## **Environmental Test**

### **TEST UNIT AND EQUIPMENT:**

GU128x32D-7806A. #804167 was tested between 19-May and 21-May, 2008.

Weiss WKL 100 Environmental Chamber serial 2200299200 calibrated 14-Aug-2007. Shaffner NSG435 ESD simulator PA0138 uncalibrated. Agilent E4402B spectrum analyser PA0193 calibrated 9-Nov-2007.

### **OPERATING CONDITION:**

RF emission and ESD: Vcc = 5V, GND = 0V, module operating in self-test mode.

Temperature test: Vcc = 5.25V and 4.75V, module operating in self-test mode.

### **TEMPERATURE RANGE:**

The module was brought to temperature in the Weiss-Technik chamber in the sequence, and for the durations shown. Module was powered on in self-test mode, and visual quality of display observed.

Temp	Duration	Observation					
-40C	2 hours	Off, storage					
-40C	1 hour	Operating, OK					
+85C	18 hours	Off, storage					
+85C	1 hour	Operating,OK					

#### ELECTRO-STATIC DISCHARGE (Method IEC 6100-4-2):

The module was powered up in self-test mode on the test table. There it was exposed to contact and air discharges applied to the ribbon cable across the module face, the horizontal conductive plane under the module, and the vertical conductive plane.

Observation	Contact Discharge	Air Discharge
Lowest voltage discharged	1kV	6kV
Temporary spurious ON/OFF of pixels	3kV	10kV
Module reset or lock-up	None	None
Permanent damage	None	None
Highest voltage discharged	9kV	16kV

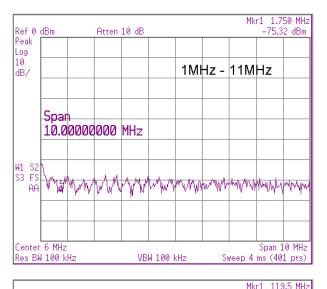
### CONDUCTED RF EMISSION TEST:

The 50-ohm input of the Agilent E4402B spectrum analyser was AC-coupled to the 5V supply of the module. While the module performed self-test, the spectra shown overleaf were taken:

Start	Stop	Spectra	Significant UUT peaks
50 kHz	2050 kHz	UUT	-28dBm @200kHz
1 MHz	11 MHz	UUT	None
8 MHz	88 MHz	UUT	-52dBm @32MHz
80 MHz	280 MHz	UUT, background	None
0.2 GHz	3 GHz	UUT	None

## **Environmental Test**

#### Mkr1 200 kHz Ref 0 dBm Atten 10 dB -28.65 dBm Peak Log 10 50kHz - 2050kHz dB/ Marker 200.000 kHz -28.65 dBm W1 S2 S3 FS AA A WW WW W W WWW WWW HM. Center 1.05 MHz Res <u>BW 10</u> kHz Span 2 MHz VBW 10 kHz Sweep 25.77 ms (401 pts)



Ref 0	dBm		Atten		Mkr1 32.0 MHz -52.86 dBm					
Peak Log										
10 dB/						8MF	۱z –	88M	Ηz	
	Mark									
			10 MH	z						
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Center Res Bk				VI	BW 1 M	Hz	S	Sweep 4		30 MHz 1 pts)

BW	1 MHz			V	BW 1 MI	łz	SI	veep 4 Mk		1 pts) 40 GHz
	dBm		Atten	10 dB						8 dBm
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	C									
	Spar 2.80	1 0000	000	GHz						
S2 FS	Mysontwoor	Analony	, syapily	1 Rayalyung-Nya,		et was a start of the start of	m	quarment	white	Mypun
AA AA										

Span 2.8 GHz

Sweep 4.667 ms (401 pts)

R P Li 1

W

Center 1.6 GHz

Res BW 3 MHz

Ref Ø Peak	dBm		Atten 10 dB			Mkr1 119.5 MHZ -64.81 dBm				
Log 10 dB/						80M	Hz -	280	MHz	
	Spar 200.	0000	000	MHz						
W1 S2 S3 FS AA		mphys	\$n.h.n.w	Knythr	nvundun	Nurin	~~~Jar	white	wr/W4	hylimpinn
	-180 M 4 1 MHz			VI	BW 1 MH	Ηz	Sr		Span 20 ms (40	

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### NORITAKE ITRON VFD MODULES

VBW 3 MHz

### GU128x32D-7806A

# GU128x32D-7806A