Product Service

SECTION 1

REPORT SUMMARY

EMC Approval Testing of the
Brigade Electronics plc
BE-970FM TFT LCD Quad Colour Monitor

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1.1 INTRODUCTION

The information contained in this report is intended to show verification of the EMC Approval Testing of the Brigade Electronics plc, BE-970FM TFT LCD Quad Colour Monitor, to the requirements of ISO 13766, for electric/electronic components to be fitted in Earth Moving Machinery.

Objective	To perform EMC Approval Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification for the series of tests carried out.
Manufacturer	Brigade Electronics plc.
Country of Origin	UK
Number of Samples Tested	One
Model/Part Number	BE-970FM
Operating Voltage	10V - 32V DC
Declared Variants	None
Test Specification/Issue/Date	ISO 13766, Second edition, 2006-05-15
Build Status	Not declared
Software Issue	N/A
Incoming Release BSD Number Date	Declaration of Build State 75904379/36 06 August 2008
Disposal Packing Note Number Date	Held at TÜV PS 75904379-36000 05 December 2008
Order Number Date	S0138 25 July 2008
Start of Test	06 August 2008
Finish of Test	05 December 2008
Test Engineers	R Bennett, B Logan, D West
Related Documents	CISPR 25: 2nd Edition 2002 ISO 10605: 2001 ISO 11452-2: 2nd Edition 2004 ISO 11452-4: 3rd Edition 2005 ISO 7637-2: 2nd Edition 2004

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1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out to ISO 13766 is shown below.

Test	Spec Clause	Test Description	Result	Base Standard
2.1	Clause 5; 5.6	Radiated Broadband Electromagnetic Emissions, Electric/Electronic Subassemblies 30MHz to 1000MHz	Pass	CISPR 25
	Clause 5; 5.7	Radiated Narrowband Electromagnetic Emissions, Electric/Electronic Subassemblies 30MHz to 1000MHz		
2.2	Clause 5; 5.8.3	Electromagnetic Radiation (AM), Absorber Lined Chamber Test Method	Pass	ISO 11452-2
2.3	Clause 5; 5.8.3	Electromagnetic Radiation, Bulk Current Injection Test Method	Pass	ISO 11452-4
2.4	Clause 5; 5.9	Electrostatic Discharge – Enclosure Port	Pass	ISO 1065
2.5	Clause 5; 5.10	Immunity of Electric/Electronic Subassemblies to Transient Disturbances Conducted Along Supply Lines	Pass	ISO 7637-2

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1.3 PRODUCT INFORMATION

1.3.1 Technical Description

The Equipment Under Test (EUT) was an Brigade Electronics plc, BE-970FM TFT LCD Quad Colour Monitor, as shown in the photograph below.

A full technical description of the equipment under test can be found in the manufacturer's documentation.

Equipment Under Test

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1.3.2 Test Configuration

The EUT was configured for testing by connecting to a BE970-C camera and the DC supply via the junction box and the supply LISN. One camera lead only was connected. The other leads remained un-terminated.

For all testing less Transient Immunity, the EUT was powered from a 24V DC supply. For Conducted Transient Immunity testing, the EUT was powered from a 12V and a 24V DC supply in turn. The BE970-C Camera was powered by a 12V DC supply from the EUT.

1.3.3 Modes of Operation

Video from the camera was continuously output to EUT and displayed on the EUT screen.

1.3.4 Monitoring of Performance

The continuous operation of the EUT was monitored by observing the screen display.

1.3.5 Manufacturers Performance Criteria

Radiated Immunity: During application of the test phenomenon, picture interference is permissible but severe breakup or loss of picture is not. The EUT must recover and operate normally without user intervention when the test phenomenon is removed.

Transient Immunity: During application of the pulses, loss of picture is allowed but the EUT must recover and operate normally without user intervention, when the test phenomenon is removed.

1.4 DEVIATIONS FROM THE STANDARD

There were no deviations from the specifications used during testing

1.5 MODIFICATION RECORD

No modifications were made to the EUT during testing.

1.6 TEST SITE

The testing was carried out at our Bearley test site near Stratford-upon-Avon, Warwickshire.