HAC RF-Emission Test Report

Report No.	:	**HFBERD-WTW-P22010914**
Applicant	:	**Honeywell International Inc.**
Address	:	**9680 Old Bailes Road, Fort Mill, SC 29707 USA**
Product	:	**Dolphin CT60**
FCC ID	:	**HD5-CT60L1N**
Brand	:	**Honeywell**
Model No.	:	**CT60L1N**
Standards	:	**FCC 47 CFR Part 20.19, ANSI C63.19-2011** **KDB 285076 D01 v05, KDB 285076 D02 v03r01**
Sample Received Date	:	**Feb. 03, 2022**
Date of Testing	:	**Feb. 16, 2022**
M-Rating Summary	:	**M4**
Lab Address	:	**No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan**
Test Location	:	**No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City, Taiwan**

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's HAC characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

This report is issued as a supplementary report to BV CPS report no.: SA171122C17-3. The differences compared with original report is changing NFC Chip, HW/SW, adding WLAN 2.4G_n40, updating standard to the latest version, and refer to section 2 for more details.

Prepared By : Vera Huang
Vera Huang / Specialist

Approved By : Gordon Lin
Gordon Lin / Manager

Testing Laboratory 2021

FCC Accredited No.: TW0003

Table of Contents

Release Control Record

Report No.	Reason for Change	Date Issued
HFBERD-WTW-P22010914	Initial release	Apr. 22, 2022

1. Summary of Maximum M-Rating

Mode	Band	Maximum Audio Interference Level (dBV/m)	M-Rating
GSM	GSM850	38.1	M4
CDMA	BC0	37.91	M4
	BC10	37.02	M4
M-Rating Summary		M4	

Note:

1. The HAC RF emission limit **(M-rating Category M3)** is specified in FCC 47 CFR part 20.19 and ANSI C63.19.
2. The device RF emission rating is determined by the minimum rating.

2. Description of Equipment Under Test

EUT Type	Dolphin CT60
FCC ID	HD5-CT60L1N
Brand Name	Honeywell
Model Name	CT60L1N
HW Version	V1.1
HW P/N	DVT
SW Version	OS.05.001-HON.03.002
SW P/N	477D
Tx Frequency Bands (Unit: MHz)	GSM850 : 824.2 ~ 848.8 GSM1900 : 1850.2 ~ 1909.8 WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 CDMA BC0 : 824.7 ~ 848.31 CDMA BC1 : 1851.25 ~ 1908.75 CDMA BC10 : 817.9 ~ 823.1 LTE Band 2 : 1850.7 ~ 1909.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 4 : 1710.7 ~ 1754.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 5 : 824.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 7 : 2502.5 ~ 2567.5 (BW: 5M, 10M, 15M, 20M) LTE Band 12 : 699.7 ~ 715.3 (BW: 1.4M, 3M, 5M, 10M) LTE Band 13 : 779.5 ~ 784.5 (BW: 5M, 10M) LTE Band 17 : 706.5 ~ 713.5 (BW: 5M, 10M) LTE Band 25 : 1850.7 ~ 1914.3 (BW: 1.4M, 3M, 5M, 10M, 15M, 20M) LTE Band 26 : 814.7 ~ 848.3 (BW: 1.4M, 3M, 5M, 10M, 15M) LTE Band 38 : 2572.5 ~ 2617.5 (BW: 5M, 10M, 15M, 20M) LTE Band 40 : 2302.5 ~ 2397.5 (BW: 5M, 10M, 15M, 20M) LTE Band 41 : 2498.5 ~ 2687.5 (BW: 5M, 10M, 15M, 20M) WLAN : 2412 ~ 2462, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5720, 5745 ~ 5825 Bluetooth : 2402 ~ 2480 NFC : 13.56
Modulations Supported in Uplink	GSM & GPRS : GMSK EDGE : 8PSK WCDMA : QPSK CDMA : QPSK LTE : QPSK, 16QAM, 64QAM 802.11b : DSSS 802.11a/g/n/ac : OFDM Bluetooth : GFSK, π/4-DQPSK, 8-DPSK NFC : ASK
Antenna Type	WWAN/WLAN/BT: PIFA Antenna NFC: Loop Antenna
EUT Stage	Engineering Sample

Note:

