

FCC PART 22H, PART 24E  
MEASUREMENT AND TEST REPORT

For

**Chengdu Vantron Technology, Ltd.**

No. 5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan 610045, China

**FCC ID: 2AAGEVTM2M-TC**

<b>Report Type:</b> Original Report	<b>Product Type:</b> M2M Gateway
<b>Test Engineer:</b> Leon Chen	<i>leon chen</i>
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<b>Reviewed By:</b> Jerry Zhang EMC Manager	<i>Jerry Zhang</i>
<b>Test Laboratory:</b> Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>	

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## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *Chengdu Vantron Technology, Ltd.*'s product, model number: *VT-M2M-TC (FCC ID: 2AAGEVTM2M-TC)* (the "EUT") in this report was a *M2M Gateway*, which was measured approximately: 16.0 cm (L) x 10.2 cm (W) x 5.2 cm (H), rated input voltage: DC 12V from adapter.

Adapter Information: GPE  
MODEL: GPE652-120500D  
INPUT: 100-240Vac, 50/60Hz, 1.5A  
OUTPUT: DC 12V, 5000mA

\* All measurement and test data in this report was gathered from production sample serial number: 130723050 (Assigned by *BACL.Dongguan*). The EUT was received on 2013-07-26.

### Objective

This report is prepared on behalf of *Chengdu Vantron Technology, Ltd.* in accordance with Part 2-Subpart J, Part 22-Subpart H, and Part 24-Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, spurious radiated emission, frequency stability and band edge.

### Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: *2AAGEVTM2M-TC* for Wifi.  
FCC Part 15C DTS submissions with FCC ID: *2AAGEVTM2M-TC* for Zigbee.  
FCC Part 27 PCB submissions with FCC ID: *2AAGEVTM2M-TC*.

### Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services  
Part 24 Subpart E - Personal Communication Services

Applicable Standards: TIA/EIA 603-D-2010, ANSI C63.4-2003.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp.(Dongguan), the radiated testing was performed at an antenna-to-EUT distance of 3 meters.

**Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).



The current scope of accreditations can be found at <http://ts.nist.gov/standards/scopes/5000690.htm>

## SYSTEM TEST CONFIGURATION

### Justification

The test items were performed with the EUT operating at testing mode.

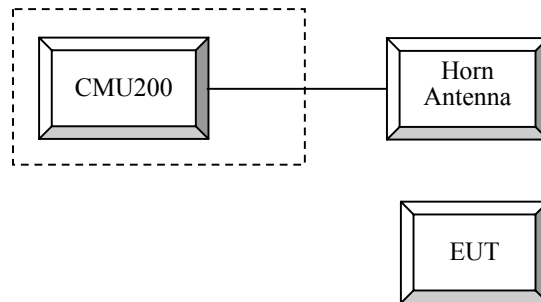
### Equipment Modifications

No modification was made to the EUT.

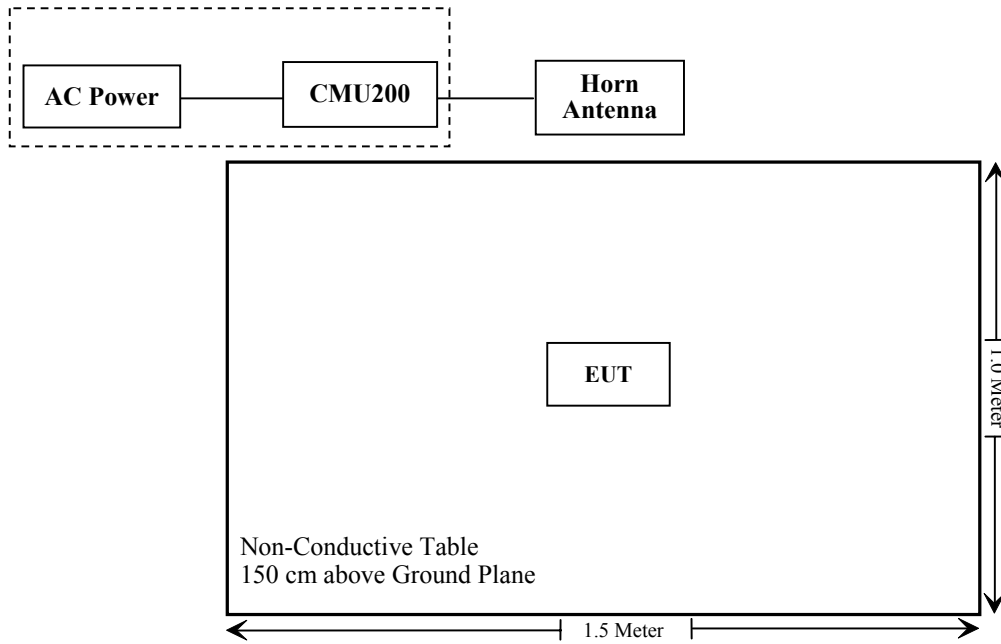
### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R & S	Universal Radio Communication Tester	CMU200	109038

