RF HAC Test Report

FOR:

Manufacturer: Unimax Communications
Model Name: U307TG, MXG308
FCC ID: P46-UMX35INT

Test Report #: HAC_INTEL_096_15001_RF_Rev1

Date of Report: June 23, 2016

TESTING LABORATORY
Certificate #2135.01

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1. <u>Assessment</u>

The following device was tested against the applicable criteria specified in FCC 20.19 and ANSI C63.19 – 2011 and no deviations were ascertained during the course of the tests performed.

Manufacturer	Description	Model #
Unimax Communications	Mobile Phone	U307TG, MXG308

Responsible for Testing Laboratory:

Date	Section	Name	Signature
June 23, 2016	Compliance	Josie Sabado (Test Lab Manager)	

Responsible for the Report:

Date	Section	Name	Signature
June 23, 2016	Compliance	James Donnellan (Sr. EMC Engineer)	James Donnellan — Digitally signed by James Donnellan DN: cn=James Donnellan, c=US, o=Cetecom Inc., ou=Compliance, email=james.donnellan@cetecom.com Date: 2016.06.24 13:07:09 -07'00'

The test results of this test report relate exclusively to the test item specified in Section3.
CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

2. Administrative Data

2.1. Identification of the Testing Laboratory Issuing the HAC Test Report

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Department:	Compliance
Address:	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
Telephone:	+1 (408) 586 6200
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Test Lab Manager	Josie Sabado
Responsible Project Manager	Rami Saman

2.2. Identification of the Client and Manufacturer

	Client	**Manufacturer**
Company	Intel Inc.	Unimax Communications
Street Address	12220 Scripps Summit Drive	18201 McDurmott Street W. Suite E
City, State Zip Code	San Diego, CA 92131	Irvine, CA 92614
Country	USA	USA

3. Equipment under Test (EUT)

3.1. Specification of the Equipment under Test

Model No	U307TG, MXG308
FCC ID	P46-UMX35INT
Prototype/Production	Pre-Production
Supported Radios	GSM/GPRS /EGPRS MS Class 12, Power Class 4/1, Mobile Class B WCDMA/ HSUPA/HSPA+, Power Class 3 Bluetooth v4.0 802.11 b/g/n, HT20 GPS receiver
Wi-Fi Low Power	Not Applicable
GSM Power Reduction	Not Applicable
Date of Testing	June 22, 2016
HAC Rated Category	M3

3.2. Antenna Information

Antenna	Type	Internal / External	Frequency (MHz)	Manufacturer Stated Max Peak Gain (dBi)
WWAN	IFA	Internal	800 – 1915	1.2
Bluetooth / WLAN	IFA	Internal	2400 – 2485	1.5

3.3. Technical Specification of Supported Radios

Technology	Type(s) of Modulation	Band	Transmit Frequency Range (MHz)	Declared Maximum Conducted Output Power Including Tolerance
GSM	GMSK	GSM 850	824.2 – 848.8	33
		PCS 1900	1850.2 – 1909.8	30
(E)GPRS	GMSK, 8PSK	GSM 850	824.2 – 848.8	33
		PCS 1900	1850.2 – 1909.8	30
WCDMA	QPSK, 16 QAM	FDD II	1852.4 – 1907.6	23.8
		FDD V	826.4 – 846.6	23.8
Bluetooth	GFSK	N/A	2402 – 2480	5.5
802.11 b/g/n	BPSK, QPSK, 16-QAM, 64-QAM	N/A	2412 – 2462	16

3.4. Supported Air Interfaces

Air Interface	Band	Transport Type[1]	C63.19 Tested	Over the Top Voice Mode	Simultaneous Transmission[2]	Wi-Fi Low Power	GSM Power Reduction
GSM	GSM 850	VO	Yes	N/A	Yes; WiFi or Bluetooth	N/A	N/A
	PCS 1900						
(E)GPRS	GSM 850	DT	N/A	No	Yes; WiFi or Bluetooth	N/A	N/A
	PCS 1900						
WCDMA	FDD II	VO	No	N/A	Yes; WiFi or Bluetooth	N/A	N/A
	FDD V						
Bluetooth	N/A	DT	N/A	No	Yes; GSM, (E)GPRS, WCDMA	N/A	N/A
802.11 b/g/n	N/A	DT	No	Yes	Yes; GSM, (E)GPRS, WCDMA	N/A	N/A

