S T S L A B

Hearing Aid Compatibility （HAC） RF Emissions TEST REPORT

Report No: STS2006150H02

Issued for

Excellus Communications, LLC

27298 Wetland Road, Suite 101 Harrisburg, SD 57032 USA

Product Name:	4G phone
Brand Name:	Snapfon
Model No.:	Snapfon ezFlip 4G
Series Model:	N/A
FCC ID:	2AW56-EZFLIP
Test Standard:	ANSI C63.19: 2011
	FCC 47 CFR Part 20.19
RF Emission Rating:	M3
Test Result:	Pass

ShenZhen STS Test Services Co.,Ltd.
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Test Report Certification

Applicant's name .... : Excellus Communications, LLC

Address .... : 27298 Wetland Road, Suite 101 Harrisburg, SD 57032 USA

Manufacture's Name............ : Ying Tai Electronics Co., Ltd.

Address .... : ROOM 803, CHEVALIER HOUSE 45-51 CHATHAM ROAD SOUTH, TSIM SHA TSUI, KOWLOON, HONG KONG

Product description

Product name .... : 4G phone

Brand name .... : Snapfon

Model name .... : Snapfon ezFlip 4G

Serial Model : N/A

Standards............................ : ANSI C63.19:2011
FCC 47 CFR Part 20.19

The device was tested by Shenzhen STS Test Services Co., Ltd. in accordance with the measurement methods and procedures specified in KDB 865664 The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Date of Test.. :

Date (s) of performance of tests............ : 16 June 2020

Date of Issue.. : 18 June 2020

Test Result .... : **Pass**

Testing Engineer : Aaron Bu

(Aaron Bu)

Technical Manager : Jason Lu

(Jason Lu)

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Authorized Signatory : Vita Li

(Vita Li)

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1. General Information

1.1 EUT Description

Product Name	4G phone	
Brand Name	Snapfon	
Model Name	Snapfon ezFlip 4G	
Series Model	N/A	
Model Difference	N/A	
Hardware Version	P31-MB-V1.2	
Software Version	Snapfon_ezFlip_V8.0_20200511_1605	
Device Type	Portable Device	
EUT Stage	Production Unit	
Frequency Range (TX)	GSM 850: 824.2~848.8MHz PCS1900: 1850.2~1909.8MHz WCDMA Band II: 1852.4~1907.6MHz WCDMA Band IV:1712.4~1752.6 MHz WCDMA Band V: 826.4~846.6MHz WLAN802.11b/g/n(HT20): 2412~2462MHz WLAN 802.11n(HT40): 2422~2452MHz Bluetooth: 2402~ 2480MHz	
Band	E-field dB(V/m)	M-Rating
GSM 850	37.08	M4
PCS1900	30.72	M3
WCDMA Band II	33.84	M3
WCDMA Band IV	32.24	M3
WCDMA Band V	35.84	M4
Operating Mode:	GSM: GSM Voice; GPRS Class 12 WCDMA: RMC, HSDPA, HSUPA Release 6 WLAN: 802.11 b/g/n(HT20) /n(HT40) Bluetooth: 4.2+EDR (GFSK +π/4DQPSK+8DPSK) BLE	
Antenna Specification:	GSM, WCDMA: PIFA Antenna BT, WLAN: PIFA Antenna	
SIM Card	Support dual-SIM, dual standby, the multiple SIM card with two lines cannot transmitting at the same time	
Battery	Rated Voltage: 3.7V Charge Limit: 4.2V Capacity :1500mAh	

1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (℃)	18-25
Humidity (%RH)	30-70

1.3 Test Facility

ShenZhen STS Test Services Co.,Ltd.

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC Registration No.: 625569

A2LA Certificate No.: 4338.01

IC Registration No.: 12108A

1.4 Test Standards

No.	Identity	Document Title
1	FCC 47 CFR Part 20.19	Hearing aid-compatible mobile handsets.
2	ANSI C63.19:2011	American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
3	KDB 285076 D01 HAC Guidance v04	Provides equipment authorization guidance for mobile handsets subject to the requirements of Section 20.19 for hearing aid compatibility

2. System Components

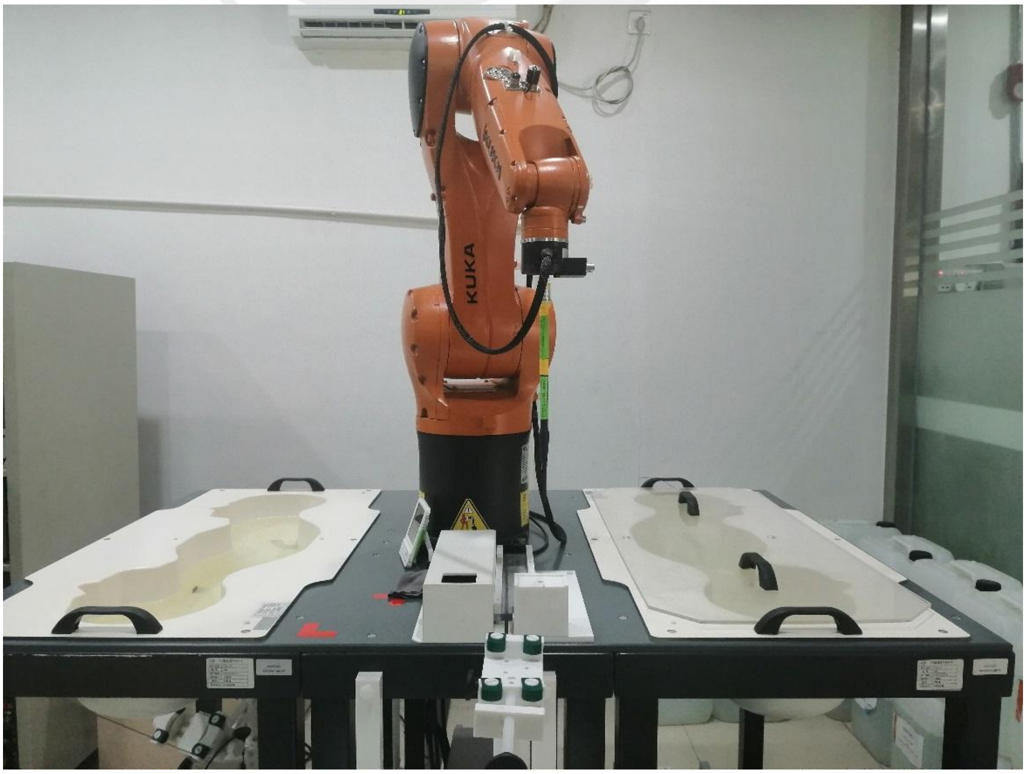
2.1 SATIMO System Description

SATIMO is fully compliant with the technical and scientific requirements of IEEE 1528, IEC 62209, CENELEC, ARIB, ACA, and the Federal Communications Commission. The system comprises of a six axes articulated robot which utilizes a dedicated controller. SATIMO uses the latest methodologies and FDTD order to provide a platform which is repeatable with minimum uncertainty.

