



FCC TEST REPORT (PART 24)

REPORT NO.: RF120507C13-1
MODEL NO.: 8001 3G Cradle
FCC ID: Q3N-80013GC
RECEIVED: Mar. 07, 2012
TESTED: May 15 ~ May 31, 2012
ISSUED: Jun. 04, 2012

APPLICANT: CIPHERLAB CO., LTD

ADDRESS: 12F, 333 Dunhua S. Rd., Sec.2 Taipei, Taiwan 106

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New
Taipei City, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120507C13-1	Original release	Jun. 04, 2012



1 CERTIFICATION

PRODUCT: CRADLE
MODEL: 8001 3G Cradle
BRAND: CIPHERLAB
APPLICANT: CIPHERLAB CO., LTD
TESTED: May 15 ~ May 31, 2012
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: FCC Part 24, Subpart E

The above equipment (model: 8001 3G Cradle) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE** : Jun. 04, 2012
Polly Chien / Specialist

APPROVED BY :  , **DATE** : Jun. 04, 2012
Gary Chang / Technical Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 24.232	Equivalent isotropically radiated power	PASS	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	PASS	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -15.4dB at 3700.4MHz.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 04, 2011	Aug. 03, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 06, 2011	Sep. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 13, 2011	Aug. 12, 2012
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 9.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 460141.
 5. The IC Site Registration No. is IC 7450F-4.



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3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	CRADLE
MODEL NO.	8001 3G Cradle
IMEI Code	35754804*****
HW Version	V1.0
SW Version	V1.0
POWER SUPPLY	5Vdc (Adapter)
MODULATION TYPE	GSM, GPRS: GMSK EDGE: 8PSK WCDMA : QPSK, BPSK
FREQUENCY RANGE	GSM, GPRS, EDGE: 1850.2MHz ~ 1909.8MHz WCDMA: 1852.4MHz ~ 1907.6MHz
MAX. ERP POWER	GSM: 1.4028Watts EDGE: 0.5808Watts WCDMA: 0.4966Watts
MULTI-SLOTS CLASS	10
WCDMA RELEASE VERSION	6
ANTENNA TYPE	Removable external antenna with 2.39dBi gain
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. The EUT uses following adapters.

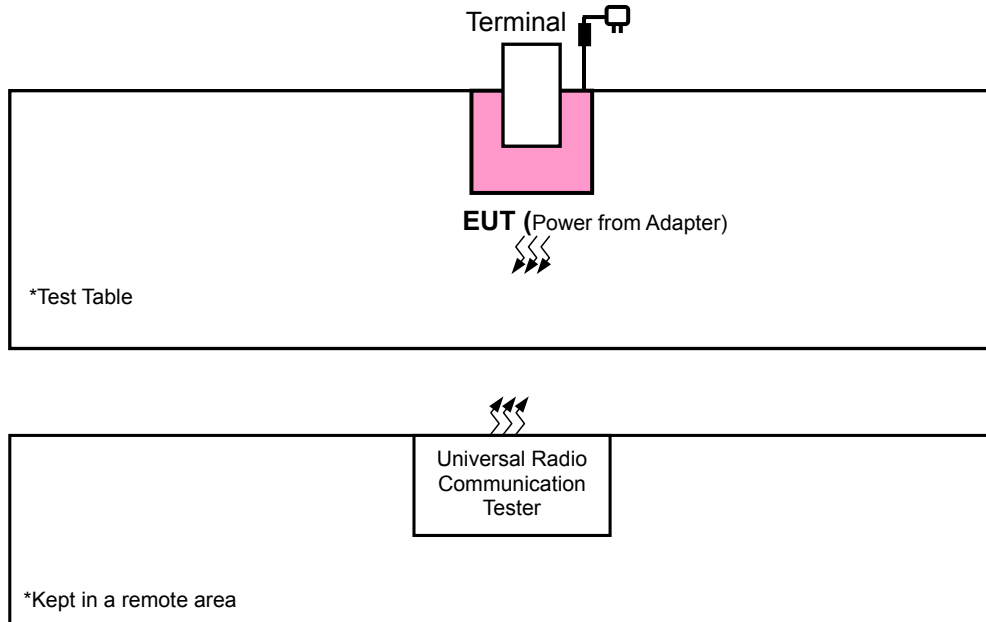
Adapter 1	
Brand	I.T.E Power SUPPLY
Model	GPSS-0500200
Input Power	100-240Vac, 50-60Hz, 0.5A
Output Power	5Vdc, 2A
Power Line	1.5m non-shielded cable with 1 core

Adapter 2	
Brand	ADAPTER TECH.
Model	STD-05020U2
Input Power	100-240Vac, 47-63Hz, 0.31A MAX
Output Power	5Vdc, 2A, 10W MAX
Power Line	1.8m non-shielded cable with 1 core

**After pre-tested two of adapters found adapter 2 was the worse one and was chosen for final test.

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Universal Radio Communication Tester	R&S	CMU200	101372	NA
2	TERMINAL	CIPHERLAB	8001 Terminal	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 acted as a communication partner to transfer data.
3. Item 2 was provided by the manufacturer.

3.4 TEST ITEM AND TEST CONFIGURATION

GSM MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	512 to 810	512, 661, 810	GPRS, EDGE
FREQUENCY STABILITY	512 to 810	512	GSM
OCCUPIED BANDWIDTH	512 to 810	512, 661, 810	GPRS, EDGE
BAND EDGE	512 to 810	512, 810	GPRS, EDGE
CONDCUETED EMISSION	512 to 810	512, 661, 810	GPRS
RADIATED EMISSION BELOW 1 GHz	512 to 810	512	GPRS
RADIATED EMISSION ABOCE 1 GHz	512 to 810	512, 661, 810	GPRS

WCDMA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
FREQUENCY STABILITY	9262 to 9538	9400	WCDMA
OCCUPIED BANDWIDTH	9262 to 9538	9262, 9400, 9538	WCDMA, HSDPA, HSUPA
BAND EDGE	9262 to 9538	9262, 9538	WCDMA, HSDPA, HSUPA
CONDCUETED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA
RADIATED EMISSION BELOW 1 GHz	9262 to 9538	9262	WCDMA
RADIATED EMISSION ABOCE 1 GHz	9262 to 9538	9262, 9400, 9538	WCDMA

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	26deg. C, 65%RH	5.0Vdc	Brad Wu
FREQUENCY STABILITY	26deg. C, 65%RH	5.0Vdc	Brad Wu
OCCUPIED BANDWIDTH	26deg. C, 65%RH	5.0Vdc	Brad Wu
BAND EDGE	26deg. C, 65%RH	5.0Vdc	Brad Wu
CONDCUETED EMISSION	26deg. C, 65%RH	5.0Vdc	Brad Wu
RADIATED EMISSION BELOW 1 GHz	25deg. C, 65%RH	5.0Vdc	Haru Yang
RADIATED EMISSION ABOCE 1 GHz	22deg. C, 71%RH	5.0Vdc	Anderson Hong

3.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

ANSI/TIA/EIA-603-C 2004

NOTE: All test items have been performed and recorded as per the above standards.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP

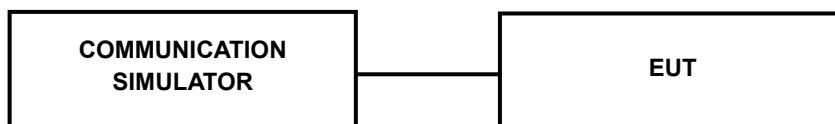
4.1.2 TEST PROCEDURES

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with GSM, GPRS link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
GPRS 8	29.08	28.81	28.70
GPRS 10	28.99	28.73	28.59
EDGE 8 (MCS1)	25.25	24.92	24.69
EDGE 10 (MCS1)	25.10	24.80	24.58
EDGE 8 (MCS9)	25.14	24.89	24.59
EDGE 10 (MCS9)	24.98	24.79	24.48

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2K	24.17	24.57	24.33
HSDPA Subtest-1	23.75	24.19	23.88
HSDPA Subtest-2	23.83	24.24	23.94
HSDPA Subtest-3	23.47	23.81	23.44
HSDPA Subtest-4	23.44	23.67	23.51
HSUPA Subtest-1	23.33	24.01	23.89
HSUPA Subtest-2	22.13	22.87	22.41
HSUPA Subtest-3	22.25	22.91	22.61
HSUPA Subtest-4	22.17	22.76	22.43
HSUPA Subtest-5	23.71	24.09	23.72

EIRP POWER (dBm)

GPRS 8					
CHANNEL NO.	FREQUENCY (MHz)	CONDUCTION POWER (dBm)	ANTENNA GAIN (dBi)	OUTPUT POWER	
				dBm	Watt
512	1850.2	29.08	2.39	31.47	1.4028
661	1880.0	28.81	2.39	31.20	1.3183
810	1909.8	28.70	2.39	31.09	1.2853

EDGE 8					
CHANNEL NO.	FREQUENCY (MHz)	CONDUCTION POWER (dBm)	ANTENNA GAIN (dBi)	OUTPUT POWER	
				dBm	Watt
512	1850.2	25.25	2.39	27.64	0.5808
661	1880.0	24.92	2.39	27.31	0.5383
810	1909.8	24.69	2.39	27.08	0.5105

WCDMA Band V_RMC 12.2K					
CHANNEL NO.	FREQUENCY (MHz)	CONDUCTION POWER (dBm)	ANTENNA GAIN (dBi)	OUTPUT POWER	
				dBm	Watt
9262	1852.40	24.17	2.39	26.56	0.4529
9400	1880.00	24.57	2.39	26.96	0.4966
9538	1907.60	24.33	2.39	26.72	0.4699

NOTE: EIRP= conducted power(dBm) + Antenna gain(dBi)