NOTES:
1. VO = CMRS Voice Service; DT = Digital Transport only (no voice); VD = CMRS IP Voice Service and Digital Transport
2. Simultaneous transmission mode is not tested

3.5. Identification of the Equipment Under Test (EUT)

EUT #	Serial Number	HW Version	SW Version
1	U307TG6303000222	B1.2	SOF35AU_L_3G_MRD5_ES21_Main_B1.1_ 01.35.ww39_p3.2016_20160512_eng_PTCRB

3.6. Identification of Accessory equipment

No accessory equipment.

3.7. Miscellaneous Information

1. The U307TG and the MXG308 are electrically identical. The purpose of the models is because of the exterior appearance and for marketing purposes.
2. All tests in this test report was performed with HAC mode enabled. HAC Audio mode was enabled through the EUT user interface. The option to enable this mode is found under Phone > Settings > Calls > Hearing Aids.
3. HAC mode enabled makes the following changes:
   a. Enhanced audio frequency response
   b. Additional 3 dB digital gain in the downlink path

4. Subject of Investigation

The objective of the measurements done by CETECOM Inc. was to determine the HAC rating of the EUT according to requirements in ANSI C63.19 – 2011. The examinations were carried out with the DASY 52 system described in Section 6.

4.1. FCC rules and ANSI Measurement Methods

Chapter 47 of Code of Federal Regulations, Part 20.19 specifies criteria for Hearing aid-compatible mobile handsets and ANSI C63.19-2011: American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids establish categories for hearing aids and methods of measurement.

4.2. Categories of Hearing Aid Compatibility for wireless devices

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

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

5. Measurement Procedure

ANSI has published an American National Standard on May 2011 (C63.19), which establishes categories for hearing aids and for wireless devices, and provide tests that can be used to assess the electromagnetic characteristics of hearing aids and for wireless devices and assign them to these categories.

ANSI C63.19-2011 describes two methods of measuring RF audio interference level. DASY52 uses the indirect method.

5.1. General Requirements

The test was performed in a laboratory with an environment which avoids influence on HAC measurements by ambient EM sources and any reflection from the environment itself. The ambient temperature shall be in the range of 20°C to 26°C and 30-70% humidity.

5.2. Configurations

Device holder and positioning description
The SPEAG HAC Test Arch is placed on a flat, stable surface. The Test Arch was designed to allow high precision positioning of the EUT and dipole. The center of the Test Arch is the point where the dielectric wire and the middle bar of the arch's top frame cross. To minimize interferences between the device holder and the EUT, a foam block is attached to the back of the EUT and used with the device holder. The distance between the EUT and the top of the HAC test arch is 6.3 mm.

Test positions of device
The HAC measurements are performed according to the requirements of ANSI C63.19-2011. It allows centering the wireless device inside a 5 x 5 cm control area. The EUT is placed under the SPEAG Test Arch. The center of the speaker of the EUT is placed at the center point of the Test Arch and the EUT is raised so that it is lightly touching the bottom of the Test Arch. The distance between the EUT and the measurement plane at the center of the E-field probe sensors is 15 mm.

Radio Exercising
The cellular radio of the EUT was exercised via a wireless connection to a base station simulator. The base station simulator was used to set the EUT to transmit at maximum power at the specified air interface, channel, and operating mode.

5.3. MIF Evaluation

The Modulation Interference Factor (MIF) scales the power-averaged signal to the RF audio interference level and is characteristic to a modulation scheme. The E-field HAC probe is calibrated for specific modulated signals by SPEAG. The MIF is not evaluated by the test lab because it is evaluated by SPEAG and used in HAC evaluation. The reported MIF values are based on worst case operating modes for all air interfaces.

