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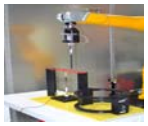

HEARING AID COMPATIBILITY

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro, Maetan dong,
Yeongtong-gu, Suwon-si
Gyeonggi-do 443-742, Korea

Date of Testing:
9/16/2014
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0Y1409021806.A3L

FCC ID:	**A3LSMG900A**
APPLICANT:	**SAMSUNG ELECTRONICS CO., LTD.**

Scope of Test:	RF Emissions Testing
Application Type:	Class II Permissive Change
FCC Rule Part(s):	§20.19(b)
HAC Standard:	ANSI C63.19-2011
EUT Type:	Portable Handset
Model(s):	SM-G900A, SM-G900FG
Test Device Serial No.:	*Production Sample* [S/N: FCC 2]
Class II Permissive Change(s):	*VoLTE Testing*
Original Grant Date:	*03/07/2014*

C63.19-2011 HAC Category:	**M4 (RF EMISSIONS CATEGORY, LTE ONLY)**

This report and category rating pertains only to the LTE bands supported by this wireless portable device. The overall category rating of the device is determined by the lowest rating obtained over all air interfaces supported by the device. This wireless portable device has been shown to be hearing-aid compatible under the above rated category, specified in ANSI/IEEE Std. C63.19-2011 and has been tested in accordance with the specified measurement procedures. Hearing-Aid Compatibility is based on the assumption that all production units will be designed electrically identical to the device tested in this report. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Randy Ortanez
President

TABLE OF CONTENTS

1. INTRODUCTION

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[1] 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
- 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

In the following tests and results, this report includes the evaluation for a wireless communications device.

Figure 1-1 Hearing Aid *in-situ*

[1] FCC Rule & Order, WT Docket 01-309 RM-8658

2. TEST SITE

2.1 Test Facility / Accreditations:

Measurements were performed at an independent accredited PCTEST Engineering Lab located in Columbia, MD, U.S.A.

- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing-Aid Compatibility (HAC), Long-Term Evolution (LTE), CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and all Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.

3. EUT DESCRIPTION

FCC ID:	A3LSMG900A
Manufacturer:	Samsung Electronics Co., Ltd. 129, Samsung-ro, Maetan dong, Yeongtong-gu, Suwon-si Gyeonggi-do 443-742, Korea
Model(s):	SM-G900A, SM-G900FG
Serial Number:	FCC 2
Antenna Configurations:	Internal Antenna
HAC Test Configurations:	LTE FDD B2; BW's: 20MHz, 15MHz, 10MHz, 5MHz, 3MHz, 1.4MHz; BT Off, WLAN Off LTE FDD B4; BW's: 20MHz, 15MHz, 10MHz, 5MHz, 3MHz, 1.4MHz; BT Off, WLAN Off LTE FDD B5; BW's: 10MHz, 5MHz, 3MHz, 1.4MHz; BT Off, WLAN Off LTE FDD B12; BW's: 10MHz, 5MHz, 3MHz, 1.4MHz; BT Off, WLAN Off LTE FDD B17; BW's: 10MHz, 5MHz; BT Off, WLAN Off
EUT Type:	Portable Handset

Air-Interface	Band (MHz)	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[2]	Yes: WIFI or BT	N/A	N/A	No
	1900						
	GPRS/EDGE	DT	No	Yes: WIFI or BT	Yes	N/A	No
UMTS	850	VD	No[1,2]	Yes: WIFI or BT	N/A	N/A	N/A
	1700						
	1900						
	HSPA	DT	No	Yes: WIFI or BT	Yes	N/A	N/A
LTE	700	VD[3]	No[1]	Yes: WIFI or BT	Yes	N/A	N/A
	850						
	1700						
	1900						
WIFI	2450	DT	No	Yes: GSM, UMTS or LTE	Yes	N/A	N/A
	5200						
	5300						
	5500						
	5800						
BT	2450	DT	No	Yes: GSM, UMTS or LTE	N/A	N/A	N/A

Type Transport
VO = Voice Only
DT = Digital Data - Not intended for CMRS Service
VD = CMRS and Data Transport

Notes:
1. Evaluated for MIF and low-power exemption.
2. GSM and UMTS air interfaces are not within the scope of this test report. Please refer to appropriate test reports.
3. The 3GPP VoLTE CMRS service is defined by GSMA in PRD IR.92 for IP Voice Service and Digital Transport.

Table 3-1: A3LSMG900A HAC Air Interfaces

4. ANSI/IEEE C63.19 PERFORMANCE CATEGORIES

I. 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.

Category	Telephone RF Parameters
Near field Category	**E-field emissions CW dB(V/m)**
f < 960 MHz	
M1	50 to 55
M2	45 to 50
M3	40 to 45
M4	< 40
f > 960 MHz	
M1	40 to 45
M2	35 to 40
M3	30 to 35
M4	< 30

Table 4-1
WD near-field categories as defined in ANSI C63.19-2011

5. SYSTEM SPECIFICATIONS

SPEAG Robotic System

E-field measurements are performed using the DASY5 automated dosimetric assessment system. The DASY5 is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland and consists of high precision robotics system (Staubli), robot controller, Intel CORE i7 computer, near-field probe, probe alignment sensor, and the HAC phantom. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF).

Figure 5-1
SPEAG Robotic System

System Hardware

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and a remote control used to drive the robot motors. The PC consists of the computer with operating system and RF Measurement Software DASY5 v52.8 (with HAC Extension), A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit that performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

System Electronics

The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

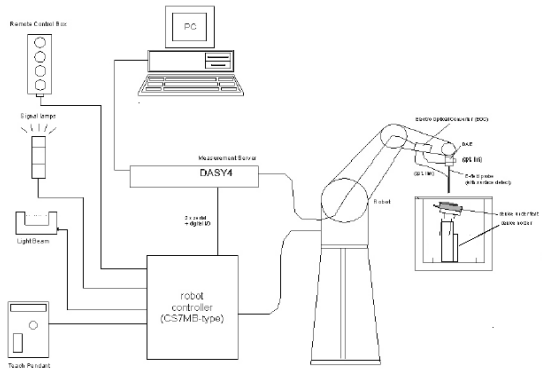

Figure 5-2
SPEAG Robotic System Diagram

DASY5 Instrumentation Chain

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with	V_i	= compensated signal of channel i	(i = x, y, z)
	U_i	= input signal of channel i	(i = x, y, z)
	cf	= crest factor of exciting field	(DASY parameter)
	dcp_i	= diode compression point	(DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

$$\text{E} - \text{fieldprobes}: \qquad E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

with V_i = compensated signal of channel i (i = x, y, z)
$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
$\mu\text{V}/(\text{V/m})^2$ for E-field Probes
$ConvF$ = sensitivity enhancement in solution
E_i = electric field strength of channel i in V/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

The measurement/integration time per point, as specified by the system manufacturer is >500ms.

The signal response time is evaluated as the time required by the system to reach 90% of the expected final value after an on/off switch of the power source with an integration time of 500ms and a probe response time of <5 ms. In the current implementation, DASY5 waits longer than 100ms after having reached the grid point before starting a measurement, i.e., the response time uncertainty is negligible.

If the device under test does not emit a CW signal, the integration time applied to measure the electric field at a specific point may introduce additional uncertainties due to the discretization. The tolerances for the different systems had the worst-case of 2.6%.

6. TEST PROCEDURE

I. RF EMISSIONS

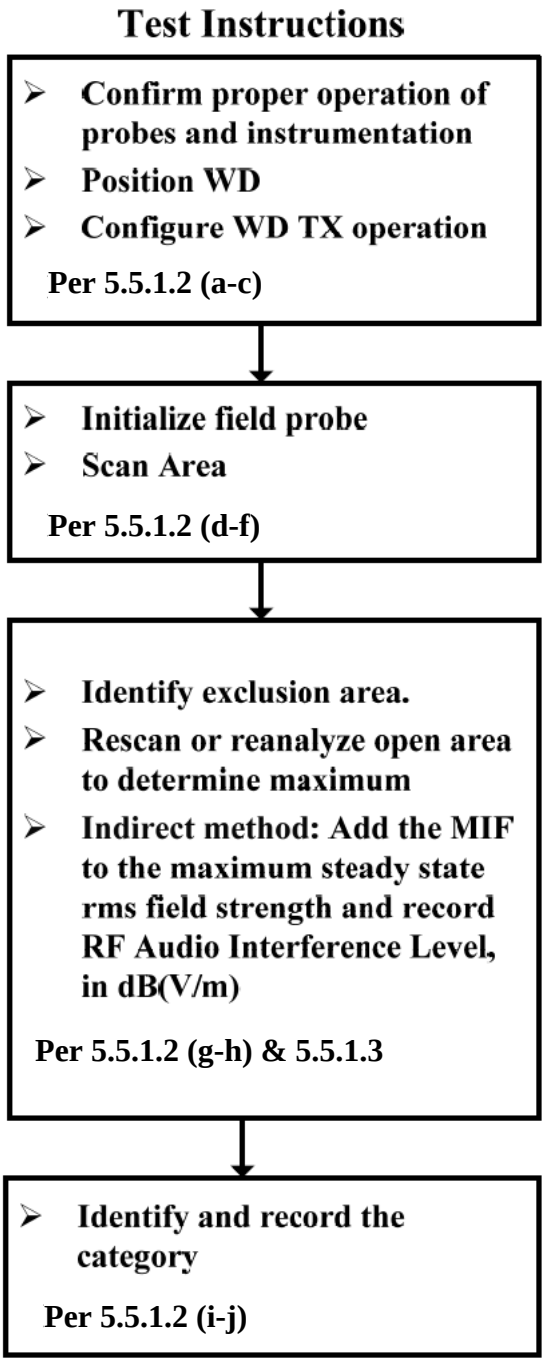

Figure 6-1 RF Emissions Flow Chart

7. MODULATION INTERFERENCE FACTOR

I. Measuring Modulation Interference Factors

For any specific fixed and repeatable modulated signal, a modulation interference factor (MIF, expressed in dB) may be determined 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. 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 or a conducted RF signal:

