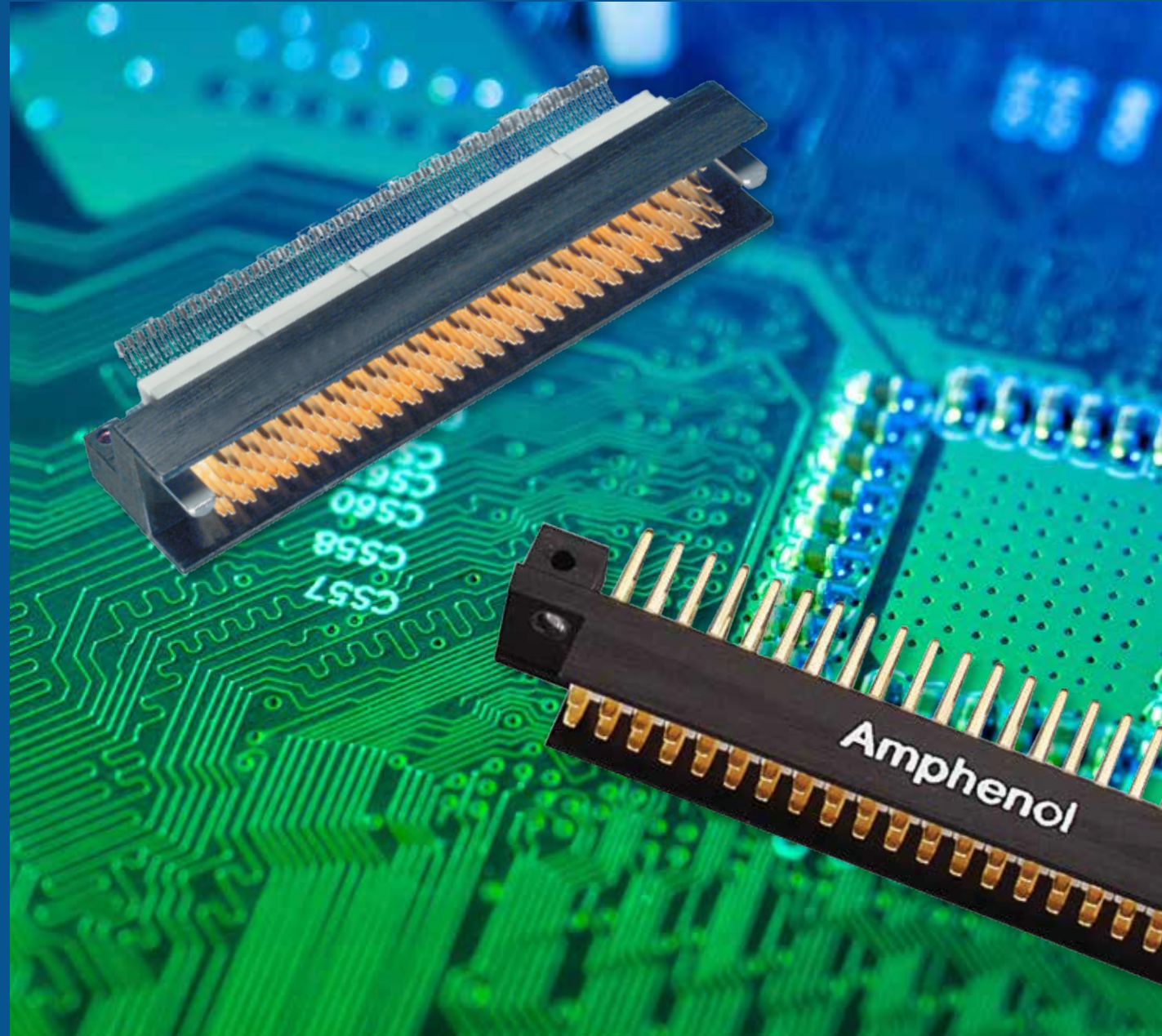


Amphenol

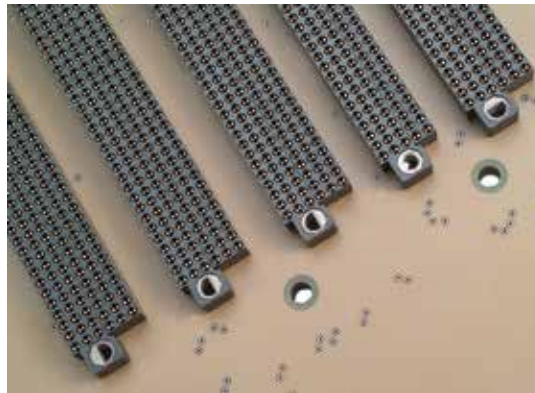
Printed Circuit Board Technology

NAFI + UHD CONNECTORS STANDARD. RELIABLE. PROVEN.



Q FEATURES & BENEFITS

- Available in 2 through 4 rows - Offers maximum design flexibility
- Tested and qualified to MIL-C-28859 and MIL-C-28754 - Confirms the product meets specific performance requirements
- Tuning fork and blade contact system - A proven technology for high reliability
- Low insertion force (2.25oz/contact) - For easy mating
- Rugged machined aluminum frames - Ensures excellent performance in harsh environments
- Compliant pin press-fit, through-hole and flex circuit termination styles available - Support a variety of design application requirements



**Tuning Fork and Blade
Contact System:**

A proven technology for
high reliability.

Originally co-developed with the U.S. Navy, the NAFI Connector product line includes multi-row, through-hole solder blade connectors and press fit tuning fork backplane connectors. The highlight of the NAFI backplane technology is its solderless “Dynamic Retention” gas tight, press-fit tuning fork contact design. Rugged, metal header bodies are machined and finished with chromate. Available in two, three, or four rows of contacts, NAFI Connectors offer a high degree of design flexibility in order to meet specific density and layout requirements.

Connector patterns containing multiple rows of contacts are easily produced and can include standard NAFI-style features such as guide pins and D-shaped polarizing keys. The mating backplane connectors feature solderless press-fit tuning fork contacts arranged on a 0.100” x 0.100” grid.





OPERATING CHARACTERISTICS

Temperature Range	-65°C to +125°C
Current Rating (individual contact)	3 Amps DC at 25°C
Current Rating (multiple contacts)	1 Amp DC at °C
Dielectric Withstanding Voltage (DWV)	600 V (RMS) at 60 Hz
Insulation Resistance (min.)	10,000 MΩ
Contact Resistance (max.)	30 MΩ
Contact-to-Backplane Retention Force (min.)	3.0 lbs.
Contact Life (durability)	500 cycles
Contact Engagement Force	2.25 oz max. average
Contact Normal Force	1.0 N (3.53 oz-f) average
Contact Wipe Length (min.)	0.053 in.

