



# HARWIN

## Test Report Summary

**HT07902**

Attenuation Testing  
Datamate Backshell & Shielded Cables

## 1. Introduction

### 1.1. Description and Purpose

The purpose of this testing is to determine the RF Attenuation provided on Datamate Cable Assemblies, with both vertical and horizontal metal Backshells and full cable braiding.

### 1.2. Conclusion

This report has established the attenuation rates over a specified frequency range of 0.01 MHz to 400.00 MHz for the Datamate Shielded Cables and Backshells range. The full external report has been attached as the last section of this document.

For further information please contact one of our Experts at [www.harwin.com/contact](http://www.harwin.com/contact).

## 2. Test Method and Requirements

### 2.1. Specification Parameters

Tests were carried out in general accordance with MIL-STD 1377 (1971).

### 2.2. List of Connectors & Assemblies

The following female-to-female 1m cable assemblies were used for the test programme:

- M80-FC31005F1-1000F1 – 10 contact unshielded cable assembly
- M80-FC31005F1-1000F1 – 10 contact shielded cable assembly
- M80-FC32005F1-1000F1 – 20 contact unshielded cable assembly
- M80-FC32005F1-1000F1 – 20 contact shielded cable assembly
- M80-FC35005F1-1000F1 – 50 contact unshielded cable assembly
- M80-FC35005F1-1000F1 – 50 contact shielded cable assembly
- M80-FC35005F1-1000F1 – 50 contact Kevlar shielded cable assembly

The cables were mated to the following board-mounted connectors and backshells:

- M80-5101005 & M80-9061002 –  
10 contact throughboard male vertical connector and backshell
- M80-5002005 & M80-9062002 –  
20 contact throughboard male vertical connector and backshell
- M80-5105005 & M80-9065002 –  
50 contact throughboard male vertical connector and backshell
- M80-5401005 & M80-9041002 –  
10 contact throughboard male horizontal connector and backshell
- M80-5412005 & M80-9042002 –  
20 contact throughboard male horizontal connector and backshell
- M80-5405005 & M80-9045002 –  
50 contact throughboard male horizontal connector and backshell

### 3. Test Results

All attenuation measurements are rounded to the nearest 2dB (see Appendix, Figures 2.1.8, 2.2.8, and 2.3.10).

| Vertical Board Connection        | Attenuation (dB)               |     |                                  |     |                                    |     |
|----------------------------------|--------------------------------|-----|----------------------------------|-----|------------------------------------|-----|
|                                  | Frequency<br>0.10MHz – 1.00MHz |     | Frequency<br>1.00MHz – 100.00MHz |     | Frequency<br>100.00MHz – 400.00MHz |     |
|                                  | Min                            | Max | Min                              | Max | Min*                               | Max |
| 10 contact Shielded cable        | 10                             | 42  | 38                               | 62  | 22                                 | 66  |
| 20 contact Shielded cable        | 20                             | 42  | 40                               | 50  | 16                                 | 62  |
| 50 contact Shielded cable        | 14                             | 38  | 36                               | 56  | 10                                 | 48  |
| 50 contact Kevlar Shielded cable | 10                             | 36  | 34                               | 54  | 10                                 | 48  |

| Horizontal Board Connection      | Attenuation (dB)               |     |                                  |     |                                    |     |
|----------------------------------|--------------------------------|-----|----------------------------------|-----|------------------------------------|-----|
|                                  | Frequency<br>0.10MHz – 1.00MHz |     | Frequency<br>1.00MHz – 100.00MHz |     | Frequency<br>100.00MHz – 400.00MHz |     |
|                                  | Min                            | Max | Min                              | Max | Min*                               | Max |
| 10 contact Shielded cable        | 24                             | 46  | 44                               | 52  | 22                                 | 56  |
| 20 contact Shielded cable        | 26                             | 60  | 46                               | 68  | 38                                 | 72  |
| 50 contact Shielded cable        | 16                             | 52  | 42                               | 60  | 38                                 | 64  |
| 50 contact Kevlar Shielded cable | 14                             | 48  | 38                               | 72  | 28                                 | 54  |

\*As cable length approaches wavelength, shielding effectiveness is reduced.

### 4. Appendix – Complete 3rd Party Test Report

See following attached pages.