

# microGiGaCN™ Cable I/O

## Infiniband Cable Assemblies

### FCN-260(D) Series microGiGaCN®



Selected by InfiniBand as the I/O Interface Standard for the 4X and 12X



#### ■ FEATURES

- I/O Connector designed for high speed differential signal applications.
- Matched Impedance (100 ohms ±10%)
- Low insertion loss
- Low cross talk
- Adopted by InfiniBand as 4x (4 channel) and 12x (12 channel) I/O Interface

#### ■ SPECIFICATIONS

Item	Specifications
Operating temperature range	-55° C to +105° C
Current rating	AC 0.5A (signal) AC 1A (ground)
Voltage rating	AC 30V
Contact resistance (with conductor resistance)	80 m ohms max. (signal) 35 m ohms max.(ground)
Insulation resistance	1000M ohms minimum
Dielectric withstanding voltage	AC 500V for 1 minute
Durability	250 cycles
Insertion force	30 N max. (8 pair) 60 N max. (24 pair)
Withdrawl force	7 N min. (8 pair) 10.5 N min. (24 pair)

#### ■ MATERIALS

Item	Materials
Insulator	LCP Resin (UL94V-0)
Conductor	Copper Alloy
Plating	Contact: Gold Plating (PAGOS) Terminal: Gold coat over Pd-Ni plating Cover: Zinc

*Product Specification are subject to change, please check our website ([www.fcai.fujitsu.com](http://www.fcai.fujitsu.com)) for the latest specifications.*

# microGiGaCN® Cable I/O - Cable Assemblies

The MicroGigaCN offers a cost-effective I/O solution for high-speed applications in data and telecommunications convergence (voice, data, video and storage). It utilizes a 2.5 Gbit/sec wire speed connection with four or twelve wire link widths, offering a scalable performance range of 500Mbps to 6Gbps per link to meet the needs of entry-level and high-end enterprise systems. Forward crosstalk is less than 4% at 100 pico second pulse-rise time (four-pair switching).

Fujitsu Components designed the MicroGiGaCN to specifically address the emerging requirements for a

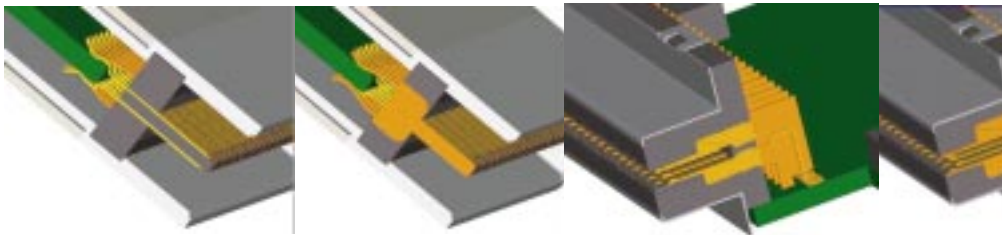
high speed differential signal I/O connector. The MicroGiGaCN offers a unique solution to LVDS, InfiniBand TA, 10G Ethernet, 4x Fiber Channel, and other high speed I/O applications. InfiniBand has selected Fujitsu's connector for the 4x and 12x I/O connector interface.

The performance requirements of the connector system were tested with cable to simulate the actual requirements of an OEM System manufacturer. Our test data includes the parasitic effects of the PCB, along with measurements of a completed I/O cable assembly.

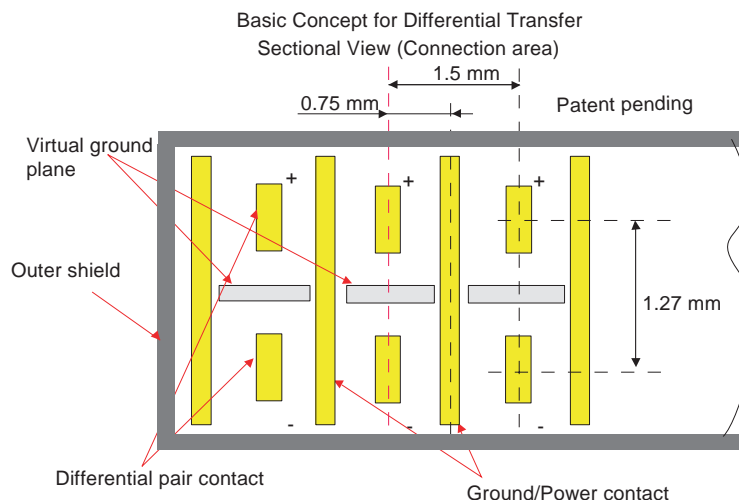
Electrical Performance in out testing:

