TEST RESULT SUMMARY

FCC Part 15 Subpart C Section 15.235
FCC Part 15 Subpart C Section 15.207
Industry Canada RSS-310 Issue 1
Industry Canada RSS-Gen Issue 1

MANUFACTURER'S NAME	Comlink Products, L.L.C.
NAME OF EQUIPMENT	Comlink Room Monitor with integral antenna Comlink Room Monitor with external antenna
MODEL NUMBER(S) TESTED	CLP-BMT1 CLP-BMT2
MANUFACTURER'S ADDRESS	1900 Annapolis Ln Plymouth MN 55441
TEST REPORT NUMBER	WC605021
TEST DATE(S)	4 Aug, 15 Aug, & 7 Sep, 2006

According to testing performed at TÜV America Inc, the above-mentioned unit is in compliance with the applicable electromagnetic compatibility (EMC) portions of the requirements defined in FCC Part 15 Subpart C Sections 15.235 and 15.207 and IC RSS-310 Issue 1 and RSS-Gen Issue 1.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

TÜV America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the applicable EMC requirements of FCC Part 15 Subpart C *"Intentional radiators"* Sections 15.235 *"Operation within the band 49.82–49.90 MHz."* and 15.207 *"Conducted limits"* and IC RSS-310 Issue 1 *"Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category II Equipment"* and RSS-Gen *"General Requirements and Information for the Certification of Radiocommunication Equipment"*

Date: 13 September 2006

Location: Taylors Falls MN USA

Ross Johnson & Joe Sausen
EMC Technicians

Joel Schneider
Senior EMC Engineer

Not Transferable

EMC TEST REPORT

Test Report File No.	:	**WC605021**	Date of issue:	13 September 2006

Model / Serial No(s) Tested	:	CLP-BMT1 / --- CLP-BMT2 / ---
Product Type	:	Room monitor with integral antenna Room monitor with external antenna
Applicant	:	Comlink Products, L.L.C.
Manufacturer	:	Comlink Products, L.L.C.
License holder	:	Comlink Products, L.L.C.
Address	:	1900 Annapolis Ln Plymouth MN 55441
Test Result	:	■ **Positive** ☐ **Negative**
Test Project Number References	:	**WC605021**
Total pages including Appendices	:	**39**

TÜV America Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV America Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV America Inc issued reports.

TÜV America Inc and its professional staff hold government and professional organization certifications and are members of AAMI, ACIL, AEA, ANSI, IEEE, NARTE, and VCCI.

D I R E C T O R Y

Sign Explanations:
☐ - not applicable
■ - applicable

EMC TEST REGULATIONS:

The tests were performed according to the following regulations :

☐ - EN 55014-2: 1997 + Amendment A1: 2001 - Category __
☐ - EN 55024: 1998 + Amendments A1: 2001 + A2: 2003
☐ - EN 60601-1-2: 2001
☐ - EN 61000-6-1: 2001
☐ - EN 61000-6-2: 2001
☐ - EN 61326: 1997 + Amendments A1: 1998 + A2: 2001 + A3: 2003
☐ - EN 61800-3: 1996 + Amendment A11: 2000
☐ - ETS 300 683: 1997
☐ - ETSI EN 301 489-3 V1.4.1: 2002
☐ - EN 300 330-2 V1.1.1 (2001-06)
■ - FCC Part 15 Subpart C Section 15.235
☐ - FCC Part 15 Subpart C Section 15.207
■ - IC RSS-310 Issue 1
■ - IC RSS-Gen Issue 1
☐ - IC RSS-Gen Issue 1

ENVIRONMENTAL CONDITIONS IN THE LAB

	Actual
Temperature	: 20 - 24 °C
Atmospheric pressure	: 98 kPa
Relative Humidity	: 40 - 45 %

POWER SUPPLY UTILIZED

Power supply system	: 110V, 60Hz

Field strength within band
FCC 15.235(a), IC RSS-310 3.8

Test summary
The requirements are: ■ - MET ☐ - NOT MET
Minimum margin of compliance = 0.22 dB at 49.859 MHz
Peak measurements are within 20 dB of average measurements

Test location
■ - Wild River Lab Large Test Site (Open Area Test Site)
■ - Wild River Lab Small Test Site (Open Area Test Site)

Test Distance
■ - 3 meters
☐ - 10 meters

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
3995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	31-Mar-07
2665	ZHL-1042J	Mini-Circuits	Preamplifier 30 - 5000 MHz	32296	Code B
2679	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00550	23-Nov-06
8052	8566B	Hewlett-Packard	Spectrum Analyzer	2115A00853	28-Mar-07
8051	85662A	Hewlett-Packard	Analyzer Display	2112A02220	28-Mar-07
3204	EM-6917B	Electro-Metrics	Biconicalog Periodic	102	19-Oct-06
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	12 May 07
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	12 May 07
2684	85650A	Hewlett-Packard	Quasi-Peak Adapter	2521A01006	15 Mar 07
3800	ESCS 30	Rohde & Schwarz	EMI Receiver	100312	07-Jul 07
2535	ESVS-20	Rhode & Schwarz	EMI Receiver	830350/004	26-Jun-07

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limit
10000 μV/m or 80 dBμV/m

Test data
Pages 5 - 6

RADIATED EMISSIONS

Test Report #:	WC604754 Run 1	Test Area:	LTS		
EUT Model #:	CLT-BMT1	Date:	8/15/2006		
EUT Serial #:	N/A	EUT Power:	60Hz/120VAC	Temperature:	20.0 °C
Test Method:	FCC 15-C			Air Pressure:	98.0 kPa
Customer:	COMLINK			Rel. Humidity:	40.0 %
EUT Description:	ROOM MONITOR				
Notes:	NO ACCESSORY CABLE ATTACHED				
Data File Name:	4754.dat			Page:	1 of 1

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	LIMIT (dBµV/m) 3m	DELTA (dB)
49.859 MHz	92.2 Av	1.08 / 13.93 / 28.14 / 0.0	-79.07	V / 1.00 / 0	80	-0.93
49.859 MHz	92.3 Pk	1.08 / 13.93 / 28.14 / 0.0	79.17	V / 1.00 / 0	80	-0.83
NO FURTHER EMISSIONS DETECTED WITH V OR H POLARIZATIONS AT ALL AZIMUTHS.						
TOTAL RESISTANCE FOR R10 = 62 OHMS.						
49.859 MHz	92.68 Av	1.08 / 13.93 / 28.14 / 0.0	79.55	V / 1.00 / 0	80	-0.45
END OF SCAN 30 - 4900MHz.						