The following text is from SPEAG DASY52 System Handbook, April 2014, Chapter 39

MIF Definition

The MIF is defined in the HAC standard. It is the weighted envelope from a square law detector, relative to its carrier. The weighting consists of a spectral part (extracting the audible parts with a weighting similar to an A-weighting curve) followed by a quasi peak detector. Because it is used to scale the power-averaged field, the weighted quantity is relative to the carrier signal. The unmodulated carrier would not pass the spectral filter; therefore the reference signal is defined for the carrier when the amplitude is modulated with 1 kHz and 80% AM depth. The MIF measurement principle is shown in figure 39.1.

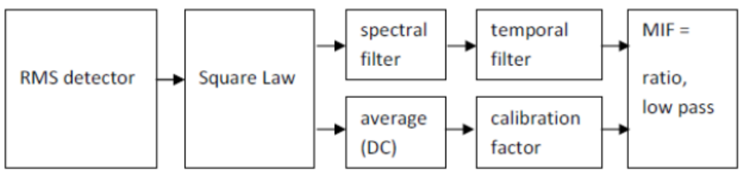


Figure 39.1: Block diagram of the MIF definition: The top path evaluates the AC part of the square law detected signal, the lower path extracts the carrier level from the signal and applies the calibration factor compensating for the 1 kHz 80% AM. The MIF is the output ratio from these two paths.

In the appendix of the standard, the components for realizing this evaluation are well characterized. One crucial item is a square law detector with a high dynamic range that is insensitive to all required modulations. In the desired RF frequency band, the square law detector response must be uniform within 1 dB for modulation frequencies from 50 Hz to 10 kHz and follow the square law over the signal dynamic range with 1 dB tolerance at the output. The spectral and temporal filtering is defined separately for the frequency range from 20 Hz to 20 kHz, with higher tolerances outside the range 50 Hz - 10 kHz with tighter specifications. Validation data for generic waveforms are provided.

MIF Evaluation

Complex modulations are well defined due to their digital modulation pattern. Such waveforms can therefore be reproduced precisely using digitally modulated RF signal generators (e.g. Anritsu MG-3700A). The baseband modulation is available as a digital file from synthesis or from digital sampling of real waveforms. Highly reproducible results can thus be obtained using full or partial digital processing for the MIF evaluation - or fully analogue measurement.

Due to the availability of the digitized baseband signals, we have focused on fully digital evaluation with numerical processing which exceeds the dynamic range and precision of any practical measurement. In addition, we have measured the MIF using the AIA which uses an analogue front end, samples the signal and then applies fully digital filtering and evaluation. Both methods have been realized according to the block diagram in figure 39.2.

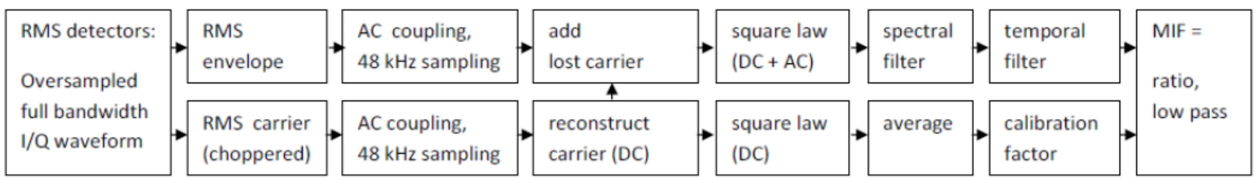


Figure 39.2: Block diagram for measuring or simulating MIF from modulated waveforms

MIF Measurement

The RF signal is supplied to an RMS detector covering the full band from 698 - 6000 MHz with high dynamic range. The RMS output has a high "video" bandwidth passing the full modulation bandwidth of all signals. The two paths in figure 39.2 have the same function as the ones in figure 39.1.