MATERIALS & FINISHES

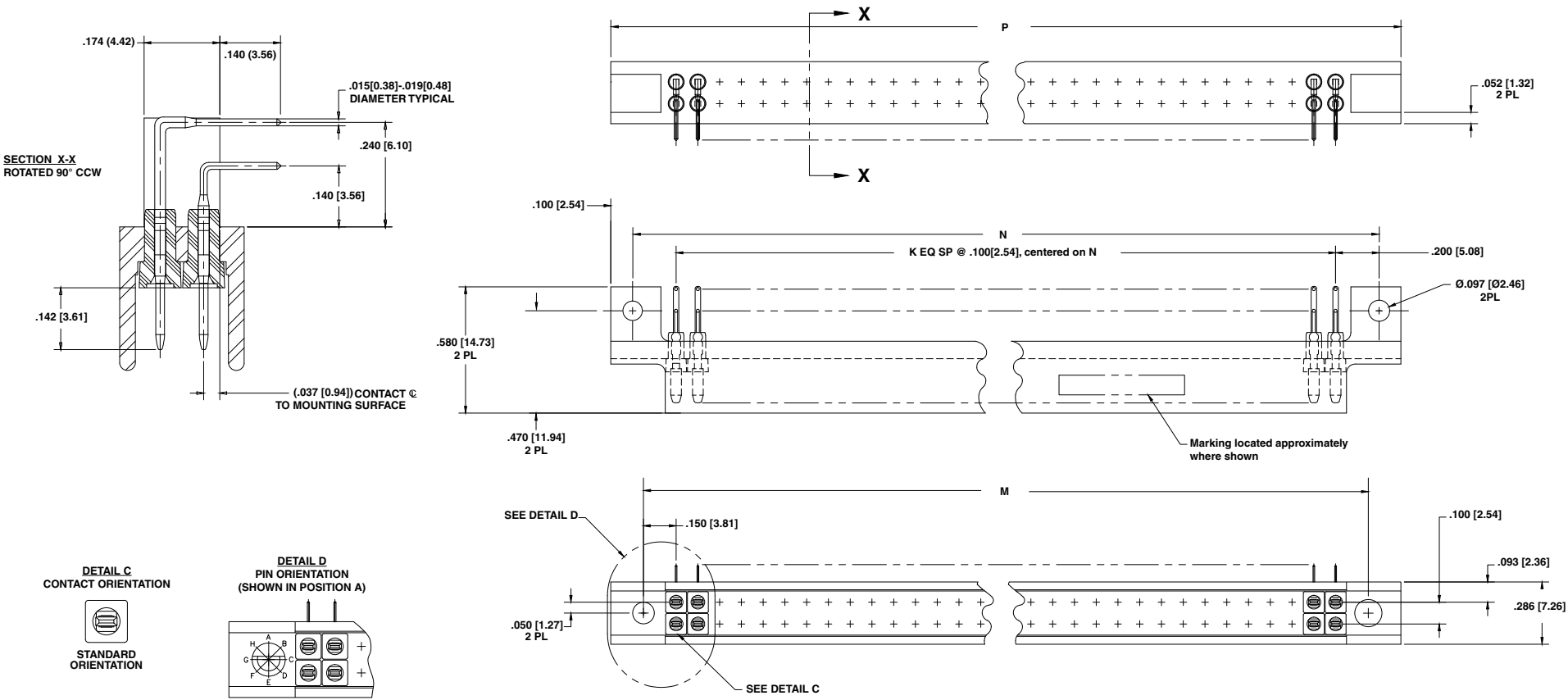
Frame Material	Aluminum Alloy
Frame Finish	Gold Chromate per MIL-C-5541
Module Contact Material	Brass
Module Contact Tails	Pre-tinned using Sn63 (from end of contact to mounting surface min.)
Module Contact Finish	50μ" min. Gold over 10μ" min. Nickel
Backplane Contact Material	Beryllium Copper
Backplane Contact Finish	50μ" min. Gold over 10μ" min. Nickel
Module Insulator	High-temperature Nylon 6-6
Backplane Insulator	Polyester, 30% glass-filled (UL 94V-0)
Module Marking	Includes Amphenol part number, logo and date code
Polarizing Keys and Bushings	Stainless Steel, Passivated

ENVIRONMENTAL CHARACTERISTICS

Salt Spray (corrosion)	MIL-STD-1344	Method 1001, Test Condition B
Thermal Shock	MIL-STD-1344	Method 1003, -55°C to +125°C
Humidity	MIL-STD-810	Method 507, Procedure 1
Physical Shock	MIL-STD-202	Method 213
Vibration (random)	MIL-STD-1344	Method 2005, 10-2000 Hz, 15g Peak



