



Tyco Electronics Powered 4X Mini SAS Proposal T10/08-435r0

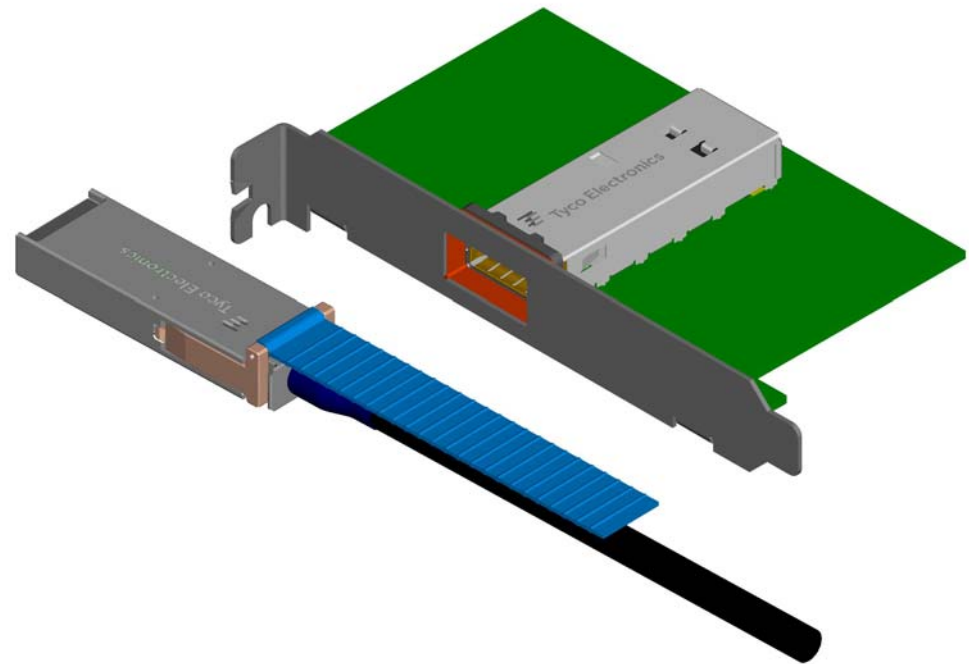
October 31, 2008

Our Commitment, Your Advantage

TE's new High Density Mini-SAS proposal provides the following advantages to customers using Mini-SAS technology.

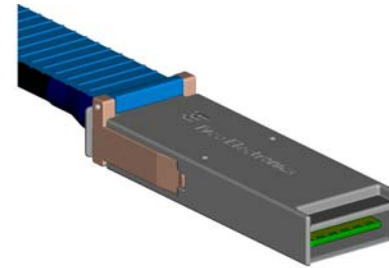
- Suitable for next generations of SAS: 6 & 12 Gbps
- PCI bracket compatible
- Pull Tab Latching capability
- Improved Insertion and Return Loss Performance
- Designed for External Fiber Cable Option
- Designed for Active Cable Assembly Option
- Heat sink compatible designs
- Single port or multi-port configurations available
- Various EMI containment options

