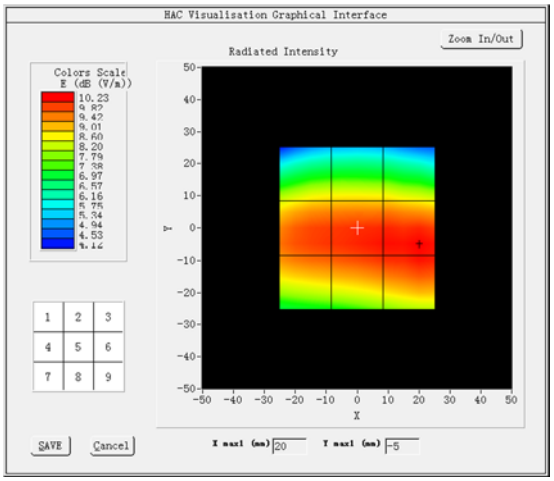
Higher Band (Channel 777):

Frequency (MHz): 848.310000

Maximum value of total field = 10.15 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC



E in dB (V/m)

Grid 1: 8.59	Grid 2: 8.62	Grid 3: 8.57
Grid 4: 9.93	Grid 5: 10.15	Grid 6: 10.24
Grid 7: 9.76	Grid 8: 10.05	Grid 9: 10.21

MEASUREMENT 19

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 38
Channel	Low
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Lower Band (Channel 37850):

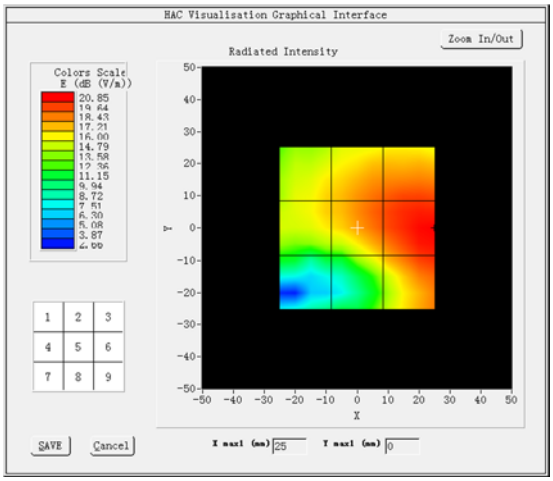
Frequency (MHz): 2580.000000

Maximum value of total field = 19.49 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 16.84	Grid 2: 19.00	Grid 3: 19.57
Grid 4: 16.91	Grid 5: 19.49	Grid 6: 20.87
Grid 7: 12.68	Grid 8: 17.56	Grid 9: 20.25

MEASUREMENT 20

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 38
Channel	Middle
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Middle Band (Channel 38000):

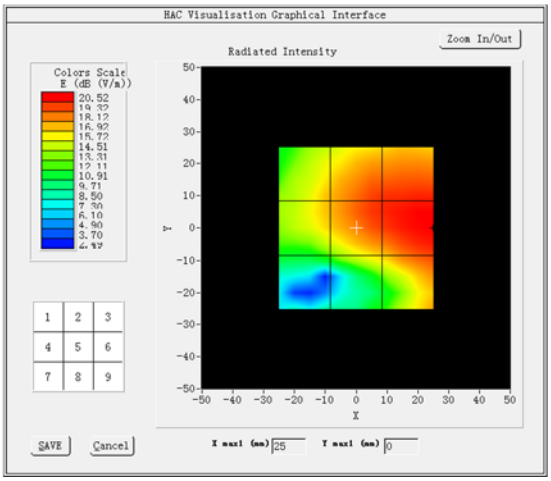
Frequency (MHz): 2595.000000

Maximum value of total field = 19.84 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 17.02	Grid 2: 19.60	Grid 3: 19.89
Grid 4: 17.08	Grid 5: 19.84	Grid 6: 20.58
Grid 7: 13.40	Grid 8: 16.94	Grid 9: 19.44

MEASUREMENT 21

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 38
Channel	High
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Higher Band (Channel 38150):

