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TEST REPORT

**PolyComp 32X80P7.621YHB
Electronic Sign**

tested to the

47 Code of Federal Regulations

Part 15 - Radio Frequency Devices

Subpart A and B – Unintentional Radiators

for

PolyComp Electronic Signs

A handwritten signature in black ink that reads "Andrew Cutler". The signature is written in a cursive style and is positioned above a horizontal line.

This Test Report is issued with the authority of:

Andrew Cutler – General Manager



All tests reported
herein have been
performed in accordance
with the laboratory's
scope of accreditation

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1. STATEMENT OF COMPLIANCE

The **Polycomp 32X80P7.621YHB Electronic Sign** complies with FCC Part 15 Subparts A and B as a Class A Unintentional Radiator when the methods as described in ANSI C63.4 - 2003 are applied.

2. RESULTS SUMMARY

The results from testing the sample are summarised in the following table:

Clause	Parameter	Result
15.101	Equipment authorisation requirement.	Verification required as the device would be categorised as “Other Class A digital devices”.
15.103	Exempted devices.	Not applicable as the device contains a digital device.
15.107	Conducted Emissions 0.15 - 30 MHz	Complies with a 14.6 dB margin at 0.501 MHz (Average).
15.109	Radiated Emissions 30 - 5000 MHz	Complies with a 11.7 dB margin at 152.120 MHz (Vertical).
15.111	Antenna Terminal Disturbance 30 – 950 MHz	Not applicable.

3. INTRODUCTION

This report describes the tests and measurements performed for the purpose of determining compliance with the specification.

The client selected the test sample.

This report relates only to the sample tested.

This report contains no corrections or erasures.

Measurement uncertainties with statistical confidence intervals of 95% are shown below test results. Both Class A and Class B uncertainties have been accounted for, as well as influence uncertainties where appropriate.

4. CLIENT INFORMATION

Company Name	Polycomp Electronic Signs.
Address	Unit 7, 88 Elizabeth Knox Place Mt Wellington.
City	Auckland.
Country	New Zealand.
Contact	Nissim Cohen.

5. DESCRIPTION OF TEST SAMPLE

Brand Name	Polycomp.
Model Number	32X80P7.621YHB.
Product	Electronic Sign.
Manufacturer	Unknown.
Country of Origin	Unknown.
Serial Number	Unknown.

6. RESULTS

Standard

The sample was tested in accordance with 47 CFR Part 15 Subparts A and B as a Class B digital device.

Methods and Procedures

The measurement methods and procedures as described in ANSI C63.4 - 2003 were used.

Section 15.107: Conducted emissions testing

Conducted Emissions testing was carried out over the frequency range of 150 kHz to 30 MHz which was carried out at the laboratory's MacKelvie Street premises in a 2.4 m x 2.4 m x 2.4 m screened room

Testing was carried out using a representative AC power supply system that was powered at 120 Vac.

The device was placed on top of the emissions table, which is 1 m x 1.5 m, 80 cm above the screened room floor which acts as the horizontal ground plane.

In addition the device was positioned 40 cm away from the screened room wall which acts as the vertical ground plane.

The artificial mains network was bonded to the screened room floor.

At all times the device was kept more than 80 cm from the artificial mains network.

The Class A limits have been applied.

The supplied plot is combined plot showing the worst case quasi peak and average results of both the phase and neutral lines to the representative AC power supply.

Quasi peak and average detectors have been used with resolution bandwidths of 9 kHz.