Physical Information



External Embedded Fiber and Copper Plug Cable Description

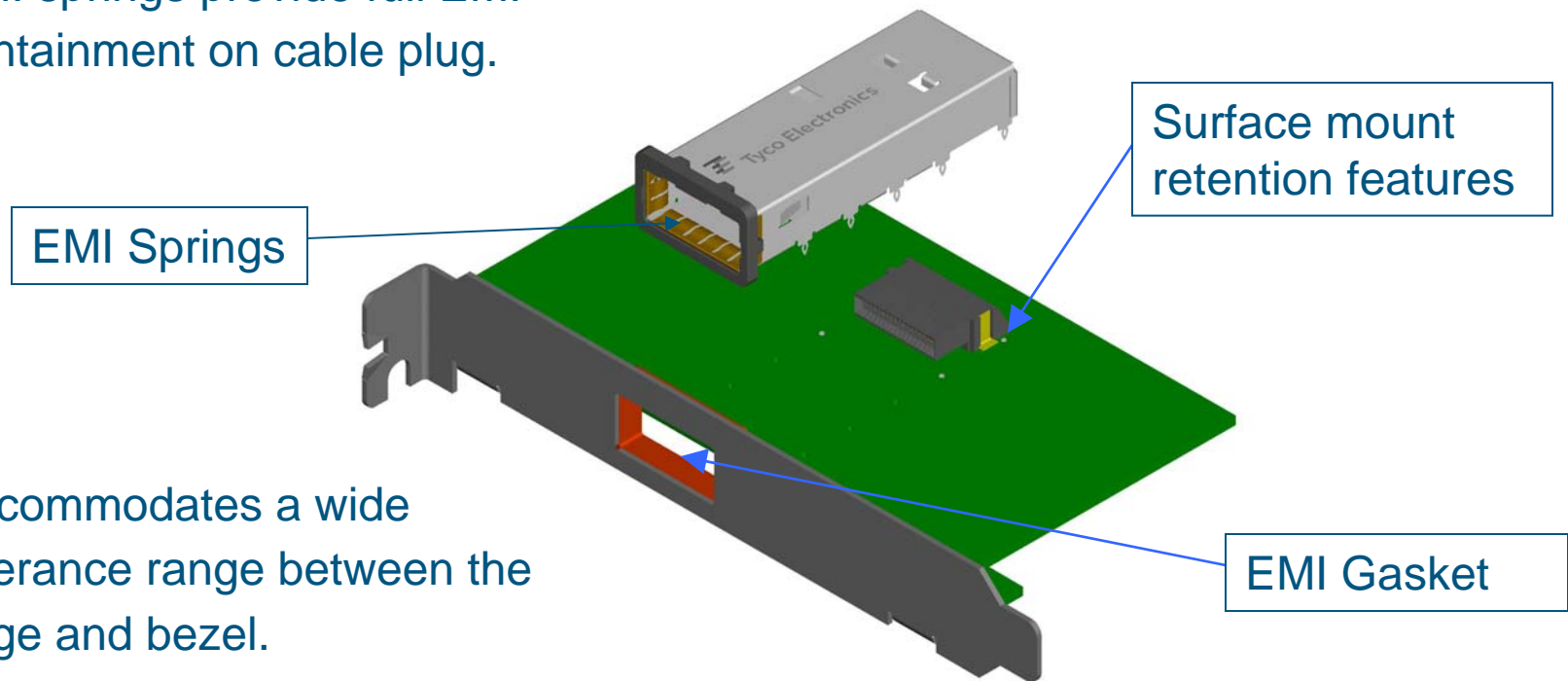
26, 28 and 30 AWG Cable will be available



	Embedded Fiber	Copper
Cable Diameter	6.2mm	8.2mm
Cable Construction	12 fiber	8 Pair
Cable Bend Radius, min	5x Dia	6X Cable Dia
Industry Specification	TIA-492AAAC-XBAX ICEA S-83-596-2001	
Max Cable Length @ 12Gbps	100 Meters	10 (Passive) 30 (Active)
Power (Watts)	2.0 – 2.5 max	1.5 max (Active)

