



America

EMC TEST REPORT

Test Report No. WC1202311 Date of issue: 13 April 2012

Product Name TRX transceiver

Model(s) Tested 39169

Serial No(s) Tested 251100001

Product Description 909-921 MHz transceiver

Manufacturer Data Sciences International

119 14th Street

St Paul, MN 55112

Test Result **Positive** **Negative**

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REVISION RECORD

REVISION	TOTAL NUMBER OF PAGES	DATE	DESCRIPTION
	28	13 April 2012	Initial Release



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EMC TEST REGULATIONS:

The tests were performed according to the following regulations:

FCC Part 15 Subpart C Section 15.249 Paragraph (a), (d)

FCC Part 15 Subpart C Section 15.207 Paragraphs (a)

FCC Part 15 Subpart B Section 15.109

IC RSS-210 Issue 8 Section A2.9 (a), (b)

IC RSS-Gen Issue 3 Sections 4.6.1, 7.2.5

ENVIRONMENTAL CONDITIONS IN THE LAB

	<u>Actual</u>
Temperature:	: 19-21°C
Atmospheric pressure	: 97-99kPa
Relative Humidity	: 30-33%

POWER SUPPLY UTILIZED

Power supply system : 110 V / 60 Hz

TEST EQUIPMENT

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

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

SIGN EXPLANATIONS

- not applicable

- applicable

Field strength of fundamental/harmonics

FCC 15.249(a), IC RSS-210 A2.9(a)

Test summary

The requirements are: - MET - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 8.2.3, 8.2.4.

Maximum field strength of the fundamental is 87.59 dB μ V/m (23.96 mV/m) at 909.31 MHz. Minimum margin of compliance of the fundamental is 6.4 dB.

Maximum field strength of the harmonics is 34.91 dB μ V/m (55.7 μ V/m) at 1.841 GHz, average detection. Minimum margin of compliance of the harmonics is 19 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

Test equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE03995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	06-May-12
WRLE02674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	07-Dec-12
WRLE02690	8568B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Dec-12
WRLE02681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	24-May-12
WRLE02670	8447D	Hewlett-Packard	Preamplifier	2443A03954	Code B 06-Feb-13

Test limit

Fundamental Frequency (MHz)	Field strength of fundamental mV/m	Field strength of harmonics μ V/m
902-928	50	500

Field strength limits are specified at a distance of 3 meters. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Radiated emissions from the EUT are measured in the frequency range of 30 to 1000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with a 120 kHz / 6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz RBW/VBW / 6 dB bandwidth and peak detection, 1 MHz RBW/ 10 Hz VBW for average detection. Table top equipment is placed on a non-conductive support 80 cm above the ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3, 10 or 30 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT is rotated 360 degrees. The transmitter is rotated through 3 orthogonal axes to determine worst case.

Test Data, dB μ V/m

see next page

Measurement summary for limit1: FCC 15.249 902-928 <1ghz-qp 3m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 902-928 <1ghz-qp 3m
909.312 MHz	88.55 Qp	3.09 / 22.45 / 26.5 / 0.0	87.59	V / 1.35 / 359	-6.41
915.38 MHz	87.71 Qp	3.1 / 22.59 / 26.52 / 0.0	86.88	V / 1.36 / 358	-7.12
920.538 MHz	86.1 Qp	3.11 / 22.42 / 26.53 / 0.0	85.1	V / 1.34 / 356	-8.9

Measurement summary for limit1: FCC 15.249 >1GHz 3m av (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 >1GHz 3m av
1.841 GHz	44.0 Av	4.41 / 27.12 / 41.43 / 0.8	34.91	H / 1.13 / 27	-19.09
1.831 GHz	43.9 Av	4.4 / 27.07 / 41.4 / 0.86	34.83	H / 1.14 / 27	-19.17
1.819 GHz	43.16 Av	4.38 / 27.01 / 41.37 / 0.86	34.04	H / 1.14 / 27	-19.96

Measurement summary for limit2: FCC 15.249 >1GHz 3m pk (Pk)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 FCC 15.249 >1GHz 3m pk
1.831 GHz	51.15 Pk	4.4 / 27.07 / 41.4 / 0.86	42.09	H / 1.13 / 27	-31.91
1.841 GHz	51.15 Pk	4.41 / 27.12 / 41.43 / 0.81	42.06	H / 1.13 / 27	-31.94
1.819 GHz	50.85 Pk	4.38 / 27.01 / 41.37 / 0.85	41.73	H / 1.14 / 27	-32.27

No other signals detected up to 9.30 GHz.

