EMI TEST REPORT

Test Report No. : 26AE0244-HO-8b

Applicant	:	**Welcat Inc.**
Type of Equipment	:	**Handy Terminal**
Model No.	:	**XIT-100-BW**
Test standard	:	**FCC Part 15 Subpart C Section 15.207, Section 15.247 : 2005**
FCC ID	:	**Q98XIT100BW**
Test Result	:	**Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.

Date of test:

October 14 to 28, 2005

Tested by:

Yutaka Yoshida
EMC Services

Takumi Shimada
EMC Services

Kenichi Adachi
EMC Services

Approved by :

Naoki Sakamoto
Group Leader of EMC Services

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

CONTENTS **PAGE**

SECTION 1: Client information

Company Name	Welcat Inc.
Address	1-17-12 Shinyokohama, Kouhoku-Ku, Yokohama Kanagawa 222-0033 Japan
Telephone Number	+81-45-474-9806
Facsimile Number	+81-45-474-9816
Contact Person	Kaoru Nayuki

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	Handy Terminal
Model No.	XIT-100-BW
Serial No.	1, 2
Country of Manufacture	Japan
Rating	DC 3.7V, 0.5A
Receipt Date of Sample	October 14, 2005
Condition of EUT	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Category Identified	Portable device

2.2 Product Description

2.2.1 General Information

Feature of EUT	The barcode handy terminal that WLAN module and Bluetooth module were built in.
Size	58 mm*162 mm*40 mm (W*L*H)
Range of operation temperature	-5 to +50 deg. C.
Operation Clock	Main board (3.6864MHz) (PLL:99.5328MHz,199.0656MHz) WLAN (22MHz) Bluetooth (16MHz)

2.2.2 Radio specification / Wireless LAN (IEEE802.11b)

Equipment Type	Transceiver
Frequency band	2412-2462MHz
Bandwidth & Channel spacing	18MHz max & 5MHz
Type of Modulation	DSSS
Antenna Type	Modification dipole
Antenna Connector Type	W.FL（Hirose）
Antenna Gain	2.14dBi max （Not included cableloss）
ITU code	11b : G1D
Mode of Operation	Simplex
Operating frequency	Synthesizer

2.2.3 Radio specification / Bluetooth

Equipment Type	Transceiver
Frequency band	2402-2480MHz
Bandwidth & Channel spacing	1MHz & 1MHz
Type of Modulation	FHSS
Antenna Type	Chip antenna
Antenna Connector Type	Nothing
Antenna Gain	0.2dBi (max)
ITU code	F1D
Mode of Operation	Simplex
Operating frequency	Synthesizer

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C : 2005
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits : 2005
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz : 2005

FCC 15.31 (e)
This EUT provides stable voltage(DC3.3V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement
It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.2 Procedures and results [FHSS]

No.	Item	Specification	Test Procedure	Remarks	Deviation	Worst Margin*0)	Results
1	Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	23.7dB 0.15446MHz, QP, L	Complied
2	Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)	Conducted	N/A	*See data.	Complied
3	20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)	Conducted	N/A		Complied
4	Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)(iii)	Conducted	N/A		Complied
5	Dwell time	ANSI C63.4:2003 13.Measurement of intentional radiators	Section15.247(a)(1)(iii)	Conducted	N/A		Complied
6	Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(b)(1)	Conducted	N/A		Complied
7	Band Edge Compliance	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d)	Conducted	N/A		Complied
8	Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d)	Conducted/ Radiated	N/A	12.8dB 16814.000MHz Horizontal/Vertical, AV, 22320.000MHz, Vertical, AV	Complied

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.
*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*These tests were also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".
*These tests were performed without any deviations from test procedure except for additions or exclusions.

[DSSS and other forms of modulation]

No.	Item	Specification	Test Procedure	Remarks	Deviation	Worst margin	Results
1	Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	20.2dB 0.18721MHz, AV, L	Complied
2	6dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247(a)(2)	Conducted	N/A	*See data.	Complied
3	Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247(b)(3)	Conducted	N/A		Complied
4	Restricted Band Edges	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (d)	Conducted/ Radiated	N/A		Complied
6	Power Density	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (e)	Conducted	N/A		Complied
7	Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (d)	Conducted/ Radiated	N/A	2.9dB 2390MHz Vertical, AV	Complied

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.
*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*These tests were also referred to "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".
*These tests were performed without any deviations from test procedure except for additions or exclusions.

3.3 Uncertainty

Conducted Emission
The measurement uncertainty (with a 95% confidence level) for this test is ±1.3dB.
The data listed in this test report has enough margin, more than the site margin.

Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ±4.5dB(3m)/ ±4.7dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ±5.2dB(3m)/ ±3.8dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ±6.6dB.
The data listed in this report meets the limits unless the uncertainty is taken into consideration. (for DSSS and Co-location & Co-operation)
The data listed in this test report has enough margin, more than the site margin. (for FHSS)

Other test except Conducted Emission and Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test is ±3.0dB.

3.4 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin *0)	Results
1	99% Occupied Band Width	RSS-Gen 4.4.1	-	Conducted	N/A	N/A	N/A
2	Co-location & Co-operation (Confirmation testing for Conducted emission & Radiated Spurious Emission at simultaneous transmission)	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d) RSS-210 A8.5	Conducted emission	N/A	20.5dB 0.15735MHz, QP, L	Complied
				Radiated emission	N/A	4.1dB 4874MHz Horizontal, AV	Complied
*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.							

3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1 and No.2 semi-anechoic and No.3 shielded room.

3.6 Test set up, Test instruments and Data of EMI

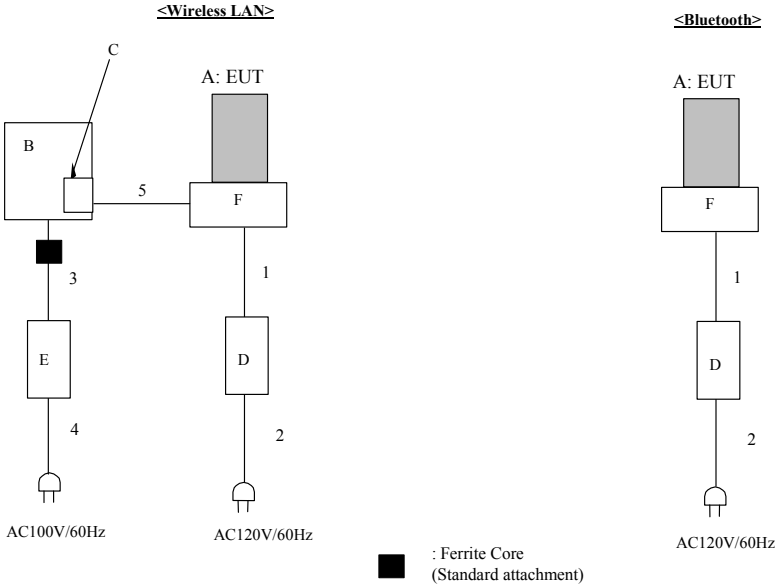
Refer to APPENDIX 1 to 3.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

The mode is used : [FHSS: Bluetooth]
Transmitting mode(Packet size DH5)
Low Channel :2402MHz
Mid Channel :2441MHz
High Channel :2480MHz
Inquiry
[DSSS: Wireless LAN IEEE802.11b (11Mbps (Worst Data Rate))]
Transmitting mode(Packet size Max size)
Low Channel :2412MHz
Mid Channel :2437MHz
High Channel :2462MHz
[Co-location & Co-operation]
Bluetooth hopping + Wireless LAN 2437MHz
*The test was made with the above modes which had the worst case.

4.2 Configuration and peripherals



* Cabling was taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks/FCC ID
A	Handy Terminal	XIT-100-BW	1 *1), 2 *2)	Welcat Inc.	EUT/ Q98XIT100BW
B	Note PC	CF-W2CW1AXS	4BKSA81863	Panasonic	-
C	PC Card Adapter	-	-	BUFFALO	-
D	AC Adapter	GPE241-05250W	-	GOLDEN PROFIT ELECTRONICS	-
E	AC Adapter	CF-AA1625A	04105147B	Panasonic	-
F	Charger	QC-001	0500010	Welcat Inc.	-

*1) Used for tests for Wireless LAN, and Co-location & Co-operation mode / *2) Used for tests for Bluetooth

List of cables used

No.	Name	Length (m)	Shield	Remarks
1	DC Cable	1.85	N	-
2	AC Cable	1.85	N	-
3	DC Cable	1.2	N	-
4	AC Cable	0.9	N	-
5	Wireless LAN Control Cable	0.5	Y	*1) used only for the tests

*1) The end user cannot install this cable.

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.
The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

1) For the tests on EUT with other peripherals (as a whole system)
I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

2) For the tests on EUT itself (as a stand alone equipment)
Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN /(AMN) to the input power source. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber or a Measurement Room.
The EUT was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

Detector : CISPR quasi-peak and average detector (IF BW 9 kHz)
Measurement range : 0.15-30MHz
Test data : APPENDIX 3
Test result : Pass

SECTION 6: Spurious Emission

[Conducted]

Test Procedure
The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.
Test data : APPENDIX 3
Test result : Pass

[Radiated]

Test Procedure
EUT was placed on a platform of nominal size, 1.0m by 0.5m, raised 80cm above the conducting ground plane.
The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).
The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer (in linear mode).
The test was made with the detector (RBW/VBW) in the following table.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

20dBc was applied to the frequency over the limit of FCC 15.209 and outside the restricted band of 15.205.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz(T/R) 20dBc : RBW: 100kHz VBW: 300kHz (S/A)	PK: RBW:1MHz/VBW: 1MHz AV: RBW:1MHz/VBW:10Hz 20dBc : RBW:100kHz/VBW:300kHz

Test data : APPENDIX 3
Test result : Pass

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

SECTION 7: Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 8: Maximum Peak Output Power

Test Procedure
The test was made with the spectrum analyzer that has a function of channel-power measurements (for DSSS only).
The Maximum Peak Output Power was measured with a spectrum analyzer connected to the antenna port.
Test data : APPENDIX 3
Test result : Pass

SECTION 9: Carrier Frequency Separation

Test Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.
Test data : APPENDIX 3
Test result : Pass

SECTION 10: Number of Hopping Frequency

Test Procedure

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.
Test data : APPENDIX 3
Test result : Pass

SECTION 11: Dwell time

Test Procedure
The Dwell time was measured with a spectrum analyzer connected to the antenna port.
Test data : APPENDIX 3
Test result : Pass

SECTION 12: Peak Power Density

[Conducted]
Test Procedure
The Peak Power Density was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

APPENDIX 1: Photographs of test setup

Conducted Emission (Bluetooth)

Front

Rear

Conducted Emission (Wireless LAN/ Wireless LAN + Bluetooth)

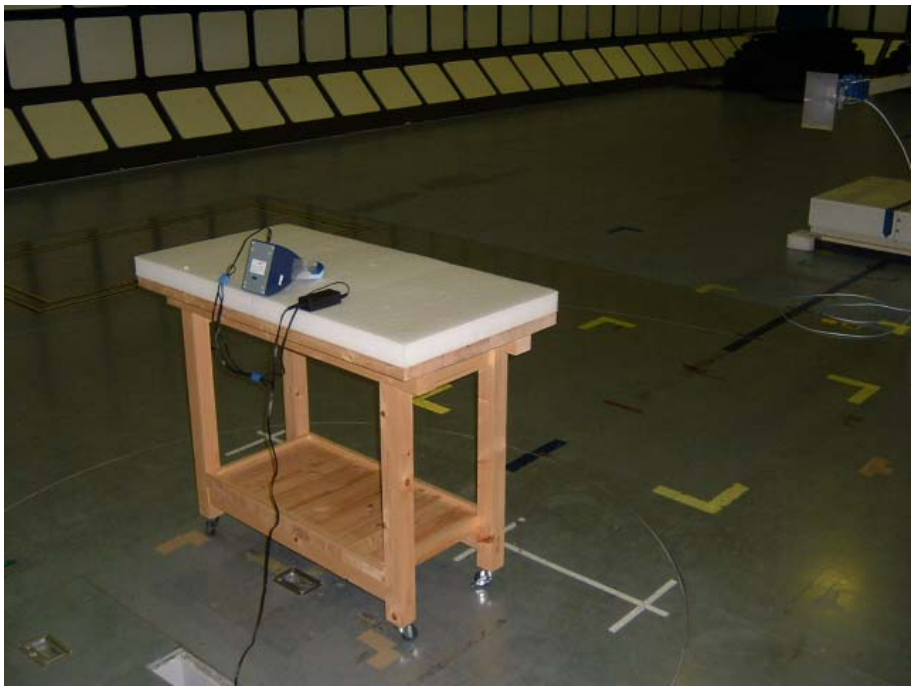
Front

Rear

Spurious Emission (Bluetooth)(Radiated)

Front

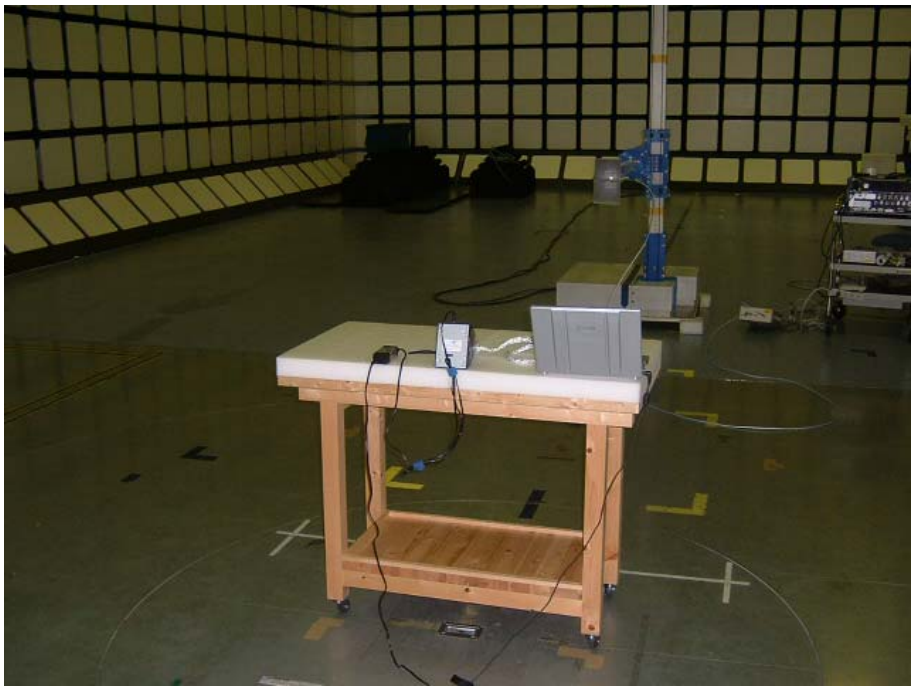
Rear



Spurious Emission (Wireless LAN/ Wireless LAN + Bluetooth)(Radiated)

Front

Rear



Worst Case Position
(Bluetooth: Y-axis:Horizontal / Z-axis:Vertical)
(Wireless LAN: Y-axis:Horizontal / Z-axis:Vertical)

X-axis

Y-axis

Z-axis

APPENDIX 2:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MSA-03	Spectrum Analyzer	Agilent	E4448A	AT	2005/09/16 * 12
MAT-23	Attenuator(10dB)(above1GHz)	Orient Microwave	BX10-0476-00	AT	2005/03/16 * 12
MCC-22	Microwave Cable 1G-50GHz	Storm	421-011 (90-011-080)	AT	2005/04/29 * 12
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE/CE	2004/11/13 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE/CE	2004/11/12 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2005/08/30 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2005/02/05 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2005/02/03 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/01/10 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2005/01/10 * 12
MHF-02	High Pass Filter	Tokimec	TF323DCA	RE	2005/09/27 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/Agilent/TSJ	-	CE	2004/12/24 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2004/11/10 * 12
MPL-01	Pulse Limiter	Rohde & Schwarz	ESH3Z2	CE	2005/01/11 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/TSJ	-	RE	2004/12/19 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2004/12/16 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2005/05/24 * 12
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2005/04/11 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/01/10 * 12
MHA-02	Horn Antenna	EMCO	3160-09	RE	2005/01/10 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	RE/CE	2005/05/19 * 12
MCC-04	Microwave Cable 1G-50GHz	Storm	421-011 (90-1394-079)	RE	2005/01/05 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2005/02/24 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2005/09/07 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2004/12/16 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE(AE)	2005/02/04 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2005/02/04 * 12
MTA-01	Termination	TME	CT-01	CE	2005/02/03 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	CE	2005/02/24 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE/CE	2005/02/02 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

CE: Conducted emission, RE: Radiated emission, AT: Antenna terminal tests

APPENDIX 3: Data of EMI test

Conducted Emission

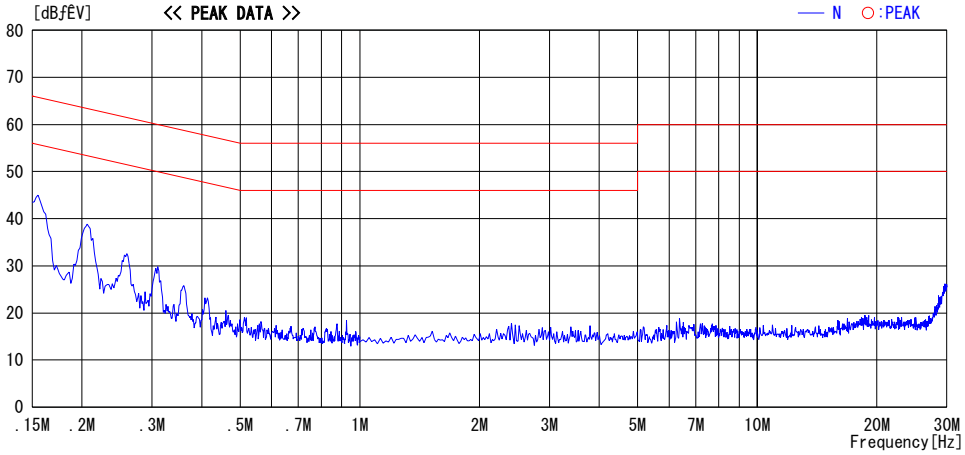
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 21:01:17

Applicant	: Welcat Inc.	Report No.	: 26AE0244-HO
Kind of EUT	: Handy Terminal	Power	: DC 3.7V (AC adapter: AC120V/60Hz)
Model No.	: XIT-100-BW	Temp./Humi.	: 23deg.C / 50%
Serial No.	: 2	Operator	: Takumi Shimada

Mode / Remarks : Bluetooth Tx2402MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



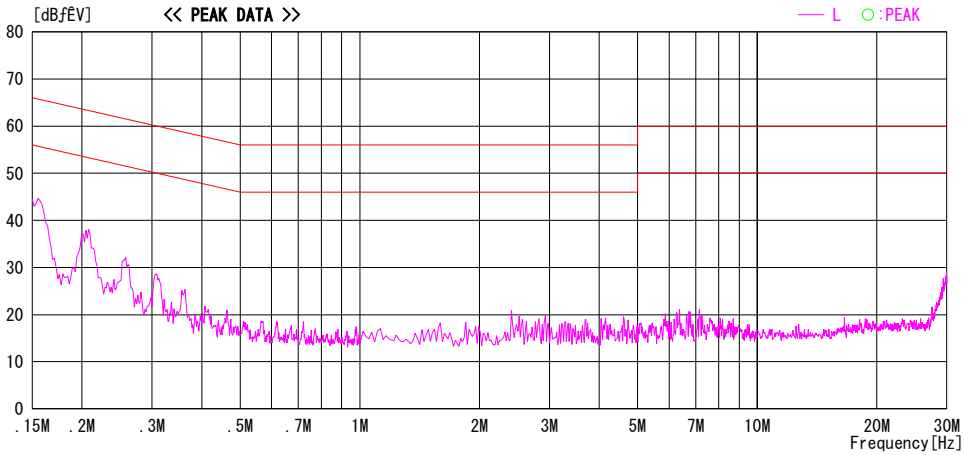


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

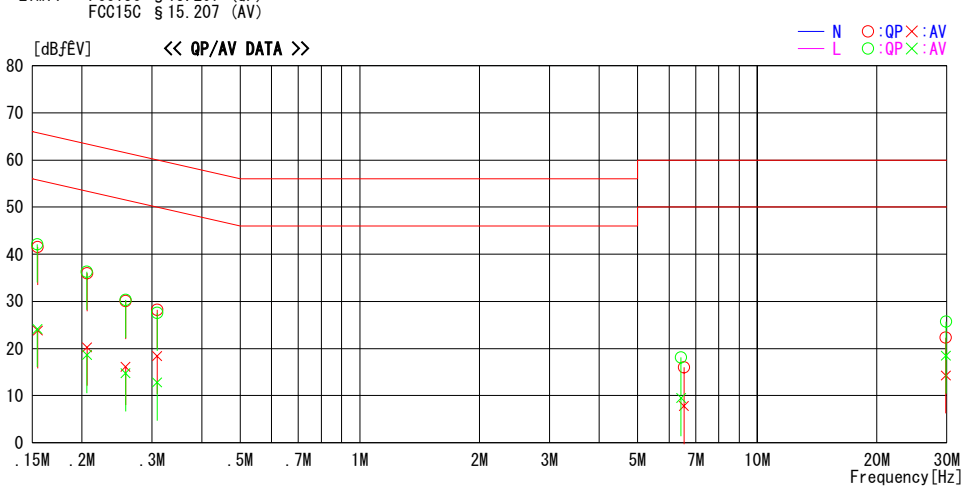
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 21:01:17

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 50%
Operator : Takumi Shimada

Mode / Remarks : Bluetooth Tx2402MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.15470	31.6	13.8	10.0	41.6	23.8	65.7	55.7	24.1	31.9	N
0.20603	25.6	9.9	10.3	35.9	20.2	63.4	53.4	27.5	33.2	N
0.25747	19.9	5.9	10.2	30.1	16.1	61.5	51.5	31.4	35.4	N
0.30916	18.1	8.3	10.1	28.2	18.4	60.0	50.0	31.8	31.6	N
6.54127	4.8	-3.4	11.2	16.0	7.8	60.0	50.0	44.0	42.2	N
29.82557	9.6	1.6	12.7	22.3	14.3	60.0	50.0	37.7	35.7	N
0.15446	32.1	14.2	10.0	42.1	24.2	65.8	55.8	23.7	31.7	L
0.20580	26.0	8.3	10.3	36.3	18.6	63.4	53.4	27.1	34.8	L
0.25736	20.1	4.6	10.2	30.3	14.8	61.5	51.5	31.2	36.8	L
0.30898	17.5	2.7	10.1	27.6	12.8	60.0	50.0	32.4	37.2	L
6.43461	7.1	-1.5	11.0	18.1	9.5	60.0	50.0	41.9	40.5	L
29.85468	13.0	5.8	12.7	25.7	18.5	60.0	50.0	34.3	31.5	L

CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

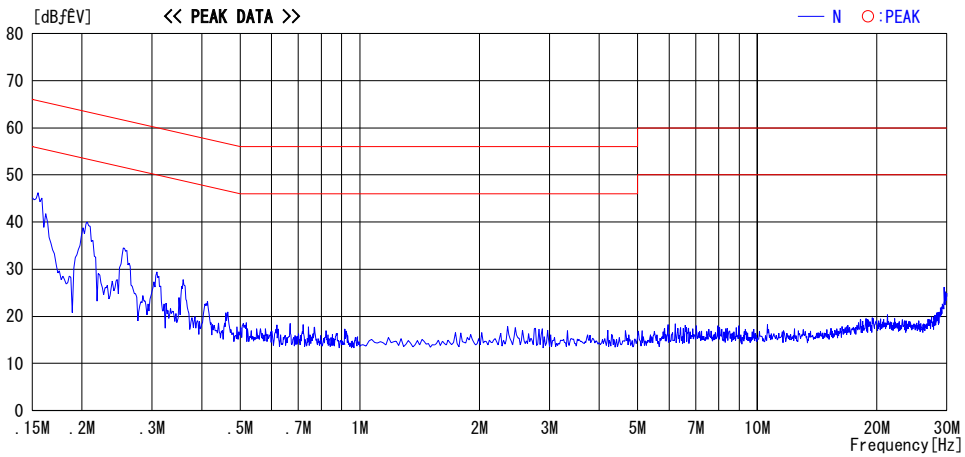
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 20:49:28

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 50%
Operator : Takumi Shimada

Mode / Remarks : Bluetooth Tx2441MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



