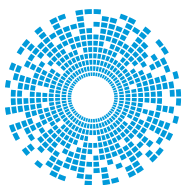


ICM SOLUTIONS FOR 5G CELLULAR NETWORKS



bel MAGNETIC
SOLUTIONS

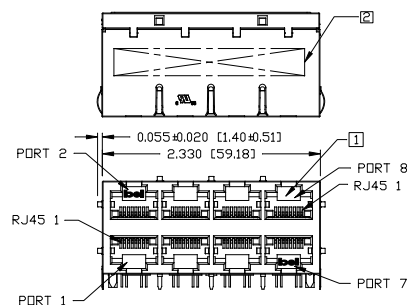
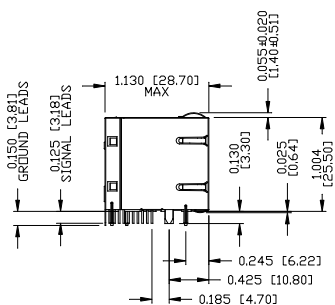
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ICMs in the 5G Central Office Network

5G network speeds and reduced latencies will enable many applications to offload computation-intensive tasks to data centers, driving a significant increase in demand for cloud computing and data traffic. At the same time telecom operators are modifying central offices to add server racks able to sustain computationally intensive tasks. To gear-up for 5G, data center owners and telecom companies will have to scale-up their operations by adding more power, cooling, servers, racks, etc. With current technology, 2kWh of energy is required to download one gigabyte of data. One major driver for data traffic is video streaming which is expected to grow even further. This growth will be reinforced by increasing availability of connectivity services and 5G. Higher port densities, more bandwidth capability and higher power output per port will be essential to driving the infrastructure of these new 5G networks both inside the closets and outside on the streets. The new 5G networks will implement a dense, distributed network of base stations in a small cell infrastructure. This will allow more processing to happen on the edge, leading to lower latencies. Base stations and small cells require power, ideally this power can be supplied by the switches within the network infrastructure.

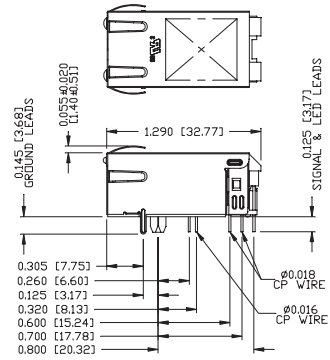
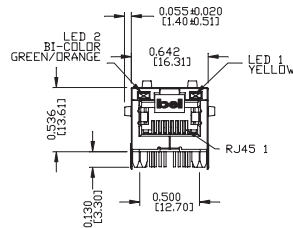
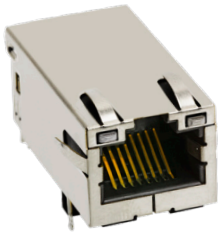
2xN Port MagJack® 10G PoE ICMs



Part Number	Speed	Port Configuration	PoE	Operating Temperature	LED
0895-2C1R-GK	1GBT	2x1	30W	-40 to 85°C	Yes
0895-2C1R-GVH	1GBT	2x1	60W	-40 to 85°C	Yes
0895-2B2J-JD	2.5GBT	2x2	60W	-40 to 85°C	Yes
2250343-1	2.5GBT	2x2	60W	-40 to 85°C	Yes
0895-2B2J-JVA	5GBT	2x2	60W	-40 to 85°C	Yes
2250532-1	5GBT	2x2	60W	-40 to 85°C	Yes
G53-488V-150	10GBT	2x2	100W	-40 to 85°C	Yes
2250660-1	10GBT	2x2	100W	-40 to 85°C	Yes
0895-2B4J-GVH	1GBT	2x4	60W	-40 to 85°C	Yes
0895-2B4J-JD	2.5GBT	2x4	60W	-40 to 85°C	Yes
2250345-1	2.5GBT	2x4	60W	-40 to 85°C	Yes
0895-2B4J-JVA	5GBT	2x4	60W	-40 to 85°C	Yes
2250445-1	5GBT	2x4	60W	-40 to 85°C	Yes
G31-88NV-011	10GBT	2x4	60W	-40 to 85°C	Yes
0895-2B6J-GVH	1GBT	2x6	60W	-40 to 85°C	Yes
0895-2B6J-JD	2.5GBT	2x6	60W	-40 to 85°C	Yes
2250346-1	2.5GBT	2x6	60W	-40 to 85°C	Yes
0895-2B6J-JVA	5GBT	2x6	60W	-40 to 85°C	Yes
G31-B8NV-011	10GBT	2x6	60W	-40 to 85°C	Yes
0895-2B8J-GVH	1GBT	2x8	60W	-40 to 85°C	Yes
0895-2B8J-JD	2.5GBT	2x8	60W	-40 to 85°C	Yes
2250347-1	2.5GBT	2x8	60W	-40 to 85°C	Yes
0895-2B8J-JVA	5GBT	2x8	60W	-40 to 85°C	Yes
G31-D8NV-011	10GBT	2x8	60W	-40 to 85°C	Yes

