World Standardization Certification &Testing CO.,LTD
World Standardization Safety and EMC Testing Centre

ETSI EN 300 220-2 V2.1.2: 2007

TEST REPORT

Report Number: WSCT08080175E-RT

For

Control Panel

TX Model: B902

RX Model: LHD8001

Trade Name: Longhorn

Issued to

Shenzhen Longhorn Security Technology CO.,Ltd
The 4th building New and High TechnologyIndustrial Park Guangming, Wandaiheng,Baoan Shenzhen Guangdong

Issued by

WORLD STANDARDIZATION CERTIFICATION & TESTING CO., LTD.
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1. TEST RESULT CERTIFICATION

Applicant: Shenzhen Longhorn Security Technology CO., Ltd
The 4th building New and High TechnologyIndustrial Park
Guangming, Wandaiheng, Shenzhen Guangdong

Equipment Under Test: Control Panel

Trade Name: Longhorn

TX Model: B902

RX Model: LHD8001

Test Date: Aug 04~ 09, 2008

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
ETSI EN 300 220-2 V2.1.2 (2007)	No non-compliance noted

The above equipment was tested by World Standardization Certification & Testing Co., Ltd. for compliance with the requirements set forth in the European Standard ETSI EN 300 220-2 V2.1.2 (2007). The results of testing in this report apply to the product /system which were tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Divan Dai ***Date:*** ***2008-08-11***
(Divan Dai)

Check By: Joe Lin ***Date:*** ***2008-08-11***
(Joe Lin)

Approved By: Sula Huang ***Date:*** ***2008-08-11***
(Sula Huang)

2. EUT DESCRIPTION

Product	Control Panel
Trade Name	Longhorn
Model Number	TX Model: B902 RX Model: LHD8001
Model Discrepancy	N/A
Power Supply	TX: DC 6V (Powered by 2 × 3V Lithium battery) RX: DC 12V (Powered by Switching Mode Power Adaptor)
Frequency Range	433.875 MHz
Modulation Technique	ASK
Number of Channels	1 Channel
Antenna Specification	PCB antenna Gain: -3dBi (max)
Temperature Range	-10°C ~ +55°C

Remark: *for more details, refer to the user's manual of the EUT.*

3. TEST METHODOLOGY

GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

ETSI EN 300 220-2 V2.1.2 : 2007 –Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW; Part 3: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.

DESCRIPTION OF TEST MODES

The EUT has been tested under normal operating and standby condition. Software used to control the EUT for staying in continuous transmitting and receiving mode for testing.

The field strength of spurious radiation emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The following data show only with the worst case setup.

The worst case of Y axis without cradle was reported.

4. FACILITIES AND ACCREDITATIONS

FACILITIES

All measurement facilities used to collect the measurement data are located at 1-2/F, Dachong Science&Technology Building, No.25 of Tonggu Road, Nanshan District, ShenZhen.PRC

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2003) and CISPR Publication 22.

EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

LABORATORY ACCREDITATIONS AND LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by by FCC. Oct 06.2007. The certificate registration number is 276008 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements.

5. SETUP OF EQUIPMENT UNDER TEST

SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
1.	N/A						

Remark:

1. *All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.*
2. *Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.*

6. ETSI EN 300 220-2/-1 REQUIREMENTS

6.1 TRANSMITTER REQUIREMENTS

6.1.1 FREQUENCY ERROR OR FREQUENCY DRIFT

LIMIT

ETSI EN 300 220-2 (V2.1.2) clause 4.2.1.1

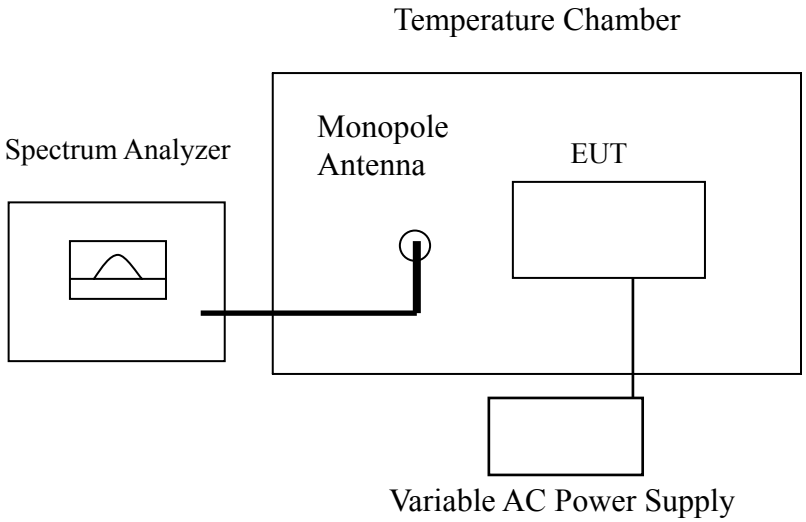
1. The frequency error or frequency drift, as defined in EN 300 220-1 [2] subclause 8.1.1, shall not exceed the limits in EN 300 220-1 [2] ,clause 8.1.4,table 6a for narrow band or table 6b for wide band ; or
2. For narrow band equipment not capable of producing an unmodulated carrier, the adjacent channel power, as defined in EN 300 220-1 [2] clause 8.6.1, shall not exceed the limits in EN 300 220-1 [2], clause 8.6.3 under extreme conditions.

MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	R&S	FSU	100114	04/21/2009
Temp. / Humidity Chamber	Kingson	THS-M1	243	05/26/2009

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Test Configuration



TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 6.1 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.1.2 / 8.1.3.1 for the measurement method.

TEST RESULTS

No non-compliance note

Test Temp.	Test Voltage (Vdc)	Frequency (MHz)	Error (kHz)	Limit (kHz)
25°C	6.00	433.87476	0	±6.0
-10°C	6.90	433.87451	-0.25	
	5.10	433.87549	0.73	
55°C	6.90	433.87463	-0.13	
	5.10	433.87542	0.66	

6.1.2 CARRIER POWER (CONDUCTED)

LIMIT

ETSI EN 300 220-1 (V2.1.1) clause 8.2
The carrier power is the average power delivered to the artificial antenna (see clause 6.2) during one radio frequency cycle in the absence of modulation. When it is not possible to measure the power in the absence of modulation, this fact shall be stated.

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.2.3
Under normal and extreme test conditions (see clauses 5.3 and 5.4), the carrier output power (conducted) shall not exceed the power class value given in table below:

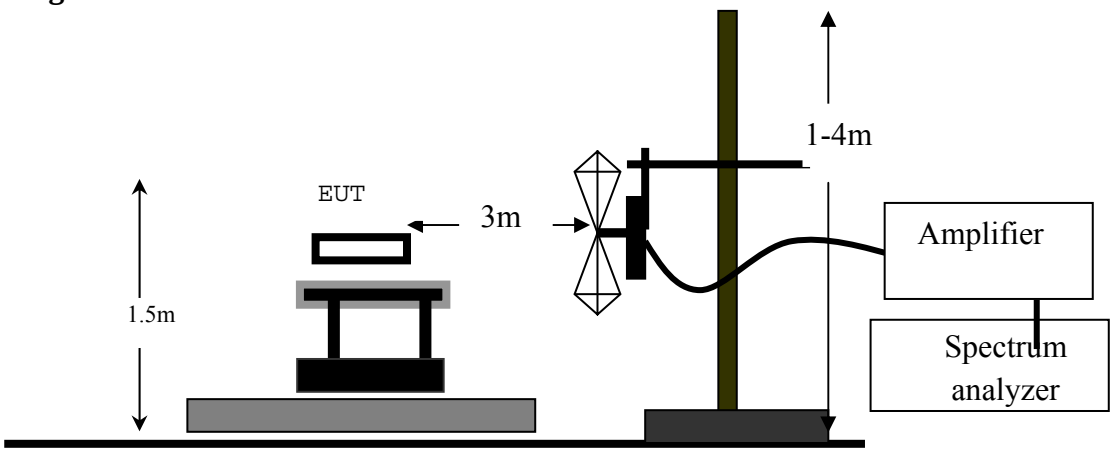
Power class	Power level (mW)
*5a	*0.025
7a	5
8	10
9	25
11	100
12	500

MEASUREMENT EQUIPMENT USED

966 CHAMBER				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	R&S	FSU	100114	04/21/2009
EMI Test Receiver	R&S	ESCI	100005	06/23/2009
Pre Amplifier	H.P.	HP8447E	2945A02715	06/15/2009
Pre-Amplifier	Compliance	PAM0118	1360976	06/04/2009
Bilog Antenna	SUNOL Sciences	JB3	A021907	06/10/2009
Turn Table	EMCO	2081-1.21	N/A	N.C.R
Antenna Tower	CT	N/A	N/A	N.C.R
Controller	CT	N/A	N/A	N.C.R
RF Comm. Test set	HP	8920B	US36142090	N.C.R
Site NSA	C&C	N/A	N/A	06/10/2009
Horn Antenna	Compliance	CE18000	001	06/10/2009

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Test Configuration



TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) clause 5.3/5.4 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) clause 8.2.2 for the measurement method.

TEST RESULTS

(Not applicable: EUT uses an integral antenna.)

6.1.3 EFFECTIVE RADIATED POWER

LIMIT

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.3.1
The effective radiated power is the power radiated in the direction of the maximum level under specified conditions of measurements in the absence of modulation. When it is not possible to measure the power in the absence of modulation, this fact shall be stated.

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.3.3
The effective radiated power shall not exceeded the power class value given in the following table:

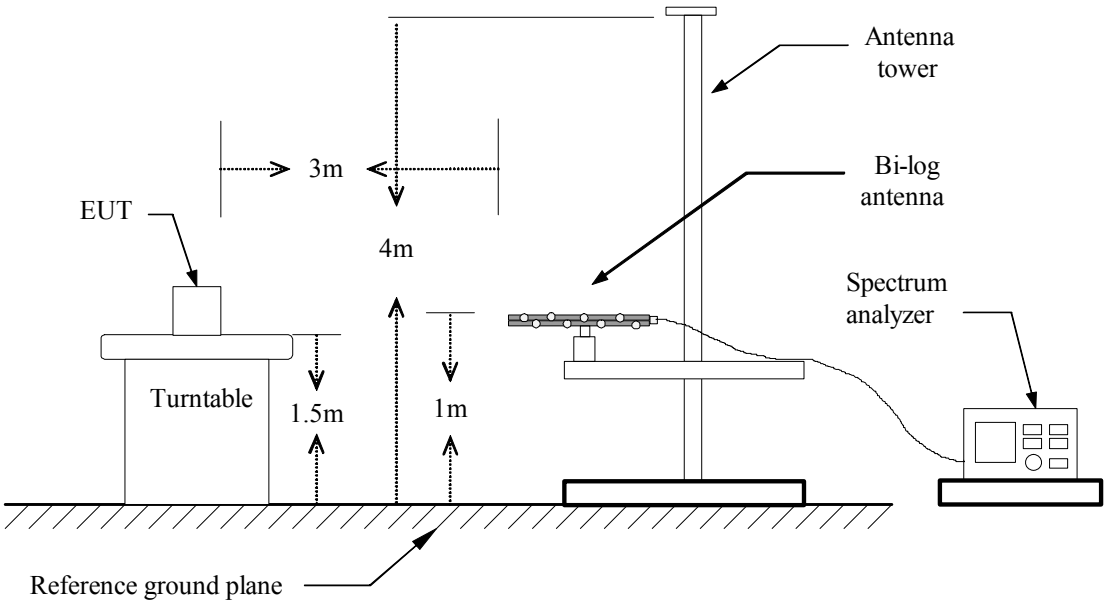
Power class	Power level (mW)
*5a	*0.025
7a	5
8	10
9	25
11	100
12	500

MEASUREMENT EQUIPMENT USED

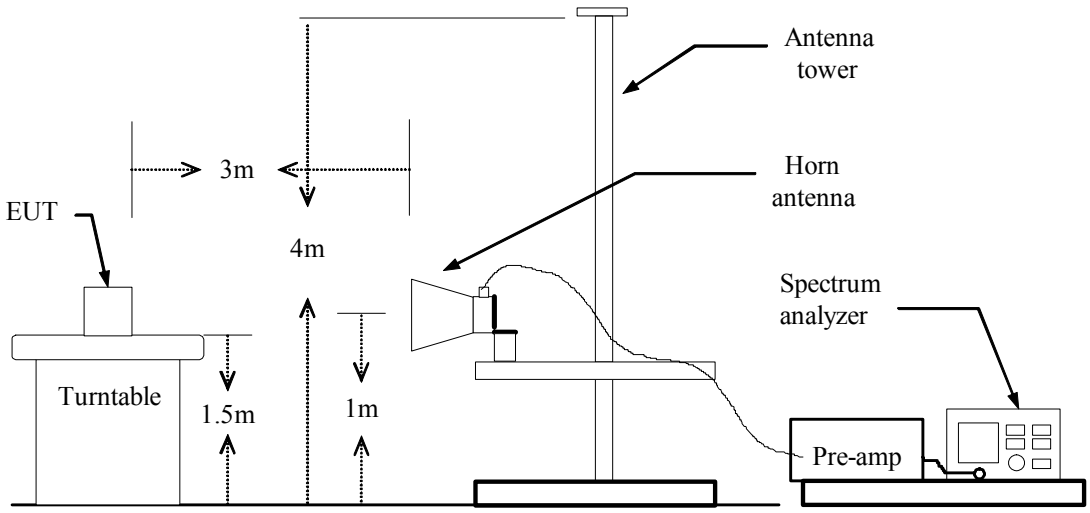
966 CHAMBER				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	R&S	FSU	100114	04/21/2009
EMI Test Receiver	R&S	ESCI	100005	06/23/2009
Pre Amplifier	H.P.	HP8447E	2945A02715	06/15/2009
Pre-Amplifier	Compliance	PAM0118	1360976	06/04/2009
Bilog Antenna	SUNOL Sciences	JB3	A021907	06/10/2009
Turn Table	EMCO	2081-1.21	N/A	N.C.R
Antenna Tower	CT	N/A	N/A	N.C.R
Controller	CT	N/A	N/A	N.C.R
RF Comm. Test set	HP	8920B	US36142090	N.C.R
Site NSA	C&C	N/A	N/A	06/10/2009
Horn Antenna	Compliance	CE18000	001	06/10/2009

Remark: *Each piece of equipment is scheduled for calibration once a year.*

Below 1GHz



Above 1GHz



TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause5.3 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.3.2 for the measurement method.

TEST RESULTS

No non-compliance noted

Operation Mode:	TX / Y Mode	**Test Date:**	Aug 07, 2008
Temperature:	25°C	**Tested by:**	Divan
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Freq.	Antenna	Reading	SG O/P	Ant. Gain	Cable	Corrected Power		Limit
(MHz)	Polarity	(dBuV)	(dBm)	(dBi)	(dB)	(dBm)	(mW)	(mW)
433.87	V	65.02	-4.9	5.2	2.1	-1.8	0.6606	10
433.87	H	78.06	-2.2	5.2	2.1	0.9	1.2302	

Note: The ERP class is 8(10mW).

6.1.4 TRANSIENT POWER

LIMIT

ETSI EN 300 220-1 (V2.1.1) clause 8.5.1

The transient power is the power falling into adjacent spectrum due to switching the transmitter on and off during normal operation.