- Matched Impedance: 93.6 to 109.9 ohms @ 100 ps Trise
- Low Cross Talk: NEXT 3.8% @ 100pc Trise (4 pairs switching, 2 connectors and 10 meters of cable)
- Low Insertion Loss: 2.3dB @ 2.5Gb/s (1.25GHz, 1 Meter Cable Assembly)
- Skew within Differential Pair: 14.2ps (2 connectors and 2 meter of cable)
- Skew pair to pair: 21.2ps (2 connectors and 2 meter of cable)

## Connector Internal Structure



## Basic Concept for Differential Transfer



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Fujitsu Components has designed the mechanical features of the connector to provide space saving footprint that will allow for 3 4x I/O connectors to mount onto a PCI form, or 2 12x. As RFI/EMI are critical elements in high performance cable assemblies, Fujitsu Takamisawa provides the surface mount sockets with an EMI Ground Spring on the face of the connector, to insure that the metal surface of the connector makes sufficient contact with the metal face of the card bracket.

The latching mechanism of the backshell offers a lanyard system for ease of un-mating the I/O plug connector/cable assembly from the SMT I/O socket. The die cast backshell offers excellent RFI/EMI characteristics. The backshell uses a ferrule and

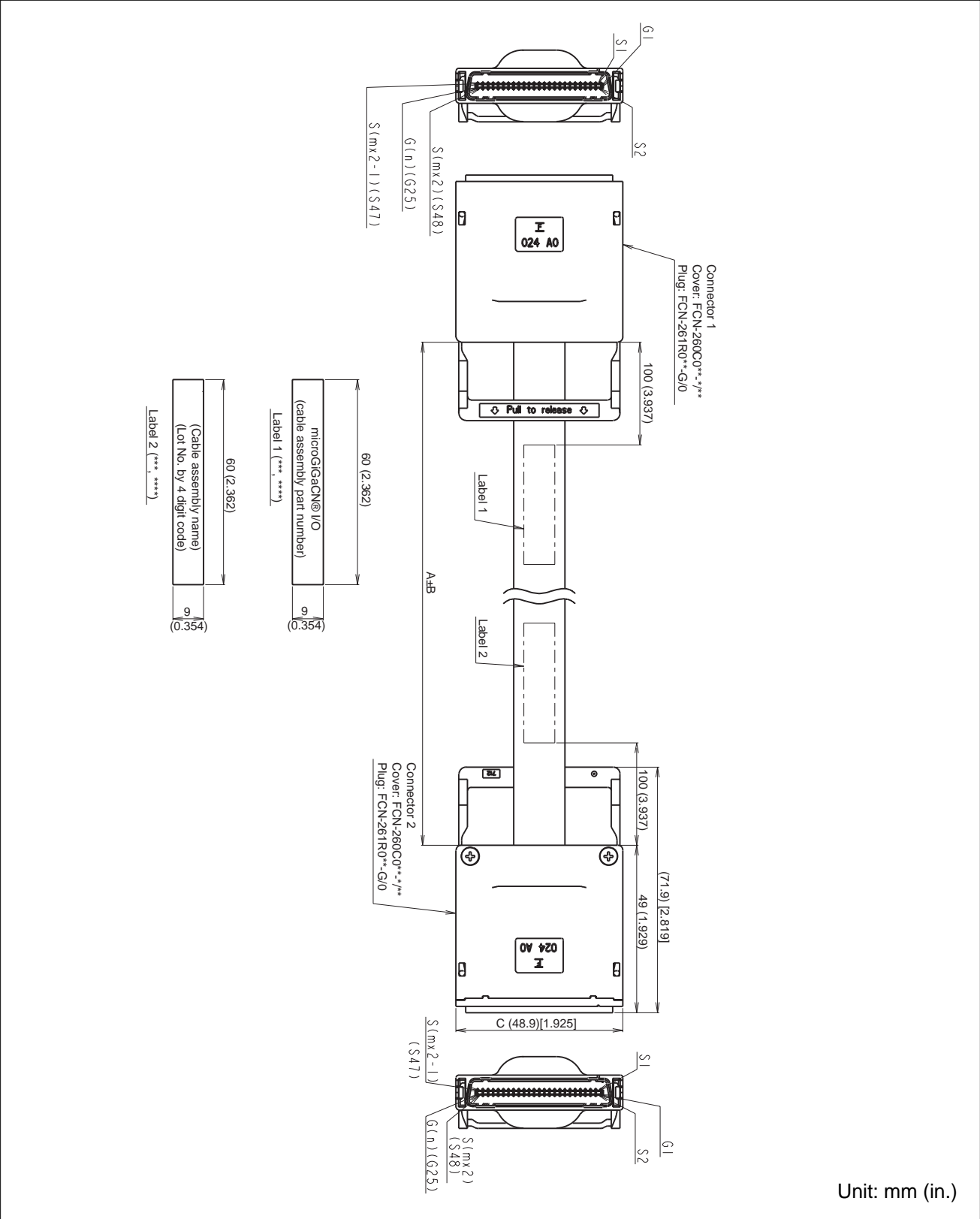
unique ground spring system to provide 360 degree contact of the cable shield to the backshell, which, combined with the solid interconnect of the socket to faceplate, offers low AC coupling termination.