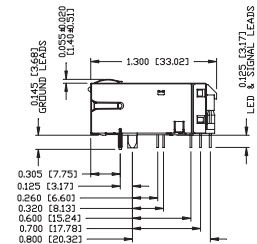
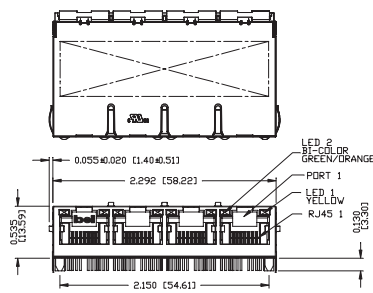
ICM Solutions for 5G Cellular Networks

1x1 Port MagJack® ICMs



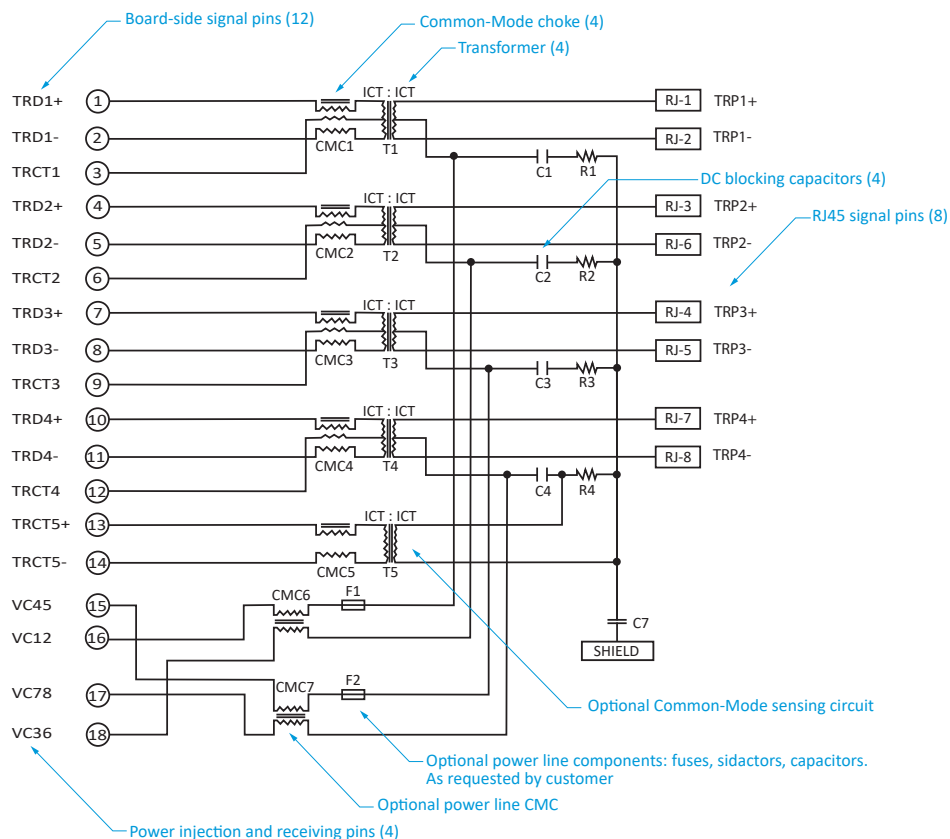
Part Number	Speed	Port Configuration	PoE	Operating Temperature	LED
0826-1X1T-GH-F	1GBT	1x1	60W	-40 to 85°C	Yes
0826-1X1T-HS-F	1GBT	1x1	100W	-40 to 85°C	Yes
2250506-1	1GBT	1x1	100W	-40 to 85°C	Yes
0826-1X1T-HT-F	2.5GBT	1x1	60W	-40 to 85°C	Yes
2250331-1	2.5GBT	1x1	60W	-40 to 85°C	Yes
0826-1X1T-KH-F	2.5GBT	1x1	100W	-40 to 85°C	Yes
2250504-1	2.5GBT	1x1	100W	-40 to 85°C	Yes
0826-1X1T-JK-F	5GBT	1x1	60W	-40 to 85°C	Yes
2250477-1	5GBT	1x1	60W	-40 to 85°C	Yes
0826-1X1T-KL-F	5GBT	1x1	100W	-40 to 85°C	Yes
2250507-1	5GBT	1x1	100W	-40 to 85°C	Yes
G27-122T-066A	10GBT	1x1	60W	-40 to 85°C	Yes
G27-122T-015	10GBT	1x1	60W	-40 to 85°C	Yes
G27-122T-141B	10GBT	1x1	100W	-40 to 85°C	Yes
G27-111T-118	10GBT	1x1	60W	-40 to 85°C	Yes

