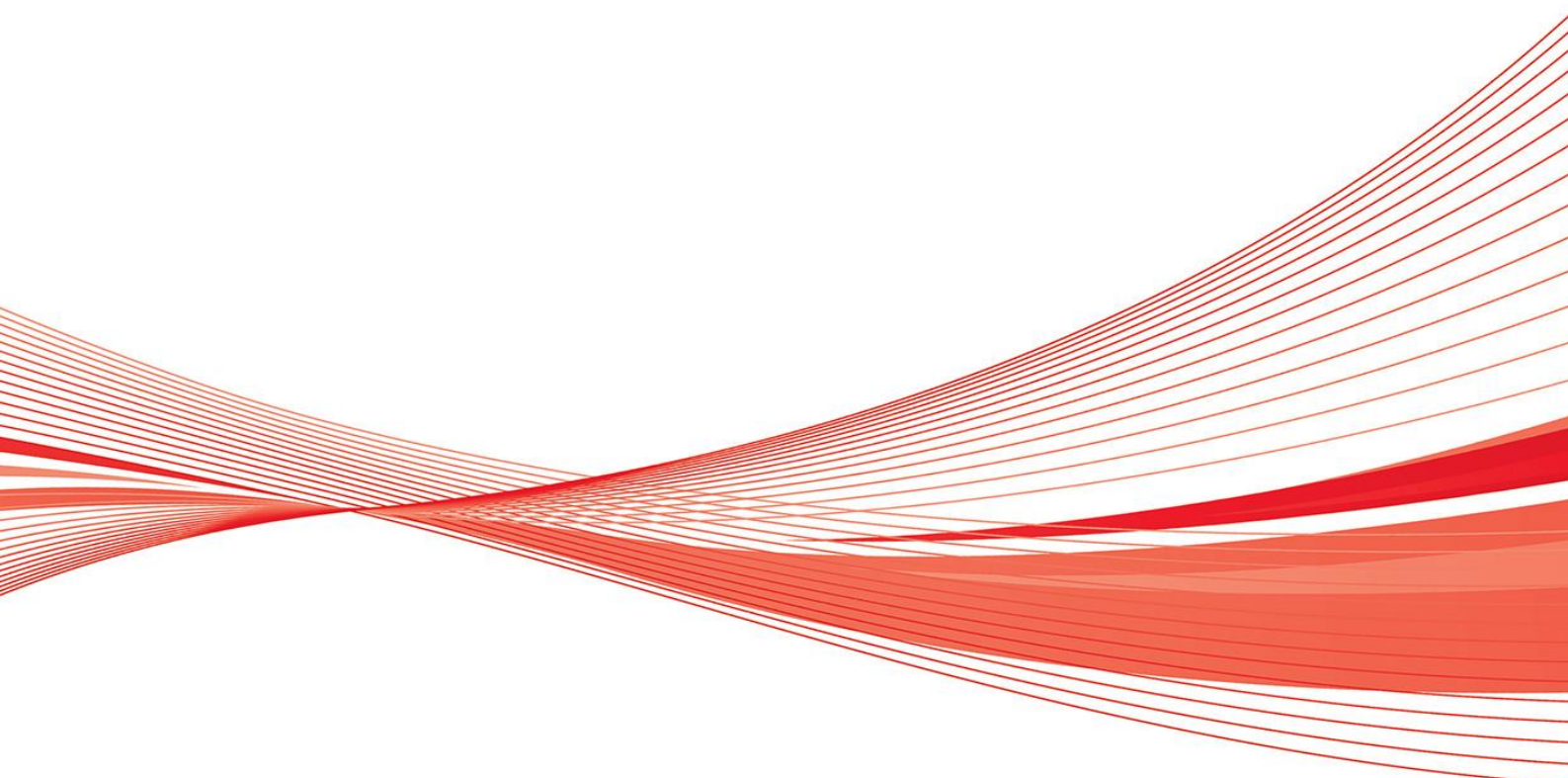




Harwin Test Report Summary

HT07401

Flex Circuits (Datamate & Gecko)
Electrical Testing



1. Introduction

1.1. Description and Purpose

The Harwin Flex Circuit ranges aim to provide an extra degree of design flexibility for off-the-shelf connector assemblies, providing a compact and reliable alternative to cable assemblies within the Gecko and Datamate, High Reliability Connector ranges.

1.2. Conclusion

The following data has been collated from Harwin test report QA000020. The tests indicate that the Datamate and Gecko Flex assemblies perform as required to the existing M80 and G125 Component Specifications respectively.