Spurious Radiated Emissions 30 - 9300 MHz

FCC 15.249(d), IC RSS-210 A2.9(b)

Test summary

The requirements are: ■ - MET □ - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 8.2.3, 8.2.4.

No spurious emissions were detected within 10 dB of the limit.

Test limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

15.209

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

All measurements made at 3 meters. The emission limits shown in the above tables are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§ 15.250, 15.252, 15.255, and 15.509–15.519, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Radiated emissions from the EUT are measured in the frequency range of 30 to 1000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with a 120 kHz / 6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz RBW/VBW / 6 dB bandwidth and peak detection, 1 MHz RBW/ 10 Hz VBW for average detection. Table top equipment is placed on a non-conductive support 80 cm above the ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3, 10 or 30 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT is rotated 360 degrees.

Test location

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

Test distance

■ - 3 meters

Test Equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE03995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	06-May-12
WRLE02674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	07-Dec-12
WRLE02690	8568B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Dec-12
WRLE02681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	24-May-12
WRLE02670	8447D	Hewlett-Packard	Preamplifier	2443A03954	Code B 06-Feb-13
WRLE10527	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0001	Code B 05-Jan-13
WRLE03229	3115	Electro-Mechanics (EMCO)	Ridge Guide Antenna	2483	04-Aug-12
WRLE03935	F548B-1	Acronetics	1 – 2 GHz Bandpass Filter	010	Code B 06-Feb-13

Cal Code B = Calibration verification performed internally.

Test data No spurious emissions detected within 10 dB of the limit.

Receiver Radiated Emissions 30 - 9300 MHz FCC 15.109, IC RSS Gen Section 6

Test summary

The requirements are: ■ - MET □ - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 8.2.3, 8.2.4.

Maximum field strength of the fundamental is 26.82 dB μ V/m (21.9 μ V/m) at 400 MHz. Minimum margin of compliance of the fundamental is 19.1 dB.

Test limits 15.109

Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
30 – 88	100	40	3
88 – 216	150	43.5	3
216 – 960	200	46	3
Above 960	500	54	3

All measurements made at 3 meters. The emission limits shown in the above tables are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§ 15.250, 15.252, 15.255, and 15.509–15.519, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Radiated emissions from the EUT are measured in the frequency range of 30 to 1000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with a 120 kHz / 6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz RBW/VBW / 6 dB bandwidth and peak detection, 1 MHz RBW/ 10 Hz VBW for average detection. Table top equipment is placed on a non-conductive support 80 cm above the ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3, 10 or 30 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT is rotated 360 degrees.

Test location

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

Test distance

■ - 3 meters

Test Equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE03995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	06-May-12
WRLE02674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	07-Dec-12
WRLE02690	8568B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Dec-12
WRLE02681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	24-May-12
WRLE02670	8447D	Hewlett-Packard	Preamplifier	2443A03954	Code B 06-Feb-13
WRLE10527	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0001	Code B 05-Jan-13
WRLE03229	3115	Electro-Mechanics (EMCO)	Ridge Guide Antenna	2483	04-Aug-12
WRLE03935	F548B-1	Acronetics	1 – 2 GHz Bandpass Filter	010	Code B 06-Feb-13

Cal Code B = Calibration verification performed internally.

Test data

See next page

Measurement summary for limit1: FCC-B <1GHz 3m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m
400.0 MHz	36.3 Qp	1.91 / 16.0 / 27.39 / 0.0	26.82	H / 1.00 / 270	-19.18



Occupied bandwidth

RSS-Gen 4.6.1

Test summary

The requirements are: - MET - NOT MET

Test was performed in accordance with the article "The Measurement of Occupied Bandwidth" by Industry Canada's certification bureau.

