Nemko Korea Co., Ltd.

300-2, Osan-Ri, Mohyun-Myeon, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, KOREA
TEL:+ 82 31 322 2333 FAX:+ 82 31 322 2332

FCC EVALUATION REPORT FOR CERTIFICATION

Applicant :

C-motech Co., Ltd.
8,9F Yongsan Bldg. Yoido-Dong, Youngdungpo-Gu, Seoul, Korea (Post code : 150-871)

Dates of Issue : February 22, 2008
Test Report No. : NK08E127
Test Site : Nemko Korea Co., Ltd. EMC site, Korea

FCC ID	***TARCMU-300***
Brand Name	**C-motech**
Contact Person	**C-motech Co., Ltd.** **8,9F Yongsan Bldg. Yoido-Dong,** **Youngdungpo-Gu, Seoul, Korea (150-871)** **Mr. Gil-Sung Bahn** **Telephone No. : + 82 2 368 9863**

Applied Standard: Part 15 & 2
Classification : FCC Class B Device
EUT Type: DBDM(CDMA&WI-MAX) USB MODEM

The device bearing the brand name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003.
I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested By : J. R. Choi
Engineer

Reviewed By : D.H. Ryu
Manager & Chief Engineer

TABLE OF CONTENTS

SCOPE

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

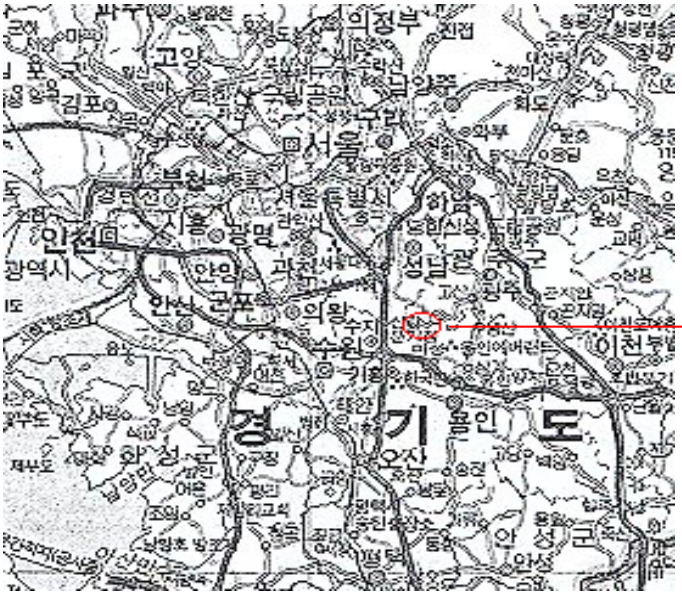
Responsible Party :	C-motech Co., Ltd.
Contact Person :	Mr. Gil-sung Bahn Tel No. : +82 2 368 9863
Manufacturer :	C-motech Co., Ltd. 8,9F Yongsan Bldg., Yoido-dog, Youngdungpo-gu, Seoul Korea (150-871)

- FCC ID: TARCMU-300
- EUT Type: DBDM(CDMA&Wi-max) USB MODEM
- Brand Name: C-motech
- Electric Rating: +5 Vdc from USB port
- Classification: FCC Class B
- Applied Standard: FCC Part 15 & Part 2
- Test Procedure(s): ANSI C63.4 (2003)
- Dates of Test: February 14, 2008 to February 19, 2008
- Place of Tests: Nemko Korea Co., Ltd. EMC Site
- Test Report No.: NK08E127

INTRODUCTION

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) was used in determining radiated and conducted emissions emanating from **C-motech Co., Ltd.**
FCC ID : **TARCMU-300, DBDM(CDMA&Wi-max) USB MODEM.**

These measurement tests were conducted at ***Nemko Korea Co., Ltd. EMC Laboratory***.
The site address is 300-2, Osan-Ri, Mohyun-Myeon, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, KOREA
The area of Nemko Korea Corporation Ltd. EMC Test Site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18miles) south-southeast from central Seoul.
It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures.
The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 on 2003.



Nemko Korea Co., Ltd.
OPEN AREA TEST SITE
300-2, Osan-Ri, Mohyun-Myeon,
Cheoin-Gu, Yongin-Si, Gyeonggi-Do,
KOREA, 449-852
Tel)+ 82 31 322 2333

Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. EMC Lab and Incheon Airport.

TEST CONDITIONS & EUT INFORMATION

Operating During Test (According to part 15 subpart B)

The EUT was operated at maximum transmit power.
The EUT was tested at CDMA 835 TCH mode with the EVDO function, CDMA 1900 TCH mode and WIMAX TCH mode and all data recorded in the report.

