

Test Plots (8DPSK) - 1 GHz - 10 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (High-CH)



Test Plots (π/4DQPSK) - 1 GHz - 10 GHz (RBW:1 MHz, VBW: 3 MHz)

Spurious Emission (Low-CH)

Agilen	it Spectru	m Analyzer	- Swep	t SA	41			<u></u>				
Cen	ter Fr	RF eq 5 50	50 Ω	AC 000 GH	17		INT REF	#Avg Type	ALIGN AUTO e: RMS	11:02:43 P TRAC	M Jun 30, 2013	Frequency
		oq 0.00	uuuu	PI IFC	NO: Fast 🔸	Trig: Free Atten: 24	Run dB	Avg Hold:	: 1/1	TYF DE		Auto Tuno
10 di	B/div	Ref Offs Ref 20.	et 7.2 c 00 dE	iB 3m					Mk	1 2.466 -40.4	55 GHz 20 dBm	Auto Tune
10.0												Center Freq 5.500000000 GHz
0.00 -10.0											-13,46 dBm	Start Freq 1.000000000 GHz
-20.0												Stop Freq 10.000000000 GHz
-40.0			1	l statel cars				l carte a				CF Step 900.000000 MHz <u>Auto</u> Man
-50.0	an di Adalah <mark>Angkaran di Angkaran di Ang Angkaran di Angkaran di Ang</mark>		» راسم کا ا	a sea de la granda	d di sa di sa Gali sa di	de la discrimination <mark>Antoine de la discrimina</mark> tion	antara per para da para da per					Freq Offset
-70.0												0 Hz
Star	t 1.000	GHz								Stop 10	.000 GHz	
#Re	s BW 1	.0 MHz			#VBW	3.0 MHz			Sweep	16.0 ms (2	0001 pts)	2
	Points	s changed	l; all tra	aces clear	red				STATU	S		

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 52 of 79	



Test Plots (π /4DQPSK) - 1 GHz - 10 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (Mid-CH)



Test Plots (π/4DQPSK) - 1 GHz - 10 GHz (RBW:1 MHz, VBW: 3 MHz)

Spurious Emission (High-CH)

Agilent Spectrum Analy	zer - Swept SA							
Cepter Fred 5	50 Ω AC	CH-	INT REF	#Ava Tvp	ALIGNAUTO	11:04:25 PN TRACE	1)un 30, 2013	Frequency
Center rreq 5.	500000000	PNO: Fast	Trig: Free Run Atten: 24 dB	Avg Hold:	1/1	TYPE DE1	PPPPPP	
Ref O 10 dB/div Ref 2	ffset 7.2 dB 20.00 dBm				Mkr	1 2.416	15 GHz 3 dBm	Auto Tune
10.0								Center Freq 5.500000000 GHz
-10.0							-12.86 dBm	Start Freq 1.000000000 GHz
-20,0								Stop Freq 10.000000000 GHz
-40.0		unita		Liza, kolon antitor, anala i	rabat on the set		14.	CF Step 900.000000 MHz <u>Auto</u> Man
-50.0 And the back of the second s				Option of a paper of the Postan	nalisyl dan yang	and a straight of the straight		Freq Offset 0 Hz
-70.0								
Start 1.000 GHz #Res BW 1.0 MI	Hz	#VBW	3.0 MHz		Sweep 1	Stop 10. 6.0 ms (20	000 GHz 0001 pts)	
мsg 🧼 Points chang	ged; all traces of	cleared			STATUS			

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No. HCTR1307FR11-1	Date of Issue:	EUT Type: GSM Phone with Bluetooth3 0, WIEI802 11 b/a/n	FCC ID: ZNEF410I
	00.910,2010	Page 53 of 79	2.0.21.0.