Occupied bandwidth = 206 kHz

Test location

- Wild River Lab Large Test Site (Open Area Test Site)

- Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
WRLE03371	E4440A	Agilent	Spectrum Analyzer	MY43362222	06-Sep-12
WRLE03995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	06-May-12
WRLE02670	8447D	Hewlett-Packard	Preamplifier	2443A03954	Code B 06-Feb-13

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

Test limit

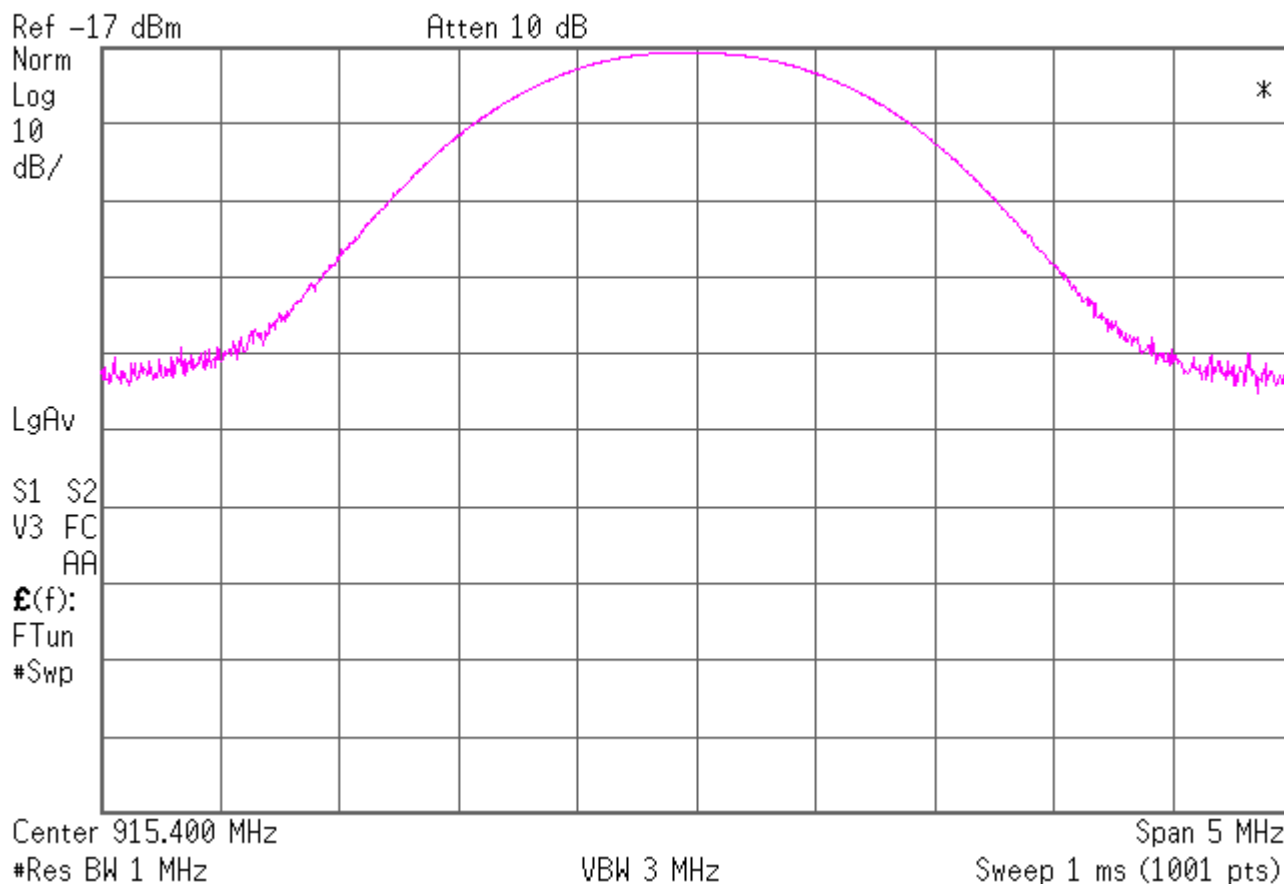
No limit specified

Test data

See following pages

99% Occupied bandwidth
1 of 2

Agilent 10:02:00 Mar 15, 2012



99% Occupied bandwidth
2 of 2

Agilent 10:05:01 Mar 15, 2012

▲ Mkr1 206 kHz
-0.51 dB

Ref -17 dBm

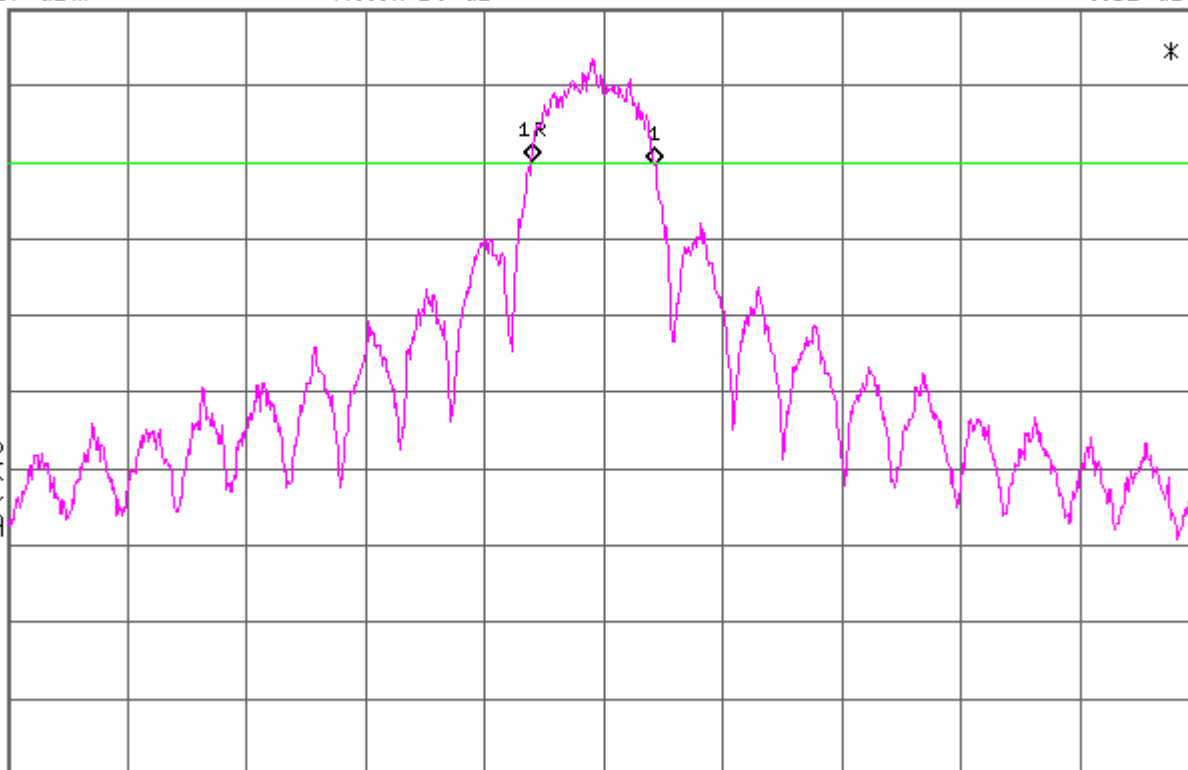
Atten 10 dB

Norm
Log
10
dB/

DI
-37.0
dBm
LgAv

S1 S2
V3 FC
AA

£(f):
f>50k
#Swp



Center 915.400 MHz

#Res BW 3 kHz

VBW 10 kHz

Sweep 210.9 ms (1001 pts)

Span 2 MHz

Conducted Emissions - AC Power Lines

FCC 15.207(a), IC RSS-Gen 7.2.4

Test summary

The requirements are: - MET - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 7.2

Minimum margin of compliance is 17.1 dB at 170 kHz – quasi-peak

Minimum margin of compliance is 13.4 dB at 3.035 MHz – average

Test location

- Wild River Lab Large Test Site (Open Area Test Site)

- Wild River Lab Small Test Site (Open Area Test Site)

Test equipment used:

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
OWLE02078	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	1326	Code B 20-Jul-12
WRLE02534	ESHS-20	Rohde & Schwarz	EMI Receiver 9kHz-30MHz	837055/003	15-Jun-12

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

Test limits, dB μ V

Frequency (MHz)	dB μ V Quasi Peak	dB μ V Average
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency

Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth (9 kHz resolution bandwidth) and quasi-peak/average detection, and a Line Impedance Stabilization Network (LISN), with 50 Ω/50 μH (CISPR 16) characteristics. Table top equipment is placed on a non-conducting table 80 centimeters above the floor and is positioned 40 centimeters from the vertical ground plane (wall) of the screen room. In some cases, a pre-scan using a spectrum analyzer is initially performed on the units comprising the system under test to locate the highest emissions. Conducted emissions were measured on the Communication Link Controller, which powers the transceiver over Ethernet.