Support Equipment

DBDM (CDMA&Wi-max) USB Modem (EUT)	CMotech Co. Ltd. Model: CMU-300	S/N: N/A
Notebook Computer	Samsung Electronics Co., Ltd. Model : NT-X11B 0.5 m shielded USB cable, 0.65 m shielded USB cable Adaptor : Lishin Model : AD-6019 1.2m unshielded AC cable, 1.8m unshielded DC cable	S/N: N/A S/N: N/A
Monitor	Tianjin Samsung Electronics Display Model : BR20BS 1.5 m shielded D-sub cable, 1.5 m unshielded AC power cable	S/N: N667HVZLC00912Z
Wireless Communications Test Set	Agilent Model : E5515C	S/N: GB43193659
Mobile WIMAX Test Set	Agilent Technologies Model : E6651A	S/N: KR47220125

Description of EUT

Frequency Band	Tx	824.70 ~ 848.31MHz 1851.25 ~ 1908.75MHz 2507.5 ~ 2684.5 MHz
	Rx	869.70 ~ 893.31MHz 1931.25 ~ 1988.75MHz 2507.5 ~ 2684.5 MHz
Output Power	Cellular : ERP 0.340 W(25.32 dBm) US PCS : EIRP 0.603 W(27.80 dBm) Wimax QPSK : EIRP 0.318 W (25.02 dBm) WimaxQAM : EIRP 0.277 W (24.43 dBm)	
Interface	USB port	
Modulation Method	Tx : OQPSK, QPSKQAM / Rx : QPSK, QAM	
Emission Designator	1M28F9W, 9M17G7D, 9M10W7D	
Number of channels	20CH for CDMA / 48CH for US PCS	
Antenna Type	PIFA Antenna (Internal)	
Antenna Gain	Cellular (-3.4 dBi) / PCS (-4.3 dBi) / Wimax (-3.2 dBi)	
Dimensions	33 mm x 93mm x 12.5 mm	
Weight	Approx. 43.8 g	
Operating Conditions	-20°C ~ +55°C , 85% at 50°C	
Antenna Length (LXWXH)	26.85 mm x 12.95 mm x 7.8 mm	

SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specification:

Name of Test	Paragraph No.	Result	Remark
Conducted Emission	15.107(a)	Complies	
Radiated Emission	15.109(a)	Complies	

RECOMMENDATION/CONCLUSION

The data collected shows that the **C-motech Co., Ltd.**
FCC ID : **TARCMU-300, DBDM(CDMA&Wi-max) USB Modem.**
The highest emission observed was at **0.59 MHz** for conducted emissions with a A.V margin of **11.5 dB,** at **240.00 MHz** for radiated emissions with a margin of **8.7 dB.**

SAMPLE CALCULATION

$$\text{dB}\,\mu N = 20 \log_{10}(\mu N/\text{m})$$

$$\mu N = 10^{(\text{dB}\,\mu N/20)}$$

EX. 1.

@165.0 MHz Class B limit = 30.0 dB μN/m

Reading = 38.2 dB μN(calibrated level)
Antenna factor + Cable Loss + Amplifier Gain = -12.9 dB
Total = 25.30 dB μN/m
Margin = 30.0 – 25.30 = 4.70
4.70 dB below the limit

DESCRIPTION OF TESTS

Conducted Emissions

The Line conducted emission test facility is located inside a 4 X 7 X 2.5 m shielded enclosure.
It is manufactured by EM engineering. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6.
A 1 m X 1.5 m wooden table 0.8 m height is placed 0.4 m away from the vertical wall and 0.5 m away from the side of wall of the shielded room
Rohde & Schwarz (ESH3-Z5) and Kyoritsu (KNW-407) of the 50 ohm / 50 uH Line Impedance Stabilization Network(LISN) are bonded to the shielded room.
The EUT is powered from the Rohde & Schwarz LISN and the support equipment is powered from the Kyoritsu LISN. Power to the LISN s are filtered by high-current high insertion loss Power line filters. The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1/2".
If DC power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs,
All interconnecting cables more than 1 m were shortened by non inductive bundling (serpentine fashion) to a 1 m length.
Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.
The spectrum was scanned from 150 kHz to 30 MHz with 20 ms sweep time.
The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESCS30).
The detector function were set to CISPR quasi-peak mode & average mode.
The bandwidth of receiver was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.
Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; which ever determined the worst case emission.
Each EME reported was calibrated using the R&S signal generator.