a. 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.
b. Measure the steady-state RMS level at the output of the fast probe or sensor.
c. Measure the steady-state average level at the weighting output.
d. Without changing the square-law detector or weighting system, and using RF illumination or conducted coupling, substitute for the specific modulated signal a 1 kHz, 80% amplitude modulated carrier at the same frequency and adjust its strength until the level at the weighting output equals the step c) measurement.
e. Without changing the carrier level from step d), remove the 1 kHz modulation and again measure the steady-state RMS level indicated at the output of the fast probe or sensor.
f. The MIF for the specific modulation characteristic is provided by the ratio of the step e) measurement to the step b) measurement, expressed in dB (20 × log[(step e)/(step b)]).

The following procedure was used to measure the MIF using the SPEAG Audio Interference Analyzer (AIA), Type No: SE UMS 170 CB, Serial No: 1010:

1. The device was placed into a simulated call using a base station simulator or set to transmit using test software for a given mode.
2. The device was then set to continuously transmit at maximum power.
3. Using a coupler if needed, the device output signal was connected to the RF In port of the AIA, which was connected to a desktop computer. Alternatively, a radiated RF signal may be used with the AIA's built-in antenna.
4. The MIF measurement procedure in the DASY software was run, and the resulting MIF value was recorded.
5. Steps 1-4 were repeated for all CMRS air interfaces, frequency bands, and modulations.

The modulation interference factors obtained were applied to readings taken of the actual wireless device in order to obtain an accurate audio interference level reading using the formula:

Audio Interference Level [dB(V/m)] = 20 * log[Raw Field Value (V/m)] + MIF (dB)

Because the MIF value is output power independent, MIF values for a given mode should be constant across all devices; however, per C63.19-2011 §D.7, MIF values should be measured for each device being evaluated. The voice modes for this device have been investigated in this section of the report.

II. MIF Measurement Block Diagrams

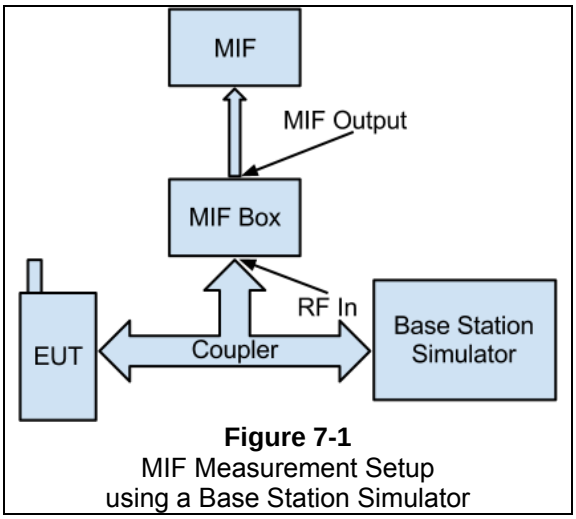

Figure 7-1
MIF Measurement Setup
using a Base Station Simulator

III. Measured Modulation Interference Factors:

LTE Band	Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	MIF [dB]
2	1880.0	18900	20	16QAM	1	0	-10.20
4	1732.5	20175	20	16QAM	1	0	-10.62
5	836.5	20525	10	16QAM	1	0	-10.23
17	710.0	23790	10	16QAM	1	0	-10.68
2	1880.0	18900	20	QPSK	1	0	-15.45
2	1880.0	18900	20	16QAM	1	49	-10.10
2	1880.0	18900	20	16QAM	1	100	-9.77
2	1880.0	18900	20	16QAM	50	0	-17.06
2	1880.0	18900	20	16QAM	100	0	-18.10
2	1880.0	18900	15	16QAM	1	0	-10.36
2	1880.0	18900	10	16QAM	1	0	-10.28
2	1880.0	18900	5	16QAM	1	0	-11.00
2	1880.0	18900	3	16QAM	1	0	-11.61
2	1880.0	18900	1.4	16QAM	1	0	-10.84
2	1860.0	18700	20	16QAM	1	100	-9.88
2	1900.0	19100	20	16QAM	1	100	-10.21

Table 7-1
LTE Modulation Interference Factors[1,2]

[1] Note: Measured MIF values may be lower than sample MIF values provided in ANSI C63.19-2011 Annex D.7 Table D.5 due to manufacturing variations for each device, however per Annex D.7, the sample MIF values of Table D.5 are not intended to substitute for measurements of actual devices under test and their respective operating modes.

[2] Note: LTE MIF's were found to be substantially similar given similar modulation, RB, and BW configurations.

8. RF CONDUCTED POWER MEASUREMENTS

I. Procedures Used to Establish RF Signal for HAC Testing

The handset was placed into a simulated call using a base station simulator in a shielded chamber. Such test signals offer a consistent means for testing HAC and are recommended for evaluating HAC. Measurements were taken with a fully charged battery. In order to verify that the device was tested and maintained at full power, this was configured with the base station simulator.

II. HAC Measurement Conditions

Output Power Verification

Maximum output power is verified on the High, Middle and Low channels for all applicable air interfaces. See Table 9-1 for air interface specific settings of transmit power parameters.

Air Interface:	Parameter Name:	Parameter Set To:
LTE	TPC	"Max Power"

Table 8-1
Power Control Parameters and Settings by Air Interface

III. Setup Used to Measure RF Conducted Powers

Power measurements were performed using a base station simulator under digital average power.

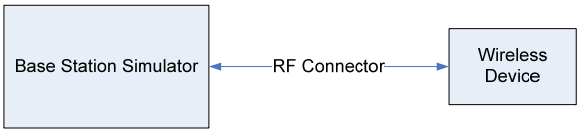

Figure 8-1
Power Measurement Setup

IV. LTE Conducted Powers

Table 8-2
LTE Band 17 Conducted Powers - 10MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
710.0	23790	10	QPSK	1	0	22.83	0	0
710.0	23790	10	QPSK	1	25	22.88	0	0
710.0	23790	10	QPSK	1	49	**23.00**	0	0
710.0	23790	10	QPSK	25	0	21.86	0-1	1
710.0	23790	10	QPSK	25	12	21.85	0-1	1
710.0	23790	10	QPSK	25	25	**21.97**	0-1	1
710.0	23790	10	QPSK	50	0	21.91	0-1	1
710.0	23790	10	16QAM	1	0	22.15	0-1	1
710.0	23790	10	16QAM	1	25	22.27	0-1	1
710.0	23790	10	16QAM	1	49	22.21	0-1	1
710.0	23790	10	16QAM	25	0	20.86	0-2	2
710.0	23790	10	16QAM	25	12	20.94	0-2	2
710.0	23790	10	16QAM	25	25	20.97	0-2	2
710.0	23790	10	16QAM	50	0	20.84	0-2	2

Table 8-3
LTE Band 17 Conducted Powers - 5MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
710.0	23790	5	QPSK	1	0	22.98	0	0
710.0	23790	5	QPSK	1	12	22.73	0	0
710.0	23790	5	QPSK	1	24	22.99	0	0
710.0	23790	5	QPSK	12	0	21.89	0-1	1
710.0	23790	5	QPSK	12	6	21.95	0-1	1
710.0	23790	5	QPSK	12	13	21.94	0-1	1
710.0	23790	5	QPSK	25	0	21.92	0-1	1
710.0	23790	5	16-QAM	1	0	21.82	0-1	1
710.0	23790	5	16-QAM	1	12	21.95	0-1	1
710.0	23790	5	16-QAM	1	24	21.94	0-1	1
710.0	23790	5	16-QAM	12	0	21.04	0-2	2
710.0	23790	5	16-QAM	12	6	21.06	0-2	2
710.0	23790	5	16-QAM	12	13	21.03	0-2	2
710.0	23790	5	16-QAM	25	0	21.01	0-2	2