The current version of the I/O plug comes with an attached paddlecard for wire termination. Fujitsu will offer the paddlecard in either an equalized or un-equalized version (see factory for details of the equalized version). Standard product offering will be un-equalized. As there are multiple applications for the paddlecard, with industry and customer specific wire termination, Fujitsu Components offers options to customers of providing the I/O plug connector with custom paddlecards (consult factory).

*Product Specification are subject to change, please check our website ([www.fcai.fujitsu.com](http://www.fcai.fujitsu.com)) for the latest specifications.*

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## DIMENSIONS



# microGiGaCN® Cable I/O - Cable Assemblies

## ■ CABLE ASSEMBLIES ≤ 5.0 METERS

Part number (Harness)	Pair	Length A	Tolerance B	Width	C	m	n	Plug Part number	Cover Part number	Recommended cable	
FCD-ZZ00001	8	500	100	24AWG	24.9	1-8	1-9	FCN-261R008-G/0	FCN-260C008A/L0	SPECTRASTRIP SKEWCLEAR® 8 Pair 24 AWG Infiniband 4X Part Number: 166-2499-998	
FCD-ZZ00002		1000									
FCD-ZZ00003		1500	150								
FCD-ZZ00004		2000									
FCD-ZZ00005		3000									
FCD-ZZ00006		4000									
FCD-ZZ00007		5000									
FCD-ZZ00008	24	500	100		26AWG	48.9	1-24	1-25	FCN-261R024-G/0	FCN-260C024-A/L0	SPECTRASTRIP SKEWCLEAR® Plus 12 Pair 24 AWG Infiniband 12X Part Number: 166-2499-994
FCD-ZZ00009		1000									
FCD-ZZ00010		1500	150								
FCD-ZZ00011		2000									
FCD-ZZ00012		3000									
FCD-ZZ00013		4000									
FCD-ZZ00014		5000									
FCD-ZZ00015	8	500	100	26AWG		24.9	1-8	1-9	FCN-261R008-G/0	FCN-260C008-C/L0	SPECTRASTRIP SKEWCLEAR® Plus Infiniband 4X 8 Pair 26 AWG Part Number: 166-2699-967
FCD-ZZ00016		1000									
FCD-ZZ00017		1500	150								
FCD-ZZ00018		2000									
FCD-ZZ00019		3000									
FCD-ZZ00020		4000									
FCD-ZZ00021		5000									
FCD-ZZ00022	24	500	100		26AWG	48.9	1-24	1-25	FCN-261R024-G/0	(TBD)	SPECTRASTRIP SKEWCLEAR® Plus Infiniband 12X 24 Pair 26 AWG Part Number: 166-2699-965
FCD-ZZ00023		1000									
FCD-ZZ00024		1500	150								
FCD-ZZ00025		2000									
FCD-ZZ00026		3000									
FCD-ZZ00027		4000									
FCD-ZZ00028		5000									