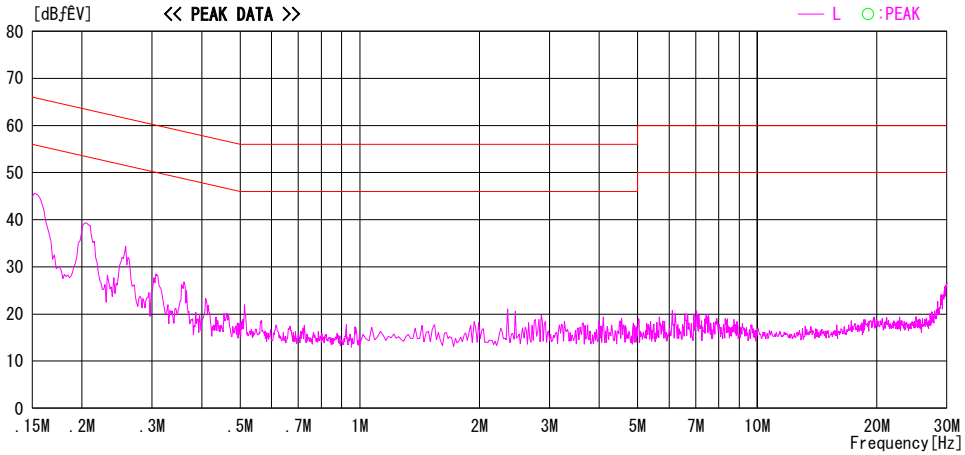


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

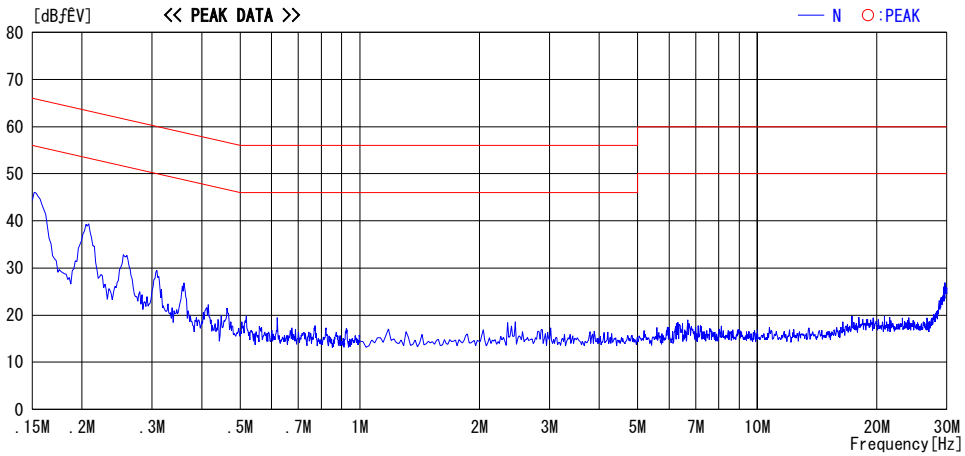
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 20:55:12

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 50%
Operator : Takumi Shimada

Mode / Remarks : Bluetooth Tx2480MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



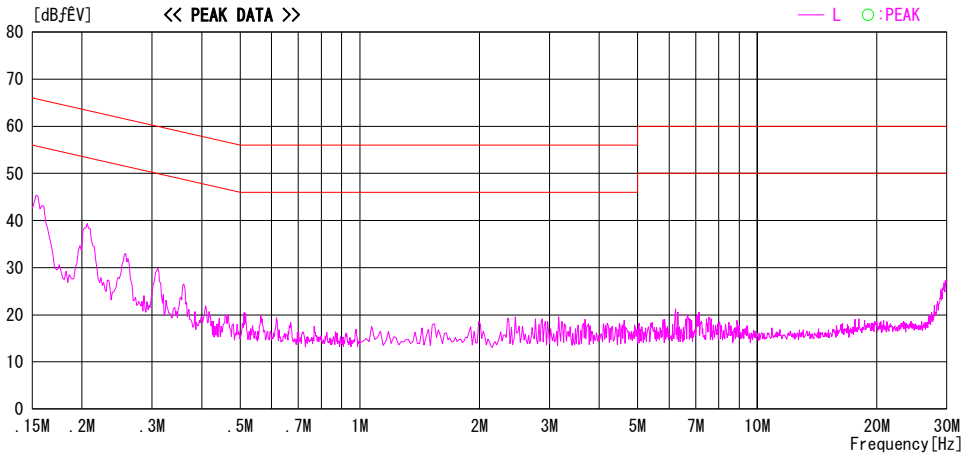


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

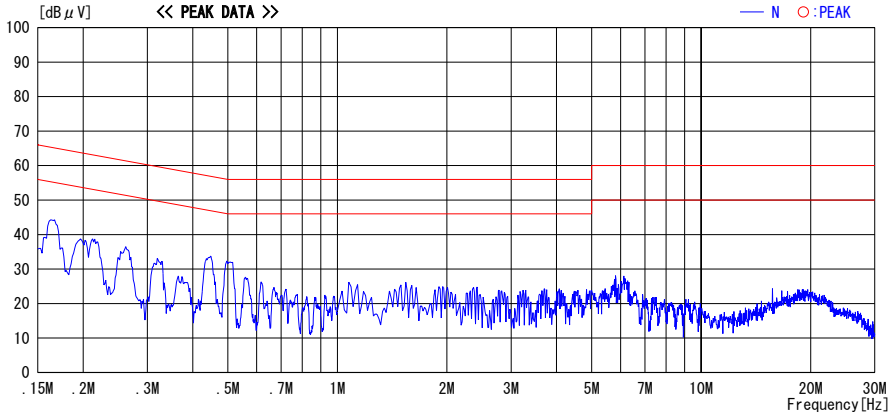
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 21:45:36

Applicant	: Welcat Inc.	Report No.	: 26AE0244-HO
Kind of EUT	: Handy Terminal	Power	: DC 3.7V (AC adapter: AC120V/60Hz)
Model No.	: XIT-100-BW	Temp./Humi.	: 25deg.C / 48%
Serial No.	: 1	Operator	: Yutaka Yoshida

Mode / Remarks : WLAN 11b Tx 2412MHz(11Mbps)

LIMIT : FCC15C §15.207 (QP) / RSS-Gen / RSS-210
FCC15C §15.207 (AV) / RSS-Gen / RSS-210



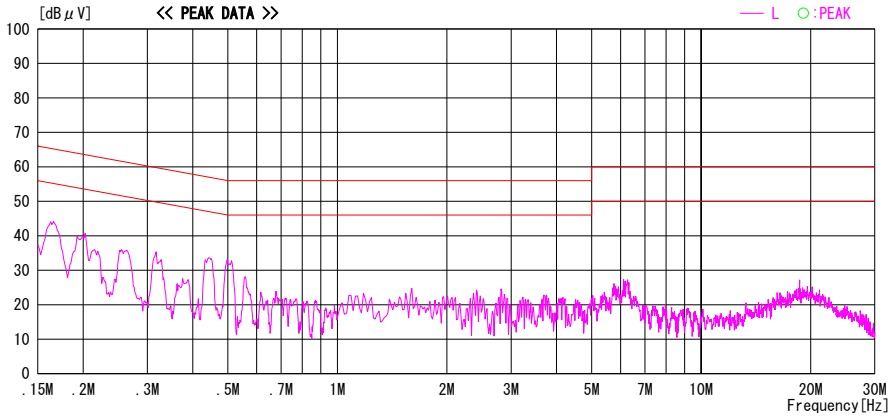


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

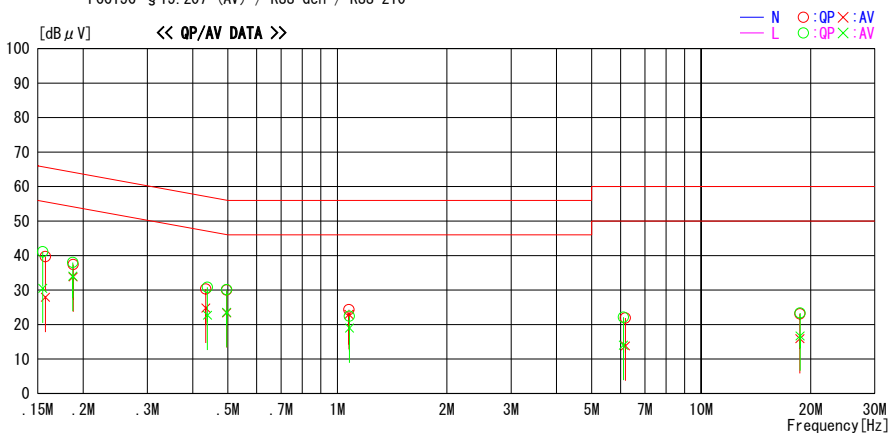
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 21:45:36

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 48%
Operator : Yutaka Yoshida

Mode / Remarks : WLAN 11b Tx 2412MHz(11Mbps)

LIMIT : FCC15C §15.207 (QP) / RSS-Gen / RSS-210
FCC15C §15.207 (AV) / RSS-Gen / RSS-210



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.15750	39.6	27.8	0.1	39.7	27.9	65.6	55.6	25.9	27.7	N
0.18766	37.3	33.7	0.1	37.4	33.8	64.1	54.1	26.7	20.3	N
0.43475	30.2	24.7	0.1	30.3	24.8	57.2	47.2	26.9	22.4	N
0.49596	29.9	23.3	0.1	30.0	23.4	56.1	46.1	26.1	22.7	N
1.07525	24.0	22.6	0.3	24.3	22.9	56.0	46.0	31.7	23.1	N
6.18891	21.0	12.9	0.9	21.9	13.8	60.0	50.0	38.1	36.2	N
18.67779	21.3	14.1	1.8	23.1	15.9	60.0	50.0	36.9	34.1	N
0.15487	41.0	30.4	0.1	41.1	30.5	65.7	55.7	24.6	25.2	L
0.18721	37.9	33.9	0.1	38.0	34.0	64.2	54.2	26.2	20.2	L
0.43944	30.7	22.6	0.1	30.8	22.7	57.1	47.1	26.3	24.4	L
0.49568	30.0	23.4	0.1	30.1	23.5	56.1	46.1	26.0	22.6	L
1.07879	22.1	18.7	0.3	22.4	19.0	56.0	46.0	33.6	27.0	L
6.11024	21.2	13.1	0.9	22.1	14.0	60.0	50.0	37.9	36.0	L
18.68137	21.5	14.9	1.8	23.3	16.7	60.0	50.0	36.7	33.3	L

CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

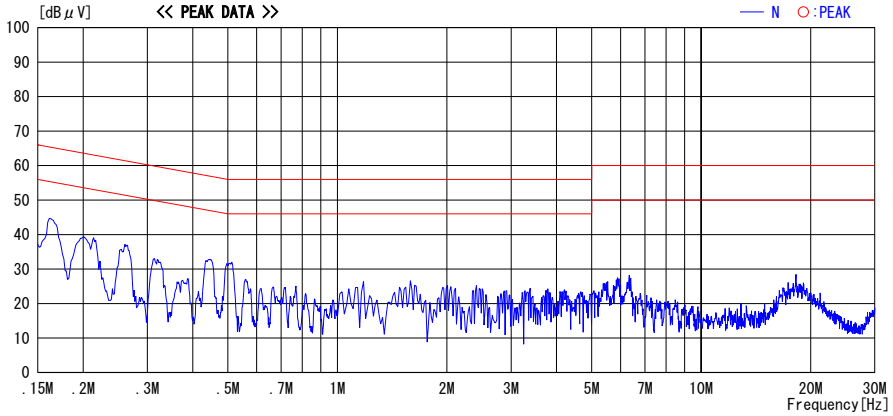
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 22:12:08

Applicant	: Welcat Inc.	Report No.	: 26AE0244-HO
Kind of EUT	: Handy Terminal	Power	: DC 3.7V (AC adapter: AC120V/60Hz)
Model No.	: XIT-100-BW	Temp./Humi.	: 25deg.C / 48%
Serial No.	: 1	Operator	: Yutaka Yoshida

Mode / Remarks : WLAN 11b Tx 2437MHz(11Mbps)

LIMIT : FCC15C §15.207 (QP) / RSS-Gen / RSS-210
FCC15C §15.207 (AV) / RSS-Gen / RSS-210



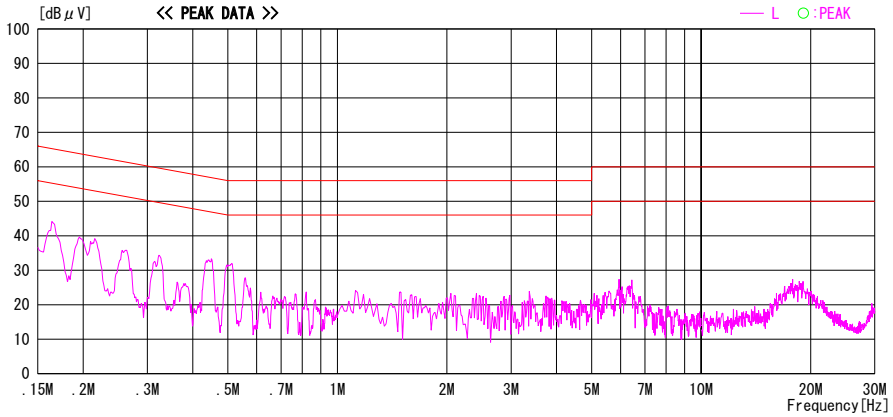


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

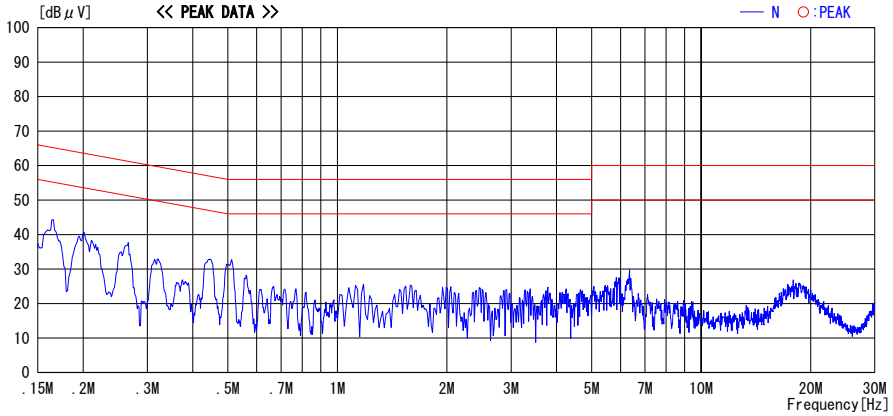
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 22:17:19

Applicant	: Welcat Inc.	Report No.	: 26AE0244-HO
Kind of EUT	: Handy Terminal	Power	: DC 3.7V (AC adapter: AC120V/60Hz)
Model No.	: XIT-100-BW	Temp./Humi.	: 25deg.C / 48%
Serial No.	: 1	Operator	: Yutaka Yoshida

Mode / Remarks : WLAN 11b Tx 2462MHz(11Mbps)

LIMIT : FCC15C §15.207 (QP) / RSS-Gen / RSS-210
FCC15C §15.207 (AV) / RSS-Gen / RSS-210



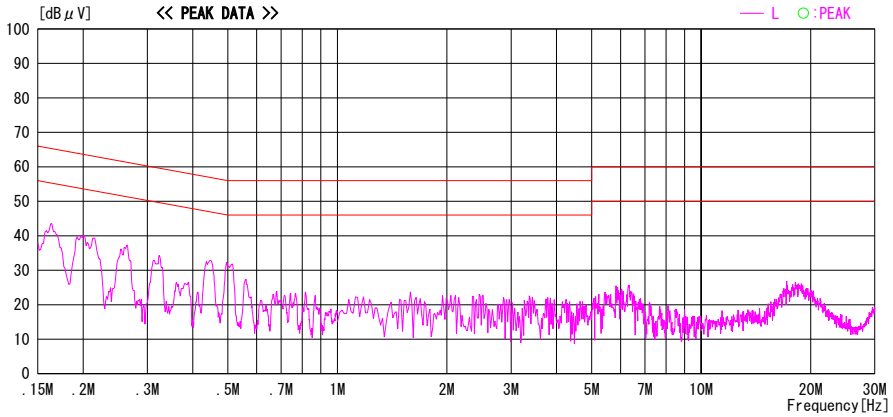


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

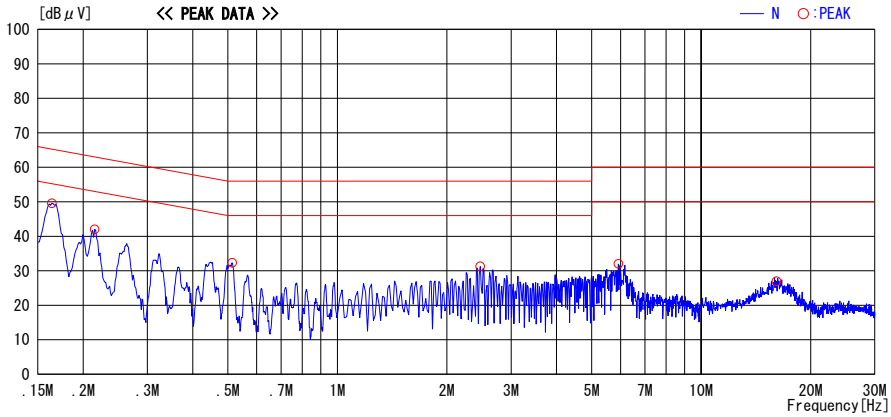
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 19:50:02

Applicant	: Welcat Inc.	Report No.	: 26AE0244-HO
Kind of EUT	: Handy Terminal	Power	: DC 3.7V (AC adapter: AC120V/60Hz)
Model No.	: XIT-100-BW	Temp./Humi.	: 25deg.C / 48%
Serial No.	: 1	Operator	: Yutaka Yoshida

Mode / Remarks : Bluetooth hopping, WLAN 11b Tx 2437MHz(11Mbps)

LIMIT : FCC15C §15.207 (QP) / RSS-Gen / RSS-210
FCC15C §15.207 (AV) / RSS-Gen / RSS-210



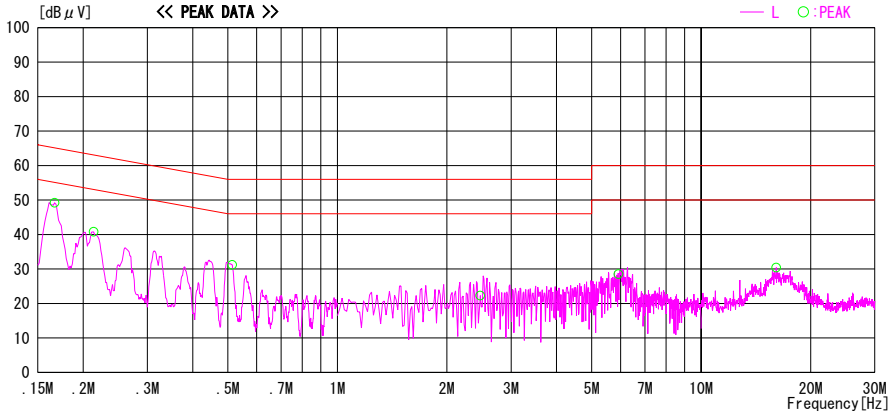


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

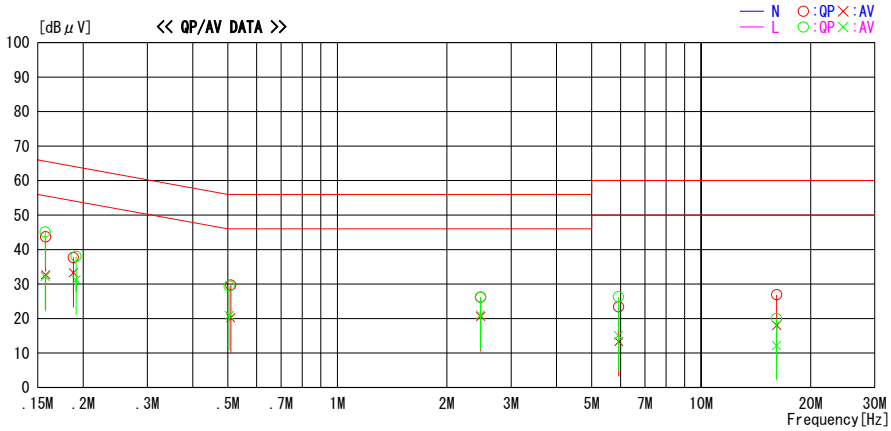
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 19:50:02

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 48%
Operator : Yutaka Yoshida

Mode / Remarks : Bluetooth hopping, WLAN 11b Tx 2437MHz(11Mbps)

LIMIT : FCC15C §15.207 (QP) / RSS-Gen / RSS-210
FCC15C §15.207 (AV) / RSS-Gen / RSS-210



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.15735	45.0	32.1	0.1	45.1	32.2	65.6	55.6	20.5	23.4	L
0.15767	43.6	32.6	0.1	43.7	32.7	65.6	55.6	21.9	22.9	N
0.19123	37.9	31.1	0.1	38.0	31.2	64.0	54.0	26.0	22.8	L
0.18809	37.6	33.2	0.1	37.7	33.3	64.1	54.1	26.4	20.8	N
0.50370	29.2	20.7	0.2	29.4	20.9	56.0	46.0	26.6	25.1	L
0.50898	29.5	20.0	0.2	29.7	20.2	56.0	46.0	26.3	25.8	N
2.47637	25.7	20.1	0.5	26.2	20.6	56.0	46.0	29.8	25.4	N
2.47216	25.7	20.5	0.5	26.2	21.0	56.0	46.0	29.8	25.0	L
5.93150	22.5	12.4	0.9	23.4	13.3	60.0	50.0	36.6	36.7	N
5.92204	25.4	14.2	0.9	26.3	15.1	60.0	50.0	33.7	34.9	L
16.12020	25.2	16.3	1.7	26.9	18.0	60.0	50.0	33.1	32.0	N
16.10410	18.4	10.6	1.6	20.0	12.2	60.0	50.0	40.0	37.8	L

CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

[FHSS]

Carrier Frequency Separation

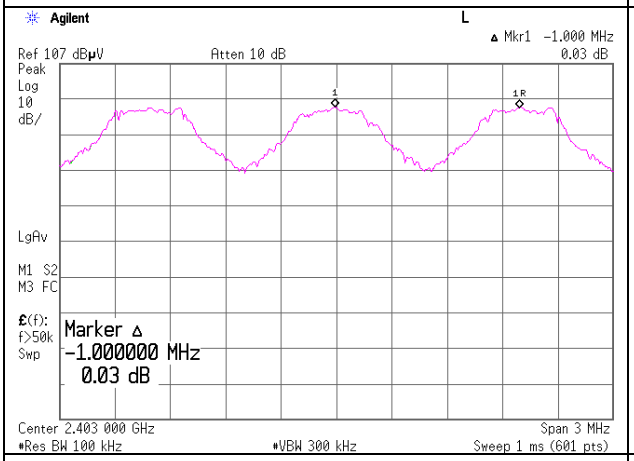
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	:	Welcat Inc.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	:	Handy Terminal	TEST DISTANCE	:	-
MODEL	:	XIT-100-BW	DATE	:	10/14, 10/21/2005
S/ N	:	2	TEMPERATURE	:	22deg.C, 23deg.C
POWER	:	DC 3.7V(Battery)	HUMIDITY	:	50%, 45%
MODE	:	Tx(Hopping on)/Inquiry	ENGINEER	:	Takumi Shimada

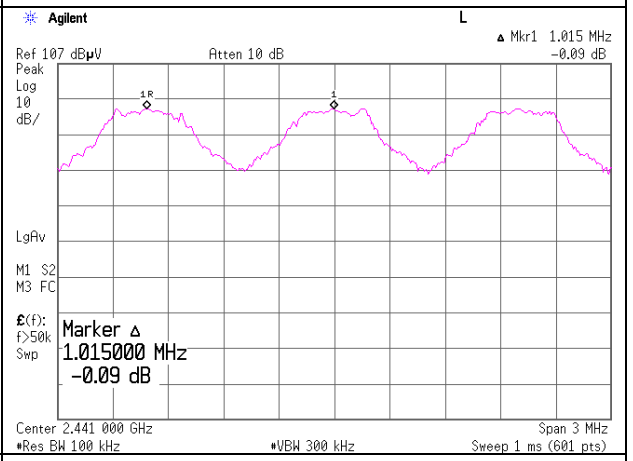
Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.000	>20dB Bandwidth and 25[kHz]
Mid	2441.0	1.015	>20dB Bandwidth and 25[kHz]
High	2480.0	1.005	>20dB Bandwidth and 25[kHz]
Inquiry	2441.0	2.017	>20dB Bandwidth and 25[kHz]