Tested by: Ross Johnson

Printed | Signature

Reviewed by: Greg Jakubowski

Printed | Signature

RADIATED EMISSIONS

Test Report #:	WC605021 Run 1	Test Area:	STS		
EUT Model #:	CLP-BMT2	Date:	9/7/2006		
EUT Serial #:		EUT Power:	60 Hz / 110 VAC	Temperature:	24.0 °C
Test Method:	FCC Part 15 C Sect 15.235			Air Pressure:	98.0 kPa
Customer:	ComLink Products, LLC			Rel. Humidity:	45.0 %
EUT Description:	49 MHz transmitter / room monitor				
Notes:	R10 adjusted to max permitted trx output level. ComLink Rev 4. C w/ Ext antenna				
Data File Name:	5021.dat			Page:	1 of 1

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	LIMIT (dBµV/m) 3m	DELTA (dB)
Without speaker cable:						
EUT transmitter level maxed. EUT roataion and receive and antenna ht maxed:						
49.859 MHz	92.91 Av	1.08 / 13.93 / 28.14 / 0.0	79.78	V / 1.00 / 350	80	-0.22
49.859 MHz	92.72 Pk	1.08 / 13.93 / 28.14 / 0.0	79.59	V / 1.00 / 350	80	-0.41
No harmonics or spurious emissions detected 30 MHz to 1000 MHz, vert and hor ant.						
49.859 MHz	72.42 Av	1.08 / 13.93 / 28.14 / 0.0	59.29	H / 1.00 / 0	80	-20.71
49.859 MHz	72.6 Pk	1.08 / 13.93 / 28.14 / 0.0	59.47	H / 1.00 / 0	80	-20.53
With speaker cable:						
49.859 MHz	61.48 Av	1.08 / 13.93 / 28.14 / 0.0	48.35	H / 1.00 / 0	80	-31.65
49.859 MHz	61.82 Pk	1.08 / 13.93 / 28.14 / 0.0	48.69	H / 1.00 / 0	80	-31.31
49.859 MHz	70.8 Av	1.08 / 13.93 / 28.14 / 0.0	57.67	V / 1.00 / 0	80	-22.33
49.859 MHz	70.9 Pk	1.08 / 13.93 / 28.14 / 0.0	57.77	V / 1.00 / 0	80	-22.23
No harmonics or spurious emissions detected 30 MHz to 1000 MHz, vert and hor ant.						

Tested by: J. C. Sausen — Printed — Signature

Reviewed by: Greg Jakubowski — Printed — Signature

Band edges, 49.81 - 49.82 MHz and 49.90 - 49.91 MHz
FCC 15.235(b), IC RSS-310 3.8

Test summary
The requirements are: ■ - MET ☐ - NOT MET
Minimum margin of compliance > 26 dB

Test location
☐ - Wild River Lab Large Test Site (Open Area Test Site)
■ - Wild River Lab Small Test Site (Open Area Test Site)

Test Distance
■ - 3 meters
☐ - 10 meters

Test equipment

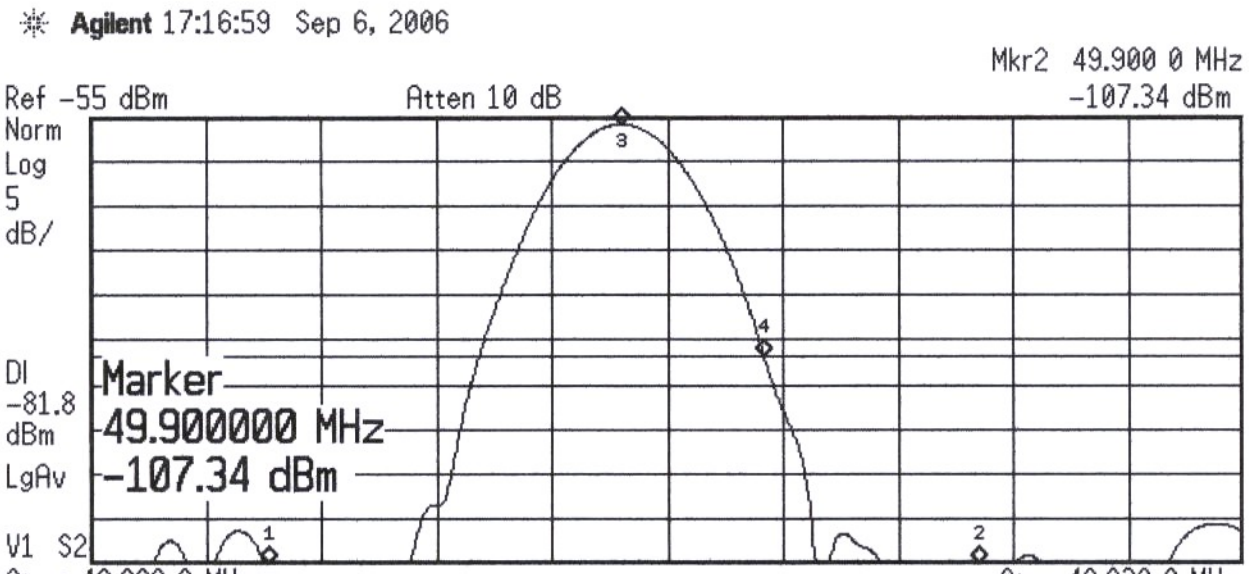
TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
3995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	31-Mar-07
3371	E4440A	Agilent	Spectrum Analyzer	MY43362222	03 Nov 06

Test limit
-26 dBc or FCC 15.209 limits;

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

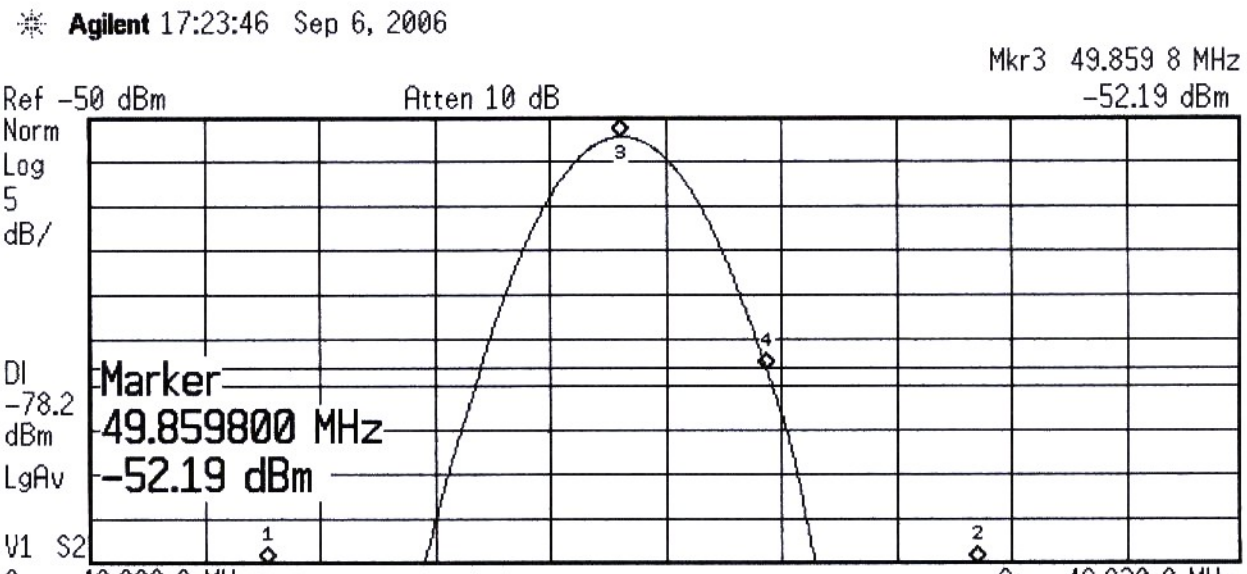
whichever permits the higher emission levels

Test data
Pages 8 - 9



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	49.820 0 MHz	-107.63 dBm
2	(1)	Freq	49.900 0 MHz	-107.34 dBm
3	(1)	Freq	49.859 8 MHz	-55.83 dBm
4	(1)	Freq	49.875 8 MHz	-81.78 dBm

Bandedge Plot m/N CLP-BMT1 Int. Ant.



