EMC VERIFICATION SUMMARY

Report No.: SZ12040249-1

☐TV ☐DVB ☐AV In ☐IPod ☐DVD ☐Cassette ☒Others Remote control

Model: CLR7921 IR-100, IR-180, MINIPRO, IR-50, USB-300, PR-8200, RC-PROG-01, RC-PROG-02, FREE TV, FREE 4, PRC1(CLR7981-E1), PRC2(CLR7981-E2), PRC4(CLR7981-E4), CLR7089, DPM7921, PRC2280, PRC6242, PRC6440, CLR7980-E1, CLR7980-E2, CLR7980-E4, CLR7981-E1, CLR7981-E2, CLR7981-E4, CLR7982-E1, CLR7982-E2, CLR7982-E4, CLR7983-E4, CLR7984-E4, CLR7985-E2, CLR7986-E2, CLR7987, CLR7988-E4, CLR7989-E1, CLR79810, CLR79811-E1, CLR79812-E1, CLR79813-E4, CLR79814-E4, CLR79815-E4, CLR79816-E4, CLR79817, CLR79818, CLR79819-DVD, CLR79819-TV, CLR79819, CLR79820, CLR7922, CLR7088, CLR7089, CLR7090, CLR7098, CLR7099	Applicant: Changzhou Longer Electronics Co., Limited FL 4, NO.431-1, GONGRENXINCUN,CHANGZHOU, JIANGSU PROVINCE, PRC Product Description: PROGRAMMABLE REMOTE CONTROL Test Conducted Date: 26 August 2011 to 05 September 2011 Sample Receipt Date: 26 August 2011
☒ 1st TEST ☐ 2nd TEST	ALL TESTS WERE CONDUCTED IN ACCORDANCE WITH: *EN 55013: 2001 + A1 +A2 *EN 55020: 2007

Test Result	OK	Not OK	See Remark
*EN 55013: 2001 + A1 +A2	☒	☐	☐
*EN 55020: 2007	☒	☐	☐
When determining the test conclusion, the Measurement Uncertainty of test has been considered.			

Remarks:Partially tests were witnessed in a sub-contractor which located in Shenzhen, China.
This report supersedes previous report with Verification/Report number(s) SZ11080442-1 / SZ11080442-1 dated 05 September 2011.

Prepared and Checked By:

Sign on File
William Chen
Engineer

Approved By:

Alex Digitally signed by Alex Li Location: Intertek Testing Services ***Signature***

Alex Li
Supervisor

07 May 2012 ***Date***

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Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch
6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751

EMC Results Conclusion
(with Justification)

RE: EMC Testing Pursuant to EMC Directive 2004/108/EC Performed On The PROGRAMMABLE REMOTE CONTROL,
Model: CLR7921
IR-100, IR-180, MINIPRO, IR-50, USB-300, PR-8200, RC-PROG-01, RC-PROG-02, FREE TV, FREE 4, PRC1(CLR7981-E1), PRC2(CLR7981-E2), PRC4(CLR7981-E4), CLR7089, DPM7921, PRC2280, PRC6242, PRC6440, CLR7980-E1, CLR7980-E2, CLR7980-E4, CLR7981-E1, CLR7981-E2, CLR7981-E4, CLR7982-E1, CLR7982-E2, CLR7982-E4, CLR7983-E4, CLR7984-E4, CLR7985-E2, CLR7986-E2, CLR7987, CLR7988-E4, CLR7989-E1, CLR79810, CLR79811-E1, CLR79812-E1, CLR79813-E4, CLR79814-E4, CLR79815-E4, CLR79816-E4, CLR79817, CLR79818, CLR79819-DVD, CLR79819-TV, CLR79819, CLR79820, CLR7922, CLR7088, CLR7089, CLR7090, CLR7098, CLR7099

We tested the PROGRAMMABLE REMOTE CONTROL, Model: CLR7921, to determine if it was in compliance with the relevant EN standards as marked on the EMC Verification Summary. We found that the unit met the requirement of EN55013, EN55020 standards when tested as received.