2.2 E-Field Probe Specification

Device Under Test	
Device Type	COMOHAC E FIELD PROBE
Manufacturer	Satimo
Model	SCE
Serial Number	SN 06/14 EPH42
Product Condition (new / used)	new
Frequency Range of Probe	0.7GHz-2.5GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.214 MΩ Dipole 2: R2=0.213 MΩ Dipole 3: R3=0.204 MΩ

2.3 Axis Articulated Robot



SATIMO utilizes a six articulated robot, which is controlled using a Pentium based real-time movement controller. The movement kinematics engine utilizes proprietary (Thermo CRS) interpolation and extrapolation algorithms, which allow full freedom of movement for each of the six joints within the working envelop. Utilization of joint 6 allows for full probe rotation with a tolerance better than 0.05mm around the central axis.

Robot /Controller Manufacturer	KUKA
Number of Axis	Six independently controlled axis
Positioning Repeatability	＜±0.03mm
Controller Type	KR C4 compact
Robot Reach	901mm
Communication	RS232 and LAN compatible

2.4 Universal Device Positioner

The universal device positioner allows complete freedom of movement of the EUT. Developed to hold a EUT in a free-space scenario any additional loading attributable to the material used in the construction of the positioner has been eliminated. Repeatability has been enhanced through the linear scales which form the design used to indicate positioning for any given test scenario in all major axes.

2.5 Test Equipment List

Instrument	Manufacturer	Model	S/N	Cal. Date	Cal. Due Date
E-Field Probe	MVG	SCE	SN 06/14 EPH42	2020.06.03	2021.06.02
Reference Validation Dipole 835MHz	MVG	SID835	SN 13/14 DHA55	2017.08.15	2020.08.14
Reference Validation Dipole 1900MHz	MVG	SIDB1900	SN 13/14 DHB59	2017.08.15	2020.08.14
Magnetic Field Simulator	MVG	STMFS	SN 07/14 TMFS24	2020.06.03	2021.06.02
Network Analyzer	Agilent	8753ES	US38432810	2019.10.11	2020.10.10
Multi Meter	Keithley	Multi Meter 2000	4050073	2019.10.11	2020.10.10
Wireless Communication Test Set	R&S	CMW500	117239	2019.10.09	2020.10.08
Power Amplifier	DESAY	ZHL-42W	9638	2019.10.09	2020.10.08
Power Meter	R&S	NRP	100510	2019.10.16	2020.10.15
Power Meter	Agilent	E4418B	GB43312526	2019.10.16	2020.10.15
Power Sensor	R&S	NRP-Z11	101919	2019.10.09	2020.10.08
Power Sensor	Agilent	E9301A	MY41497725	2019.10.09	2020.10.08
Temperature hygrometer	SuWei	SW-108	N/A	2019.10.13	2020.10.12

2.6 Measurement Uncertainty

Measurement Uncertainty of RF Emission Test					
Uncertainty Component	Tol. (±dB)	Prob. Dst.	Dvi	Uncertainty （dB）	Uncertainty （%）
Measurement System					
RF reflections	0.1	R	√3	0.06	
Field Probe conv. Factor	0.4	R	√3	0.23	
Field Probe anisotropy	0.25	R	√3	0.14	
Positioning accuracy	0.1	R	√3	0.12	
Probe cable placement	0.2	R	√3	0.06	
System repeatability	0.2	R	√3	0.12	
EUT repeatability	0.4	N	1	0.40	
Combined Standard Uncertainty		N	1	0.52	
Expanded uncertainty (95% CONFIDENCE INTERVAL）		N	k=2	1.03	12.65
REPORTED Expanded uncertainty （confidence level of 95%，k=2）		N	k=2	1.03	13.00

Measurement Uncertainty of T-Coil Test					
Uncertainty Component	Tol. (±dB)	Prob. Dst.	Dvi	Uncertainty （dB）	Uncertainty （%）
Measurement System					
RF reflections	0.1	R	√3	0.06	
Acoustic noise	0.1	R	√3	0.06	
Probe coil sensitivity	0.49	R	√3	0.28	
Reference signal level	0.25	R	√3	0.14	
Positioning accuracy	0.4	R	√3	0.23	
Cable loss	0.1	N	2	0.05	
Frequency analyzer	0.15	R	√3	0.09	
System repeatability	0.2	N	1	0.20	
Repeatability of the WD	0.4	N	1	0.40	
Combined Standard Uncertainty		N	1	0.61	
Expanded uncertainty （confidence level of 95%，k=2）		N	k=2	1.22	15.05
REPORTED Expanded uncertainty （confidence level of 95%，k=2）		N	k=2	1.20	15.00

3. HAC RF Emission Measurement Evaluation

3.1 System Check

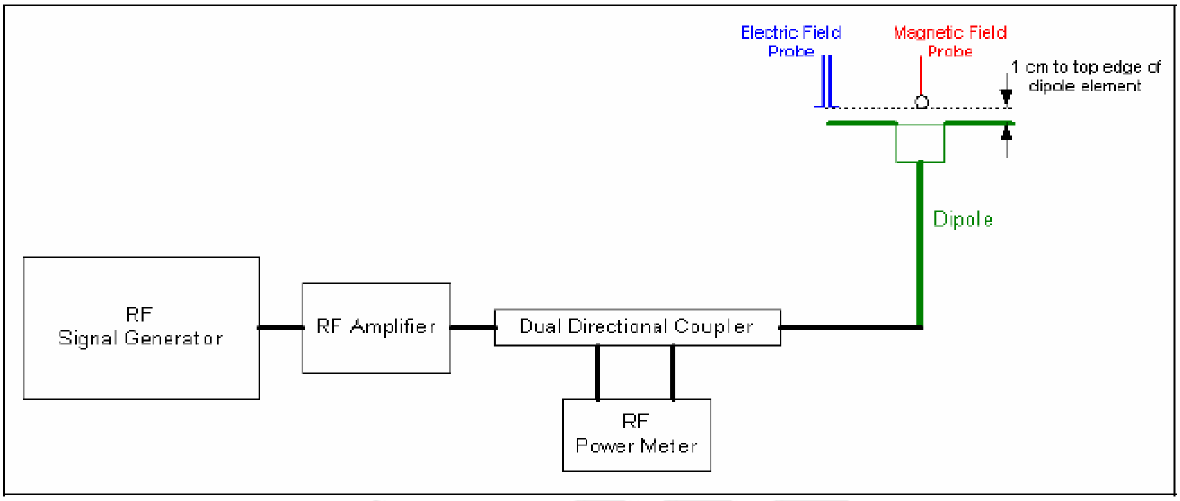
The test setup should be validated when first configured and verified periodically thereafter to ensure proper function. The procedure consists of two parts: dipole validation and determination of probe modulation factor