Carrier Frequency Separation

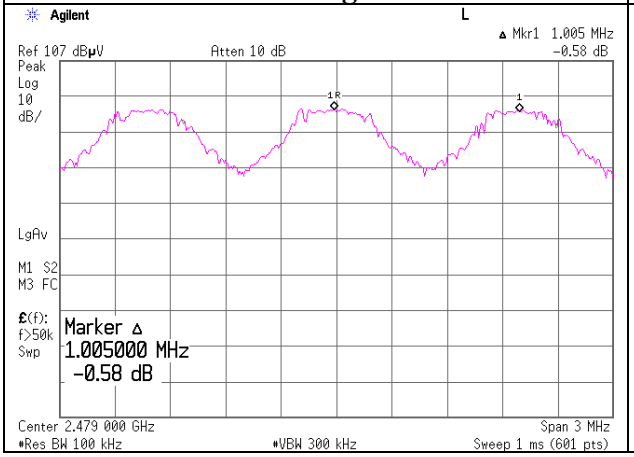
Ch:Low



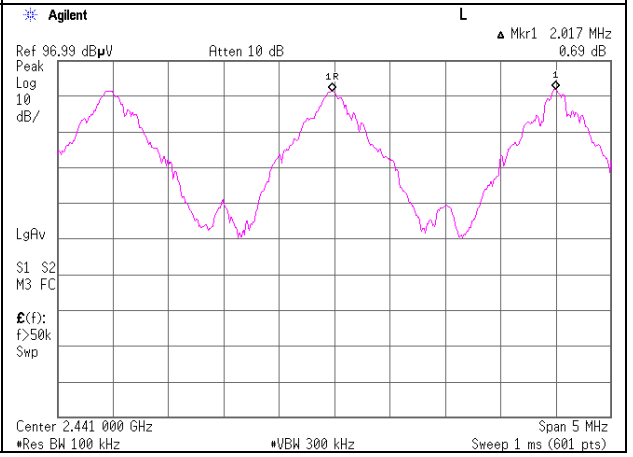
Ch:Mid



Ch:High



Inquiry



20dB Bandwidth

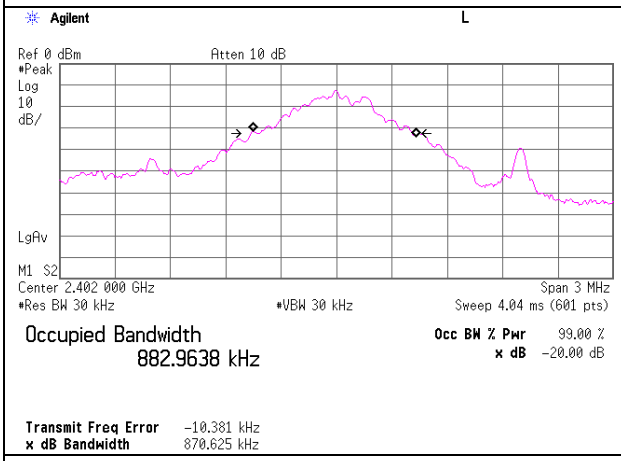
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	:	Welcat Inc.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	:	Handy Terminal	TEST DISTANCE	:	-
MODEL	:	XIT-100-BW	DATE	:	10/14, 10/21/2005
S/ N	:	2	TEMPERATURE	:	22deg.C, 23deg.C
POWER	:	DC 3.7V(Battery)	HUMIDITY	:	50%, 45%
MODE	:	Tx (Hopping off) /Inquiry	ENGINEER	:	Takumi Shimada

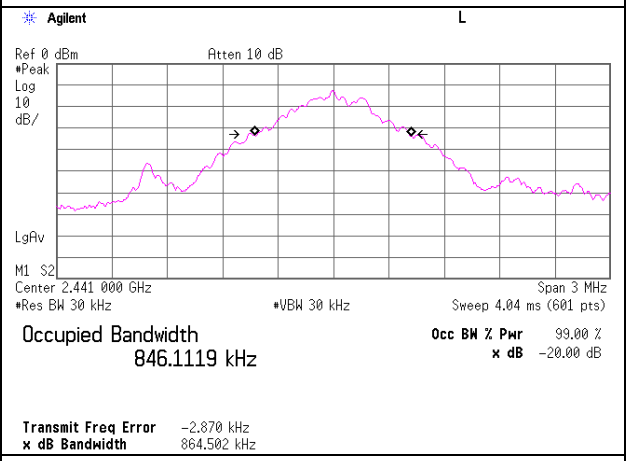
Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.871	-
Mid	2441.0	0.865	-
High	2480.0	0.865	-
Inquiry	2441.0	0.813	-

20dB Bandwidth

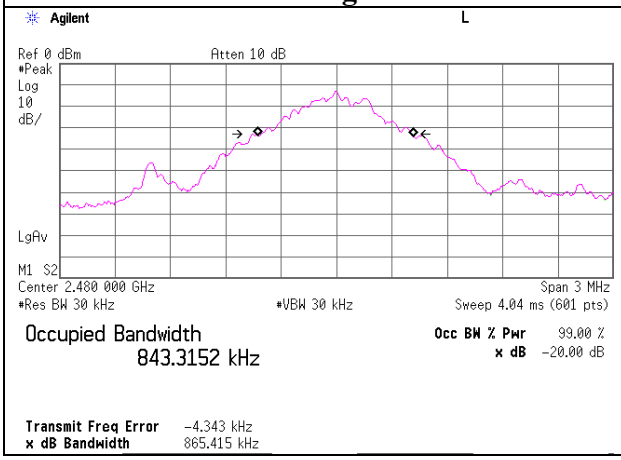
Ch:Low



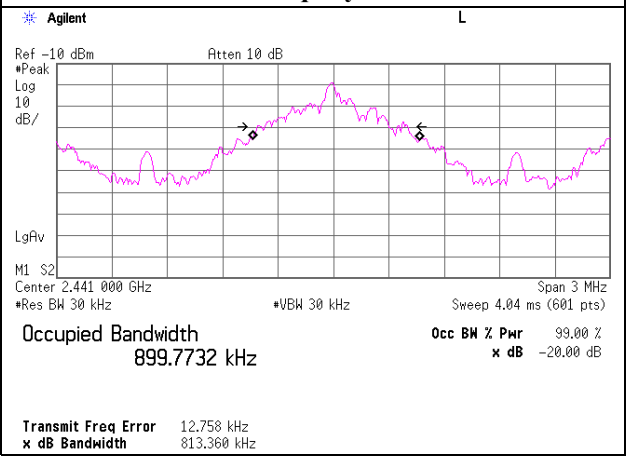
Ch:Mid



Ch:High



Inquiry



Number of Hopping Frequency

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

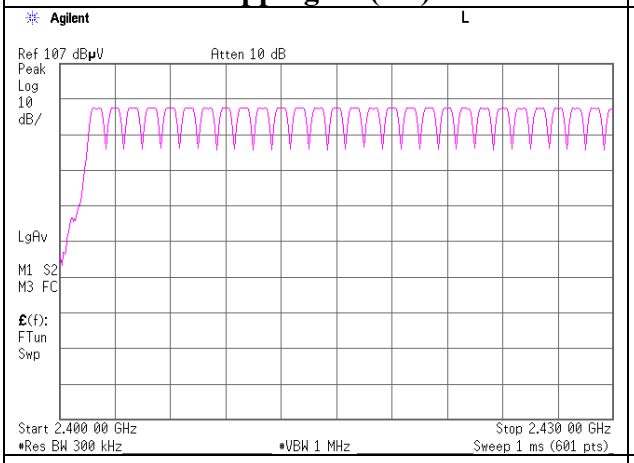
COMPANY	:	Welcat Inc.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)(iii)
EQUIPMENT	:	Handy Terminal	TEST DISTANCE	:	-
MODEL	:	XIT-100-BW	DATE	:	10/14, 10/21/2005
S/ N	:	2	TEMPERATURE	:	22deg.C, 23deg.C
POWER	:	DC 3.7V(Battery)	HUMIDITY	:	50%, 45%
MODE	:	Tx (Hopping on) /Inquiry	ENGINEER	:	Takumi Shimada

Mode	Number of channel [time]	Limit [time]
Tx(Hoppng on)	79	≧15

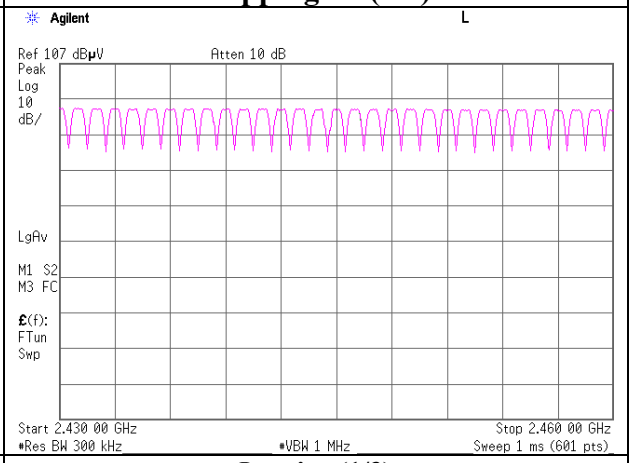
Mode	Number of channel [time]	Limit [time]
Inquiry	32	≧15

Number of Hopping Frequency

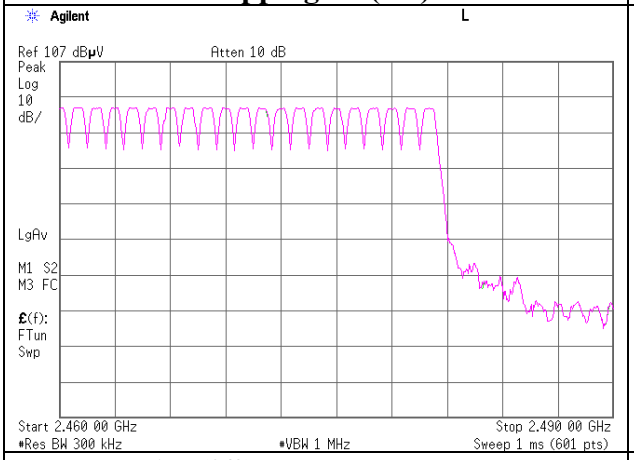
Hopping on (1/3)



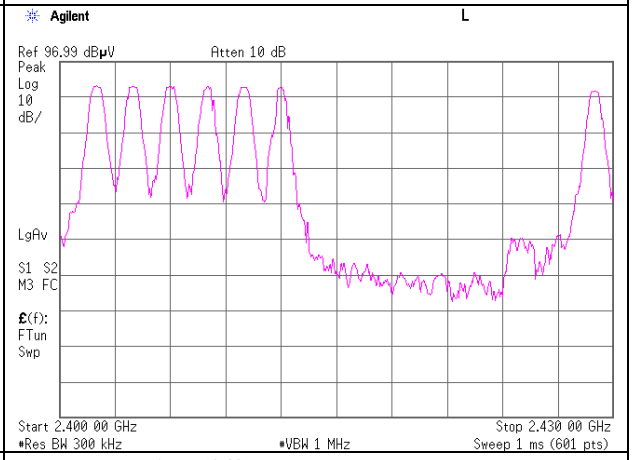
Hopping on (2/3)



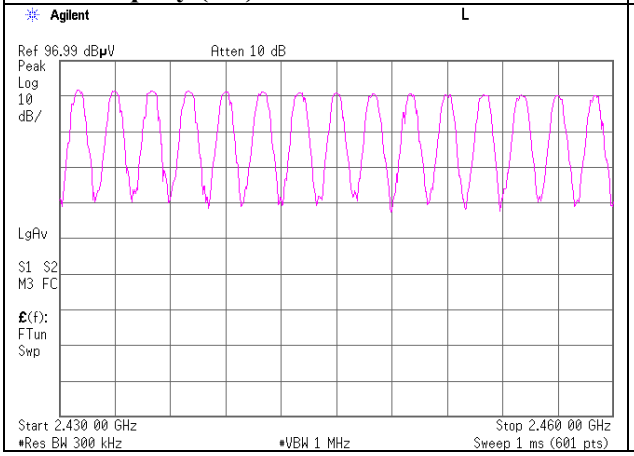
Hopping on (3/3)



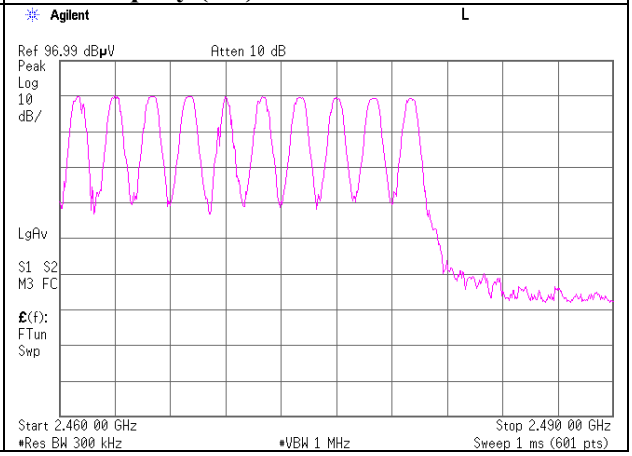
Inquiry (1/3)



Inquiry (2/3)



Inquiry (2/3)



Dwell time

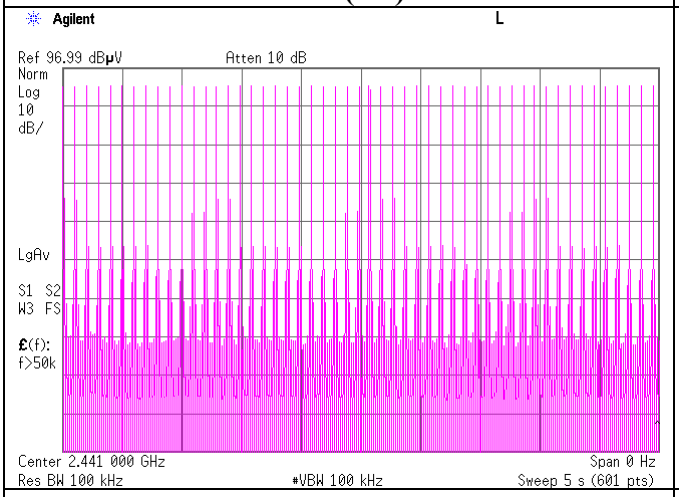
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	:	Welcat Inc.	REGULATION	:	Fcc Part15 Subpart C 15.247(a)(1)(iii)
EQUIPMENT	:	Handy Terminal	TEST DISTANCE	:	-
MODEL	:	XIT-100-BW	DATE	:	10/14, 10/21/2005
S/ N	:	2	TEMPERATURE	:	22deg.C, 23deg.C
POWER	:	DC 3.7V(Battery)	HUMIDITY	:	50%, 45%
MODE	:	Tx (Hopping on) /Inquiry	ENGINEER	:	Takumi Shimada

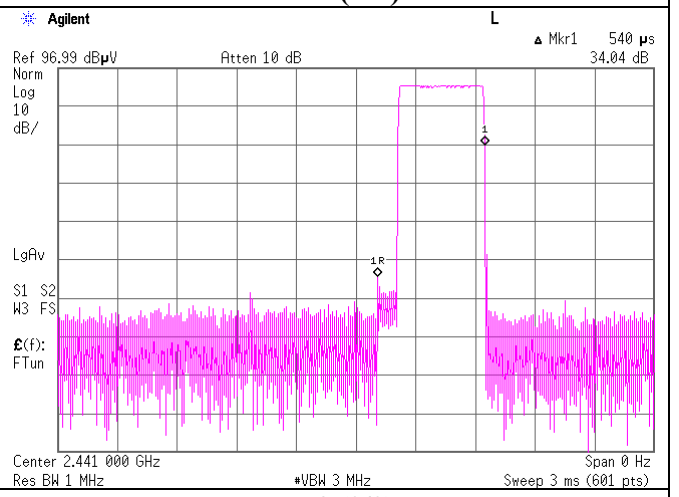
Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	52 times /5sec. x 31.6 = 329 times	0.540	178	400
DH3	27 times / 5sec. x 31.6 = 171 times	1.692	290	400
DH5	20 times / 5 sec. x 31.6 = 126 times	3.133	395	400
Inquiry	100 times / 1sec. x 12.8 = 1280 times	0.230	295	400

Dwell time

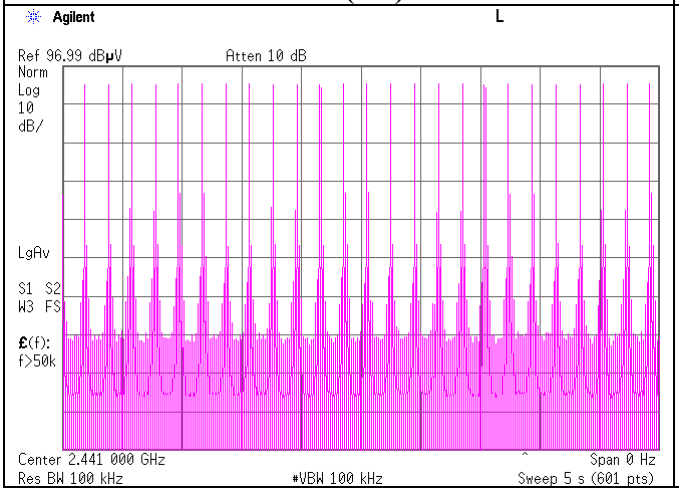
DH1 (1/2)



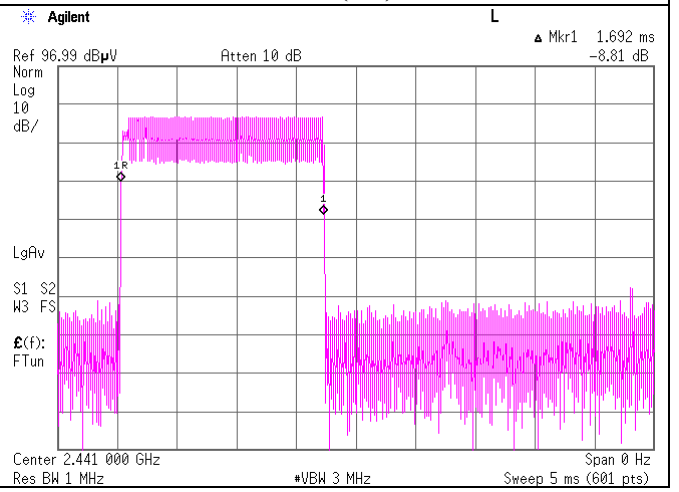
DH1 (2/2)



DH3 (1/2)

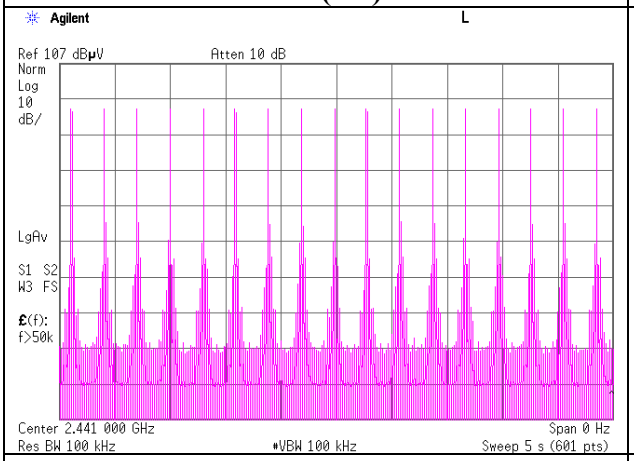


DH3 (2/2)

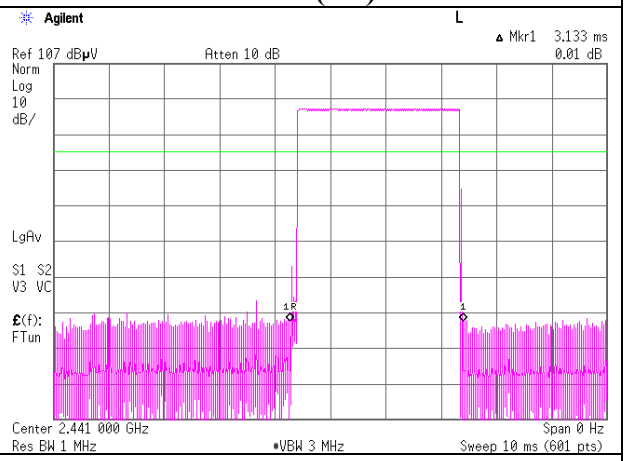


Dwell time

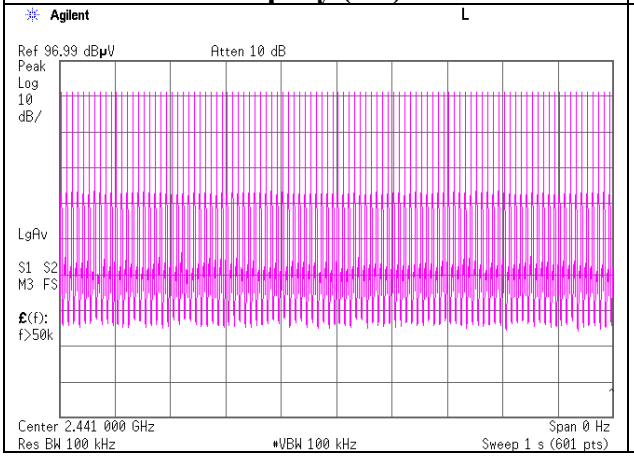
DH5 (1/2)



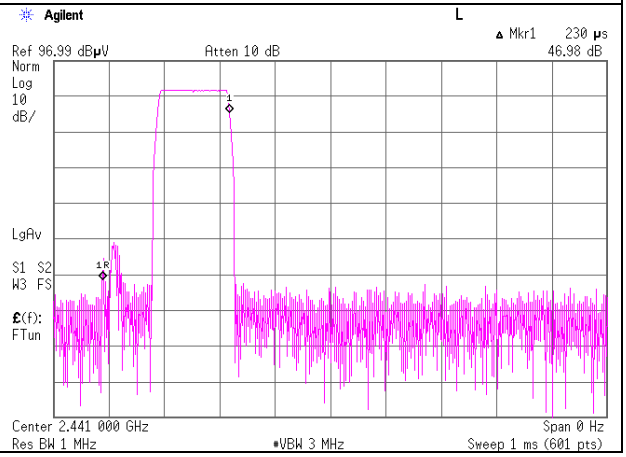
DH5 (2/2)



Inquiry (1/2)



Inquiry (2/2)



Maximum Peak Output Power

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

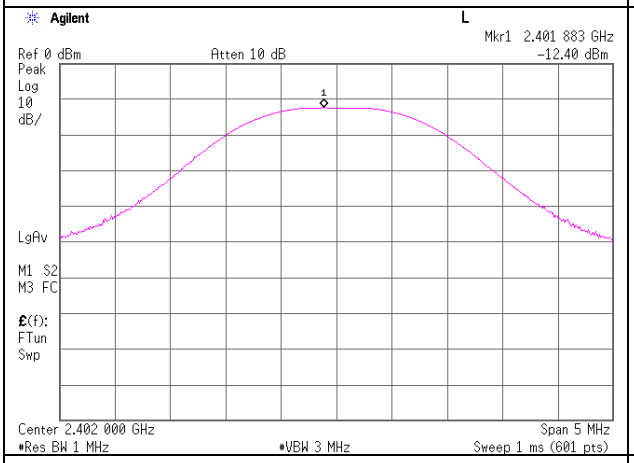
COMPANY	:	Welcat Inc.	REGULATION	:	Fcc Part15 Subpart C 15.247(b)(1)
EQUIPMENT	:	Handy Terminal	TEST DISTANCE	:	-
MODEL	:	XIT-100-BW	DATE	:	10/14, 10/21/2005
S/ N	:	2	TEMPERATURE	:	22deg.C, 23deg.C
POWER	:	DC 3.7V(Battery)	HUMIDITY	:	50%, 45%
MODE	:	Tx(Hopping on)/Inquiry	ENGINEER	:	Takumi Shimada

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2402.0	-12.40	2.46	10.70	0.76	30.00	29.24
Mid	2441.0	-12.76	2.49	10.70	0.43	30.00	29.57
High	2480.0	-13.13	2.50	10.70	0.07	30.00	29.93
Inquiry	2441.0	-18.67	2.49	10.70	-5.48	20.96	26.44

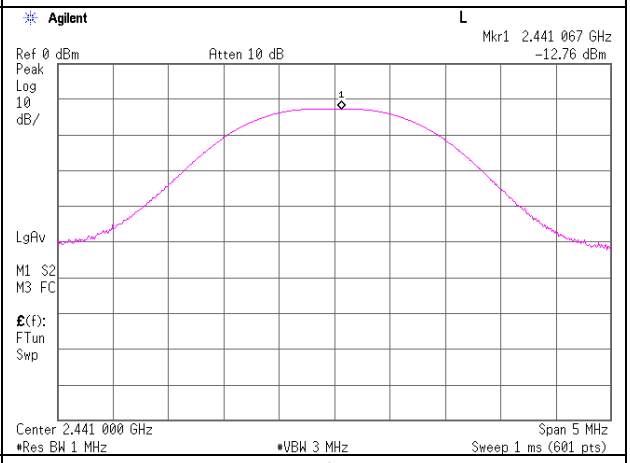
Sample Calculation:
Result = Reading + Cable Loss (supplied by customer)+ Attenuator
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