External PCI Compatible Single Port Receptacle with optional EMI Springs

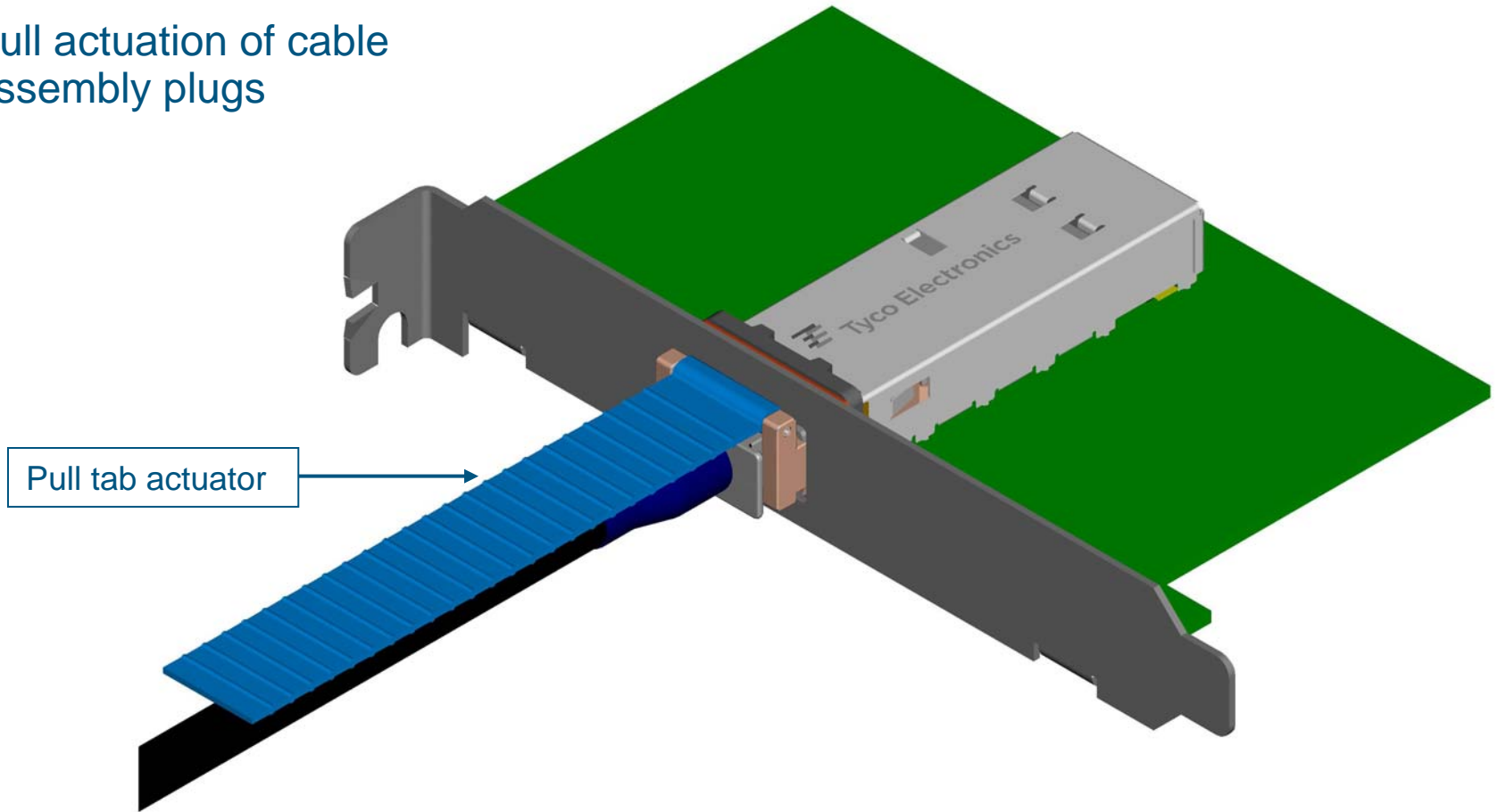
- EMI gasket provide full EMI containment on bezel.
- EMI springs provide full EMI containment on cable plug.



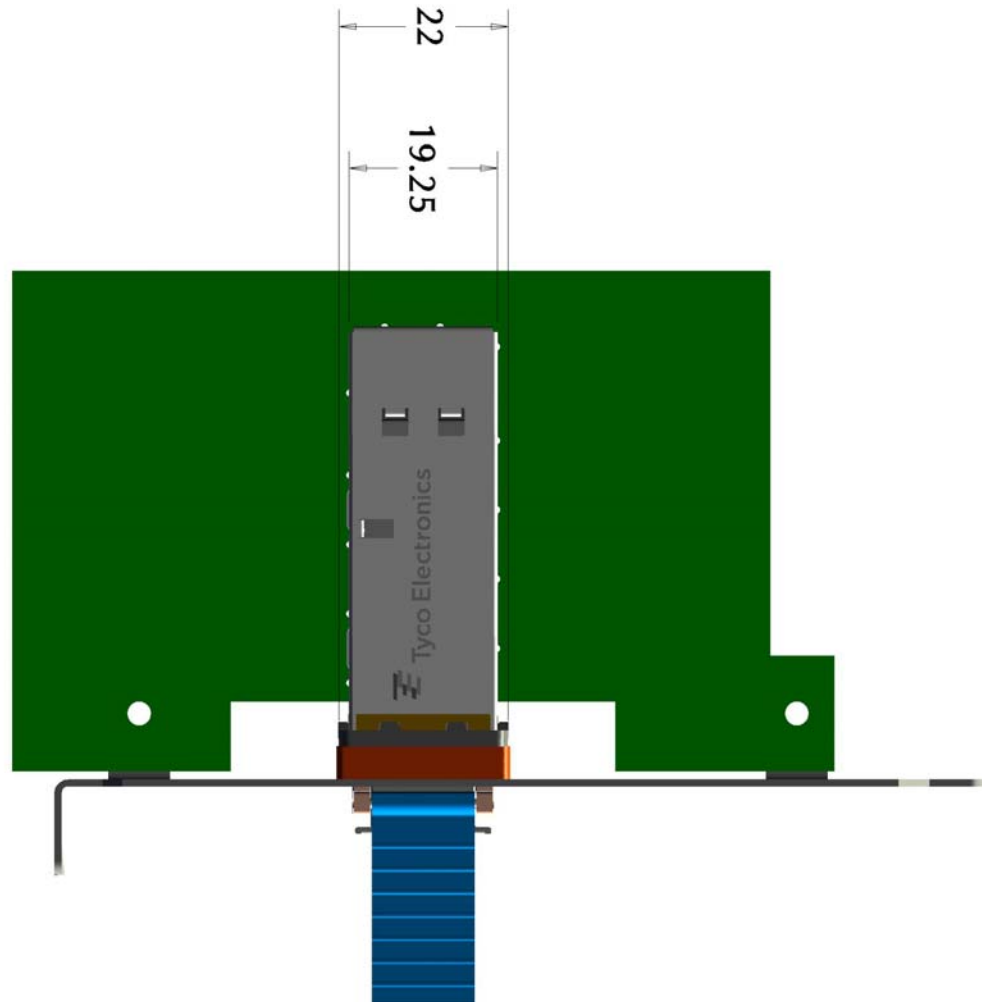
- Accommodates a wide tolerance range between the cage and bezel.