NAFI ■ TWO ROW



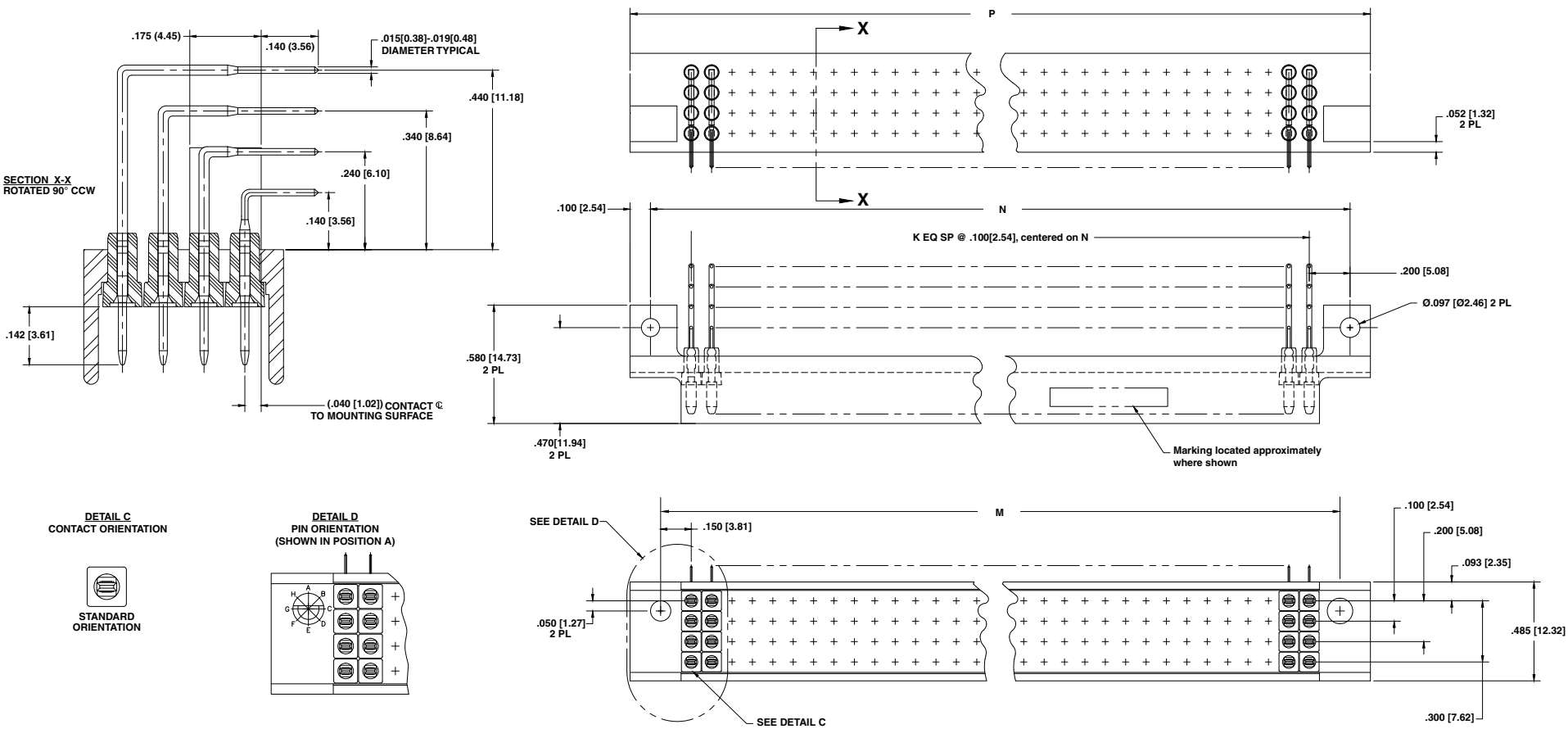
Daughtercard Connector	No. Contacts	Mating Backplane Connector Kit	K	M	N	P
M1001-12927	60	552-2583-000	29	2.930	2.940	2.960
M1001-12928	80	552-2584-000	39	3.930	3.940	3.960
M1001-12929	100	552-2585-000	49	4.930	4.940	4.960
M1001-12930	120	552-2586-000	59	5.930	5.940	5.960



Daughtercard Connector	No. Contacts	Mating Backplane Connector Kit	K	M	N	P
M1001-12931	66	552-2587-000	21	2.130	2.140	2.160
M1001-12932	99	552-2588-000	32	3.230	3.240	3.260
M1001-12933	120	552-2589-000	39	3.930	3.940	3.960
M1001-12934	150	552-2590-000	49	4.930	4.940	4.960