Table 8-4
LTE Band 5 Conducted Powers - 10MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
836.5	20525	10	QPSK	1	0	23.08	0	0
836.5	20525	10	QPSK	1	25	**23.20**	0	0
836.5	20525	10	QPSK	1	49	23.07	0	0
836.5	20525	10	QPSK	25	0	**22.08**	0-1	1
836.5	20525	10	QPSK	25	12	22.07	0-1	1
836.5	20525	10	QPSK	25	25	22.07	0-1	1
836.5	20525	10	QPSK	50	0	22.07	0-1	1
836.5	20525	10	16QAM	1	0	22.51	0-1	1
836.5	20525	10	16QAM	1	25	22.65	0-1	1
836.5	20525	10	16QAM	1	49	22.50	0-1	1
836.5	20525	10	16QAM	25	0	21.10	0-2	2
836.5	20525	10	16QAM	25	12	21.05	0-2	2
836.5	20525	10	16QAM	25	25	21.03	0-2	2
836.5	20525	10	16QAM	50	0	21.04	0-2	2

Table 8-5
LTE Band 5 Conducted Powers - 5MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
826.5	20425	5	QPSK	1	0	23.08	0	0
826.5	20425	5	QPSK	1	12	23.00	0	0
826.5	20425	5	QPSK	1	24	23.10	0	0
826.5	20425	5	QPSK	12	0	22.20	0-1	1
826.5	20425	5	QPSK	12	6	22.20	0-1	1
826.5	20425	5	QPSK	12	13	22.18	0-1	1
826.5	20425	5	QPSK	25	0	22.21	0-1	1
826.5	20425	5	16-QAM	1	0	22.43	0-1	1
826.5	20425	5	16-QAM	1	12	22.26	0-1	1
826.5	20425	5	16-QAM	1	24	22.16	0-1	1
826.5	20425	5	16-QAM	12	0	21.05	0-2	2
826.5	20425	5	16-QAM	12	6	21.05	0-2	2
826.5	20425	5	16-QAM	12	13	21.07	0-2	2
826.5	20425	5	16-QAM	25	0	21.27	0-2	2
836.5	20525	5	QPSK	1	0	23.58	0	0
836.5	20525	5	QPSK	1	12	23.54	0	0
836.5	20525	5	QPSK	1	24	23.52	0	0
836.5	20525	5	QPSK	12	0	22.16	0-1	1
836.5	20525	5	QPSK	12	6	22.13	0-1	1
836.5	20525	5	QPSK	12	13	22.18	0-1	1
836.5	20525	5	QPSK	25	0	22.07	0-1	1
836.5	20525	5	16-QAM	1	0	22.12	0-1	1
836.5	20525	5	16-QAM	1	12	22.13	0-1	1
836.5	20525	5	16-QAM	1	24	22.08	0-1	1
836.5	20525	5	16-QAM	12	0	21.30	0-2	2
836.5	20525	5	16-QAM	12	6	21.27	0-2	2
836.5	20525	5	16-QAM	12	13	21.38	0-2	2
836.5	20525	5	16-QAM	25	0	21.13	0-2	2
846.5	20625	5	QPSK	1	0	23.04	0	0
846.5	20625	5	QPSK	1	12	23.04	0	0
846.5	20625	5	QPSK	1	24	23.02	0	0
846.5	20625	5	QPSK	12	0	22.15	0-1	1
846.5	20625	5	QPSK	12	6	22.12	0-1	1
846.5	20625	5	QPSK	12	13	22.09	0-1	1
846.5	20625	5	QPSK	25	0	22.03	0-1	1
846.5	20625	5	16-QAM	1	0	22.24	0-1	1
846.5	20625	5	16-QAM	1	12	22.05	0-1	1
846.5	20625	5	16-QAM	1	24	22.12	0-1	1
846.5	20625	5	16-QAM	12	0	21.07	0-2	2
846.5	20625	5	16-QAM	12	6	21.04	0-2	2
846.5	20625	5	16-QAM	12	13	21.00	0-2	2
846.5	20625	5	16-QAM	25	0	21.26	0-2	2

Table 8-6
LTE Band 5 Conducted Powers - 3MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
825.5	20415	3	QPSK	1	0	23.22	0	0
825.5	20415	3	QPSK	1	7	23.07	0	0
825.5	20415	3	QPSK	1	14	23.20	0	0
825.5	20415	3	QPSK	8	0	22.18	0-1	1
825.5	20415	3	QPSK	8	4	22.22	0-1	1
825.5	20415	3	QPSK	8	7	22.21	0-1	1
825.5	20415	3	QPSK	15	0	22.19	0-1	1
825.5	20415	3	16-QAM	1	0	22.81	0-1	1
825.5	20415	3	16-QAM	1	7	22.70	0-1	1
825.5	20415	3	16-QAM	1	14	22.67	0-1	1
825.5	20415	3	16-QAM	8	0	21.23	0-2	2
825.5	20415	3	16-QAM	8	4	21.30	0-2	2
825.5	20415	3	16-QAM	8	7	21.18	0-2	2
825.5	20415	3	16-QAM	15	0	21.21	0-2	2
836.5	20525	3	QPSK	1	0	23.17	0	0
836.5	20525	3	QPSK	1	7	23.29	0	0
836.5	20525	3	QPSK	1	14	23.41	0	0
836.5	20525	3	QPSK	8	0	22.16	0-1	1
836.5	20525	3	QPSK	8	4	22.20	0-1	1
836.5	20525	3	QPSK	8	7	22.19	0-1	1
836.5	20525	3	QPSK	15	0	22.17	0-1	1
836.5	20525	3	16-QAM	1	0	22.75	0-1	1
836.5	20525	3	16-QAM	1	7	22.85	0-1	1
836.5	20525	3	16-QAM	1	14	22.91	0-1	1
836.5	20525	3	16-QAM	8	0	21.17	0-2	2
836.5	20525	3	16-QAM	8	4	21.20	0-2	2
836.5	20525	3	16-QAM	8	7	21.11	0-2	2
836.5	20525	3	16-QAM	15	0	21.00	0-2	2
847.5	20635	3	QPSK	1	0	23.05	0	0
847.5	20635	3	QPSK	1	7	23.04	0	0
847.5	20635	3	QPSK	1	14	23.07	0	0
847.5	20635	3	QPSK	8	0	22.09	0-1	1
847.5	20635	3	QPSK	8	4	22.03	0-1	1
847.5	20635	3	QPSK	8	7	22.06	0-1	1
847.5	20635	3	QPSK	15	0	22.02	0-1	1
847.5	20635	3	16-QAM	1	0	22.02	0-1	1
847.5	20635	3	16-QAM	1	7	22.10	0-1	1
847.5	20635	3	16-QAM	1	14	22.07	0-1	1
847.5	20635	3	16-QAM	8	0	21.06	0-2	2
847.5	20635	3	16-QAM	8	4	21.04	0-2	2
847.5	20635	3	16-QAM	8	7	21.03	0-2	2
847.5	20635	3	16-QAM	15	0	21.06	0-2	2

Table 8-7
LTE Band 5 Conducted Powers – 1.4MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
824.7	20407	1.4	QPSK	1	0	23.69	0	0
824.7	20407	1.4	QPSK	1	2	23.55	0	0
824.7	20407	1.4	QPSK	1	5	23.56	0	0
824.7	20407	1.4	QPSK	3	0	23.29	0	0
824.7	20407	1.4	QPSK	3	2	23.19	0	0
824.7	20407	1.4	QPSK	3	3	23.24	0	0
824.7	20407	1.4	QPSK	6	0	22.30	0-1	1
824.7	20407	1.4	16-QAM	1	0	22.67	0-1	1
824.7	20407	1.4	16-QAM	1	2	22.82	0-1	1
824.7	20407	1.4	16-QAM	1	5	22.51	0-1	1
824.7	20407	1.4	16-QAM	3	0	22.49	0-1	1
824.7	20407	1.4	16-QAM	3	2	22.01	0-1	1
824.7	20407	1.4	16-QAM	3	3	22.42	0-1	1
824.7	20407	1.4	16-QAM	6	0	21.40	0-2	2
836.5	20525	1.4	QPSK	1	0	23.56	0	0
836.5	20525	1.4	QPSK	1	2	23.55	0	0
836.5	20525	1.4	QPSK	1	5	23.53	0	0
836.5	20525	1.4	QPSK	3	0	23.26	0	0
836.5	20525	1.4	QPSK	3	2	23.19	0	0
836.5	20525	1.4	QPSK	3	3	23.24	0	0
836.5	20525	1.4	QPSK	6	0	22.32	0-1	1
836.5	20525	1.4	16-QAM	1	0	22.75	0-1	1
836.5	20525	1.4	16-QAM	1	2	22.70	0-1	1
836.5	20525	1.4	16-QAM	1	5	22.61	0-1	1
836.5	20525	1.4	16-QAM	3	0	22.46	0-1	1
836.5	20525	1.4	16-QAM	3	2	22.41	0-1	1
836.5	20525	1.4	16-QAM	3	3	22.32	0-1	1
836.5	20525	1.4	16-QAM	6	0	21.49	0-2	2
848.3	20643	1.4	QPSK	1	0	23.47	0	0
848.3	20643	1.4	QPSK	1	2	23.35	0	0
848.3	20643	1.4	QPSK	1	5	23.38	0	0
848.3	20643	1.4	QPSK	3	0	23.00	0	0
848.3	20643	1.4	QPSK	3	2	23.04	0	0
848.3	20643	1.4	QPSK	3	3	23.10	0	0
848.3	20643	1.4	QPSK	6	0	22.16	0-1	1
848.3	20643	1.4	16-QAM	1	0	22.48	0-1	1
848.3	20643	1.4	16-QAM	1	2	22.53	0-1	1
848.3	20643	1.4	16-QAM	1	5	22.43	0-1	1
848.3	20643	1.4	16-QAM	3	0	22.26	0-1	1
848.3	20643	1.4	16-QAM	3	2	22.28	0-1	1
848.3	20643	1.4	16-QAM	3	3	22.24	0-1	1
848.3	20643	1.4	16-QAM	6	0	21.00	0-2	2