Test Plots (GFSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (Low-CH)



Test Plots (GFSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz)

Spurious Emission (Mid-CH)

Agilent Spectrum Analyzer - Swept SA					
Center Freg 17 50 Q AC	0 GHz	INT REF #Avg Typ	ALIGNAUTO	11:01:34 PM Jun 30, 2013 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast +++ Trig: Free IFGain:Low Atten: 24	e Run Avg Hold IdB	l: 1/1		
Ref Offset 7.2 dB 10 dB/div Ref 20.00 dBm			Mkr1	24.756 5 GHz -38.268 dBm	Auto Tune
10.0					Center Freq 17.500000000 GHz
-10.0				-12.90 dBm	Start Freq 10.000000000 GHz
-20.0					Stop Freq 25.000000000 GHz
-40.0	Land difference in the second states in the	الفائل ورواري والمراجع المعالي والأمريل			CF Step 1.500000000 GHz <u>Auto</u> Man
-60.0					Freq Offset 0 Hz
-70.0					
Start 10.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz		Sweep 38	Stop 25.000 GHz .0 ms (30001 pts)	
MSG Doints changed; all traces c	leared		STATUS		

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HUIRI30/FRII-I	July 10, 2013		ZINFE4101
		Page 54 of 79	



Test Plots (GFSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (High-CH)



Test Plots (8DPSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz)

Spurious Emission (Low-CH)

Agilen	t Spectru	ım Analyzer - S	wept SA								
Con	ter Er	RF 50		GH7		INT REF	#Avg Tvp	ALIGNAUT e: RMS	O 11:05:47 F TRAC	M Jun 30, 2013	Frequency
een		oq 17.00		PNO: Fast	Trig: Free	Run	AvgHold	1/1	TY D	PE MWWWWW ET P P P P P P	
				IFGain:Low	Atten: 24			MI	kr1 24 74	4.5 GHz	Auto Tune
10 dE	3/div	Ref Offset	7.2 dB I dBm						-38.2	34 dBm	
209											Center Freg
10.0											17.500000000 GHz
0.00											
0.00											Start Freq
-10.0										-13 55 dBm	10.00000000 GHz
										10.00 40/1	
-2U.U											Stop Freq
-30.0											25.00000000 GHz
-40.0									adda athine Lundet and	al na fastila disti	1.50000000 GHz
-50.0	handlathan	and all the state	a sa like a she was here	in shiisi biyadhi			alles, silles de silles Transfers de sectores	and the second	all and a state of the second		<u>Auto</u> Man
	<mark>andre ster forde</mark>	one destruction of the									
-60.0											Freq Offset
-70.0											0112
Star	t 10.00	00 GHz							Stop 25	.000 GHz	
#Re	s BW 1	1.0 MHz		#VBW	3.0 MHz			Sweep	38.0 ms (3	0001 pts)	
MSG 🥥	Point	s changed; a	II traces cle	eared				STAT	TUS		

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 55 of 79	



Test Plots (8DPSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (Mid-CH)



Test Plots (8DPSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz)

Spurious Emission (High-CH)

Agilent Spectrum Ana	ılyzer - Swept SA								
	50 Ω AC			NT REF	#Ava Two	ALIGNAUTO	11:07:38 P TRAC	M Jun 30, 2013	Frequency
Center Freq	7.50000000	PNO: Fast	Trig: Free Atten: 24	Run dB	Avg Hold:	1/1	TYF DE	E MWWWWW T P P P P P P	
Ref 10 dB/div Ref	Offset 7.2 dB 20.00 dBm					Mkr	1 24.963 -38.3	3 5 GHz 51 dBm	Auto Tune
10.0									Center Freq 17.50000000 GHz
-10.0								-13.00 dBm	Start Freq 10.000000000 GHz
-20.0									Stop Freq 25.000000000 GHz
-40.0	ulice and alternative design of the little	an yan yakan ku ya sala ya	, data a ^{data} li ada.	المالية المراجع المالية المراجع	and in the second state		n a dalifi da dala a dala Mana da seguna a seguna a	Louis Clin Dirth	CF Step 1.50000000 GHz <u>Auto</u> Man
-60.0	ologi di anci a printi di anci								Freq Offset 0 Hz
-70.0									
Start 10.000 G #Res BW 1.0 N	Hz 1Hz	#VBW	3.0 MHz			Sweep 3	Stop 25. 38.0 ms <u>(</u> 3	.000 GHz 0001 pt <u>s)</u>	
мsg 🧼 Points cha	nged; all traces c	leared				STATU	s		

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT						
Test Report No.	Date of Issue:	EUT Type:	FCC ID:					
HCTR1307FR11-1	July 10, 2013 GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n Z							
	Page 56 of 79							



Test Plots (π /4DQPSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (Low-CH)



Test Plots (π /4DQPSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz)

Spurious Emission (Mid-CH)