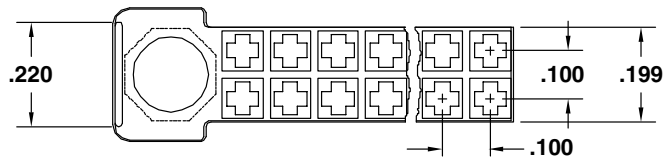
*All dimensions for reference only

NAFI FOUR ROW

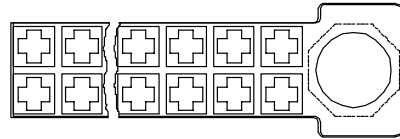


Daughtercard Connector	No. Contacts	Mating Backplane Connector Kit	K	M	N	P
M1001-12935	100	552-2591-000	24	2.430	2.440	2.460
M1001-12936	140	552-2592-000	34	3.430	3.440	3.460
M1001-12937	180	552-2593-000	44	4.430	4.440	4.460
M1001-12938	200	552-2594-000	49	4.930	4.940	4.960

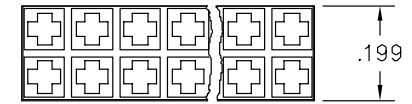
NAFI ■ BACKPLANE CONNECTOR KITS



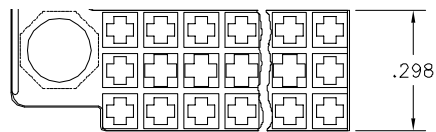
**2 ROW LEFT NAFI VERSION
(BOTTOM VIEW)**



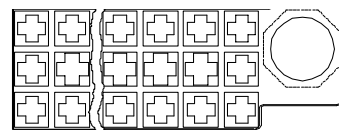
**2 ROW RIGHT NAFI VERSION
(BOTTOM VIEW)**



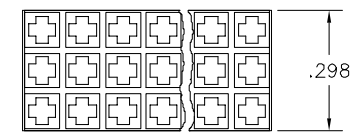
**2 ROW W/O NAFI VERSION
(BOTTOM VIEW)**



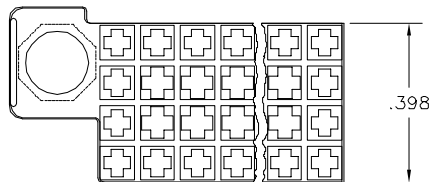
**3 ROW LEFT VERSION
(BOTTOM VIEW)**



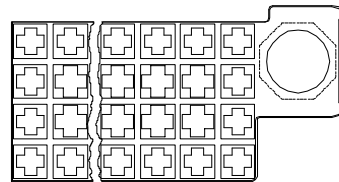
**3 ROW RIGHT VERSION
(BOTTOM VIEW)**



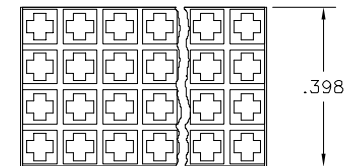
**3 ROW W/O NAFI VERSION
(BOTTOM VIEW)**



**4 ROW LEFT VERSION
(BOTTOM VIEW)**



**4 ROW RIGHT VERSION
(BOTTOM VIEW)**



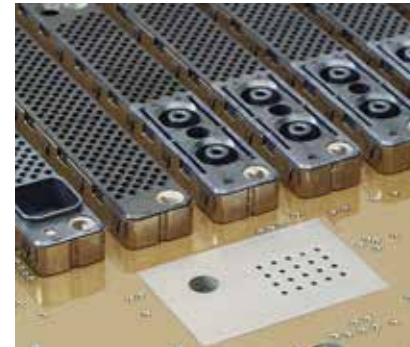
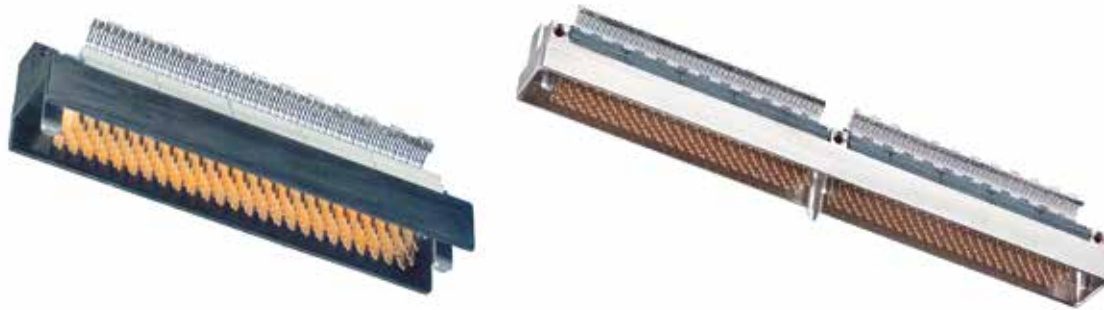
**4 ROW W/O NAFI VERSION
(BOTTOM VIEW)**