Table 8-8
LTE Band 4 Conducted Powers – 20MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1732.5	20175	20	QPSK	1	0	**23.23**	0	0
1732.5	20175	20	QPSK	1	50	23.13	0	0
1732.5	20175	20	QPSK	1	99	23.22	0	0
1732.5	20175	20	QPSK	50	0	**22.22**	0-1	1
1732.5	20175	20	QPSK	50	25	22.17	0-1	1
1732.5	20175	20	QPSK	50	50	22.18	0-1	1
1732.5	20175	20	QPSK	100	0	22.16	0-1	1
1732.5	20175	20	16QAM	1	0	22.25	0-1	1
1732.5	20175	20	16QAM	1	50	22.19	0-1	1
1732.5	20175	20	16QAM	1	99	22.22	0-1	1
1732.5	20175	20	16QAM	50	0	21.15	0-2	2
1732.5	20175	20	16QAM	50	25	21.16	0-2	2
1732.5	20175	20	16QAM	50	50	21.17	0-2	2
1732.5	20175	20	16QAM	100	0	21.16	0-2	2

Table 8-9
LTE Band 4 Conducted Powers – 15MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1717.5	20025	15	QPSK	1	0	23.50	0	0
1717.5	20025	15	QPSK	1	36	23.41	0	0
1717.5	20025	15	QPSK	1	74	23.18	0	0
1717.5	20025	15	QPSK	36	0	22.46	0-1	1
1717.5	20025	15	QPSK	36	18	22.37	0-1	1
1717.5	20025	15	QPSK	36	37	22.24	0-1	1
1717.5	20025	15	QPSK	75	0	22.37	0-1	1
1717.5	20025	15	16QAM	1	0	22.49	0-1	1
1717.5	20025	15	16QAM	1	36	22.36	0-1	1
1717.5	20025	15	16QAM	1	74	22.17	0-1	1
1717.5	20025	15	16QAM	36	0	21.45	0-2	2
1717.5	20025	15	16QAM	36	18	21.36	0-2	2
1717.5	20025	15	16QAM	36	37	21.26	0-2	2
1717.5	20025	15	16QAM	75	0	21.41	0-2	2
1732.5	20175	15	QPSK	1	0	23.29	0	0
1732.5	20175	15	QPSK	1	36	23.14	0	0
1732.5	20175	15	QPSK	1	74	23.21	0	0
1732.5	20175	15	QPSK	36	0	22.18	0-1	1
1732.5	20175	15	QPSK	36	18	22.12	0-1	1
1732.5	20175	15	QPSK	36	37	22.16	0-1	1
1732.5	20175	15	QPSK	75	0	22.17	0-1	1
1732.5	20175	15	16QAM	1	0	22.23	0-1	1
1732.5	20175	15	16QAM	1	36	22.12	0-1	1
1732.5	20175	15	16QAM	1	74	22.25	0-1	1
1732.5	20175	15	16QAM	36	0	21.12	0-2	2
1732.5	20175	15	16QAM	36	18	21.14	0-2	2
1732.5	20175	15	16QAM	36	37	21.13	0-2	2
1732.5	20175	15	16QAM	75	0	21.20	0-2	2
1747.5	20325	15	QPSK	1	0	23.31	0	0
1747.5	20325	15	QPSK	1	36	23.48	0	0
1747.5	20325	15	QPSK	1	74	23.50	0	0
1747.5	20325	15	QPSK	36	0	22.35	0-1	1
1747.5	20325	15	QPSK	36	18	22.42	0-1	1
1747.5	20325	15	QPSK	36	37	22.47	0-1	1
1747.5	20325	15	QPSK	75	0	22.43	0-1	1
1747.5	20325	15	16QAM	1	0	22.30	0-1	1
1747.5	20325	15	16QAM	1	36	22.46	0-1	1
1747.5	20325	15	16QAM	1	74	22.50	0-1	1
1747.5	20325	15	16QAM	36	0	21.30	0-2	2
1747.5	20325	15	16QAM	36	18	21.39	0-2	2
1747.5	20325	15	16QAM	36	37	21.47	0-2	2
1747.5	20325	15	16QAM	75	0	21.46	0-2	2

Table 8-10
LTE Band 4 Conducted Powers – 10MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1715	20000	10	QPSK	1	0	23.50	0	0
1715	20000	10	QPSK	1	25	23.43	0	0
1715	20000	10	QPSK	1	49	23.44	0	0
1715	20000	10	QPSK	25	0	22.39	0-1	1
1715	20000	10	QPSK	25	12	22.38	0-1	1
1715	20000	10	QPSK	25	25	22.31	0-1	1
1715	20000	10	QPSK	50	0	22.40	0-1	1
1715	20000	10	16QAM	1	0	22.49	0-1	1
1715	20000	10	16QAM	1	25	22.36	0-1	1
1715	20000	10	16QAM	1	49	22.35	0-1	1
1715	20000	10	16QAM	25	0	21.43	0-2	2
1715	20000	10	16QAM	25	12	21.49	0-2	2
1715	20000	10	16QAM	25	25	21.41	0-2	2
1715	20000	10	16QAM	50	0	21.48	0-2	2
1732.5	20175	10	QPSK	1	0	23.29	0	0
1732.5	20175	10	QPSK	1	25	23.18	0	0
1732.5	20175	10	QPSK	1	49	23.29	0	0
1732.5	20175	10	QPSK	25	0	22.10	0-1	1
1732.5	20175	10	QPSK	25	12	22.09	0-1	1
1732.5	20175	10	QPSK	25	25	22.12	0-1	1
1732.5	20175	10	QPSK	50	0	22.14	0-1	1
1732.5	20175	10	16QAM	1	0	22.48	0-1	1
1732.5	20175	10	16QAM	1	25	22.33	0-1	1
1732.5	20175	10	16QAM	1	49	22.34	0-1	1
1732.5	20175	10	16QAM	25	0	21.45	0-2	2
1732.5	20175	10	16QAM	25	12	21.49	0-2	2
1732.5	20175	10	16QAM	25	25	21.41	0-2	2
1732.5	20175	10	16QAM	50	0	21.48	0-2	2
1750	20350	10	QPSK	1	0	23.47	0	0
1750	20350	10	QPSK	1	25	23.48	0	0
1750	20350	10	QPSK	1	49	23.49	0	0
1750	20350	10	QPSK	25	0	22.39	0-1	1
1750	20350	10	QPSK	25	12	22.36	0-1	1
1750	20350	10	QPSK	25	25	22.33	0-1	1
1750	20350	10	QPSK	50	0	22.43	0-1	1
1750	20350	10	16QAM	1	0	22.31	0-1	1
1750	20350	10	16QAM	1	25	22.35	0-1	1
1750	20350	10	16QAM	1	49	22.48	0-1	1
1750	20350	10	16QAM	25	0	21.41	0-2	2
1750	20350	10	16QAM	25	12	21.38	0-2	2
1750	20350	10	16QAM	25	25	21.39	0-2	2
1750	20350	10	16QAM	50	0	21.44	0-2	2