1. Refer to below table for the change list.

SOM Change list	
RF Module	Underfill Modified
RF Module	LPDDR4x Layout Optimization
RF Module	Wi-Fi Layout Optimization
RF Module	WWAN Path Optimization
RF Module	WWAN Shielding Frame Optimization
RF Module	WWAN PA Power Optimization
RF Module	SOM PAD Mask Optimization
RF Module	Change DC regulator and WLAN amplifier DC power
RF Module	BOM Change for Optimization **
RF Module	B25 Duplexer-AVAGO-ACMD-6225-TR1
RF Module	B40 TRX filter-AVAGO-ACPF-8240-TR1
RF Module	Remove un-used CLK trace WCN_CLK
RF Module	WIFI 11b Power reduction from 18+/-1.5 dB to 17.5+/-1.5 dB **
RF Module	LTE 7 Power reduction from 23.4 + 1 / -2.7 dB to 23 + 1 / -2.7dB **
RF Module	GSM 850 Power reduction for Head with WIFI ON mode from 33.4 + 1 / - 2 dB to 32.8 + 1 / -2 dB **
RF Module	CDMA2K BC0 Power reduction for Head with WIFI ON mode from 24.4 +/- 1 dB to 23.8 + /- 1dB **
RF Module	CDMA2K BC10 Power reduction for Head with WIFI ON mode from 24.4 +/- 1 dB to 23.8 + /- 1dB **
RF Module	Enable WIFI 2.4G N40 by software
Carrier board Change list	
Carrier Board	Scanner change to N6703 imager
Carrier Board	Add 1F/2.7V supercap
Carrier Board	Add MAX38888 DC/DC for supercap charge/ change discharge circuit
Carrier Board	Add low battery protection circuit
Carrier Board	Change speaker and add a connector for it
Carrier Board	Change ADS1014 to ADS1015 to add supercap voltage detection
Carrier Board	AUX antenna tuner circuit change placement location
Carrier Board	Upgrade the SOM to SOM4
Carrier Board	Add a new model battery
Carrier Board	NFC Controller from NQ310 to NQ410
Carrier Board	Add the second source (OV13855 Camera, S0703VE insertion
Carrier Board	Add the second source (ESD, ADC, OPT Sensor, Translator, 6-axis sensor, Pressure sensor, Analog switch)

2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
3. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

List of Accessory:

Battery 1	**Brand Name**	Inventus
	Model Name	CT50-BTSC
	Power Rating	3.6Vdc, 4040mAh, 14.6Wh
	Type	Li-ion
Battery 2 (For test)	**Brand Name**	Honeywell
	Model Name	CT50-BTSC
	Power Rating	3.85Vdc, 4020mAh, 15.5Wh
	Type	Li-ion

Report Issue History Record:

Issue No.	Description	Date Issued
SA171122C17-3	Initial release	Jan. 05, 2018
HFBERD-WTW-P22010914	1. Change NFC Chip, HW/SW 2. Add WLAN 2.4G_n40 3. Update standard to the latest version	Apr. 22, 2022

Air Interface and Operational Mode:

Air Interface	Bands	Type Transport	HAC Tested	Simultaneous But Not Tested	Voice Over Digital Transport OTT Capability	WiFi Low Power	Additional GSM Power Reduction
GSM	850	VO	YES	WLAN or BT	N/A	N/A	N/A
	1900						
	GPRS/EDGE	DT	N/A	WLAN or BT	YES		
WCDMA	II	VO	NO[1]	WLAN or BT	N/A	N/A	N/A
	IV						
	V						
	HSPA	DT	N/A	WLAN or BT	YES		
CDMA	BC0	VO	NO[1]	WLAN or BT	N/A	N/A	N/A
	BC1						
	BC10						
	EVDO	DT	N/A	WLAN or BT	YES		
FDD-LTE	2	VD	NO[1, 2]	WLAN or BT	YES	N/A	N/A
	4						
	5						
	7						
	12						
	13						
	17						
	25						
	26						
TDD-LTE	38	VD	YES[2]	WLAN or BT	YES	N/A	N/A
	40						
	41						
WLAN	2.4G / 5G	DT	N/A	WWAN	YES	N/A	N/A
Bluetooth	2.4G	DT	N/A	WWAN	N/A	N/A	N/A

Type Transport

VO = Voice only

DT = Digital Data – Not Indented for CMRS Service

VD = CMRS and Data transport

Note

1. It applies the low power exemption per ANSI C63.19-2011.
2. No associated T-Coil measurement has been made in accordance with the guidance issued by OET in KDB publication 285076 D02 T-Coil testing for CMRS IP.