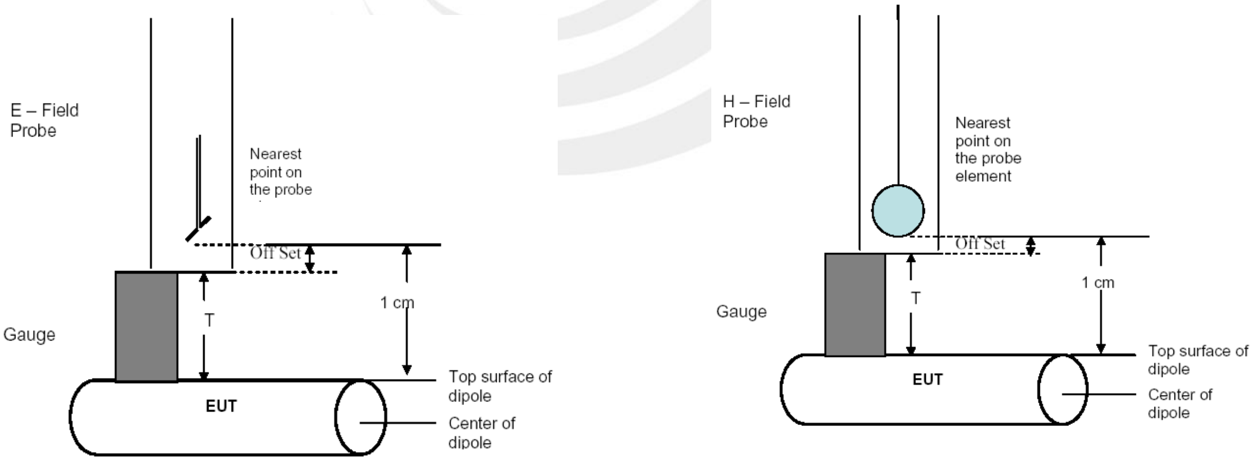
3.2 Dipole validation

The HAC validation dipole antenna serves as a known source for an electrical and magnetic RF output. Figure 2 shows the setup used for the dipole validation.

1. The dipole antenna was placed in the position normally occupied by the WD.
2. The dipole was energized with a 20 dBm un-modulated continuous-wave signal.
3. The length of the dipole was scanned with both E-field and H-field probes and the maximum value for each scan was recorded.
4. The readings were compared with the values provided by the probe manufacturer and were found to agree within the allowed tolerance of 10%.

Figure 2: Dipole Validation Procedure





The probe is positioned over the illuminated dipole at 10 mm distance from the nearest point on the probe sensor element to the top surface (edge) of the dipole element.

3.3 System Validation Results

Lab Temperature: 23℃, Lab Humidity: 57%.

Date	Calibration Dipole	Frequency (MHz)	Input Power (dBm)	Target Value(V/m)	Measured (V/m)	Deviation (%)
2020/6/16	SN 06/14 EPH42 E-field	850	20	220.4	219.2	-0.54
2020/6/16		1900	20	153.4	154.1	0.46

Note: Deviation=((Measured Result)-(Target Value))/(Target Value)*100%

4. Hearing AID Compatibility

The purpose of the Hearing Aid Compatibility extension is to enable measurements of the near electric and magnetic fields generated by wireless communication devices in the region controlled for use by a hearing aid in accordance with ANSI-C63.19-2011 FCC has granted a request for waiver of the HAC rules in section 20.19 for dual band GSM handsets. The waiver has specific conditions, as stated in the order (FCC 05-166).
The purpose of this standard is to establish categories for hearing aids and for WD (wireless communications devices) that can indicate to health care practitioners and hearing aid users which hearing aids are compatible with which WD, and to provide tests that can be used to assess the electromagnetic characteristics of hearing aids and WD and assign them to these categories. The various parameters required, in order to demonstrate compatibility and accessibility are measured. The design of the standard is such that when a hearing aid and WD achieve one of the categories specified, as measured by the methodology of this standard, the indicated performance is realized.

In order to provide for the usability of a hearing aid with a WD, several factors must be coordinated:

a) Radio frequency (RF) measurements of the near-field electric and magnetic fields emitted by a WD to categorize these emissions for correlation with the RF immunity of a hearing aid.
b) Magnetic field measurements of a WD emitted via the audio transducer associated with the T-coil mode of the hearing aid, for assessment of hearing aid performance.
c) Measurements with the hearing aid and a simulation of the categorized WD T-coil emissions to assess the hearing aid RF immunity in the T-coil mode.

The WD radio frequency (RF) and audio band emissions are measured.

Hence, the following are measurements made for the WD:

a) RF E-Field emissions
c) T-coil mode, magnetic signal strength in the audio band
d) T-coil mode, magnetic signal and noise articulation index
e) T-coil mode, magnetic signal frequency response through the audio band

Corresponding to the WD measurements, the hearing aid is measured for:

a) RF immunity in microphone mode
b) RF immunity in T-coil mode

5. Modulation Interference Factor (MIF)

The HAC Standard ANSI C63.19-2011 defines a new scaling using the Modulation Interference Factor (MIF) which replaces the need for the Articulation Weighting Factor (AWF) during the evaluation and is applicable to any modulation scheme.

The Modulation Interference factor (MIF, in dB) is added to the measured average E-field (in dBV/m) and converts it to the RF Audio Interference level (in dBV/m). This level considers the audible amplitude modulation components in the RF E-field. CW fields without amplitude modulation are assumed to not interfere with the hearing aid electronics. Modulations without time slots and low fluctuations at low frequencies have low MIF values, TDMA modulations with narrow transmission and repetition rates of few 100 Hz have high MIF values and give similar classifications as ANSI C63-2007.

Definitions, E-field probes have a bandwidth <10 kHz and can therefore not evaluate the RF envelope in the full audio band. OPENHAC is therefore using the “indirect" measurement method according to ANSI C63.19-2011 which is the primary method. These near field probes read the averaged E-field measurement. Especially for the new high peak-to-average (PAR) signal types, the probes shall be linearized by probe modulation response (PMR) calibration in order to not overestimate the field reading. The evaluation method or the MIF is defined in ANSI C63.19-2011 section D.7. An RMS demodulated RF signal is fed to a spectral filter (similar to an A weighting filter) and forwarded to a temporal filter acting as a quasi-peak detector. The averaged output of these filtering is called to a 1 kHz 80% AM signal as reference. MIF measurement requires additional instrumentation and is not well suited for evaluation by the end user with reasonable uncertainty it may alternatively be determined through analysis and simulation, because it is constraint and characteristic for a communication signal. OPENHAC uses well defined signals for PMR calibration. The MIF of these signals has been determined by simulation and is automatically applied.