Table 8-11
LTE Band 4 Conducted Powers – 5MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1712.5	19975	5	QPSK	1	0	23.49	0	0
1712.5	19975	5	QPSK	1	12	23.44	0	0
1712.5	19975	5	QPSK	1	24	23.45	0	0
1712.5	19975	5	QPSK	12	0	22.35	0-1	1
1712.5	19975	5	QPSK	12	6	22.29	0-1	1
1712.5	19975	5	QPSK	12	13	22.30	0-1	1
1712.5	19975	5	QPSK	25	0	22.41	0-1	1
1712.5	19975	5	16-QAM	1	0	22.42	0-1	1
1712.5	19975	5	16-QAM	1	12	22.35	0-1	1
1712.5	19975	5	16-QAM	1	24	22.34	0-1	1
1712.5	19975	5	16-QAM	12	0	21.41	0-2	2
1712.5	19975	5	16-QAM	12	6	21.27	0-2	2
1712.5	19975	5	16-QAM	12	13	21.25	0-2	2
1712.5	19975	5	16-QAM	25	0	21.44	0-2	2
1732.5	20175	5	QPSK	1	0	23.11	0	0
1732.5	20175	5	QPSK	1	12	23.09	0	0
1732.5	20175	5	QPSK	1	24	23.12	0	0
1732.5	20175	5	QPSK	12	0	22.01	0-1	1
1732.5	20175	5	QPSK	12	6	21.96	0-1	1
1732.5	20175	5	QPSK	12	13	21.98	0-1	1
1732.5	20175	5	QPSK	25	0	22.04	0-1	1
1732.5	20175	5	16-QAM	1	0	22.06	0-1	1
1732.5	20175	5	16-QAM	1	12	21.95	0-1	1
1732.5	20175	5	16-QAM	1	24	22.04	0-1	1
1732.5	20175	5	16-QAM	12	0	20.95	0-2	2
1732.5	20175	5	16-QAM	12	6	20.98	0-2	2
1732.5	20175	5	16-QAM	12	13	20.92	0-2	2
1732.5	20175	5	16-QAM	25	0	21.06	0-2	2
1752.5	20375	5	QPSK	1	0	23.47	0	0
1752.5	20375	5	QPSK	1	12	23.49	0	0
1752.5	20375	5	QPSK	1	24	23.50	0	0
1752.5	20375	5	QPSK	12	0	22.32	0-1	1
1752.5	20375	5	QPSK	12	6	22.31	0-1	1
1752.5	20375	5	QPSK	12	13	22.41	0-1	1
1752.5	20375	5	QPSK	25	0	22.36	0-1	1
1752.5	20375	5	16-QAM	1	0	22.39	0-1	1
1752.5	20375	5	16-QAM	1	12	22.40	0-1	1
1752.5	20375	5	16-QAM	1	24	22.47	0-1	1
1752.5	20375	5	16-QAM	12	0	21.32	0-2	2
1752.5	20375	5	16-QAM	12	6	21.32	0-2	2
1752.5	20375	5	16-QAM	12	13	21.42	0-2	2
1752.5	20375	5	16-QAM	25	0	21.39	0-2	2

Table 8-12
LTE Band 4 Conducted Powers – 3MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1711.5	19965	3	QPSK	1	0	23.45	0	0
1711.5	19965	3	QPSK	1	7	23.42	0	0
1711.5	19965	3	QPSK	1	14	23.44	0	0
1711.5	19965	3	QPSK	8	0	22.37	0-1	1
1711.5	19965	3	QPSK	8	4	22.35	0-1	1
1711.5	19965	3	QPSK	8	7	22.29	0-1	1
1711.5	19965	3	QPSK	15	0	22.36	0-1	1
1711.5	19965	3	16-QAM	1	0	22.48	0-1	1
1711.5	19965	3	16-QAM	1	7	22.34	0-1	1
1711.5	19965	3	16-QAM	1	14	22.36	0-1	1
1711.5	19965	3	16-QAM	8	0	21.35	0-2	2
1711.5	19965	3	16-QAM	8	4	21.39	0-2	2
1711.5	19965	3	16-QAM	8	7	21.28	0-2	2
1711.5	19965	3	16-QAM	15	0	21.47	0-2	2
1732.5	20175	3	QPSK	1	0	23.14	0	0
1732.5	20175	3	QPSK	1	7	23.08	0	0
1732.5	20175	3	QPSK	1	14	23.10	0	0
1732.5	20175	3	QPSK	8	0	22.04	0-1	1
1732.5	20175	3	QPSK	8	4	21.95	0-1	1
1732.5	20175	3	QPSK	8	7	22.01	0-1	1
1732.5	20175	3	QPSK	15	0	22.02	0-1	1
1732.5	20175	3	16-QAM	1	0	22.04	0-1	1
1732.5	20175	3	16-QAM	1	7	22.07	0-1	1
1732.5	20175	3	16-QAM	1	14	22.06	0-1	1
1732.5	20175	3	16-QAM	8	0	20.93	0-2	2
1732.5	20175	3	16-QAM	8	4	20.90	0-2	2
1732.5	20175	3	16-QAM	8	7	20.97	0-2	2
1732.5	20175	3	16-QAM	15	0	21.06	0-2	2
1753.5	20385	3	QPSK	1	0	23.48	0	0
1753.5	20385	3	QPSK	1	7	23.49	0	0
1753.5	20385	3	QPSK	1	14	23.50	0	0
1753.5	20385	3	QPSK	8	0	22.36	0-1	1
1753.5	20385	3	QPSK	8	4	22.40	0-1	1
1753.5	20385	3	QPSK	8	7	22.44	0-1	1
1753.5	20385	3	QPSK	15	0	22.41	0-1	1
1753.5	20385	3	16-QAM	1	0	22.39	0-1	1
1753.5	20385	3	16-QAM	1	7	22.42	0-1	1
1753.5	20385	3	16-QAM	1	14	22.49	0-1	1
1753.5	20385	3	16-QAM	8	0	21.30	0-2	2
1753.5	20385	3	16-QAM	8	4	21.43	0-2	2
1753.5	20385	3	16-QAM	8	7	21.41	0-2	2
1753.5	20385	3	16-QAM	15	0	21.49	0-2	2

Table 8-13
LTE Band 4 Conducted Powers – 1.4MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1710.7	19957	1.4	QPSK	1	0	23.47	0	0
1710.7	19957	1.4	QPSK	1	2	23.50	0	0
1710.7	19957	1.4	QPSK	1	5	23.49	0	0
1710.7	19957	1.4	QPSK	3	0	23.45	0	0
1710.7	19957	1.4	QPSK	3	2	23.41	0	0
1710.7	19957	1.4	QPSK	3	3	23.42	0	0
1710.7	19957	1.4	QPSK	6	0	22.36	0-1	1
1710.7	19957	1.4	16-QAM	1	0	22.43	0-1	1
1710.7	19957	1.4	16-QAM	1	2	22.45	0-1	1
1710.7	19957	1.4	16-QAM	1	5	22.49	0-1	1
1710.7	19957	1.4	16-QAM	3	0	22.42	0-1	1
1710.7	19957	1.4	16-QAM	3	2	22.37	0-1	1
1710.7	19957	1.4	16-QAM	3	3	22.39	0-1	1
1710.7	19957	1.4	16-QAM	6	0	21.45	0-2	2
1732.5	20175	1.4	QPSK	1	0	23.06	0	0
1732.5	20175	1.4	QPSK	1	2	23.07	0	0
1732.5	20175	1.4	QPSK	1	5	23.05	0	0
1732.5	20175	1.4	QPSK	3	0	22.97	0	0
1732.5	20175	1.4	QPSK	3	2	22.96	0	0
1732.5	20175	1.4	QPSK	3	3	22.95	0	0
1732.5	20175	1.4	QPSK	6	0	22.02	0-1	1
1732.5	20175	1.4	16-QAM	1	0	22.04	0-1	1
1732.5	20175	1.4	16-QAM	1	2	22.09	0-1	1
1732.5	20175	1.4	16-QAM	1	5	22.12	0-1	1
1732.5	20175	1.4	16-QAM	3	0	22.01	0-1	1
1732.5	20175	1.4	16-QAM	3	2	21.96	0-1	1
1732.5	20175	1.4	16-QAM	3	3	22.02	0-1	1
1732.5	20175	1.4	16-QAM	6	0	21.01	0-2	2
1754.3	20393	1.4	QPSK	1	0	23.49	0	0
1754.3	20393	1.4	QPSK	1	2	23.48	0	0
1754.3	20393	1.4	QPSK	1	5	23.46	0	0
1754.3	20393	1.4	QPSK	3	0	23.44	0	0
1754.3	20393	1.4	QPSK	3	2	23.42	0	0
1754.3	20393	1.4	QPSK	3	3	23.47	0	0
1754.3	20393	1.4	QPSK	6	0	22.42	0-1	1
1754.3	20393	1.4	16-QAM	1	0	22.50	0-1	1
1754.3	20393	1.4	16-QAM	1	2	22.48	0-1	1
1754.3	20393	1.4	16-QAM	1	5	22.48	0-1	1
1754.3	20393	1.4	16-QAM	3	0	22.45	0-1	1
1754.3	20393	1.4	16-QAM	3	2	22.44	0-1	1
1754.3	20393	1.4	16-QAM	3	3	22.44	0-1	1
1754.3	20393	1.4	16-QAM	6	0	21.48	0-2	2