### Configuration of Test Setup



**Block Diagram of Test Setup**



## SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310, §2.1091	RF Exposure	Compliance
§2.1046; § 22.913 (a); § 24.232 (c)	RF Output Power	Applicable*
§ 2.1047	Modulation Characteristics	Not Applicable**
§ 2.1049; § 22.905 § 22.917; § 24.238	Occupied Bandwidth	Not Applicable**
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Not Applicable**
§ 2.1053 § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Not Applicable**
§ 2.1055 § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Not Applicable**

Note: \* EPR & EIRP.

\*\* Please refer to the certified 3G module with FCC ID: RI7HE910.

**§1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

**Applicable Standard**

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission’s guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; \* = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

**Per 447498 D01 General RF Exposure Guidance v05r01**, simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0.

**Calculated Formulary:**

Predication of MPE limit at a given distance

S = PG/4πR<sup>2</sup> = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

**Calculated Data:**

RF module	Frequency band	Antenna Gain		Conducted Power		Duty cycle (%)	Evaluation distance (cm)	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )	MPE Ratios (%)
	(MHz)	(dBi)	(numeric)	(dBm)	(mW)					
WIFI	2412-2462	2.5	1.78	20.68	117	100	20	0.041	1	4.14
Zigbee	2405-2480	2.5	1.78	7.99	6.3	100	20	0.002	1	0.22
3G	1850.2-1909.8	2.4	1.74	29.20	832	50	20	0.144	1.00	14.38
Total sum of MPE ratios (%)										18.74

**Note:**

\* For 3G module, the worst case for MPE was chosen.

**Result:** 18.74 % < 1, the device meet FCC MPE at 20 cm distance.



## **FCC § 2.1046, § 22.913 (a) & § 24.232 (c) - RF OUTPUT POWER**

### **Applicable Standard**

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications..

### **Test Procedure**

#### **GSM**

Function: Menu select > GSM Mobile Station > GSM 850/1900  
 Press Connection control to choose the different menus  
 Press RESET > choose all the reset all settings  
 Connection Press Signal Off to turn off the signal and change settings  
 Network Support > GSM + only  
 MS Signal  
     > 33 dBm for GSM 850  
     > 30 dBm for GSM 1900  
 BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel  
 Frequency Offset > + 0 Hz  
 Mode > BCCH and TCH  
 BCCH Level > -85 dBm (May need to adjust if link is not stable)  
 BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]  
 Channel Type > Off  
 P0 > 4 dB  
 TCH > choose desired test channel  
 Hopping > Off  
 AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input  
 Connection Press Signal on to turn on the signal and change settings

#### **GPRS/EGPRS**

Function: Menu select > GSM Mobile Station > GSM 850/1900  
 Press Connection control to choose the different menus  
 Press RESET > choose all the reset all settings  
 Connection Press Signal Off to turn off the signal and change settings  
 Network Support > GSM + GPRS or GSM + EGSM  
 Main Service > Packet Data  
 Service selection > Test Mode A – Auto Slot Config. off  
 MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting  
     > Slot configuration > Uplink/Gamma  
     > 33 dBm for GPRS 850  
     > 30 dBm for GPRS 1900  
     > 27 dBm for EGPRS 850  
     > 26 dBm for EGPRS 1900  
 BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel  
 Frequency Offset > + 0 Hz  
 Mode > BCCH and TCH  
 BCCH Level > -85 dBm (May need to adjust if link is not stable)  
 BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off  
 P0 > 4 dB  
 Slot Config > Unchanged (if already set under MS signal)  
 TCH > choose desired test channel  
 Hopping > Off  
 Main Timeslot > 3  
 Network Coding Scheme > CS4 (GPRS) and MCS9 (EGPRS)  
 Bit Stream > 2E9-1 PSR Bit Stream  
 AF/RF Connection Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input  
 Press Signal on to turn on the signal and change settings