ETSI EN 300 220-1 (V2.1.1) clause8.5.2/8.5.4

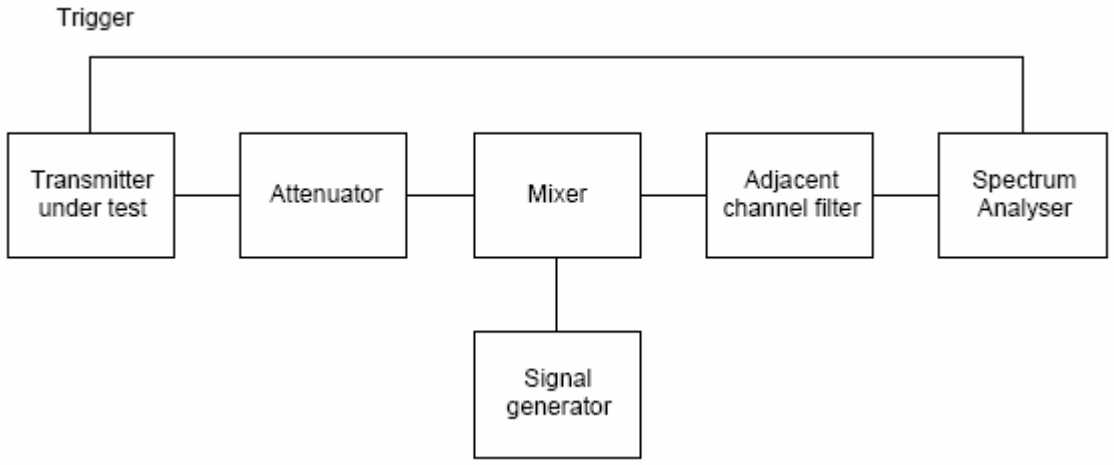
The modulation test signal (see clause 6.1.1 or 6.1.2 as appropriate)shall be applied at the transmitter.For constant envelope modulation schemes it is not required to apply modulation.The modulation used, if any , shall be recorded in the test report.

During normal operation conditions , the transient power shall not exceed limits given in table below:
The transient power in the alternate channel shall not exceed a value of 40 dB below the power of transmitter without the need to be below 2 uW(-27,0dBm).

For measurements at 4 and 10 times the channel spacing the transient power shall not exceed 50 dB below power of the transmitter without the need to be below 250nW(-36 dBm).

MEASUREMENT EQUIPMENT USED

Shielding Room				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	R&S	FSU	100114	04/21/2009
Mixer	HP	10514A	N/A	02/06/2009
Attenuator	Agilent	11708A	10031	02/06/2009
Signal Generator	JSR	SG8150	9781798	02/06/2009



TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 6.1.1 / 6.1.2 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.4.1.2.1 / 8.4.1.3.1 for the measurement method.

TEST RESULTS

The transient power in the alternate channel is 20 dB below the power of transmitter without the need to be below 2 uW(-27,0dBm).

For measurements at 4 and 10 times the channel spacing the transient power is 30dB below power of the transmitter without the need to be below 250nW(-36 dBm).

6.1.5 ADJACENT CHANNEL POWER

LIMIT

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.6.3

The adjacent channel power shall not exceed the maximum values given below:

	Channel separation <20kHz	Channel separation ≧20kHz
Normal condition	10 μW	200nW
Extreme condition	32 μW	640nW

MEASUREMENT EQUIPMENT USED

(Same as <Effective Radiated Power>)

Test Configuration

(Same as <Effective Radiated Power>)

TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause5.3 / 5.4 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.6.2 for the measurement method.

TEST RESULTS

No non-compliance noted

Measuring	Antenna	Peak Power	ACP Rated	Adjacent Channel Power	Adjacent Channel Power	Limit
Position	Polarity	(dBm)		(dBm)	(uW)	(uW)
Upper	V	-0.7	-27.8	-28.5	1.412537	10
Lower	V	0.4	-26.4	-26.0	2.511886	10
Upper	H	2.3	-27.8	-25.5	2.818382	10
Lower	H	2.9	-26.4	-23.5	4.668359	10

6.1.6 MODULATION BANDWIDTH FOR WIDEBAND EQUIPMENT (>200KHZ)

LIMIT

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.7.3

The permitted range of modulation bandwidth including the frequency error or drift as measured in sub-clause 8.1.4 shall be within the limits of the assigned wide band channel, sub-band or frequency band, as appropriate. Where an assigned frequency band has been subdivided into channels with bandwidths greater than 25 kHz, the 250 nW limit shall apply to the adjacent channel. Where the band is divided into sub-bands the 250 nW limit shall apply to the sub-band edge frequencies.

TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause6.3 / 8.2 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.7.2 for the measurement method.