Maximum Peak Output Power

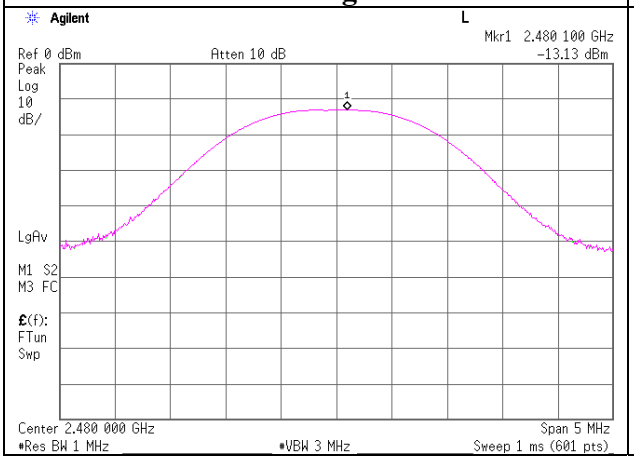
Ch:Low



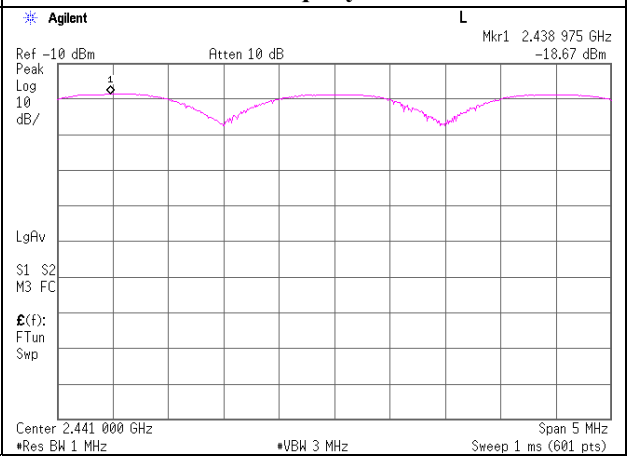
Ch:Mid



Ch:High



Inquiry



Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

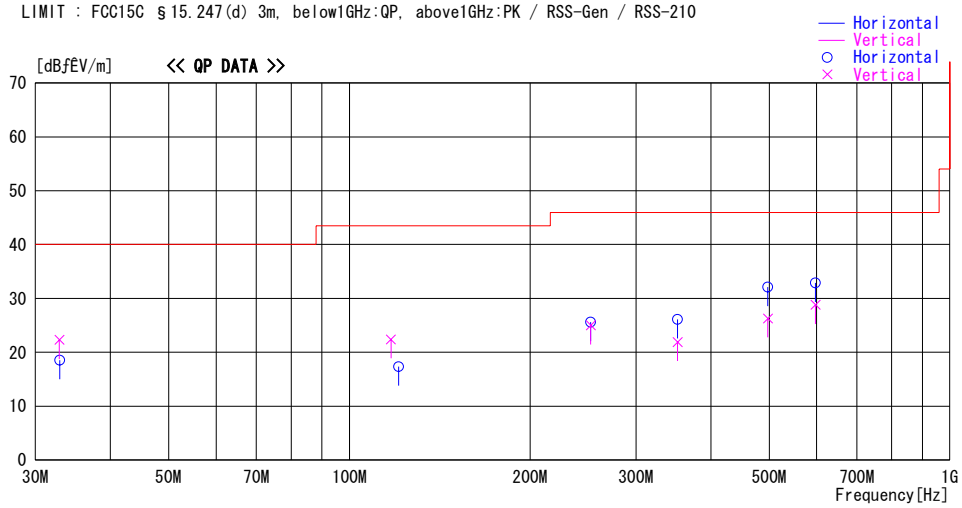
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 23:20:46

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 50%
Operator : Takumi Shimada

Mode / Remarks : Bluetooth Tx 2402MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
32.897	25.9	QP	17.4	-21.0	22.3	359	100	Vert.	40.0	17.7
32.936	22.2	QP	17.3	-21.0	18.5	360	300	Hori.	40.0	21.5
117.310	29.0	QP	12.8	-19.4	22.4	293	100	Vert.	43.5	21.1
120.751	23.4	QP	13.2	-19.3	17.3	359	300	Hori.	43.5	26.2
252.330	25.0	QP	17.5	-17.5	25.0	65	100	Vert.	46.0	21.0
252.331	25.6	QP	17.5	-17.5	25.6	243	183	Hori.	46.0	20.4
351.997	22.8	QP	16.1	-17.0	21.9	0	108	Vert.	46.0	24.1
351.997	27.0	QP	16.1	-17.0	26.1	259	100	Hori.	46.0	19.9
497.656	31.4	QP	17.8	-17.1	32.1	96	188	Hori.	46.0	13.9
497.683	25.6	QP	17.8	-17.1	26.3	180	109	Vert.	46.0	19.7
597.144	30.6	QP	19.1	-16.8	32.9	115	144	Hori.	46.0	13.1
597.221	26.5	QP	19.1	-16.8	28.8	345	100	Vert.	46.0	17.2

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

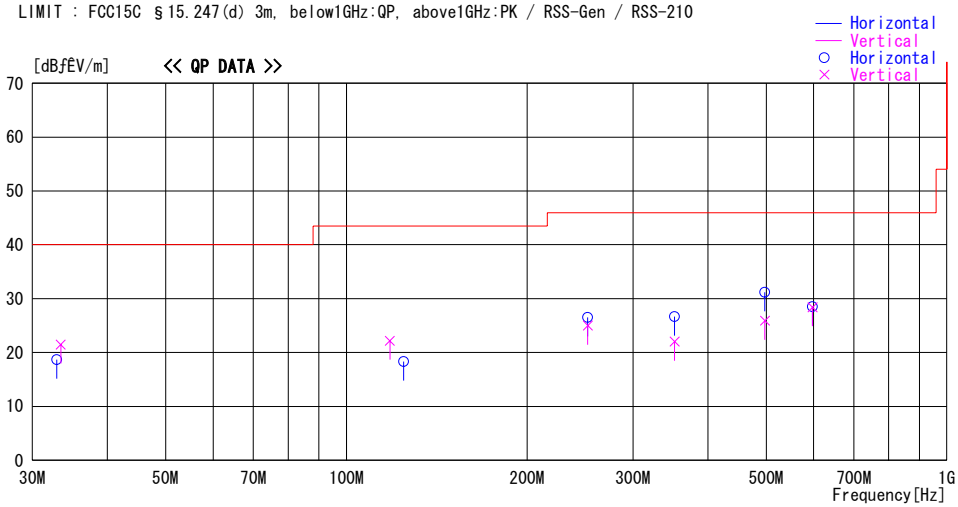
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/22 00:54:55

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 50%
Operator : Takumi Shimada

Mode / Remarks : Bluetooth Tx 2441MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
32.948	22.4	QP	17.3	-21.0	18.7	360	300	Hori.	40.0	21.3
33.454	25.4	QP	17.1	-21.0	21.5	359	100	Vert.	40.0	18.5
118.131	28.6	QP	12.9	-19.3	22.2	295	100	Vert.	43.5	21.3
124.671	24.2	QP	13.5	-19.4	18.3	192	300	Hori.	43.5	25.2
252.369	25.0	QP	17.5	-17.5	25.0	28	100	Vert.	46.0	21.0
252.368	26.5	QP	17.5	-17.5	26.5	240	155	Hori.	46.0	19.5
351.997	22.9	QP	16.1	-17.0	22.0	75	100	Vert.	46.0	24.0
351.997	27.6	QP	16.1	-17.0	26.7	274	100	Hori.	46.0	19.3
497.667	25.2	QP	17.8	-17.1	25.9	183	100	Vert.	46.0	20.1
497.669	30.5	QP	17.8	-17.1	31.2	188	100	Hori.	46.0	14.8
597.217	26.2	QP	19.1	-16.8	28.5	132	123	Hori.	46.0	17.5
597.099	26.1	QP	19.1	-16.8	28.4	359	100	Vert.	46.0	17.6

CHART:WITH FACTOR ANT TYPE:-30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

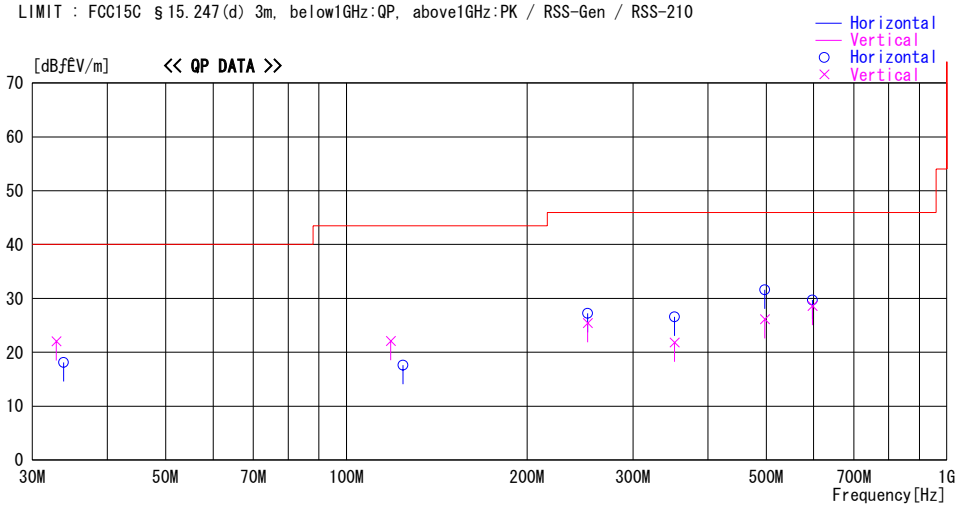
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/22 01:50:51

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 50%
Operator : Takumi Shimada

Mode / Remarks : Bluetooth Tx 2480MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
33.795	22.2	QP	16.9	-21.0	18.1	359	299	Hori.	40.0	21.9
32.886	25.6	QP	17.4	-21.0	22.0	359	100	Vert.	40.0	18.0
124.134	23.5	QP	13.5	-19.4	17.6	359	300	Hori.	43.5	25.9
118.547	28.5	QP	12.9	-19.3	22.1	277	101	Vert.	43.5	21.4
252.358	27.2	QP	17.5	-17.5	27.2	249	135	Hori.	46.0	18.8
252.361	25.4	QP	17.5	-17.5	25.4	71	100	Vert.	46.0	20.6
352.007	22.7	QP	16.1	-17.0	21.8	81	100	Vert.	46.0	24.2
351.997	27.5	QP	16.1	-17.0	26.6	254	100	Hori.	46.0	19.4
497.632	25.4	QP	17.8	-17.1	26.1	209	122	Vert.	46.0	19.9
497.687	30.9	QP	17.8	-17.1	31.6	196	100	Hori.	46.0	14.4
597.229	27.4	QP	19.1	-16.8	29.7	119	137	Hori.	46.0	16.3
597.204	26.3	QP	19.1	-16.8	28.6	331	101	Vert.	46.0	17.4

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

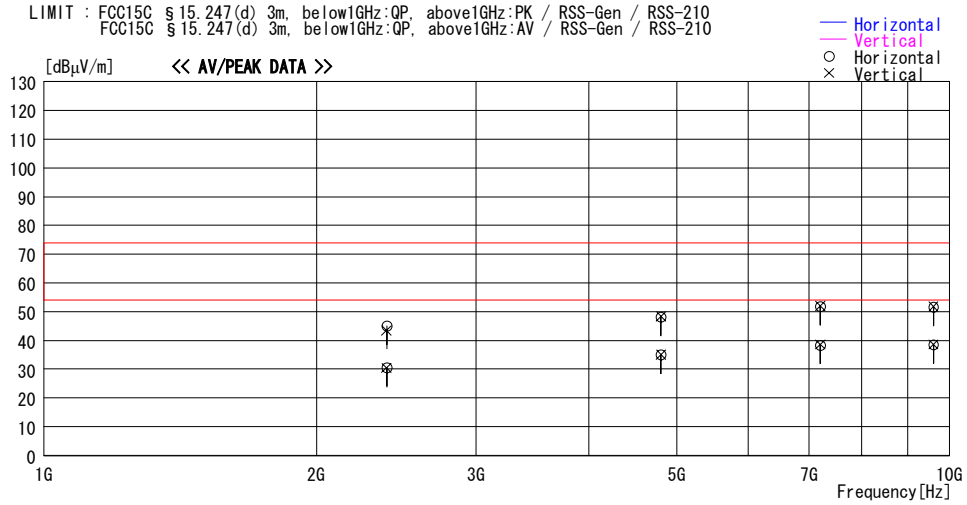
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 17:30:41

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx 2402MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]
2390.000	47.4	PK	30.9	-33.3	45.0	Hori.	74.0	29.0
2390.000	33.0	AV	30.9	-33.3	30.6	Hori.	54.0	23.4
2390.000	45.9	PK	30.9	-33.3	43.5	Vert.	74.0	30.5
2390.000	32.8	AV	30.9	-33.3	30.4	Vert.	54.0	23.6
4804.000	31.8	AV	34.9	-31.7	35.0	Hori.	54.0	19.0
4804.000	31.8	AV	34.9	-31.7	35.0	Vert.	54.0	19.0
4804.000	44.9	PK	34.9	-31.7	48.1	Hori.	74.0	25.9
4804.000	45.2	PK	34.9	-31.7	48.4	Vert.	74.0	25.6
7206.000	45.2	PK	37.6	-31.0	51.8	Hori.	74.0	22.2
7206.000	31.8	AV	37.6	-31.0	38.4	Hori.	54.0	15.6
7206.000	45.4	PK	37.6	-31.0	52.0	Vert.	74.0	22.0
7206.000	31.9	AV	37.6	-31.0	38.5	Vert.	54.0	15.5
9608.000	45.6	PK	36.3	-30.3	51.6	Hori.	74.0	22.4
9608.000	32.5	AV	36.3	-30.3	38.5	Hori.	54.0	15.5
9608.000	45.8	PK	36.3	-30.3	51.8	Vert.	74.0	22.2
9608.000	32.6	AV	36.3	-30.3	38.6	Vert.	54.0	15.4

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Welcat Inc.	REPORT NO	: 26AE0244-HO
Equipment	: Handy Terminal	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: XIT-100-BW	TEST DISTANCE	: 3m
Sample No.	: 2	DATE	: 10/20/2005
Power	: DC 3.7V (AC adapter input: AC120V/60Hz)	TEMPERATURE	: 25deg.C
Mode	: Bluetooth, Tx: 2402MHz	HUMIDITY	: 37%
		ENGINEER	: Kenichi Adachi
Remarks	: EUT-max-axis (Hor.: Y , Ver.: Z)		

20dBc(Fundamental 2402MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	ATT or	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter Loss	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2402.0	92.5	87.5	30.9	36.4	3.2	0.0	90.2	85.2	-	-	-
2	2400.0	49.4	45.1	30.9	36.4	3.1	0.0	47.0	42.7	Funda-20dB	23.2	22.5

*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.
*Hi-Pass Filter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

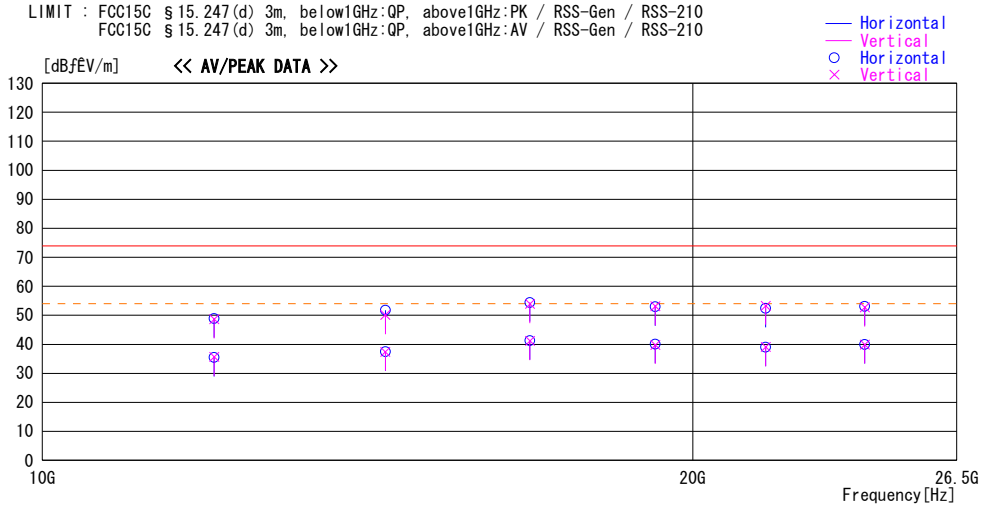
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 20:50:07

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx 2402MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]
12010.000	45.9	PK	41.4	-38.4	48.9	Hori.	74.0	25.1
12010.000	45.6	PK	41.4	-38.4	48.6	Vert.	74.0	25.4
12010.000	32.5	AV	41.4	-38.4	35.5	Hori.	54.0	18.5
12010.000	32.6	AV	41.4	-38.4	35.6	Vert.	54.0	18.4
14412.000	46.5	PK	41.7	-36.5	51.7	Hori.	74.0	22.3
14412.000	44.9	PK	41.7	-36.5	50.1	Vert.	74.0	23.9
14412.000	32.3	AV	41.7	-36.5	37.5	Hori.	54.0	16.5
14412.000	32.2	AV	41.7	-36.5	37.4	Vert.	54.0	16.6
16814.000	46.0	PK	44.7	-36.3	54.4	Hori.	74.0	19.6
16814.000	45.5	PK	44.7	-36.3	53.9	Vert.	74.0	20.1
16814.000	32.8	AV	44.7	-36.3	41.2	Hori.	54.0	12.8
16814.000	32.8	AV	44.7	-36.3	41.2	Vert.	54.0	12.8
19216.000	45.8	PK	41.7	-34.6	52.9	Hori.	74.0	21.1
19216.000	46.0	PK	41.7	-34.6	53.1	Vert.	74.0	20.9
19216.000	33.0	AV	41.7	-34.6	40.1	Hori.	54.0	13.9
19216.000	32.7	AV	41.7	-34.6	39.8	Vert.	54.0	14.2
21618.000	47.0	PK	40.4	-35.0	52.4	Hori.	74.0	21.6
21618.000	47.9	PK	40.4	-35.0	53.3	Vert.	74.0	20.7
21618.000	33.6	AV	40.4	-35.0	39.0	Hori.	54.0	15.0
21618.000	33.6	AV	40.4	-35.0	39.0	Vert.	54.0	15.0
24020.000	47.7	PK	41.0	-35.6	53.1	Hori.	74.0	20.9
24020.000	47.3	PK	41.0	-35.6	52.7	Vert.	74.0	21.3
24020.000	34.5	AV	41.0	-35.6	39.9	Hori.	54.0	14.1
24020.000	34.5	AV	41.0	-35.6	39.9	Vert.	54.0	14.1

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

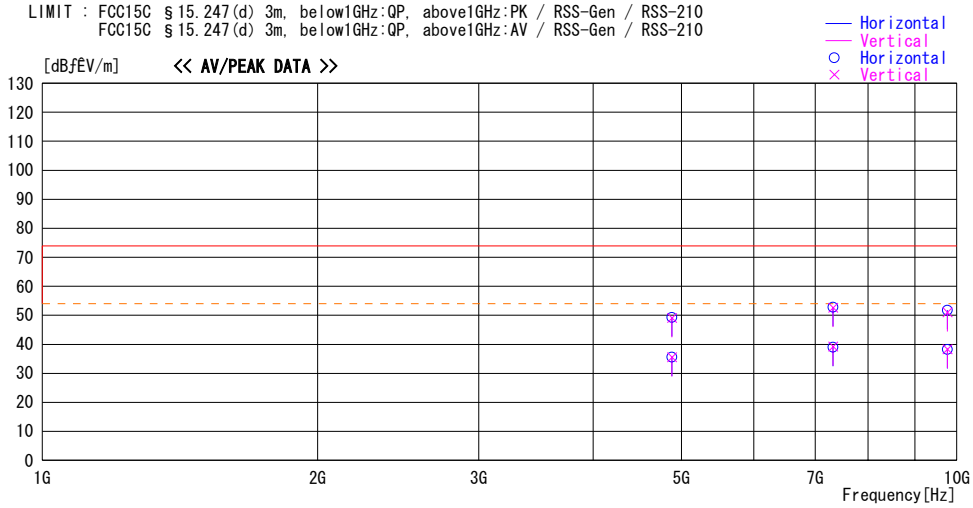
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 17:57:23

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx 2441MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]
4882.000	45.5	PK	35.4	-31.7	49.2	Hori.	74.0	24.8
4882.000	31.9	AV	35.4	-31.7	35.6	Hori.	54.0	18.4
4882.000	45.3	PK	35.4	-31.7	49.0	Vert.	74.0	25.0
4882.000	31.8	AV	35.4	-31.7	35.5	Vert.	54.0	18.5
7323.000	45.8	PK	37.8	-30.8	52.8	Hori.	74.0	21.2
7323.000	32.0	AV	37.8	-30.8	39.0	Hori.	54.0	15.0
7323.000	45.6	PK	37.8	-30.8	52.6	Vert.	74.0	21.4
7323.000	32.2	AV	37.8	-30.8	39.2	Vert.	54.0	14.8
9764.000	45.7	PK	36.2	-30.2	51.7	Hori.	74.0	22.3
9764.000	32.2	AV	36.2	-30.2	38.2	Hori.	54.0	15.8
9764.000	45.0	PK	36.2	-30.2	51.0	Vert.	74.0	23.0
9764.000	32.3	AV	36.2	-30.2	38.3	Vert.	54.0	15.7

CHART:WITH FACTOR ANT TYPE:-30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

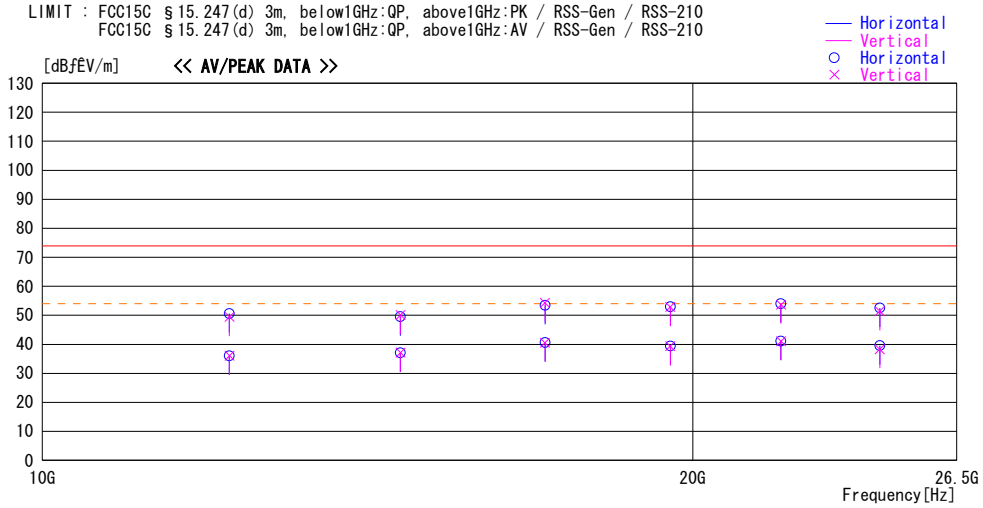
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 20:31:47

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx 2441MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
12205.000	47.4	PK	41.5	-38.3	50.6	Hori.	74.0	23.4
12205.000	46.2	PK	41.5	-38.3	49.4	Vert.	74.0	24.6
12205.000	32.9	AV	41.5	-38.3	36.1	Hori.	54.0	17.9
12205.000	32.8	AV	41.5	-38.3	36.0	Vert.	54.0	18.0
14646.000	44.5	PK	42.2	-37.2	49.5	Hori.	74.0	24.5
14646.000	45.1	PK	42.2	-37.2	50.1	Vert.	74.0	24.0
14646.000	32.1	AV	42.2	-37.2	37.1	Hori.	54.0	16.9
14646.000	32.1	AV	42.2	-37.2	37.1	Vert.	54.0	16.9
17087.000	45.0	PK	44.5	-36.0	53.5	Hori.	74.0	20.5
17087.000	45.8	PK	44.5	-36.0	54.3	Vert.	74.0	19.7
17087.000	32.1	AV	44.5	-36.0	40.6	Hori.	54.0	13.4
17087.000	32.1	AV	44.5	-36.0	40.6	Vert.	54.0	13.4
19528.000	46.3	PK	41.4	-34.8	52.9	Hori.	74.0	21.1
19528.000	46.3	PK	41.4	-34.8	52.9	Vert.	74.0	21.1
19528.000	32.8	AV	41.4	-34.8	39.4	Hori.	54.0	14.6
19528.000	32.7	AV	41.4	-34.8	39.3	Vert.	54.0	14.7
21969.000	47.9	PK	40.5	-34.4	54.0	Hori.	74.0	20.0
21969.000	47.6	PK	40.5	-34.4	53.7	Vert.	74.0	20.3
21969.000	35.0	AV	40.5	-34.4	41.1	Hori.	54.0	12.9
21969.000	35.0	AV	40.5	-34.4	41.1	Vert.	54.0	12.9
24410.000	47.4	PK	41.1	-36.0	52.5	Hori.	74.0	21.5
24410.000	46.3	PK	41.1	-36.0	51.4	Vert.	74.0	22.6
24410.000	34.4	AV	41.1	-36.0	39.5	Hori.	54.0	14.5
24410.000	33.2	AV	41.1	-36.0	38.3	Vert.	54.0	15.7

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

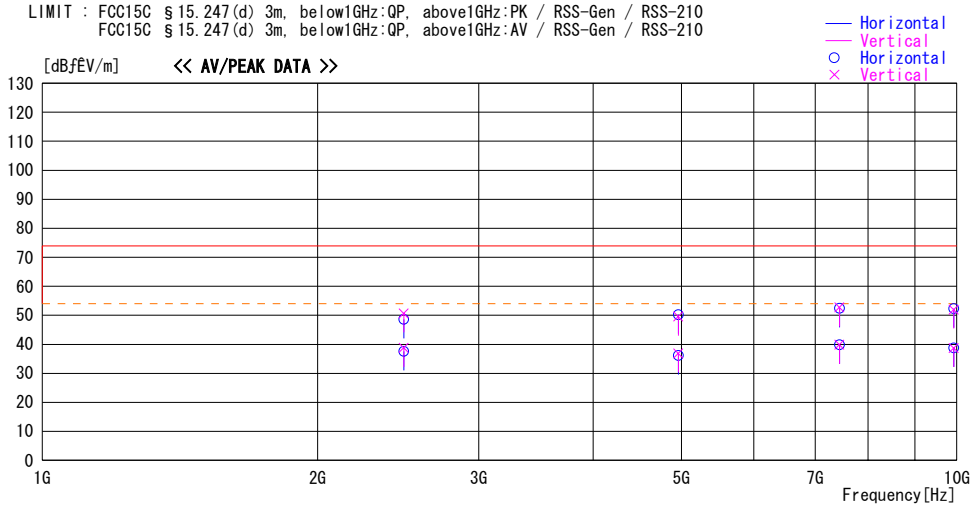
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 19:33:06