UMTS Rel 99

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	$\beta_c$	Not Applicable
	$\beta_d$	Not Applicable
	$\beta_{ec}$	Not Applicable
	$\beta_c/\beta_d$	8/15
	$\beta_{hs}$	Not Applicable
$\beta_{ed}$	Not Applicable	

UMTS Rel 6 HSDPA

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	Not Applicable			
	Power Control Algorithm	Algorithm 2			
	$\beta_c$	2/15	12/15	15/15	15/15
	$\beta_d$	15/15	15/15	8/15	4/15
	$\beta_{ec}$	-	-	-	-
	$\beta_c/\beta_d$	2/15	12/15	15/8	15/4
	$\beta_{hs}$	4/15	24/15	30/15	30/15
$\beta_{ed}$	Not Applicable				
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs = $\beta_{hs}/\beta_c$	30/15			

UMTS Rel 6 HSPA (HSDPA & HSUPA)

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	$\beta_c$	11/15	6/15	15/15	2/15	15/15
	$\beta_d$	15/15	15/15	9/15	15/15	0
	$\beta_{ec}$	209/225	12/15	30/15	2/15	5/15
	$\beta_c/\beta_d$	11/15	6/15	15/9	2/15	-
	$\beta_{hs}$	22/15	12/15	30/15	4/15	5/15
$\beta_{ed}$	1309/225	94/75	47/15	56/75	47/15	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

Radiated method:

ANSI/TIA 603-D section 2.2.17

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCI	100224	2013-5-6	2014-5-5
Sunol Sciences	Antenna	JB3	A060611-1	2011-9-6	2014-9-5
R&S	Spectrum analyzer	FSEM	DE31388	2013-5-7	2014-5-6
ETS LINDGREN	horn antenna	3115	000 527 35	2012-9-6	2015-9-5
Giga	Signal Generator	1026	320408	2013-5-9	2014-5-8
TDK RF	horn antenna	HRN-0118	130 084	2012-9-6	2015-9-5
EMCO	Adjustable dipole antenna	3121C	9109-753	N/A	N/A

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

<b>Temperature:</b>	25.4 °C
<b>Relative Humidity:</b>	62 %
<b>ATM Pressure:</b>	100.8 kPa

*The testing was performed by Leon Chen on 2013-10-20.*

ERP & EIRP

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GPRS 850								
824.200	V	101.37	29.4	0.0	1	28.4	38.5	10.1
836.600	V	101.05	29.3	0.0	1	28.3	38.5	10.2
848.800	V	100.00	28.3	0.0	1	27.3	38.5	11.2
EDGE 850								
824.200	V	97.47	25.5	0.0	1	24.5	38.5	14.0
836.600	V	96.36	24.6	0.0	1	23.6	38.5	14.9
848.800	V	96.45	24.8	0.0	1	23.8	38.5	14.7
GPRS 1900								
1850.200	V	90.96	19	11.4	1.4	29.0	33.0	4.0
1880.000	V	91.25	19.8	11.7	1.4	30.1	33.0	2.9
1909.800	V	89.96	18.9	11.8	1.4	29.3	33.0	3.7
EDGE 1900								
1850.200	V	87.76	15.8	11.4	1.4	25.8	33.0	7.2
1880.000	V	87.18	15.7	11.7	1.4	26.0	33.0	7.0
1909.800	V	85.86	14.8	11.8	1.4	25.2	33.0	7.8
BAND V								
826.400	V	92.34	20.4	0.0	1	19.4	38.5	19.1
836.600	V	93.33	21.5	0.0	1	20.5	38.5	18.0
846.600	V	92.82	21.2	0.0	1	20.2	38.5	18.3
BAND II								
1852.400	V	85.14	13.2	11.5	1.4	23.3	33.0	9.7
1880.000	V	83.26	11.8	11.7	1.4	22.1	33.0	10.9
1907.600	V	82.75	11.7	11.8	1.4	22.1	33.0	10.9

## FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

### Applicable Standard

FCC § 2.1053, §22.917 and § 24.238.

### Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log<sub>10</sub> (power out in Watts)

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCI	100224	2013-5-6	2014-5-5
Sunol Sciences	Antenna	JB3	A060611-1	2011-9-6	2014-9-5
HP	AMPLIFIER	8447E	2434A02181	N/A	N/A
R&S	Spectrum analyzer	FSEM	DE31388	2013-5-7	2014-5-6
ETS LINDGREN	horn antenna	3115	000 527 35	2012-9-6	2015-9-5
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	N/A	N/A
Ducommun Technologies	horn antenna	ARH-4223-02	1007726-01	2013-6-16	2014-6-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	N/A	N/A
Giga	Signal Generator	1026	320408	2013-5-9	2014-5-8
Ducommun Technologies	horn antenna	ARH-4223-02	1007726-01 1302	2013-6-16	2014-6-15
TDK RF	horn antenna	HRN-0118	130 084	2012-9-6	2015-9-5
EMCO	Adjustable dipole antenna	3121C	9109-753	N/A	N/A

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

<b>Temperature:</b>	25.4 °C
<b>Relative Humidity:</b>	62 %
<b>ATM Pressure:</b>	100.8 kPa

The testing was performed by Leon Chen on 2013-10-20.

EUT Operation Mode: Transmitting

**GSM 850**

Frequency	Polar	S.A Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dB $\mu$ V	dBm	dBd/dBi	dB	dBm	dBm	dB
<b>Low Channel, fc = 824.2 MHz</b>								
1648.400	H	51.87	-49.3	10.5	1.5	-40.3	-13.0	27.3
1648.400	V	61.44	-40.1	10.5	1.5	-31.1	-13.0	18.1
2472.600	H	44.93	-53.1	12.9	2.6	-42.8	-13.0	29.8
2472.600	V	47.01	-49.7	12.9	2.6	-39.4	-13.0	26.4
725.060	H	40.63	-48.9	0.0	0.9	-49.8	-13.0	36.8
725.060	V	41.85	-45.9	0.0	0.9	-46.8	-13.0	33.8
<b>Middle Channel, fc = 836.6 MHz</b>								
1673.200	H	51.39	-49.7	10.6	1.5	-40.6	-13.0	27.6
1673.200	V	57.04	-44.3	10.6	1.5	-35.2	-13.0	22.2
2509.800	H	45.62	-52.4	13.1	2.8	-42.1	-13.0	29.1
2509.800	V	46.75	-50.3	13.1	2.8	-40.0	-13.0	27.0
725.110	H	40.12	-49.4	0.0	0.9	-50.3	-13.0	37.3
725.110	V	41.92	-45.8	0.0	0.9	-46.7	-13.0	33.7
<b>High Channel, fc = 848.8 MHz</b>								
1697.600	H	52.15	-48.9	10.8	1.5	-39.6	-13.0	26.6
1697.600	V	57.26	-43.9	10.8	1.5	-34.6	-13.0	21.6
2546.400	H	44.17	-52.4	13.1	2.8	-42.1	-13.0	29.1
2546.400	V	46.06	-51	13.1	2.8	-40.7	-13.0	27.7
725.060	H	40.26	-49.3	0.0	0.9	-50.2	-13.0	37.2
725.060	V	41.87	-45.9	0.0	0.9	-46.8	-13.0	33.8