The square law is applied to the bandwidth reduced waveform (20 kHz) after sampling with 48 kHz. An AC coupled sampling device (preceded by anti-aliasing filters) provides a digitized stream for the subsequent digital filtering. Due to the AC coupling, the RF carrier signal (represented by a DC signal in the baseband) is suppressed. Using a chopper and a reconstruction in the lower path of figure 39.2, it is recovered and also added again to the upper envelope path before applying the square law processing. The square law detected envelope is then subject to spectral filtering by convoluting the signal with the coefficients from the Fourier transformed spectral filter. The MIF is then obtained from the simple temporal filter with averaging and weighting.

MIF measurements were performed with a SPEAG AIA on RF signals from an Anritsu MG3700A RF signal generator at 1 GHz. The operation of the AIA with DASY52 is explained in detail in according to section 24.9 MIF Measurement with the AIA.

MIF Numerical Evaluation
Input for the processing is the baseband waveform with I and Q components and full bandwidth, which allows a much higher dynamic range than hardware detectors. Depending on the available sampling rate of this baseband signal, an oversampling or decimation must be applied to allow reasonable digital processing with digital filtering in the audio frequency range with comparatively low frequencies. For the numerical evaluation, the same processing steps are used as in the measurement, except that choppering and recovering the carrier signal is simplified. Spectral and temporal filtering and averaging have been realized with the same algorithms as for the measured waveforms above.

Spectral filtering can also be realized with an alternative implementation: Fourier transformation + spectral weighting + inverse Fourier transformation. This method has been verified to give the same results as the convolution (with negligible deviations).

MIF processing was performed on a PC using MATLAB.

System Validation
Both methods for numerical and measured MIF evaluation were validated in detail for compliance with the requirements from the standard.

RF frequency response: Numerical evaluation of the baseband signal is independent of the RF. Measurements were all taken at a fixed frequency of 1 GHz. The AIA was calibrated using a 1 kHz 80% AM signal at this constant frequency before measuring other waveforms.

RF dynamic range: was > 30 dB for the reference 1 kHz 80% AM signal. Measurement of an unmodulated CW signal gives an MIF reading of < -40 dB at high signal levels which reduces to -30 dB at the lower end of the dynamic range.

Modulation frequency response: The spectral filtering used for both numerical and measurement evaluation has the frequency response according to figure 39.3 with negligible deviation in the frequency range up to > 10 kHz. Verification measurements of the AIA were taken for the RMS detector with an Agilent RF signal generator sweeping through the audio frequency range at 10 % AM. The amplitude variation at the output is very small and can be neglected due to the detector bandwidth which covers the full modulation bandwidth of several 10 MHz. Finally, the filtering response of the complete AIA until the MIF output verified with the same 10 % AM signal gives a deviation within 0.2 dB up to > 12.5 kHz.

At higher frequencies, the deviation (MIF -37 to -44 dB) increases in line with the limited dynamic range of the AIA.

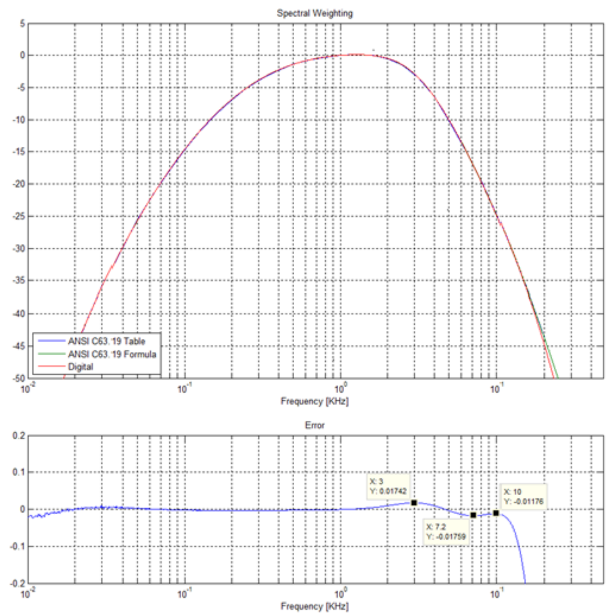


Figure 39.3: Spectral filter for convolution and deviation from the target defined in the standard [1]. Worst case deviation is < 0.02 dB in the frequency range from 10 Hz to 10 kHz.