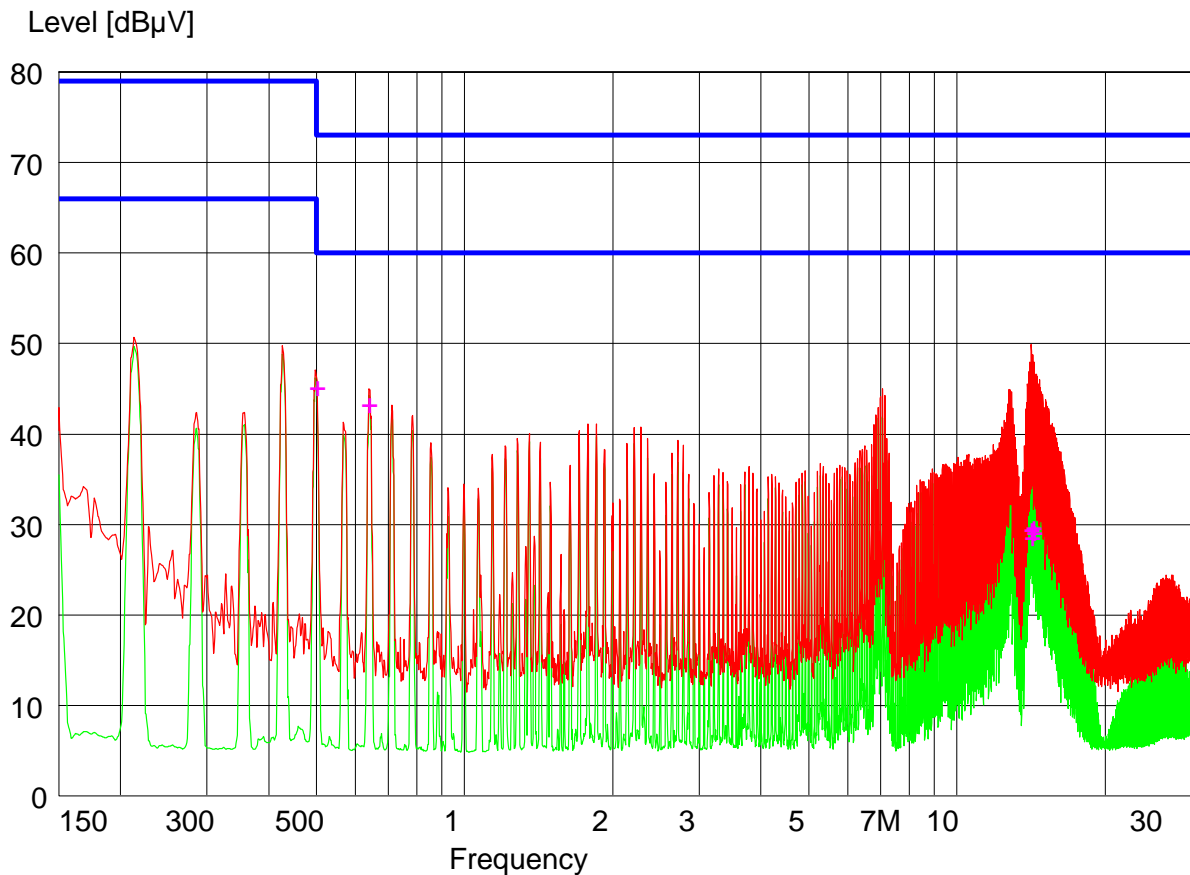
Measurement uncertainty with a confidence interval of 95% is:

- AC Mains port (0.15-30 MHz) \pm 2.8 dB

Conducted emissions (0.15 - 30.0 MHz)

Setup: EUT set up and powered at 110Vac. EUT operating normally.

Peak --- Average -- Quasi Peak X Average +



Final Quasi-Peak Measurements

Frequency MHz	Level dBµV	Limit dBµV	Margin dB	Phase	Rechecks dBµV
No Final Measurements within 20dB of limit					

Final Average Measurements

Frequency MHz	Level dBµV	Limit dBµV	Margin dB	Phase	Rechecks dBµV
0.501000	45.40	60.0	14.6	L1	46.1
0.639000	43.60	60.0	16.4	L1	44.4
14.136500	29.70	60.0	30.3	L1	
14.208500	28.90	60.0	31.1	L1	
14.280500	30.00	60.0	30.0	L1	
14.352500	29.40	60.0	30.6	L1	

Section 15.109: Radiated emission limits

Radiated emissions testing was carried out over the frequency range of 0.15 to 30 MHz and 30 to 1000 MHz as the highest frequency in use is less than 108 MHz.