Table 8-14
LTE Band 2 Conducted Powers – 20MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1860	18700	20	QPSK	1	0	23.17	0	0
1860	18700	20	QPSK	1	50	23.40	0	0
1860	18700	20	QPSK	1	99	23.47	0	0
1860	18700	20	QPSK	50	0	22.20	0-1	1
1860	18700	20	QPSK	50	25	22.40	0-1	1
1860	18700	20	QPSK	50	50	22.41	0-1	1
1860	18700	20	QPSK	100	0	22.28	0-1	1
1860	18700	20	16QAM	1	0	22.12	0-1	1
1860	18700	20	16QAM	1	50	22.41	0-1	1
1860	18700	20	16QAM	1	99	22.32	0-1	1
1860	18700	20	16QAM	50	0	21.16	0-2	2
1860	18700	20	16QAM	50	25	21.29	0-2	2
1860	18700	20	16QAM	50	50	21.24	0-2	2
1860	18700	20	16QAM	100	0	21.17	0-2	2
1880.0	18900	20	QPSK	1	0	**23.50**	0	0
1880.0	18900	20	QPSK	1	50	23.41	0	0
1880.0	18900	20	QPSK	1	99	23.23	0	0
1880.0	18900	20	QPSK	50	0	**22.49**	0-1	1
1880.0	18900	20	QPSK	50	25	22.40	0-1	1
1880.0	18900	20	QPSK	50	50	22.30	0-1	1
1880.0	18900	20	QPSK	100	0	22.37	0-1	1
1880.0	18900	20	16QAM	1	0	22.45	0-1	1
1880.0	18900	20	16QAM	1	50	22.35	0-1	1
1880.0	18900	20	16QAM	1	99	22.20	0-1	1
1880.0	18900	20	16QAM	50	0	21.39	0-2	2
1880.0	18900	20	16QAM	50	25	21.33	0-2	2
1880.0	18900	20	16QAM	50	50	21.18	0-2	2
1880.0	18900	20	16QAM	100	0	21.26	0-2	2
1900	19100	20	QPSK	1	0	23.17	0	0
1900	19100	20	QPSK	1	50	23.12	0	0
1900	19100	20	QPSK	1	99	23.29	0	0
1900	19100	20	QPSK	50	0	22.13	0-1	1
1900	19100	20	QPSK	50	25	22.15	0-1	1
1900	19100	20	QPSK	50	50	22.25	0-1	1
1900	19100	20	QPSK	100	0	22.09	0-1	1
1900	19100	20	16QAM	1	0	22.11	0-1	1
1900	19100	20	16QAM	1	50	22.12	0-1	1
1900	19100	20	16QAM	1	99	22.21	0-1	1
1900	19100	20	16QAM	50	0	21.08	0-2	2
1900	19100	20	16QAM	50	25	21.07	0-2	2
1900	19100	20	16QAM	50	50	21.18	0-2	2
1900	19100	20	16QAM	100	0	21.02	0-2	2

Table 8-15
LTE Band 2 Conducted Powers – 15MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1857.5	18675	15	QPSK	1	0	23.17	0	0
1857.5	18675	15	QPSK	1	36	23.40	0	0
1857.5	18675	15	QPSK	1	74	23.44	0	0
1857.5	18675	15	QPSK	36	0	22.30	0-1	1
1857.5	18675	15	QPSK	36	18	22.39	0-1	1
1857.5	18675	15	QPSK	36	37	22.30	0-1	1
1857.5	18675	15	QPSK	75	0	22.38	0-1	1
1857.5	18675	15	16QAM	1	0	22.13	0-1	1
1857.5	18675	15	16QAM	1	36	22.36	0-1	1
1857.5	18675	15	16QAM	1	74	22.45	0-1	1
1857.5	18675	15	16QAM	36	0	21.21	0-2	2
1857.5	18675	15	16QAM	36	18	21.24	0-2	2
1857.5	18675	15	16QAM	36	37	21.19	0-2	2
1857.5	18675	15	16QAM	75	0	21.22	0-2	2
1880.0	18900	15	QPSK	1	0	23.49	0	0
1880.0	18900	15	QPSK	1	36	23.43	0	0
1880.0	18900	15	QPSK	1	74	23.34	0	0
1880.0	18900	15	QPSK	36	0	22.30	0-1	1
1880.0	18900	15	QPSK	36	18	22.37	0-1	1
1880.0	18900	15	QPSK	36	37	22.40	0-1	1
1880.0	18900	15	QPSK	75	0	22.43	0-1	1
1880.0	18900	15	16QAM	1	0	22.48	0-1	1
1880.0	18900	15	16QAM	1	36	22.32	0-1	1
1880.0	18900	15	16QAM	1	74	22.27	0-1	1
1880.0	18900	15	16QAM	36	0	21.28	0-2	2
1880.0	18900	15	16QAM	36	18	21.21	0-2	2
1880.0	18900	15	16QAM	36	37	21.24	0-2	2
1880.0	18900	15	16QAM	75	0	21.26	0-2	2
1902.5	19125	15	QPSK	1	0	23.09	0	0
1902.5	19125	15	QPSK	1	36	23.24	0	0
1902.5	19125	15	QPSK	1	74	23.29	0	0
1902.5	19125	15	QPSK	36	0	22.03	0-1	1
1902.5	19125	15	QPSK	36	18	22.04	0-1	1
1902.5	19125	15	QPSK	36	37	22.15	0-1	1
1902.5	19125	15	QPSK	75	0	22.10	0-1	1
1902.5	19125	15	16QAM	1	0	22.02	0-1	1
1902.5	19125	15	16QAM	1	36	22.17	0-1	1
1902.5	19125	15	16QAM	1	74	22.20	0-1	1
1902.5	19125	15	16QAM	36	0	20.98	0-2	2
1902.5	19125	15	16QAM	36	18	21.00	0-2	2
1902.5	19125	15	16QAM	36	37	21.11	0-2	2
1902.5	19125	15	16QAM	75	0	21.06	0-2	2

Table 8-16
LTE Band 2 Conducted Powers – 10MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1855	18650	10	QPSK	1	0	23.20	0	0
1855	18650	10	QPSK	1	25	23.25	0	0
1855	18650	10	QPSK	1	49	23.41	0	0
1855	18650	10	QPSK	25	0	22.07	0-1	1
1855	18650	10	QPSK	25	12	22.05	0-1	1
1855	18650	10	QPSK	25	25	22.21	0-1	1
1855	18650	10	QPSK	50	0	22.20	0-1	1
1855	18650	10	16QAM	1	0	22.12	0-1	1
1855	18650	10	16QAM	1	25	22.17	0-1	1
1855	18650	10	16QAM	1	49	22.31	0-1	1
1855	18650	10	16QAM	25	0	21.02	0-2	2
1855	18650	10	16QAM	25	12	21.00	0-2	2
1855	18650	10	16QAM	25	25	21.20	0-2	2
1855	18650	10	16QAM	50	0	21.13	0-2	2
1880.0	18900	10	QPSK	1	0	23.49	0	0
1880.0	18900	10	QPSK	1	25	23.42	0	0
1880.0	18900	10	QPSK	1	49	23.36	0	0
1880.0	18900	10	QPSK	25	0	22.34	0-1	1
1880.0	18900	10	QPSK	25	12	22.30	0-1	1
1880.0	18900	10	QPSK	25	25	22.27	0-1	1
1880.0	18900	10	QPSK	50	0	22.33	0-1	1
1880.0	18900	10	16QAM	1	0	22.46	0-1	1
1880.0	18900	10	16QAM	1	25	22.31	0-1	1
1880.0	18900	10	16QAM	1	49	22.22	0-1	1
1880.0	18900	10	16QAM	25	0	21.25	0-2	2
1880.0	18900	10	16QAM	25	12	21.27	0-2	2
1880.0	18900	10	16QAM	25	25	21.22	0-2	2
1880.0	18900	10	16QAM	50	0	21.26	0-2	2
1905	19150	10	QPSK	1	0	23.14	0	0
1905	19150	10	QPSK	1	25	23.27	0	0
1905	19150	10	QPSK	1	49	23.19	0	0
1905	19150	10	QPSK	25	0	22.04	0-1	1
1905	19150	10	QPSK	25	12	22.19	0-1	1
1905	19150	10	QPSK	25	25	22.12	0-1	1
1905	19150	10	QPSK	50	0	22.20	0-1	1
1905	19150	10	16QAM	1	0	22.12	0-1	1
1905	19150	10	16QAM	1	25	22.17	0-1	1
1905	19150	10	16QAM	1	49	22.23	0-1	1
1905	19150	10	16QAM	25	0	21.07	0-2	2
1905	19150	10	16QAM	25	12	21.10	0-2	2
1905	19150	10	16QAM	25	25	21.13	0-2	2
1905	19150	10	16QAM	50	0	21.14	0-2	2

