

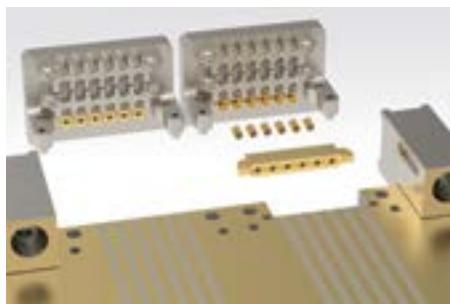
NanoRF Edge Launch Connector

HIGH FREQUENCY CONTACTS SUPPORT HIGH PERFORMANCE
UP TO 70 GHZ

NanoRF Edge Launch Connector



High frequency contacts support high performance up to 70 Ghz



Description

TE Connectivity (TE) has introduced the NanoRF Edge Launch connector. This product offers higher density and ruggedness over SMPM and SMPS edge launch options, and integrates the RF above an optical interconnect (with TE's hybrid RF/optical modules). This product offers higher density and ruggedness over SMPM and SMPS edge launch options, and the technology can be leveraged to support SOSA aligned NanoRF connector modules.

ROBUST AND SPACE SAVING

- NanoRF contact plug in module is terminated to the pc board, eliminating the need for cables

EASIER TERMINATION

- Bullet adapter takes up tolerance between edge launch termination and mating face and decreases the mating force required for stacked boards

VERSATILE

- Contact and module design is configurable for different sizes and contact counts

INDUSTRY STANDARDS

- Supports VITA 67.3 interface for VPX industry standard implementations with SOSA compliance to support plug-in computing modules

MARKETS SERVED

- Military
- Radar

APPLICATIONS

- RF switches
- Tuners
- Software defined radios (RF devices for use in embedded computing systems)

ELECTRICAL

- **Frequency range** of 2 MHz to 40 GHz and 1.5:1 over the frequency range of 40 GHz to 85 GHz.
- VSWR of 1.4:1 over the frequency range of 2 MHz to 40 GHz and 1.5:1 over the frequency range of 40 GHz to 67 GHz.
- **Crosstalk:** Frequency Range 3 GHz to 27 GHz and can achieve 100 db of crosstalk
- **Insertion Loss:** Not be greater than $0.12 * \sqrt{f}$ dB, where f is in GHz. Maximum insertion loss at 20 GHz = 0.5367 dB.
- Meets VITA 72 Shock and Vibration
- Meets VITA 67 Environmental Requirement

Test report to 108-163-006-1 Spec

STANDARDS AND SPECIFICATIONS

- **EIA-364:** Electrical Connector/Socket Test Procedures Including Environmental Classifications
- **ANSI/VITA 67.3:** Coaxial Interconnect on VPX, Spring-Loaded Contact on Backplane
- **ANSI/VITA 48.1:** Mechanical Specification for Microcomputers Using REDI Air Cooling
- **ANSI/VITA 46.0:** VPX Baseline Standard
- **ANSI/VITA 65.0-2019:** OpenVPX System Standard
- **ANSI/VITA 65.1-2019:** OpenVPX System Standard – Profile Tables
- **MIL-STD-810H:** Environmental Engineering Considerations and Laboratory Tests, Jan 2019



NanoRF Edge Launch Connector

Eliminates Cables in the Plug-In Module

Direct Board Termination

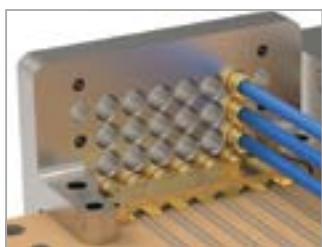
- NanoRF contact on plug-in module directly terminated to the board
- Contacts fixed in module frame mounted to board
- Upper rows (if needed) use cabling



| | Part Number | Description |
|--|-------------|--|
| | 2332714-2 | Daughtercard Assembly, Edge Launch, 67.3 (for separable solution w/bullet) |
| | 2332709-2 | Backplane Module, RF, 67.3C, Edge Launch |

With Bullet Adapter

- NanoRF contacts tightly positioned in module
- Bullets take up tolerance between edge launch terminations and NanoRF mating face
- Ideal for stacked boards. Contact row heights in VITA 65.1 support stacked boards
- This approach is implemented today with 67.3 SPPM