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

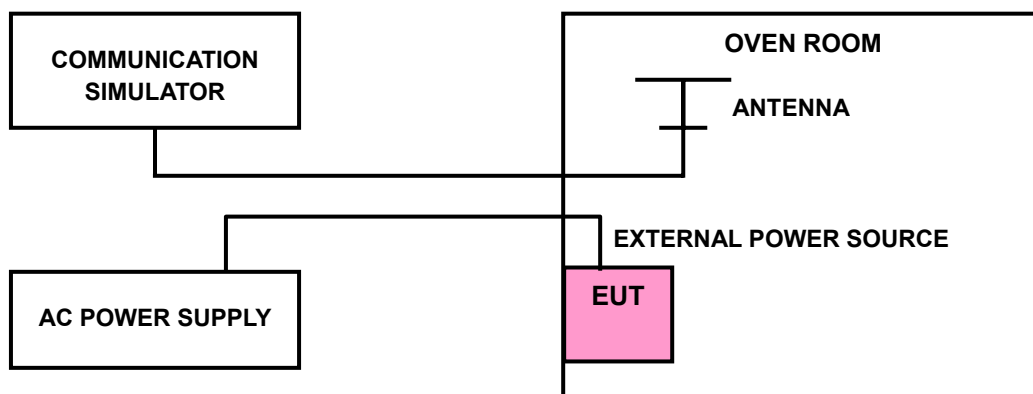
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

4.2.2 TEST PROCEDURE

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the AC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.2.3 TEST SETUP



4.2.4 TEST RESULTS

FREQUENCY ERROR vs. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	GSM	WCDMA	
126.5	-0.011	-0.020	2.5
93.5	-0.013	-0.019	2.5

NOTE: The applicant defined the normal working voltage of the adapter is from 93.5Vdc to 126.5Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

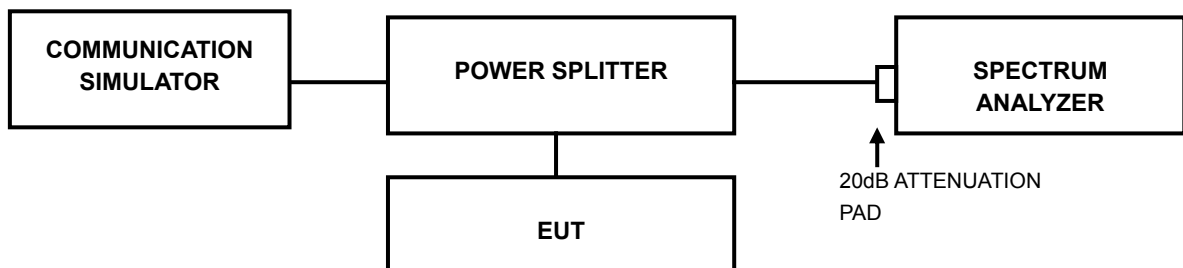
TEMP. (°C)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	GSM	WCDMA	
50	-0.012	-0.018	2.5
40	-0.012	-0.018	2.5
30	-0.013	-0.020	2.5
20	-0.013	-0.019	2.5
10	-0.014	-0.018	2.5
0	-0.013	-0.019	2.5
-10	-0.012	-0.020	2.5
-20	-0.015	-0.019	2.5
-30	-0.014	-0.017	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 TEST SETUP

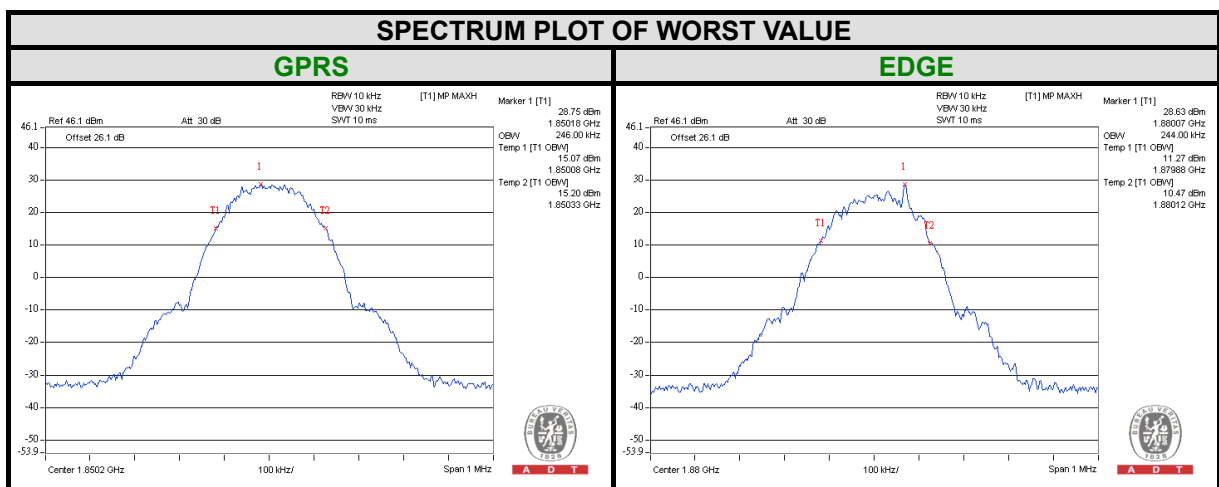




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4.3.3 TEST RESULTS

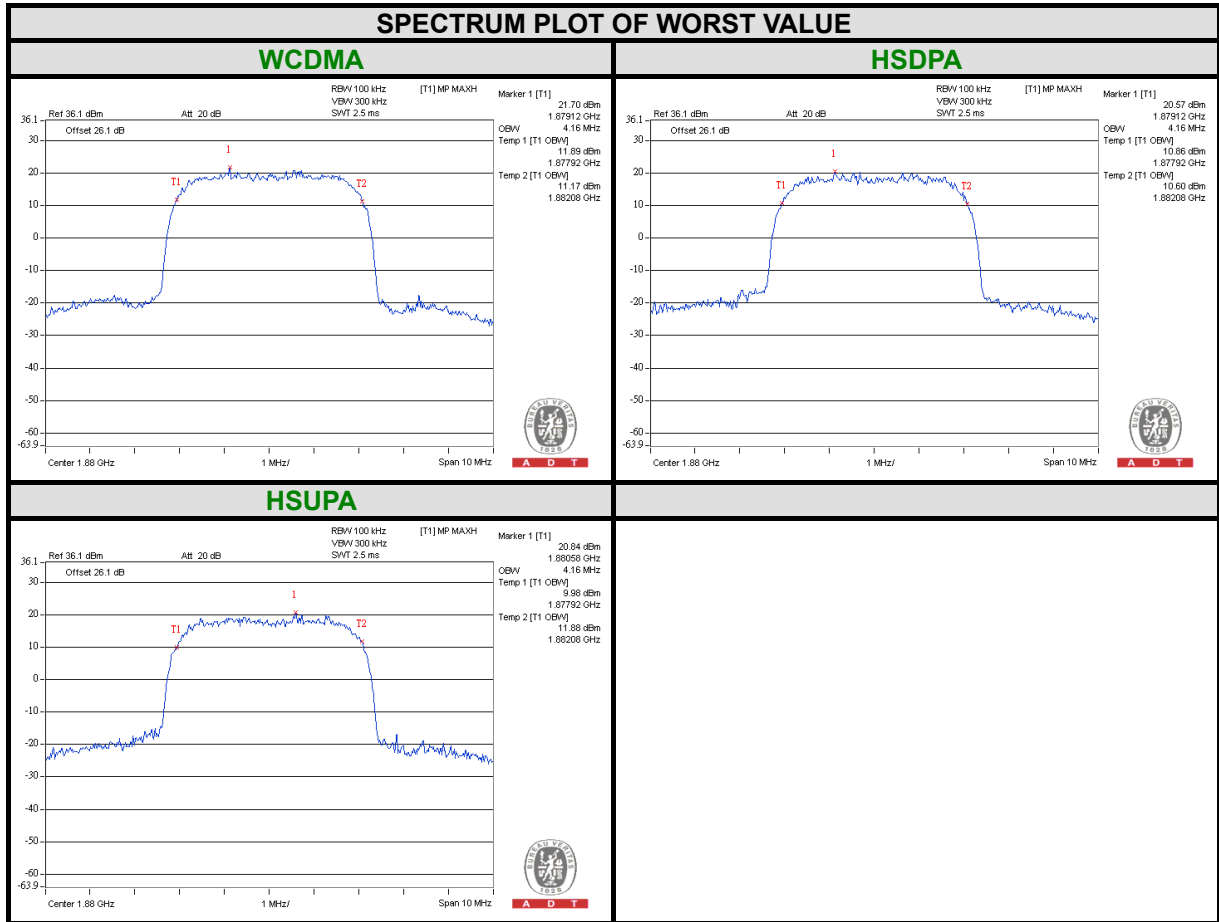
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (kHz)	
		GPRS	EDGE
512	1850.2	246	240
661	1880.0	244	244
810	1909.8	246	242





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CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		
		WCDMA	HSDPA	HSUPA
9262	1852.4	4.16	4.14	4.14
9400	1880.0	4.16	4.16	4.16
9538	1907.6	4.16	4.14	4.14