Agilent Spectrum Analyzer - Swept SA					
Center Freq 17 50 Ω AC	0 GHz	INT REF #Avg 1	ALIGN AUTO	11:04:06 PM Jun 30, 2013 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast +++ Trig: Fr IFGain:Low Atten: :	eeRun Avg H 24 dB	old: 1/1		Auto Tupo
Ref Offset 7.2 dB 10 dB/div Ref 20.00 dBm			Mkr1	24.161 5 GHz -38.706 dBm	Auto Tune
10.0					Center Freq 17.500000000 GHz
-10.0				-12.42 dBm	Start Freq 10.000000000 GHz
-20.0					Stop Freq 25.00000000 GHz
-40.0	ut an ain third an amh an dhe la la la	a a a statis i de al calificia a deta judi			CF Step 1.50000000 GHz <u>Auto</u> Man
	an in the second se				Eron Offect
-60.0					0 Hz
-70.0					
Start 10.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MH		Sweep 38	Stop 25.000 GHz 3.0 ms (30001 pts)	
MSG UPoints changed; all traces of	cleared		STATUS		

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT				
Test Report No.	Date of Issue:	Date of Issue: EUT Type:				
HCTR1307FR11-1	July 10, 2013	ZNFE410I				
		Page 57 of 79				



Test Plots (π /4DQPSK) - 10 GHz - 25 GHz (RBW:1 MHz, VBW: 3 MHz) Spurious Emission (High-CH)

Agilent Spec	trum Analyzer - Swept	SA						
LXI RL	RF 50 Ω /	AC	INT REF	A	LIGN AUTO	11:04:57 PM	1 Jun 30, 2013	Fraguanav
Center F	reg 17.50000)000 GHz		#Avg Type:	RMS	TRACE	123456	Frequency
		PNO: Fast 🔸	Trig: Free Run	Avg Hold: 1	n	I YPt	PPPPP	
		IFGain:Low	Atten: 24 dB			UL		
	D				Mkr1	24,956	0 GHz	Auto Tune
40	Ref Uffset / 2 dt	3 ·				-38 43	8 dBm	
Log	Rei 20.00 UD	<u> </u>						
								Center Freq
10.0	2				-			17.50000000 GHz
0.00								
0.00								Otant Frank
								StartFreq
-10.0							10.98 dBm	10.00000000 GHz
							-12.66 ubm	
-20.0								Ston Fred
								otoprited
-30.0					-			25.000000000 GHz
00.0							1	
-40.0		2			the second second second	diffe al d	Les La Propher di	CF Step
			Indone line in the		at the state of the state	an deside contactant	and the second second	1.500000000 GHz
50.0 1000	an and a bloom state labour d	hard a state of the	Contraction of the second		A STREET, STRE	A Stand In 1944		<u>Auto</u> Man
-50.0 700,007	and and seals to all its	and a state of the second state of the second s	All and a second se	MANUAL DATE OF DATE				
ations, its is	Lis defini (
-60.0								Freq Offset
								0 Hz
-70.0								
Start 10.	000 GHz					Stop 25.	000 GHz	
#Res BW	/ 1.0 MHz	#VBW	3.0 MHz	S	weep <u>38</u>	.0 ms (30	0001 pts)	
	nte obongodi all trei	an algored			STATIS			
Mod A Poll	ins changed, all trac	les cleared			STATUS			

FCC PT.15.247 TEST REPORT		www.hct.co.kr				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:			
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I			
Page 58 of 79						



8.6.2 RADIATED SPURIOUS EMISSIONS

LIMIT : §15.247(d), §15.205, §15.209

1. 20dBc in any 100kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)		
0.009 - 0.490	2400/F(kHz)	300		
0.490 – 1.705	24000/F(kHz)	30		
1.705 – 30	30	30		
30-88	100	3		
88-216	150	3		
216-960	200	3		
Above 960	500	3		

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HUIRISU/FRII-I	July 10, 2013	GSIV Phone with Bidetooths.c, WiFi802.11 b/g/h	ZINFE4101



Test Configuration

Below 30 MHz



30 MHz - 1 GHz



FCC PT.15.247 TEST REPORT		www.hct.co.kr				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:			
HUIRI30/FRII-I	July 10, 2013	GSM Phone with Bluetooth3.0, WiF1802.11 b/g/h	ZINFE4101			
Page 60 of 79						



Above 1 GHz



TEST PROCEDURE

- 1. The EUT is placed on a turntable, which is 0.8 m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.
- 7. Spectrum Setting
 - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 kHz \ge 1/T Hz, where T = pulse width in seconds.