1xN Port MagJack® ICMs



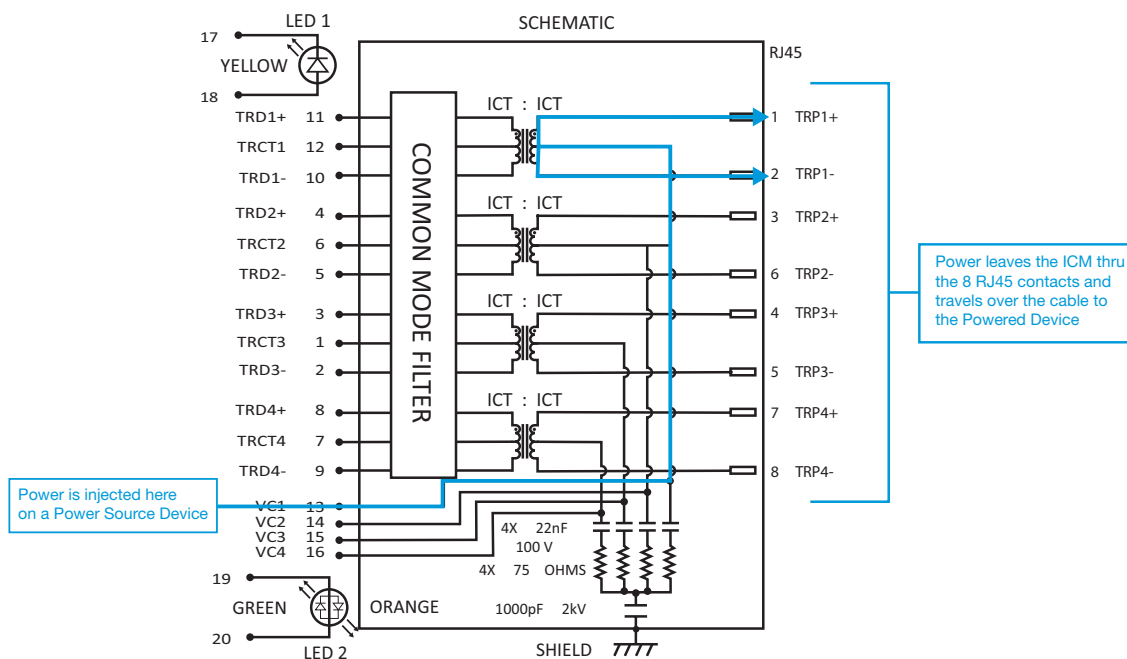
Part Number	Speed	Port Configuration	PoE	Operating Temperature	LED
0826-1X4T-GH-F	1GBT	1x4	60W	-40 to 85°C	Yes
0826-1X2T-HT-F	2.5GBT	1x2	60W	-40 to 85°C	Yes
0826-1X2T-HS-F	1GBT	1x2	100W	-40 to 85°C	Yes
0826-1X4T-HS-F	1GBT	1x2	100W	-40 to 85°C	Yes
0826-1X4T-HT-F	2.5GBT	1x4	60W	-40 to 85°C	Yes
2250580-2	10GBT	1x4	100W	-40 to 85°C	Yes