3. HAC RF Emission Measurement System

3.1 SPEAG DASY6 System

The SPEAG DASY6 system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY6 software defined. The DASY6 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (EOC). The EOC performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

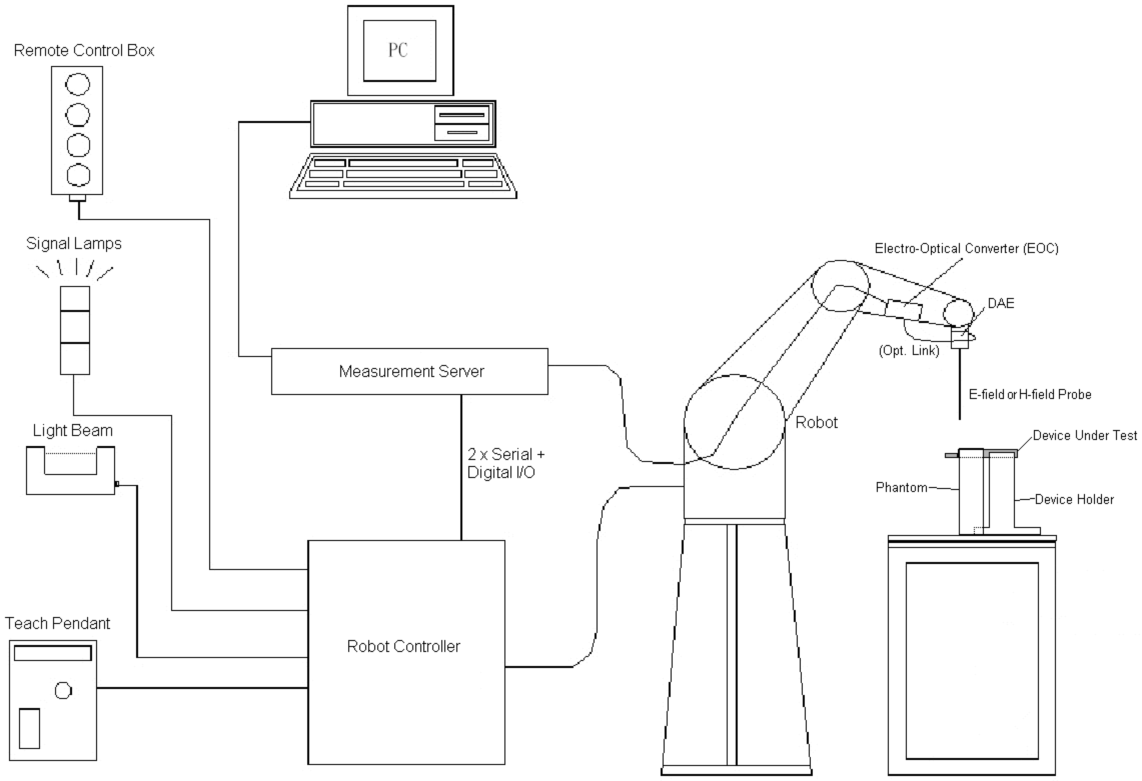


Fig-3.1 SPEAG DASY6 System Setup

3.1.1 Robot

The DASY6 system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY6: CS8c) from Stäubli is used. The Stäubli 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)

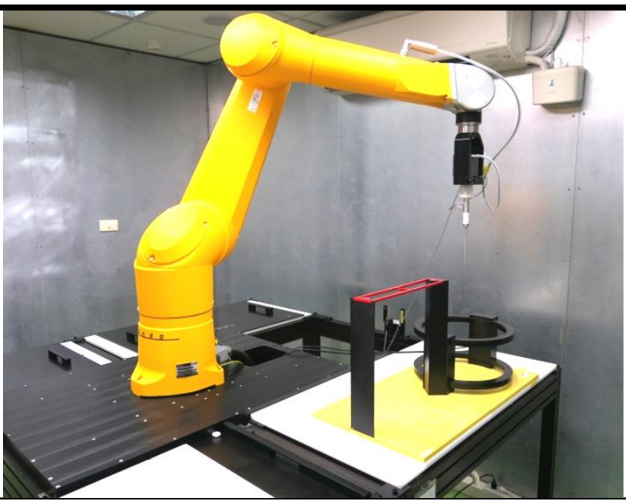
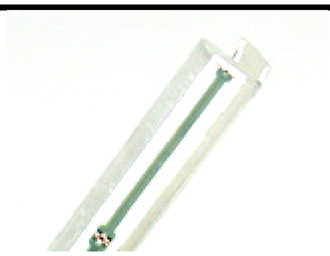