FCC PT.15.247 TEST REPORT		www.hct.co.kr				
Test Report No.	Date of Issue:	EUT Type:	FCC ID:			
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I			
Page 61 of 79						



TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin		
MHz	dBµV	dB /m	dB	(H/V)	dBµV/m	dBµV/m	dB		
No Critical peaks found									

- 1. Measuring frequencies from 9 kHz to the 30MHz.
- 2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
- 3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
- 4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
- 5. This test is performed with hopping off.
- 6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247		FCC CERTIFICATION REPORT				
TEST REPORT						
Test Report No.	Date of Issue:	EUT Type:	FCC ID:			
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I			
		Page 62 of 79				



TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin		
MHz	dBµV	dB /m	dB	(H/V)	dBµV/m	dBµV/m	dB		
No Critical peaks found									

- 1. Measuring frequencies from 30 MHz to the 1 GHz.
- 2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
- 3. This test is performed with hopping off.
- 4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 63 of 79	



Above 1 GHz

Operation Mode: CH Low(GFSK)

Frequency	Reading	⋇A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4804	51.39	-0.84	V	50.55	74	23.45	PK
4804	37.62	-0.84	V	36.78	54	17.22	AV
7206	49.68	9.15	V	58.83	74	15.17	PK
7206	35.87	9.15	V	45.02	54	8.98	AV
4804	51.46	-0.84	Н	50.62	74	23.38	PK
4804	37.53	-0.84	Н	36.69	54	17.31	AV
7206	49.64	9.15	Н	58.79	74	15.21	PK
7206	35.91	9.15	Н	45.06	54	8.94	AV

Operation Mode: CH Low(8DPSK)

Frequency	Reading	⋇A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4804	50.52	-0.84	V	49.68	74	24.32	PK
4804	37.35	-0.84	V	36.51	54	17.49	AV
7206	49.30	9.15	V	58.45	74	15.55	PK
7206	35.74	9.15	V	44.89	54	9.11	AV
4804	50.18	-0.84	Н	49.34	74	24.66	PK
4804	37.41	-0.84	Н	36.57	54	17.43	AV
7206	49.16	9.15	Н	58.31	74	15.69	PK
7206	35.38	9.15	Н	44.53	54	9.47	AV

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 64 of 79	



Frequency	Reading	⋇A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4804	50.73	-0.84	V	49.89	74	24.11	PK
4804	37.55	-0.84	V	36.71	54	17.29	AV
7206	49.53	9.15	V	58.68	74	15.32	PK
7206	35.84	9.15	V	44.99	54	9.01	AV
4804	50.41	-0.84	Н	49.57	74	24.43	PK
4804	37.42	-0.84	Н	36.58	54	17.42	AV
7206	48.91	9.15	Н	58.06	74	15.94	PK
7206	35.93	9.15	Н	45.08	54	8.92	AV

Operation Mode: CH Low(π/4DQPSK)

* A·F: ANTENNA FACTOR

C·L: CABLE LOSS

AMP GAIN: AMPLIFIER GAIN

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4. Total = Reading Value + Antenna Factor + Cable Loss Amp Gain
- 5. Spectrum setting:
 - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 kHz \ge 1/ τ Hz, where τ = pulse width in seconds. We performed using a reduced video BW method was done with the analyzer in linear mode.
- 6. We have done Normal Mode and EDR Mode test.
- 7. This test is performed with hopping off.
- 8. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

TEST REPORT		www.net.co.ki
Test Report No. Date of Issue: EUT	Туре:	FCC ID:
HCTR1307FR11-1 July 10, 2013 GSM	/I Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I



Operation Mode: CH Mid(GFSK)

Frequency	Reading	⋇A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4882	49.88	-0.37	V	49.51	74	24.49	PK
4882	36.85	-0.37	V	36.48	54	17.52	AV
7323	48.98	8.72	V	57.70	74	16.31	PK
7323	35.51	8.72	V	44.23	54	9.78	AV
4882	50.01	-0.37	Н	49.64	74	24.36	PK
4882	36.66	-0.37	Н	36.29	54	17.71	AV
7323	48.93	8.72	Н	57.65	74	16.36	PK
7323	35.66	8.72	Н	44.38	54	9.63	AV

Operation Mode: CH Mid(8DPSK)