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	49.820 0 MHz	-110.71 dBm
2	(1)	Freq	49.900 0 MHz	-107.83 dBm
3	(1)	Freq	49.859 8 MHz	-52.19 dBm
4	(1)	Freq	49.876 3 MHz	-78.38 dBm

Bandedge Plot m/n CLP-BMT2 Ext. Ant.

Emissions > 10 kHz from band edges
FCC 15.235(b), IC RSS-310 3.8

Test summary
The requirements are: ■ - MET ☐ - NOT MET
Minimum margin of compliance is > 10 dB
No significant emissions detected

Test location
■ - Wild River Lab Large Test Site (Open Area Test Site)
■ - Wild River Lab Small Test Site (Open Area Test Site)

Test Distance
■ - 3 meters
☐ - 10 meters

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
3995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	31-Mar-07
2665	ZHL-1042J	Mini-Circuits	Preamplifier 30 - 5000 MHz	32296	Code B
2679	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00550	23-Nov-06
8052	8566B	Hewlett-Packard	Spectrum Analyzer	2115A00853	28-Mar-07
8051	85662A	Hewlett-Packard	Analyzer Display	2112A02220	28-Mar-07
3204	EM-6917B	Electro-Metrics	Biconicalog Periodic	102	19-Oct-06
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	12 May 07
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	12 May 07
2684	85650A	Hewlett-Packard	Quasi-Peak Adapter	2521A01006	15 Mar 07

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limit

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

Test data
Pages 5 - 6

Occupied Bandwidth
IC RSS-Gen 4.4.1

Test summary
The requirements are: ■ - MET ☐ - NOT MET
Maximum occupied bandwidth = 130 kHz

Test location
☐ - Wild River Lab Large Test Site (Open Area Test Site)
■ - Wild River Lab Small Test Site (Open Area Test Site)

Test Distance
■ - 3 meters
☐ - 10 meters

Test equipment

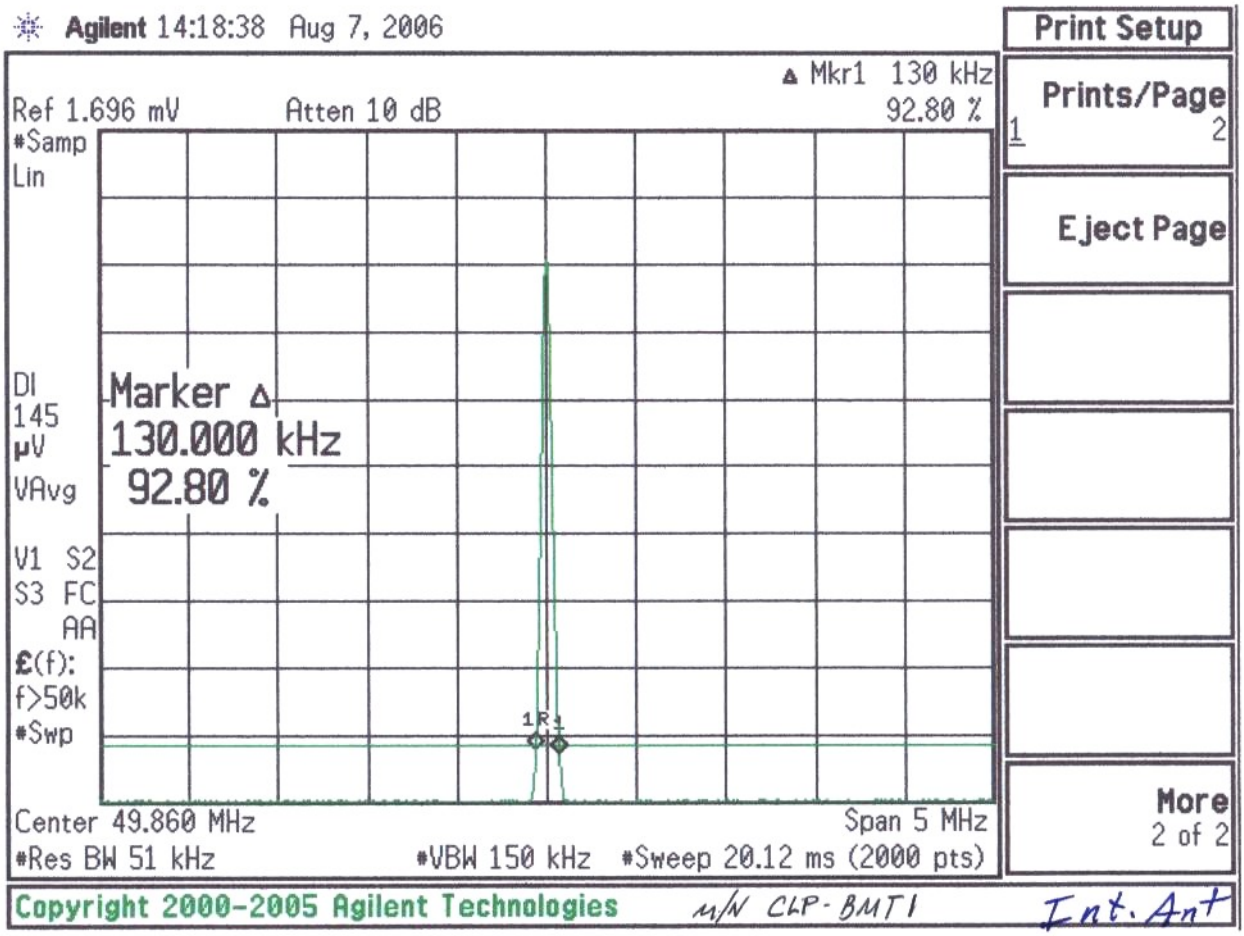
TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
3995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	31-Mar-07
2665	ZHL-1042J	Mini-Circuits	Preamplifier 30 - 5000 MHz	32296	Code B
2679	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00550	23-Nov-06
8052	8566B	Hewlett-Packard	Spectrum Analyzer	2115A00853	28-Mar-07
8051	85662A	Hewlett-Packard	Analyzer Display	2112A02220	28-Mar-07