Fig-3.2 DASY6 Measurement System

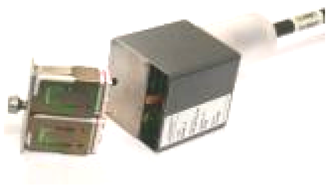
3.1.2 Probes

Model	ER3DV6	
Construction	One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges	
Frequency	40 MHz to 3 GHz Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in air (rotation around probe axis) ± 0.4 dB in air (rotation normal to probe axis)	
Dynamic Range	2 V/m to 1000 V/m Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 16 mm) Tip diameter: 8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.5 mm	

Model	EF3DV3	
Construction	One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges	
Frequency	40 MHz to 6 GHz Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in air (rotation around probe axis) ± 0.4 dB in air (rotation normal to probe axis)	
Dynamic Range	2 V/m to 1000 V/m Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.5 mm	

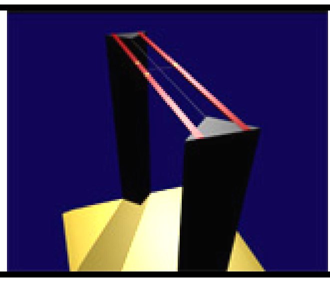
3.1.3 Data Acquisition Electronics (DAE)

Model	DAE3, DAE4
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
Input Offset Voltage	< 5μV (with auto zero)
Input Bias Current	< 50 fA
Dimensions	60 x 60 x 68 mm



3.1.4 Phantoms

Model	Test Arch
Construction	Enables easy and well defined positioning of the phone and validation dipoles as well as simple teaching of the robot.
Dimensions	Length : 370 mm Width : 370 mm Height : 370 mm

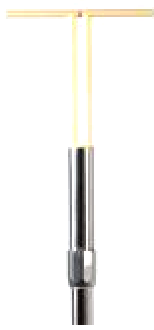


3.1.5 Device Holder

Model	Mounting Device
Construction	The Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to ANSI C63.19.
Material	POM

3.1.6 RF Emission Calibration Dipoles

Model	CD-Serial
Construction	Free space antenna Hearing Aid susceptibility measurements according to ANSI C63.19. Validation of Hearing Aid RF setup for wireless device emission measurements according to ANSI C63.19
Frequency	CD700V3 : 698 ~ 806 MHz CD835V3 : 800 ~ 960 MHz CD1880V3 : 1710 ~ 2000 MHz CD2450V3 : 2250 ~ 2650 MHz CD2600V3 : 2450 ~ 2750 MHz CD3500V3 : 3300 ~ 3950 MHz CD5500V3 : 5000 ~ 5900 MHz
Return Loss	CD700V3 : > 15 dB (750 MHz > 20 dB) CD835V3 : > 15 dB (835 MHz > 25 dB) CD1880V3 : > 18 dB (1880 MHz > 20 dB) CD2450V3 : > 18 dB (2450 MHz > 25 dB) CD2600V3 : > 18 dB (2600 MHz > 20 dB) CD3500V3 : > 16 dB (3500 MHz > 20 dB) CD5500V3 : > 18 dB (5500 MHz > 20 dB)
Power Capability	> 40 W continuous



3.2 DASY6 System Verification

The system check verifies that the system operates within its specifications. It is performed before every E-field measurement. The system check uses normal measurements in the center section of the arch phantom with a matched dipole at a specified distance. The system verification setup is shown as below.