Frequency	Reading	** A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4882	49.38	-0.37	V	49.01	74	24.99	PK
4882	36.54	-0.37	V	36.17	54	17.83	AV
7323	48.66	8.72	V	57.38	74	16.63	PK
7323	35.30	8.72	V	44.02	54	9.99	AV
4882	49.88	-0.37	Н	49.51	74	24.49	PK
4882	36.63	-0.37	Н	36.26	54	17.74	AV
7323	48.14	8.72	Н	56.86	74	17.15	PK
7323	35.64	8.72	Н	44.36	54	9.65	AV

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 66 of 79	



Frequency	Reading	** A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4882	50.48	-0.37	V	50.11	74	23.89	PK
4882	36.64	-0.37	V	36.27	54	17.73	AV
7323	48.27	8.72	V	56.99	74	17.02	PK
7323	35.59	8.72	V	44.31	54	9.69	AV
4882	49.45	-0.37	Н	49.08	74	24.92	PK
4882	36.66	-0.37	Н	36.29	54	17.71	AV
7323	48.06	8.72	Н	56.78	74	17.23	PK
7323	35.44	8.72	Н	44.16	54	9.85	AV

Operation Mode: CH Mid(π/4DQPSK)

* A·F: ANTENNA FACTOR

C·L: CABLE LOSS

AMP GAIN: AMPLIFIER GAIN

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4. Total = Reading Value + Antenna Factor + Cable Loss Amp Gain
- 5. Spectrum setting:
 - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 kHz \ge 1/ τ Hz, where τ = pulse width in seconds. We performed using a reduced video BW method was done with the analyzer in linear mode.
- 6. We have done Normal Mode and EDR Mode test.
- 7. This test is performed with hopping off.
- 8. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 67 of 79	



Operation Mode: CH High(GFSK)

Frequency	Reading	⋇A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4960	48.96	0.50	V	49.46	74	24.54	PK
4960	35.84	0.50	V	36.34	54	17.66	AV
7440	49.23	8.95	V	58.18	74	15.82	PK
7440	36.40	8.95	V	45.35	54	8.65	AV
4960	48.93	0.50	Н	49.43	74	24.57	PK
4960	35.65	0.50	Н	36.15	54	17.85	AV
7440	49.79	8.95	Н	58.74	74	15.26	PK
7440	36.44	8.95	Н	45.39	54	8.61	AV

Operation Mode: CH High(8DPSK)

Frequency	Reading	*A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4960	48.44	0.50	V	48.94	74	25.06	PK
4960	35.64	0.50	V	36.14	54	17.86	AV
7440	48.88	8.95	V	57.83	74	16.17	PK
7440	36.18	8.95	V	45.13	54	8.87	AV
4960	48.65	0.50	Н	49.15	74	24.85	PK
4960	35.60	0.50	Н	36.10	54	17.90	AV
7440	49.45	8.95	Н	58.40	74	15.60	PK
7440	36.15	8.95	Н	45.10	54	8.90	AV

FCC PT.15.247 TEST REPORT		FCC CERTIFICATION REPORT	www.hct.co.kr
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 68 of 79	



Frequency	Reading	** A.F+CL-AMP GAIN	ANT. POL	Total	Limit	Margin	Detect
[MHz]	DBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
4960	48.87	0.50	V	49.37	74	24.63	PK
4960	35.95	0.50	V	36.45	54	17.55	AV
7440	49.60	8.95	V	58.55	74	15.45	PK
7440	36.34	8.95	V	45.29	54	8.71	AV
4960	48.54	0.50	Н	49.04	74	24.96	PK
4960	35.79	0.50	Н	36.29	54	17.71	AV
7440	50.27	8.95	Н	59.22	74	14.78	PK
7440	36.22	8.95	Н	45.17	54	8.83	AV

Operation Mode: CH High (π/4DQPSK)

* A·F: ANTENNA FACTOR

C·L: CABLE LOSS

AMP GAIN: AMPLIFIER GAIN

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 3. Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4. Total = Reading Value + Antenna Factor + Cable Loss Amp Gain
- 5. Spectrum setting:
 - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 kHz \ge 1/ τ Hz, where τ = pulse width in seconds. We performed using a reduced video BW method was done with the analyzer in linear mode.
- 6. We have done Normal Mode and EDR Mode test.
- 7. This test is performed with hopping off.
- 8. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 69 of 79	



8.6.3 RADIATED RESTRICTED BAND EDGES

Test Requirements and limit, §15.247(d), §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c).