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limit
No limit specified

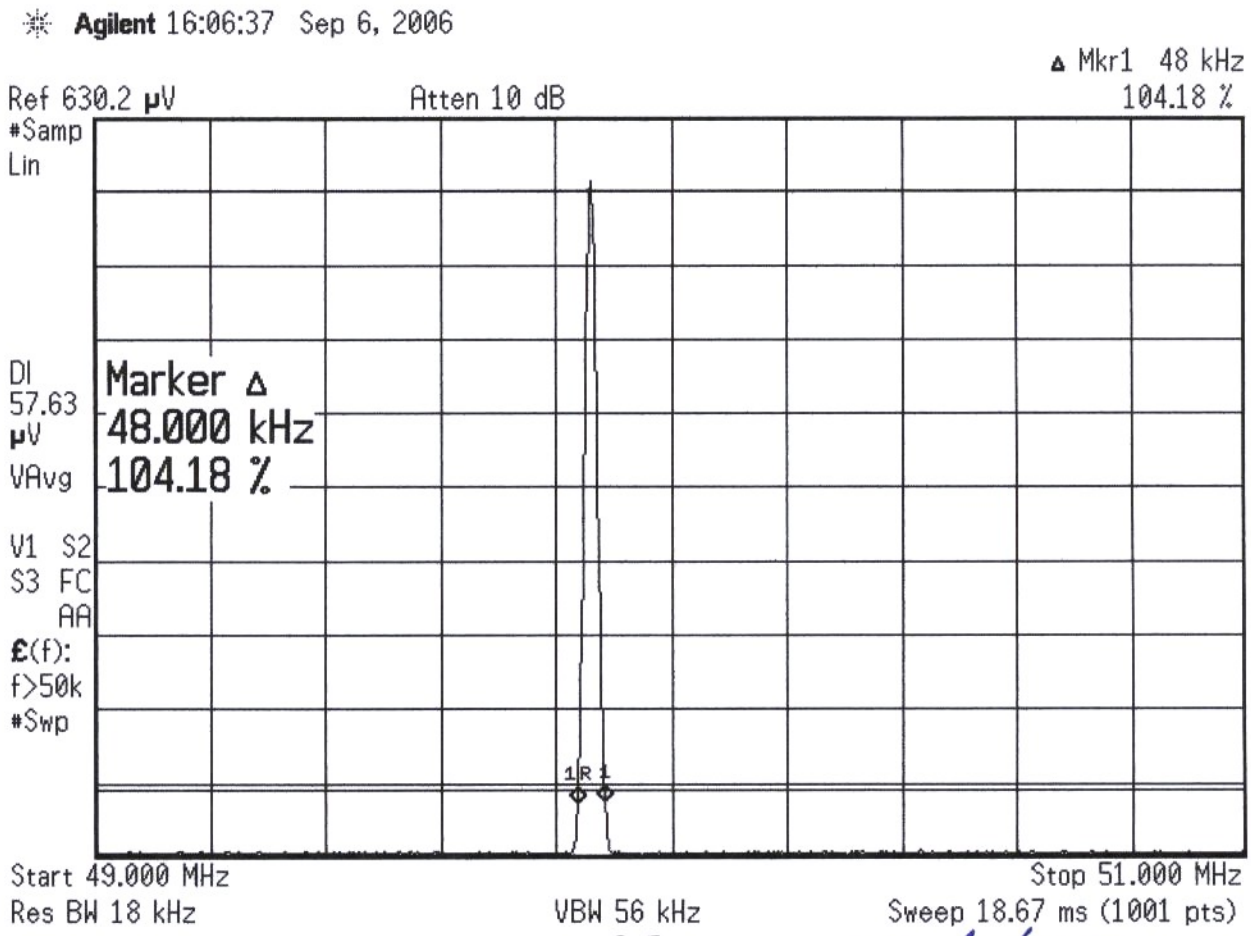
Test data
Pages 12 - 13

99% Occupied bandwidth plot per IC RSS-Gen 4.4.1



IC-RSS-310 BANDWIDTH PLOT

99% Occupied bandwidth plot per IC RSS-Gen 4.4.1



m/N CLP-BMT2 Ext. Antenna

IC RSS-310 Bandwidth Plot

Conducted Limits - AC Power lines
FCC 15.207(a), IC RSS-Gen 7.2.2

Test summary
The requirements are: ■ - MET ☐ - NOT MET
Minimum margin of compliance = 32.6 dB at 247.656 kHz

Test location
☐ - Wild River Lab Large Test Site (Tech area)
■ - Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
3800	ESCS 30	Rohde & Schwarz	EMI Receiver	100312	07 Jul 07
2417	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN (yellow tape*)	8812-1439	Code B

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limit

Frequncy (MHz)	Quasi Peak (dBμV)	Average (dBμV)
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency

Test data
Pages 15 - 19

CONDUCTED EMISSIONS

Test Report #:	WC604555 Run 3	Test Area:	STS		
EUT Model #:	CLT-BMT1	Date:	8/4/2006		
EUT Serial #:	N/A	EUT Power:	60Hz/120VAC	Temperature:	23.0 °C
Test Method:	FCC 15-C			Air Pressure:	98.0 kPa
Customer:	COMLINK			Rel. Humidity:	43.0 %
EUT Description:	WIRELESS ROOM MONITOR				
Notes:	UNIT # 8				
Data File Name:	4555.dat			Page:	1 of 5