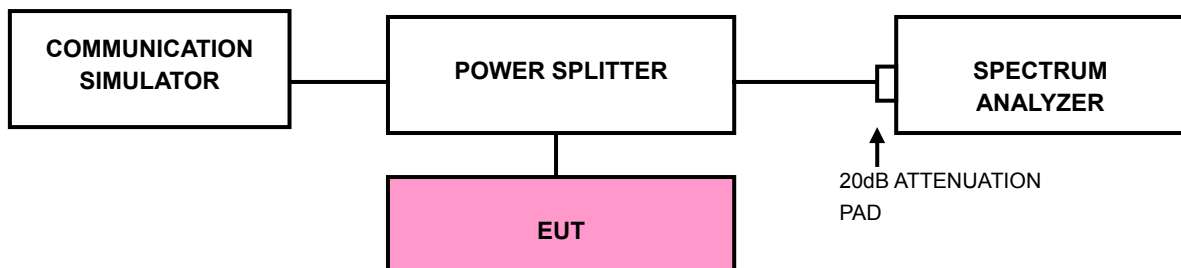


4.4 BAND EDGE MEASUREMENT

4.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.4.2 TEST SETUP



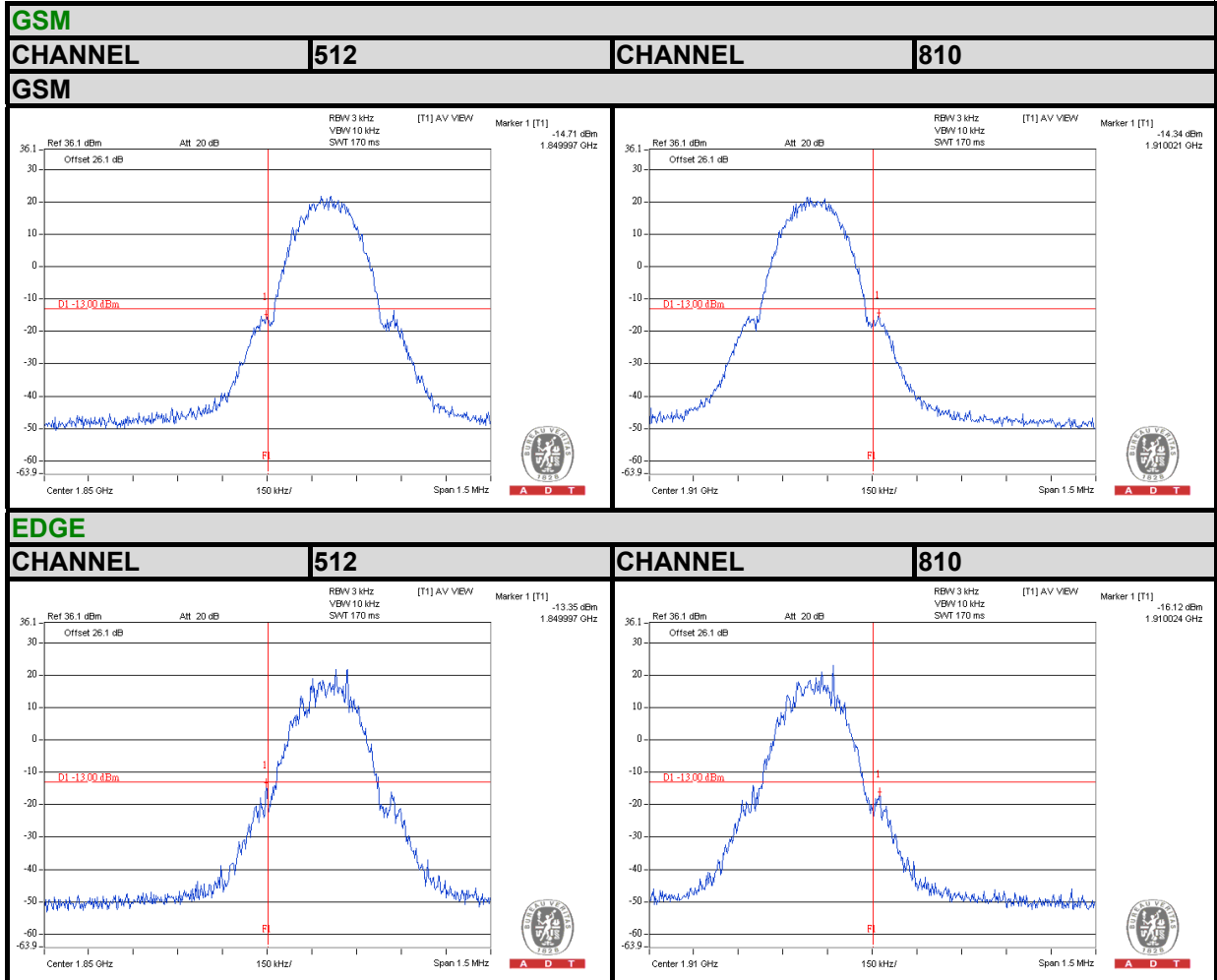
4.4.3 TEST PROCEDURES

- a. All measurements were done at low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 1.5 MHz. RB of the spectrum is 3kHz and VB of the spectrum is 10kHz.
- c. Record the max trace plot into the test report.



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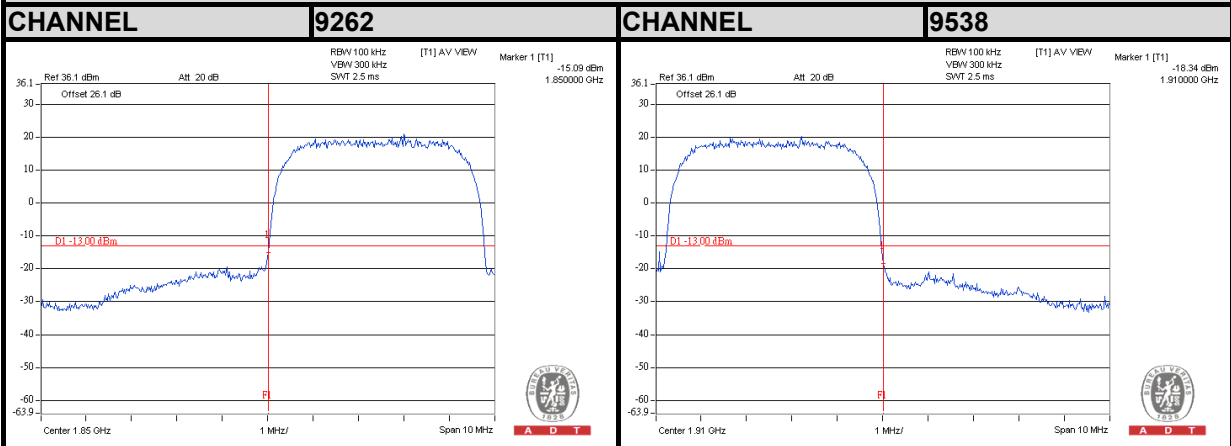
4.4.4 TEST RESULTS



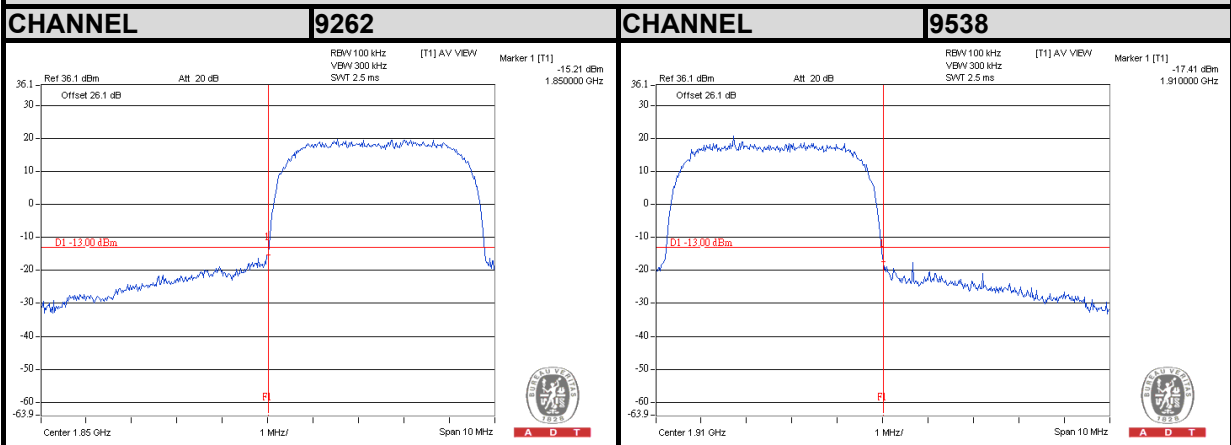


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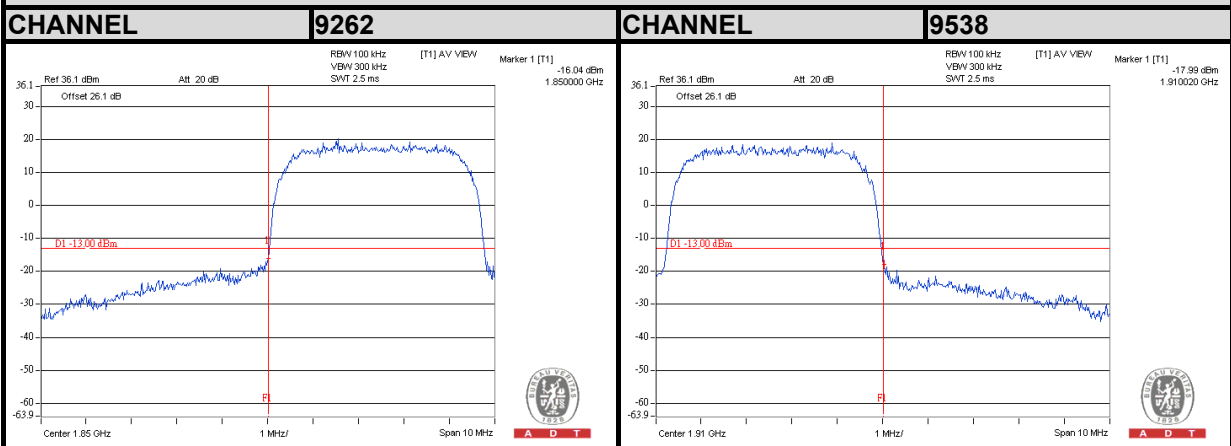
WCDMA