2 ROW INSULATOR			3 ROW INSULATOR			4 ROW INSULATOR		
Backplane Connector Kit	No. of Contacts	Mating Daughtercard Connector	Backplane Connector Kit	No. of Contacts	Mating Daughtercard Connector	Backplane Connector Kit	No. of Contacts	Mating Daughtercard Connector
552-2583-000	60	M1001-12927	552-2587-000	66	M1001-12931	552-2591-000	100	M1001-12935
552-2584-000	80	M1001-12928	552-2588-000	99	M1001-12932	552-2592-000	140	M1001-12936
552-2585-000	100	M1001-12929	552-2589-000	120	M1001-12933	552-2593-000	180	M1001-12937
552-2586-000	120	M1001-12930	552-2590-000	150	M1001-12934	552-2594-000	200	M1001-12938



FEATURES & BENEFITS

- 0.100" x 0.050" staggered grid - High density optimizes trace routing through the backplane
- Compliant press-fit termination of backplane connectors - Provides a gas-tight interface with the printed circuit backplane without the need for soldering
- Tuning fork and blade contact system - A proven technology for high reliability
- Low insertion force (2.25oz/contact) - For easy mating
- Daughtercard connectors feature surface mount termination via rigid pins or flex circuit - Maximum design flexibility depending on the application requirements
- Rugged machined aluminum frames - Ensures excellent performance in harsh environments



**Low Insertion Force
(2.25oz/contact):**
For easy mating.

The Ultra High Density (UHD) interconnect is a high reliability packaging solution for airborne, space, shipboard, and ground-based applications. With 80 contacts per linear inch, the UHD connector is tested and qualified to DSCC 89065. These connectors feature up to 396 surface-mount contacts in the SEM-E (Standard Electronic Module) format and up to 556 pins in the 10 SU configurations. The mating backplane connectors feature solderless compliant press-fit tuning fork contacts arranged on a staggered eight row 0.100" x 0.050" grid for optimized trace routing through the backplane.

The module connectors are surface mounted to the module using rigid pin or flex circuit terminations. Designers faced with unique packaging requirements will appreciate the design flexibility of the UHD connector. A modular approach allows for straightforward incorporation of signal, power, coax, and fiber-optic inserts, as well as EMI shielding, all within the same connector footprint. The design also enables the production of connectors that are either longer or shorter than the basic SEM-E format. The UHD connector is designed to provide signal integrity and interconnect density to meet today's advanced system-level requirements while maintaining a robust design.



UHD ■ TECHNICAL REFERENCES



OPERATING CHARACTERISTICS

Temperature Range	-65°C to +125°C
Current Rating (individual contact)	3 Amps DC at 25°C
Current Rating (multiple contacts)	1 Amp DC at °C
Dielectric Withstanding Voltage (DWV)	600 V (RMS) at 60 Hz
Insulation Resistance (min.)	10,000 MΩ
Contact Resistance (max.)	30 MΩ
Contact-to-Backplane Retention Force (min.)	3.0 lbs.
Contact Life (durability)	500 cycles
Contact Engagement Force	2.25 oz max. average
Contact Normal Force	1.0 N (3.53 oz-f) average
Contact Wipe Length (min.)	0.053 in.