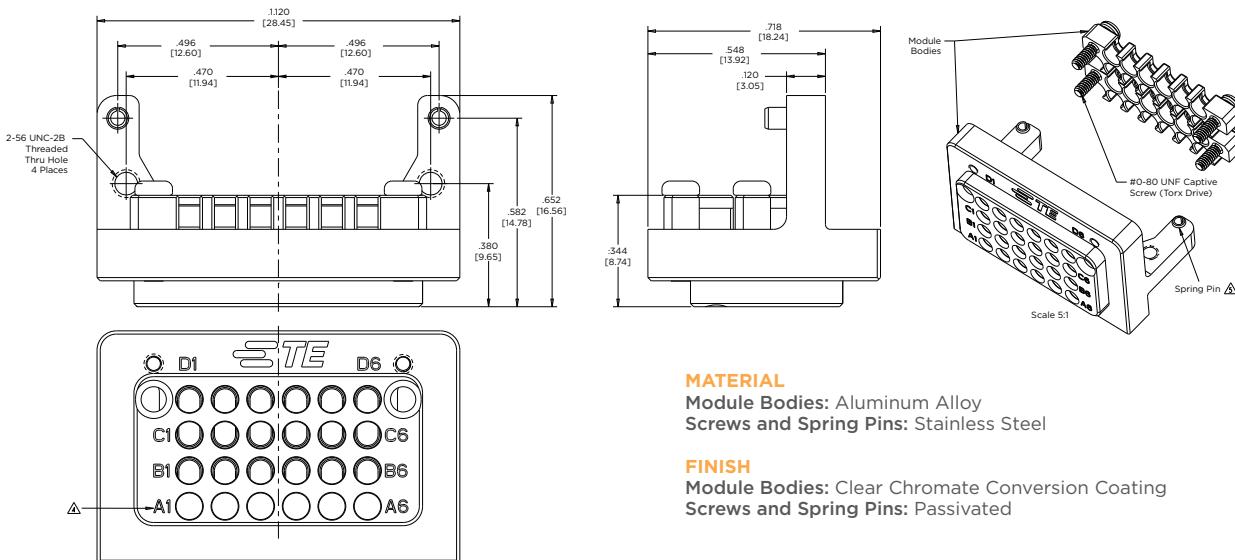
| | Part Number | Description |
|--|-------------|--|
| | 2332714-2 | Daughtercard Assembly, Edge Launch, 67.3 |
| | 2337098-1 | SMPS Edge Launch: 6 Position |
| | 2331630-1 | Adapter, SMPS, Bullet |
| | 2332709-2 | Backplane Module, RF, 67.3C, Edge Launch |

NanoRF Edge Launch Kit

- 6 bullets
- SMPS solder bar
- 6 SMPS to NanoRF adapters
- Daughtercard module



| Part Number | Description |
|-------------|---------------------|
| 2393429-1 | Stainless Steel Kit |
| 2393429-2 | Aluminum Kit |



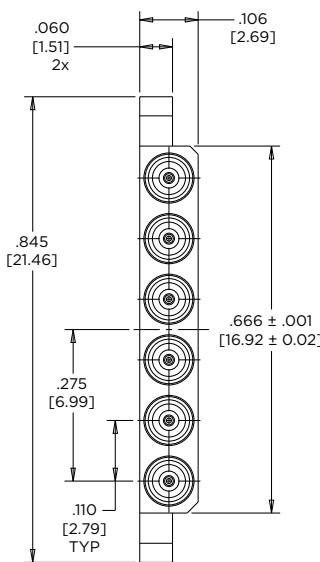
MATERIAL

Module Bodies: Aluminum Alloy
Screws and Spring Pins: Stainless Steel

FINISH

Module Bodies: Clear Chromate Conversion Coating
Screws and Spring Pins: Passivated