HSDPA



HSUPA



4.5 CONDUCTED SPURIOUS EMISSIONS

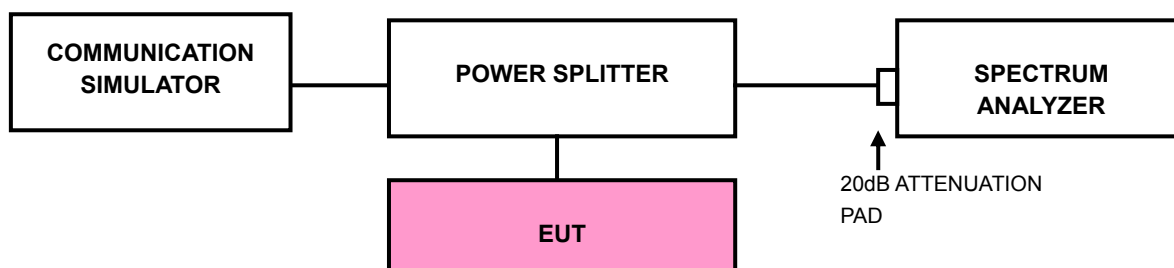
4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.5.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9 kHz to 20GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

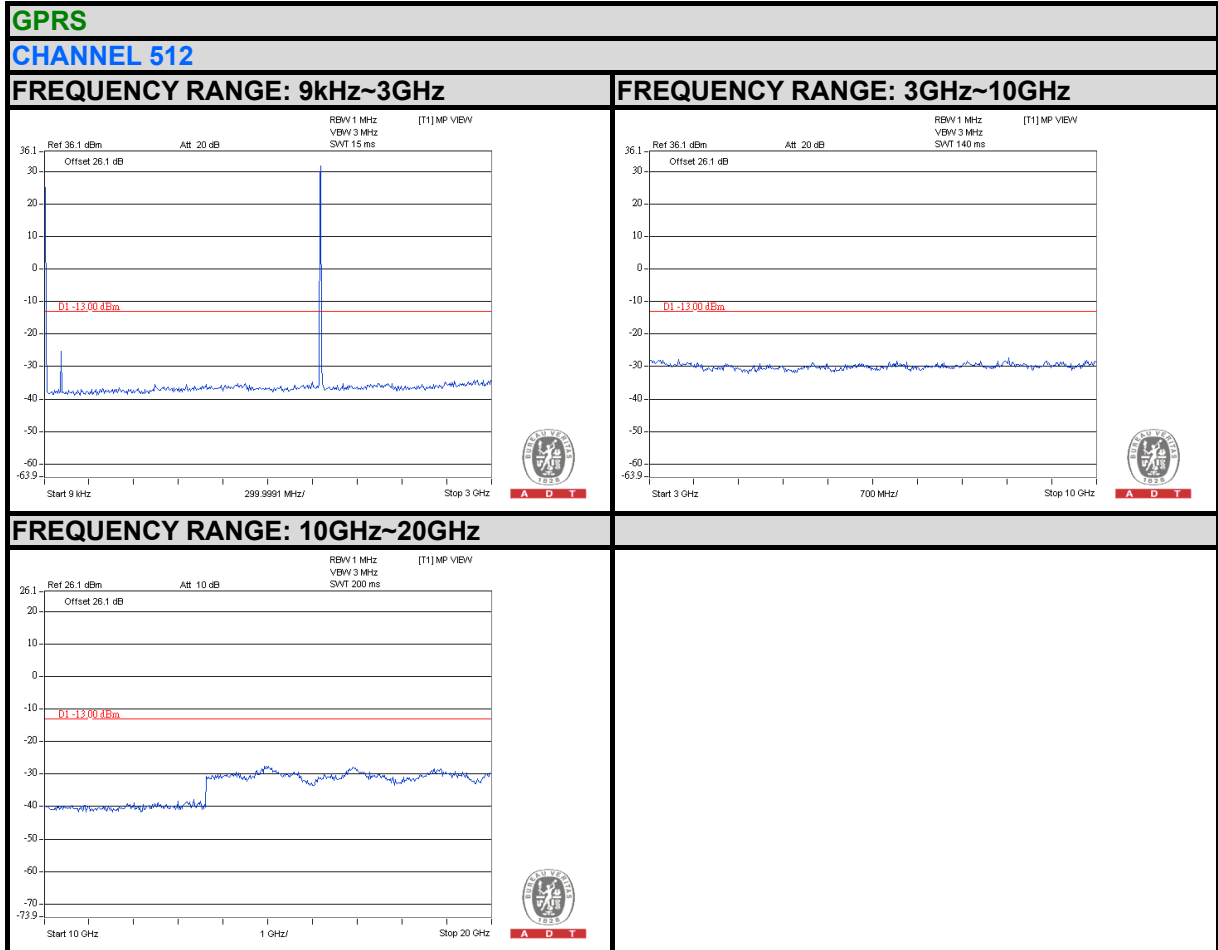
4.5.3 TEST SETUP





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4.5.4 TEST RESULTS

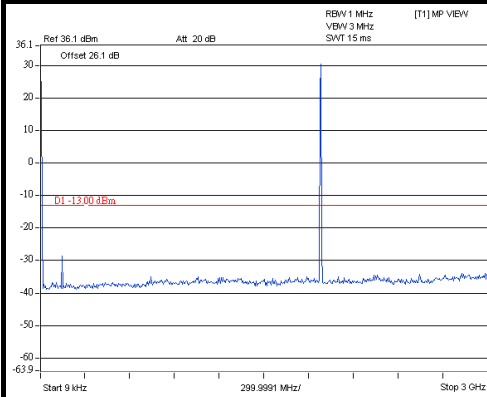




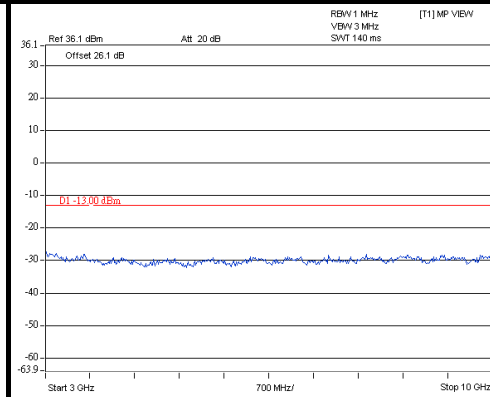
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CHANNEL 661

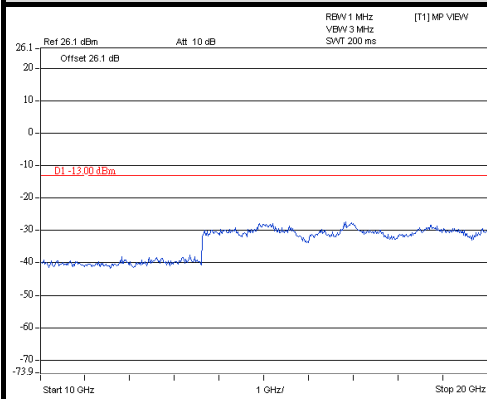
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

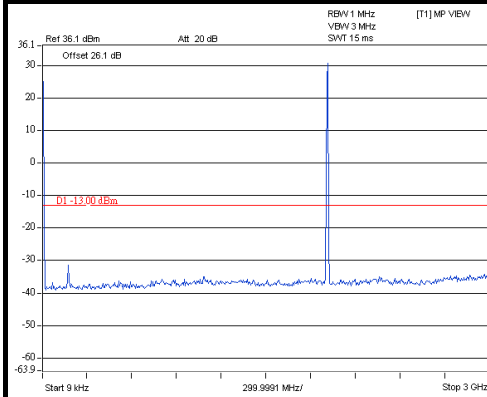




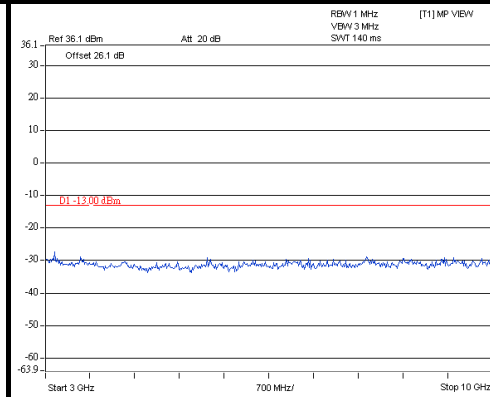
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CHANNEL 810

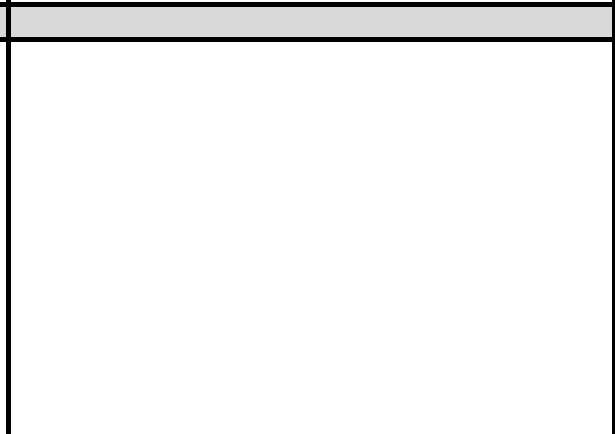
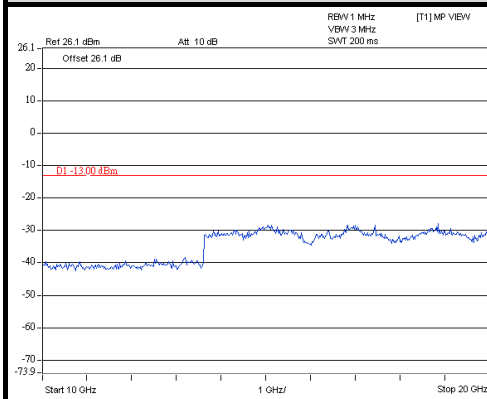
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz