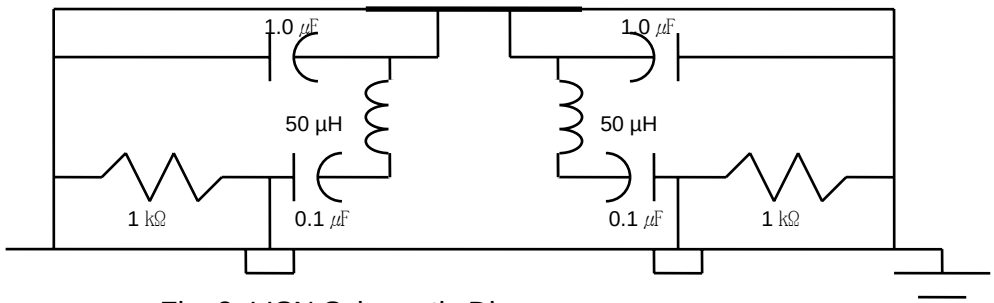


Fig. 2. LISN Schematic Diagram

DESCRIPTION OF TESTS

Radiated Emissions

Preliminary measurement were made indoors at 3 m using broad band antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The Technology configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna was note for each frequency found. The spectrum was scanned from 30 MHz to 1000 MHz using Biconical log Antenna(ARA, LPB-2520/A).
Final Measurements were made outdoors at 10 m test range using Trilog-Broadband Antenna (Shwarzbeck, VULB9168). The test equipment was placed on a wooden table.
Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.
Each frequency found during pre-scan measurements was reexamined and investigated using EMI test receiver. (ESCS30)
The detector function were set to CISPR quasi-peak and peak mode and the bandwidth of the receiver were set to 120 kHz and 1 MHz depending on the frequency or type of signal.
The half wave dipole antenna was tuned to the frequency found during preliminary radiated measurements.
The EUT support equipment and interconnecting cables were re configured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8 m high non- metallic 1.0 X 1.5 m table.
The EUT, support equipment and interconnecting cables were re-arranged and manipulated to maximize each EME emission.
The turn table containing the Technology was rotated; the antenna height was varied 1 m to 4 m and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by : switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux AC outlet, if applicable; which ever determined the worst case emission.
Each EME reported was calibrated using the R/S signal generator.

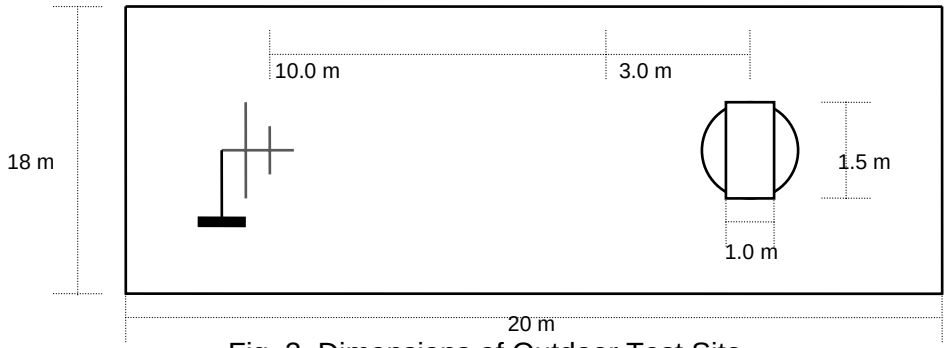


Fig. 3. Dimensions of Outdoor Test Site

TEST DATA

Conducted Emissions (15.107)

FCC ID : TARCMU-300

▶ **CDMA 835 TCH mode**

Frequency	Level(dBμV)		Line	Limit(dBμV)		Margin(dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.15	42.4	22.1	L	66.0	56.0	23.6	33.9
0.19	48.2	41.4	L	64.0	54.0	15.8	12.6
0.26	42.3	36.6	L	61.4	51.4	19.1	14.8
0.59	37.8	33.4	N	56.0	46.0	18.2	12.6
18.02	32.2	24.8	L	60.0	50.0	27.8	25.2
20.14	31.8	24.4	L	60.0	50.0	28.2	25.6

Table 1. Line Conducted Emissions Tabulated Data

▶ **CDMA 1900 TCH mode**

Frequency	Level(dBμV)		Line	Limit(dBμV)		Margin(dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.15	40.8	20.5	L	66.0	56.0	25.2	35.5
0.19	47.4	41.7	L	64.0	54.0	16.6	12.3
0.26	42.5	37.1	L	61.4	51.4	18.9	14.3
0.59	38.2	34.5	N	56.0	46.0	17.8	11.5
18.50	32.8	25.8	L	60.0	50.0	27.2	24.2
20.32	31.9	24.8	L	60.0	50.0	28.1	25.2

Table 2. Line Conducted Emissions Tabulated Data

▶ **WIMAX TCH mode**

Frequency	Level(dBμV)		Line	Limit(dBμV)		Margin(dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.15	44.8	26.5	L	66.0	56.0	21.2	29.5
0.19	51.3	41.3	N	64.0	54.0	12.7	12.7
0.25	44.8	34.6	N	61.8	51.8	17.0	17.2
0.31	42.1	30.2	N	60.0	50.0	17.9	19.8
0.57	43.1	30.8	N	56.0	46.0	12.9	15.2
1.01	36.4	25.8	L	56.0	46.0	19.6	20.2

Table 3. Line Conducted Emissions Tabulated Data

NOTES:

1. ***Measurements using CISPR quasi-peak mode & average mode.***
2. ***All modes of operation were investigated and the worst -case emission are reported. See attached Plots.***
3. ***LINE : L =Line , N = Neutral***
4. ***The limit is on the FCC Part section 15.107(a).***

Tested by : ***J. R. Choi***

TEST DATA

Radiated Emissions (15.109)

FCC ID : TARCMU-300

▶ **CDMA 835 TCH mode**

Frequency (MHz)	Reading (dBμV/m)	Pol* (H/V)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
60.00	40.0	V	-17.9	22.1	40.0	17.9
120.00	38.0	V	-13.2	24.8	43.5	18.7
240.00	48.7	V	-11.6	37.1	46.0	8.9
323.99	37.8	H	-9.4	28.4	46.0	17.6
336.00	36.6	H	-9.5	27.1	46.0	18.9
432.99	31.7	H	-6.8	24.9	46.0	21.1