Table 8-17
LTE Band 2 Conducted Powers – 5MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1852.5	18625	5	QPSK	1	0	23.19	0	0
1852.5	18625	5	QPSK	1	12	23.17	0	0
1852.5	18625	5	QPSK	1	24	23.29	0	0
1852.5	18625	5	QPSK	12	0	22.07	0-1	1
1852.5	18625	5	QPSK	12	6	22.02	0-1	1
1852.5	18625	5	QPSK	12	13	22.06	0-1	1
1852.5	18625	5	QPSK	25	0	22.05	0-1	1
1852.5	18625	5	16-QAM	1	0	22.12	0-1	1
1852.5	18625	5	16-QAM	1	12	22.01	0-1	1
1852.5	18625	5	16-QAM	1	24	22.11	0-1	1
1852.5	18625	5	16-QAM	12	0	20.96	0-2	2
1852.5	18625	5	16-QAM	12	6	20.90	0-2	2
1852.5	18625	5	16-QAM	12	13	20.91	0-2	2
1852.5	18625	5	16-QAM	25	0	20.99	0-2	2
1880.0	18900	5	QPSK	1	0	23.49	0	0
1880.0	18900	5	QPSK	1	12	23.46	0	0
1880.0	18900	5	QPSK	1	24	23.47	0	0
1880.0	18900	5	QPSK	12	0	22.25	0-1	1
1880.0	18900	5	QPSK	12	6	22.23	0-1	1
1880.0	18900	5	QPSK	12	13	22.27	0-1	1
1880.0	18900	5	QPSK	25	0	22.33	0-1	1
1880.0	18900	5	16-QAM	1	0	22.46	0-1	1
1880.0	18900	5	16-QAM	1	12	22.26	0-1	1
1880.0	18900	5	16-QAM	1	24	22.31	0-1	1
1880.0	18900	5	16-QAM	12	0	21.17	0-2	2
1880.0	18900	5	16-QAM	12	6	21.15	0-2	2
1880.0	18900	5	16-QAM	12	13	21.13	0-2	2
1880.0	18900	5	16-QAM	25	0	21.20	0-2	2
1907.5	19175	5	QPSK	1	0	23.25	0	0
1907.5	19175	5	QPSK	1	12	23.26	0	0
1907.5	19175	5	QPSK	1	24	23.16	0	0
1907.5	19175	5	QPSK	12	0	22.16	0-1	1
1907.5	19175	5	QPSK	12	6	22.17	0-1	1
1907.5	19175	5	QPSK	12	13	22.11	0-1	1
1907.5	19175	5	QPSK	25	0	22.14	0-1	1
1907.5	19175	5	16-QAM	1	0	22.17	0-1	1
1907.5	19175	5	16-QAM	1	12	22.16	0-1	1
1907.5	19175	5	16-QAM	1	24	22.15	0-1	1
1907.5	19175	5	16-QAM	12	0	21.03	0-2	2
1907.5	19175	5	16-QAM	12	6	21.05	0-2	2
1907.5	19175	5	16-QAM	12	13	21.08	0-2	2
1907.5	19175	5	16-QAM	25	0	21.09	0-2	2

Table 8-18
LTE Band 2 Conducted Powers – 3MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1851.5	18615	3	QPSK	1	0	23.14	0	0
1851.5	18615	3	QPSK	1	7	23.15	0	0
1851.5	18615	3	QPSK	1	14	23.18	0	0
1851.5	18615	3	QPSK	8	0	22.01	0-1	1
1851.5	18615	3	QPSK	8	4	22.03	0-1	1
1851.5	18615	3	QPSK	8	7	22.02	0-1	1
1851.5	18615	3	QPSK	15	0	22.04	0-1	1
1851.5	18615	3	16-QAM	1	0	22.08	0-1	1
1851.5	18615	3	16-QAM	1	7	22.04	0-1	1
1851.5	18615	3	16-QAM	1	14	22.11	0-1	1
1851.5	18615	3	16-QAM	8	0	20.91	0-2	2
1851.5	18615	3	16-QAM	8	4	20.92	0-2	2
1851.5	18615	3	16-QAM	8	7	20.90	0-2	2
1851.5	18615	3	16-QAM	15	0	21.02	0-2	2
1880.0	18900	3	QPSK	1	0	23.45	0	0
1880.0	18900	3	QPSK	1	7	23.43	0	0
1880.0	18900	3	QPSK	1	14	23.46	0	0
1880.0	18900	3	QPSK	8	0	22.31	0-1	1
1880.0	18900	3	QPSK	8	4	22.28	0-1	1
1880.0	18900	3	QPSK	8	7	22.26	0-1	1
1880.0	18900	3	QPSK	15	0	22.27	0-1	1
1880.0	18900	3	16-QAM	1	0	22.32	0-1	1
1880.0	18900	3	16-QAM	1	7	22.27	0-1	1
1880.0	18900	3	16-QAM	1	14	22.33	0-1	1
1880.0	18900	3	16-QAM	8	0	21.17	0-2	2
1880.0	18900	3	16-QAM	8	4	21.16	0-2	2
1880.0	18900	3	16-QAM	8	7	21.15	0-2	2
1880.0	18900	3	16-QAM	15	0	21.23	0-2	2
1908.5	19185	3	QPSK	1	0	23.28	0	0
1908.5	19185	3	QPSK	1	7	23.24	0	0
1908.5	19185	3	QPSK	1	14	23.12	0	0
1908.5	19185	3	QPSK	8	0	22.35	0-1	1
1908.5	19185	3	QPSK	8	4	22.12	0-1	1
1908.5	19185	3	QPSK	8	7	22.11	0-1	1
1908.5	19185	3	QPSK	15	0	22.14	0-1	1
1908.5	19185	3	16-QAM	1	0	22.24	0-1	1
1908.5	19185	3	16-QAM	1	7	22.17	0-1	1
1908.5	19185	3	16-QAM	1	14	22.16	0-1	1
1908.5	19185	3	16-QAM	8	0	21.07	0-2	2
1908.5	19185	3	16-QAM	8	4	21.03	0-2	2
1908.5	19185	3	16-QAM	8	7	21.05	0-2	2
1908.5	19185	3	16-QAM	15	0	21.13	0-2	2

Table 8-19
LTE Band 2 Conducted Powers – 1.4MHz Bandwidth

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	Conducted Power [dBm]	MPR Allowed per 3GPP [dB]	MPR [dB]
1850.7	18607	1.4	QPSK	1	0	23.14	0	0
1850.7	18607	1.4	QPSK	1	2	23.13	0	0
1850.7	18607	1.4	QPSK	1	5	23.12	0	0
1850.7	18607	1.4	QPSK	3	0	23.05	0	0
1850.7	18607	1.4	QPSK	3	2	23.07	0	0
1850.7	18607	1.4	QPSK	3	3	23.01	0	0
1850.7	18607	1.4	QPSK	6	0	22.05	0-1	1
1850.7	18607	1.4	16-QAM	1	0	22.12	0-1	1
1850.7	18607	1.4	16-QAM	1	2	22.08	0-1	1
1850.7	18607	1.4	16-QAM	1	5	22.09	0-1	1
1850.7	18607	1.4	16-QAM	3	0	22.05	0-1	1
1850.7	18607	1.4	16-QAM	3	2	22.04	0-1	1
1850.7	18607	1.4	16-QAM	3	3	22.05	0-1	1
1850.7	18607	1.4	16-QAM	6	0	21.01	0-2	2
1880.0	18900	1.4	QPSK	1	0	23.40	0	0
1880.0	18900	1.4	QPSK	1	2	23.39	0	0
1880.0	18900	1.4	QPSK	1	5	23.45	0	0
1880.0	18900	1.4	QPSK	3	0	23.37	0	0
1880.0	18900	1.4	QPSK	3	2	23.34	0	0
1880.0	18900	1.4	QPSK	3	3	23.30	0	0
1880.0	18900	1.4	QPSK	6	0	22.31	0-1	1
1880.0	18900	1.4	16-QAM	1	0	22.45	0-1	1
1880.0	18900	1.4	16-QAM	1	2	22.34	0-1	1
1880.0	18900	1.4	16-QAM	1	5	22.42	0-1	1
1880.0	18900	1.4	16-QAM	3	0	22.32	0-1	1
1880.0	18900	1.4	16-QAM	3	2	22.35	0-1	1
1880.0	18900	1.4	16-QAM	3	3	22.34	0-1	1
1880.0	18900	1.4	16-QAM	6	0	21.20	0-2	2
1909.3	19193	1.4	QPSK	1	0	23.24	0	0
1909.3	19193	1.4	QPSK	1	2	23.22	0	0
1909.3	19193	1.4	QPSK	1	5	23.06	0	0
1909.3	19193	1.4	QPSK	3	0	23.14	0	0
1909.3	19193	1.4	QPSK	3	2	23.15	0	0
1909.3	19193	1.4	QPSK	3	3	23.08	0	0
1909.3	19193	1.4	QPSK	6	0	22.25	0-1	1
1909.3	19193	1.4	16-QAM	1	0	22.21	0-1	1
1909.3	19193	1.4	16-QAM	1	2	22.18	0-1	1
1909.3	19193	1.4	16-QAM	1	5	22.27	0-1	1
1909.3	19193	1.4	16-QAM	3	0	22.15	0-1	1
1909.3	19193	1.4	16-QAM	3	2	22.13	0-1	1
1909.3	19193	1.4	16-QAM	3	3	22.18	0-1	1
1909.3	19193	1.4	16-QAM	6	0	21.12	0-2	2