Test data

See following pages

Measurement summary for limit1: FCC B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 FCC B Qp
170.0 kHz	36.27 Qp	0.06 / 1.28 / 0.0 / 10.2	47.81	N	-17.16
2.715 MHz	26.49 Qp	0.38 / 0.05 / 0.0 / 10.17	37.09	L2	-18.91
215.0 kHz	32.19 Qp	0.08 / 1.21 / 0.0 / 10.2	43.67	N	-19.34
3.035 MHz	25.59 Qp	0.41 / 0.05 / 0.0 / 10.17	36.22	L1	-19.78
235.0 kHz	28.77 Qp	0.08 / 1.18 / 0.0 / 10.2	40.23	L2	-22.04
160.0 kHz	30.91 Qp	0.06 / 1.29 / 0.0 / 10.2	42.46	L2	-23.01

Measurement summary for limit2: FCC B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 FCC B Avg
3.035 MHz	21.91 Av	0.41 / 0.05 / 0.0 / 10.17	32.54	L1	-13.46
16.225 MHz	20.48 Av	0.92 / 0.4 / 0.0 / 10.04	31.84	N	-18.16
3.35 MHz	16.44 Av	0.43 / 0.06 / 0.0 / 10.17	27.1	L1	-18.9
170.0 kHz	22.24 Av	0.06 / 1.28 / 0.0 / 10.2	33.78	N	-21.19
10.245 MHz	16.96 Av	0.69 / 0.24 / 0.0 / 10.1	27.99	N	-22.01
385.0 kHz	14.79 Av	0.11 / 0.95 / 0.0 / 10.2	26.05	N	-22.12

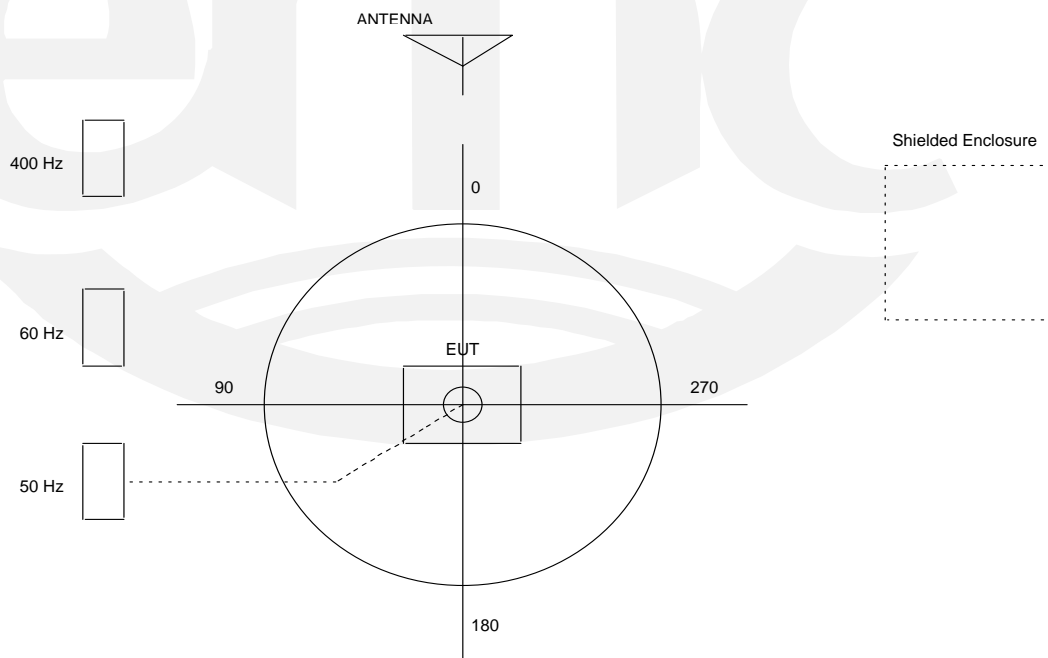


TEST SETUP FOR EMISSIONS TESTING

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.