Testing was carried out at the laboratory's open area test site - located at Driving Creek, Orere Point, Auckland, New Zealand.

This site conforms to the requirements of CISPR 16 and ANSI C63.4 - 2003.

Before testing was carried out, a receiver Self Test and Internal Calibration was undertaken along with a check of all connecting cables and programmed antenna factors.

The device was placed on the test tabletop, which was a total of 0.8 m above the test site ground plane.

Measurements of the radiated field were made with the antenna located at a 10 metre horizontal distance from the boundary of the devices under test.

Testing is carried out by manually scanning between 30 and 1000 MHz in 100 kHz steps while aurally and visually monitoring for emissions.

When an emission is located, it is positively identified and its maximum level is found by rotating the automated turntable, and by varying the antenna height with an automated antenna tower.

The emission is measured in both vertical and horizontal antenna polarisations using a Quasi Peak detector with a bandwidth of 120 kHz.

During the test, a number of ambient emissions are identified (list of which can be provided upon request).

The emission level is determined in field strength by taking the following into consideration:

Level (dB μ V/m) = Receiver Reading (dB μ V) + Antenna Factor (dB/m) + Coax Loss (dB)

Result: Complies

Measurement uncertainty with a confidence interval of 95% is:

- Free radiation tests (30 – 1000 MHz) \pm 4.1 dB

Radiated Emissions : 30.0 - 1000 MHz

Test results:

The device was powered at 110Vac operating in normal mode.

Frequency MHz	Vertical dBuV/m	Horizontal dBuV/m	Limit dBuV/m	Margin dB	Result	Antenna
48.750	27.4		39.0	11.6	Pass	Vertical
64.930	21.1		39.0	17.9	Pass	Vertical
86.800	24.3	15.1	43.5	19.2	Pass	Vertical
89.600	26.4	17.5	43.5	17.1	Pass	Vertical
136.110	20.2		43.5	23.3	Pass	Vertical
152.120	28.3		43.5	15.2	Pass	Vertical
623.260		29.1	46.4	17.4	Pass	Horizontal

No further emissions observed within 20 dB of the limit up to 624 MHz.

7. TEST EQUIPMENT USED

Instrument	Manufacturer	Model	Serial No	Ref
Aerial Controller	EMCO	1090	9112-1062	3710
Aerial Mast	EMCO	1070-1	9203-1661	3708
Artificial Mains Network	Rohde & Schwarz	ESH 2-Z5	881362/032	3628
Biconical Antenna	Schwarzbeck	BBA 9106	-	3612
Log Periodic Antenna	Schwarzbeck	VUSLP 9111	9111-228	3785
Measurement Receiver	Rohde & Schwarz	ESCS30	847124/020	E1595
Measurement Receiver	Rohde & Schwarz	ESHS 10	838693/002	3800
Turntable	EMCO	1080-1-2.1	9109-1578	3709
Variac	General Radio	1592	-	RFS 3690

8. ACCREDITATIONS

Testing was carried out in accordance with EMC Technologies Ltd registration with the Federal Communications Commission as a listed facility, registration number: 90838, which was updated on January 23rd, 2010.

All testing was carried out in accordance with the terms of EMC Technologies (NZ) Ltd International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025, 2005.

All measurement equipment has been calibrated in accordance with the terms of the EMC Technologies (NZ) Ltd International Accreditation New Zealand (IANZ) Accreditation to NZS/ISO/IEC 17025, 2005.

International Accreditation New Zealand has Mutual Recognition Arrangements for testing and calibration with accreditation bodies in a number of economies. This includes NATA (Australia), UKAS (UK), SANAS (South Africa), NVLAP (USA), A2LA (USA), SWEDAC (Sweden). Further details can be supplied on request.

9. PHOTOGRAPHS