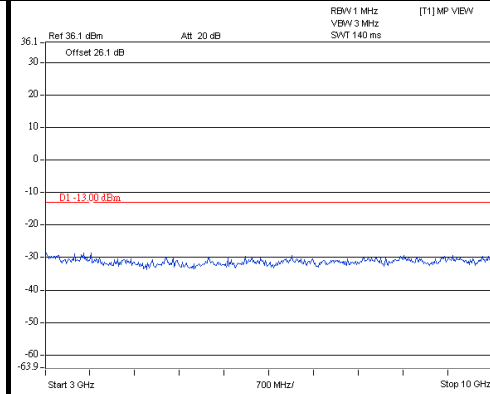
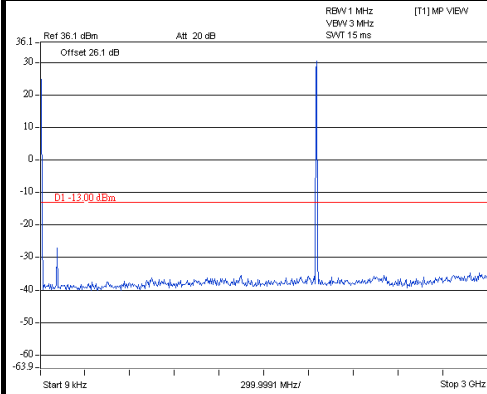
A D T

EDGE

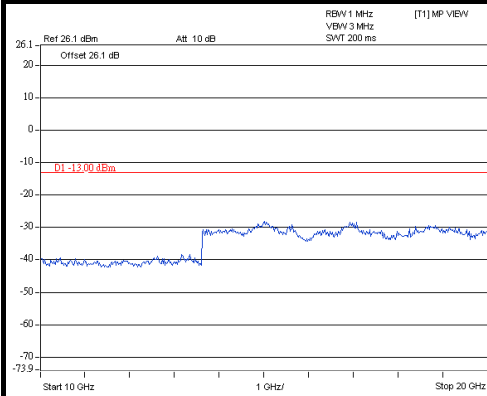
CHANNEL 512

FREQUENCY RANGE: 9kHz~3GHz

FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

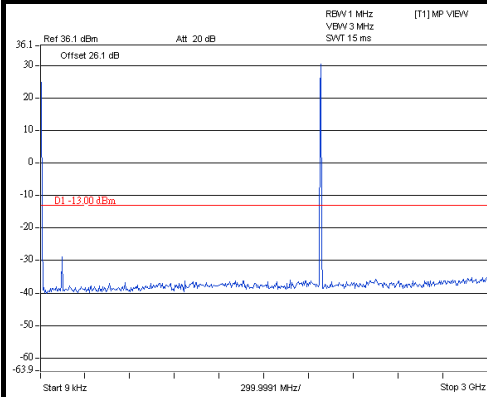




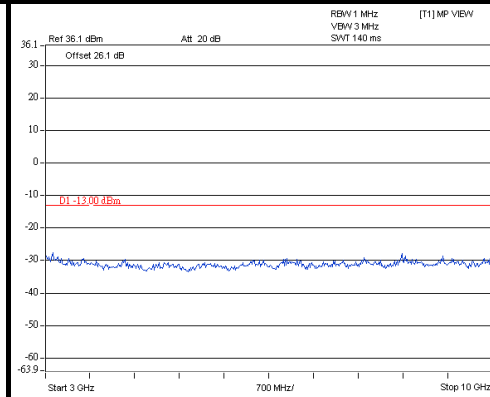
A D T

CHANNEL 661

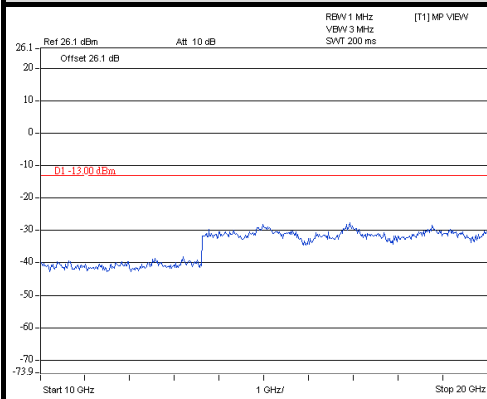
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FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

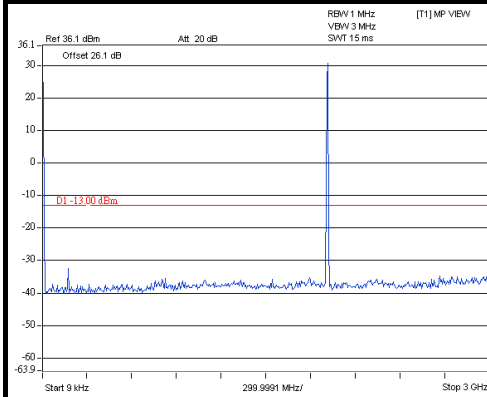




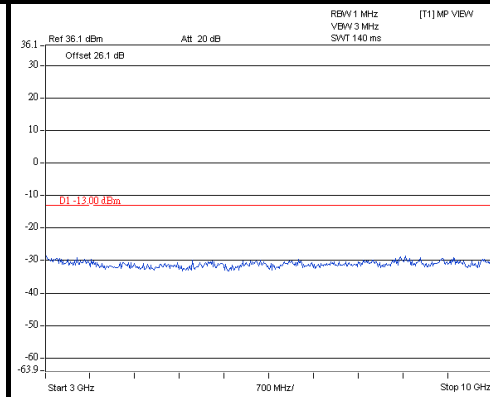
A D T

CHANNEL 810

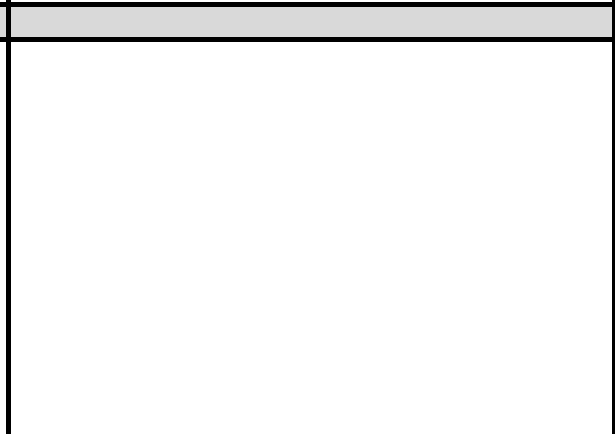
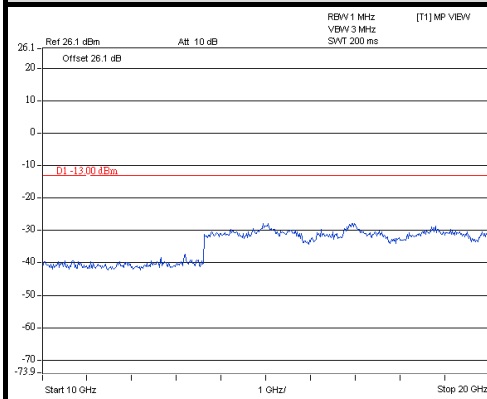
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FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz



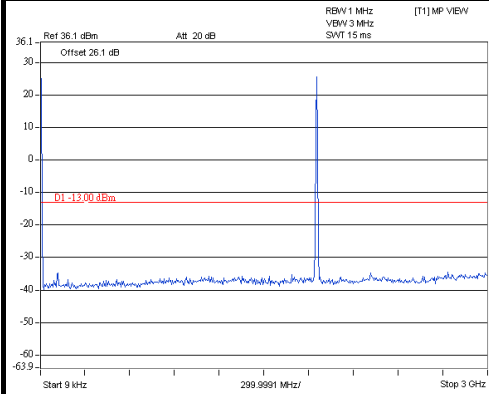


A D T

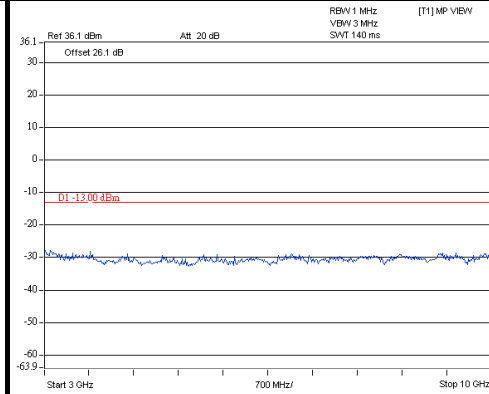
WCDMA

CHANNEL 9262

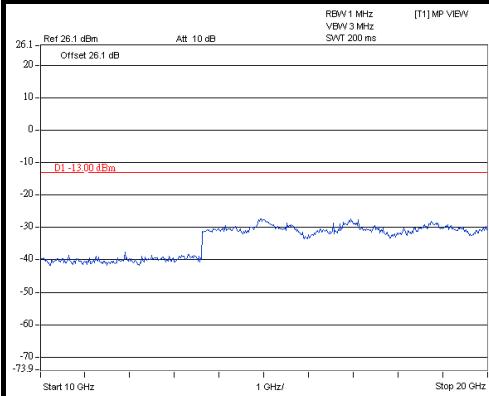
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FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