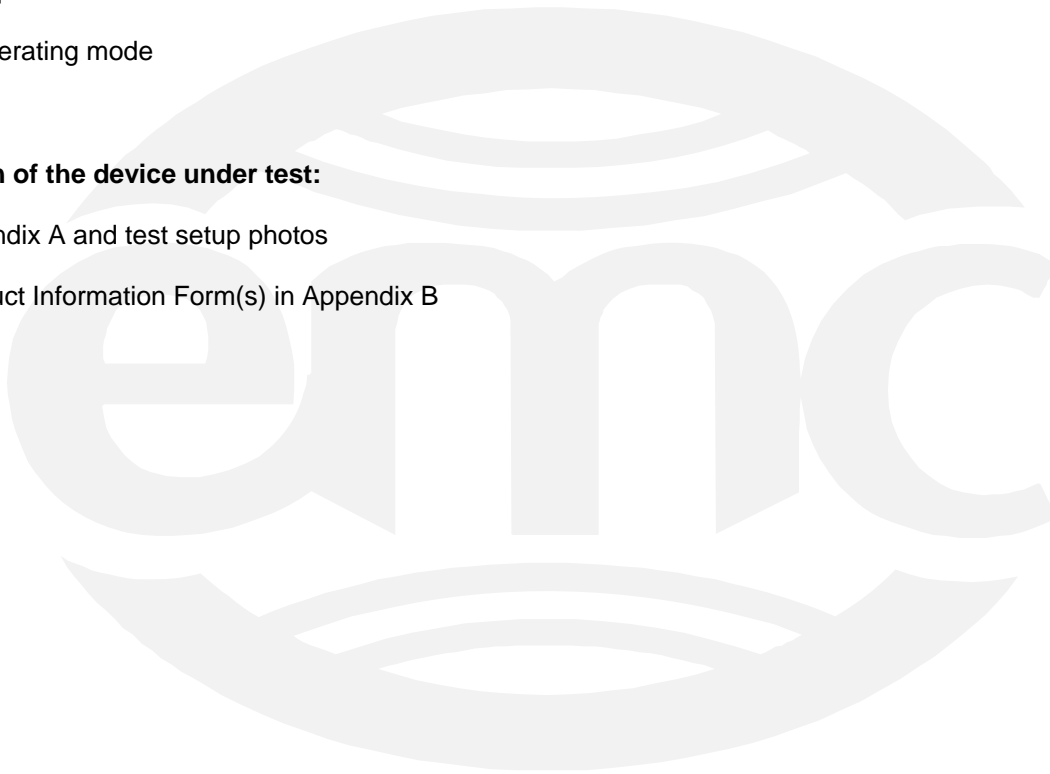
Equipment Under Test (EUT) Test Operation Mode:

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 and test setup photos
- See Product Information Form(s) in Appendix B



DEVIATIONS FROM STANDARD:

None.

GENERAL REMARKS:

None

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..

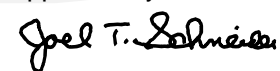
EUT Received Date: 12 March 2012Condition of EUT: NormalTesting Start Date: 12 March 2012Testing End Date: 15 March 2012**TÜV SÜD AMERICA INC**

Tested by:



Greg Jakubowski
Senior EMC Technician

Approved by:



Joel T Schneider
Senior EMC Engineer

Appendix A

Constructional Data Form





EMC Test Plan and Constructional Data Form

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: Data Sciences International
 Address: 119-14th Street
St. Paul, MN 55112
 Contact: John Yates Position: Principal Electrical Engineer
 Phone: 651-414-5366 Fax: _____
 E-mail Address: jyates@datasci.com

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

EUT Description Data Acquisition System
 EUT Name TruSense
 Model No.: Multiple (recorded on data sheet) Serial No.: Multiple (recorded on datasheet)
 Product Options: _____
 Configurations to be tested: SI+TRX+CLC (product) connected to
Switch+Router+APR+Computer+Monitor (OTS)