Table 4. Radiated Measurements at 3 meters

▶ **CDMA 1900 TCH mode**

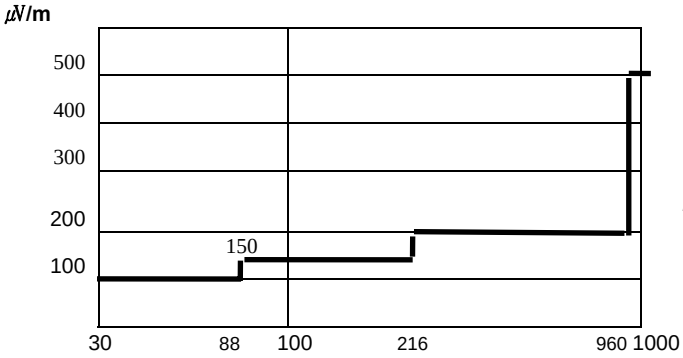
Frequency (MHz)	Reading (dBμV/m)	Pol* (H/V)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
60.00	39.8	V	-17.9	21.9	40.0	18.1
120.00	38.3	V	-13.2	25.1	43.5	18.4
287.99	36.6	H	-10.0	26.6	46.0	19.4
324.00	38.4	V	-9.4	29.0	46.0	17.0
336.00	36.5	V	-9.5	27.0	46.0	19.0
439.99	31.3	H	-6.6	24.7	46.0	21.3

Table 5. Radiated Measurements at 3 meters

▶ **WIMAX TCH mode**

Frequency (MHz)	Reading (dBμV/m)	Pol* (H/V)	AF+CL+Amp (dB)**	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
60.00	39.3	V	-17.9	21.4	40.0	18.6
120.00	39.1	V	-13.2	25.9	43.5	17.6
240.00	48.9	H	-11.6	37.3	46.0	8.7
323.99	38.7	H	-9.4	29.3	46.0	16.7
336.00	36.9	H	-9.5	27.4	46.0	18.6
383.99	37.0	H	-8.3	28.7	46.0	17.3

Table 6. Radiated Measurements at 3 meters



NOTES:

1. All modes were measured and the worst-case emission was reported.

2 The radiated limits are shown on Figure 1.

Above 1GHz the limit is 500 μV/m.

Fig. 4. Limits at 3 meters

NOTES:

1. *Pol. H =Horizontal, V=Vertical

2. **AF+CL+Amp. = Antenna Factor + Cable Loss + Amplifier.

3. Measurements using CISPR quasi-peak mode.

4. The limit is on the FCC Part section 15.109(a).

Tested by : ***J. R. Choi***

PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (CDMA 835 TCH mode, Line)***

NEMKO KOREA (NK-08-E-127) 15 Feb 2008 10:45

Conducted Emissions

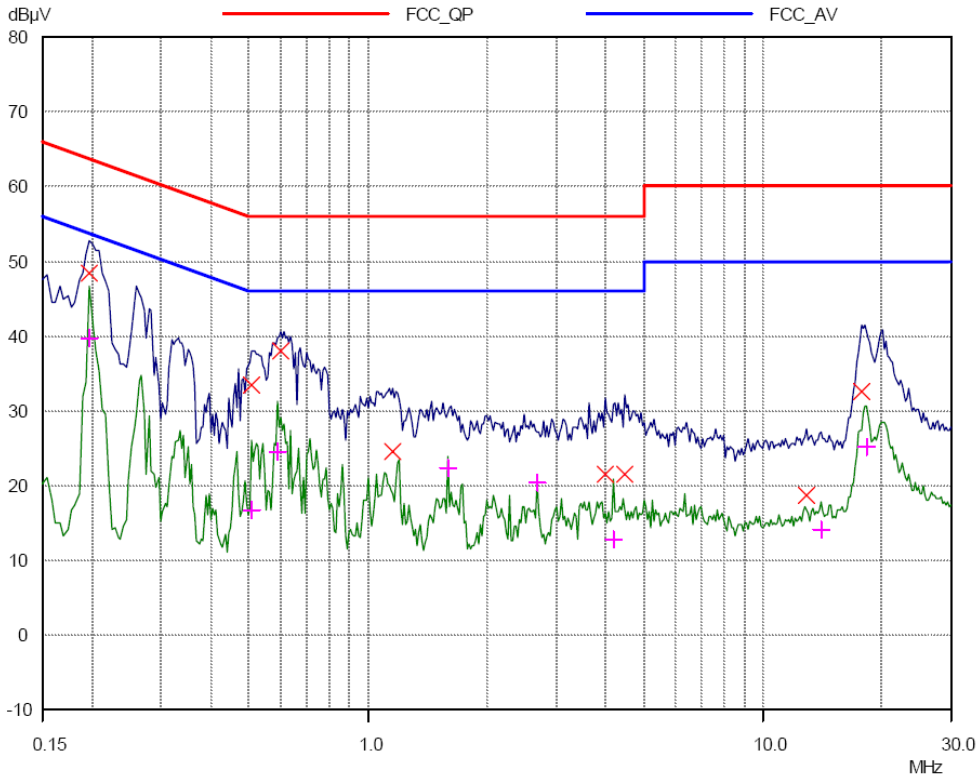
EUT:	DBDM (CDMA&WI-MAX) USB MODEM
Manuf:	C-motech Co. Ltd.
Op Cond:	a. c. 120 V / 60 Hz
Operator:	Jae-Rak, Choi
Test Spec:	FCC Part 15
Comment:	MODEL : CMU-300 (CDMA 835 TCH Mode)
	LINE : LINE-PE
Result File:	127835-l.dat : FCC Part 15.107