MIF values were not tested by a probe or as specified in the standards but are based on analysis provided by SATIMO for all the air interfaces (GSM, WCDMA). The data included in this report are for the worst case operating modes.

Transmission protocol	Modulation interference factor
GSM; full-rate version 2; speech codec/handset low	+3.5dB
WCDMA; speech; speech codec low; AMR 12.2 kb/s	-20.0dB
CDMA; speech; SO3; RC3; full frame rate: 8kEVRC	-19.0dB
CDMA; speech; SO3; RC1;1/8th frame rate; 8kEVRC	+3.3dB

A PMR calibrated probe is linearized for the selected waveform over the full dynamic range within the uncertainty.

Specified in its calibration certificate. E-field probes have a bandwidth <10 kHz and can therefore not evaluate the RF envelope in the full audio band. OPENHAC is therefore using the \indirect" measurement method according to ANSI C63.19-2011 which is the primary method. These near field probes read the averaged E-field measurement. Especially for the new high peak-to-average (PAR) signal types, the probes shall be linearized by PMR calibration in order to not overestimate the field reading. The evaluation method for the MIF is defined in ANSI C63.19-2011 section D.7. An RMS demodulated RF signal is fed to a spectral filter (similar to an A weighting filter) and forwarded to a temporal filter acting as a quasi-peak detector. The averaged output of these filtering is scaled to a 1 kHz 80% AM signal as reference. MIF measurement requires additional instrumentation and is not well suited for evaluation by the end user with reasonable uncertainty. It may alternatively be determined through analysis and simulation, because it is constant and characteristic for a communication signal. OPENHAC uses well-defined signals for PMR calibration. The MIF of these signals has been determined by simulation and is automatically applied. The MIF measurement uncertainty is estimated as follows, for modulation frequencies from slotted waveforms with fundamental frequency and at least 2 harmonics within 10

kHz:

0.2 dB for MIF -7 to +5 dB, 0.5 dB for MIF -13 to +11 dB

1 dB for MIF > -20

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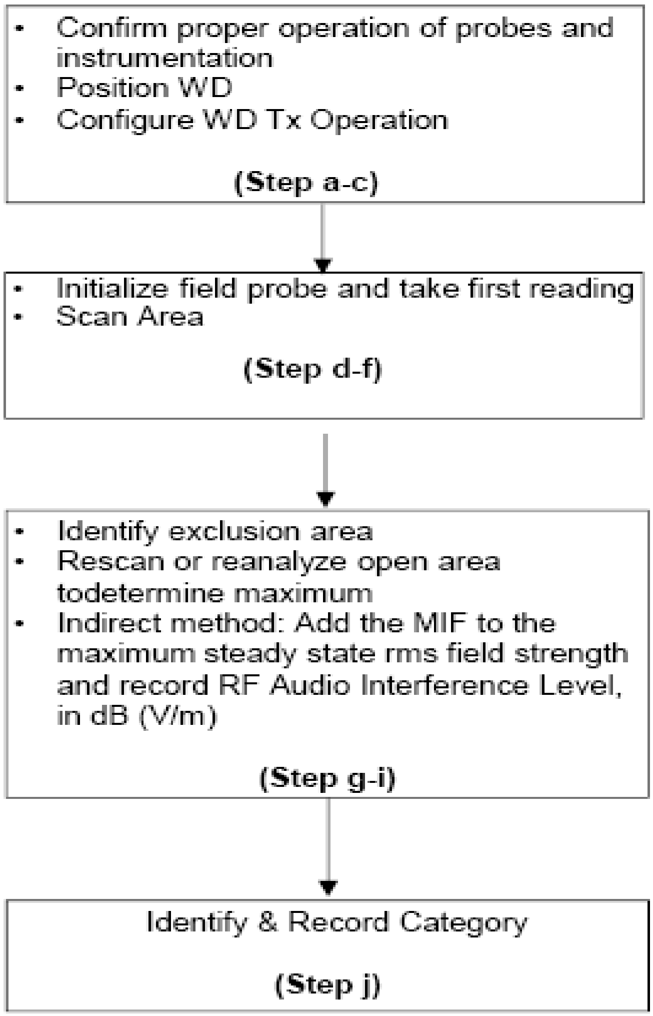
6. HAC Test Procedures

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

1. Proper operation of the field probe, probe measurement system, other instrumentation, and the positioning system was confirmed.
2. DUT is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.
3. The DUT 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.
4. The center sub-grid was centered over the center of the acoustic output (also audio band magnetic output, if applicable). The DUT audio output was positioned tangent (as physically possible) to the measurement plane.
5. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the test Arch.
6. The measurement system measured the field strength at the reference location.
7. Measurements at 5 mm increments in the 5 x 5 cm region were performed and recorded. A 360° rotation about the azimuth axis at the maximum interpolated position was measured. For the worst-case condition, the peak reading from this rotation was used in re-evaluating the HAC category.
8. The system performed a drift evaluation by measuring the field at the reference location.
9. Steps 1 ~ 8 were done for both the E and H-Field measurements.

7. Test Flowchart Per ANSI-PC63.19 2011

Test Instructions



8. Schematic Test Configuration

During HAC test, EUT was operating in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.

The Absolute Radio Frequency Channel Number (ARFCN) was allocated to 128, 190 and 251 respectively in the case of GSM 850MHz, or to 512, 661 and 810 respectively in the case of PCS 1900MHz, or to 4132, 4183 and 4233 respectively in the case of WCDMA 850MHz, or to 9262, 9400 and 9538 respectively in the case of WCDMA 1900MHz. or to 1312, 1413 and 1513 respectively in the case of WCDMA 1700MHz. The EUT was commanded to operate at maximum transmitting power.

The EUT should use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link was used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.

The signal transmitted by the simulator to the antenna feeding point should be lower than the output power level of the handset by at least 35 dB

Air-interface	Band (MHz)	Type	C63.19-2011 Tested	Simultaneous Transmissions Scenarios invoice (Not to be tested)	Reduced power
GSM	850	Voice	Yes	Yes: WIFI or BT	N/A
	1900	Voice	Yes	Yes: WIFI or BT	N/A
	GPRS	Data	N/A	N/A	N/A
WCDMA	850	Voice	Yes	Yes: WIFI or BT	N/A
	1900	Voice	Yes	Yes: WIFI or BT	N/A
	HSDPA	Data	N/A	N/A	N/A
	HSUPA	Data	N/A	N/A	N/A
WIFI	2.4G	Data	N/A	Yes GSM or WCDMA	N/A
BT	2.4G	Data	N/A	Yes GSM or WCDMA	N/A

The volume is at the maximum value, and the backlight of the phone is turned off. The Manufacturer doesn't design HAC mode software on the EUT

Note: The EUT 4G only supports data mode, not 4G voice mode.