9. JUSTIFICATION OF HELD TO EAR MODES TESTED

I. Analysis of RF Air Interface Technologies

a. This report covers only the LTE air interface for VoLTE. Other air interfaces supported by the device are not included in the test scope for this report..

b. An analysis was performed, following the guidance of §4.3 and §4.4 of the ANSI standard, of the RF air interface technologies being evaluated. The factors that will affect the RF interference potential were evaluated, and the worst case operating modes were identified and used in the evaluation. A WD's interference potential is a function both of the WD's average near-field field strength and of the signal's audio-frequency amplitude modulation characteristics. Per §4.4, RF air interface technologies that have low power have been found to produce sufficiently low RF interference potential, so it is possible to exempt them from the product testing specified in Clause 5 of the ANSI standard. An RF air interface technology of a device is exempt from testing when its average antenna input power plus its MIF is ≤17dBm for all of its operating modes.

The worst case MIF plus the worst case average antenna input power for all modes are investigated below to determine the testing requirements for this device.

II. Individual Mode Evaluations

Air Interface	Maximum Average Power (dBm)	Worst Case MIF (dB)	Total (Power + MIF, dB)	C63.19 Testing Required
LTE - FDD	23.69	-9.77	13.92	No

Table 9-1
Max Power + MIF calculations
for Low Power Exemptions

III. Low-Power Exemption Conclusions

Per ANSI C63.19-2011, RF Emissions testing for this device is not required for VoLTE modes. Per C63.19, modes exempted from testing in this manner are assigned an M4 rating.

10. EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Anritsu	ML2469A	Power Meter	3/14/2014	Annual	3/14/2015	1306009
Anritsu	MA2481A	Power Sensor	10/30/2013	Annual	10/30/2014	5605
Anritsu	MA2411B	Pulse Power Sensor	11/14/2013	Annual	11/14/2014	1126066
Anritsu	MA24106A	USB Power Sensor	12/18/2013	Annual	12/18/2014	1344555
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	N/A	CBT*	N/A	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	N/A	CBT*	N/A	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	N/A	CBT*	N/A	1226
Pasternack	PE2208-6	Bidirectional Coupler	N/A	CBT*	N/A	N/A
Pasternack	PE2209-10	Bidirectional Coupler	N/A	CBT*	N/A	N/A
Pasternack	PE2237-20	Bidirectional Coupler	N/A	CBT*	N/A	N/A
Rohde & Schwarz	NRVD	Dual Channel Power Meter	10/12/2012	Biennial	10/12/2014	101695
Rohde & Schwarz	NRV-Z32	Peak Power Sensor	10/12/2012	Biennial	10/12/2014	836019/013
Rohde & Schwarz	NRV-Z32	Peak Power Sensor (100uW-2W)	10/31/2013	Annual	10/31/2014	100155
Rohde & Schwarz	NRV-Z32	Peak Power Sensor (1mW-20W)	10/31/2013	Annual	10/31/2014	100004
Rohde & Schwarz	CMW500	Radio Communication Tester	2/20/2014	Annual	2/20/2015	128633
Rohde & Schwarz	CMW500	Radio Communication Tester	7/9/2014	Annual	7/9/2015	106578
Rohde & Schwarz	CMW500	Radio Communication Tester	7/22/2014	Annual	7/22/2015	116743
Rohde & Schwarz	CMW500	Radio Communication Tester	10/4/2013	Biennial	10/4/2015	103962
Rohde & Schwarz	NRVS	Single Channel Power Meter	10/31/2013	Annual	10/31/2014	835360/0079
Seekonk	NC-100	Torque Wrench	3/18/2014	Biennial	3/18/2016	N/A
Speag	AIA	Audio Interference Analzyer	N/A	CBT*	N/A	1010

Table 10-1
Equipment List

Calibration traceable to the National Institute of Standards and Technology (NIST).

***Note: CBT (Calibrated Before Testing).** Prior to testing, the measurement paths containing a cable, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

11. MEASUREMENT UNCERTAINTY

Wireless Communications Device Near-Field Measurement Uncertainty Estimation							
Uncertainty Component	Data (dB)	Data Type	Prob. Dist.	Divisor	Ci (E)	Unc. (dB)	Notes/Comments
Measurement System							
RF System Reflections	0.50	Tolerance	N	1.00	1	0.50	* Refl. < -20 dB
Field Probe Calibration	0.21	Tolerance	N	1.00	1	0.21	
Field Probe Isotropy	0.01	Tolerance	N	1.00	1	0.01	
Field Probe Frequency Response	0.135	Tolerance	N	1.00	1	0.14	
Field Probe Linearity	0.013	Tolerance	N	1.00	1	0.01	
Modulation Interference Factor	0.20	Tolerance	R	1.73	1	0.12	Applicable for M-rating testing
Boundary Effects	0.105	Accuracy	R	1.73	1	0.06	*
Probe Positioning Accuracy	0.20	Accuracy	R	1.73	1	0.12	*
Probe Positioner	0.050	Accuracy	R	1.73	1	0.03	*
Extrapolation/Interpolation	0.045	Tolerance	R	1.73	1	0.03	*
Resolution to 2mm error	0.21	Tolerance	N	1.00	1	0.21	
System Detection Limit	0.05	Tolerance	R	1.73	1	0.03	*
Readout Electronics	0.015	Tolerance	N	1.00	1	0.02	*
Integration Time	0.11	Tolerance	R	1.73	1	0.06	*
Response Time	0.033	Tolerance	R	1.73	1	0.02	*
Phantom Thickness	0.10	Tolerance	R	1.73	1	0.06	*
System Repeatability (Field x 2=power)	0.17	Tolerance	N	1.00	1	0.17	*
Test Sample Related							
Device Positioning Vertical	0.2	Tolerance	R	1.73	1	0.12	*
Device Positioning Lateral	0.045	Tolerance	R	1.73	1	0.03	*
Device Holder and Phantom	0.1	Tolerance	R	1.73	1	0.06	*
Power Drift	0.21	Tolerance	R	1.73	1	0.12	
Combined Standard Uncertainty (k=1)						0.66	16.3%
Expanded Uncertainty [95% confidence]						1.31	32.6%
Expanded Uncertainty [95% confidence] on Field						0.66	16.3%

Table 11-1
Uncertainty Estimation Table

Notes:
1. Test equipments are calibrated according to techniques outlined in NIS81, NIS3003 and NIST Tech Note 1297. All equipments have traceability according to NIST. Measurement Uncertainties are defined in further detail in NIS 81 and NIST Tech Note 1297 and UKAS M3003.
2. * Uncertainty specifications from Schmidt & Partner Engineering AG (not site specific)

Measurement uncertainty reflects the quality and accuracy of a measured result as compared to the true value. Such statements are generally required when stating results of measurements so that it is clear to the intended audience that the results may differ when reproduced by different facilities. Measurement results vary due to the measurement uncertainty of the instrumentation, measurement technique, and test engineer. Most uncertainties are calculated using the tolerances of the instrumentation used in the measurement, the measurement setup variability, and the technique used in performing the test. While not generally included, the variability of the equipment under test also figures into the overall measurement uncertainty. Another component of the overall uncertainty is based on the variability of repeated measurements (so-called Type A uncertainty). This may mean that the Hearing Aid immunity tests may have to be repeated by taking down the test setup and resetting it up so that there are a statistically significant number of repeat measurements to identify the measurement uncertainty. By combining the repeat measurement results with that of the instrumentation chain using the technique contained in NIS 81 and NIS 3003, the overall measurement uncertainty was estimated.

12. CONCLUSION

The measurements indicate that the LTE air interface of this wireless communications device complies with the HAC limits specified in accordance with the ANSI C63.19 Standard and FCC WT Docket No. 01-309 RM-8658. Precise laboratory measures were taken to assure repeatability of the tests. The tested device complies with the requirements in respect to all parameters specific to the test. The test results and statements relate only to the item(s) tested.

Please note that the M-rating for this equipment only represents the field interference possible against a hypothetical and typical hearing aid. The measurement system and techniques presented in this evaluation are proposed in the ANSI standard as a means of best approximating wireless device compatibility with a hearing-aid. The literature is under continual re-construction.

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