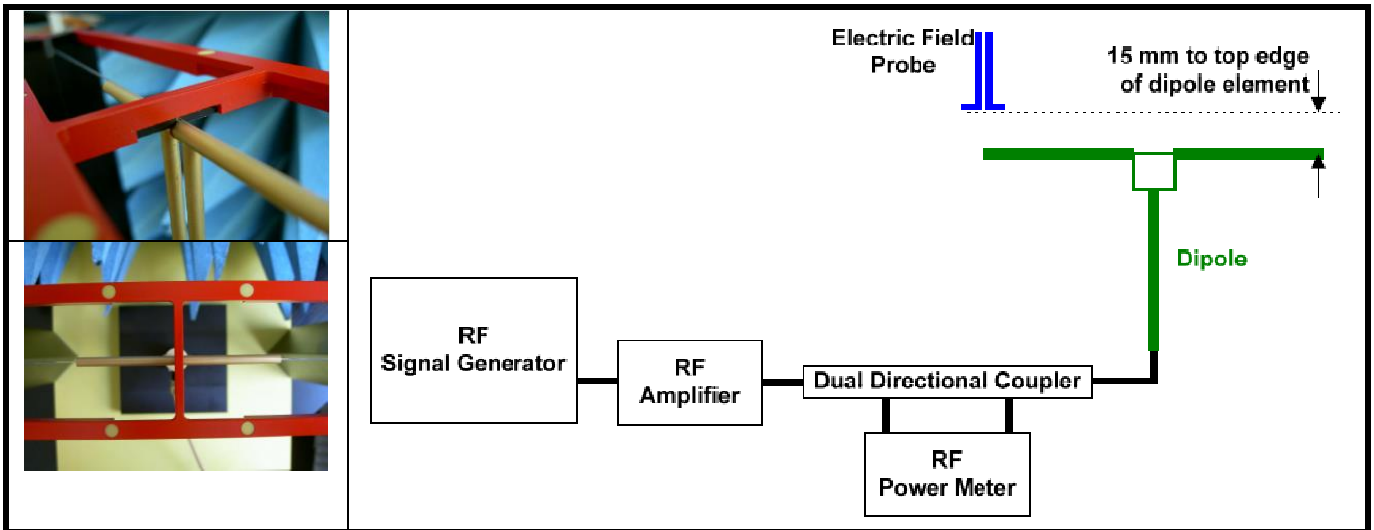


Fig-3.3 System Verification Setup

The validation dipole is placed beneath the center of arch phantom. The power meter measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power, 100 mW (20 dBm) at the dipole connector and the RF power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at RF power meter.

After system check testing, the E-field result will be compared with the reference value derived from validation dipole certificate report. The deviation of system check should be within 25 %.

The result of system verification is shown in section 4.3 of this report.

3.3 EUT Measurements Reference and Plane

The EUT is mounted in the device holder. The acoustic output of the EUT will coincide with the center point of the area formed by the dielectric wire and the middle bar of the arch's top frame. Then EUT will be moved vertically upwards until it touches the frame.

Fig-3.4 and Fig-3.5 illustrate the references and reference plane that is used in the RF emissions measurement.

(a) The grid is 50 mm by 50 mm area that is divided into nine evenly sized blocks or sub-grids.

(b) The grid is centered on the audio frequency output transducer of the EUT.

(c) The grid is in a reference plane, which is defined as the planar area that contains the highest point in the area of the phone that normally rests against the user's ear. It is parallel to the centerline of the receiver area of the phone and is defined by the points of the receiver-end of the EUT handset, which in normal handset use rest against the ear.

(d) The measurement plane is parallel to and 15 mm in front of the reference plane.