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx 2480MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]
2483.500	51.1	PK	30.8	-33.3	48.6	Hori.	74.0	25.4
2483.500	53.2	PK	30.8	-33.3	50.7	Vert.	74.0	23.3
2483.500	40.0	AV	30.8	-33.3	37.5	Hori.	54.0	16.5
2483.500	41.3	AV	30.8	-33.3	38.8	Vert.	54.0	15.2
4960.000	45.9	PK	35.8	-31.6	50.1	Hori.	74.0	23.9
4960.000	45.4	PK	35.8	-31.6	49.6	Vert.	74.0	24.4
4960.000	32.0	AV	35.8	-31.6	36.2	Hori.	54.0	17.8
4960.000	32.7	AV	35.8	-31.6	36.9	Vert.	54.0	17.1
7440.000	45.1	PK	37.9	-30.6	52.4	Hori.	74.0	21.7
7440.000	45.4	PK	37.9	-30.6	52.7	Vert.	74.0	21.3
7440.000	32.5	AV	37.9	-30.6	39.8	Hori.	54.0	14.2
7440.000	32.6	AV	37.9	-30.6	39.9	Vert.	54.0	14.1
9920.000	46.3	PK	36.2	-30.2	52.3	Hori.	74.0	21.7
9920.000	46.0	PK	36.2	-30.2	52.0	Vert.	74.0	22.0
9920.000	32.7	AV	36.2	-30.2	38.7	Hori.	54.0	15.3
9920.000	32.7	AV	36.2	-30.2	38.7	Vert.	54.0	15.3

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

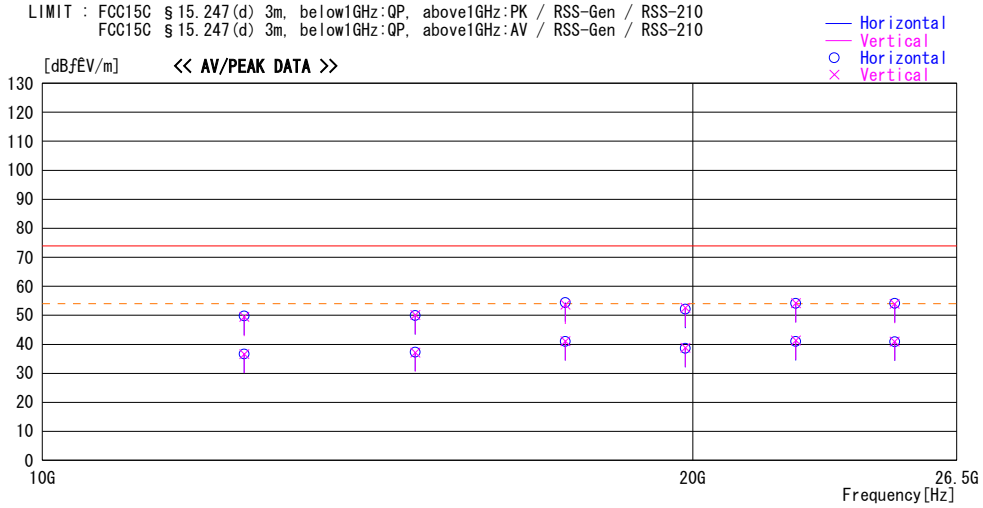
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 20:12:37

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 2

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx 2480MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



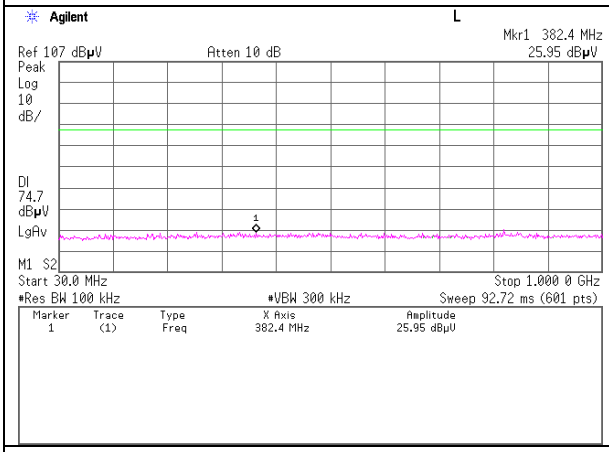
Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
12400.000	46.2	PK	41.6	-38.0	49.8	Hori.	74.0	24.2
12400.000	45.8	PK	41.6	-38.0	49.4	Vert.	74.0	24.6
12400.000	33.0	AV	41.6	-38.0	36.6	Hori.	54.0	17.4
12400.000	33.0	AV	41.6	-38.0	36.6	Vert.	54.0	17.4
14880.000	45.2	PK	42.6	-37.9	49.9	Hori.	74.0	24.1
14880.000	45.4	PK	42.6	-37.9	50.1	Vert.	74.0	23.9
14880.000	32.6	AV	42.6	-37.9	37.3	Hori.	54.0	16.7
14880.000	32.4	AV	42.6	-37.9	37.1	Vert.	54.0	16.9
17460.000	45.9	PK	44.3	-35.9	54.3	Hori.	74.0	19.7
17460.000	45.2	PK	44.3	-35.9	53.6	Vert.	74.0	20.4
17460.000	32.6	AV	44.3	-35.9	41.0	Hori.	54.0	13.0
17460.000	32.6	AV	44.3	-35.9	41.0	Vert.	54.0	13.0
19840.000	46.3	PK	41.1	-35.3	52.1	Hori.	74.0	21.9
19840.000	46.8	PK	41.1	-35.3	52.6	Vert.	74.0	21.4
19840.000	32.9	AV	41.1	-35.3	38.7	Hori.	54.0	15.3
19840.000	33.0	AV	41.1	-35.3	38.8	Vert.	54.0	15.2
22320.000	48.0	PK	40.4	-34.2	54.2	Vert.	74.0	19.8
22320.000	47.9	PK	40.4	-34.2	54.1	Hori.	74.0	19.9
22320.000	35.1	AV	40.4	-34.2	41.3	Vert.	54.0	12.8
22320.000	34.8	AV	40.4	-34.2	41.0	Hori.	54.0	13.1
24800.000	48.3	PK	41.1	-35.2	54.2	Hori.	74.0	19.8
24800.000	48.0	PK	41.1	-35.2	53.9	Vert.	74.0	20.1
24800.000	35.0	AV	41.1	-35.2	40.9	Hori.	54.0	13.2
24800.000	35.1	AV	41.1	-35.2	41.0	Vert.	54.0	13.1

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

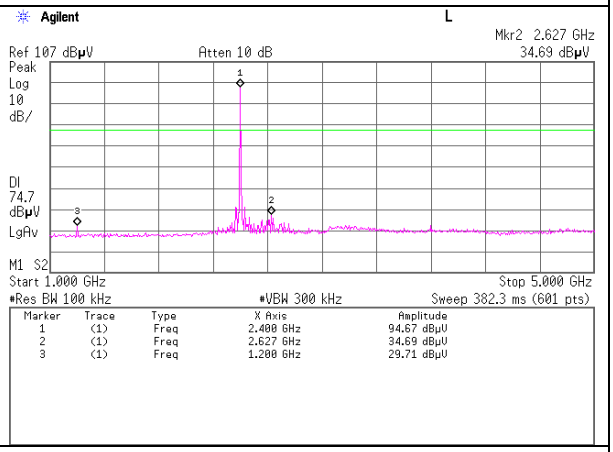
Conducted Spurious Emission

Ch:Low

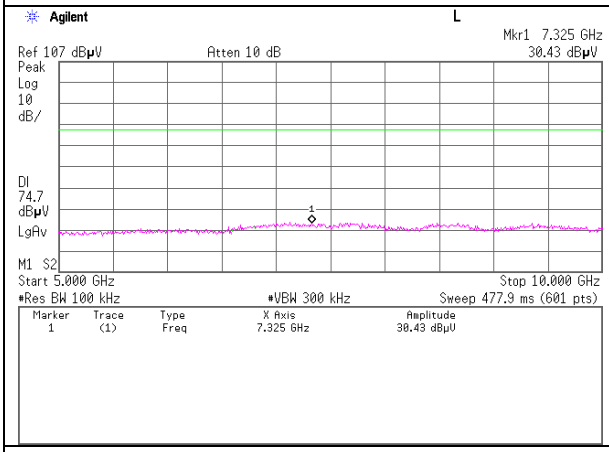
30MHz-1GHz



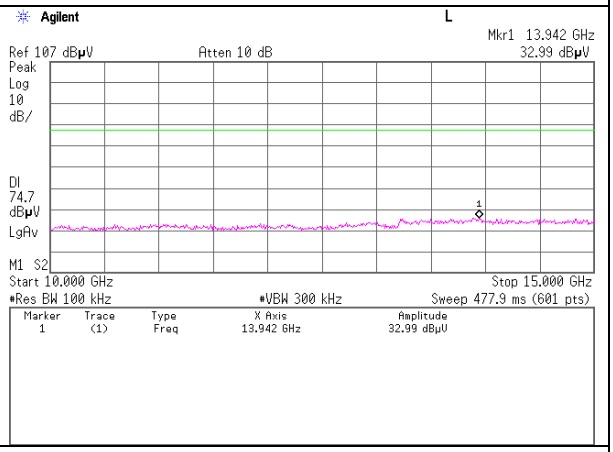
1GHz-5GHz



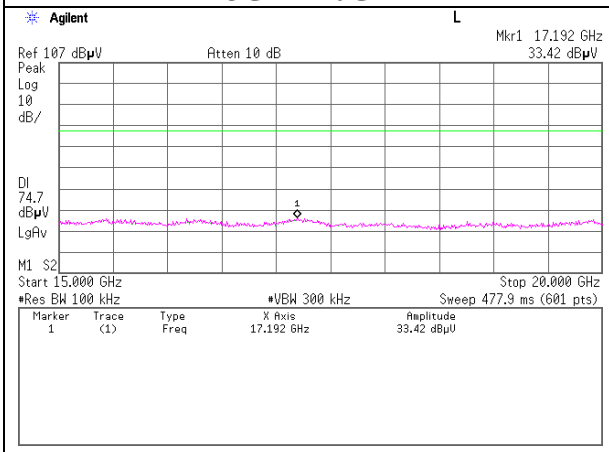
5GHz-10GHz



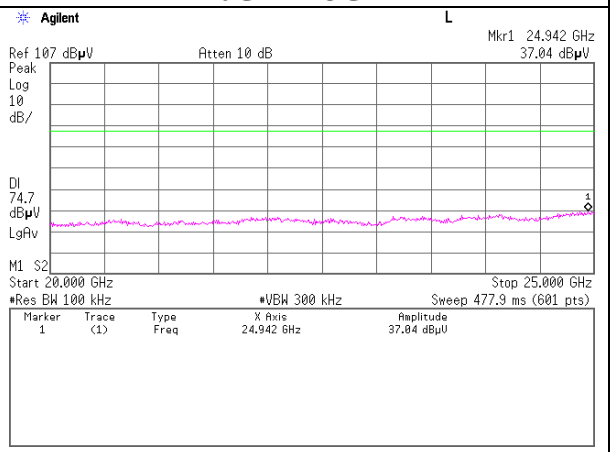
10GHz-15GHz



15GHz-20GHz



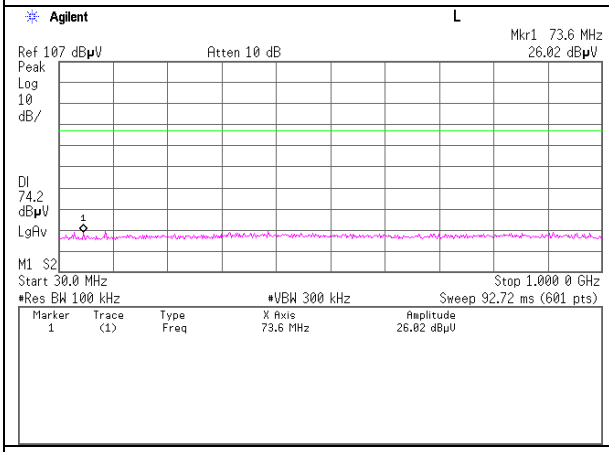
20GHz-25GHz



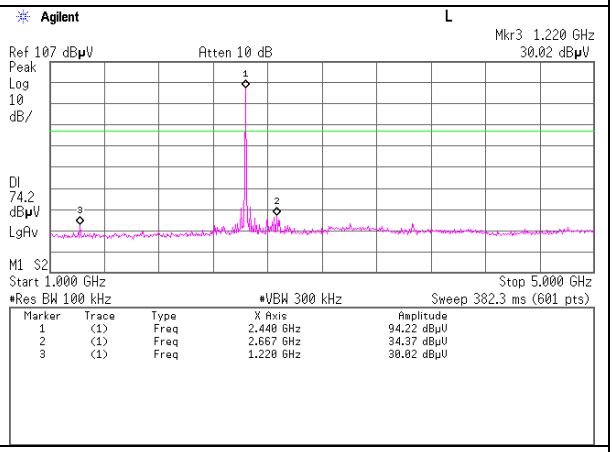
Conducted Spurious Emission

Ch:Mid

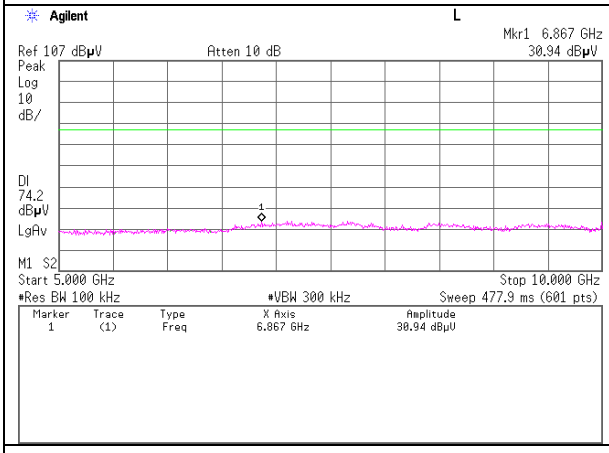
30MHz-1GHz



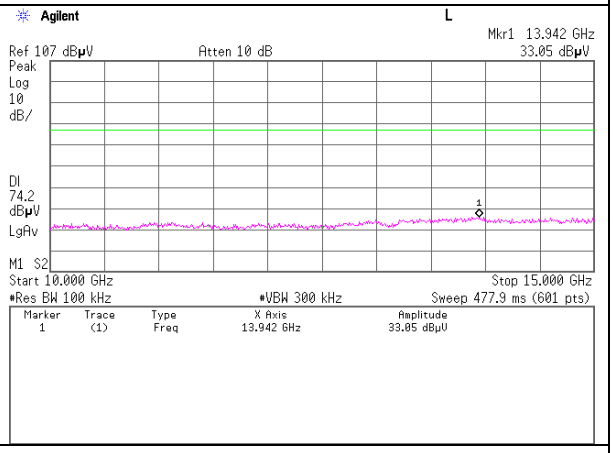
1GHz-5GHz



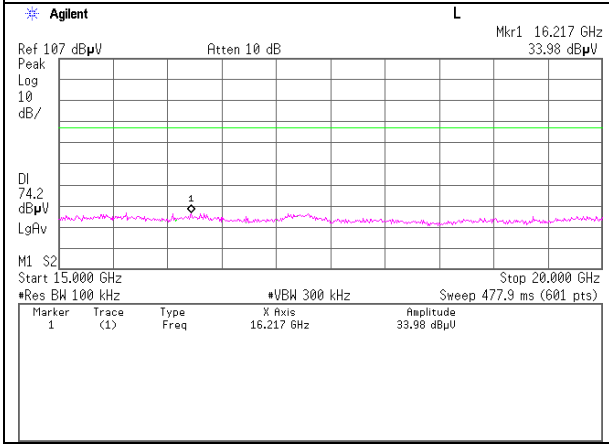
5GHz-10GHz



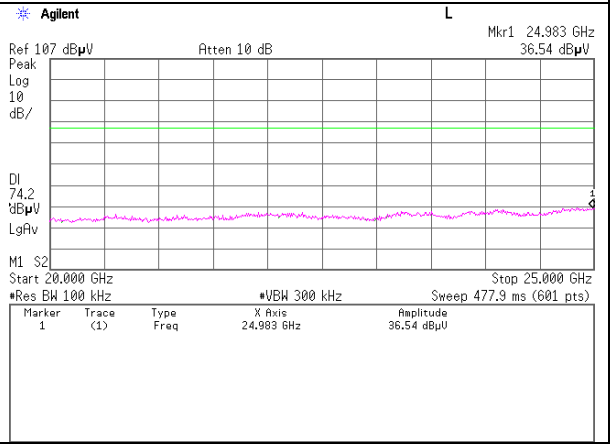
10GHz-15GHz



15GHz-20GHz



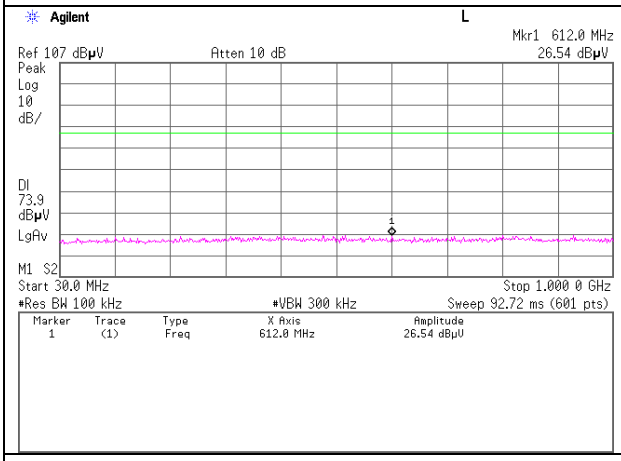
20GHz-25GHz



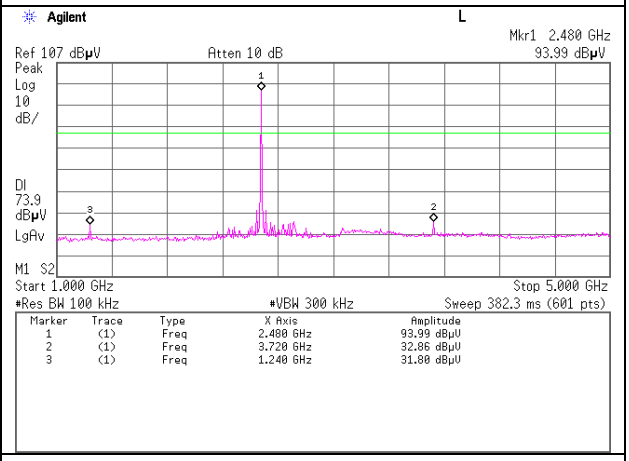
Conducted Spurious Emission

Ch:High

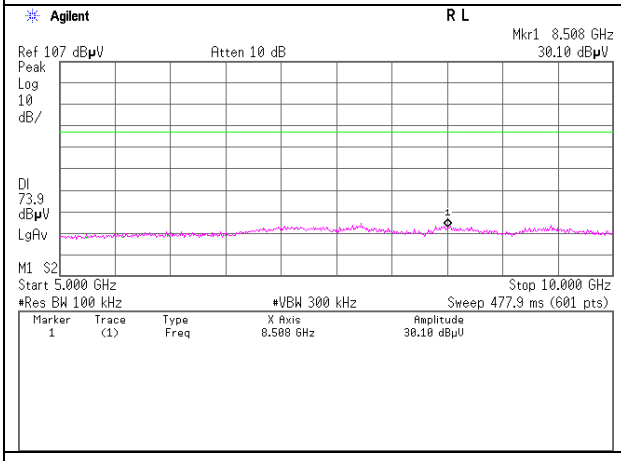
30MHz-1GHz



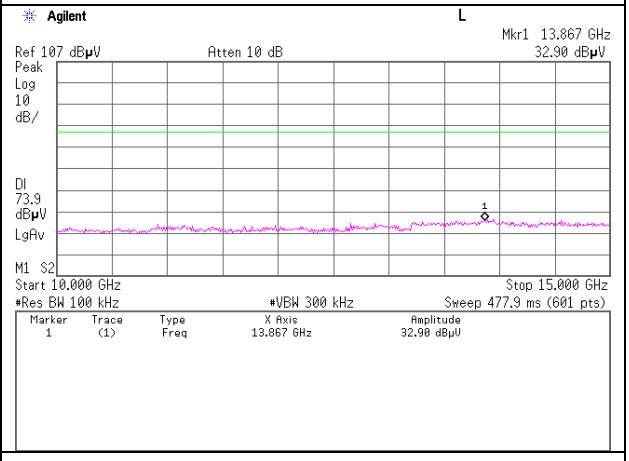
1GHz-5GHz



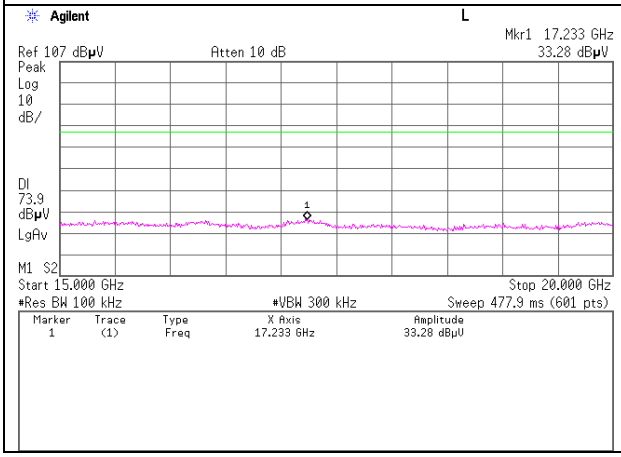
5GHz-10GHz



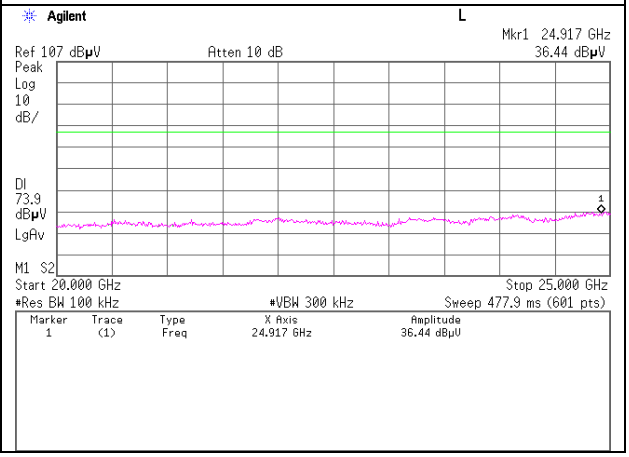
10GHz-15GHz



15GHz-20GHz

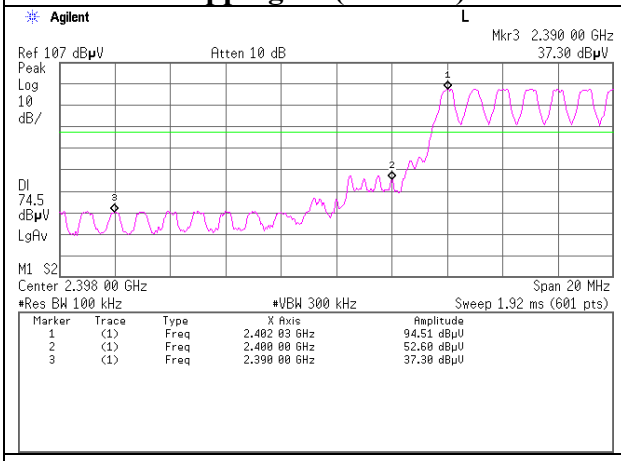


20GHz-25GHz

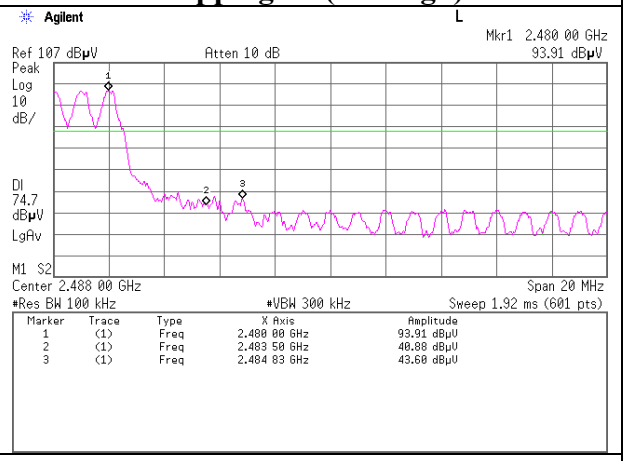


Conducted Spurious Emission
Band Edge compliance

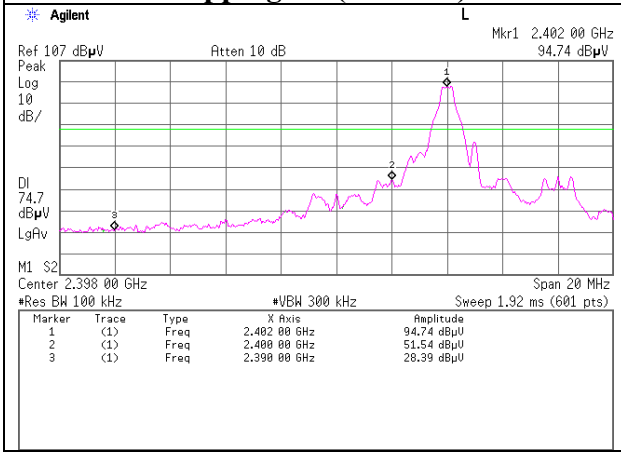
Hopping on (Ch:Low)