# microGiGaCN® Cable I/O - Cable Assemblies

8 Pairs cable connector signal Assignment			
Connector 1		Connector 2	
Pin Number	Signal	Pin Number	Signal
G1-G9	Signal Ground	G1-G9	Signal Ground
S1	-	S16	-
S2	-	S15	-
S3	-	S14	-
S4	-	S13	-
S5	-	S12	-
S6	-	S11	-
S7	-	S10	-
S8	-	S9	-
S9	-	S8	-
S10	-	S7	-
S11	-	S6	-
S12	-	S5	-
S13	-	S4	-
S14	-	S3	-
S15	-	S2	-
S16	-	S1	-
Housing	Chassis Ground	Housing	Chassis Ground

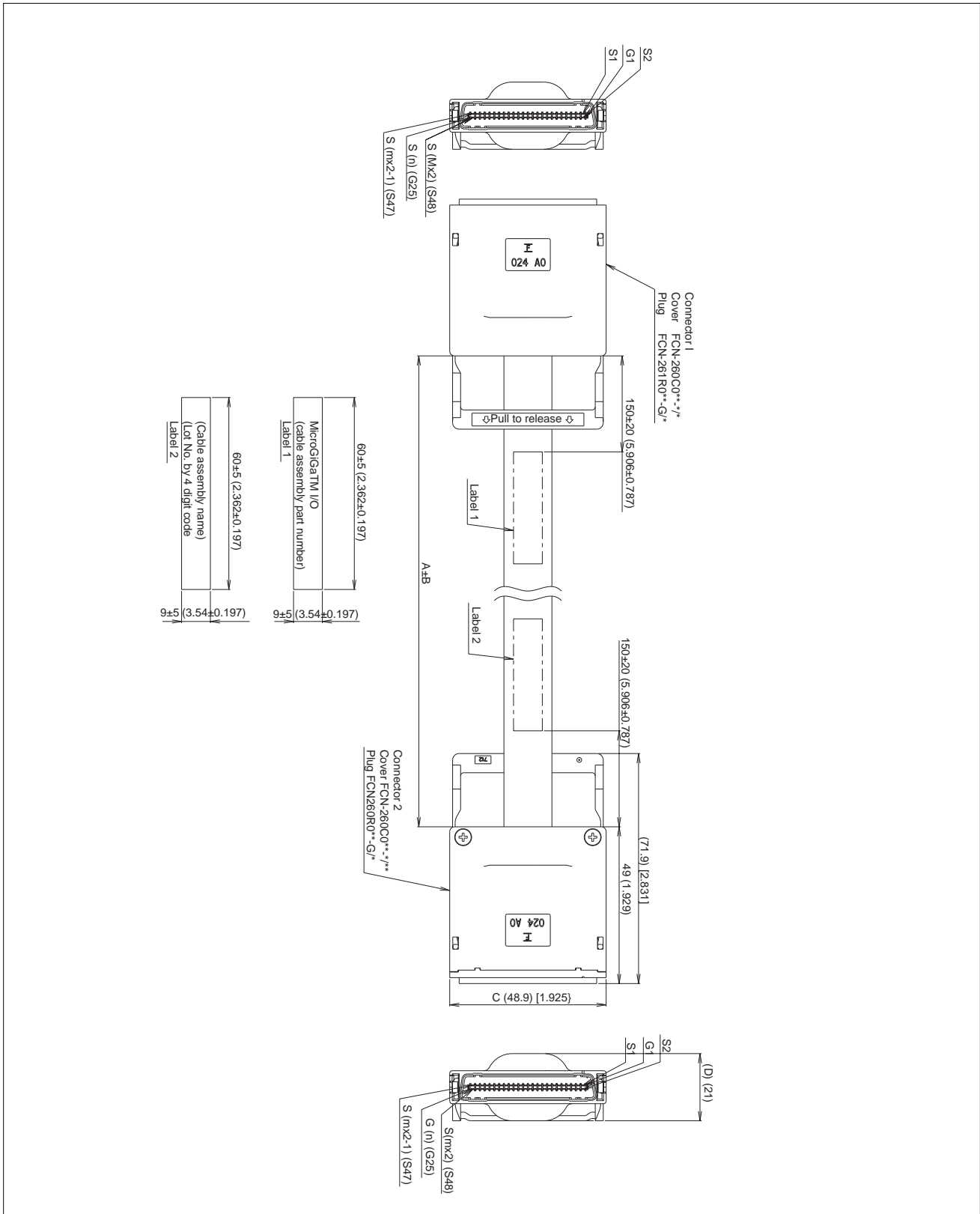
# microGiGaCN® Cable I/O - Cable Assemblies