The Model: IR-100, IR-180, MINIPRO, IR-50, USB-300, PR-8200, RC-PROG-01, RC-PROG-02, FREE TV, FREE 4, PRC1(CLR7981-E1), PRC2(CLR7981-E2), PRC4(CLR7981-E4), CLR7089, DPM7921, PRC2280, PRC6242, PRC6440, CLR7980-E1, CLR7980-E2, CLR7980-E4, CLR7981-E1, CLR7981-E2, CLR7981-E4, CLR7982-E1, CLR7982-E2, CLR7982-E4, CLR7983-E4, CLR7984-E4, CLR7985-E2, CLR7986-E2, CLR7987, CLR7988-E4, CLR7989-E1, CLR79810, CLR79811-E1, CLR79812-E1, CLR79813-E4, CLR79814-E4, CLR79815-E4, CLR79816-E4, CLR79817, CLR79818, CLR79819-DVD, CLR79819-TV, CLR79819, CLR79820, CLR7922, CLR7088, CLR7089, CLR7090, CLR7098, CLR7099 are the same as the Model: CLR7921 in hardware aspect. The difference in model number serves as marketing strategy.

The production units are required to conform to the initial sample as received when the units are placed on the market.

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6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751

LABORATORY MEASUREMENTS

Configuration Information

Equipment Under Test (EUT):	PROGRAMMABLE REMOTE CONTROL
Model:	CLR7921
Serial No.:	N/A
Support Equipment:	IR Remote Control Code Analyzer (YG-303)
Cables:	N/A
Adaptor:	N/A
Rated Voltage:	Battery Operated DC 4.5 V (“ÁAA”*1.5 V*3)

Performance Criteria for Immunity

The performance criteria are referred to the test standard: EN 55020

Performance Criteria A

The equipment shall continue to operate as intended during the test. No change of actual operating state (for example change of channel) is allowed as a result of the application of the test. Multifunction equipment shall for each function meet the relevant requirements. Evaluation is carried out for audio and video functions.

Evaluation of Audio Quality

The criterion of compliance with the requirement is a wanted to unwanted audio signal ratio of ≥40dB at a wanted audio signal level of 50mW, or at another audio signal level specified by the manufacturer. If the S/N ratio is less than 43dB, the performance criterion for audio assessment is the actual S/N ration minus 3dB. For AM sound receivers the criterion is ≥26dB at 50mW; and is ≥26dB at 500mW for the AM/FM car radio or broadcast receiver cards for computers.

Evaluation of Video Quality

In the evaluation of picture interference the wanted test signal produces a standard picture (in the case of video tape equipment on the screen of the test-TV-set) and the unwanted signal produces a degradation of the picture. The degradation may be in a number of forms, such as a superposed pattern, disturbance of synchronization, geometrical distortion, loss of picture contrast, of colour, etc.

The criterion of compliance with the requirement is just perceptible degradation by observation of the picture. The screen shall be observed under normal viewing conditions (brightness 15 lx to 20 lx), at a viewing distance of six times the height of screen.

Performance Criteria B

The equipment shall continue to operate as intended after the test. No loss of function is allowed after the test when the apparatus is used as intended, but failures which are recovered automatically but which cause temporary delay in processing, are permissible. No change of actual operating state for example change of channel or stored data and settings is allowed as result of the application of the test. During the test, degradation of performance is allowed.