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
UNIT # 8						
196.875 kHz	27.7 Qp	0.25 / 0.1 / 0.0 / 0.0	28.05	L1	-35.69	n/a
247.656 kHz	27.04 Qp	0.27 / 0.07 / 0.0 / 0.0	27.38	L1	-34.46	n/a
357.031 kHz	19.84 Qp	0.31 / 0.08 / 0.0 / 0.0	20.22	L1	-38.57	n/a
825.781 kHz	6.5 Qp	0.41 / 0.08 / 0.0 / 0.0	6.98	L1	-49.02	n/a
16.619 MHz	12.28 Qp	2.1 / 0.03 / 0.0 / 0.0	14.41	L1	-45.59	n/a
29.345 MHz	8.06 Qp	2.82 / 0.38 / 0.0 / 0.0	11.26	L1	-48.74	n/a
196.875 kHz	8.21 Av	0.25 / 0.1 / 0.0 / 0.0	8.56	L1	n/a	-45.18
247.656 kHz	4.93 Av	0.27 / 0.07 / 0.0 / 0.0	5.27	L1	n/a	-46.57
357.031 kHz	2.72 Av	0.31 / 0.08 / 0.0 / 0.0	3.1	L1	n/a	-45.69
825.781 kHz	2.19 Av	0.41 / 0.08 / 0.0 / 0.0	2.67	L1	n/a	-43.33
16.619 MHz	11.71 Av	2.1 / 0.03 / 0.0 / 0.0	13.84	L1	n/a	-36.16
29.345 MHz	4.52 Av	2.82 / 0.38 / 0.0 / 0.0	7.72	L1	n/a	-42.28
196.875 kHz	28.44 Qp	0.25 / 0.1 / 0.0 / 0.0	28.79	N	-34.95	n/a
247.656 kHz	28.82 Qp	0.27 / 0.07 / 0.0 / 0.0	29.16	N	-32.68	n/a
357.031 kHz	21.68 Qp	0.31 / 0.08 / 0.0 / 0.0	22.06	N	-36.73	n/a
825.781 kHz	6.5 Qp	0.41 / 0.08 / 0.0 / 0.0	6.98	N	-49.02	n/a
16.619 MHz	11.6 Qp	2.1 / 0.03 / 0.0 / 0.0	13.73	N	-46.27	n/a
29.345 MHz	9.36 Qp	2.82 / 0.38 / 0.0 / 0.0	12.56	N	-47.44	n/a
196.875 kHz	8.1 Av	0.25 / 0.1 / 0.0 / 0.0	8.45	N	n/a	-45.29
247.656 kHz	5.24 Av	0.27 / 0.07 / 0.0 / 0.0	5.58	N	n/a	-46.26
357.031 kHz	2.77 Av	0.31 / 0.08 / 0.0 / 0.0	3.15	N	n/a	-45.64
825.781 kHz	2.02 Av	0.41 / 0.08 / 0.0 / 0.0	2.5	N	n/a	-43.5

Tested by: Ross Johnson

Printed | Signature

Reviewed by: Greg Jakubowski

Printed | Signature

CONDUCTED EMISSIONS

Test Report #:	WC604555 Run 3	Test Area:	STS			
EUT Model #:	CLT-BMT1	Date:	8/4/2006			
EUT Serial #:	N/A	EUT Power:	60Hz/120VAC	Temperature:	23.0	°C
Test Method:	FCC 15-C			Air Pressure:	98.0	kPa
Customer:	COMLINK			Rel. Humidity:	43.0	%
EUT Description:	WIRELESS ROOM MONITOR					
Notes:	UNIT # 8					
Data File Name:	4555.dat			Page:	2 of 5	

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
16.619 MHz	10.87 Av	2.1 / 0.03 / 0.0 / 0.0	13.0	N	n/a	-37.0
29.345 MHz	5.62 Av	2.82 / 0.38 / 0.0 / 0.0	8.82	N	n/a	-41.18
END OF SCAN.						

Tested by: Ross Johnson — Printed — Signature

Reviewed by: Greg Jakubowski — Printed — Signature

CONDUCTED EMISSIONS

Test Report #:	WC604555 Run 3	Test Area:	STS		
EUT Model #:	CLT-BMT1	Date:	8/4/2006		
EUT Serial #:	N/A	EUT Power:	60Hz/120VAC	Temperature:	23.0 °C
Test Method:	FCC 15-C			Air Pressure:	98.0 kPa
Customer:	COMLINK			Rel. Humidity:	43.0 %
EUT Description:	WIRELESS ROOM MONITOR				
Notes:	UNIT # 8				
Data File Name:	4555.dat			Page:	3 of 5

Measurement summary for limit1: EN55022 B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp
247.656 kHz	28.82 Qp	0.27 / 0.07 / 0.0 / 0.0	29.16	N	-32.68
196.875 kHz	28.44 Qp	0.25 / 0.1 / 0.0 / 0.0	28.79	N	-34.95
357.031 kHz	21.68 Qp	0.31 / 0.08 / 0.0 / 0.0	22.06	N	-36.73
16.619 MHz	12.28 Qp	2.1 / 0.03 / 0.0 / 0.0	14.41	L1	-45.59
29.345 MHz	9.36 Qp	2.82 / 0.38 / 0.0 / 0.0	12.56	N	-47.44
825.781 kHz	6.5 Qp	0.41 / 0.08 / 0.0 / 0.0	6.98	L1	-49.02

Tested by: Ross Johnson — Printed — Signature

Reviewed by: Greg Jakubowski — Printed — Signature

CONDUCTED EMISSIONS

Test Report #:	WC604555 Run 3	Test Area:	STS			
EUT Model #:	CLT-BMT1	Date:	8/4/2006			
EUT Serial #:	N/A	EUT Power:	60Hz/120VAC	Temperature:	23.0	°C
Test Method:	FCC 15-C			Air Pressure:	98.0	kPa
Customer:	COMLINK			Rel. Humidity:	43.0	%
EUT Description:	WIRELESS ROOM MONITOR					
Notes:	UNIT # 8					
Data File Name:	4555.dat			Page:	4 of 5	

Measurement summary for limit2: EN55022 B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA2 EN55022 B Avg
16.619 MHz	11.71 Av	2.1 / 0.03 / 0.0 / 0.0	13.84	L1	-36.16
29.345 MHz	5.62 Av	2.82 / 0.38 / 0.0 / 0.0	8.82	N	-41.18
825.781 kHz	2.19 Av	0.41 / 0.08 / 0.0 / 0.0	2.67	L1	-43.33
196.875 kHz	8.21 Av	0.25 / 0.1 / 0.0 / 0.0	8.56	L1	-45.18
357.031 kHz	2.77 Av	0.31 / 0.08 / 0.0 / 0.0	3.15	N	-45.64
247.656 kHz	5.24 Av	0.27 / 0.07 / 0.0 / 0.0	5.58	N	-46.26