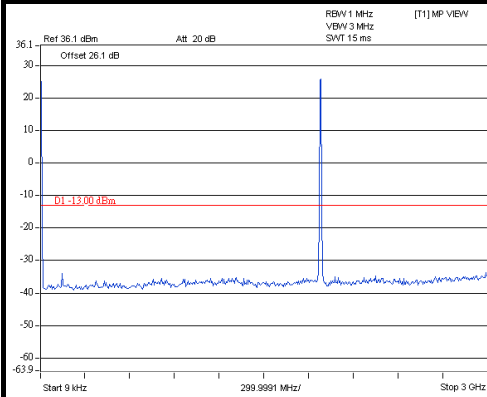




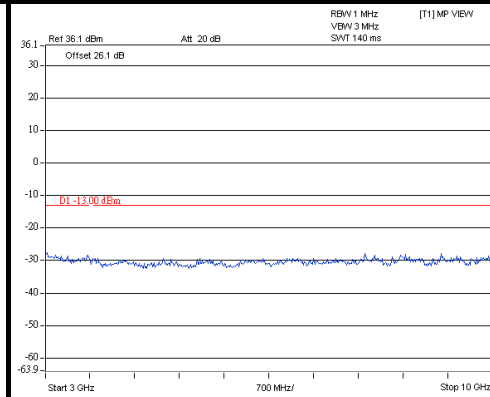
A D T

CHANNEL 9400

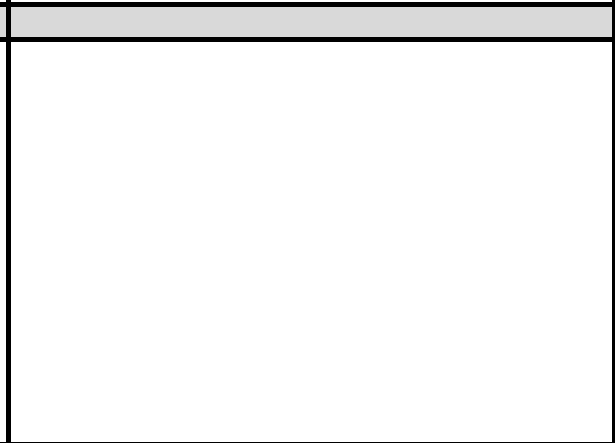
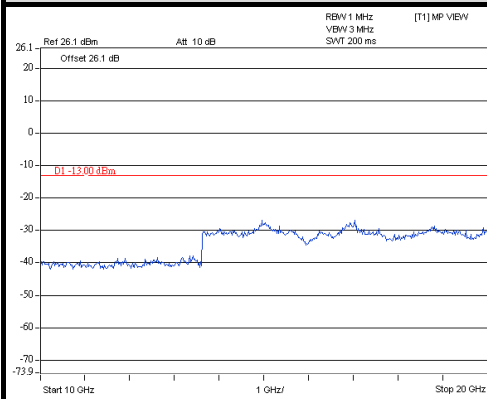
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

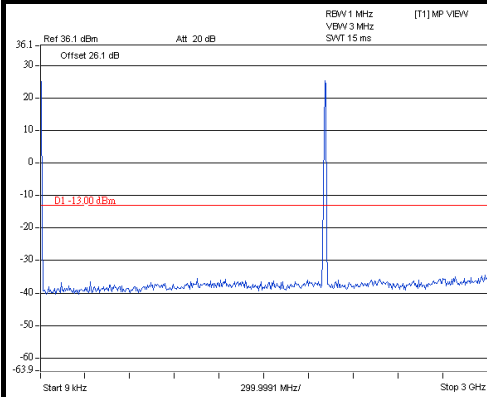




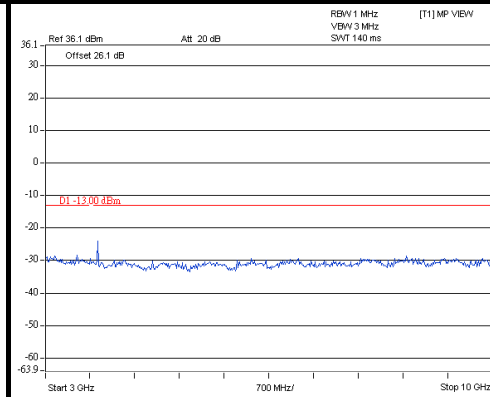
A D T

CHANNEL 9538

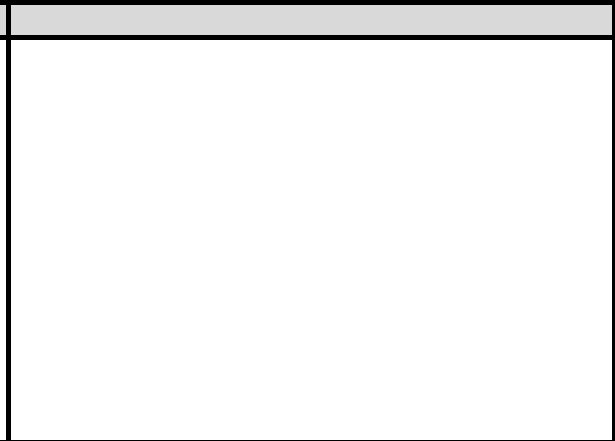
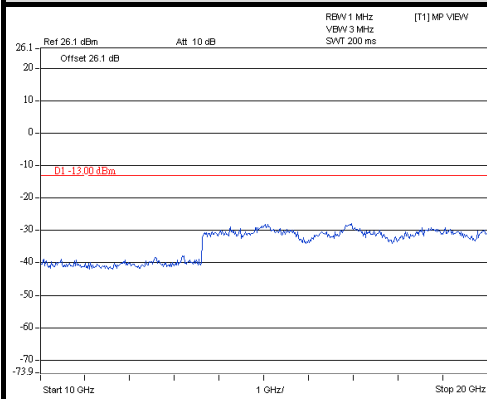
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz



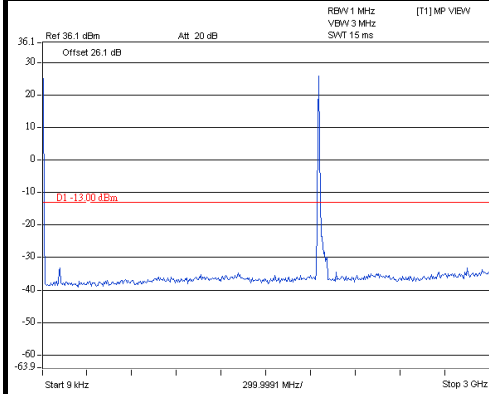


A D T

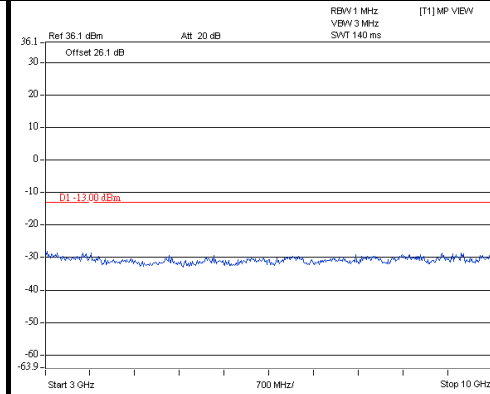
HSDPA

CHANNEL 9262

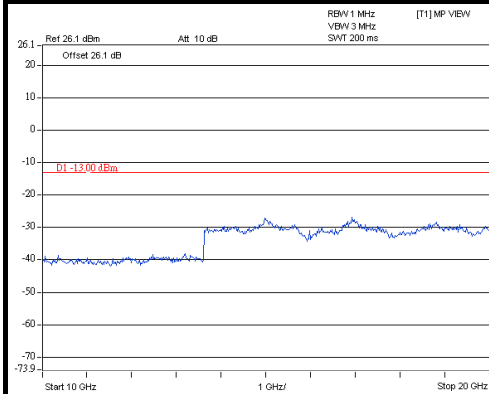
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

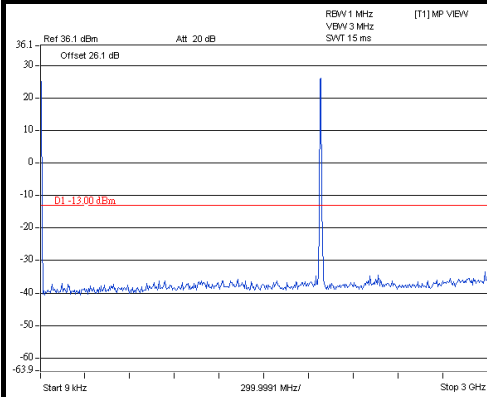




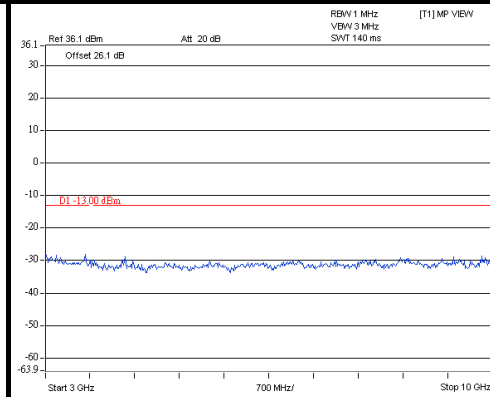
A D T

CHANNEL 9400

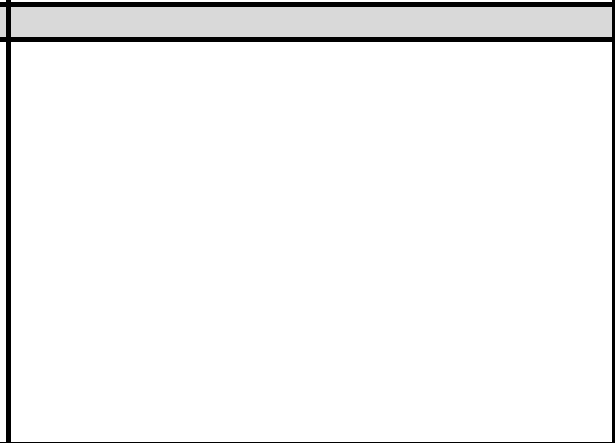
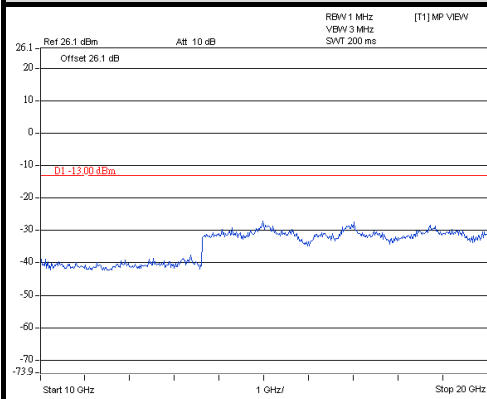
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