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	8
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (CDMA 835 TCH mode, Neutral)***

NEMKO KOREA (NK-08-E-127) 15 Feb 2008 10:59

Conducted Emissions

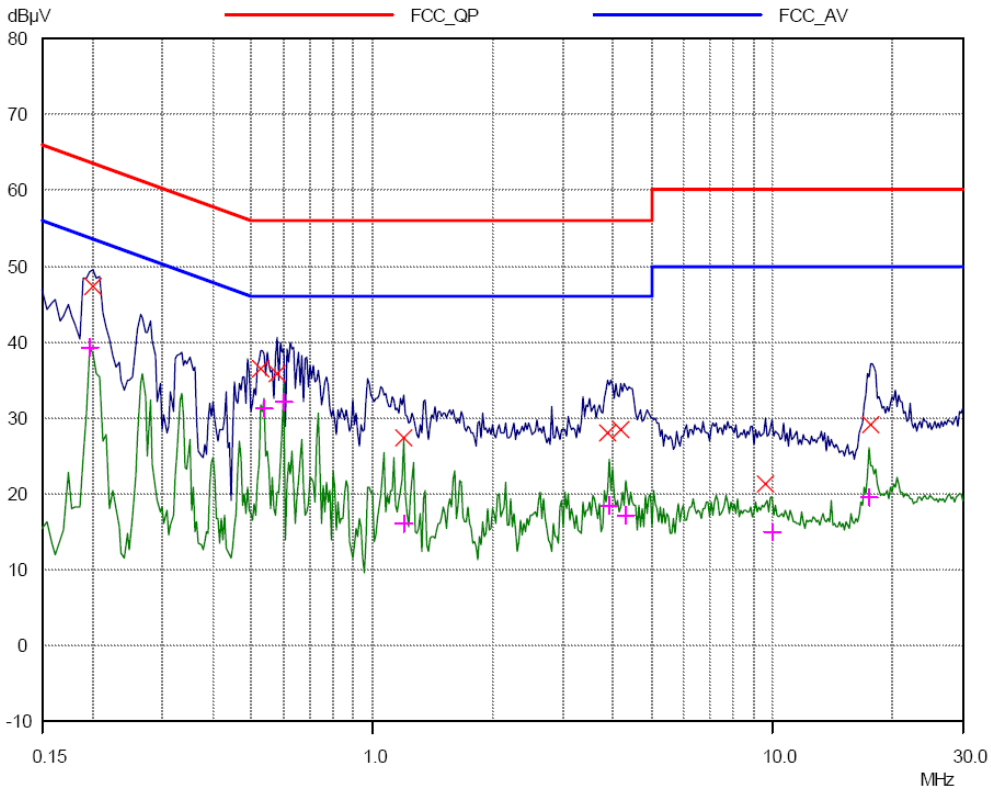
EUT:	DBDM (CDMA&WI-MAX) USB MODEM
Manuf:	C-motech Co. Ltd.
Op Cond:	a. c. 120 V / 60 Hz
Operator:	Jae-Rak, Choi
Test Spec:	FCC Part 15
Comment:	MODEL : CMU-300 (CDMA 835 TCH Mode)
	LINE : NEUTRAL-PE
Result File:	127835-n.dat : FCC Part 15.107

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_NEUT

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	8
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (CDMA 1900 TCH mode, Line)***