9. RF Emissions

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

Emission Categories	E-field emissions	
	< 960 MHz	> 960 MHz
Category M1	50 to 55 dB (V/m)	40 to 45 dB (V/m)
Category M2	45 to 50 dB (V/m)	35 to 40 dB (V/m)
Category M3	40 to 45 dB (V/m)	30 to 35 dB (V/m)
Category M4	<40 dB (V/m)	<30 dB (V/m)

10 HAC RF Emission Test Results

10.1 Conducted Power (Unit: dBm)

6.1 Burst Average Power (dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880	1909.8
GSM(GMSK, 1-Slot)	32.00	32.31	32.35	28.59	28.44	28.38

Band	WCDMA Band V			WCDMA Band IV			WCDMA Band II		
Channel	4132	4183	4233	1312	1413	1513	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1712.6	1740	1752.4	1852.4	1880.0	1907.6
RMC 12.2Kbps	21.47	21.65	22.16	22.72	22.85	22.64	22.93	22.88	22.91

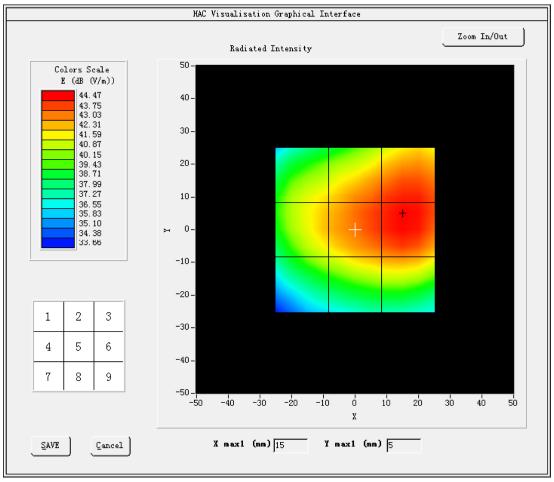
10.2 M-Rating

Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880	1909.8
Result(dB V/m)	35.13	36.34	37.08	30.72	30.07	29.45
M-Rating	M4	M4	M4	M3	M3	M4

Band	WCDMA Band V			WCDMA Band IV			WCDMA Band II		
Channel	4132	4183	4233	1312	1413	1513	9262	9400	9538
Frequency (MHz)	826.4	836.6	846.6	1712.6	1740	1752.4	1852.4	1880.0	1907.6
Result(dB V/m)	35.84	35.73	35.63	29.65	31.86	32.24	33.70	33.84	33.40
M-Rating	M4	M4	M4	M4	M3	M3	M3	M3	M3

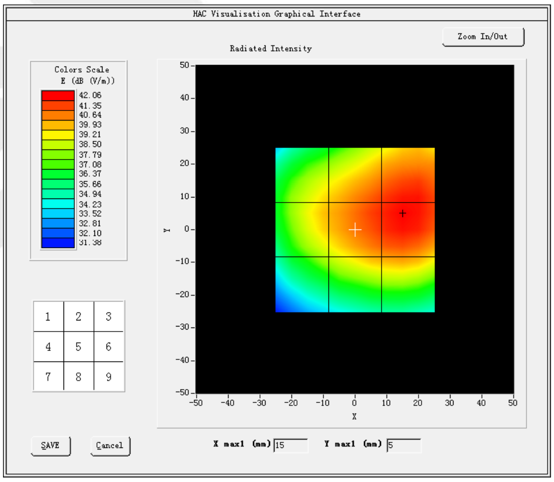
10.3 E-Field Emission for GSM:

Grid 1: 32.92	Grid 2: 34.78	Grid 3: 35.23
Grid 4: 33.44	Grid 5: 35.13	Grid 6: 35.53
Grid 7: 32.23	Grid 8: 33.81	Grid 9: 34.07



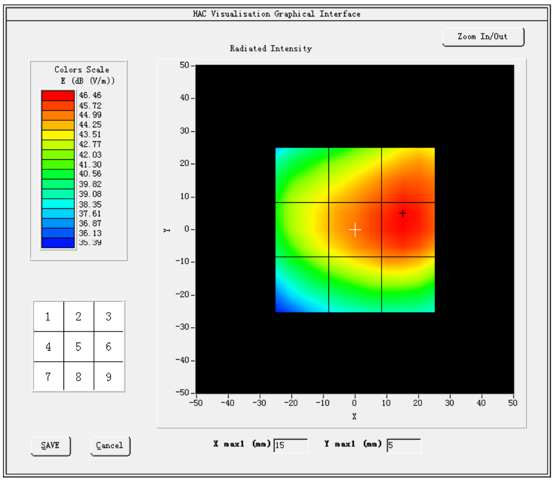
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
GSM850	128	824.2	35.13	M4

Grid 1: 34.30	Grid 2: 36.06	Grid 3: 36.56
Grid 4: 34.66	Grid 5: 36.34	Grid 6: 36.72
Grid 7: 33.30	Grid 8: 35.03	Grid 9: 35.20



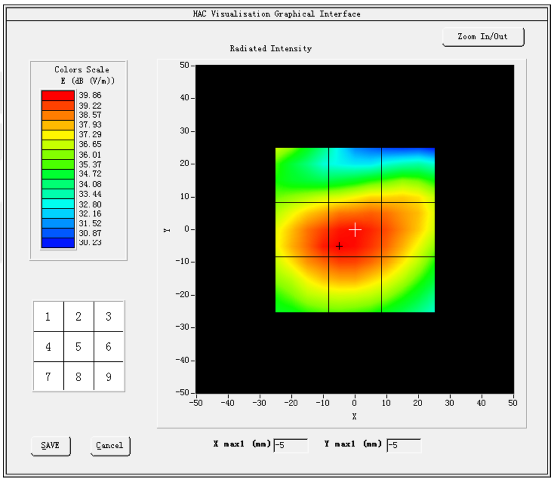
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
GSM850	190	836.4	36.34	M4

Grid 1: 34.78	Grid 2: 36.46	Grid 3: 37.06
Grid 4: 35.29	Grid 5: 37.08	Grid 6: 37.52
Grid 7: 34.20	Grid 8: 36.00	Grid 9: 36.19