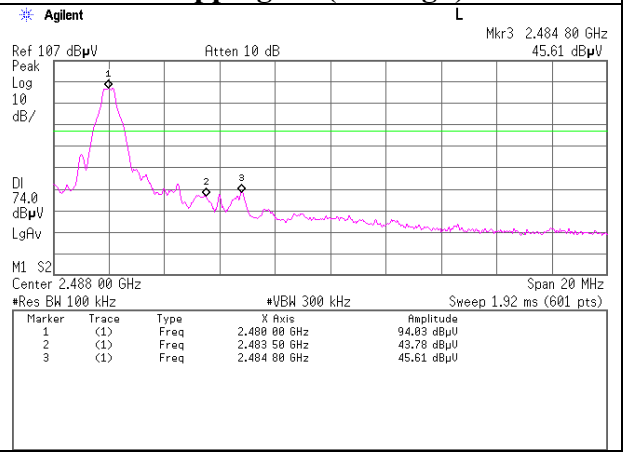
Hopping on (Ch:High)



Hopping off (Ch:Low)

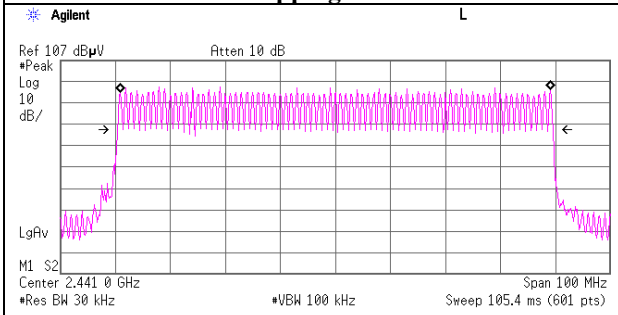


Hopping off (Ch:High)

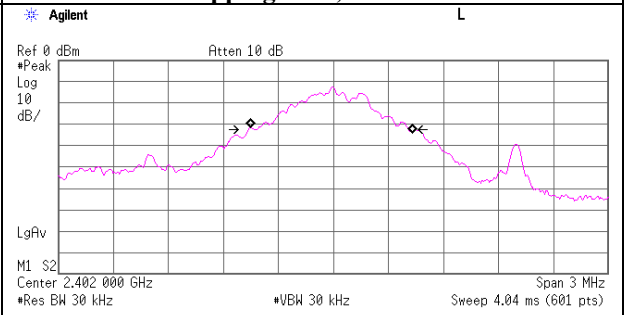


99% Occupied Bandwidth

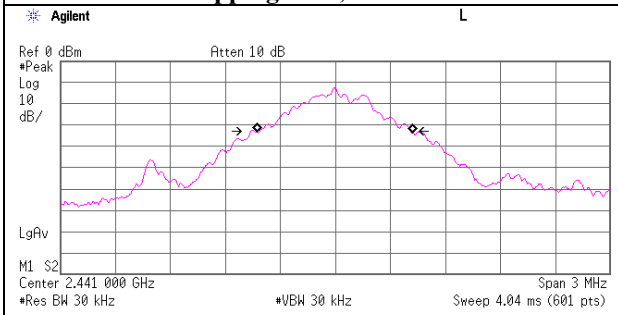
Hopping ON



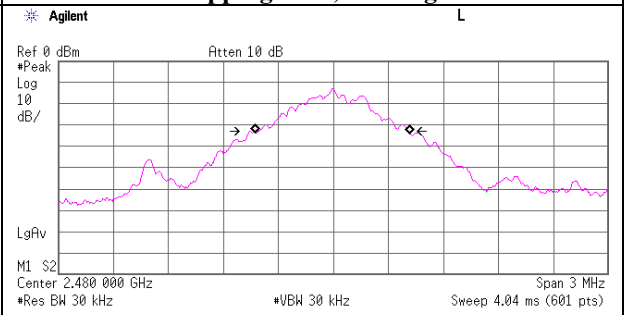
Hopping OFF, Ch: Low



Hopping OFF, Ch: Mid



Hopping OFF, Ch: High



[DSSS and other forms of modulation]

6dB Bandwidth

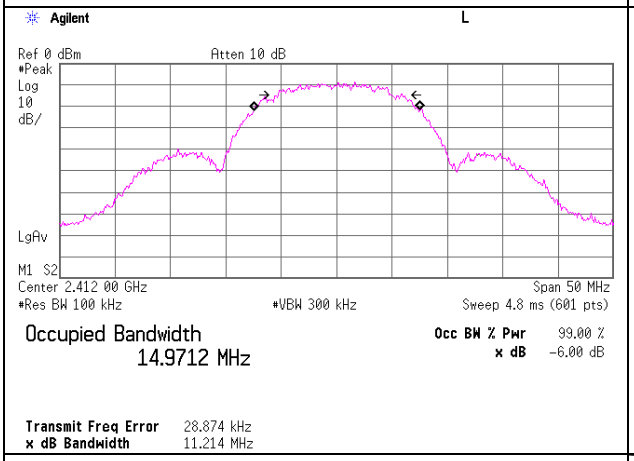
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

Company	: Welcat Inc.	REPORT NO	: 26AE0244-HO
Equipment	: Handy Terminal	REGULATION	: Fcc Part15 Subpart C 15.247(a)(2)
Model	: XIT-100-BW	TEST DISTANCE	: -
Sample No.	: 1	DATE	: 10/14/2005
Power	: DC 3.7V(Battery)	TEMPERATURE	: 22℃
Mode	: Tx (ch1,6,11)	HUMIDITY	: 50%
		ENGINEER	: Takumi Shimada

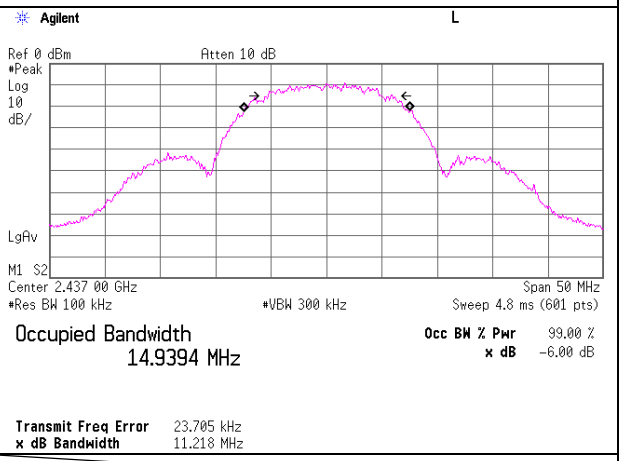
Ch	Freq. [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
Low	2412.0	11.214	500.0
Mid	2437.0	11.218	500.0
High	2462.0	11.235	500.0

6dB Bandwidth

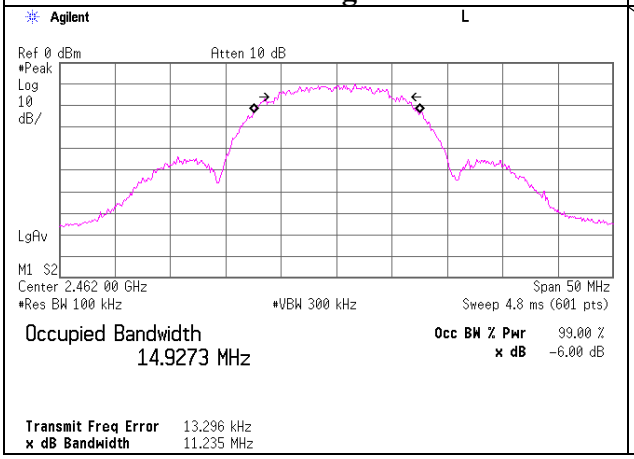
Ch:Low



Ch:Mid



Ch:High



Maximum Peak OutPut Power

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

Company	: Welcat Inc.	REPORT NO	: 26AE0244-HO
Equipment	: Handy Terminal	REGULATION	: Fcc Part15 Subpart C 15.247(b)(3)
Model	: XIT-100-BW	TEST DISTANCE	: -
Sample No.	: 1	DATE	: 10/14/2005
Power	: DC 3.7V(Battery)	TEMPERATURE	: 22℃
Mode	: Tx(ch1,6,11)	HUMIDITY	: 50%
		ENGINEER	: Takumi Shimada

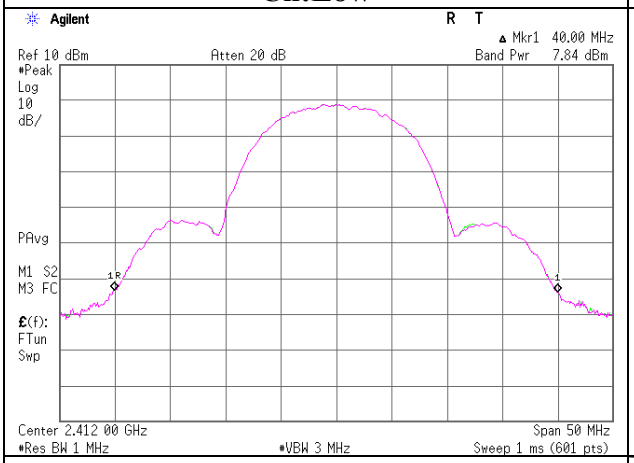
[IEEE802.11b]

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2412.0	7.84	2.47	10.70	21.01	30.00	8.99
Mid	2437.0	7.37	2.49	10.70	20.56	30.00	9.44
High	2462.0	6.63	2.50	10.70	19.83	30.00	10.17

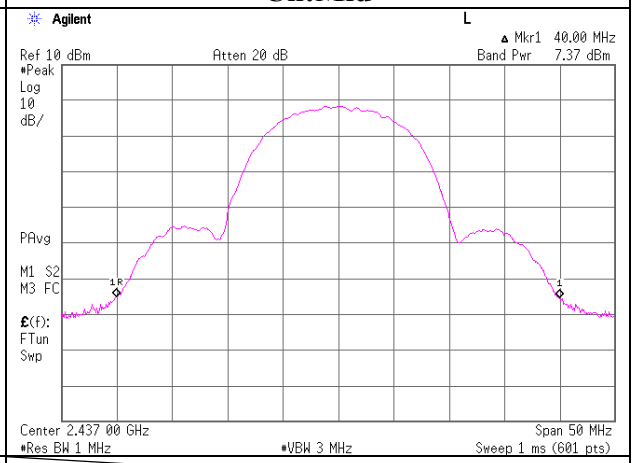
Sample Calculation:
Result = Reading + Cable Loss (supplied by customer) + Attenuator
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

Maximum Peak OutPut Power

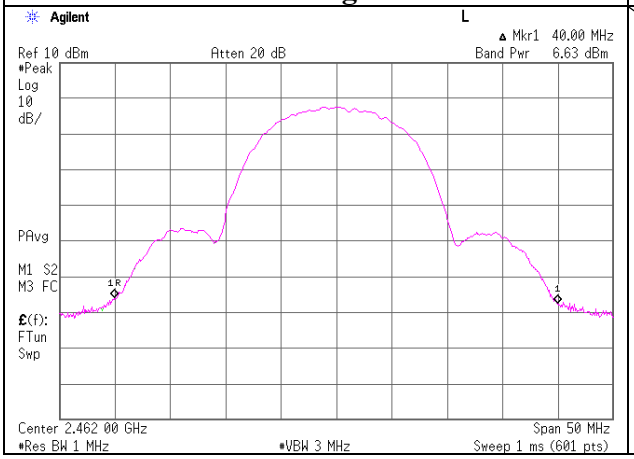
Ch:Low



Ch:Mid



Ch:High



Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

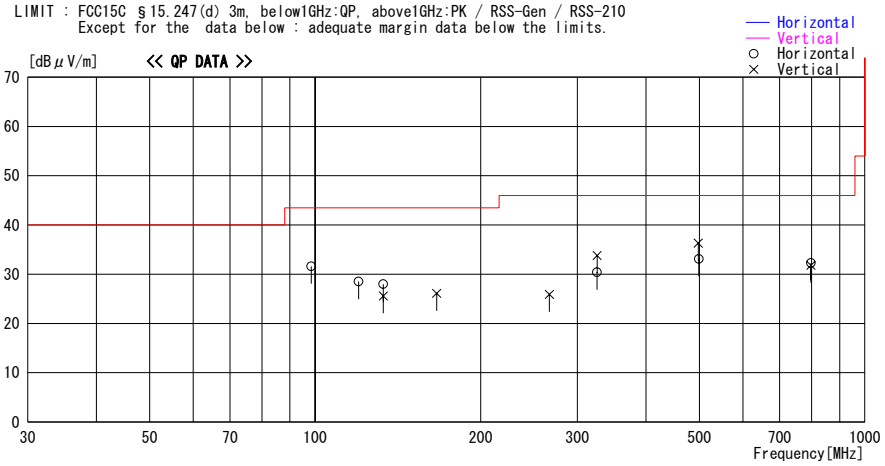
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 02:11:20

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 52%
Operator : Yutaka Yoshida

Mode / Remarks : W-LAN Tx 2412MHz(11b 11Mbps), EUT max-axis(H: Y, V: Z)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
98.308	44.1	QP	9.6	-22.1	31.6	197	267	Hori.	43.5	11.9
120.001	37.8	QP	12.5	-21.8	28.5	182	273	Hori.	43.5	15.0
133.030	33.1	QP	13.7	-21.2	25.6	360	136	Vert.	43.5	17.9
133.031	35.5	QP	13.7	-21.2	28.0	164	159	Hori.	43.5	15.5
166.346	31.8	QP	15.5	-21.2	26.1	164	100	Vert.	43.5	17.4
266.700	28.1	QP	18.2	-20.4	25.9	326	100	Vert.	46.0	20.1
325.674	34.2	QP	15.2	-19.0	30.4	208	103	Hori.	46.0	15.6
325.772	37.6	QP	15.2	-19.0	33.8	219	133	Vert.	46.0	12.2
497.654	38.6	QP	17.8	-20.1	36.3	5	114	Vert.	46.0	9.7
498.986	35.4	QP	17.8	-20.1	33.1	360	115	Hori.	46.0	12.9
797.743	28.3	QP	21.4	-17.9	31.8	360	169	Vert.	46.0	14.2
798.094	28.7	QP	21.4	-17.8	32.3	58	118	Hori.	46.0	13.7

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

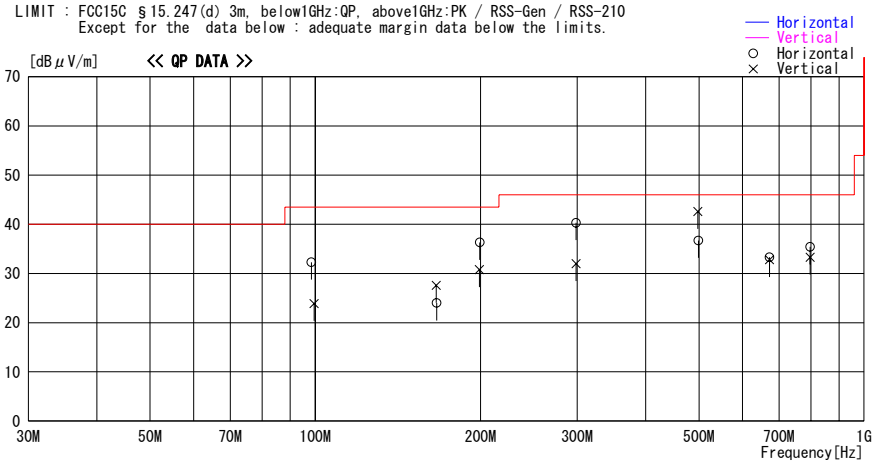
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/28 01:35:29

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 24deg.C / 45%
Operator : Yutaka Yoshida

Mode / Remarks : W-LAN Tx 2437MHz(11b 11Mbps), EUT max-axis(H: Y, V: Z)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
99.528	36.1	QP	9.8	-22.0	23.9	64	100	Vert.	43.5	19.6
98.307	44.8	QP	9.6	-22.1	32.3	191	323	Hori.	43.5	11.2
166.089	33.3	QP	15.5	-21.2	27.6	267	100	Vert.	43.5	15.9
166.415	29.7	QP	15.5	-21.2	24.0	360	268	Hori.	43.5	19.5
199.372	40.2	QP	16.6	-20.5	36.3	209	170	Hori.	43.5	7.2
199.079	34.7	QP	16.6	-20.5	30.8	190	100	Vert.	43.5	12.7
298.618	40.0	QP	20.0	-19.7	40.3	230	100	Hori.	46.0	5.7
298.609	31.7	QP	20.0	-19.7	32.0	309	165	Vert.	46.0	14.0
498.818	39.0	QP	17.8	-20.1	36.7	-1	100	Hori.	46.0	9.3
497.674	44.9	QP	17.8	-20.1	42.6	310	100	Vert.	46.0	3.4
672.118	32.3	QP	20.2	-19.2	33.3	268	226	Hori.	46.0	12.7
672.116	31.8	QP	20.2	-19.2	32.8	168	100	Vert.	46.0	13.2
797.614	31.9	QP	21.4	-17.9	35.4	267	100	Hori.	46.0	10.6
797.645	29.8	QP	21.4	-17.9	33.3	360	100	Vert.	46.0	12.7

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)
Except for the data below : adequate margin data below the limits.

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

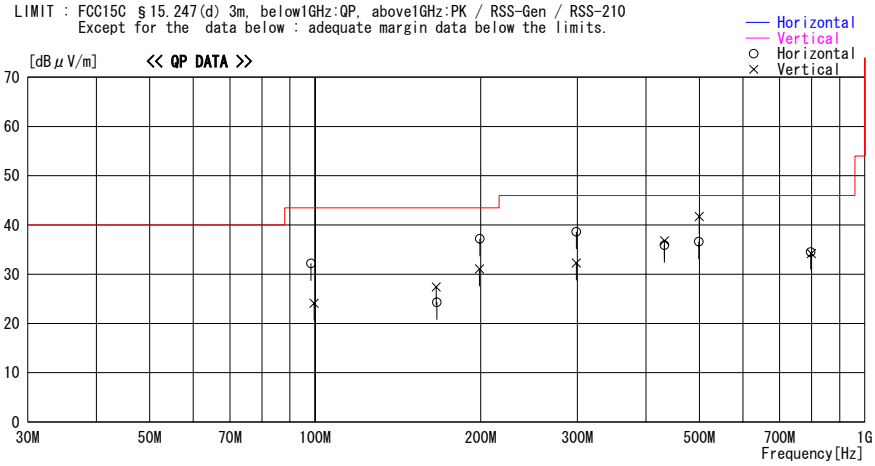
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/28 02:31:31

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 24deg.C / 45%
Operator : Yutaka Yoshida

Mode / Remarks : W-LAN Tx 2462MHz(11b 11Mbps), EUT max-axis(H: Y, V: Z)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
98.305	44.7	QP	9.6	-22.1	32.2	187	318	Hori.	43.5	11.3
99.550	36.3	QP	9.8	-22.0	24.1	66	100	Vert.	43.5	19.4
166.099	33.1	QP	15.5	-21.2	27.4	267	100	Vert.	43.5	16.1
166.479	30.0	QP	15.5	-21.2	24.3	359	259	Hori.	43.5	19.2
199.082	35.0	QP	16.6	-20.5	31.1	182	100	Vert.	43.5	12.4
199.370	41.1	QP	16.6	-20.5	37.2	210	177	Hori.	43.5	6.3
298.624	38.3	QP	20.0	-19.7	38.6	236	100	Hori.	46.0	7.4
298.617	32.0	QP	20.0	-19.7	32.3	298	171	Vert.	46.0	13.7
432.075	38.2	QP	17.8	-20.1	35.9	106	100	Hori.	46.0	10.1
432.075	39.1	QP	17.8	-20.1	36.8	192	113	Vert.	46.0	9.2
499.677	44.0	QP	17.8	-20.1	41.7	313	100	Vert.	46.0	4.3
498.818	38.9	QP	17.8	-20.1	36.6	0	100	Hori.	46.0	9.4
797.610	31.0	QP	21.4	-17.9	34.5	270	100	Hori.	46.0	11.5
799.637	30.6	QP	21.4	-17.8	34.2	12	100	Vert.	46.0	11.8

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)
Except for the data below : adequate margin data below the limits.

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

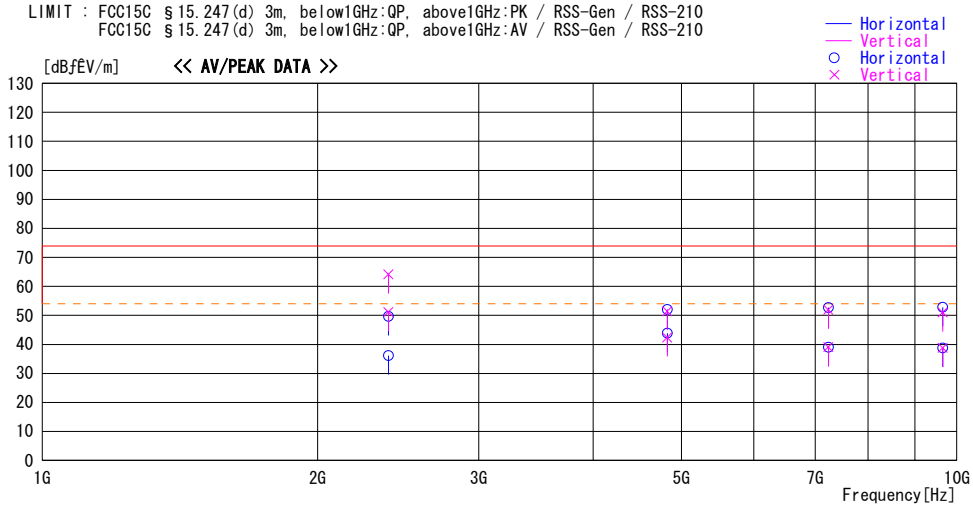
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/20 23:34:10

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Takumi Shimada

Mode / Remarks : W-LAN 11b 11Mbps Tx 2412MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
2390.000	66.6	PK	30.9	-33.3	64.2	Vert.	74.0	9.8
2390.000	52.1	PK	30.9	-33.3	49.7	Hori.	74.0	24.3
2390.000	53.5	AV	30.9	-33.3	51.1	Vert.	54.0	2.9
2390.000	38.6	AV	30.9	-33.3	36.2	Hori.	54.0	17.8
4824.000	47.7	PK	35.0	-30.7	52.0	Hori.	74.0	22.0
4824.000	38.1	AV	35.0	-30.7	42.4	Vert.	54.0	11.6
4824.000	39.5	AV	35.0	-30.7	43.8	Hori.	54.0	10.2
4824.000	47.1	PK	35.0	-30.7	51.4	Vert.	74.0	22.6
7236.000	45.6	PK	37.6	-30.5	52.7	Hori.	74.0	21.3
7236.000	32.0	AV	37.6	-30.5	39.1	Vert.	54.0	15.0
7236.000	31.9	AV	37.6	-30.5	39.0	Hori.	54.0	15.0
7236.000	44.8	PK	37.6	-30.5	51.9	Vert.	74.0	22.1
9648.000	46.7	PK	36.3	-30.1	52.9	Hori.	74.0	21.2
9648.000	32.6	AV	36.3	-30.1	38.8	Vert.	54.0	15.2
9648.000	32.6	AV	36.3	-30.1	38.8	Hori.	54.0	15.2
9648.000	44.8	PK	36.3	-30.1	51.0	Vert.	74.0	23.0

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Welcat Inc.	REPORT NO	: 26AE0244-HO
Equipment	: Handy Terminal	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: XIT-100-BW	TEST DISTANCE	: 3m
Sample No.	: 1	DATE	: 10/20/2005
Power	: DC 3.7V	TEMPERATURE	: 25deg.C
Mode	: W-LAN 11b, Tx 2412MHz	HUMIDITY	: 37%
Remarks	: Horizontal : Y-axis / Vertical : Z-axis	ENGINEER	: Takumi Shimada

20dBc(Fundamental 2412MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	2412.0	104.6	101.2	30.9	36.4	3.2	0.0	102.3	98.9	-	-	-
2	2400.0	65.0	65.0	30.9	36.4	3.1	0.0	62.6	62.6	Funda-20dB	19.7	16.3

*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

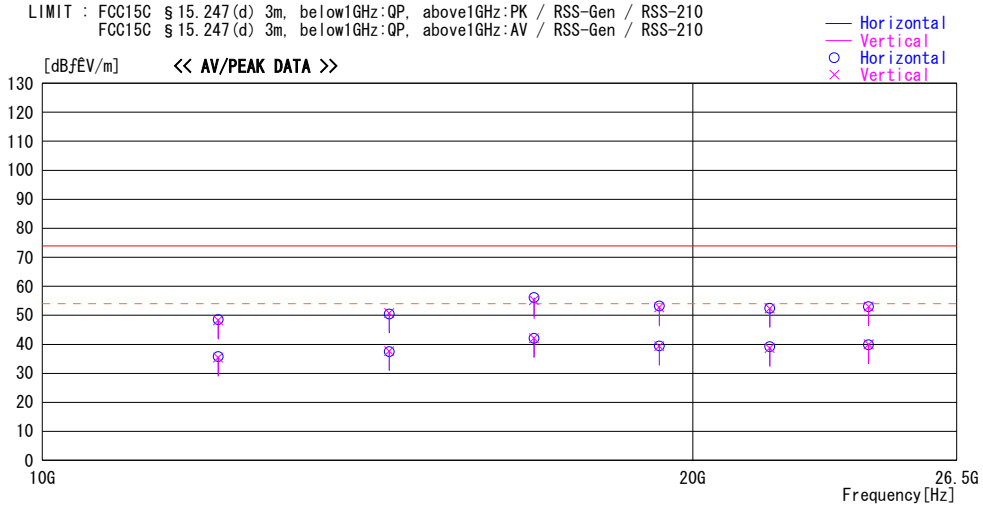
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 02:43:00