TEST RESULTS

Not applicable.
(Since the power is too low for measuring the range of modulation bandwidth)

6.1.7 SPURIOUS EMISSIONS

LIMIT

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.8.5

The power of any spurious emission, conducted or radiated, shall not exceed the following values given below:

State	47MHz-74MHz 87.5MHz-118 MHz 174 MHz -230 MHz 470 MHz -862 MHz	Other frequencies below 1000MHz	Frequencies above 1000MHz
Operating	4nW	250nW	1μW
Standby	2nW	2nW	20nW

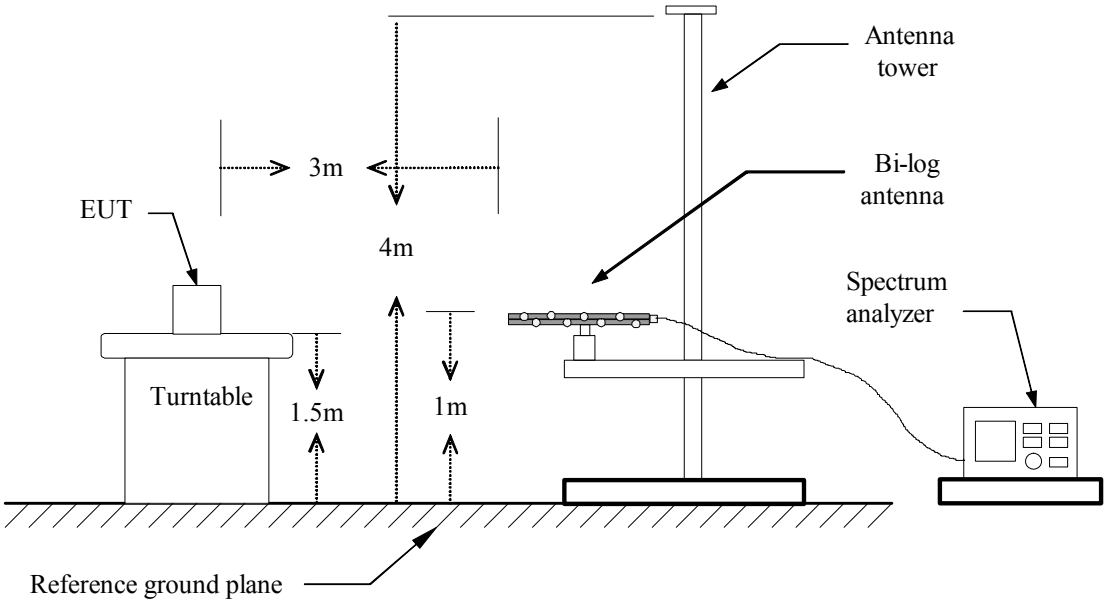
MEASUREMENT EQUIPMENT USED

966 RF CHAMBER				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	R&S	FSU	100114	04/21/2009
EMI Test Receiver	R&S	ESCI	100005	06/23/2009
Pre Amplifier	H.P.	HP8447E	2945A02715	06/15/2009
Pre-Amplifier	Compliance	PAM0118	1360976	06/04/2009
Bilog Antenna	SUNOL Sciences	JB3	A021907	06/10/2009
Turn Table	EMCO	2081-1.21	N/A	N.C.R
Antenna Tower	CT	N/A	N/A	N.C.R
Controller	CT	N/A	N/A	N.C.R
RF Comm. Test set	HP	8920B	US36142090	N.C.R
Site NSA	C&C	N/A	N/A	06/10/2009
Horn Antenna	Compliance	CE18000	001	06/10/2009

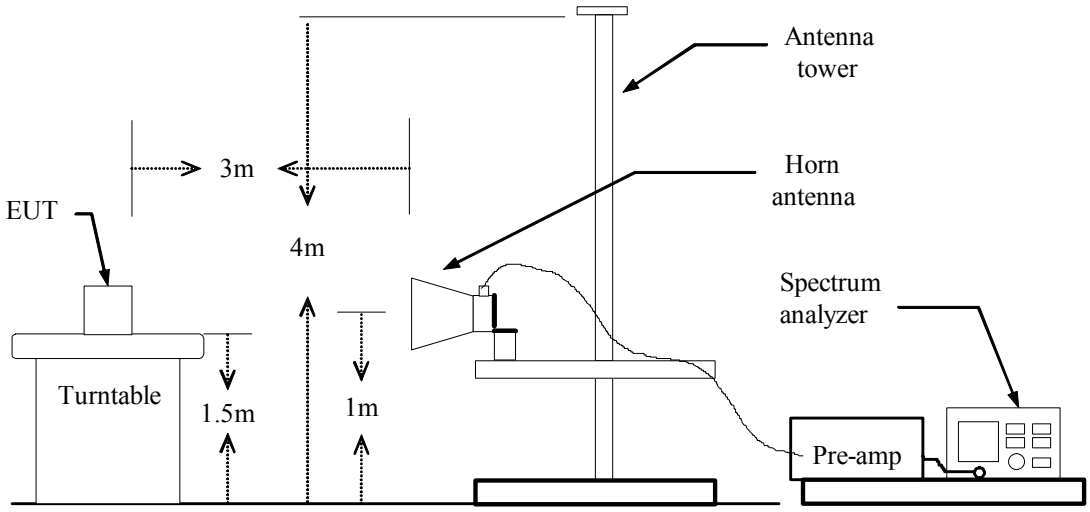
Remark: *Each piece of equipment is scheduled for calibration once a year.*

Test Configuration

Below 1GHz



Above 1GHz



TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 6.1.1 / 6.1.2 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.8.2 / 8.8.3 / 8.78.4 for the measurement method.

