



**TEST REPORT
FOR
IEC 61000-4-4 (EFT/BURST IMMUNITY)
IEC 61000-4-5 (SURGE IMMUNITY)
ANSI/IEEE C62.41**

Report No.: 11-02-MAS-020-03

Client: ComMax International Company
 Product: Surge Energy Absorb and Transfer Device
 突波能量吸收及轉換裝置
 Model No.: MART5-C2-30-250
 Comment Issues: N/A

Date test item received: 2011/01/27
 Date test campaign completed: 2011/02/10
 Date of issue: 2011/02/25

The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.

Total number of pages of this test report: 7 pages

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Laboratory Introduction: Electronics Testing Center, Taiwan is recognized, filed and mutual recognition arrangement as following:

- ① ISO9001: TÜV Product Service
- ② ISO/IEC 17025: BSMI, CNLA, DGT, NVLAP, CCIBLAC, UL, Compliance
- ③ Filing: FCC, Industry Canada, VCCI
- ④ MRA: Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through CNLA
- ⑤ FCC Registration Number: 90588, 91094, 91095



EFT/BURST IMMUNITY TEST DATA

Test Date: Jan. 27, 2011

Test Specification	IEC 61000-4-4:2004		
Test Equipment		Calibration Data	Recommended Recal. Date
EFT Generator/Clamp\NoiseKen\FNS-AXII		Mar. 19, 2010	Mar. 18, 2011
Climatic Condition	Ambient Temperature: <u>22</u> °C		Relative Humidity: <u>62</u> % RH
Atmospheric Pressure	<u>985</u> mbar		
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		
Operating Conditions of The Device		Operation Mode	

Pulse: 5 /50ns Burst: 15ms /300ms		Repetition Rate: <u>5kHz</u>		Test time: <u>1</u> min/each condition	
\Voltage\Polarity\		<u>4.0</u> kV		___ kV	
\Test Point\Mode\Result\		+	-	+	
Power Line	L	A	A	--	--
	N	A	A	--	--
	G	A	A	--	--

Note: "A" means the EUT function was correct during the test.

"--" means the test is not applicable.

※ Test Method: Conform with IEC61000-4-4 and CNS14676-4 (C6424-4)

EFT/BURST IMMUNITY TEST SETUP PHOTOS



SURGE IMMUNITY TEST DATA

Test Date: Jan. 27, 2011

Test Specification	IEC 61000-4-5:2005		
Test Equipment		Calibration Data	Recommended Recal. Date
Lightning Surge Simulator Noiseken\LSS-15AX		Jan. 07, 2011	Jan. 06, 2012
Climatic Condition	Ambient Temperature: <u>21</u> °C		Relative Humidity: <u>53</u> % RH
Atmospheric Pressure	<u>985</u> mbar		
Power Supply System	AC Power: <u>230</u> V <u>50</u> Hz		
Operating Conditions of The Device	Operation Mode		

Waveform: 1.2/50 μ s(8/20 μ s)		Repetition rate: <u>60</u> sec		Times: <u>1</u> times/each condition		Testing port :power port	
\Voltage \Mode \Polarity \Phase \Result			0°	90°	180°	270°	
10.0kV	L - N	+	A	A	A	A	
		-	A	A	A	A	
	L - G	+	A	A	A	A	
		-	A	A	A	A	
	N - G	+	A	A	A	A	
		-	A	A	A	A	

Note: "A" means the EUT function was correct during the test.

"--" means the test is not applicable.

※ Test Method: Conform with IEC61000-4-5 and CNS14676-5 (C6424-5)

SURGE IMMUNITY SETUP PHOTOS



RINGWAVE IMMUNITY TEST DATA

Test Date: Jan. 27, 2011

Test Specification	ANSI/IEEE C62.41:2002		
Test Equipment	Calibration Data	Recommended Recal. Date	
EMC Immunity Test System\ EMC PRO PLUS	May 11, 2010	May 10, 2011	
Climatic Condition	Ambient Temperature: <u>21</u> °C		Relative Humidity: <u>53</u> % RH
Atmospheric Pressure	<u>985</u> mbar		
Power Supply System	AC Power: <u>230</u> V <u>50</u> Hz		
Operating Conditions of The Device	Operation Mode		

Waveform : Combination wave 1.2/50µs(8/20µs)			Repetition rate: <u>60</u> sec		Times: <u>3</u> times/each condition	
\Voltage \Mode \Polarity \Phase \Result			0°	90°	180°	270°
6.0 kV	L - N	+	A	A	A	A
		-	A	A	A	A
	L - G	+	A	A	A	A
		-	A	A	A	A
	N - G	+	A	A	A	A
		-	A	A	A	A

Note: "A" means the EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

RINGWAVE IMMUNITY SETUP PHOTOS