Test signal validation: Table 39.1 gives the results for all generic waveforms listed in the standard. The numerically simulated evaluations lead to small deviations < 0.1 dB, mainly due to rounding. Only for the very slow 10 Hz modulation and the high dynamic range pulsed 100 Hz signal is the deviation larger. As expected, the MIF values from the measurements with the AIA (according to section 24.9 MIF Measurement with the AIA) have a slightly larger deviation. Their deviation is, however, within the allowed deviations considering the specification requirements in the standard.

UID	Test Waveforms	PAR	MIF (dB) Standard	MIF (dB) simulated	MIF (dB) measured
10010−CAA	SAR Validation (Square, 100ms, 10ms)	10.00	1.6	1.68	0.93
10085−CAA	HAC 80% AM	3.90	-1.2	-1.17	-1.20
10280−CAA	0.5ms pulse, 1000Hz repetition rate	3.01	-0.9	-0.94	-0.80
10281−CAA	1ms pulse, 100Hz repetition rate	10.00	3.9	3.92	3.84
10282−CAA	0.1ms pulse, 100Hz repetition rate	20.00	10.6	9.60	9.32
10284−CAA	1kHz sine, 10% AM	0.81	-9.1	-9.10	-9.20
10285−CAA	1kHz sine, 1% AM	0.09	-19.1	-19.08	-19.19
10286−CAA	100Hz sine, 10% AM	0.81	-16.1	-16.01	-16.10
10287−CAA	10kHz sine, 10% AM	0.81	-21.5	-21.50	-21.62
10289−CAA	1/8 duty cycle pulse, 217Hz repetition rate	9.03	3.3	3.33	3.20

Table 39.1: Comparison of MIF for test signals: Value stated in the HAC standard, from numerical simulations and from verification with measurement

MIF Results

The following tables list groups of modulations identified by UID with version, common name and the PAR. The UID detailed specifications are available from SPEAG. These MIF results are applicable not only to the listed version for the UID, but replace also older MIF values for previous versions of the same UID (represented by the identical numerical UID value). Besides the common name, the PAR is listed for better identification. This PAR is the peak-to-average ratio which is only exceeded with 0.1 % probability, in line with the FCC requirements. It has been evaluated from the numerically available signals which were further processed to obtain the MIF.

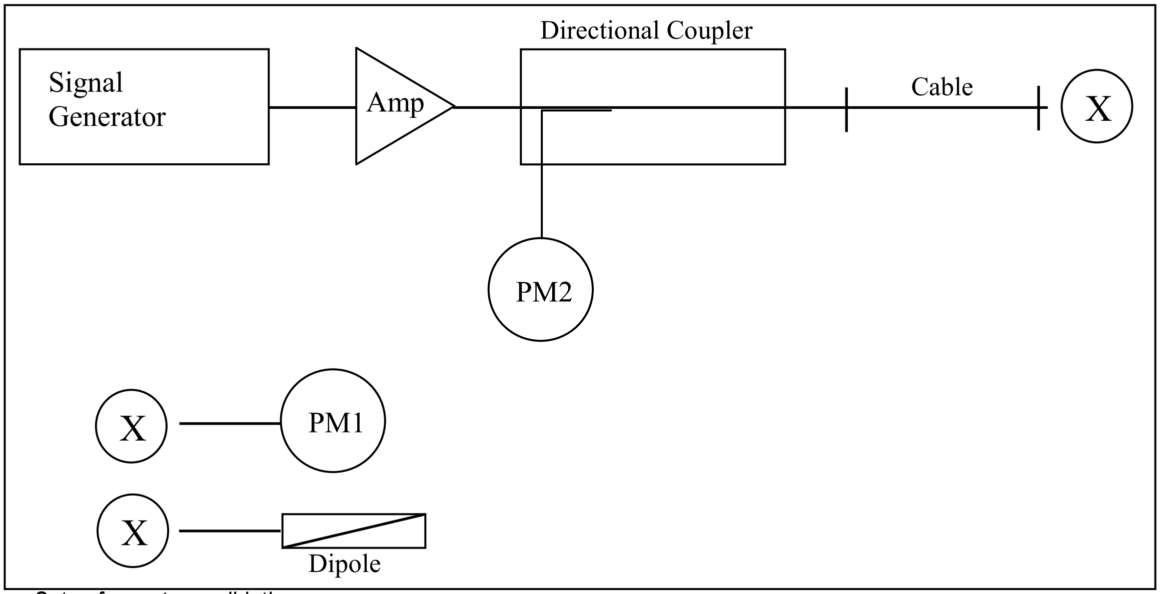
The MIF for these waveforms results from the numerical evaluation described above. Each of the values has also been verified by measurement with an AIA. The measured deviations are < 0.2 dB for almost all modulations. Up to 0.3 dB deviation was only observed in conjunction with very low MIF or very high dynamic range. Only three modulations characterized by slow modulation slots < 25 Hz showed larger deviations up to 0.8 dB.