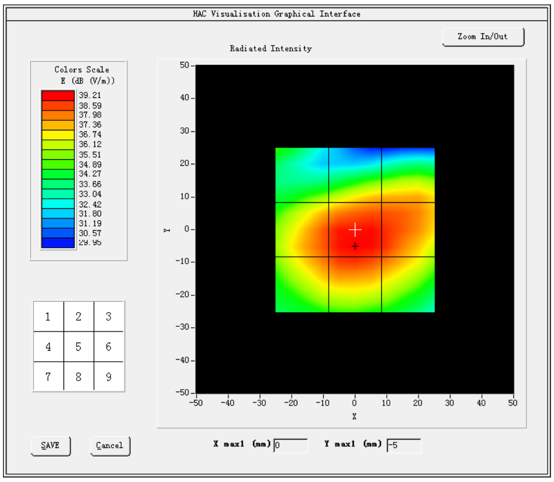
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
GSM850	251	848.8	37.08	M4

Grid 1: 27.61	Grid 2: 28.44	Grid 3: 28.51
Grid 4: 30.58	Grid 5: 30.72	Grid 6: 29.87
Grid 7: 30.19	Grid 8: 30.37	Grid 9: 29.30



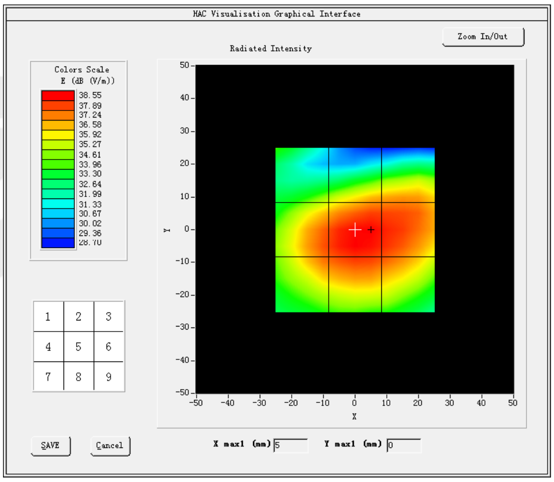
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
PCS1900	512	1850.2	30.72	M3

Grid 1: 26.65	Grid 2: 28.22	Grid 3: 28.36
Grid 4: 29.57	Grid 5: 30.07	Grid 6: 29.61
Grid 7: 29.29	Grid 8: 29.81	Grid 9: 29.13



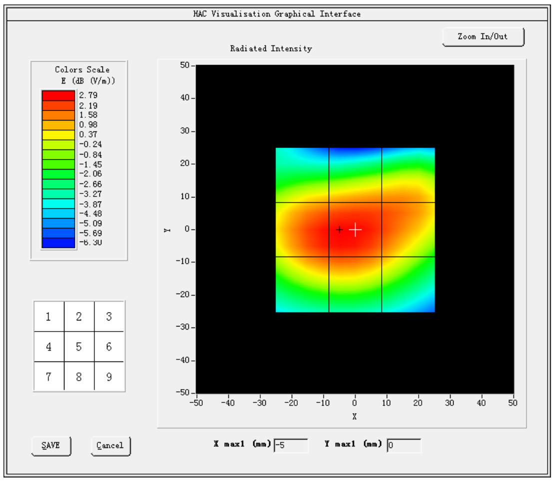
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
PCS1900	661	1880.0	30.07	M3

Grid 1: 25.77	Grid 2: 27.56	Grid 3: 27.78
Grid 4: 28.79	Grid 5: 29.45	Grid 6: 29.01
Grid 7: 28.51	Grid 8: 29.00	Grid 9: 28.53



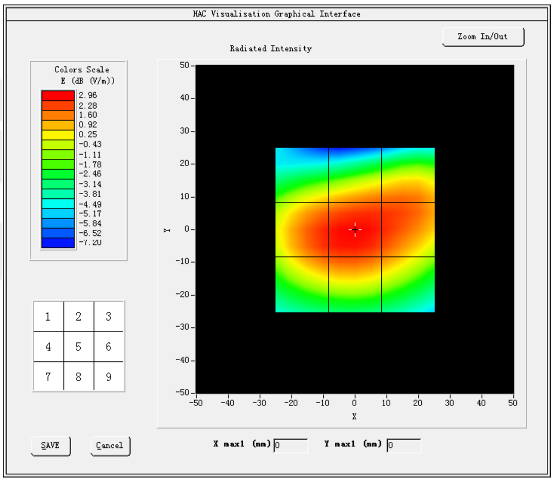
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
PCS1900	810	1909.8	29.45	M4

Grid 1: 31.64	Grid 2: 32.23	Grid 3: 32.27
Grid 4: 33.61	Grid 5: 33.70	Grid 6: 32.98
Grid 7: 32.99	Grid 8: 33.07	Grid 9: 31.91



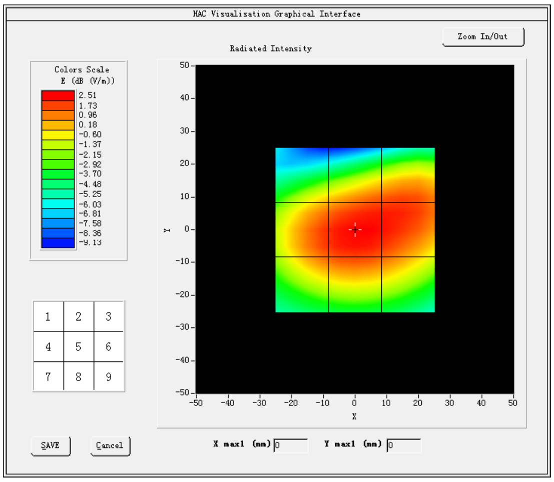
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA II	9262	1852.4	33.70	M3

Grid 1: 31.47	Grid 2: 32.52	Grid 3: 32.66
Grid 4: 33.61	Grid 5: 33.84	Grid 6: 33.37
Grid 7: 33.02	Grid 8: 33.21	Grid 9: 32.38



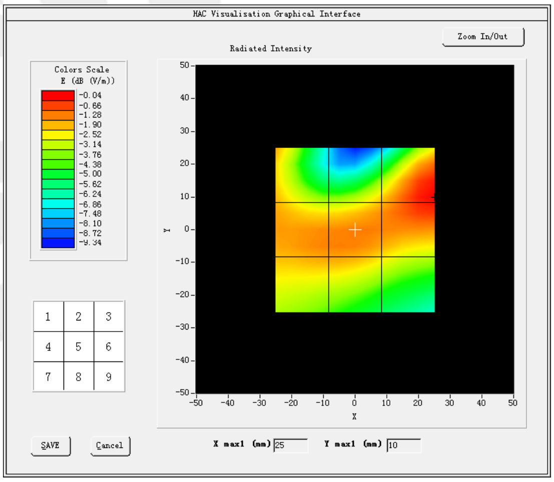
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA II	9400	1880.0	33.84	M3