NanoRF Edge Launch Connector

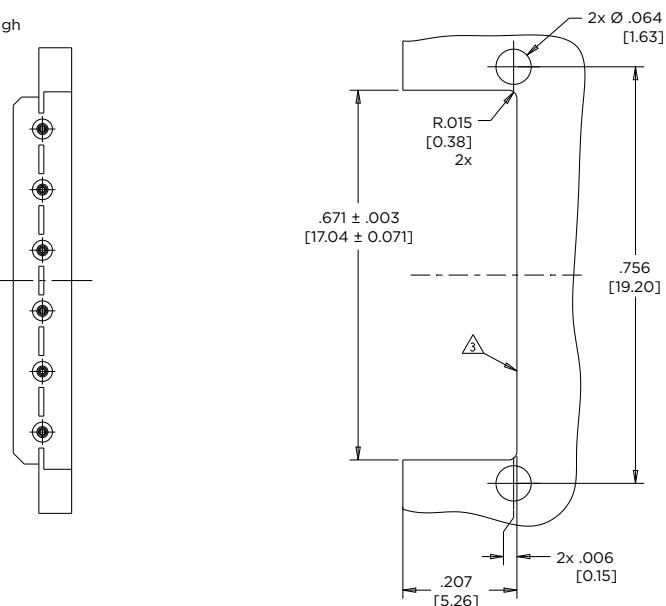
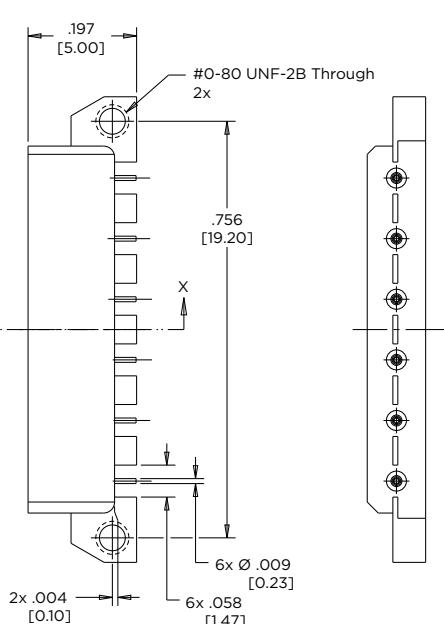


MATERIAL

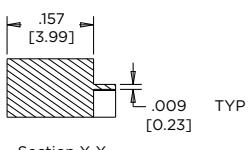
Body and Center Contact: Copper Alloy
Insulator: PTFE

FINISH

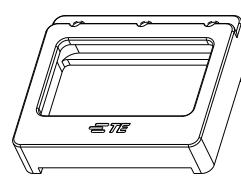
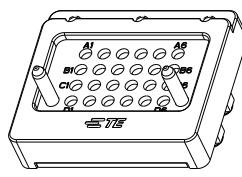
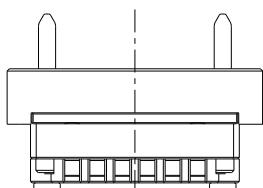
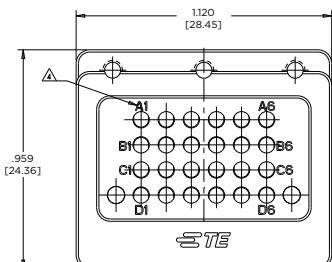
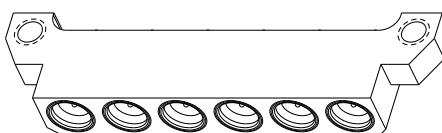
Front Body: 50-90 μ m.
Gold Plate over Nickel
Center Contact: 35-70 μ m.
Gold Plate over Nickel
Rear Body: 3-15 μ m.
Gold Plate over Nickel



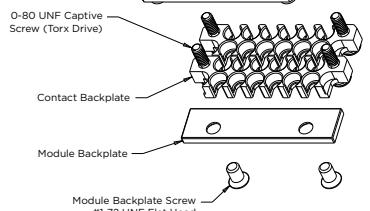
Recommended PCB Cutout



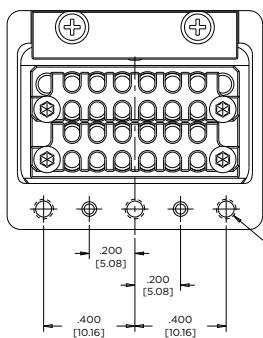
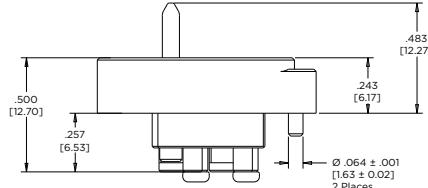
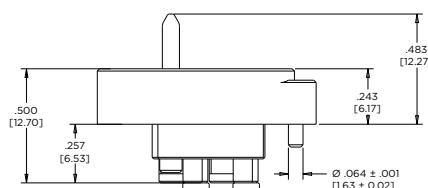
Section X-X



Scale 4:1



Scale 4:1

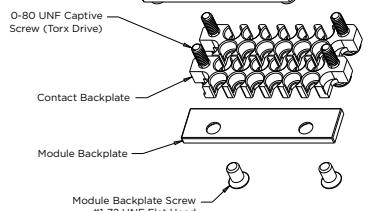
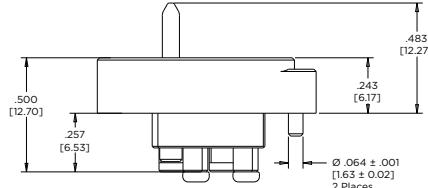
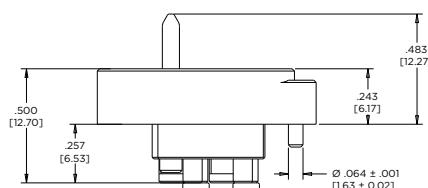