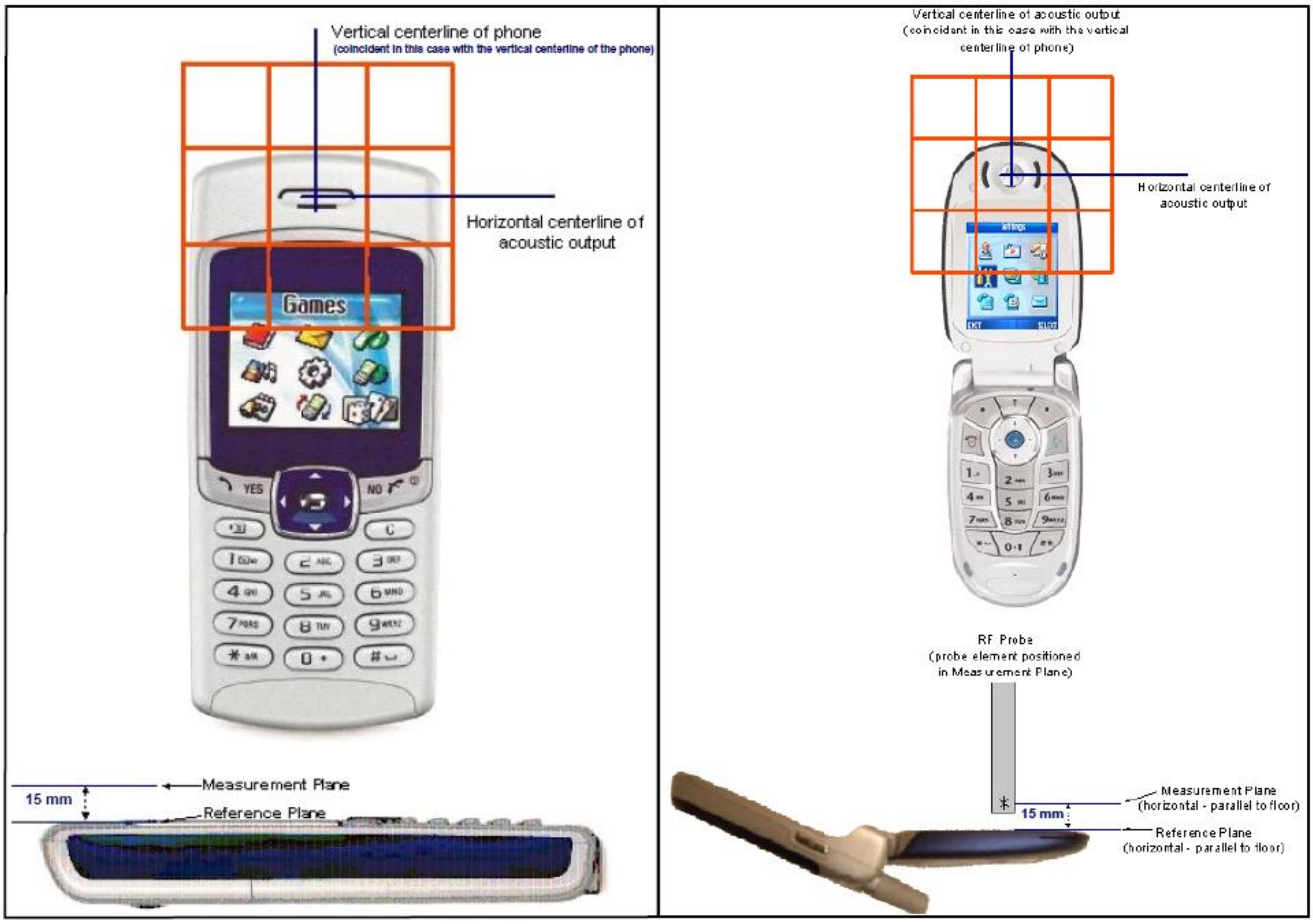


Fig-3.4 EUT Reference and Plane

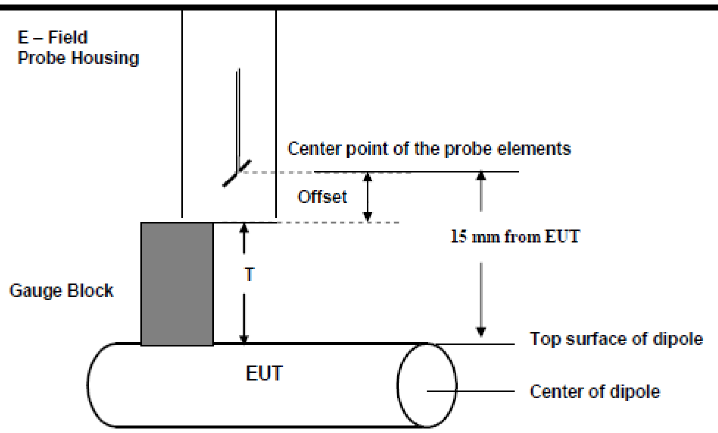


Fig-3.5 Gauge Block for Setting Measurement Distance to Probe

3.4 HAC RF Emission Measurement Procedure

The RF emissions test procedure for wireless communications device is as below.