3. TEST RESULTS

No non-compliance noted

Operation Mode:	TX / Y Mode	**Test Date:**	Aug 07,2008
Temperature:	25°C	**Tested by:**	Divan
Humidity:	68 % RH	**Polarity:**	Ver. / Hor.

Frequency	Reading level	Antenna	S.G.	Cable loss	Ant.Gain	Emission level	Limit	Margin
(MHz)	(dBm)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
				TX				
869.539	-46.35	H	-43.06	2.94	7.2	-38.80	-36	-2.80
1301.282	-49.76	H	-42.84	3.58	7.21	-39.21	-30	-9.21
1737.179	-52.02	H	-42.39	4.17	8.16	-38.40	-30	-8.40
2166.666	-61.80	H	-40.45	4.76	9.11	-36.10	-30	-6.10
869.539	-51.01	V	-45.20	3.58	7.2	-41.58	-36	-5.58
1301.282	-52.32	V	-41.94	3.58	7.21	-38.31	-30	-8.31
1737.179	-55.25	V	-41.79	4.17	8.16	-37.80	-30	-7.80
2166.666	-58.80	V	-38.03	4.76	9.11	-33.68	-30	-3.68

6.1.8 FREQUENCY STABILITY UNDER LOW-VOLTAGE CONDITION

LIMIT

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.9.3

The equipment shall either:

1. Remain on channel, for channelized equipment within the limits stated in sub-clause 1.4 or within the assigned operating frequency band, for non-channelized equipment, whilst the radiated or conducted power is greater than the spurious emission limits; or
2. The equipment ceases to function below the manufacturers declared operating voltage.

MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Bilog Antenna	SUNOL Sciences	JB3	A021907	06/10/2009
Spectrum Analyzer	R&S	FSU	100114	04/21/2009

Remark: *Each piece of equipment is scheduled for calibration once a year.*

TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 5.3 / 6.3 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.9.2 for the measurement method.

TEST RESULTS

No non-compliance noted

Voltage Supply (Vdc)		Measurement Frequency (MHz)	Frequency Error (kHz)	Limit (kHz)
Normal Voltage	6	433.8747	0	±6.0
Bottom Voltage	5.1	433.8787	4.0	
(End Point)	4.5	(shut-down)		

Remark:

1. *Where " * " marked denotes the equipment ceases to function at the supply voltage.*
2. *Limit was refered to subclause 8.1.4 of wide band equipment.*

6.1.9 DUTY CYCLE

LIMIT

ETSI EN 300 220-1 (V2.1.1) Sub-clause 8.10.2 & 8.10.3

1. For software controlled or pre-programmed devices, the manufacturer shall declare the duty cycle class or classes for the equipment under test, see table 14. For manually operated or event dependant devices, with or without software controlled functions, the manufacturer shall declare whether the device once triggered, follows a pre-programmed cycle, or whether the transmission is constant until the trigger is released or manually reset. The manufacturer shall also give a description of the application for the device and include a typical usage pattern. The typical usage pattern as declared by the manufacturer shall be used to determine the duty cycle and hence the duty class,
2. Where an acknowledgement is required, the additional transmitter on-time shall be included and declared by the manufacturer.

In a period of 1 hour the duty cycle shall not exceed the class values given below:

Duty cycle class	Duty cycle ratio (%)
1	<0.1%
2	<1.0%
3	<10%
*4	*Up to 100%

TEST PROCEDURE

Please refer to ETSI EN 300 220-1 (V2.1.1) Sub-clause 6.1.1 / 6.1.2 for the test conditions.

TEST RESULTS

The duty cycle of a period of 1 hour is < 10% (Duty cycle class 3)

6.10 LISTEN BEFORE TALK(LBT)

6.10.1 Minimum transmitter off-time

The minimum transmitter off-time, as defined in EN 300 220-1[2], clause 8.11.1.1.1, shall not be less than the limits in EN 300 220-1[2], clause 8.11.1.1.2.

(Not applicable: TX without using LBT .)

6.10.2 Minimum transmitter time

The minimum listening time, as defined in EN 300 220-1[2], clause 8.11.1.2.1 shall not shall not be less than the limits in EN 300 220-1[2], clause 8.11.1.2.2.

(Not applicable: TX without using LBT .)

6.10.3 Maximum transmitter on-time

The maximum transmitter on-time, as defined in EN 300 220-1[2], clause 8.11.1.4.1 shall not exceed the limits in EN 300 220-1[2], clause 8.11.1.4.2.

(Not applicable: TX without using LBT .)

6.11 Type of spread spectrum modulation

6.11.1 Frequency hopping spread spectrum devices

The FHSS parameters, as declared in EN 300 220-1[2],clause 8.4.1.1 shall not exceed the limits in EN 300 220-1[2], clause 8.4.1.3 table 9 and indent a) to g).

(Not applicable: TX employ ASK.)

6.11.2 Direct sequence or other spread spectrum than FHSS

The power density, as defined in EN 300 220-1[2], clause 8.4.2.1 shall not exceed the limits in EN 300 220-1 [2], clause 8.4.2.2, table 10.

This applies to all transmitters which employ DSSS and other spread spectrum than FHSS.