Radiated Disturbance
Pursuant to EN55013: Emissions Requirement

Used Test Equipment

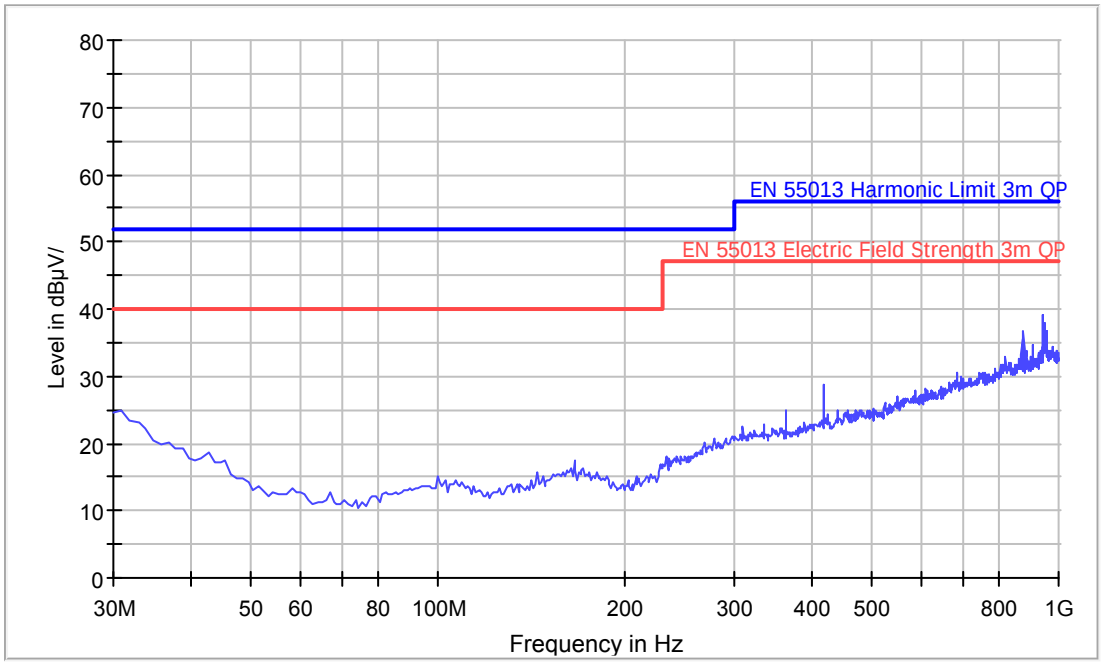
Equip No.	Description	Manufacturer	Model No.	Cal. Date	Due Date
SZ185-01	EMI Receiver	R & S	ESCI	08 Mar 2011	08 Mar 2012
SZ061-03	Biconilog Antenna	ETS	3142C	02 Jul 2011	02 Jan 2013
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	15 Jan 2011	15 Jan 2012

Notes:
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
2. Negative sign (–) in the margin column signify levels below the limit.
3. Frequency range scanned: 30MHz to1000MHz.
4. Only emissions significantly above equipment noise floor are reported.
5. Uncertainty: 4.8dB at a level of confidence of 95%.

Test Data

Radiated Disturbance
Pursuant to EN55013: Emissions Requirement

Vertical



Frequency (MHz)	Polarization	Readings (dBµV/m)	Limits (dBµV/m)	Margin (dB)
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☒ No emissions significantly above equipment noise floor.

EN61000-4-2
Electrostatic Discharge

Test Summary (Pursuant to EN55020)

Port:	Enclosure
Basic Standard:	EN61000-4-2
Required Performance Criterion:	B
Limit:	±8.0kV (Air Discharge)
	±4.0kV (Contact Discharge)
	±4.0kV (Indirect Contact Discharge)
Temperature:	28°C
Relative Humidity:	43%
Test Mode:	ON Mode
Test Setup:	Table-top
Test of Post-Installation:	N/A
Time Between Each Discharge:	1 second

Used Test Equipment

Equip No.	Description	Manufacturer	Model No.	Cal. Date	Due Date
SZ189-03	ESD Simulator	TESEQ	NSG 435	05 Nov 2010	05 Nov 2011

Test Results

EN61000-4-2
Electrostatic Discharge

Discharge Type	Applied Voltage	Result (Pursuant to EN55020, Criterion B)
Contact Discharge	±4kV	N/A
Air Discharge	±8kV	OK
Indirect HCP Discharge	±4kV	OK
Indirect VCP Discharge	±4kV	OK

- **No. of discharge: 10 discharge for +ve and 10 discharge for –ve.**
- **Time between each discharge: at least 1 second.**

☒ Additional Information

☒ No observable change

☐ EUT stopped operation and could / could not be reset by operator at _____kV of ESD.

☐ EUT was in abnormal operation:
- Operation mode was changed at _____kV of ESD.

☐ _____
_____

EN61000-4-3
RF EM Field (Keyed Carrier)

Test Summary (Pursuant to EN55020)

Basic Standard:	EN61000-4-3
Port:	Enclosure
Required Performance Criterion:	A
Limit:	3.0 V/m (rms)
Test Modulation:	Duty Cycle 1/8, 217Hz Repetition Frequency
Frequency:	895MHz to 905MHz
Dwell Time:	3s
Frequency Step:	5MHz
Temperature:	25°C
Relative Humidity:	57%
Test Facility:	Full Anechoic Chamber
Type of Antenna:	Log-periodic
Antenna Polarization:	Vertical
Test Distance:	3 meters
Test Mode:	ON Mode
Test Setup:	Table-top