Operation Mode	Normal(GFSK)		
Operating Frequency	2402 MHz		
Channel No	СН 0		

Frequency	Reading	×A.F+CL	ANT. POL	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
2390.0	24.61	33.90	Н	58.51	74	15.49	PK
2390.0	12.04	33.90	Н	45.94	54	8.06	AV
2390.0	24.55	33.90	V	58.45	74	15.55	PK
2390.0	12.10	33.90	V	46.00	54	8.00	AV

Operation Mode Operating Frequency Channel No EDR(8DPSK) 2402 MHz CH 0

Frequency	Reading	×A.F+CL	ANT. POL	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
2390.0	23.58	33.90	Н	57.48	74	16.52	PK
2390.0	12.14	33.90	Н	46.04	54	7.96	AV
2390.0	23.49	33.90	V	57.39	74	16.61	PK
2390.0	11.54	33.90	V	45.44	54	8.56	AV

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type:	FCC ID:
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I
		Page 70 of 79	



Operation Mode	EDR(π/4DQPSK)
Operating Frequency	2402 MHz
Channel No	CH 0

Frequency	Reading	×A.F+CL	ANT. POL	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	
2390.0	24.04	33.90	Н	57.94	74	16.06	PK
2390.0	12.08	33.90	Н	45.98	54	8.02	AV
2390.0	24.16	33.90	V	58.06	74	15.94	PK
2390.0	12.34	33.90	V	46.24	54	7.76	AV

※ A·F: ANTENNA FACTOR

C·L: CABLE LOSS

- 1.. Frequency range of measurement = 2310 MHz ~ 2390 MHz
- 2. Total = Fundamental Reading Value + Antenna Factor + Cable Loss
- 3. Spectrum setting:
 - a. Peak Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 MHz.
 - b. AV Setting 1 GHz 26 GHz, RBW = 1 MHz, VBW = 1 kHz \ge 1/T Hz, where T = pulse width in seconds. We performed using a reduced video BW method was done with the analyzer in linear mode.
- 4. We have done Normal Mode and EDR Mode.
- 5. This test is performed with hopping off.
- 6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

FCC PT.15.247 TEST REPORT		www.hct.co.kr			
Test Report No.	Date of Issue:	Date of Issue: EUT Type:			
HCTR1307FR11-1	July 10, 2013	ZNFE410I			
		Page 71 of 79			



Operation Mode	Normal(GFSK)
Operating Frequency	2480 MHz
Channel No	CH 78

Frequency	Reading	⋇ A.F.+CL	Ant. Pol.	Duty Cycle Correction	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
2483.5	34.18	33.99	Н	0	68.17	74	5.83	PK
2483.5	30.78	33.99	Н	-24.78	39.99	54	14.01	AV
2483.5	30.04	33.99	V	0	64.03	74	9.97	PK
2483.5	25.70	33.99	V	-24.78	34.91	54	19.09	AV

Operation Mode Operating Frequency Channel No

EDR(8DPSK)	
2480 MHz	
CH 78	

Frequency	Reading	⋇ A.F.+CL	Ant. Pol.	Duty Cycle Correction	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
2483.5	35.04	33.99	Н	0	69.03	74	4.97	PK
2483.5	29.36	33.99	Н	-24.78	38.57	54	15.43	AV
2483.5	26.28	33.99	V	0	60.27	74	13.73	PK
2483.5	20.20	33.99	V	-24.78	29.41	54	24.59	AV

FCC PT.15.247 TEST REPORT		www.hct.co.kr			
Test Report No.	Date of Issue:	EUT Type: CSM Phone with Rhystoeth3.0, WIEI802.11 b/c/n	FCC ID:		
	July 10, 2013		ZINFE4101		
Page 72 of 79					



Operation Mode	EDR(π/4DQPSK)
Operating Frequency	2480 MHz
Channel No	CH 78

Frequency	*Fund. Reading	⋇ A.F.+CL	Ant. Pol.	Duty Cycle Correction	Total	Limit	Margin	Detect
[MHz]	dBuV	[dB]	[H/V]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
2483.5	35.36	33.99	Н	0	69.35	74	4.65	PK
2483.5	29.30	33.99	Н	-24.78	38.51	54	15.49	AV
2483.5	25.74	33.99	V	0	59.73	74	14.27	PK
2483.5	19.92	33.99	V	-24.78	29.13	54	24.87	AV