NEMKO KOREA (NK-08-E-127) 15 Feb 2008 11:08

Conducted Emissions

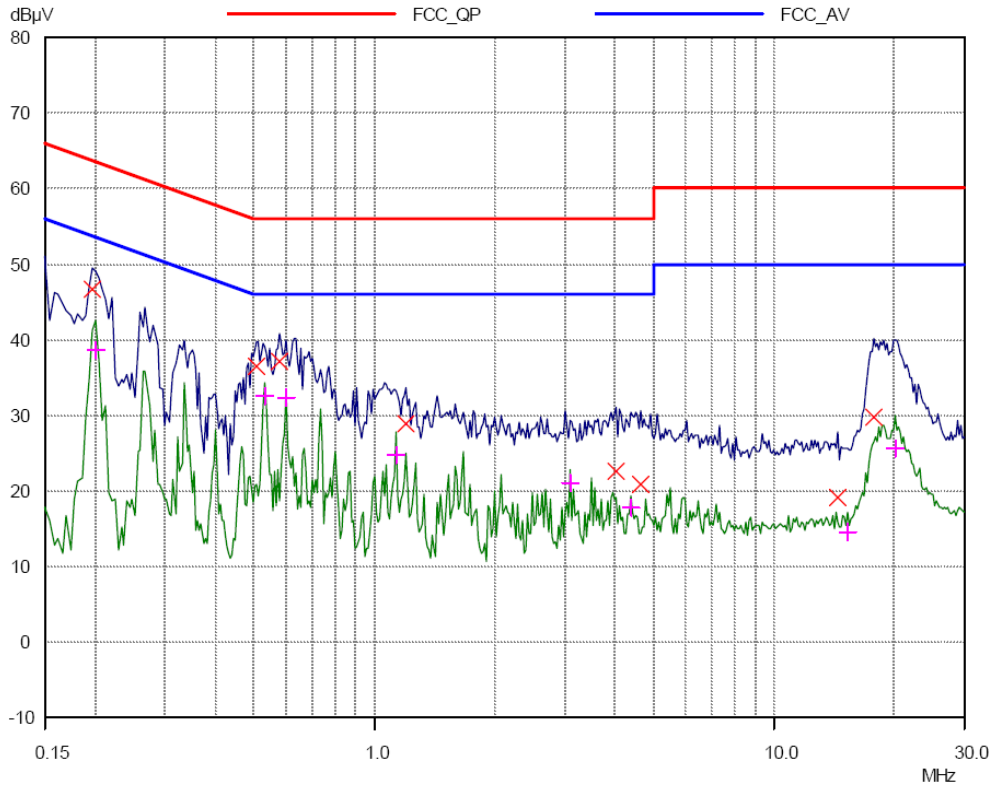
EUT:	DBDM (CDMA&WI-MAX) USB MODEM
Manuf:	C-motech Co. Ltd.
Op Cond:	a. c. 120 V / 60 Hz
Operator:	Jae-Rak, Choi
Test Spec:	FCC Part 15
Comment:	MODEL : CMU-300 (CDMA 1900 TCH Mode)
	LINE : LINE-PE
Result File:	127190-l.dat : FCC Part 15.107

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	8
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (CDMA 1900 TCH mode, Neutral)***

NEMKO KOREA 15 Feb 2008 11:20

Conducted Emissions

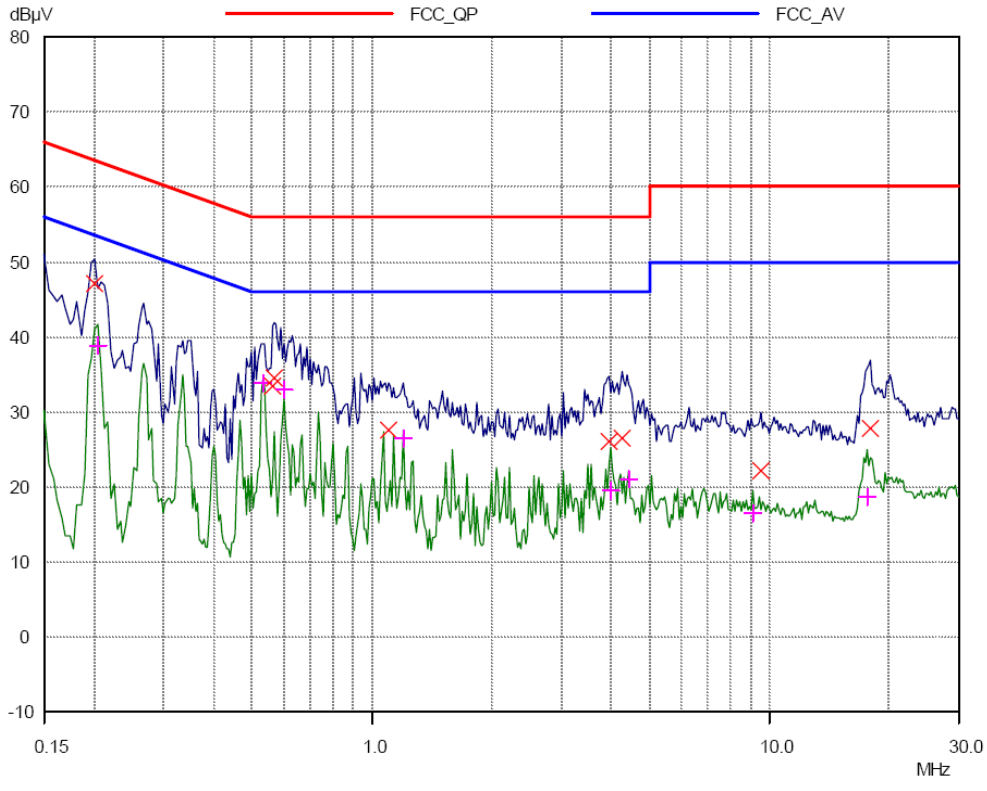
EUT:	DBDM (CDMA&WI-MAX) USB MODEM
Manuf:	C-motech Co. Ltd.
Op Cond:	a. c. 120 V / 60 Hz
Operator:	S. Lee
Test Spec:	FCC Part 15
Comment:	MODEL : CMU-300 (CDMA 1900 TCH Mode)
	LINE : NEUTRAL-PE
Result File:	127190-n.dat : FCC Part 15.107

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_NEUT

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	8
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (WIMAX TCH mode, Line)***