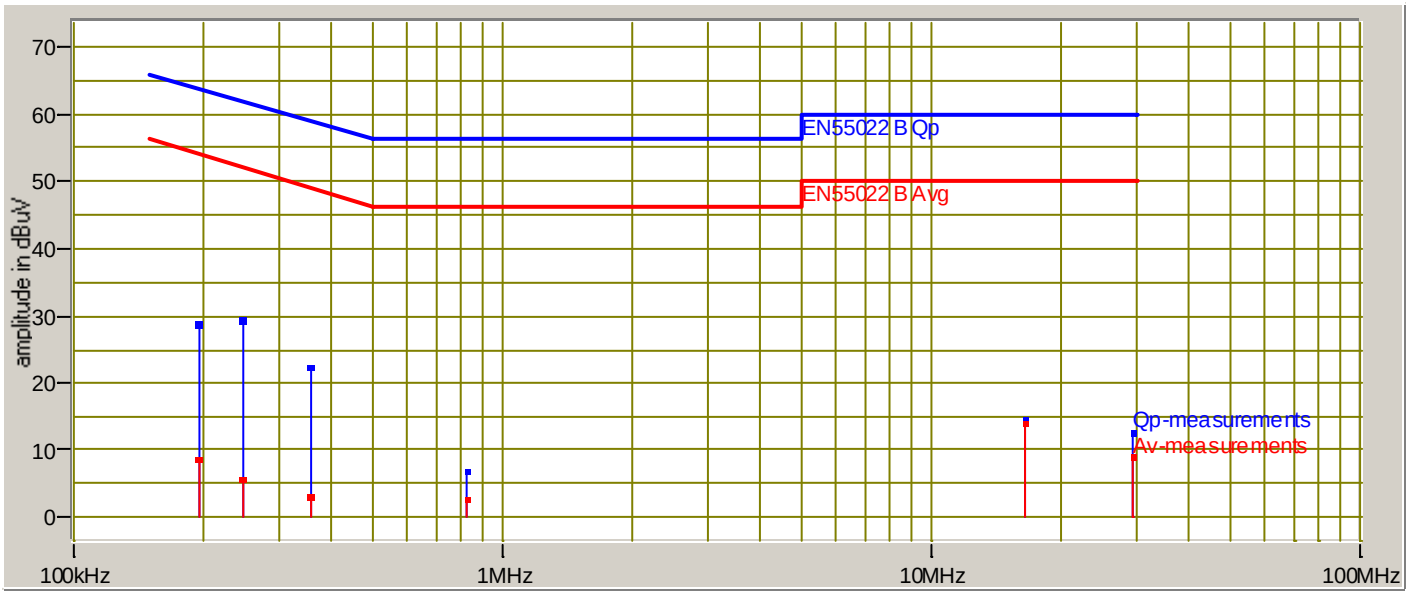
Tested by: Ross Johnson — Printed — Signature

Reviewed by: Greg Jakubowski — Printed — Signature

CONDUCTED EMISSIONS

Test Report #:	WC604555 Run 3	Test Area:	STS		
EUT Model #:	CLT-BMT1	Date:	8/4/2006		
EUT Serial #:	N/A	EUT Power:	60Hz/120VAC	Temperature:	23.0 °C
Test Method:	FCC 15-C			Air Pressure:	98.0 kPa
Customer:	COMLINK			Rel. Humidity:	43.0 %
EUT Description:	WIRELESS ROOM MONITOR				
Notes:	UNIT # 8				
Data File Name:	4555.dat			Page:	5 of 5

Graph:



Tested by: Ross Johnson

Printed | Signature

Reviewed by: Greg Jakubowski

Printed | Signature

TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB
Large Test Site

Notes:

1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to the test area.

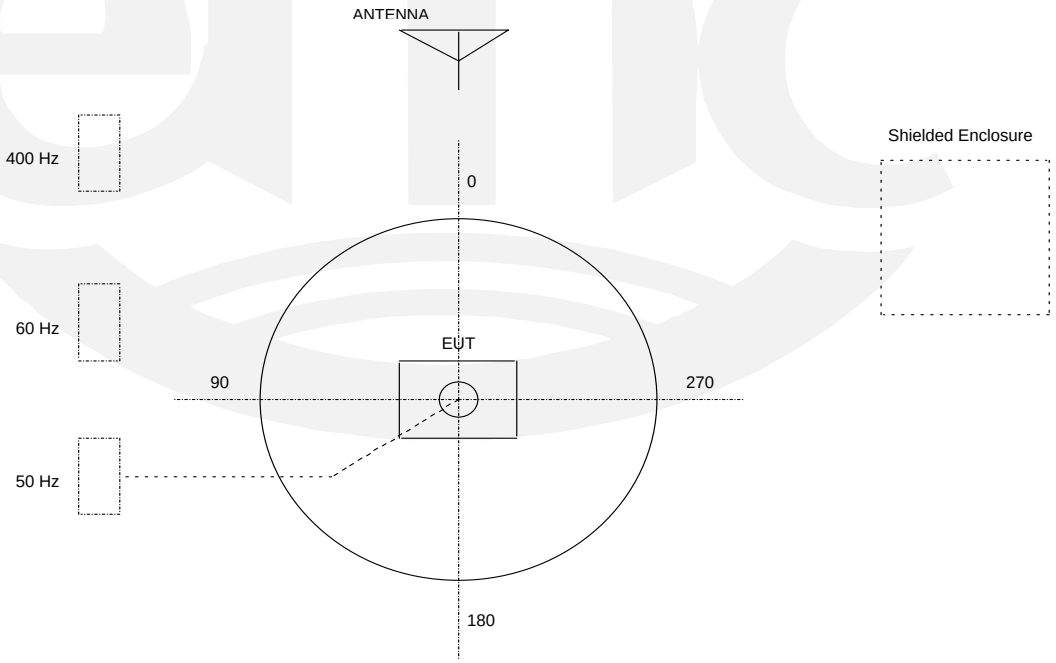
2. 50 Hz, 60 Hz, and 400 Hz are power panels for alternating current.

3. The antenna may be positioned horizontally 3, 10 or 30 meters from the center of the turntable.

4. The circle is a 6.7 meter diameter turntable.

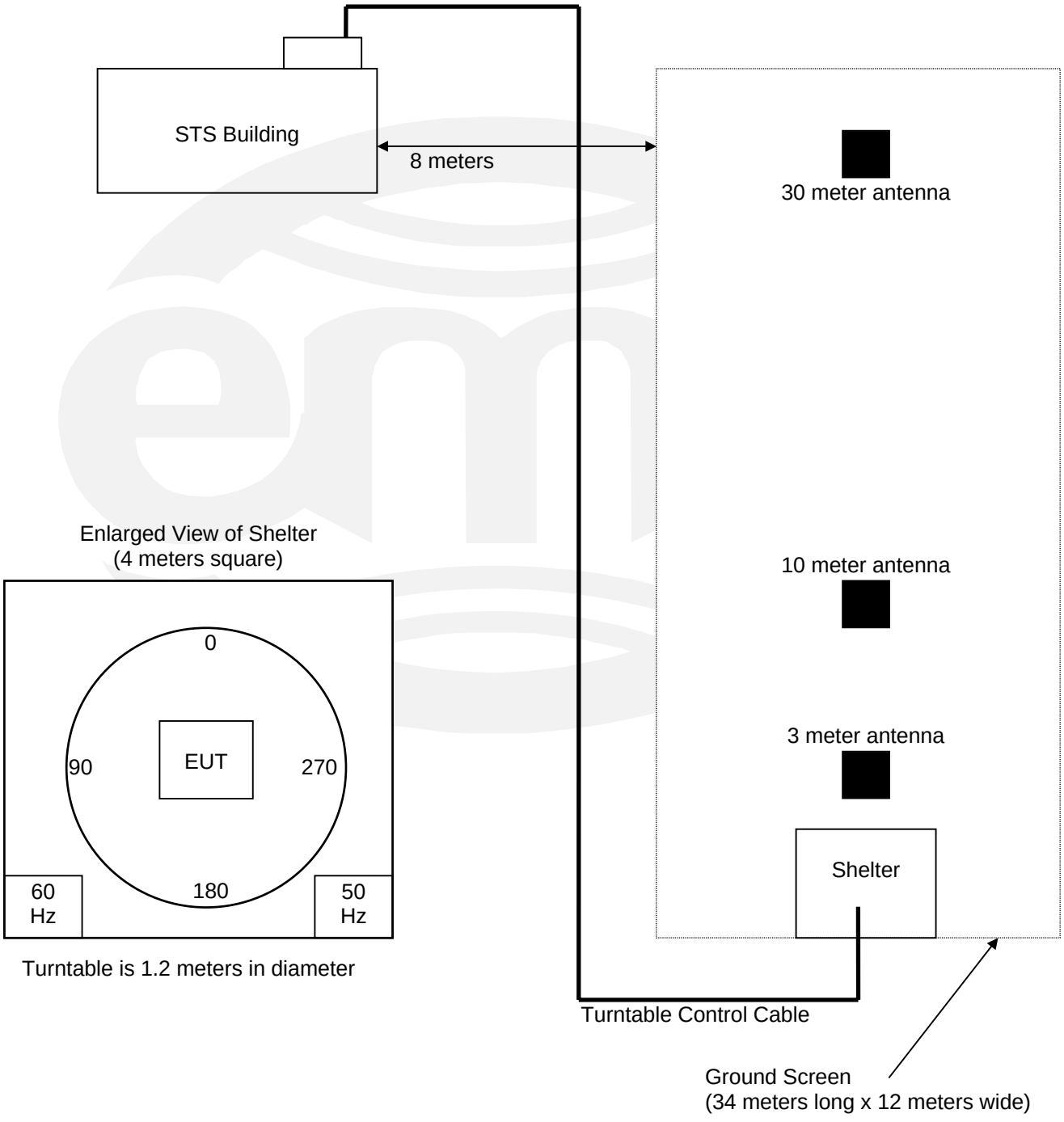
5. A ground plane is in the plane of this sheet.