* A·F: ANTENNA FACTOR

C·L: CABLE LOSS

AMP GAIN: AMPLIFIER GAIN

Notes:

- 1. Frequency range of measurement = 2483.5 MHz ~ 2500 MHz
- 2. Total = Fundamental Reading Value + Antenna Factor + Cable Loss Delta Value + Duty Cycle Correction Factor
- 3. Spectrum setting:

a. Peak Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 MHz.

b. AV Setting 1 GHz – 26 GHz, RBW = 1 MHz, VBW = 1 kHz \ge 1/T Hz, where T = pulse width in seconds.

We performed using a reduced video BW method was done with the analyzer in linear mode.

- 4. FYI : Duty Cycle Correction Factor (79 channel hopping)
 - a. Time to cycle through all channels= Δ t= τ [ms] x 79 channels = 227.757 ms, where τ = pulse width
 - b. 100 ms/ Δt [ms] = $H \rightarrow$ Round up to next highest integer, H' = 1
 - c. Worst Case Dwell Time = τ [ms] x H ' = 2.883 ms
 - d. Duty Cycle Correction = 20log (Worst Case Dwell Time/ 100ms) dB = -30.803 dB
- 5. Duty Cycle Correction Factor(AFH mode minimum channel number case 20 channels)
 - a. Time to cycle through all channels= Δ t= τ [ms] x 20 channels = 57.66 ms, where τ = pulse width
 - b. 100 ms/ Δ t [ms] = $H \rightarrow$ Round up to next highest integer, H' = 2
 - c. Worst Case Dwell Time = T [ms] x H ' = 5.766 ms
 - d. Duty Cycle Correction(AFH) = 20log (Worst Case Dwell Time/ 100ms) dB = -24.7825 dB
 - e. We applied DCCF in the test result which hopping channel number is 20.
- 6. We have done Normal Mode, EDR Mode.
- 7. This test is performed with hopping off.
- 8. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

FCC PT.15.247		FCC CERTIFICATION REPORT				
IEST REPORT						
Test Report No.	Date of Issue:	Date of Issue: EUT Type:				
HCTR1307FR11-1	July 10, 2013	July 10, 2013 GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n				
	Page 73 of 79					



8.7 POWERLINE CONDUCTED EMISSIONS

LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolt (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBµV)			
	Quasi-peak	Average		
0.15 to 0.50	66 to 56	56 to 46		
0.50 to 5	56	46		
5 to 30	60	50		

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

- 1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
- 2. The EUT is connected via LISN to a test power supply.
- 3. The measurement results are obtained as described below:
- 4. Detectors Quasi Peak and Average Detector.
- 5. This test is performed with hopping off and 3 Mbps (3-DH5) data rate of No.78 channel.

FCC PT.15.247 TEST REPORT		www.hct.co.kr			
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I		
Page 74 of 79					



RESULT PLOTSConducted Emissions (Line 1)

HCT

EMC

EUT:	LG-E410i
Manufacturer:	LG
Operating Condition:	BT MODE
Test Site:	SHIELD ROOM
Operator:	JC SHIN
Test Specification:	FCC PART15 B
Comment:	H

SCAN TABLE: "FCC CLASS B(H)"

Short Desc	ription:		KNZZ CLASS	B		
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

2013-06-30	2:27오후					
Frequency	y Level z dB킮	Transd dB	Limit dB	Margin dB	Line	PE
0.15000	1 41.30	9.8	66	24.7		
0.17800	1 38.70	9.8	65	25.9		
0.47000	1 29.80	9.8	57	26.7		
1,02000	0 31.80	9.8	56	24.2		
1.07200	0 31.30	9.8	56	24.7		
1,15200	0 31.80	9.9	56	24.2		
14.01200	0 28.10	10.7	60	31.9		
14.32400	0 28.30	10.7	60	31.7		
14.48400	0 28.10	10.7	60	31.9		

Page 1/2 2013-06-30 2:27오후 HCT EMC LAB

FCC PT.15.247	FCC CERTIFICATION REPORT www.hct.c					
TEST REPORT						
Test Report No.	Date of Issue:	EUT Type:	FCC ID:			
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I			
		Page 75 of 79				



MEASUREMENT RESULT: "PHONE_fin AV"