1. Confirm the proper operation of the field probe, probe measurement system, and other instrumentation and the positioning system.
2. Position the WD in its intended test position.
3. Set the WD to transmit a fixed and repeatable combination of signal power and modulation characteristic that is representative of the worst case (highest interference potential) encountered in normal use. Transiently occurring start-up, changeover, or termination conditions, or other operations likely to occur less than 1% of the time during normal operation, may be excluded from consideration.
4. The center sub-grid shall be centered on the T-Coil mode perpendicular measurement point or the acoustic output, as appropriate. Locate the field probe at the initial test position in the 50 mm by 50 mm grid, which is contained in the measurement plane, illustrated in Fig-3.4. If the field alignment method is used, align the probe for maximum field reception.
5. Record the reading at the output of the measurement system.
6. Scan the entire 50 mm by 50 mm region in equally spaced increments and record the reading at each measurement point. The distance between measurement points shall be sufficient to assure the identification of the maximum reading.
7. Identify the five contiguous sub-grids around the center sub-grid whose maximum reading is the lowest of all available choices. This eliminates the three sub-grids with the maximum readings. Thus, the six areas to be used to determine the WD's highest emissions are identified.
8. Identify the maximum reading within the non-excluded sub-grids identified in step 7.
9. Indirect Measurement Method: The RF audio interference level in dB(V/m) is obtained by adding the MIF (in dB) to the maximum steady-state rms field-strength reading, in dB(V/m), from step 8. Use this result to determine the category rating.

10. Compare this RF audio interference level with the categories in section 4.1 and record the resulting WD category rating.

11 For the T-Coil mode M-rating assessment, determine whether the chosen perpendicular measurement point is contained in an included sub-grid of the first can. If so, then a second scan is not necessary. The first scan and resultant category rating may be used for the T-Coil mode M-rating. Otherwise, repeat step 1 through step 9, with the grid shifted so that it is centered on the perpendicular measurement point. Record the WD category rating.

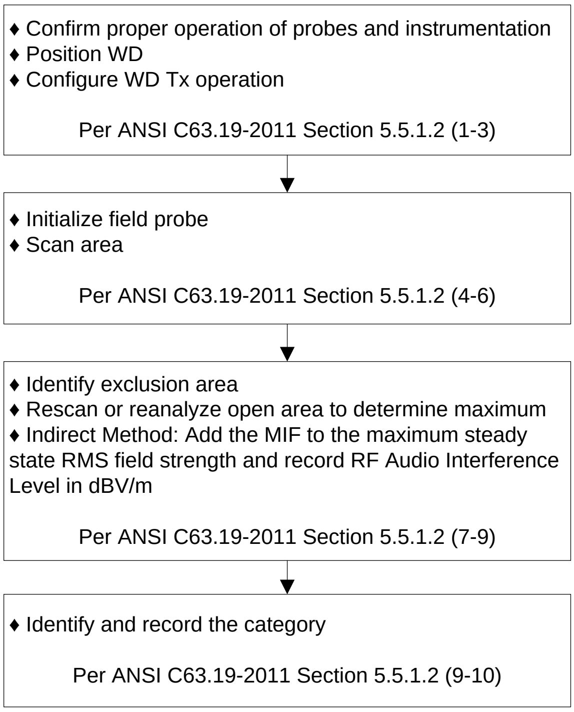


Fig-3.6 WD Near-Field Emission Test Flowchart

3.5 Modulation Interference Factor

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 potential (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 slots and repetition rates of few 100 Hz have high MIF values and give similar classification as ANSI C63.19-2007.

ER3D E-field probe have a bandwidth <10 kHz and can therefore not evaluate the RF envelope in the full audio band. DASY6 is therefore using the “indirect" measurement method according to ANSI C63.19-2011 which is the primary method. This near field probe read the averaged E-field. 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. It may alternatively be determined through analysis and simulation, because it is constant and characteristic for a communication signal. DASY6 uses well-defined signals for PMR calibration. The MIF of these signals has been determined numerically. It allows a precise scaling and is therefore automatically applied.

The following table lists the MIF values evaluated by DASY6 manufacturer (SPEAG), and the test result will be calculated with the MIF parameter automatically. The detailed parameters for E-field probe can be found in the probe calibration report in appendix C.

UID	Reversion	Communication System Name	MIF (dB)
10021	DAC	GSM-FDD (TDMA, GMSK)	3.63
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	3.75
10460	AAA	UMTS-FDD (WCDMA, AMR)	-25.43
10225	CAB	UMTS-FDD (HSPA+)	-20.39
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	3.26
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	-9.76
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	-1.62
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	-1.44
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	-1.54
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	-2.02
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	0.12
10427	AAC	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	-13.44
10069	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	-3.15
10616	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	-5.57

The MIF measurement uncertainty listed in following table is estimated by SPEAG.