NEMKO KOREA (NK-08-E-127) 14 Feb 2008 14:41

Conducted Emissions

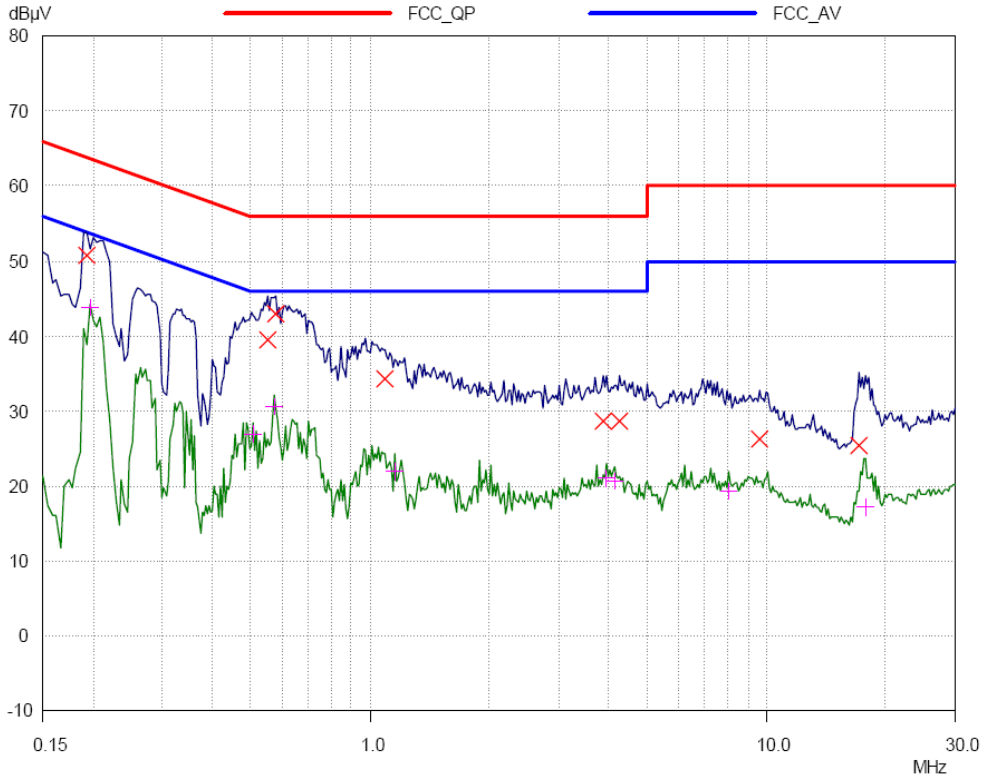
EUT:	DBDM (CDMA&WI-MAX) USB MODEM
Manuf:	C-motech Co. Ltd.
Op Cond:	a. c. 120 V / 60 Hz
Operator:	Jae-Rak, Choi
Test Spec:	FCC Part 15
Comment:	MODEL : CMU-300 (WIMAX TCH Mode)
	LINE : LINE-PE
Result File:	127WI-L.dat : FCC Part 15.107

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_LINE

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	8
	Acc Margin:	60 dB



PLOTS OF EMISSIONS

- ***Conducted Emission at the Mains port (WIMAX TCH mode, Neutral)***

NEMKO KOREA (NK-08-E-127) 14 Feb 2008 14:57

Conducted Emissions

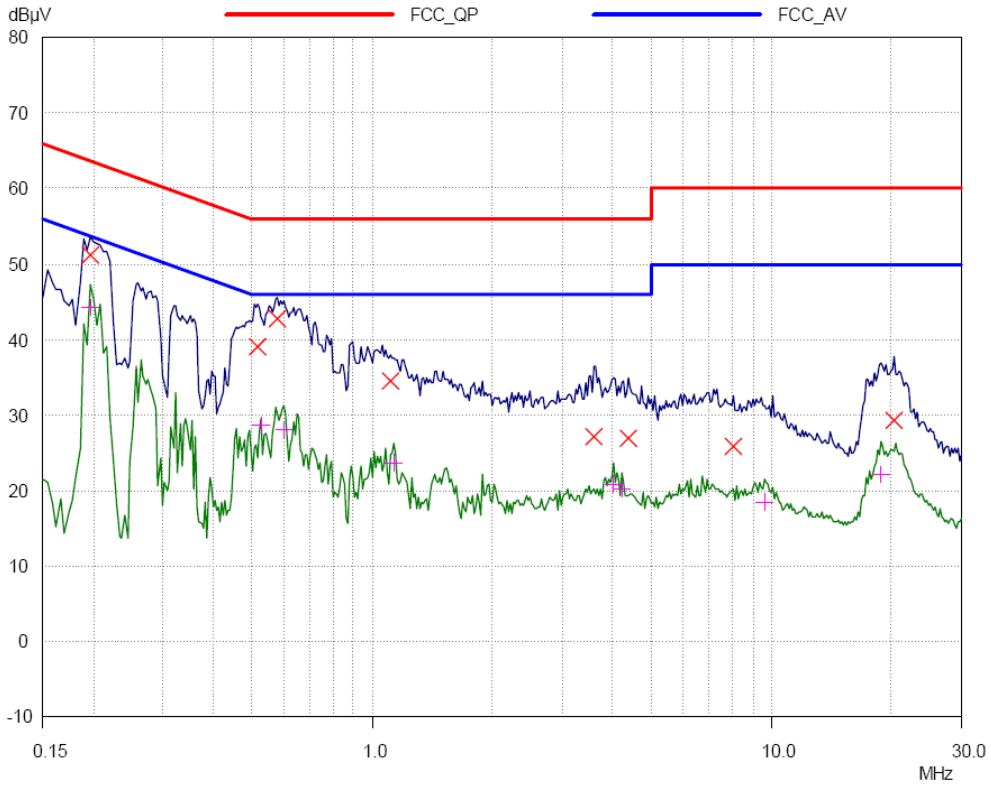
EUT:	DBDM (CDMA&WI-MAX) USB MODEM
Manuf:	C-motech Co. Ltd.
Op Cond:	a. c. 120 V / 60 Hz
Operator:	Jae-Rak, Choi
Test Spec:	FCC Part 15
Comment:	MODEL : CMU-300 (WIMAX TCH Mode)
	LINE : NEUTRAL-PE
Result File:	127wi-n.dat : FCC Part 15.107