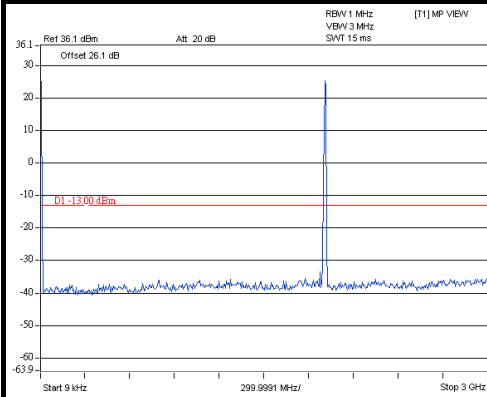




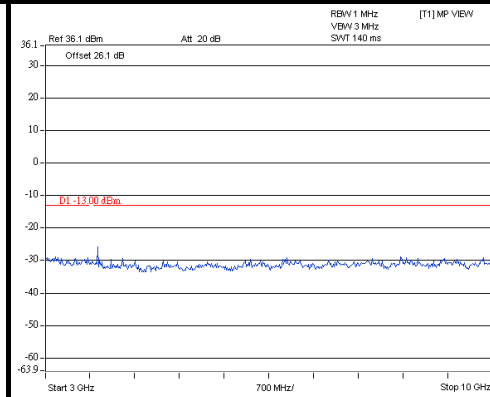
A D T

CHANNEL 9538

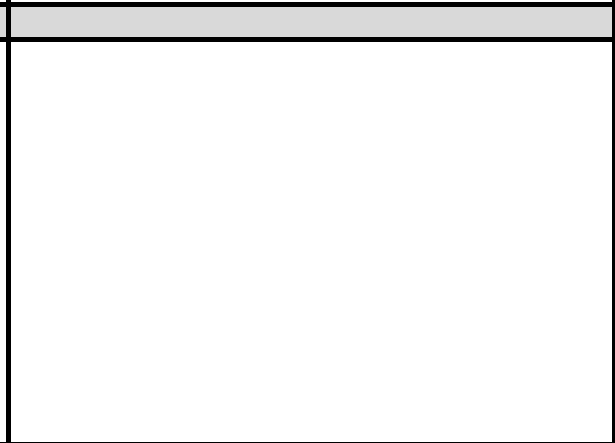
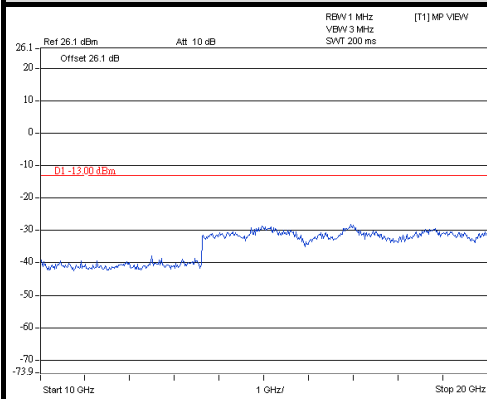
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz



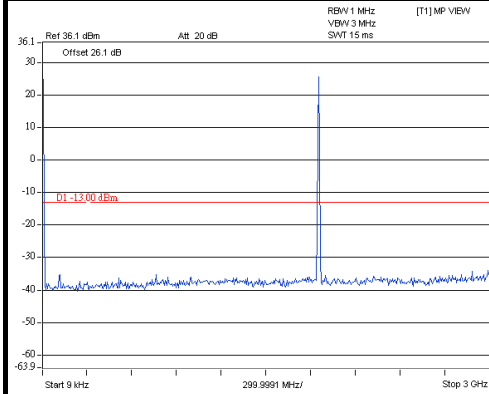


A D T

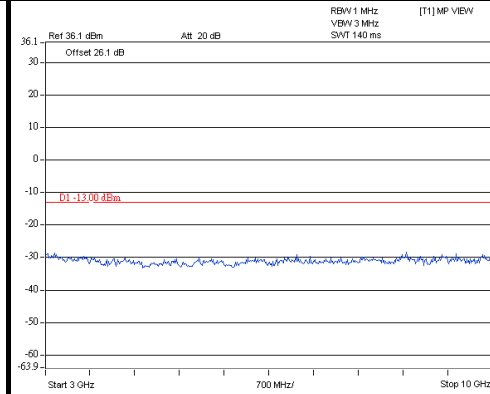
HSUPA

CHANNEL 9262

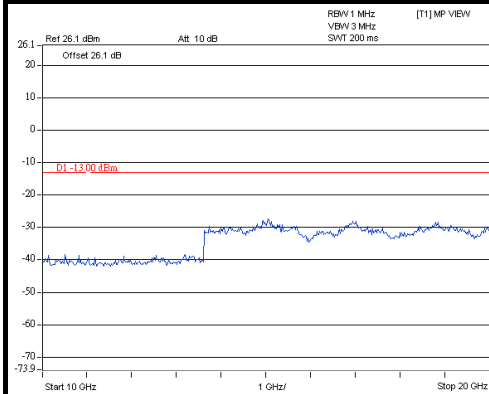
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

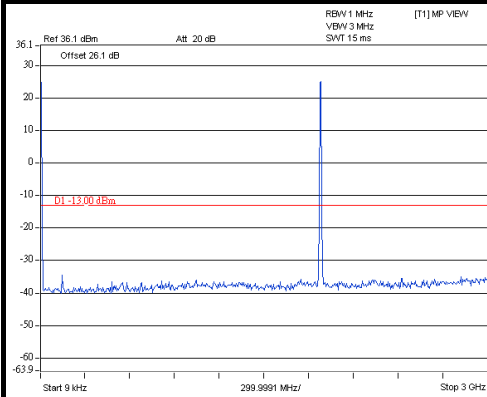




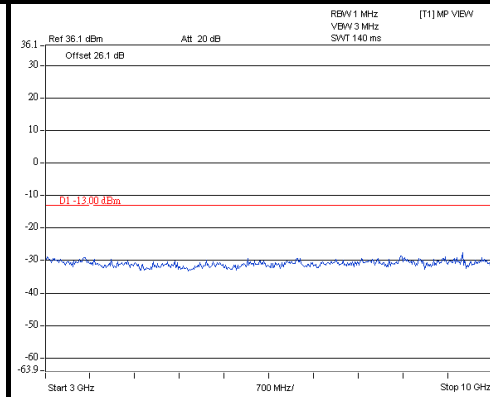
A D T

CHANNEL 9400

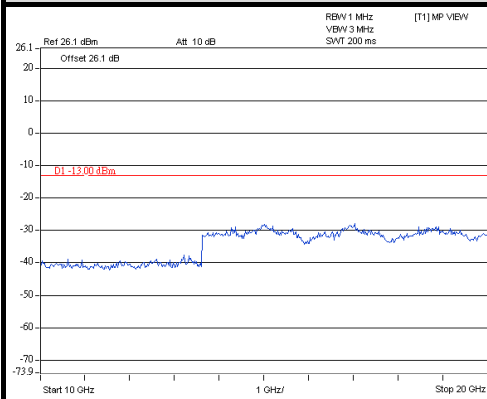
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz

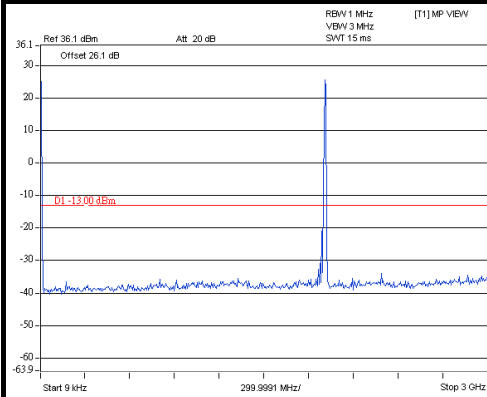




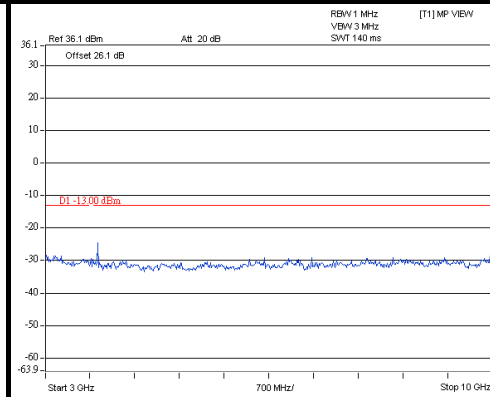
A D T

CHANNEL 9538

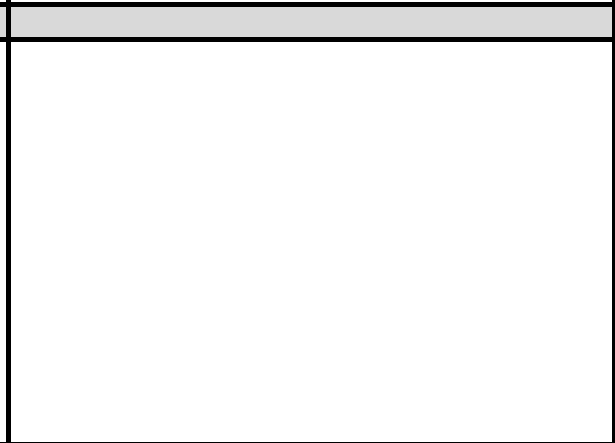
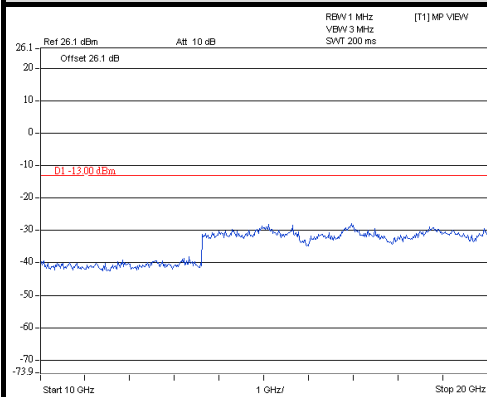
FREQUENCY RANGE: 9kHz~3GHz