Grid 1: 30.67	Grid 2: 32.25	Grid 3: 32.52
Grid 4: 32.94	Grid 5: 33.40	Grid 6: 33.18
Grid 7: 32.35	Grid 8: 32.71	Grid 9: 32.13



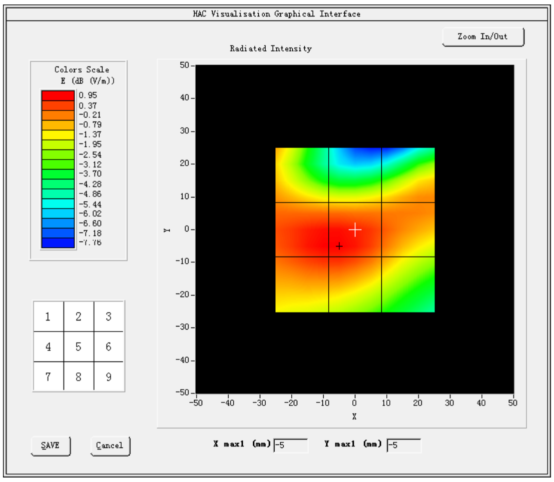
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA II	9538	1907.6	33.40	M3

Grid 1: 29.12	Grid 2: 28.77	Grid 3: 30.83
Grid 4: 29.59	Grid 5: 29.65	Grid 6: 30.77
Grid 7: 29.27	Grid 8: 29.27	Grid 9: 28.46



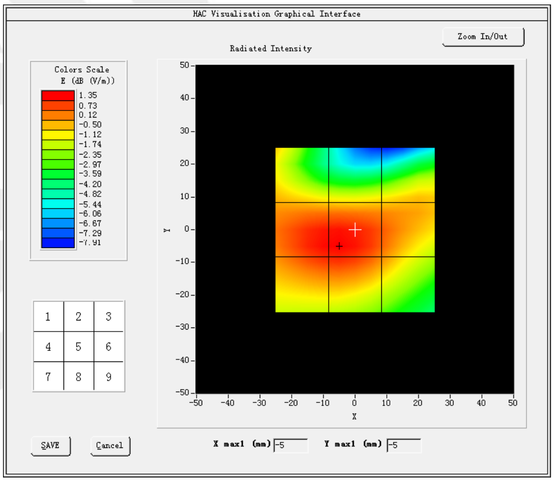
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA IV	1312	1712.6	29.65	M4

Grid 1: 30.42	Grid 2: 29.67	Grid 3: 30.56
Grid 4: 31.86	Grid 5: 31.86	Grid 6: 30.94
Grid 7: 31.59	Grid 8: 31.59	Grid 9: 30.30



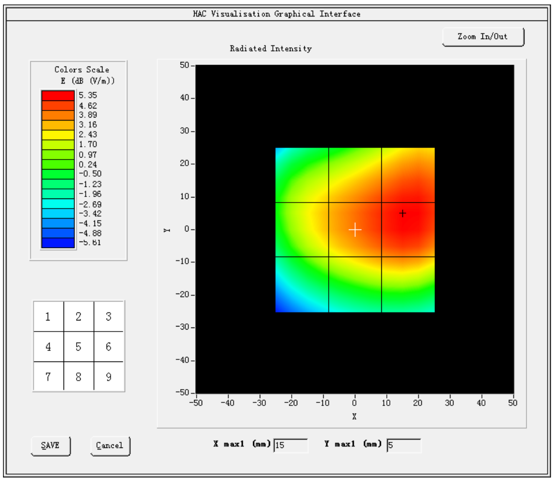
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA IV	1413	1740.0	31.86	M3

Grid 1: 30.35	Grid 2: 29.76	Grid 3: 30.28
Grid 4: 32.21	Grid 5: 32.24	Grid 6: 31.22
Grid 7: 31.94	Grid 8: 31.97	Grid 9: 30.74



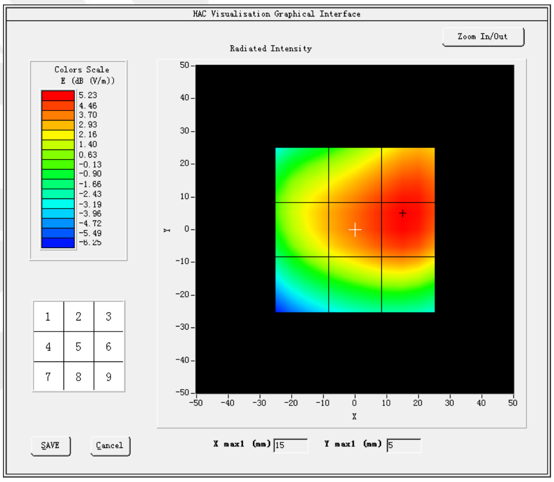
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA IV	1513	1752.4	32.24	M3

Grid 1: 33.71	Grid 2: 35.43	Grid 3: 35.99
Grid 4: 34.10	Grid 5: 35.84	Grid 6: 36.28
Grid 7: 32.90	Grid 8: 34.60	Grid 9: 34.92



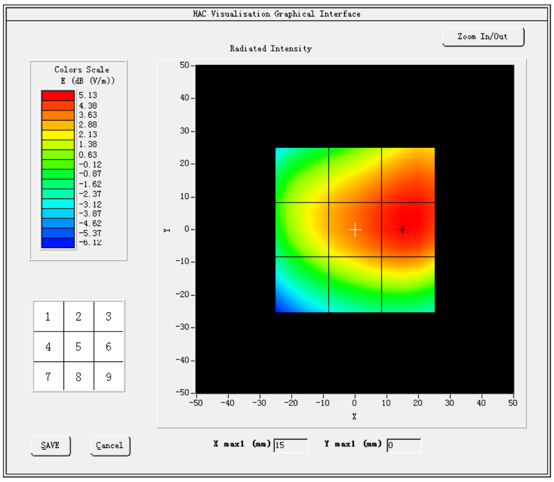
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA V	4132	826.4	35.84	M4

Grid 1: 33.58	Grid 2: 35.35	Grid 3: 35.88
Grid 4: 33.96	Grid 5: 35.73	Grid 6: 36.12
Grid 7: 32.73	Grid 8: 34.45	Grid 9: 34.72