MATERIAL

Module Bodies and Backplates: Aluminum Alloy
Guide Pin: Stainless Steel, per UNS S30300
Screws: 300 Series Stainless Steel

FINISH

Module Bodies: Clear Chromate Conversion Coating
Screws and Guide Pin: Passivated



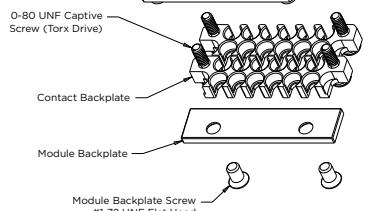
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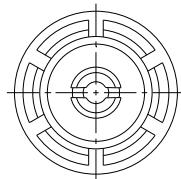
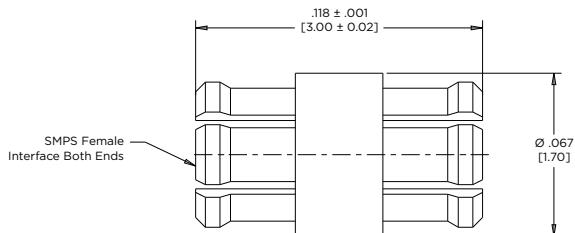
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Module Bodies: Clear Chromate Conversion Coating
Screws and Guide Pin: Passivated



Scale 4:1

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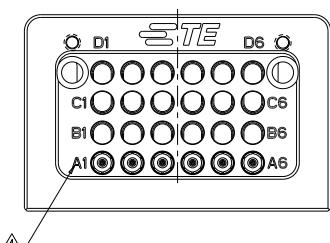
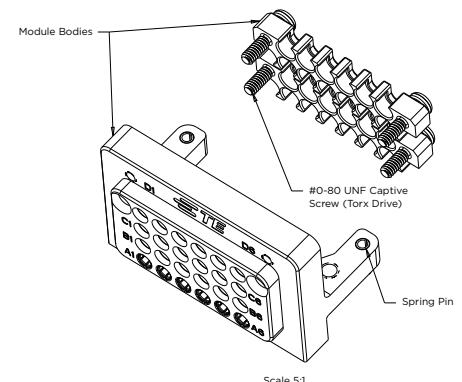
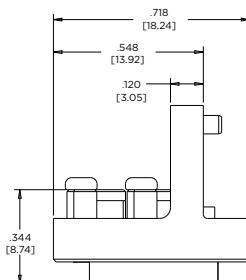
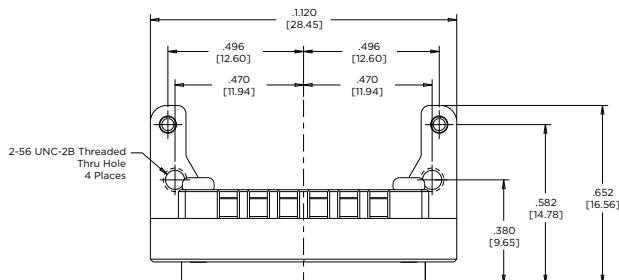
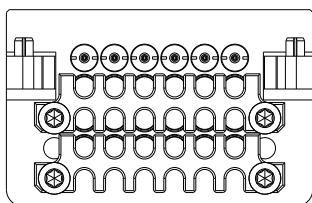


MATERIAL

Body and Center Contact: Copper Alloy
Insulator: PTFE

FINISH

Body and Center Contact: Gold Plate over Nickel



MATERIAL

Module Bodies: Aluminum Alloy
Screws and Spring Pins: Stainless Steel
Contact Bodies and Pin: Copper Alloy
Insulator: PTFE

FINISH

Module Bodies: Clear Chromate Conversion Coating
Screws and Spring Pins: Passivated
Front Contact Body and Pin: 50-90 µin. Gold Plate over Nickel
Rear Contact Body: 3-15 µin. Gold Plate over Nickel

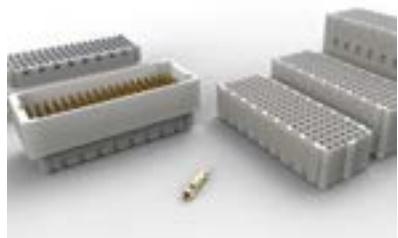
Compatibility is Standard



NanoRF Backplane Modules



NanoRF Backplane Contacts



Mezzanine Connectors

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