External Single port PCI Configuration

Pull actuation of cable assembly plugs

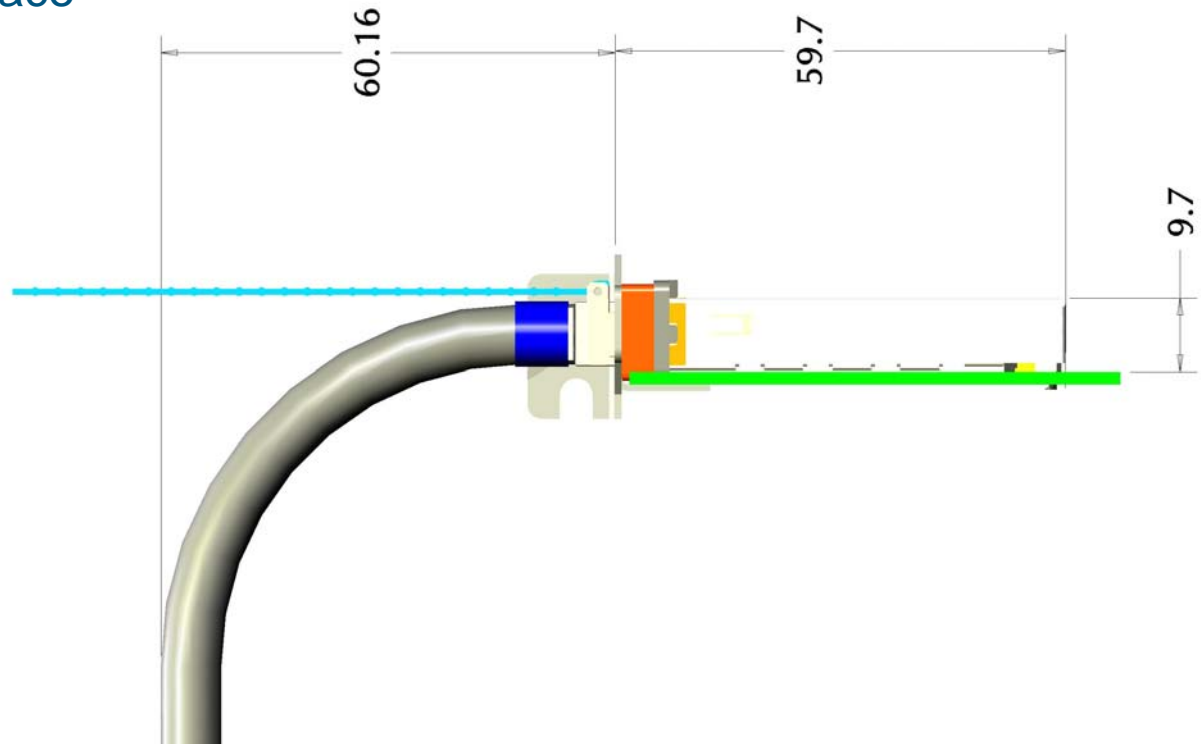


External Single port PCI Configuration



External Single port PCI Configuration

- Significant reduction in panel to cable clearance requirements
- Elimination of wasted space in plug nose and keying region.