2013-06-30 2: Frequency MHz	27오후 Level dB킮	Transd dE	Limit dB킭	Margin dB	Line	PE
0.054001	00 40	0.0	10	26 5		
0.354001	22.40	9.8	49	20.5		
0.442001	20.80	9.8	47	26.2		
0.740000	22.10	9.8	46	23.9		
1.060000	23.10	9.8	46	22.9		
1.148000	24.60	9.9	46	21.4		
5.732000	15.50	10.2	50	34.5		
14.484000	17.30	10.7	50	32.7		
16.544000	14.50	10.8	50	35.5		

Page 2/2 2013-06-30 2:27오후 HCT EMC LAB

FCC PT.15.247 TEST REPORT		www.hct.co.kr			
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HUIRISU/FRII-I	July 10, 2013	GSM Phone with Bluetooths.o, WF1802.11 b/g/1	ZINFE4101		
Page 76 of 79					



Conducted Emissions (Line 2)

HCT

EMC

EUT:	LG-E410i
Manufacturer:	LG
Operating Condition:	BT MODE
Test Site:	SHIELD ROOM
Operator:	JC SHIN
Test Specification:	FCC PART15 B
Comment:	N

SCAN TABLE: "FCC CLASS B(N)"

Short Desc	ription:	Rton	Detector	Meas	TF	Transducer
Frequency	Frequency	Width	Decector	Time	Bandw.	1101000000
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

Frequency MHz	Level dBZ	Transd dB	Limit dB킮	Margin dB	Line	PE
		2021-0021	-			
0.346001	33.30	10.0	59	25.7		
0.406001	30.80	10.0	58	26.9		
0.494001	29.60	10.0	56	26.5	-	
0.612000	30.80	10.0	56	25.2		
0.720000	32.20	10.0	56	23.8		
1,140000	32.70	10.1	56	23.3		
13,904000	27.00	11.0	60	33.0		
14,128000	28.30	11.0	60	31.7		
14.336000	27.90	11.0	60	32.1		

Page 1/2 2013-06-30 2:37오후 HCT EMC LAB

FCC PT.15.247	FCC CERTIFICATION REPORT				
TEST REPORT			<u></u>		
Test Report No.	Date of Issue:	EUT Type:	FCC ID:		
HCTR1307FR11-1	July 10, 2013	GSM Phone with Bluetooth3.0, WIFI802.11 b/g/n	ZNFE410I		
Page 77 of 79					



MEASUREMENT RESULT: "PHONE_fin AV"

2013-06-30 2:	37오후					
Frequency MHz	Level dB킳	Transd dB	Limit dB킮	Margin dB	Line	PE
0,406001	19.00	10.0	48	28.7		
0.434001	19.60	10.0	47	27.6		
0.494001	19.00	10.0	46	27.1		
0.636000	23.30	10.0	46	22.7		
0.724000	24.00	10.0	46	22.0		
1,140000	24.90	10.1	46	21.1		
5 000000	12.20	10.4	46	33.8		
14 556000	16.10	11.0	50	33.9		
16.796000	12.90	11.1	50	37.1		

Page 2/2 2013-06-30 2:37오후 HCT EMC LAB

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: CSM Phone with Rivetoeth3.0. WIEI802.11 b/c/n	FCC ID:
	July 10, 2013	Page 78 of 79	ZINFE4101



9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/06/2014	100073
Schwarzbeck	VULB 9160/ TRILOG Antenna	Biennial	12/17/2014	3150
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	04/16/2014	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	04/25/2014	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	MY51110063
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/11/2013	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2014	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Agilent	E4416A /Power Meter	Annual	11/07/2013	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	04/16/2014	MY4442009
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	04/16/2014	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	04/16/2014	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject	Annual	03/19/2014	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Agilent	87300B/Directional Coupler	Annual	12/24/2013	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
CERNEX	CBLU1183540 / POWER AMP	Annual	07/27/2013	21691
Agilent	8493C / Attenuator(10 dB)	Annual	07/30/2013	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	Annual	11/07/2013	BR0617

FCC PT.15.247 TEST REPORT		www.hct.co.kr	
Test Report No.	Date of Issue:	EUT Type: GSM Phone with Bluetooth3 0, WIEI802 11 b/g/n	FCC ID: ZNEE4101
	odiy 10, 2010	Page 79 of 79	ZITIETIO