**GSM 1900**

Frequency	Polar	S.A.Reading	S.G.Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBμV	dBm	dBd/dBi	dB	dBm	dBm	dB
<b>Low Channel, fc = 1850.2 MHz</b>								
3700.400	H	33.17	-61.6	14.0	2.5	-50.1	-13.0	37.1
3700.400	V	35.62	-58.7	14.0	2.5	-47.2	-13.0	34.2
725.060	H	40.03	-49.5	0.0	0.9	-50.4	-13.0	37.4
725.060	V	41.85	-45.9	0.0	0.9	-46.8	-13.0	33.8
<b>Middle Channel, fc = 1880.0 MHz</b>								
3760.000	H	34.68	-59.6	13.8	2.9	-48.7	-13.0	35.7
3760.000	V	37.52	-55.5	13.8	2.9	-44.6	-13.0	31.6
725.010	H	40.06	-49.5	0.0	0.9	-50.4	-13.0	37.4
725.010	V	41.75	-46	0.0	0.9	-46.9	-13.0	33.9
<b>High Channel, fc = 1909.8 MHz</b>								
3819.600	H	36.24	-57.6	13.6	3.3	-47.3	-13.0	34.3
3819.600	V	39.15	-53	13.6	3.3	-42.7	-13.0	29.7
725.260	H	40.06	-49.5	0.0	0.9	-50.4	-13.0	37.4
725.260	V	41.59	-46.1	0.0	0.9	-47.0	-13.0	34.0

**WCDMA Band II**

Frequency	Polar	S.A.Reading	S.G.Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBμV	dBm	dBd/dBi	dB	dBm	dBm	dB
<b>Low Channel, fc = 1852.4 MHz</b>								
3704.800	H	32.85	-61.9	13.9	2.5	-50.5	-13.0	37.5
3704.800	V	35.25	-59	13.9	2.5	-47.6	-13.0	34.6
725.060	H	40.36	-49.2	0.0	0.9	-50.1	-13.0	37.1
725.060	V	41.75	-46	0.0	0.9	-46.9	-13.0	33.9
<b>Middle Channel, fc = 1880.0 MHz</b>								
3760.000	H	33.12	-61.2	13.8	2.9	-50.3	-13.0	37.3
3760.000	V	35.69	-57.4	13.8	2.9	-46.5	-13.0	33.5
725.020	H	40.21	-49.3	0.0	0.9	-50.2	-13.0	37.2
725.020	V	41.69	-46	0.0	0.9	-46.9	-13.0	33.9
<b>High Channel, fc = 1907.6 MHz</b>								
3815.200	H	33.84	-60	13.6	3.3	-49.7	-13.0	36.7
3815.200	V	36.25	-55.9	13.6	3.3	-45.6	-13.0	32.6
725.330	H	40.22	-49.3	0.0	0.9	-50.2	-13.0	37.2
725.330	V	41.93	-45.8	0.0	0.9	-46.7	-13.0	33.7



**WCDMA Band V**

Frequency	Polar	S.A.Reading	S.G.Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dBμV	dBm	dBd/dBi	dB	dBm	dBm	dB
<b>Low Channel, fc = 826.4 MHz</b>								
1652.800	H	49.07	-52	10.5	1.5	-43.0	-13.0	30.0
1652.800	V	46.82	-54.7	10.5	1.5	-45.7	-13.0	32.7
725.620	H	40.03	-49.5	0.0	0.9	-50.4	-13.0	37.4
725.620	V	41.89	-45.9	0.0	0.9	-46.8	-13.0	33.8
<b>Middle Channel, fc = 836.6 MHz</b>								
1673.200	H	43.49	-57.6	10.6	1.5	-48.5	-13.0	35.5
1673.200	V	47.20	-54.2	10.6	1.5	-45.1	-13.0	32.1
725.060	H	40.26	-49.3	0.0	0.9	-50.2	-13.0	37.2
725.060	V	41.87	-45.9	0.0	0.9	-46.8	-13.0	33.8
<b>High Channel, fc = 846.6 MHz</b>								
1693.200	H	43.92	-57.1	10.7	1.5	-47.9	-13.0	34.9
1693.200	V	46.10	-55.1	10.7	1.5	-45.9	-13.0	32.9
725.150	H	40.06	-49.5	0.0	0.9	-50.4	-13.0	37.4
725.150	V	41.78	-46	0.0	0.9	-46.9	-13.0	33.9

**Note:**

- 1) Absolute Level = SG Level - Cable loss + Antenna Gain
- 2) Margin = Limit- Absolute Level

**\*\*\*\*\* END OF REPORT \*\*\*\*\***