Used Test Equipment

Equip No.	Description	Manufacturer	Model No.	Cal. Date	Due Date
SZ188-02	Anechoic Chamber	ETS	RFD-F/A-100	25 Nov 2010	25 Nov 2011
SZ061-04	Biconilog Antenna	ETS	3142C	15 Mar 2010	15 Sep 2011
SZ180-01	Signal Generator	R&S	SML03	08 Mar 2011	08 Mar 2012
SZ181-01	Amplifier	PRANA	AP32 MT215	03 Dec 2010	03 Dec 2011
SZ089-03	Audio Analyzer	Audio Precision	ATS-1A	08 Mar 2011	08 Mar 2012

Test Results

EN61000-4-3
RF EM Field (Keyed Carrier)

Frequency (MHz)	Exposed Side		Field Strength V/m (rms)	Result (Pursuant to EN55020, Criterion A)
895-905	Left	V	3	OK
895-905	Right	V	3	OK

☒ Additional Information

☒ No observable change

☐ EUT stopped operation and could / could not be reset by operator at _____V/m at _____MHz.

☐ EUT was in abnormal operation:
– Degradation was found in picture quality assessment.

☐ S/N ratio (≥40dB) decreased under keyed carrier RF interference.

☐ _____

_____

EN55020
RF EM Field (AM Modulated Carrier)

Test Summary

Port:	Enclosure
Basic Standard:	EN55020
Required Performance Criterion:	A
Wanted Signal:	☐ FM: 1kHz, 40kHz Deviation FM Signal ☐ TV: Standard TV Signal (Colour Bar with 1kHz Audio) ☐ DTV: Standard TV Signal (Colour Bar with Full Range –6dB Audio in 1kHz and Small Moving Element) ☐ DAB: Standard digital sound signal (Full Range –6dB Audio in 1kHz) ☐ Audio Playback: Pre-recorded Tape / Disc (1kHz Audio) ☐ Video Playback: Pre-recorded Tape / Disc (Colour Bar with 1kHz Audio) ☐ Audio& Video Input.: (Colour Bar with 1kHz Audio) ☐ Audio Amp.: 1kHz Audio Signal ☒ Infrared remote control
Unwanted Signal:	AM at 1kHz at 80% Depth

Test Results

EN55020
RF EM Field (AM Modulated Carrier)

Test Mode	Type	Result (Pursuant to EN55020, Criterion A)
ON Mode	Sweep	OK

Note: Uncertainty: 2.5dB at a level of confidence of 95%.
This test was witnessed in Shenzhen Academy of Metrology & Quality Inspection.

☒ Additional Information

☒ No observable change

☐ EUT stopped operation and could / could not be reset by operator at _____MHz unwanted signal.

☐ EUT was in abnormal operation:
– Operation mode was changed from _____ to _____ at _____MHz.

☐ The interference level need to decrease for keeping the required picture quality / S/N ratio ≥40dB.