Connector Dimensional Information

- Connector dimensional information is covered in the SFF-8634 specification (<ftp://ftp.seagate.com/sff/>)
- Contact and interface dimensioning not specified in SFF-8634 is covered by SFF-8086

Powered 4x External Mini SAS

- Powered 4x External Mini SAS extension (External)
 - Uses existing Mini SAS SFF-8086 contact (same P/N)
 - Limited or no additional qualification
 - Increased pin count from 26 to 32 positions
 - Receptacle improvements
 - Offer behind the bezel and through bezel options
 - Use bail style latch
 - Increased cage height allows for powered devices to be inside cabinet
 - Eliminate sidewalls on connector
 - Less chance of stubbing on through-bezel receptacle
 - Eliminate tab feature on plug (reduce expense, reduce damaged/bent plug housings)
 - Fully boxed interface
 - More robust interface.

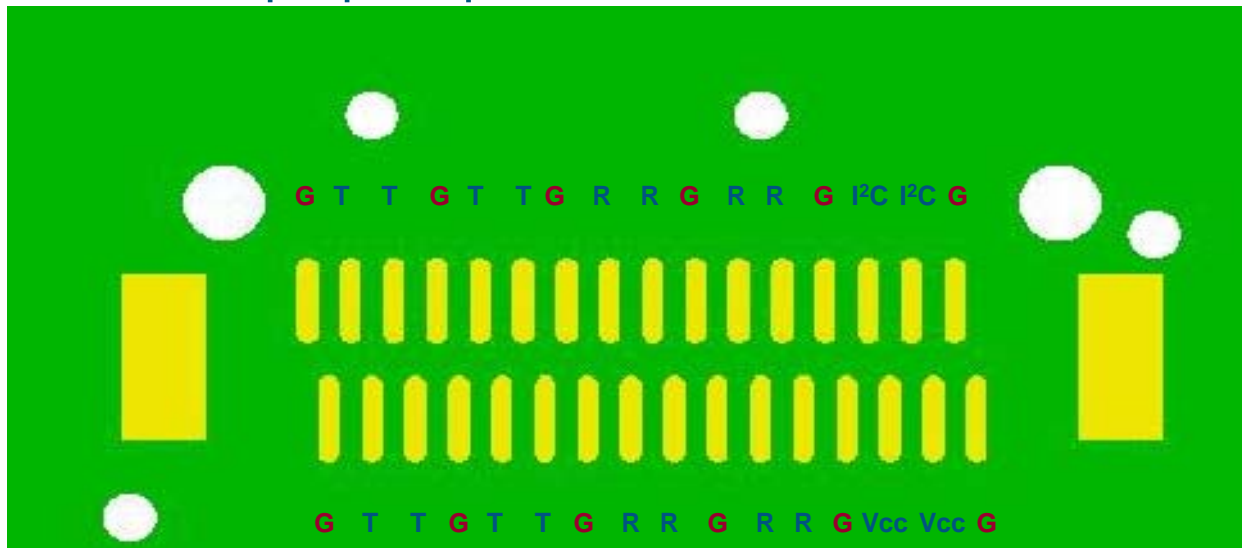
Pinout Suggestions

- Add 6 positions to existing 26 position, external connector
 - Add EEPROM (I²C) 2 pins
 - Add Vcc₁ and Vcc₂ (3.3V and variable power supply) 2 pins
 - Add 2 additional reserved pins

- Total of 32 positions

Powered External Proposals

- A unique interface for powered external applications makes sense because. . . .
 - It prevents damage due to mismatched power pin assignments.
 - Older cables may not work at higher data rates
 - Active cables will not work in older systems
 - I2C can be used to properly set pre-emphasis and post equalization values to assure proper operation



Questions?

- For more information or if you have questions you can contact one of the following people.
- Mike Walmsley – Product Manager
 - Email: mjwalmsl@tycoelectronics.com
 - Phone: 717-985-2835
- Michael Fogg – Senior Principal Engineer, Signal Integrity and EMI
 - Email: mike.fogg@tycoelectronics.com
 - Phone: 717-986-5802
- Scott Shuey – Standards Engineer
 - Email: scott.shuey@tycoelectronics.com
 - Phone: 717-592-3371
- Dan Gorenc – Product Engineer
 - Email: daniel.gorenc@tycoelectronics.com
 - Phone: 717-986-3518