MIF (dB)	MIF Measurement Uncertainty (dB)
-7 to +5	0.2
-13 to +11	0.5
> -20	1.0

4. HAC Measurement Evaluation

4.1 M-Rating Category

The HAC Standard ANSI C63.19-2011 represents 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 (dB V/m)	E-Field Emissions > 960 MHz (dB V/m)
Category M1	50 - 55	40 - 45
Category M2	45 - 50	35 - 40
Category M3	40 - 45	30 - 35
Category M4	< 40	< 30

4.2 EUT Configuration and Setting

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

4.3 System Verification

Refer to Annex C.

4.4 Maximum Target Conducted Power

Refer to Annex D.

4.5 Low Power Exemption Evaluation

Refer to Annex E.

4.6 Measured Conducted Power Results

Refer to Annex F.

4.7 HAC RF Emission Testing Results

Refer to Annex G.

Test Engineer： Ray Lo

5. Calibration of Test Equipment

Refer to Annex H.

6. Measurement Uncertainty

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (E)	Standard Uncertainty (E)
Measurement System					
Probe Calibration	5.05	Normal	1	1	± 5.1 %
Axial Isotropy	4.7	Rectangular	√3	1	± 2.7 %
Sensor Displacement	16.5	Rectangular	√3	1	± 9.5 %
Boundary Effects	2.4	Rectangular	√3	1	± 1.4 %
Phantom Boundary Effect	7.2	Rectangular	√3	1	± 4.2 %
Linearity	4.7	Rectangular	√3	1	± 2.7 %
Scaling with PMR Calibration	10.0	Rectangular	√3	1	± 5.8 %
System Detection Limit	0.25	Rectangular	√3	1	± 0.1 %
Readout Electronics	0.3	Normal	1	1	± 0.3 %
Response Time	0.0	Rectangular	√3	1	± 0.0 %
Integration Time	2.6	Rectangular	√3	1	± 1.5 %
RF Ambient Conditions	3.0	Rectangular	√3	1	± 1.7 %
RF Reflections	12.0	Rectangular	√3	1	± 6.9 %
Probe Positioner	1.2	Rectangular	√3	1	± 0.7 %
Probe Positioning	4.7	Rectangular	√3	1	± 2.7 %
Extrap. and Interpolation	2.0	Rectangular	√3	1	± 1.2 %
Test Sample Related					
Device Positioning Vertical	4.7	Rectangular	√3	1	± 2.7 %
Device Positioning Lateral	1.0	Rectangular	√3	1	± 0.6 %
Device Holder and Phantom	2.4	Rectangular	√3	1	± 1.4 %
Power Drift	5.0	Rectangular	√3	1	± 2.9 %
Phantom and Setup Related					
Phantom Thickness	2.4	Rectangular	√3	1	± 1.4 %
Combined Standard Uncertainty					± 16.3 %
Coverage Factor for 95 %					K = 2
Expanded Uncertainty					**± 32.6 %**

Uncertainty budget for HAC RF Emission

7. Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Taiwan Huaya Lab:
Add: No. 19, Huaya 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan
Tel: +886-(0)3-318-3232
Fax: +886-(0)3-211-5834

Taiwan Linkou Lab:
Add: No. 47-2, Baodoucuokeng, Linkou Dist., New Taipei City 244, Taiwan
Tel: +886-(0)2-2605-2180
Fax: +886-(0)2-2605-2943

Taiwan Hsinchu Lab1:
Add: E-2, No. 1, Lixing 1st Rd., East Dist., Hsinchu City 300, Taiwan
Tel: +886-(0)3-666-8565
Fax: +886-(0)3-666-8323

Taiwan Hsinchu Lab2:
Add: No. 49, Ln. 206, Wende Rd., Qionglin Township, Hsinchu County 307, Taiwan
Tel: +886-(0)3-512-0595
Fax: +886-(0)3-512-0568

Taiwan Xindian Lab:
Add: B2F., No. 215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan
Tel: +886-(0)2-8914-5882
Fax: +886-(0)2-8914-5840

Email: service.adt@tw.bureauveritas.com
Web Site: https://ee.bureauveritas.com.tw/BVInternet/Default

The road map of all our labs can be found in our web site also.

---END---