(Not applicable: TX employ ASK.)

6.2 RECEIVER REQUIREMENTS

6.2.1 Maximum usable sensitivity (conducted)

The receiver sensitivity as defined in EN 300 220-1[2], clause 9.1.1 and F.2.1, shall be equal to or less than the limits in EN 300 220-1[2], clauses 9.1.4 or F.2.2, as appropriate.

(Not applicable: RX without LBT facility .)

6.2.2 Receive LBT threshold and transmitter max on-time

a) The LBT threshold, as defined in EN 300 220 -1[2],clause 9.2.1, shall be equal to or less than the limits in EN 300 220-1[2], clause 9.2.3, table 14.
b) The transmitter max on-time, as defined in EN 300 220-1[2], clause 8.11.1.4.1,shall be equal to or less than the limits in EN 300 220-1[2], clause 9.2.3.table 14.

(Not applicable: RX without LBT facility .)

6.2.3 Adjacent channel selectivity

The adjacent channel selectivity as defined in EN 300 220-1[2], clause 9.3.1, shall be equal to or greater than the limits in EN 300 220-1[2], clause 9.3.3.1, table 15 and clause 9.3.3.2,table 16.
This requirement applies only to all class 1 receivers, as defined in EN 300 220-1[2], clause 4.1.1.

(Not applicable: RX is class 3.)

6.2.4 Blocking or desensitization

The blocking or desensitization, as defined in EN 300 220-1[2], clause 9.4.1, shall be equal to or greater than the limits in EN 300 220-1[2], clause 9.4.3, table 17 and clause 9.4.3.3, table 18.
This requirement applies only to class 1 and class 2 receivers, as defined in EN 300 220-1[2], clause 4.1.1.
The blocking or desensitization for receivers with listen before talk(LBT) facility, as defined in 300 220-1[2], clause 9.4.1, shall be equal to or greater than the limits in EN 300 200-1[2], clause9.4.3.1.
Additionally, the blocking (saturation) for Class 1 receivers as defined in 300 220-1[2], clause 9.4.1, shall be equal to or greater than the limits in 300 220-1[2], clause 9.4.3.2.

(Not applicable: RX is class 3.)

6.2.5 Intermodulation response rejection

The intermodulation response rejection , as defined in 300 220-1[2], clause 9.5.1, shall be equal to or greater than the limits in 300 220-1[2], clause 9.5.3.
This requirement applies only to class 1 receivers, as defined in 300 220-1[2], clause 4.1.1.

(Not applicable: RX is class 3.)

6.2.6 Spurious response rejection

The spurious response rejection, as defined in 300 220-1[2], clause 9.6.1, shall be equal to or greater than the limits in 300 220-1[2], clause 9.6.3.

(Not applicable: RX is class 3.)

6.2.7 Spurious radiations

LIMIT

ETSI EN 300 220-1 (V21.1) Sub-clause 9.7.5
The power of any spurious emission, conducted or radiated, shall not exceed the following values given below:

	Below 1000 MHz	**Above 1000 MHz**
Operating	2nW	20nW

Remark: The limits are applicable to all receiver classes.

MEASUREMENT EQUIPMENT USED

(Same as <Effective Radiated Power>)

Test Configuration

(Same as <Effective Radiated Power>)

TEST PROCEDURE

1. Please refer to ETSI EN 300 220-1 (V21.1) Sub-clause 6.1.1 / 6.1.2 for the test conditions.
2. Please refer to ETSI EN 300 220-1 (V21.1) Sub-clause 9.7.2 / 9.7.3 / 9.7.4 for the measurement method.