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	20msec	20 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	CE_NEUT

Final Measurement:		
	Detectors:	X QP / + AV
	Meas Time:	1sec
	Subranges:	8
	Acc Margin:	60 dB



ACCURACY OF MEASUREMENT

The Measurement Uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 with the confidence level of 95%

1. Radiation Uncertainty Calculation

Contribution	***Probability Distribution***	***Uncertainty(+/-dB)***
Antenna Factor	Normal (k=2)	± 0.5
Cable Loss	Normal (k=2)	± 0.04
Receiver Specification	Rectangular	± 2.0
Antenna directivity	Rectangular	± 1.0
Antenna Factor variation with Height		
Antenna Phase Center Variation		
Antenna Factor Frequency Interpolation		
Measurement Distance Variation		
Site Inperfections	Rectangular	± 2.0
Mismatch:Receiver VRC ri=0.3 Antenna VRC rR=0.1(Bi)0.4(Lp) Uncertainty Limits 20Log(1+/-ri rR)	U-Shaped	+ 0.25 / - 0.26
System Repeatibilty	Std.deviation	± 0.05
Repeatability of EUT	-	-
Combined Standard Uncertainty	Normal	± 1.77
Expended Uncertainty U	Normal (k=2)	± 3.5

2. Conducted Uncertainty Calculation

Contribution	***Probability Distribution***	***Uncertainty(+/-dB)***
Receiver Specification	Normal (k=2)	± 2.0
LISN coupling spec.	Normal (k=2)	± 0.4
Cable and input attenuator cal.	Rectangular	± 0.4
Mismatch:Receiver VRC ri=0.3 LISN vrc rg=0.1 Uncertainty Limits 20Log(1+/-ri rR)	U-Shaped	± 0.26
System Repeatibilty	Std.deviation	± 0.68
Repeatability of EUT	-	-
Combined Standard Uncertainty	Normal	± 1.18
Expended Uncertainty U	Normal (k=2)	± 2.4

LIST OF TEST EQUIPMENT

No.	Instrument	Manufacturer	Model	Serial No.	Calibration Date	Calibration Interval
1	*Test Receiver	R & S	ESCS 30	833364/020	Apr. 02 2007	1year
2	*Test Receiver	R & S	ESCS 30	100302	Dec. 03 2007	1year
3	*Amplifier	HP	8447F	2805A03427	Aug. 07 2007	1year
4	*Amplifier	HP	8447F	2805A03351	Oct. 23 2007	1year
5	Pre Amplifier	HP	8449B	3008A00107	Mar. 06 2007	1year
6	*Spectrum Analyzer	Advantest	R3265A	45060401	Dec. 04 2007	1year
7	Spectrum Analyzer	HP	8566B	2607A03469	Mar. 06 2007	1year
8	Loop Antenna	EMCO	EMCO/6502	8911-2436	Dec. 13 2007	1year
9	*Biconical Log Antenna	ARA	LPB-2520/A	1180	Feb. 28 2007	1year
10	Biconical Log Antenna	ARA	LPB-2520/A	1209	Dec. 31 2007	1year
11	*Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-257	Mar. 15 2007	1year
12	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-474	Jul. 24 2007	1year
13	Signal Generater	R & S	SMP02	833286/003	Aug. 07 2007	1year
14	*LISN	R & S	ESH3-Z5	833874/006	Oct. 23 2007	1year
15	*LISN	Kyoritsu	KNW-407	8-1034-10	Mar. 16 2007	1year
16	*Position Controller	DAEIL EMC	N/A	N/A	N/A	N/A
17	*Turn Table	DAEIL EMC	N/A	N/A	N/A	N/A
18	*Antenna Mast	DAEIL EMC	N/A	N/A	N/A	N/A
19	*Anechoic Chamber	EM Eng.	N/A	N/A	N/A	N/A
20	*Shielded Room	EM Eng.	N/A	N/A	N/A	N/A
21	Position Controller	Seo-Young EMC	N/A	N/A	N/A	N/A
22	Turn Table	Seo-Young EMC	N/A	N/A	N/A	N/A
23	Antenna Mast	Seo-Young EMC	N/A	N/A	N/A	N/A
24	Anechoic Chamber	Seo-Young EMC	N/A	N/A	N/A	N/A
25	Shielded Room	Seo-Young EMC	N/A	N/A	N/A	N/A

) Test equipment used during the test