MATERIALS & FINISHES

Frame Material	Aluminum Alloy
Frame Finish	Electroless Nickel
Module Contact Material	Brass
Module Contact Finish	50μ" min. Gold over 50μ" min. Nickel Solderable per MIL-STD-208, Solder coated tail, 60/40 Tin-Lead"
Backplane Contact Material	Beryllium Copper
Backplane Contact Finish	50μ" min. Gold over 50μ" min. Nickel
Module Insulator	Polyphenylene Sulfide (PPS), 40% glass- filled
Terminal Guide	Liquid Crystal Polymer
Backplane Insulator	Polyester, 30% glass-filled (UL 94V-0)
Polarizing Keys and Bushings	Stainless Steel, Passivated
Guide Pin Adhesive	3M Scotch-Weld, DP-190 (gray)

ENVIRONMENTAL CHARACTERISTICS

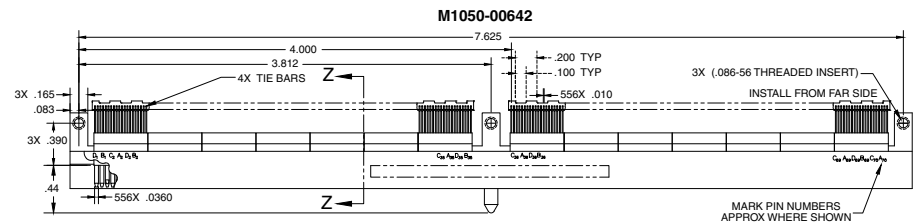
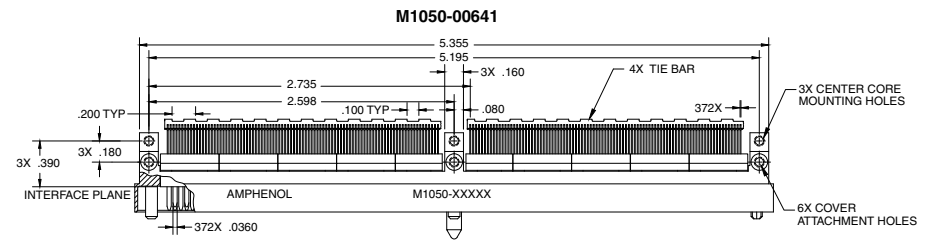
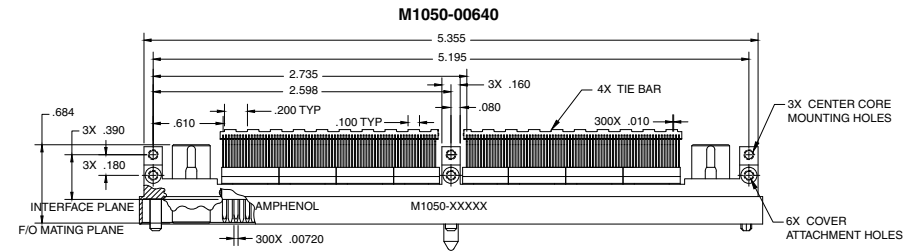
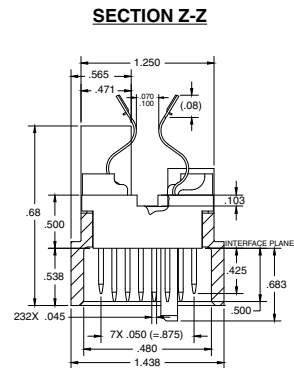
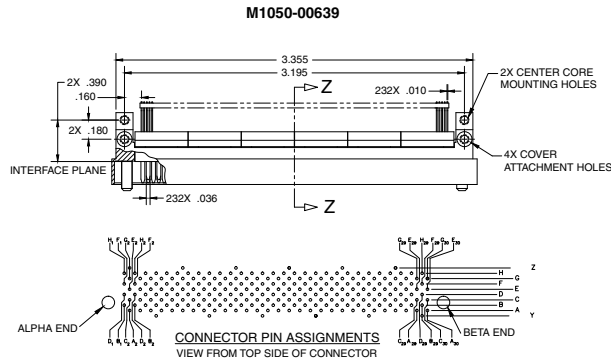
Salt Fog	MIL-STD-810	Method 509, Procedure 1
Thermal Shock	MIL-STD-202	Method 107, Test Condition B
Humidity	MIL-STD-1344	Method 1002
Physical Shock	MIL-STD-202	Method 213, Test Condition C
Resistance to Solder Heat	EIA-364-56	Procedures 3 & 4
Vibration (sinusoidal)	MIL-DTL-202	Method 204, Test Condition G
Vibration (random)	MIL-DTL-202	Method 214, Test Condition I, Letter E



Additional configurations also available. Visit www.amphenol-abs.com or email nafi_uhd@amphenol-abs.com for more information.