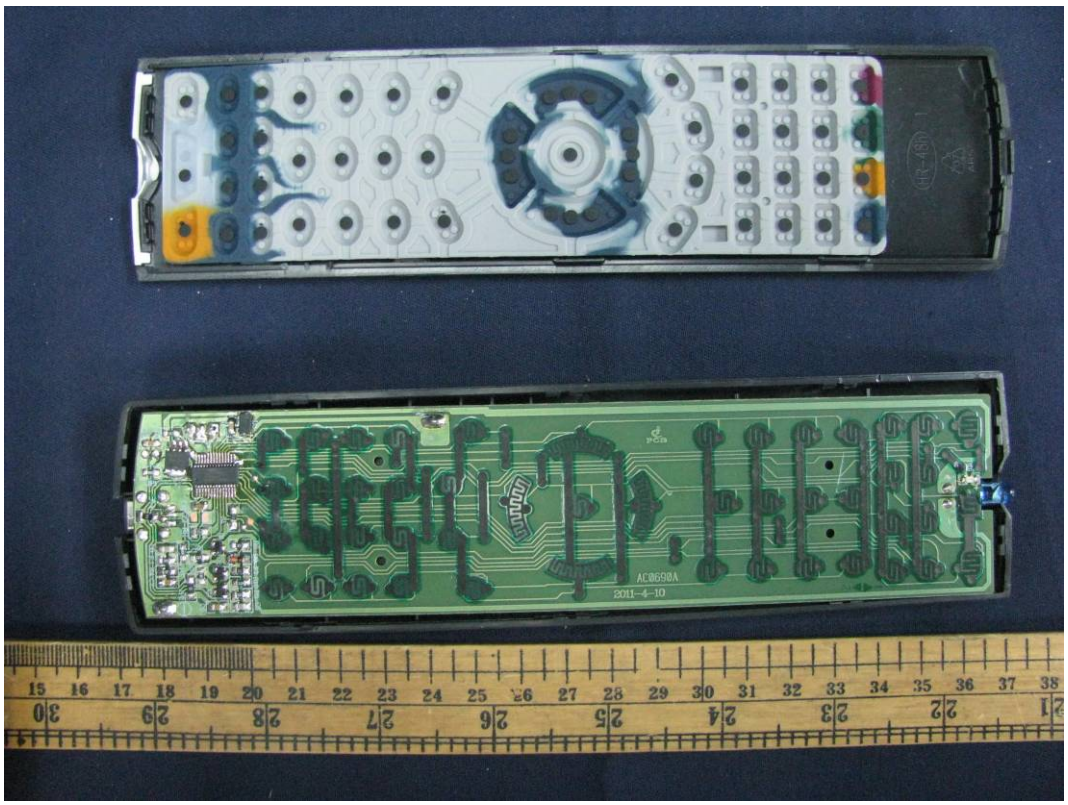
☐ _____
_____

Photos of EUT

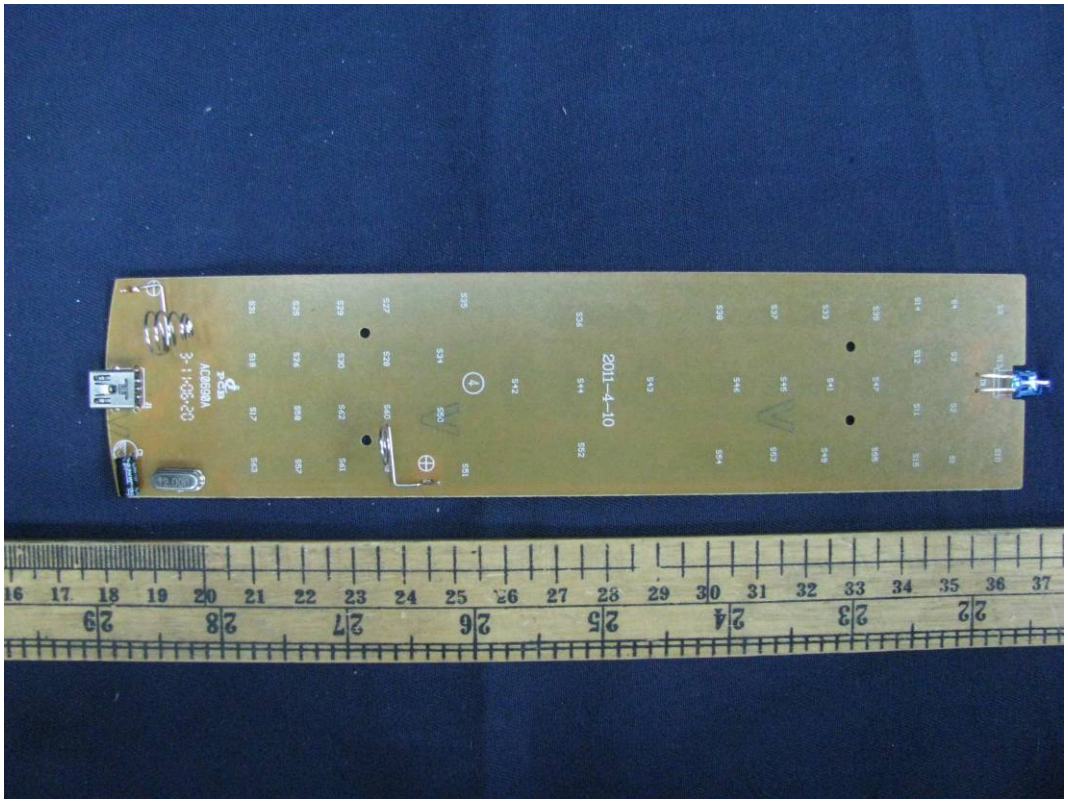
External Photo

External Photo

Internal Photo



Internal Photo



Appendix 1

EMS Test Equipments Used for S1, S2, S3 and S4

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
TS9980 Software	ROHDE&SCHWARZ	T80-K1 V 2.0	#N/A	---	---
Signal Generator	R&S	SMY01	837577/009	22 Jan 2011	21 Jan 2012
Signal Generator	R&S	SMY01	830573/011	22 Jan 2011	21 Jan 2012
Power amplifier	BONN	BSA1515-25	994639	22 Jan 2011	21 Jan 2012
Power meter	R&S	URV5	828999/017	22 Jan 2011	21 Jan 2012
Audio analyzer	R&S	UPA	829814/001	28 Dec 2010	27 Dec 2011
Stripline Test Cell	R&S	TS998JC	#N/A	---	---
Voltage meter	R&S	URV35	100188	22 Jan 2011	21 Jan 2012
TV Transmitter	R&S	SFM	100133	22 Jan 2011	21 Jan 2012
TV Generator	R&S	SGMF	100032	22 Jan 2011	21 Jan 2012
TV Generator	R&S	SGPF	100122	22 Jan 2011	21 Jan 2012
TV Transmitter	R&S	SFQ	100576	9 Mar 2010	8 Mar 2012
MPEG2 Generator	R&S	DVG	100440	9 Mar 2010	8 Mar 2012
DSB Data Inserter	R&S	DSIP020	#N/A	---	---
DAB Transmitter	R&S	SDB601	#N/A	---	---

Guidelines On Issuing EC Declaration Of Conformity Pursuant To EMC Directive

To attest the compliance of apparatus with the relevant EMC Directive, an EC Declaration of Conformity shall be issued by the manufacturer or his authorised representative in the European Community, and the attached EC Declaration of Conformity template contains all mandatory requirements pursuant to EMC Directive 2004/108/EC. Please follow the steps listed below when preparing an EC Declaration of Conformity:

1. Provide the name and address of the manufacturer;
2. Provide the name and address of the authorised representative in the European Community, where applicable;
3. For Apparatus' Description, specify the brand name and any other information allowing for the description of the apparatus to which the EC Declaration of Conformity refers;
4. For Apparatus' Identification, specify the type, batch, serial number or any other information allowing for the identification of the apparatus to which the EC Declaration of Conformity refers;
5. Specify the relevant EMC Directive with which the apparatus are in compliance;