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Takumi Shimada

Mode / Remarks : W-LAN 11b 11Mbps Tx 2412MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
12060.000	45.3	PK	41.4	-38.2	48.5	Hori.	74.0	25.5
12060.000	45.0	PK	41.4	-38.2	48.2	Vert.	74.0	25.8
12060.000	32.5	AV	41.4	-38.2	35.7	Hori.	54.0	18.3
12060.000	32.2	AV	41.4	-38.2	35.4	Vert.	54.0	18.6
14472.000	45.1	PK	41.8	-36.4	50.5	Hori.	74.0	23.5
14472.000	45.4	PK	41.8	-36.4	50.8	Vert.	74.0	23.2
14472.000	32.1	AV	41.8	-36.4	37.5	Hori.	54.0	16.5
14472.000	32.3	AV	41.8	-36.4	37.7	Vert.	54.0	16.4
16884.000	46.6	PK	44.6	-35.1	56.1	Hori.	74.0	17.9
16884.000	45.8	PK	44.6	-35.1	55.3	Vert.	74.0	18.7
16884.000	32.5	AV	44.6	-35.1	42.0	Hori.	54.0	12.0
16884.000	32.6	AV	44.6	-35.1	42.1	Vert.	54.0	12.0
19296.000	46.2	PK	41.6	-34.6	53.2	Hori.	74.0	20.8
19296.000	45.8	PK	41.6	-34.6	52.8	Vert.	74.0	21.2
19296.000	32.5	AV	41.6	-34.6	39.5	Hori.	54.0	14.5
19296.000	32.3	AV	41.6	-34.6	39.3	Vert.	54.0	14.7
21708.000	47.0	PK	40.4	-34.9	52.5	Hori.	74.0	21.5
21708.000	46.9	PK	40.4	-34.9	52.4	Vert.	74.0	21.6
21708.000	33.7	AV	40.4	-34.9	39.2	Hori.	54.0	14.8
21708.000	33.3	AV	40.4	-34.9	38.8	Vert.	54.0	15.3
24120.000	47.7	PK	41.0	-35.8	52.9	Hori.	74.0	21.1
24120.000	47.9	PK	41.0	-35.8	53.1	Vert.	74.0	20.9
24120.000	34.7	AV	41.0	-35.8	39.9	Hori.	54.0	14.1
24120.000	34.8	AV	41.0	-35.8	40.0	Vert.	54.0	14.0

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

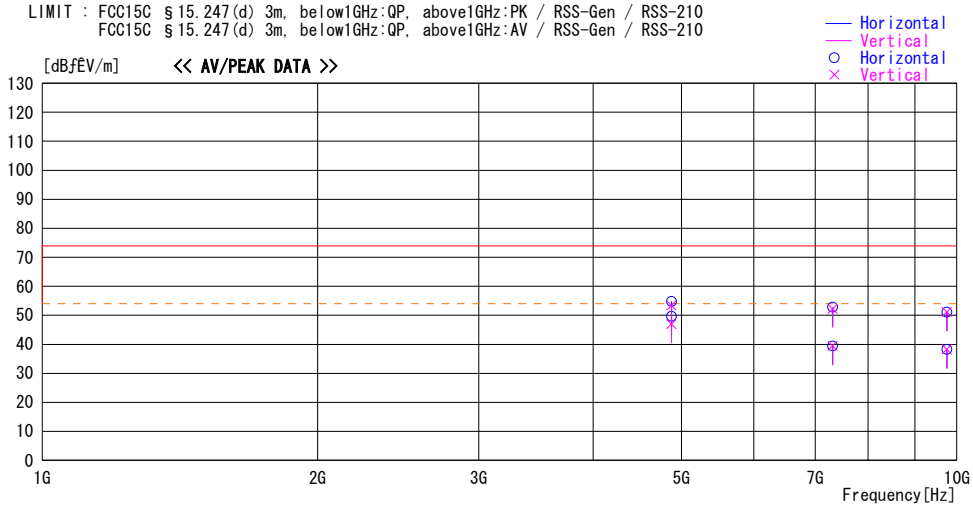
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 00:52:59

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Takumi Shimada

Mode / Remarks : W-LAN 11b 11Mbps Tx 2437MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
4874.000	50.2	PK	35.3	-30.7	54.8	Hori.	74.0	19.2
4874.000	48.8	PK	35.3	-30.7	53.4	Vert.	74.0	20.6
4874.000	45.0	AV	35.3	-30.7	49.6	Hori.	54.0	4.4
4874.000	42.4	AV	35.3	-30.7	47.0	Vert.	54.0	7.0
7311.000	45.4	PK	37.7	-30.3	52.8	Hori.	74.0	21.2
7311.000	44.8	PK	37.7	-30.3	52.2	Vert.	74.0	21.8
7311.000	32.1	AV	37.7	-30.3	39.5	Hori.	54.0	14.5
7311.000	32.0	AV	37.7	-30.3	39.4	Vert.	54.0	14.6
9748.000	45.1	PK	36.2	-30.1	51.2	Hori.	74.0	22.8
9748.000	45.1	PK	36.2	-30.1	51.2	Vert.	74.0	22.8
9748.000	32.2	AV	36.2	-30.1	38.3	Hori.	54.0	15.8
9748.000	32.2	AV	36.2	-30.1	38.3	Vert.	54.0	15.7

CHART:WITH FACTOR ANT TYPE:-30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

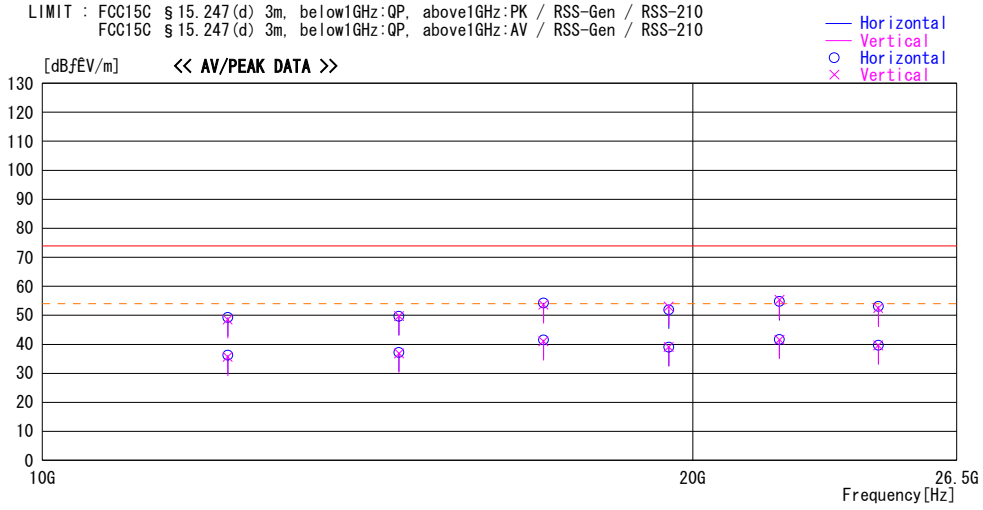
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 02:18:20

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Takumi Shimada

Mode / Remarks : W-LAN 11b 11Mbps Tx 2437MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
12185.000	45.1	PK	41.5	-38.0	48.6	Vert.	74.0	25.4
12185.000	45.8	PK	41.5	-38.0	49.3	Hori.	74.0	24.7
12185.000	32.1	AV	41.5	-38.0	35.6	Vert.	54.0	18.4
12185.000	32.7	AV	41.5	-38.0	36.2	Hori.	54.0	17.8
14622.000	44.5	PK	42.1	-36.9	49.7	Vert.	74.0	24.3
14622.000	44.5	PK	42.1	-36.9	49.7	Hori.	74.0	24.3
14622.000	31.6	AV	42.1	-36.9	36.8	Vert.	54.0	17.2
14622.000	32.0	AV	42.1	-36.9	37.2	Hori.	54.0	16.8
17059.000	44.1	PK	44.6	-35.0	53.7	Vert.	74.0	20.3
17059.000	44.6	PK	44.6	-35.0	54.2	Hori.	74.0	19.8
17059.000	31.4	AV	44.6	-35.0	41.0	Vert.	54.0	13.0
17059.000	32.0	AV	44.6	-35.0	41.6	Hori.	54.0	12.5
19496.000	45.3	PK	41.4	-34.8	51.9	Hori.	74.0	22.1
19496.000	46.4	PK	41.4	-34.8	53.0	Vert.	74.0	21.1
19496.000	32.4	AV	41.4	-34.8	39.0	Hori.	54.0	15.0
19496.000	32.4	AV	41.4	-34.8	39.0	Vert.	54.0	15.0
21933.000	48.7	PK	40.5	-34.4	54.8	Hori.	74.0	19.2
21933.000	49.2	PK	40.5	-34.4	55.3	Vert.	74.0	18.7
21933.000	35.5	AV	40.5	-34.4	41.6	Hori.	54.0	12.4
21933.000	35.5	AV	40.5	-34.4	41.6	Vert.	54.0	12.4
24370.000	47.9	PK	41.1	-35.9	53.1	Hori.	74.0	20.9
24370.000	47.3	PK	41.1	-35.9	52.5	Vert.	74.0	21.5
24370.000	34.5	AV	41.1	-35.9	39.7	Hori.	54.0	14.4
24370.000	34.5	AV	41.1	-35.9	39.7	Vert.	54.0	14.4

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

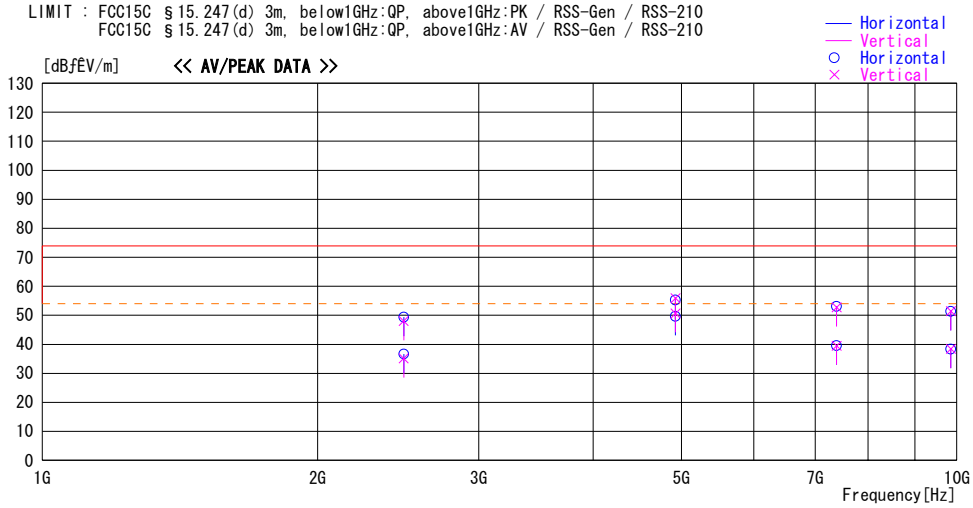
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 01:33:43

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Takumi Shimada

Mode / Remarks : W-LAN 11b 11Mbps Tx 2462MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
2483.500	51.8	PK	30.8	-33.3	49.3	Hori.	74.0	24.7
2483.500	50.5	PK	30.8	-33.3	48.0	Vert.	74.0	26.0
2483.500	39.2	AV	30.8	-33.3	36.7	Hori.	54.0	17.3
2483.500	37.6	AV	30.8	-33.3	35.1	Vert.	54.0	18.9
4924.000	50.4	PK	35.6	-30.6	55.3	Hori.	74.0	18.7
4924.000	50.9	PK	35.6	-30.6	55.9	Vert.	74.0	18.1
4924.000	44.7	AV	35.6	-30.6	49.7	Hori.	54.0	4.4
4924.000	45.7	AV	35.6	-30.6	50.7	Vert.	54.0	3.3
7386.000	45.4	PK	37.8	-30.2	53.0	Hori.	74.0	21.0
7386.000	45.1	PK	37.8	-30.2	52.7	Vert.	74.0	21.3
7386.000	31.9	AV	37.8	-30.2	39.5	Hori.	54.0	14.5
7386.000	31.9	AV	37.8	-30.2	39.5	Vert.	54.0	14.5
9848.000	45.0	PK	36.2	-29.9	51.3	Hori.	74.0	22.7
9848.000	45.1	PK	36.2	-29.9	51.4	Vert.	74.0	22.6
9848.000	32.1	AV	36.2	-29.9	38.4	Hori.	54.0	15.6
9848.000	32.1	AV	36.2	-29.9	38.4	Vert.	54.0	15.6

CHART:WITH FACTOR ANT TYPE:-30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

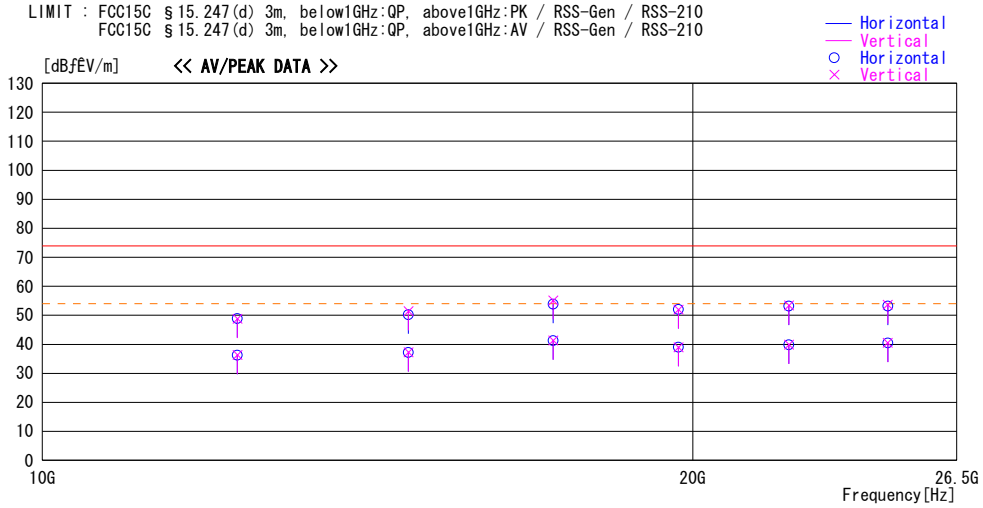
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/10/21 01:59:25

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 25deg.C / 37%
Operator : Takumi Shimada

Mode / Remarks : W-LAN 11b 11Mbps Tx 2462MHz, EUT max-axis(H: Y, V: Z),

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]		[dBuV/m]	[dB]
12310.000	45.1	PK	41.5	-37.8	48.8	Hori.	74.0	25.2
12310.000	45.1	PK	41.5	-37.8	48.8	Vert.	74.0	25.2
12310.000	32.6	AV	41.5	-37.8	36.3	Hori.	54.0	17.7
12310.000	32.6	AV	41.5	-37.8	36.3	Vert.	54.0	17.7
14772.000	46.1	PK	42.4	-37.1	51.4	Vert.	74.0	22.6
14772.000	44.9	PK	42.4	-37.1	50.2	Hori.	74.0	23.8
14772.000	31.9	AV	42.4	-37.1	37.2	Vert.	54.0	16.8
14772.000	31.9	AV	42.4	-37.1	37.2	Hori.	54.0	16.8
17234.000	45.6	PK	44.5	-35.0	55.1	Vert.	74.0	18.9
17234.000	44.4	PK	44.5	-35.0	53.9	Hori.	74.0	20.1
17234.000	31.8	AV	44.5	-35.0	41.3	Vert.	54.0	12.7
17234.000	31.8	AV	44.5	-35.0	41.3	Hori.	54.0	12.7
19696.000	45.9	PK	41.2	-35.1	52.0	Hori.	74.0	22.0
19696.000	45.9	PK	41.2	-35.1	52.0	Vert.	74.0	22.0
19696.000	32.9	AV	41.2	-35.1	39.0	Hori.	54.0	15.0
19696.000	32.9	AV	41.2	-35.1	39.0	Vert.	54.0	15.0
22158.000	47.0	PK	40.5	-34.3	53.2	Hori.	74.0	20.8
22158.000	47.2	PK	40.5	-34.3	53.4	Vert.	74.0	20.6
22158.000	33.6	AV	40.5	-34.3	39.8	Hori.	54.0	14.2
22158.000	33.7	AV	40.5	-34.3	39.9	Vert.	54.0	14.2
24620.000	47.7	PK	41.1	-35.6	53.2	Hori.	74.0	20.8
24620.000	48.2	PK	41.1	-35.6	53.7	Vert.	74.0	20.3
24620.000	35.0	AV	41.1	-35.6	40.5	Hori.	54.0	13.5
24620.000	35.0	AV	41.1	-35.6	40.5	Vert.	54.0	13.5

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Spurious Emission (Radiated /11b, Tx2437MHz+Bluetooth Hopping ON) below 1GHz

DATA OF RADIATED EMISSION TEST

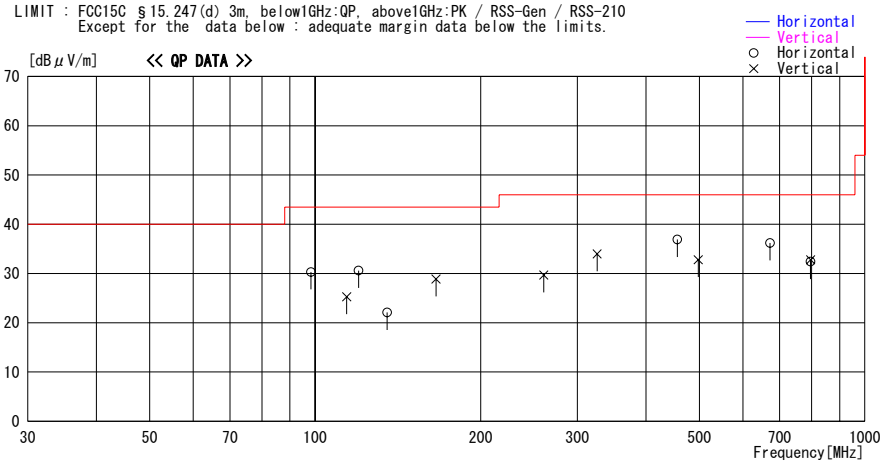
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/10/27 00:59:15

Applicant : Welcat Inc.
Kind of EUT : Handy Terminal
Model No. : XIT-100-BW
Serial No. : 1

Report No. : 26AE0244-HO
Power : DC 3.7V (AC adapter: AC120V/60Hz)
Temp./Humi. : 23deg.C / 52%
Operator : Yutaka Yoshida

Mode / Remarks : BT hopping, WLAN Tx 2437MHz(11b 11Mbps), EUT max-axis(H: Y, V: Z)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
98.305	42.8	QP	9.6	-22.1	30.3	164	276	Hori.	43.5	13.2
114.133	35.4	QP	11.8	-21.9	25.3	230	100	Vert.	43.5	18.2
120.000	39.9	QP	12.5	-21.8	30.6	177	176	Hori.	43.5	12.9
135.173	29.2	QP	13.9	-21.0	22.1	198	198	Hori.	43.5	21.4
165.934	34.7	QP	15.4	-21.2	28.9	237	100	Vert.	43.5	14.6
260.616	32.2	QP	17.8	-20.3	29.7	207	233	Vert.	46.0	16.3
325.772	37.8	QP	15.2	-19.0	34.0	193	182	Vert.	46.0	12.0
456.079	39.0	QP	17.8	-19.9	36.9	358	105	Hori.	46.0	9.1
497.689	35.1	QP	17.8	-20.1	32.8	356	111	Vert.	46.0	13.2
672.116	35.2	QP	20.2	-19.2	36.2	248	119	Hori.	46.0	9.8
796.926	28.9	QP	21.4	-17.9	32.4	264	113	Hori.	46.0	13.6
797.061	29.3	QP	21.4	-17.9	32.8	353	100	Vert.	46.0	13.2

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - GAIN(AMP)

Spurious Emission (Radiated /11b, Tx2437MHz+Bluetooth Hopping ON) above 1GHz

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company	: Welcat Inc.	REPORT NO	: 26AE0244-HO
Equipment	: Handy Terminal	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: XIT-100-BW	TEST DISTANCE	: 3/1m
Sample No.	: 1	DATE	: October 26, 2005
Power	: DC3.7V(AC adapter:AC120V / 60Hz)	TEMPERATURE	: 23 deg.C
Mode	: 11b, 11Mbps, PN9, Tx 2437MHz +Bluetooth Hopping ON	HUMIDITY	: 52 %
		ENGINEER	: Yutaka Yoshida

PK DETECT (RBW: 1MHz , VBW:1MHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	4874.0	48.8	48.2	35.6	36.0	5.4	0.8	54.6	54.0	74.0	19.4	20.0
2	7311.0	40.6	40.3	37.9	36.0	6.7	0.3	49.5	49.2	74.0	24.5	24.8
3	9748.0	39.7	40.5	36.8	36.4	8.1	0.6	48.8	49.6	74.0	25.2	24.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
4	12185.0	39.5	39.4	41.6	36.0	8.2	0.0	43.8	43.7	74.0	30.2	30.3
5	14622.0	38.5	38.9	42.1	35.1	8.5	0.0	44.5	44.9	74.0	29.5	29.1
6	17059.0	40.8	40.6	45.3	34.9	9.3	0.0	51.0	50.8	74.0	23.0	23.2
7	19496.0	40.3	41.0	40.3	34.3	10.4	0.0	47.2	47.9	74.0	26.8	26.1
8	21933.0	41.2	41.8	39.8	34.2	9.8	0.0	47.1	47.7	74.0	26.9	26.3
9	24370.0	43.0	42.5	40.4	35.7	11.7	0.0	49.9	49.4	74.0	24.1	24.6

AV DETECT (RBW: 1MHz , VBW:10Hz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	4874.0	44.1	43.3	35.6	36.0	5.4	0.8	49.9	49.1	54.0	4.1	4.9
2	7311.0	28.4	28.4	37.9	36.0	6.7	0.3	37.3	37.3	54.0	16.7	16.7
3	9748.0	28.6	28.6	36.8	36.4	8.1	0.6	37.7	37.7	54.0	16.3	16.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
4	12185.0	26.5	26.5	41.6	36.0	8.2	0.0	30.8	30.8	54.0	23.2	23.2
5	14622.0	26.0	26.0	42.1	35.1	8.5	0.0	32.0	32.0	54.0	22.0	22.0
6	17059.0	27.3	27.4	45.3	34.9	9.3	0.0	37.5	37.6	54.0	16.5	16.4
7	19496.0	27.7	27.7	40.3	34.3	10.4	0.0	34.6	34.6	54.0	19.4	19.4
8	21933.0	28.7	28.7	39.8	34.2	9.8	0.0	34.6	34.6	54.0	19.4	19.4
9	24370.0	29.9	29.9	40.4	35.7	11.7	0.0	36.8	36.8	54.0	17.2	17.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.