6. The test sample is shown in the azimuthal position representing zero degrees.



TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB
Small Test Site (STS)



Test-setup photo: Radiated Emissions
Model CLP-BMT1

Test-setup photo: Radiated Emissions
Model CLP-BMT1

Test-setup photo: Radiated Emissions
Model CLP-BMT2

Test-setup photo: Radiated Emissions
Model CLP-BMT2

Test-setup photo: Conducted Emissions
Model CLP-BMT1

Equipment Under Test (EUT) Test Operation Mode:

The device under test was operated under the following conditions during immunity testing :

☐ - Standby

☐ - Test program (H - Pattern)

☐ - Test program (color bar)

☐ - Test program (customer specific)

☐ - Practice operation

■ - Normal operating mode

Configuration of the device under test:

■ - See Appendix A & Test setup photos

☐ - See Product Information Form(s) in Appendix B

DEVIATIONS FROM STANDARD:
None.

GENERAL REMARKS:
Some data taken under test report file numbers WC604555 & WC604754

Modifications required to pass:
■ None
☐ As indicated on the data sheet(s)

Test Specification Deviations: Additions to or Exclusions from:
■ None
☐ As indicated in the Test Plan
☐

SUMMARY:

The requirements according to the technical regulations are
■ - met and the device under test does fulfill the general approval requirements.
☐ - **not** met and the device under test does **not** fulfill the general approval requirements..

EUT Received Date: 4 August 2006
Condition of EUT: Normal
Testing Start Date: 4 August 2006
Testing End Date: 7 September 2006

TÜV AMERICA INC

Ross Johnson & Joe Sausen
EMC Senior Technicians

Joel Schneider
Senior EMC Engineer

Appendix A

Constructional Data Form

Form

EMC Test Plan and Constructional Data Form

TÜV SÜD America

PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE. IF TESTING RESULTS IN MODIFICATIONS TO THE EQUIPMENT, PLEASE SUBMIT A REVISED TP/CDF INDICATING THOSE MODIFICATIONS
NOTE: This information will be input into your test report as shown below. Press the F1 key at any time to get HELP for the current field selected.

Company: COMLINK PRODUCTS, L.L.C.
Address: 1900 Annapolis Lane
PLYMOUTH, MN 55441

Contact: DR. BARRY VOROBA Position: C.E.O.
Phone: (763) 557-6434 Fax: (763) 559-9403
E-mail Address: bvoroba@ccs.com

General Equipment Description -- ***NOTE: This information will be input into your test report as shown below.***

EUT Description "BABY MONITOR" TRANSMITTER
EUT Name "COMLINK ROOM MONITOR"
Model No.: CLP-BMT1 Serial No.: N/A
Product Options: N/A
Configurations to be tested: N/A

Equipment Modification (*If applicable, indicate modifications since EUT was last tested. If modifications are made during this testing, submit revised TP/CDF after testing is complete.)*

Modifications since last test: N/A
Modifications made during test:

Test Objective(s): *Please indicate the tests to be performed, entering the applicable standard(s) where noted.*

- ☐ EMC Directive 89/336/EEC (EMC) Std:
- ☐ Machinery Directive 89/392/EEC (EMC Std:
- ☐ Medical Device Directive 93/42/EEC (EMC) Std:
- ☐ Vehicle Directive 72/245/EEC (EMC) Std:
- ☐ FDA Reviewers Guidance for Premarket Notification Submissions (EMC)

- ☐ FCC: Class ☐ A ☒ B Part 15.235
- ☐ VCCI: Class ☐ A ☐ B
- ☐ BSMI: Class ☐ A ☐ B
- ☐ Canada: Class ☐ A ☐ B
- ☐ Australia: Class ☐ A ☐ B
- ☐ Other:

Third Party Certification, if applicable (*Signature on Page 6 Required)

- ☐ Attestation of Conformity (AoC)*
- ☐ Certificate of Conformity (CoC)*
- ☐ EMC Certification (used with Octagon Mark)*
- ☐ Compliance Document*
- Protection Class (N/A for vehicles) ☐ Class I ☐ Class II ☐ Class III
  (Press F1 when field is selected to show additional information on Protection Class.)
- ☐ FCC / TCB Certification
- ☐ E-Mark Certification
- ☐ Industry Canada / FCB Certification
- ☐ Taiwan Certification

N/A

Form

EMC Test Plan and Constructional Data Form

America

Attendance

Test will be: ☐ Attended by the customer ☒ Unattended by the customer

Failure - *Complete this section if testing will not be attended by the customer.*

If a failure occurs, TÜV America should:

☐ Call contact listed above, if not available then stop testing. (After hrs phone): _____

☒ Continue testing to complete test series.

☐ Continue testing to define corrective action.

☐ Stop testing.

EUT Specifications and Requirements

Length: 3" Width: 4" Height: 1.4" Weight: 2.9 oz.