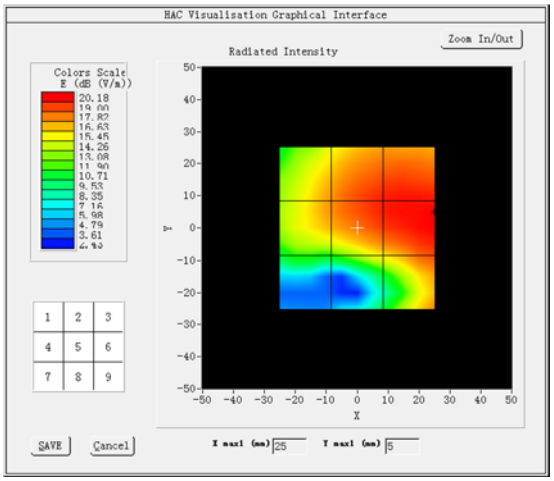
Frequency (MHz): 2610.000000

Maximum value of total field = 19.74 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 17.41	Grid 2: 19.60	Grid 3: 19.77
Grid 4: 17.55	Grid 5: 19.74	Grid 6: 20.23
Grid 7: 12.66	Grid 8: 16.20	Grid 9: 18.94

MEASUREMENT 22

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 41
Channel	Low
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Lower Band (Channel 40140):

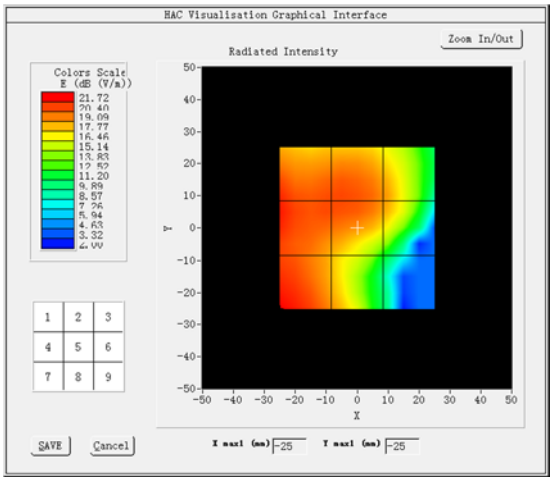
Frequency (MHz): 2545.000000

Maximum value of total field = 20.27 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 20.89	Grid 2: 20.27	Grid 3: 18.29
Grid 4: 21.21	Grid 5: 20.27	Grid 6: 18.26
Grid 7: 21.72	Grid 8: 18.34	Grid 9: 11.44

MEASUREMENT 23

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 41
Channel	Middle
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Middle Band (Channel 40640):

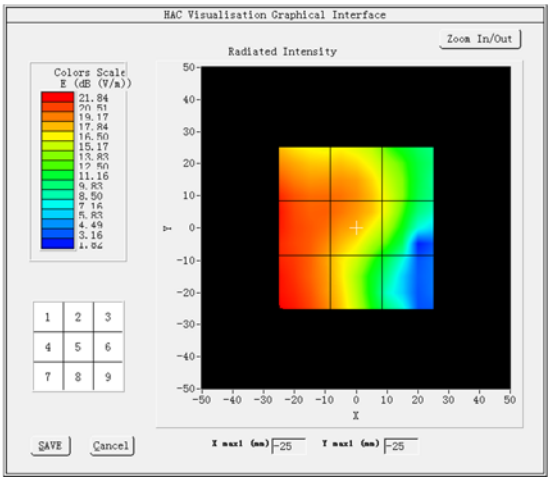
Frequency (MHz): 2595.000000

Maximum value of total field = 19.66 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 20.99	Grid 2: 19.52	Grid 3: 15.85
Grid 4: 21.42	Grid 5: 19.66	Grid 6: 15.96
Grid 7: 21.84	Grid 8: 18.27	Grid 9: 11.51

MEASUREMENT 24

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 41
Channel	High
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Higher Band (Channel 41140):

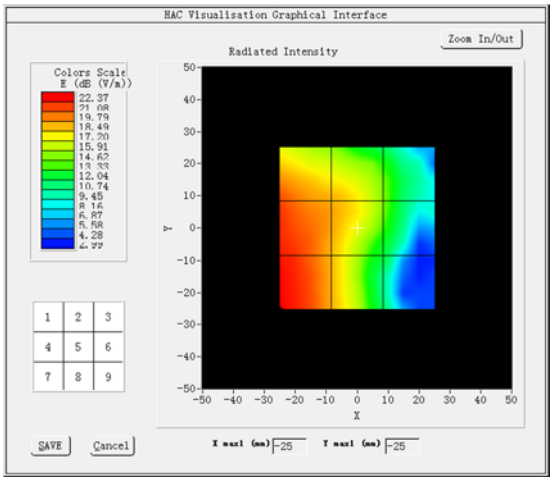
Frequency (MHz): 2645.000000

Maximum value of total field = 18.82 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 20.70	Grid 2: 18.41	Grid 3: 13.99
Grid 4: 21.73	Grid 5: 18.82	Grid 6: 13.95
Grid 7: 22.37	Grid 8: 18.33	Grid 9: 11.37