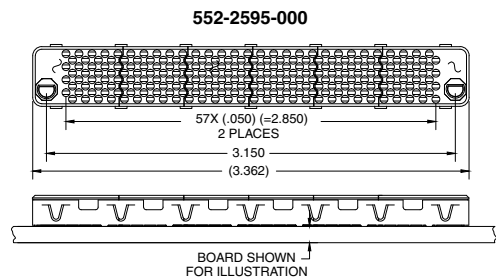


UHD ■ DAUGHTERCARD

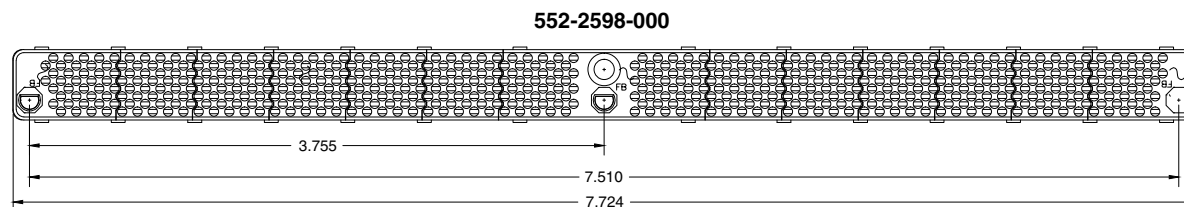
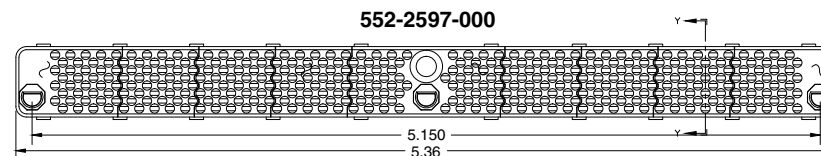
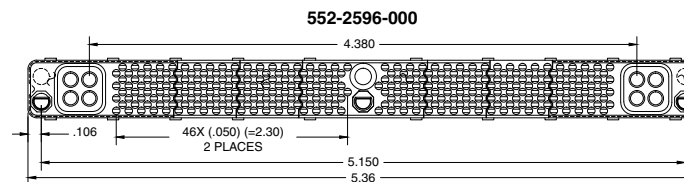
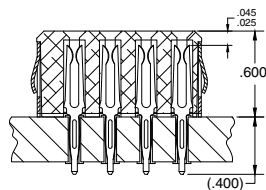


Daughtercard Connector	No. Contacts	Mating Backplane Connector Kit
M1050-00639	232	552-2595-000
M1050-00640	300	552-2596-000
M1050-00641	372	552-2597-000
M1050-00642	556	552-2598-000

UHD ■ BACKPLANE CONNECTOR KITS



SECTION Y-Y
(SHOWN INSTALLED IN PCB)
ROTATED 90° CW



Backplane Connector Kit	No. Contacts	Mating Daughtercard Connector
552-2595-000	232	M1050-00639
552-2596-000	300	M1050-00640
552-2597-000	372	M1050-00641
552-2598-000	556	M1050-00642

Amphenol

Printed Circuit Board Technology

Amphenol Printed Circuit Board Technology

Phone: (603) 324-4500

www.amphenol-apcbt.com



New Hampshire Assembly:
18 Celina Ave, Exit 8
Nashua, NH



Panels, Materials, Front End:
91 Northeastern Blvd, Exit 4
Nashua, NH



Mexico Assembly & Connectors:
Optimize Plant 3 & 6
Nogales, Mexico