Power Requirements

Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)

Voltage: 110 VAC (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: 1

Current (Amps/phase(max)): 1 Current (Amps/phase(nominal)): .01

Other _____

Other Special Requirements

Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)

Residential / Home

EUT Power Cable

☐ Permanent OR ☒ Removable Length (in meters): 1.9

☐ Shielded OR ☒ Unshielded

☐ Not Applicable

Form

N/A

EMC Test Plan and Constructional Data Form

TÜV SÜD America

EUT Interface Ports and Cables

Type	Analog	Digital	During Test: Active	During Test: Passive	Qty	Shielding: Yes	Shielding: No	Shielding: Type	Termination	Connector Type	Port Termination	Length tested (in meters)	Removable	Permanent
EXAMPLE: RS232	☐	☒	☒	☐	*2*	☒	☐	*Foil over braid*	*Coaxial*	*Metallized 9-pin D-Sub*	*Characteristic Impedance*	*6*	☒	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
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	☐	☐	☐	☐		☐	☐						☐	☐

EMC Test Plan and Constructional Data Form

America

EUT Software.

Revision Level: N/A

Description:

Equipment Under Test (EUT) Operating Modes to be Tested -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. UN-MODULATED (MICROPHONE COVERED)
2. MODULATED (1kHz @ 100dB SPL @ 10 cm.)
3.

Equipment Under Test (EUT) System Components -- List and describe all components which are part of the EUT. For FCC & Taiwan testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc)

Description	Model #	Serial #	FCC ID #
EXTERNAL POWER SUPPLY	GT-335-9-100C		

EMC Test Plan and Constructional Data Form

America

Support Equipment -- List and describe all support equipment which is not part of the EUT (i.e. peripherals, simulators, etc) This information is required for FCC & Taiwan testing.

Description	Model #	Serial #	FCC ID #
N/A			

Oscillator Frequencies

Frequency	Derived Frequency	Component # / Location	Description of Use
16.620MHz	49.860MHz	X1 / U1 - Pin 1	TX FREQ. SOURCE

Power Supply

Manufacturer	Model #	Serial #	Type
GLOBTEK	GT-335-9-100C	WD100CP-N	☐ Switched-mode: (Frequency) _____ ☒ Linear ☐ Other: _____
			☐ Switched-mode: (Frequency) _____ ☐ Linear ☐ Other: _____

Power Line Filters

Manufacturer	Model #	Location in EUT

N/A

Form

EMC Test Plan and Constructional Data Form

America

Critical EMI Components (Capacitors, ferrites, etc.)				
Description	*Manufacturer*	*Part # or Value*	*Qty*	*Component # / Location*
N/A				

EMC Critical Detail -- Describe other EMC Design details used to reduce high frequency noise.

N/A

(PLEASE INSERT "**ELECTRONIC SIGNATURE**" BELOW IF POSSIBLE)

Authorization Signatures (Signature Required for Certifications checked on pg 1)

Dan Joseph Dr. BARRY VOBOBA — 6-22-06

Customer authorization to perform tests according to this test plan — Date

MARLYN J. ANDERSON — 6-22-06

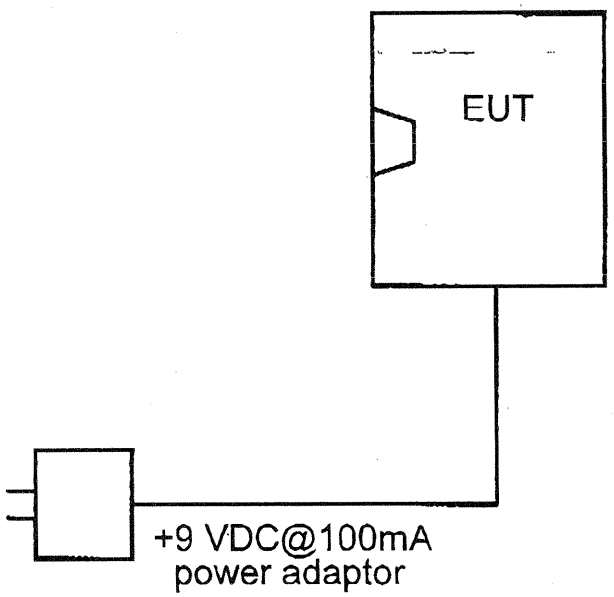
Test Plan/CDF Prepared By (please print) — Date

Form

EMC Block Diagram Form

America

System Configuration Block Diagram -- Provide a line drawing identifying the EUT, simulators, support equipment, I/O cables, power cables, and any other pertinent components to be used during testing. Use a dashed line to separate the equipment in the testing field versus equipment outside testing field.



Authorization Signatures

Barry Vorosa (BARRY VOROSA) — Customer authorization to perform tests according to this test plan. — 6-22-06 — Date

MARLYN J. ANDERSON — Test Plan/CDF Prepared By (please print) — 6-22-06 — Date

FCC Emissions
Test Plan Details
(ATTACHMENT)

If testing levels other than those desired, then indicate the requested test levels under Engineering Justifications / Test Deviations.

Standards to be Applied				
☒ CISPR 22				
☐ Class A				
☒ Class B				
☒ FCC Part	15.235	(list)	Class B	(list)
☐ Other		(list)		

Description	Basic Document	Requirement
Radiated & Conducted Emissions	ANSI 63.4	Reference Basic Document or Applicable Standard

Engineering Justifications / Test Deviations

Plug power supply into 110 volt AC outlet; insert power plug into power jack on rear panel of the transmitter. Green LED indicator will light.

First, test the peak power emission level for "Unit #1 (R10=220 ohms).

If the emission level for Unit #1 is acceptable, please perform all remaining tests upon Unit #1.

If Unit #1 does not pass, proceed to test the peak power emission level for Unit #2 (R10 value=330 ohms).

If necessary, please continue in this manner in order to identify the Unit with the highest peak power emission level that is acceptable, and perform all remaining tests upon that Unit.

Appendix B

Measurement Protocol

MEASUREMENT PROTOCOL

GENERAL INFORMATION

Test Methodology

Emissions testing is performed according to the procedures in ANSI C63.4-2003.

Measurement Uncertainty

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. The test system has a measurement uncertainty of ±1.8 dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. The test system has a measurement uncertainty of ±4.8 dB. The equipment comprising the test systems is calibrated on an annual basis.

Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

Conducted Emissions

The final level, in dBμV, equals the EMI receiver level plus the cable loss and LISN factor.

Radiated Emissions

The final level, in dBμV/m, equals the reading from the spectrum analyzer (Level dBμV), adding the antenna correction factor and cable loss factor (Factor dB) to it, and subtracting the preamp gain (and duty cycle correction factor, if applicable). This result then has the limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Attachment A.

Example:

FREQ (MHz)	LEVEL (dBuV)		CABLE/ANT/PREAMP (dB) (dB/m) (dB)			FINAL (dBuV/m)	POL/HGT/AZ (m) (deg)			DELTA1
60.80	42.5Qp	+	1.2	+ 10.9	- 25.5 =	29.1	V	1.0	0.0	-10.9

Test Equipment

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated according to internal procedure.