TEST RESULTS

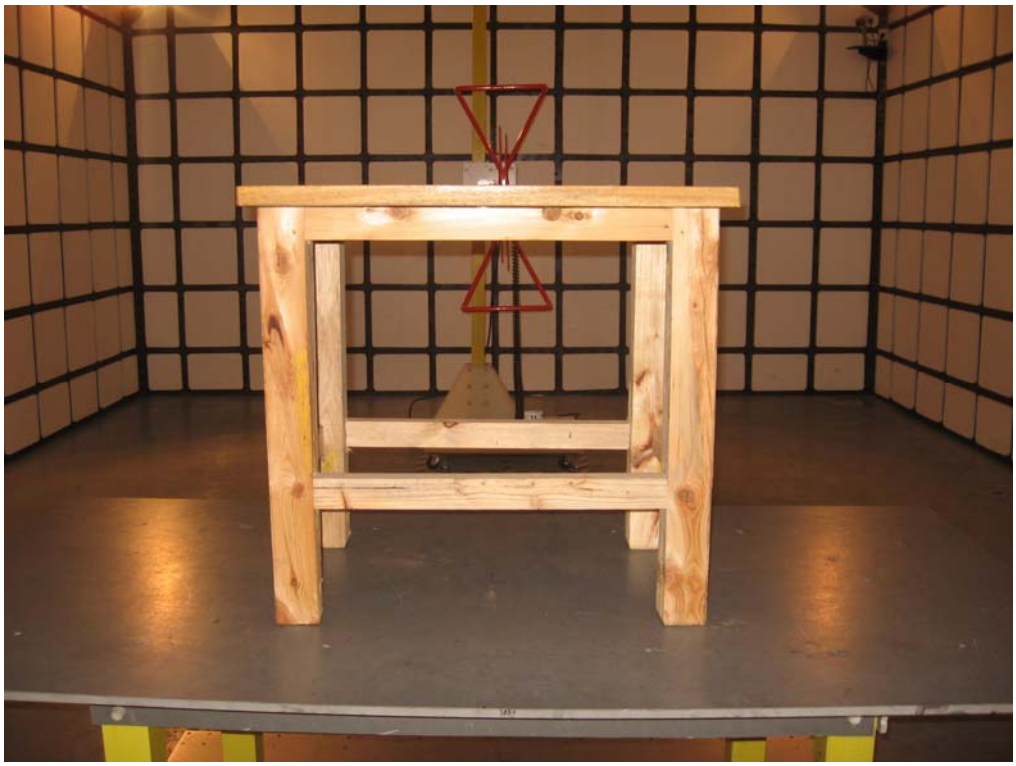
No non-compliance noted

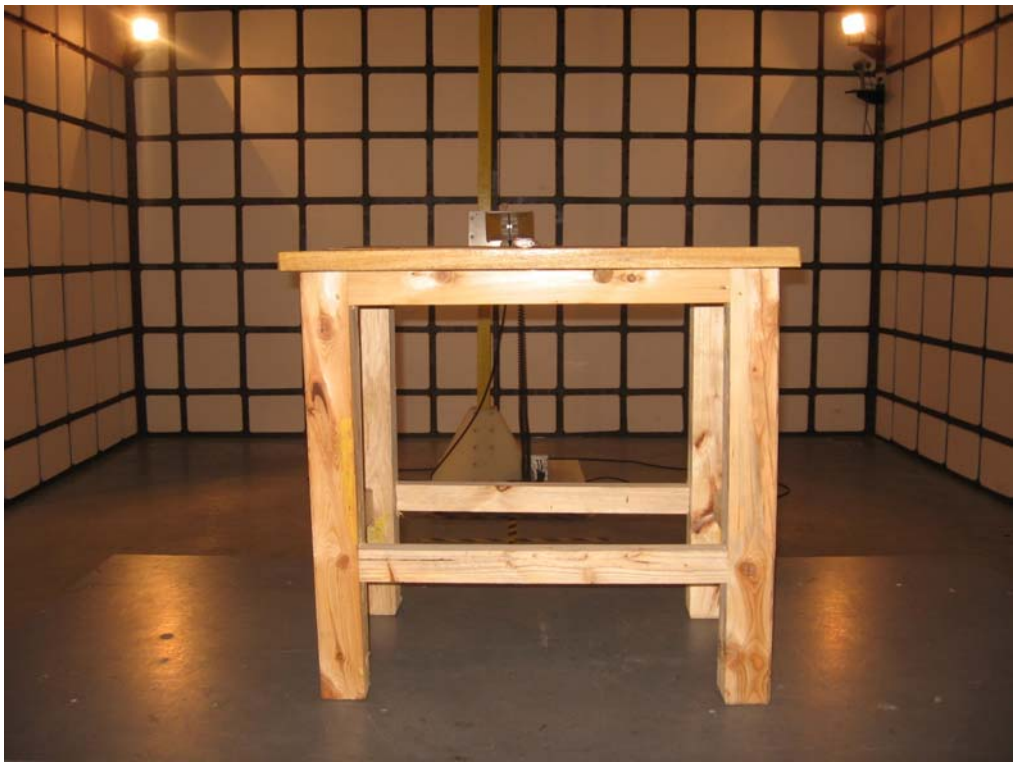
Operation Mode:	RX / Y Mode	**Test Date:**	Aug 09, 2008
Temperature:	25°C	**Tested by:**	Divan
Humidity:	56 % RH	**Polarity:**	Ver. / Hor.

Frequency	Reading level	Antenna	S.G.	Cable loss	Ant.Gain	Emission level	Limit	Margin
(MHz)	(dBm)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
				RX				
35.951	-64.22	V	-56.63	0.54	-3.88	-61.05	-57.00	-4.05
47.855	-72.83	V	-76.67	0.71	0.95	-76.43	-57.00	-19.43
63.006	-68.50	V	-70.76	0.90	0.80	-70.86	-57.00	-13.86
107.915	-56.56	V	-68.24	1.53	6.48	-63.29	-57.00	-6.29
144.168	-70.40	V	-74.85	2.04	6.90	-69.99	-57.00	-12.99
156.072	-72.54	V	-76.16	2.18	6.83	-71.51	-57.00	-14.51
35.951	-61.30	H	-56.47	0.54	-3.71	-60.72	-57.00	-3.72
84.108	-73.47	H	-81.40	1.13	1.70	-80.83	-57.00	-23.69
96.012	-73.01	H	-80.94	1.22	1.83	-80.33	-57.00	-23.33
107.915	-72.93	H	-86.45	1.53	6.47	-81.51	-57.00	-24.51
180.420	-73.72	H	-85.56	1.60	6.47	-80.69	-57.00	-23.69
276.733	-74.55	H	-79.48	2.22	6.90	-74.80	-57.00	-17.80

APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

TRANSMITTER





RECEIVER