6. List all dated specifications under which conformity is declared to ensure the conformity of the apparatus with the relevant EMC Directive, you may refer the standards shown in the Test Verification of Conformity issued by Intertek;
7. Sign the EC Declaration of Conformity by the person empowered to bind the manufacturer or his authorised representative in the European Community. The Name, Position and Company of this person shall be specified for identification;
8. State the date of issuing the EC Declaration of Conformity.

NOTES:

a. The EC Declaration of Conformity shall be held by the manufacturer or his authorised representative in the European Community at the disposal of the competent authorities for a period of at least ten years after the date on which such apparatus was last manufactured. If neither the manufacturer nor his authorised representative is established within the European Community, the obligation to hold the EC Declaration of Conformity at the disposal of the competent authorities shall lie with the person who places the apparatus on the European Community market.

b. If EMC Directive 2004/108/EC is applied, the manufacturer shall draw up technical documentation according to Annex IV of this EMC Directive; and in addition to CE Marking, the apparatus shall also meet other marks and information as stated in Article 9 of the same EMC Directive.

c. The EC Declaration of Conformity guidelines and template are for your reference only, you shall ensure that the EMC Directive 2004/108/EC are applied correctly.

EC Declaration of Conformity

I, the undersigned,

Manufacturer's Name: _____

Manufacturer's Address: _____

_____

Authorised Representative's Name: _____

Authorised Representative's Address: _____

_____

certify and declare under our sole responsibility that the following apparatus:

Apparatus' Description: _____

Apparatus' Identification: _____

conforms with the essential requirements of

Directive: _____

based on the following specifications applied:

Dated Specifications: _____

_____

_____

and therefore complies with the essential requirements and provisions of the EMC Directive.

Signature: _____

Full Name: _____

Position: _____

Company: _____

Date: _____