24 Pairs cable connector signal Assignment							
Connector 1		Connector 2		Connector 1		Connector 2	
Pin Number	Signal	Pin Number	Signal	Pin Number	Signal	Pin Number	Signal
G1-G25	Signal Ground	G1-G25	Signal Ground	S27	-	S22	-
-	-	S48	-	S28	-	S21	-
-	-	S47	-	S29	-	S20	-
-	-	S46	-	S30	-	S19	-
-	-	S45	-	S31	-	S18	-
-	-	S44	-	S32	-	S17	-
-	-	S43	-	S33	-	S16	-
-	-	S42	-	S34	-	S15	-
-	-	S41	-	S35	-	S14	-
-	-	S40	-	S36	-	S13	-
-	-	S39	-	S37	-	S12	-
-	-	S38	-	S38	-	S11	-
-	-	S37	-	S39	-	S10	-
-	-	S36	-	S40	-	S9	-
-	-	S35	-	S41	-	S8	-
-	-	S34	-	S42	-	S7	-
-	-	S33	-	S43	-	S6	-
-	-	S32	-	S44	-	S5	-
-	-	S31	-	S45	-	S4	-
-	-	S30	-	S46	-	S3	-
-	-	S29	-	S47	-	S2	-
-	-	S28	-	S48	-	S1	-
S22	-	S27	-	Housing	Chassis Ground	Housing	Chassis Ground
S23	-	S26	-				
S24	-	S25	-				
S25	-	S24	-				
S26	-	S23	-				

# microGiGaCN<sup>®</sup> Cable I/O - Cable Assemblies

## ■ DIMENSIONS

FOR CABLE  $\geq 7.5$  METERS (FOR CX 4 APPLICATIONS)





# microGiGaCN® Cable I/O - Cable Assemblies

## ■ CUSTOM LENGTH (NON EQUALIZED)

Part number (Harness)	Pair	Length A	Tolerance B	Width	C	D	m	n	Plug Part number	Cover Part number	Recommended cable
FCD-ZZ00037	8	7,500	150	24AWG	24.9	14.4	1-8	1-9	FCN-261R008-G/0	FCN-260C008-A/L0	SPECTRASTRIP SKEWCLEAR® 8 Pair 24 AWG Infiniband 4X Part Number: 166-2499-998
FCD-ZZ00038		10,000									
FCD-ZZ00039		12,500									
FCD-ZZ00040		15,000									
FCD-ZZ00041		20,000									
FCD-ZZ00042	24	7,500	150	24AWG	48.9	21.0	1-24	1-25	FCN-261R024-G/0	FCN-260C024-A/L0	SPECTRASTRIP SKEWCLEAR® 24 Pair 24 AWG Infiniband 12X Part Number: 166-2499-992
FCD-ZZ00043		10,000									
FCD-ZZ00044		12,500									
FCD-ZZ00045		15,000									
FCD-ZZ00046		20,000									
FCD-ZZ00047	8	7,500	150	26AWG	24.9	14.4	1-8	1-9	FCN-261R008-G/0	FCN-260C008-C/L0	SPECTRASTRIP SKEWCLEAR® 8 Pair 26 AWG Infiniband 4X Part Number: 166-2699-997
FCD-ZZ00048		10,000									
FCD-ZZ00049		12,500									
FCD-ZZ00050		15,000									
FCD-ZZ00051		20,000									
FCD-ZZ00052	24	7,500	150	26AWG	48.9	(TBD)	1-24	1-25	FCN-261R024-G/0	(TBD)	SPECTRASTRIP SKEWCLEAR® 24 Pair 26 AWG Infiniband 12X Part Number: 166-2699-992
FCD-ZZ00053		10,000									
FCD-ZZ00054		12,500									
FCD-ZZ00055		15,000									
FCD-ZZ00056		20,000									

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