UID	Air Interface	PAR (dB)	MIF (dB)
10011 – CAB	UMTS-FDD (WCDMA)	2.91	-27.23
10021 – DAB	GSM-FDD (TDMA, GMSK)	9.39	3.63

End of text from SPEAG DASY52 System Handbook, April 2014, Chapter 39

5.4. System Validation

The system validation is performed for the E-field probe at the center frequency of the frequency bands used by the EUT.



Setup for system validation

1. Install the validation dipole under the SPEAG Test Arch.
2. Install the E-field probe.
3. Connect the cable from the output of the directional coupler to Power Meter 1.
4. Generate a CW signal and adjust the level until 100 mW (20 dBm) is measured at Power Meter 1. Note the power measured by Power Meter 2.
5. Disconnect the cable from Power Meter 1 and connect it to the dipole.
6. Adjust the CW level to match the power measured in step 4 at Power Meter 2.
7. Perform a measurement scan in a 2D grid along the length of the dipole.
8. Compare the maximum field measured with the target field measurements in the dipole calibration report. The difference must not be greater than ±25%.

5.5. EUT Scanning Procedure

All tests are performed with the same configuration of test steps and in accordance with the requirements described in C63.19-2011 Chapter 5.

1. A test arch adjustment and verification is performed, which allows checking the borders and center position of the 5 x 5 cm² control area. The probe tip touches down on center of the test arch
2. The HAC test setup is placed at the pre-defined position under the SPEAG test arch phantom.
3. The wireless device (WD) is oriented in its intended test position (see photo documentation) with the reference plane in the horizontal plane and secured by the device holder. The acoustical output is placed in the centre of the test arch.
4. The EUT is set to transmit at maximum output power at the desired test channel(s).
5. The "area scan" measures the electric field strength above the WD on a parallel plane to the surroundings of the control area at the upper end of the HAC test arch. It is used to locate the approximate location of the peak field strength. The robot performs a stepped movement along one grid axis while the local electric field strength is measured by the probe.
6. SEMCAD is used to perform the evaluation in respect of the requirements of the test standard. SEMCAD subdivides the tested area of 5 x 5 cm into 9 squares. Within each square the maximum electric field strength is detected. For classification of M categories the 3 squares with highest field values may be excluded.

The HAC test shall be performed for near field emissions with the E-field probes for each supported frequency band.

6. The Measurement System

6.1. Robot system specification

The HAC measurement system being used is the SPEAG DASY52 system, which consists of a Stäubli TX90XL 6-axis robot arm and CS8c controller, SPEAG HAC Probes, Data Acquisition Electronics, and SPEAG Test Arch. The robot is used to articulate the probe to programmed positions over the test arch to obtain the E-field readings from the EUT.

The system is controlled remotely from a PC, which contains the software to control the robot and data acquisition equipment. The software also displays the data obtained from test scans.