2. Test Method and Requirements

2.1. Specification Parameters

Tests were carried out in general accordance with EIA-364 (or equivalent BS EN 60068). The list of tests covered in this summary are as follows:

Testing Standard	Description of Test	Section	Page No.
EIA-364-32C: 2000 (BS EN 60068-2-14:2009)	Thermal Shock	3.1	2
EIA-364-20C: 2004	Withstand Voltage	3.2	3
EIA-364-21C: 2000	Insulation Resistance	3.3	3

2.2. List of Connectors & Assemblies

The following assemblies were used throughout the testing:

- M80-F150210-100-L – 10-way Single-ended Male Flexible Circuit assembly (100mm length).
- G125-F1MS110-075-FS1 – 10-way Double-ended Male-to-Female Flexible Circuit assembly (75mm length).
- G125-F1MS110-075-L – 10-way Single-ended Male Flexible Circuit assembly (75mm length).

The following mating connectors were used to test withstand voltage and insulation resistance:

- G125-MV11005L0P – 10-way Gecko Male Vertical Through Board Connector
- G125-FV11005L0P – 10-way Gecko Female Vertical Through Board Connector
- M80-4101042 – 10-way Datamate Female PC Tail Connector

3. Test Results

3.1. Thermal Shock to EIA-364-32C: 2000

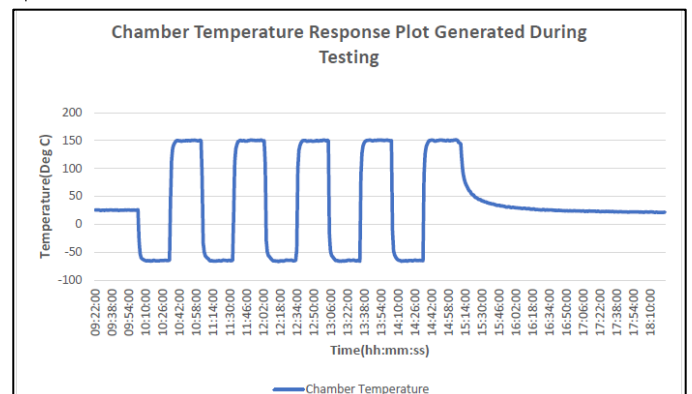
Specification:

Gecko (G125): Temperature extremes = -65°C to +150°C

Datamate (M80): Temperature extremes = -55°C to +125°C

Methodology: Flex cable assemblies with 10-way connectors were subjected to temperature extremes, as detailed above, in 30-minute dwells for 5 cycles. Cable assemblies were tested in unmated conditions and visual inspection was carried out prior to testing and once it was complete, with no obvious visual changes occurring as a result of thermal shock testing.

Fig.1: Graph illustrating the thermal cycling and dwell periods for Gecko Flex PCB assemblies.



3.2. Withstand Voltage to EIA-364-20C: 2004

Specification: Gecko (G125): Working voltage (Sea level) = 600Vdc/ac pk.
 Datamate (M80): Working voltage (Sea level) = 1200Vdc/ac pk.

Methodology: The above specified voltage was applied to connector pairs wired in two series circuits to determine whether breakdown or flashover occurred. Samples were visually inspected following the test, with no obvious changes to the connectors occurring.

Connector Part No.		Withstand Voltage (600V DC)	Withstand Voltage (1200V DC)
G125-F1MS110-075-L	Pre-Conditioning (Initial)	PASS	N/A
	Post-Conditioning (Thermal Shock)	PASS	N/A
G125-F1MS11-075-FS1	Pre-Conditioning (Initial)	PASS	N/A
	Post-Conditioning (Thermal Shock)	PASS	N/A
M80-F150210-100-402	Pre-Conditioning (Initial)	N/A	PASS
	Post-Conditioning (Thermal Shock)	N/A	PASS

3.3. Insulation Resistance to EIA-364-21C: 2000

Specification: Gecko (G125): Initial = 10GΩ min. Post-conditioning = 1GΩ min.
 Datamate (M80): Initial = 1GΩ min. Post-Conditioning = 100MΩ min.

Methodology: Voltage specified in each respective component specification was applied to connector pairs wired in two series for two minutes to determine whether the resistance satisfies the respective required specification values. Samples were visually inspected following the test, with no obvious changes to the connectors occurring.

Connector Part No.		Insulation Resistance
G125-F1MS110-075-L	Pre-Conditioning (Initial)	PASS
	Post-Conditioning (Thermal Shock)	PASS
G125-F1MS11-075-FS1	Pre-Conditioning (Initial)	PASS
	Post-Conditioning (Thermal Shock)	PASS
M80-F150210-100-402	Pre-Conditioning (Initial)	PASS
	Post-Conditioning (Thermal Shock)	PASS