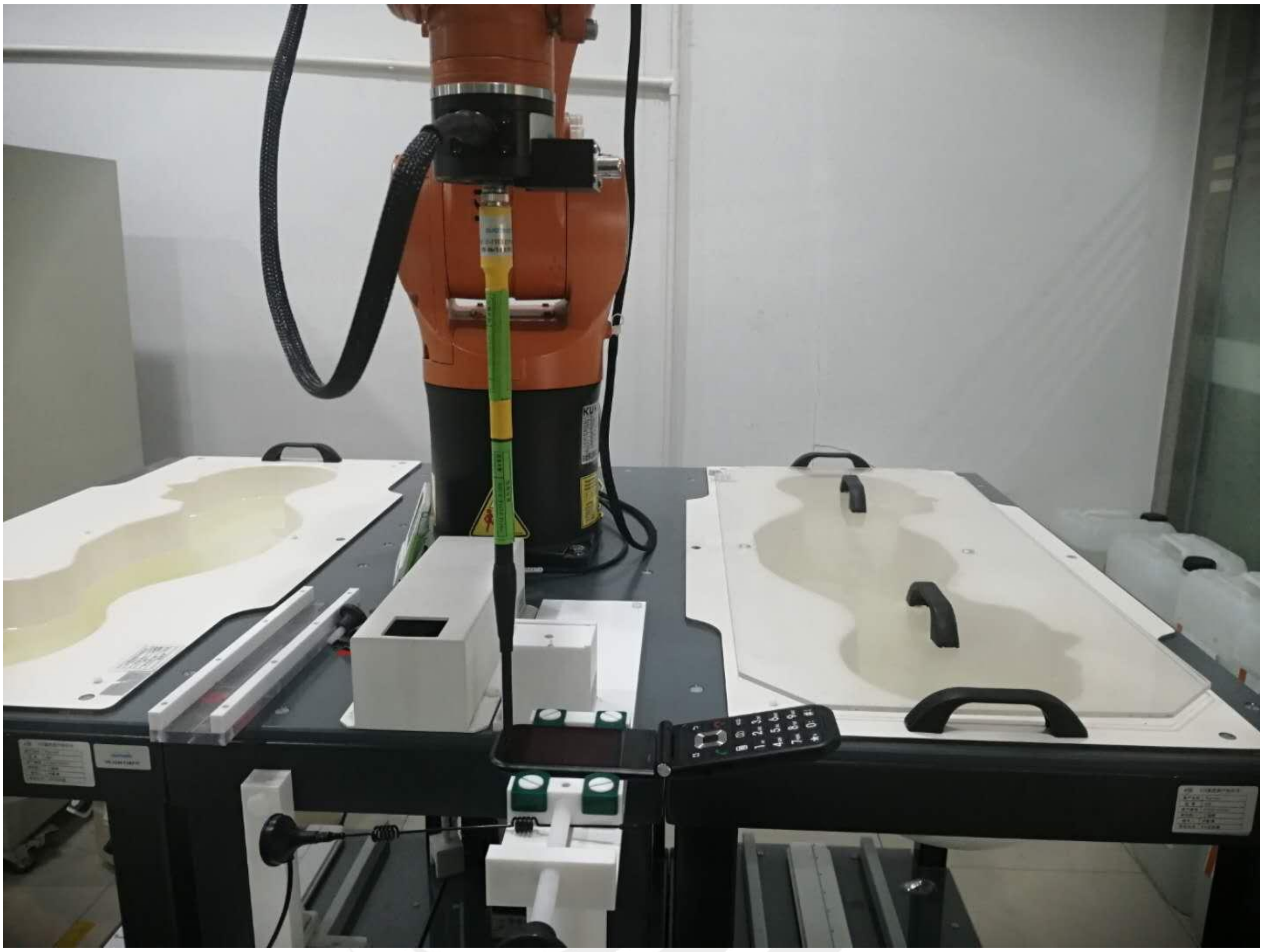
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA V	4183	836.6	35.73	M4

Grid 1: 33.46	Grid 2: 35.13	Grid 3: 35.71
Grid 4: 33.86	Grid 5: 35.63	Grid 6: 36.08
Grid 7: 32.66	Grid 8: 34.44	Grid 9: 34.78



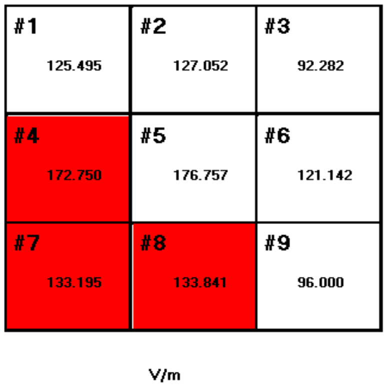
Operation mode	Channel	f(MHz)	Maximum value of total field (dB V/m)	M-Rating
WCDMA V	4233	846.6	35.63	M4

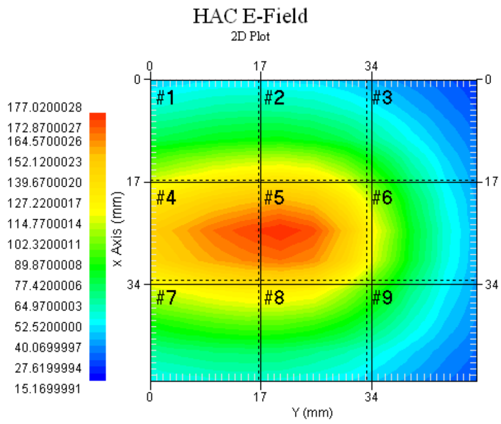
11. HAC Test Photographs



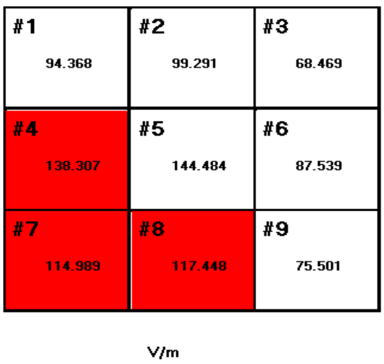
E-field

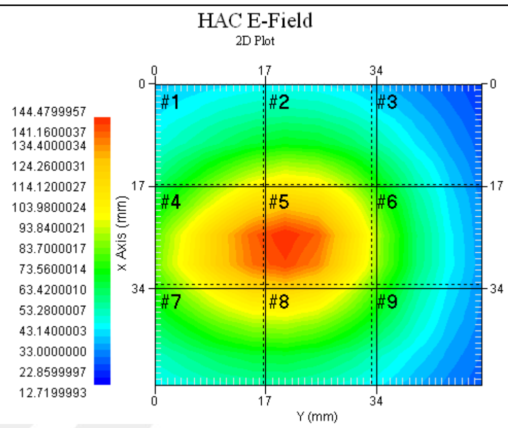
12. System Validation Results





Frequency(MHz)	Input power (dBm)	Target Value (dB V/m)	E-Field (dB V/m)	Deviation(%)	data
835	20	220.4	219.2	-0.54	Mar.16.2017





Frequency(MHz)	Input power (dBm)	Target Value (dB V/m)	E-Field (dB V/m)	Deviation(%)	data
1880	20	153.4	154.1	0.46	Mar.16.2017

13. Probe Calibration And Dipole Calibration Report

The following pages include the probe calibration used to evaluate HAC for the DUT.