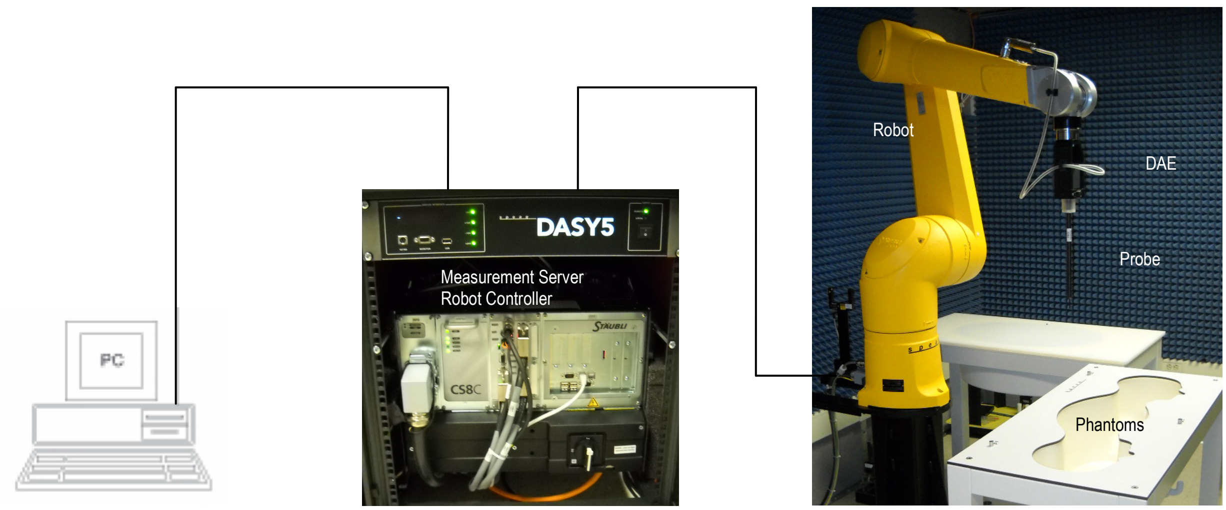


Figure 5: Schematic diagram of the SAR measurement system

In operation, the system first does an area (2D) scan at a fixed distance from the EUT.

6.2. Isotropic E-Field Probe – ER3DV6

The ER3D probe is an isotropic E-field probe for general near-field measurements. The probe's frequency range covers 10 MHz to 3 GHz with a dynamic range from 2 V/m to 1000 V/m. The probe is constructed using three sensors having a rectangular arrangement and placed 2.5 mm from the surface tip of the probe. The probes have built-in shielding against static charges and are contained within a PEEK cylindrical enclosure material at the tip. ER3D E-field probes have a bandwidth <10 kHz and can therefore not evaluate the RF envelope in the full audio band. DASY52 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. Probe calibration is described in the probe's calibration certificate (see appendix C).

6.3. Data Acquisition Electronics

The DAE contains a signal amplifier, multiplexer, 16bit A/D converter and control logic. It uses an optical link for communication with the DASY5 system. The DAE has a dynamic range of -100 to 300 mV. It also contains a two-step probe touch detector for mechanical surface detection and emergency robot stop.

7. Uncertainty Assessment

Measurement uncertainty values were evaluated for HAC measurements. The uncertainty values for components were evaluated according to the procedures given in ANSI C63.19.