MEASUREMENT 25

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 41
Channel	Low
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Lower Band (Channel 40140):

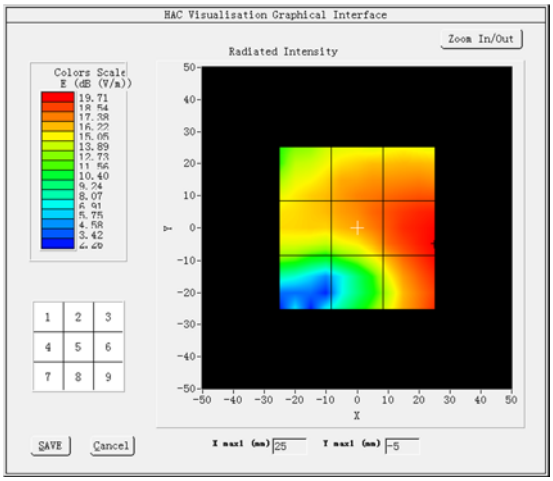
Frequency (MHz): 2545.000000

Maximum value of total field = 18.15 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 16.37	Grid 2: 17.68	Grid 3: 18.17
Grid 4: 16.41	Grid 5: 18.15	Grid 6: 19.71
Grid 7: 13.40	Grid 8: 16.58	Grid 9: 19.58

MEASUREMENT 26

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 41
Channel	Middle
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Middle Band (Channel 40640):

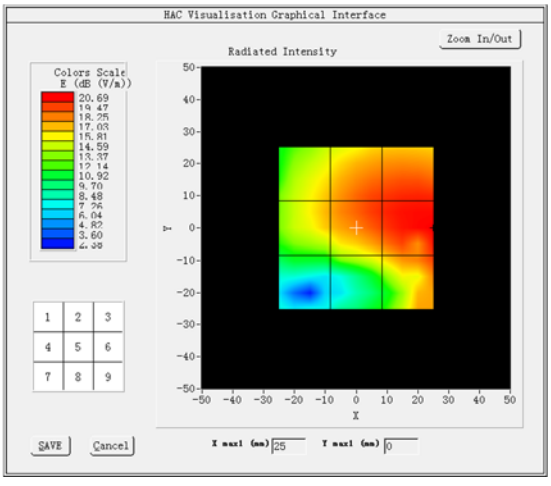
Frequency (MHz): 2595.000000

Maximum value of total field = 19.97 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 17.12	Grid 2: 19.62	Grid 3: 20.02
Grid 4: 17.44	Grid 5: 19.97	Grid 6: 20.75
Grid 7: 13.37	Grid 8: 17.07	Grid 9: 19.83

MEASUREMENT 27

Experimental conditions.

Grid size (mm x mm)	50.0, 50.0
Step (mm)	5
Band	LTE band 41
Channel	High
Signal	LTE
Date of measurement	12/19/2020

HAC Measurement Results

Higher Band (Channel 41140):

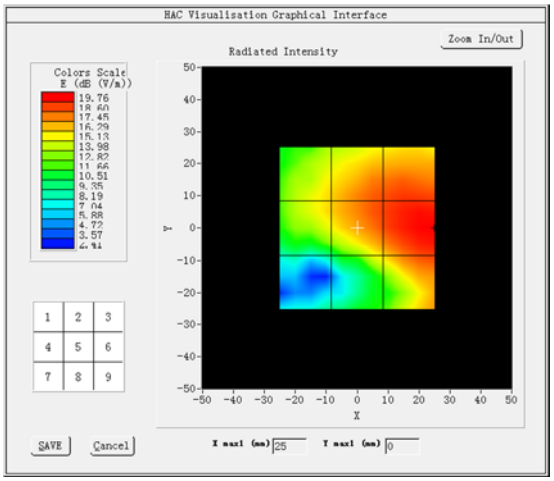
Frequency (MHz): 2645.000000

Maximum value of total field = 18.66 dB (V/m)

Hearing Aid Near-Field Category: M4

SURFACE HAC

E in dB (V/m)



Grid 1: 15.85	Grid 2: 18.34	Grid 3: 18.77
Grid 4: 15.97	Grid 5: 18.66	Grid 6: 19.78
Grid 7: 10.65	Grid 8: 16.16	Grid 9: 18.82

ANNEX C EUT EXTERNAL PHOTO

Please refer the document “BL-SZ20B0750-AW. PDF”.

ANNEX D TEST SETUP PHOTO

Please refer the document “BL-SZ20B0750-AS-2. PDF”.

ANNEX E CALIBRATION REPORT

Please refer the document “CALIBRATION REPORT_HAC.pdf”.

--END OF REPORT--