*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

Spurious Emission (Radiated /11b/g +Bluetooth Hopping ON:Band Edge)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company : Welcat Inc.
Equipment : Handy Terminal
Model : XIT-100-BW
Sample No. : 1
Power : DC3.7V(AC adapter:AC120V / 60Hz)

REPORT NO : 26AE0244-HO
REGULATION : Fcc Part15 Subpart C 15.247(d)
TEST DISTANCE : 3/1m
DATE : October 26, 2005
TEMPERATURE : 23 deg.C
HUMIDITY : 52 %
ENGINEER : Yutaka Yoshida

Mode : 11b, 11Mbps, PN9, Tx 2412MHz + Bluetooth Hopping ON

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER		HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
PK DETECT			(RBW: 1MHz , VBW:1MHz)									
1	2390.0	52.8	50.1	30.5	36.4	3.7	0.0	50.6	47.9	74.0	23.4	26.1
AV DETECT			(RBW: 1MHz , VBW:10Hz)									
1	2390.0	38.5	36.7	30.5	36.4	3.7	0.0	36.3	34.5	54.0	17.7	19.5
20dBc(Fundamental 2412MHz)				(RBW: 100kHz , VBW:300kHz)								
1	2412.0	104.1	102.2	30.5	36.4	3.8	0.0	102.0	100.1	-	-	-
2	2400.0	64.9	62.1	30.5	36.4	3.7	0.0	62.7	59.9	Funda-20dB	19.3	20.2

Mode : 11b, 11Mbps, PN9, Tx 2462MHz + Bluetooth Hopping ON

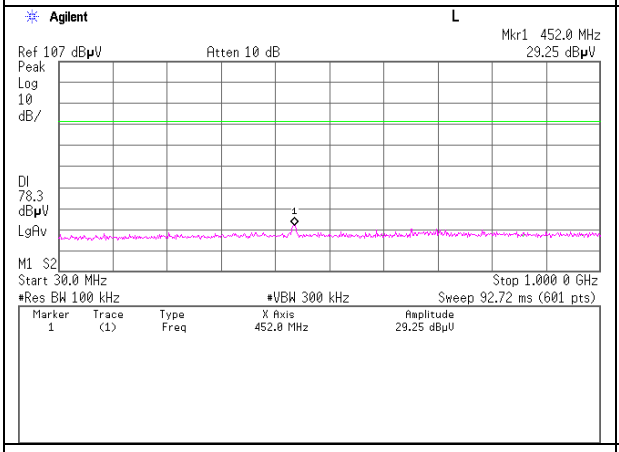
No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER		HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
PK DETECT			(RBW: 1MHz , VBW:1MHz)									
1	2483.5	51.6	50.2	30.5	36.4	3.7	0.0	49.4	48.0	74.0	24.6	26.0
AV DETECT			(RBW: 1MHz , VBW:10Hz)									
1	2483.5	37.7	36.8	30.5	36.4	3.7	0.0	35.5	34.6	54.0	18.5	19.4

Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

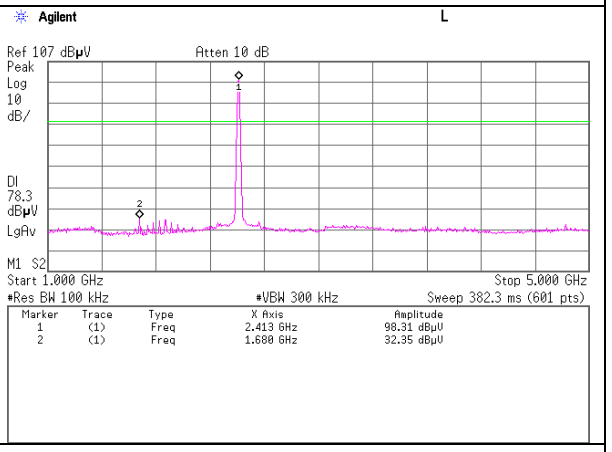
Conducted Spurious Emission

Ch : Low

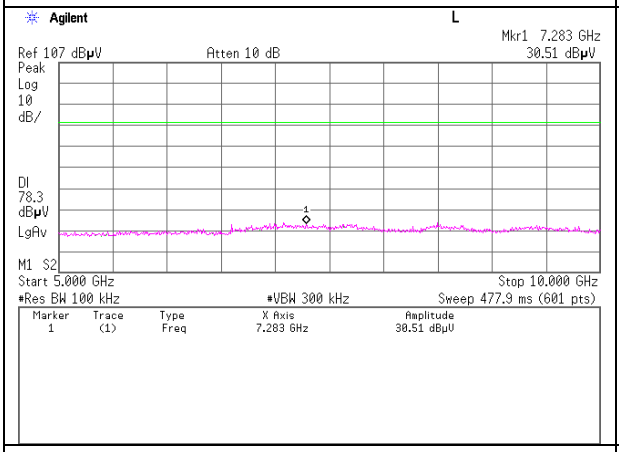
30MHz-1GHz



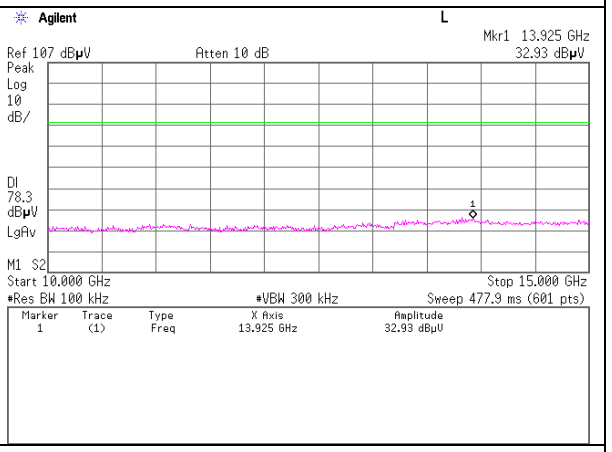
1GHz-5GHz



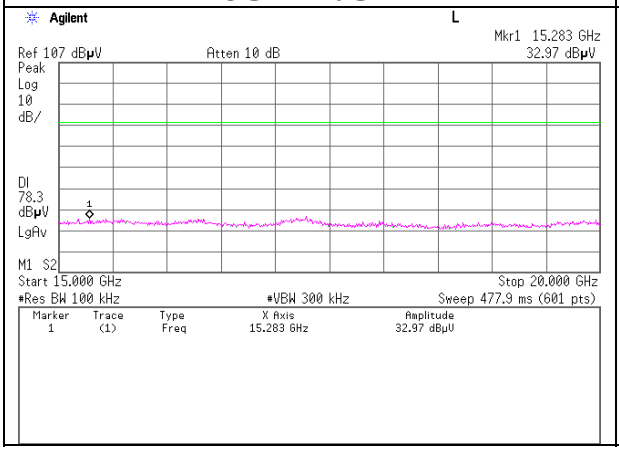
5GHz-10GHz



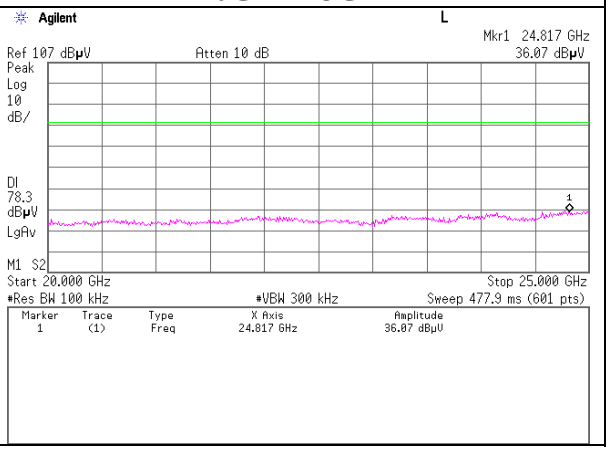
10GHz-15GHz



15GHz-20GHz



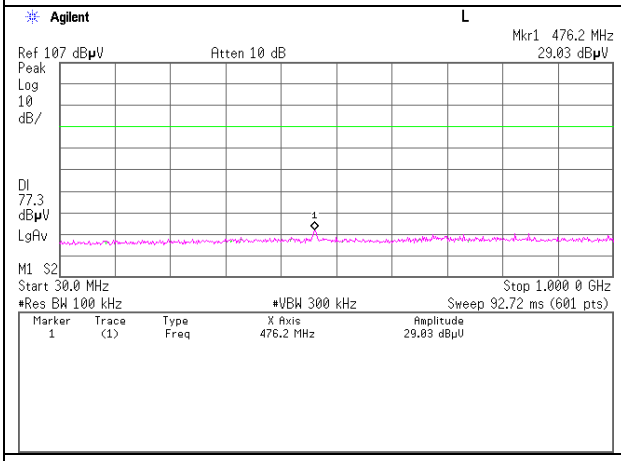
20GHz-25GHz



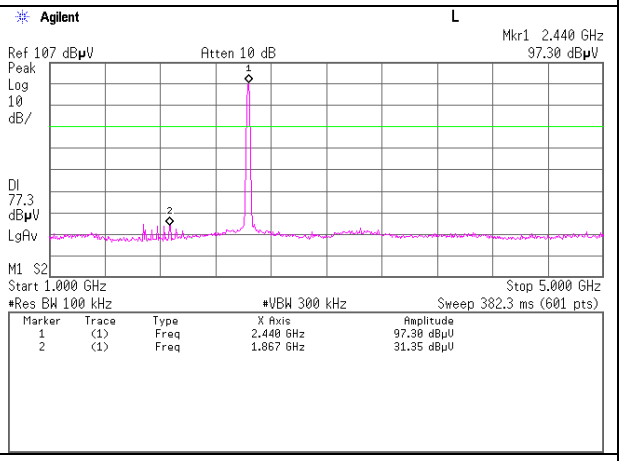
Conducted Spurious Emission

Ch : Mid

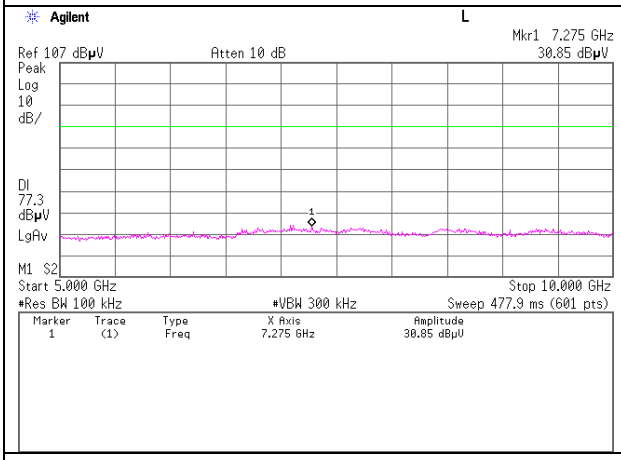
30MHz-1GHz



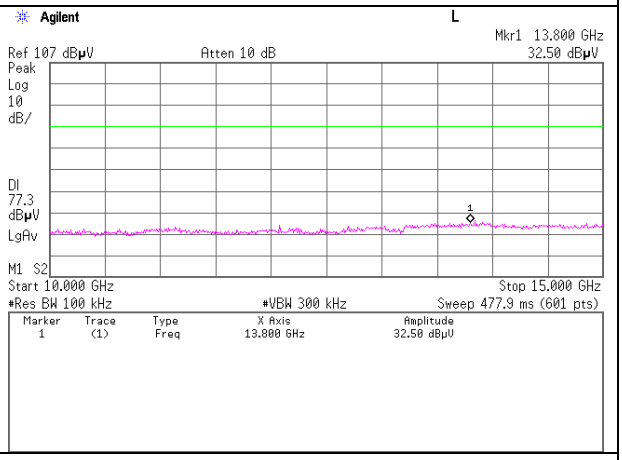
1GHz-5GHz



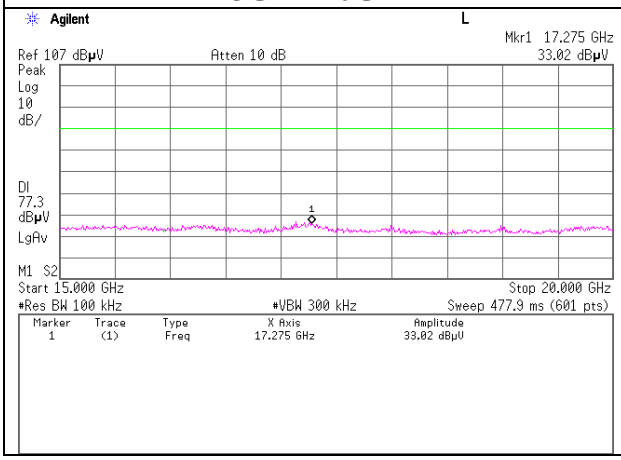
5GHz-10GHz



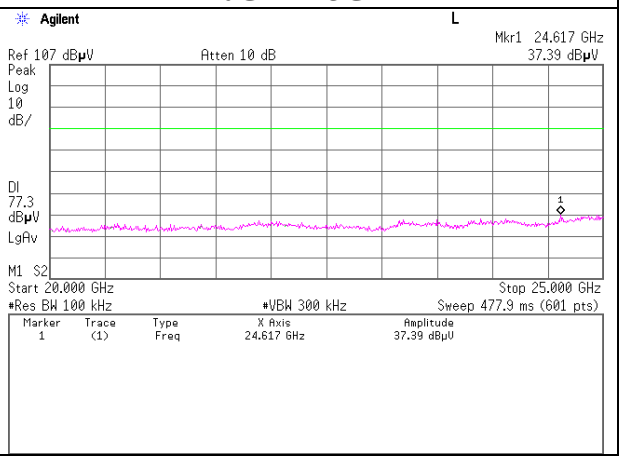
10GHz-15GHz



15GHz-20GHz



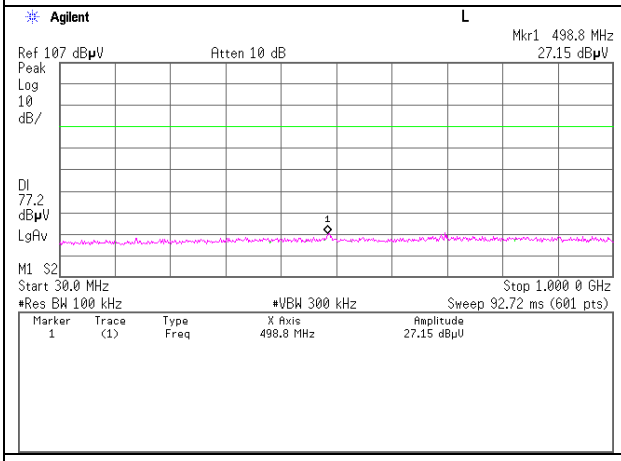
20GHz-25GHz



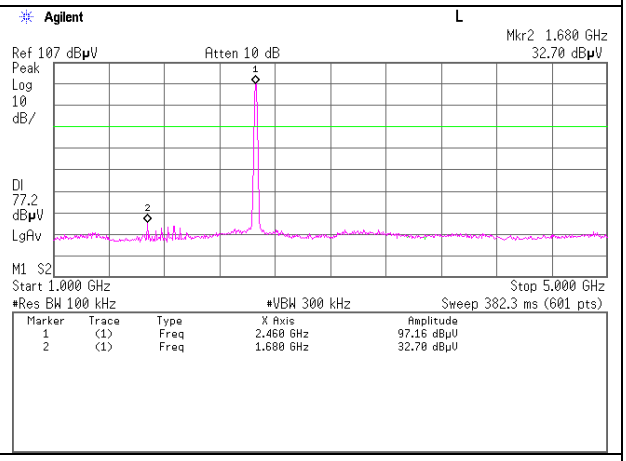
Conducted Spurious Emission

Ch : High

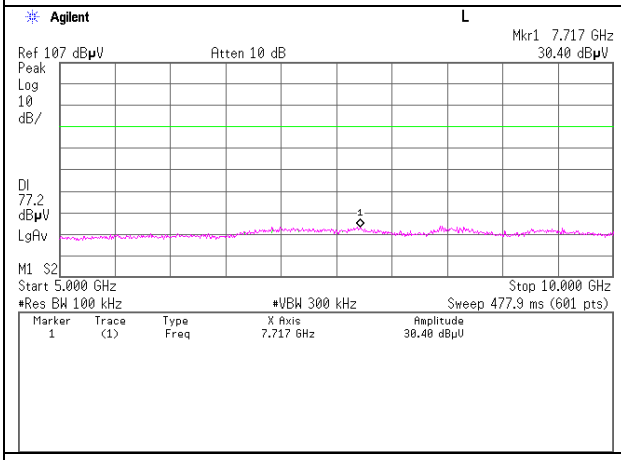
30MHz-1GHz



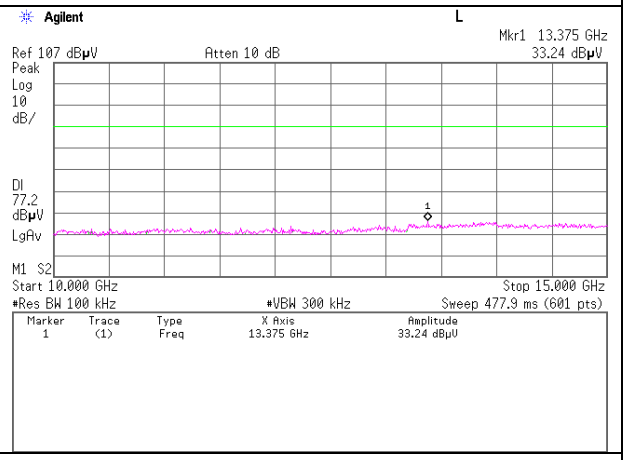
1GHz-5GHz



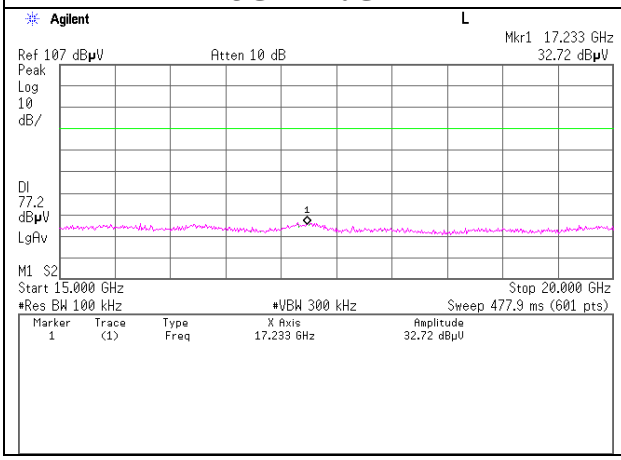
5GHz-10GHz



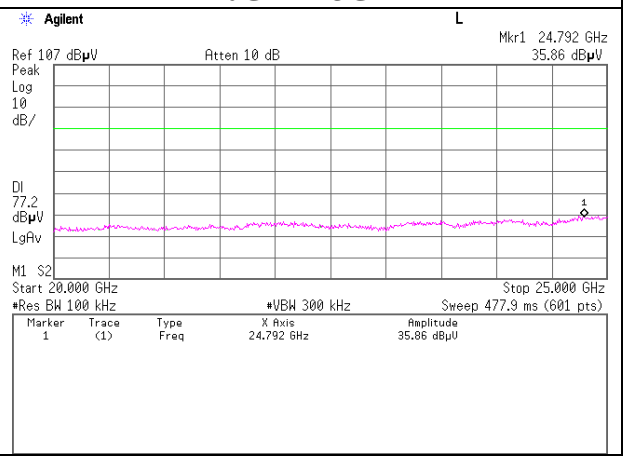
10GHz-15GHz



15GHz-20GHz

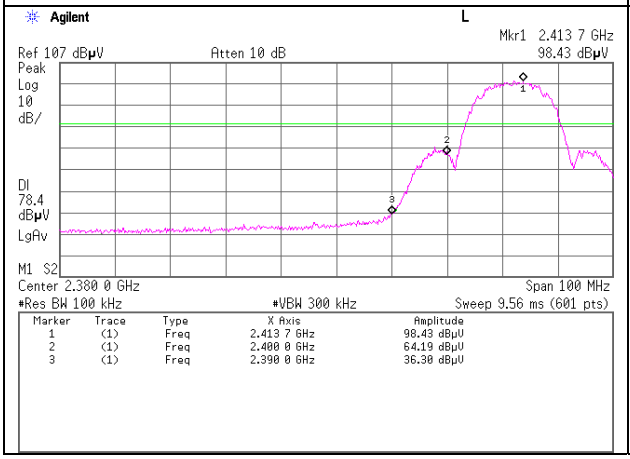


20GHz-25GHz

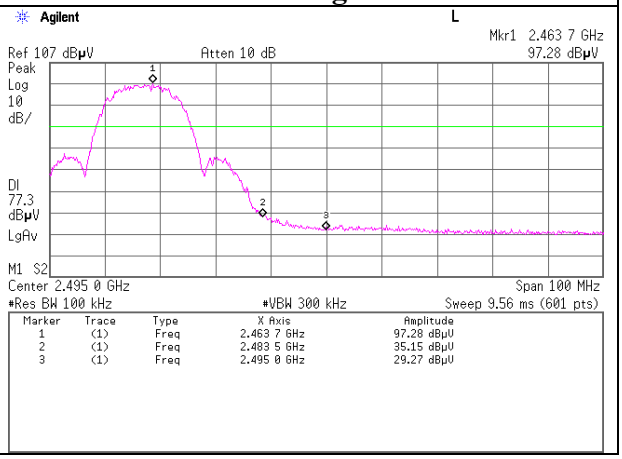


Conducted Band Edge compliance

Ch:Low



Ch:High



Power Density

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Welcat Inc.	REGULATION	: FCC Part15 Subpart C 15.247(e)
QUIPMENT	: Handy Terminal	TEST DISTANCE	: -
MODEL	: XIT-100-BW	DATE	: 10/14/2005
SAMPLE NO.	: 1	TEMPERATURE	: 22℃
POWER	: DC 3.7V(Battery)	HUMIDITY	: 50%
MODE	: Tx (ch1,6,11)	ENGINEER	: Takumi Shimada

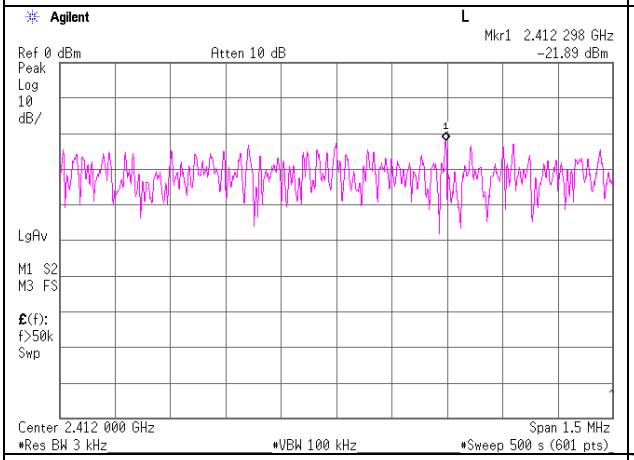
[IEEE802.11b]

Ch	Freq. [MHz]	Reading [dBm]	Cable [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2412.0	-21.89	2.47	10.70	-8.72	8.00	16.72
Mid	2437.0	-21.07	2.49	10.70	-7.88	8.00	15.88
High	2462.0	-23.34	2.50	10.70	-10.14	8.00	18.14

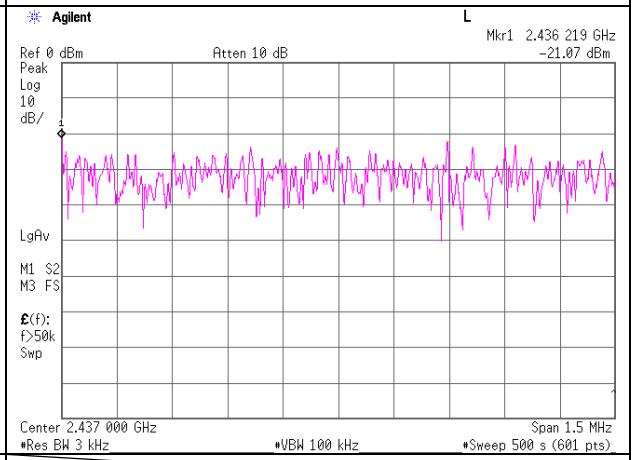
Sample Calculation:
Result = Reading + Cable Loss (spplied by customer) + Attenuator

Power Density

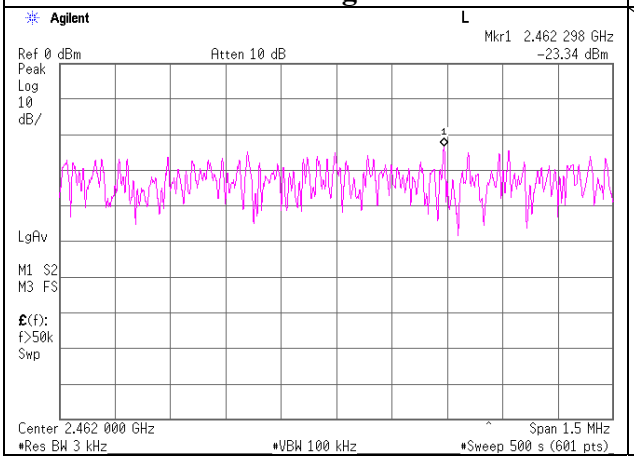
Ch:Low



Ch:Mid

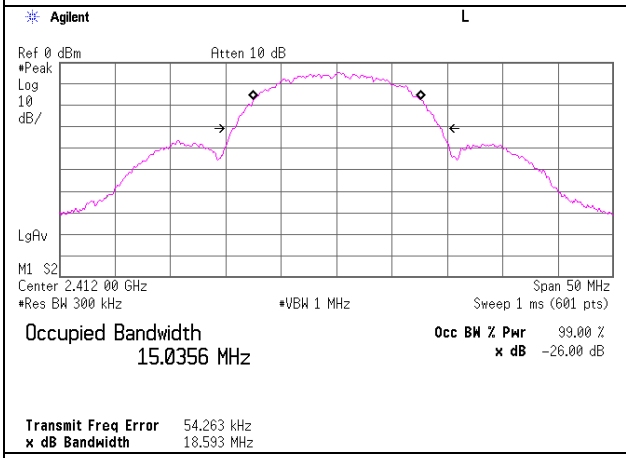


Ch:High

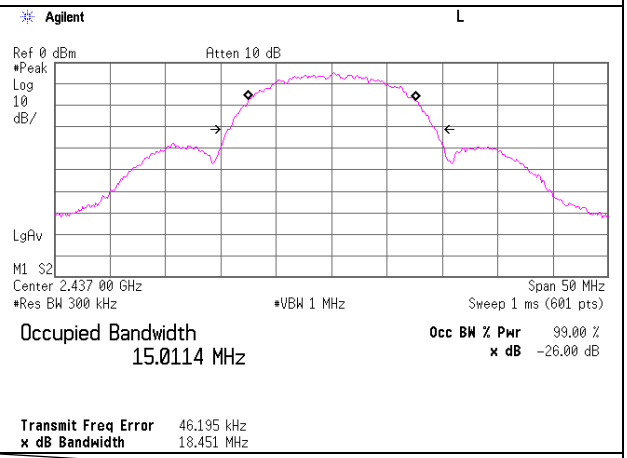


99%Occupied Bandwidth

Ch:Low



Ch:Mid



Ch:High