7.1. Measurement Uncertainty Budget

Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c_i E	Std. Unc. E (± %)
Measurement System					
Probe Calibration	5.1	N	1	1	5.1
Axial Isotropy	4.7	R	√3	1	2.7
Sensor Displacement	16.5	R	√3	1	9.5
Boundary Effect	2.4	R	√3	1	1.4
Phantom Boundary Effect	7.2	R	√3	1	4.1
Linearity	4.7	R	√3	1	2.7
Scaling to Peak Envelope Power	2.0	R	√3	1	1.2
System Detection Limit	1.0	R	√3	1	0.6
Readout Electronics	0.3	N	1	1	0.3
Response Time	0.8	R	√3	1	0.5
Integration Time	2.6	R	√3	1	1.5
RF Ambient Conditions	3.0	R	√3	1	1.7
RF Reflections	12.0	R	√3	1	6.9
Probe Positioner	1.2	R	√3	1	0.7
Probe Positioning	4.7	R	√3	1	2.7
Extrapolation and Interpolation	1.0	R	√3	1	0.6
Test sample Related					
Device Positioning Vertical	4.7	R	√3	1	2.7
Device Positioning Lateral	1.0	R	√3	1	0.6
Device Holder and Phantom	2.4	R	√3	1	1.4
Power Drift	5.0	R	√3	1	2.9
Phantom and Setup Related					
Phantom Thickness	2.4	R	√3	1	1.4
Combined Standard Uncertainty					**± 15.3%**
Expanded Uncertainty on Power					**± 30.6%**
Expanded Uncertainty on Field					**± 15.3%**

8. Test results summary

8.1. Measured Conducted Average Output Power

Measurement uncertainty for conducted measurements is ±0.5dB

GSM – Circuit Switched Voice
Average power measured using a Rhode and Schwarz CMU 200.

Band	Channel	Frequency [MHz]	Average Power [dBm]	Maximum Output Power Including Tolerance
GSM 850	128	824.2	32.8	33
	190	836.6	33	
	251	848.8	32.9	
PCS 1900	512	1850.2	30	30
	661	1880	29.9	
	810	1909.8	29.9	

8.2. HAC Test Exclusions

According to ANSI C63.19-2011 section 4.4, RF HAC testing for an RF air interface is exempt if the average antenna input power plus its MIF is ≤ 17 dBm. An RF air interface that is exempt from testing shall be rated as M4.

Voice Service Technology	Band	Declared Maximum Output Power Including Tolerance	Worst Case MIF	Sum of Power + MIF	RF HAC Test Excluded
GSM	GSM 850	33	3.63	36.63	No
	PCS 1900	30	3.63	33.63	No
WCDMA	FDD II	23.8	-27.23	-3.43	Yes
	FDD V	23.8	-27.23	-3.43	Yes

8.3. HAC Results

Operation Mode	Channel	Frequency (MHz)	Max E-field (dBV/m)	MIF	Category	Results (Appendix A)
GSM 850	128	824.2	38.14	3.63	M4	Plot 1
	190	836.6	37.20			Plot 2
	251	848.8	36.46			Plot 3

Operation Mode	Channel	Frequency (MHz)	Max E-field (dBV/m)	MIF	Category	Results (Appendix A)
GSM 1900	512	1850.2	30.63	3.63	M3	Plot 4
	661	1880	29.95			Plot 5
	810	1909.8	29.54			Plot 6

8.4. Dipole Validation

Prior to formal testing at each frequency a system validation was performed in accordance with ANSI C63.19-2011. The 100 mW reference SAR value is taken from the SPEAG dipole calibration report. The following results were obtained:

Frequency (MHz)	CW input at dipole feed (mW)	Measured Primary Peak E-Field (V/m)	Measured Secondary Peak E-Field (V/m)	Calculated Average E-Field (V/m)	Reference E-field (V/m)	Difference reference to calculated	Results (Appendix A)
835	100	104.8	100.7	102.75	107.0	-4.0 %	Plot 7
1880	100	86.74	86.52	86.63	88.9	-2.6 %	Plot 8

9. References

1. FCC 47 CFR 20 Article 19 – Hearing aid-compatible mobile handsets

2. ANSI C63.19-2011, American National Standard for Methods of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids

3. Schmid & Partner Engineering AG, DASY5 Manual V52, April 2014

10. Report History

Date	Report Name – Changes to Report	Report prepared by
June 7, 2016	**HAC_INTEL_096_15001_RF** 1. First Version	J. Sabado
June 23, 2016	**HAC_INTEL_096_15001_RF_Rev1** 1. Updated according to TCB comments received June 13, 2016 2. Updated test results 3. Replaces previous test report number.	James Donnellan