

ENGINEERING DATA

The following information is provided for the convenience of engineers and technical writers as well as individuals who require additional information about **Kern** products. All tests reported herein were conducted in accordance with accepted practices by independent laboratories, or by other independent entities qualified in the types of testing involved. Transfer impedance and shielding effectiveness tests were performed by IRT Corporation. Environmental tests were performed by Industrial System Corporation. Magnetic permeability tests were performed by ITT Cannon. Test samples used in the environmental and magnetic permeability tests included a variety of standard straight and angled backshell configurations. Test samples used in transfer impedance and shielding effectiveness tests are detailed in report number IRT 6270-001.

FUNCTIONAL TESTING:

In order to firmly establish the EMI/RFI characteristics of circular connector backshells manufactured by **Kern Engineering and Manufacturing Corp.** of Fullerton, California, a series of quantitative performance tests were conducted on a range of designs to frequencies of 1 GHz. All backshells tested employed one or two circumferential irises to provide the electrical bond between the cable shield and the connector backshell. Good correlation was obtained between measured DC resistance, measured transfer impedance at 100 Hz., and measured shielding effectiveness. Results show that this type of connector backshell provides shielding effectiveness well in excess of 100 dB, and that, depending upon backshell/iris materials, shielding effectiveness in excess of 140 dB can be achieved. Comparisons of 50-ohm shielding effectiveness tests, using braided and solid-shielded cables show that this iris bonding construction is significantly better than that of the braided shielding itself.

MAGNETIC PERMEABILITY TESTING:

Magnetic permeability tests were conducted in accordance with MIL-I-17214 and showed all values below 1.2 mu.

ENVIRONMENTAL TESTING:

Vibration tests were conducted in accordance with MIL-STD-1344A, Method 2005.1, Test condition IV. (Monitored to .01 ms). During these tests, no contact interruptions between the shield and backshell occurred, and there was no physical damage.

Shock tests were conducted in accordance with MIL-STD-1344A Method 2004.1, Test condition C (monitored to .01 ms). During these tests, no contact interruptions between the shield and backshell occurred, and there was no physical damage.

APPLICABLE STANDARDS:

QQ-A-225	Aluminium Alloys	MIL-STD-454	Workmanship
QQ-A-200	Aluminium Alloys	MIL-I-17214	Magnetic Permeability
QQ-A-591	Aluminium Alloys	MIL-STD-1344A	Shock And Vibration
WW-T-700	Aluminium Alloys	MIL-STD-167B	Shipboard Vibration
AMS-4640	Aluminium Bronze Alloys	MIL-STD-202	Test Methods
ASTM-B16	Brass Alloys	MIL-S-901C	Heavy Duty Shock
QQ-N-281	Monel	MIL-S-7742	Screw Threads
QQ-S-763	CRES 300 Series	MIL-STD-1285	Marking
QQ-S-766	CRES 300 Series	MIL-STD-130	Marking
QQ-S-35	Passivation	MIL-W-8604	Welding
AMS3209	Neoprene Rubber	MIL-W-8611	Welding
AMS3304	Silicone Rubber	MIL-B-7883	Brazing
ZZ-R-765	Silicone Rubber	MIL-STD-461	EMC Requirements
MIL-C-85049	Connector accessories	MIL-STD-462	EMI Measurements

TERMINATION TOOLS



BAND TERMINATION PLIERS

PART NO. T2624

TERMINATION BANDS

1/8 INCH WIDTH PART NO. 13049

1/4 INCH WIDTH PART NO. 13076

TERMINATION TOOLS

STRAP WRENCH

PART NO. T2622

INCH POUND TORQUE WRENCH

PART NO. T2623