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: _____
 Modifications made during test: _____

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

- | | |
|---|--|
| <input type="checkbox"/> EMC Directive 2004/108/EC (EMC)
Std: _____ | <input type="checkbox"/> FCC: Class <input type="checkbox"/> A <input type="checkbox"/> B Part _____ |
| <input type="checkbox"/> Machinery Directive 89/392/EEC (EMC)
Std: _____ | <input type="checkbox"/> VCCI: Class <input type="checkbox"/> A <input type="checkbox"/> B |
| <input type="checkbox"/> Medical Device Directive 93/42/EEC (EMC)
Std: _____ | <input type="checkbox"/> BSMI: Class <input type="checkbox"/> A <input type="checkbox"/> B (Separate Report) |
| <input type="checkbox"/> Vehicle Directive - 2004/104/EC (EMC)
<input type="checkbox"/> Other Vehicle Std: _____ | <input type="checkbox"/> Canada: Class <input type="checkbox"/> A <input type="checkbox"/> B |
| <input type="checkbox"/> FDA Reviewers Guidance for Premarket Notification Submissions (EMC) | <input type="checkbox"/> Australia: Class <input type="checkbox"/> A <input type="checkbox"/> B |
| | <input type="checkbox"/> Other: _____ |
| | <input type="checkbox"/> Ag Directive *2009/64/EC (EMC) |



EMC Test Plan and Constructional Data Form

Third Party Certification (contact TÜV for quote), if applicable (*Signature on last page required).	
<input type="checkbox"/> Attestation of Compliance (AoC)*	<input type="checkbox"/> EMC Certification (used with Octagon Mark)*
<input type="checkbox"/> Statement of Compliance (SoC, previously CoC)* - All aspects of the essential requirements were assessed	
Protection Class (Req'd for AoC, SoC, EMC Cert. N/A for vehicles) <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III (Press F1 when field is selected to show additional information on Protection Class.)	
<input type="checkbox"/> FCC / TCB Certification	<input type="checkbox"/> Taiwan Certification
<input type="checkbox"/> Industry Canada / FCB Certification	<input type="checkbox"/> Korean Certification
<input type="checkbox"/> e-Mark Certification	

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 SÜD 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: _____ Width: _____ Height: _____ Weight: _____

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

of Phases: _____

Current (Amps/phase(max)): _____ Current (Amps/phase(nominal)): _____

Other _____

Other Special Requirements

Typical Installation and/or Operating Environment

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

EUT Power Cable

Permanent OR Removable Length (in meters): _____

Shielded OR Unshielded

Not Applicable



EMC Test Plan and Constructional Data Form

EUT Interface Ports and Cables														
Type	Analog	Digital	During Test		Qty	Shielding		Termination	Connector Type	Port Termination	Length tested (in meters)	Removable	Permanent	
			Active	Passive		Yes	No							Type
EXAMPLE: RS232	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>



EMC Test Plan and Constructional Data Form

EUT Software.

Revision Level:

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.

- 2.

- 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 #



EMC Test Plan and Constructional Data Form

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.

<i>Description</i>	<i>Model #</i>	<i>Serial #</i>	<i>FCC ID #</i>

Oscillator Frequencies

<i>Manufacturer</i>	<i>Frequency</i>	<i>Derived Frequency</i>	<i>Component # / Location</i>	<i>Description of Use</i>

Power Supply

<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Type</i>
			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____
			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____

Power Line Filters

<i>Manufacturer</i>	<i>Model #</i>	<i>Location in EUT</i>



EMC Test Plan and Constructional Data Form

Critical EMI Components (Capacitors, ferrites, etc.)				
<i>Description</i>	<i>Manufacturer</i>	<i>Part # or Value</i>	<i>Qty</i>	<i>Component # / Location</i>

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

PLEASE ENTER NAMES BELOW (INSERT ELECTRONIC SIGNATURE IF POSSIBLE)

Authorization (Signature Required if a Third Party Certification is checked on pg 1)

Customer authorization to perform tests according to this test plan.

Date

Test Plan/CDF Prepared By (please print)

Date

Form



EMC Block Diagram Form

Authorization Signatures

Customer authorization to perform tests
according to this test plan.

Date

Test Plan/CDF Prepared By (please print)

Date