FREQUENCY RANGE: 3GHz~10GHz



FREQUENCY RANGE: 10GHz~20GHz



4.6 RADIATED EMISSION MEASUREMENT

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.6.2 TEST PROCEDURES

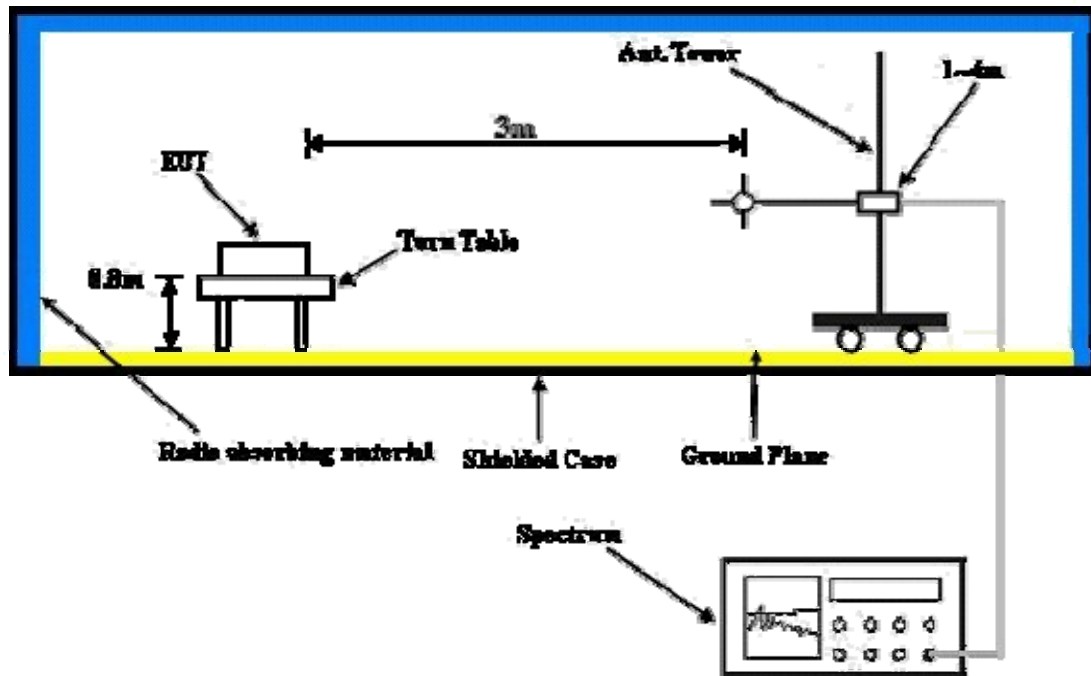
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi.}$

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.6.3 DEVIATION FROM TEST STANDARD

No deviation

4.6.4 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.6.5 TEST RESULTS

Below 1GHz

GPRS:

MODE	TX channel 810	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Haru Yang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-61.0	-44.6	-12.4	-57.0	-13.0	-44.0
2	68.88	-60.2	-61.3	-5.3	-66.6	-13.0	-53.6
3	134.97	-59.6	-65.2	0.0	-65.2	-13.0	-52.2
4	160.24	-61.2	-65.0	0.0	-65.0	-13.0	-52.0
5	212.73	-56.0	-67.5	5.5	-62.0	-13.0	-49.0
6	694.81	-67.7	-69.5	5.2	-64.3	-13.0	-51.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-49.3	-44.1	-12.6	-56.7	-13.0	-43.7
2	92.20	-55.4	-59.5	1.1	-58.4	-13.0	-45.4
3	138.86	-58.4	-59.9	0.0	-59.9	-13.0	-46.9
4	467.37	-64.0	-67.6	5.0	-62.6	-13.0	-49.6
5	745.35	-67.8	-65.1	4.7	-60.4	-13.0	-47.4
6	937.80	-67.4	-61.3	3.9	-57.4	-13.0	-44.4

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

WCDMA-RMC:

MODE	TX channel 9262	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Haru Yang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-62.5	-46.1	-12.4	-58.5	-13.0	-45.5
2	70.82	-59.9	-62.1	-4.7	-66.8	-13.0	-53.8
3	158.30	-60.9	-64.8	0.0	-64.8	-13.0	-51.8
4	210.78	-56.0	-67.5	5.5	-62.0	-13.0	-49.0
5	698.70	-67.9	-69.6	5.2	-64.4	-13.0	-51.4
6	758.96	-67.9	-66.9	4.5	-62.4	-13.0	-49.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	35.83	-47.7	-42.2	-11.9	-54.1	-13.0	-41.1
2	68.88	-52.4	-53.8	-5.3	-59.1	-13.0	-46.1
3	94.15	-54.8	-59.3	1.0	-58.3	-13.0	-45.3
4	136.91	-57.1	-59.0	0.0	-59.0	-13.0	-46.0
5	321.58	-62.5	-68.7	5.2	-63.5	-13.0	-50.5
6	547.07	-65.3	-67.5	4.7	-62.8	-13.0	-49.8

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



A D T

Above 1GHz

GPRS:

MODE	Channel 512	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg. C, 71%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3700.4	-39.9	-38.2	7.2	-31.0	-13.0	-18.0
2	5550.6	-58.6	-50.7	6.8	-43.9	-13.0	-30.9
3	7400.8	-58.6	-45.2	4.3	-40.9	-13.0	-27.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3700.4	-36.8	-35.6	7.2	-28.4	-13.0	-15.4
2	5550.6	-58.2	-53.3	6.8	-46.5	-13.0	-33.5
3	7400.8	-58.2	-45.3	4.3	-41.0	-13.0	-28.0

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



MODE	Channel 661	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg. C, 71%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.0	-40.8	-38.8	7.1	-31.7	-13.0	-18.7
2	5640.0	-58.7	-50.6	6.8	-43.8	-13.0	-30.8
3	7520.0	-58.9	-45.4	4.2	-41.2	-13.0	-28.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.0	-37.3	-36.0	7.1	-28.9	-13.0	-15.9
2	5640.0	-58.4	-53.2	6.8	-46.4	-13.0	-33.4
3	7520.0	-57.5	-44.2	4.2	-40.0	-13.0	-27.0

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



A D T

MODE	Channel 810	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg. C, 71%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3819.6	-42.3	-40.1	7.1	-33.0	-13.0	-20.0
2	5729.4	-58.4	-50.0	6.7	-43.3	-13.0	-30.3
3	7639.2	-58.4	-44.7	4.2	-40.5	-13.0	-27.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3819.6	-38.0	-36.7	7.1	-29.6	-13.0	-16.6
2	5729.4	-58.3	-52.7	6.7	-46.0	-13.0	-33.0
3	7639.2	-57.5	-44.0	4.2	-39.8	-13.0	-26.8

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



WCDMA-RMC:

MODE	Channel 9262	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg. C, 71%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3704.80	-48.7	-47.0	7.2	-39.8	-13.0	-26.8
2	5557.20	-57.0	-49.1	6.8	-42.3	-13.0	-29.3
3	7409.60	-56.4	-43.0	4.3	-38.7	-13.0	-25.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3704.80	-42.3	-41.1	7.2	-33.9	-13.0	-20.9
2	5557.20	-56.4	-51.4	6.8	-44.6	-13.0	-31.6
3	7409.60	-55.9	-43.0	4.3	-38.7	-13.0	-25.7

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



MODE	Channel 9400	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg. C, 71%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-49.8	-47.8	7.1	-40.7	-13.0	-27.7
2	5640.00	-57.9	-49.8	6.8	-43.0	-13.0	-30.0
3	7520.00	-57.2	-43.7	4.2	-39.5	-13.0	-26.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-45.1	-43.8	7.1	-36.7	-13.0	-23.7
2	5640.00	-57.1	-51.9	6.8	-45.1	-13.0	-32.1
3	7520.00	-56.8	-43.5	4.2	-39.3	-13.0	-26.3

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



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MODE	Channel 9538	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg. C, 71%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.20	-49.9	-47.7	7.1	-40.6	-13.0	-27.6
2	5722.80	-57.4	-49.0	6.7	-42.3	-13.0	-29.3
3	7630.40	-56.7	-43.0	4.2	-38.8	-13.0	-25.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.20	-44.8	-43.5	7.1	-36.4	-13.0	-23.4
2	5722.80	-56.7	-51.2	6.7	-44.5	-13.0	-31.5
3	7630.40	-56.1	-42.7	4.2	-38.5	-13.0	-25.5

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



6 INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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



7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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