Electrical Circuit Diagram

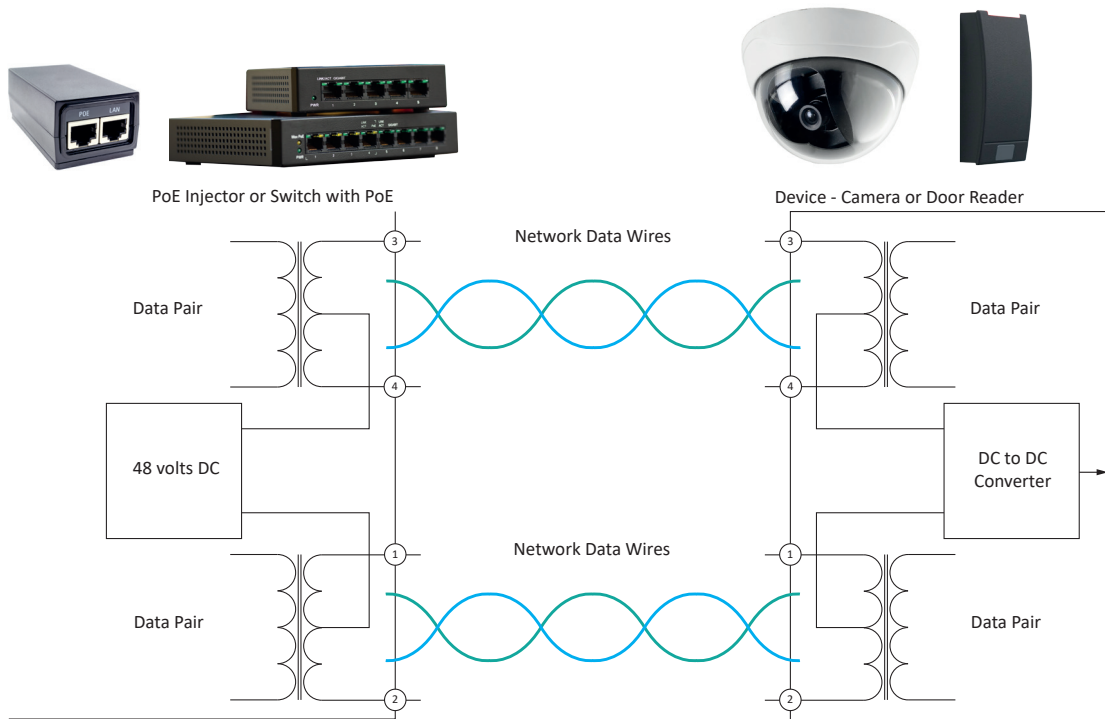


PoE in Bel ICMs

Example circuit illustrating the ability to access the center taps in any of our PoE connectors:



How PoE Works



Ethernet

Although the arrival of 5G may raise questions over its future, most analysts agree that Ethernet will have a key role to play for many years to come. Ethernet's ability to combine power and data delivery underpins its flexibility and cost effectiveness for a broad range of home and enterprise applications such as access points, surveillance cameras, VoIP phone systems and led lighting.

Integrated Connector Modules

Delivery of 5G data will depend heavily on Ethernet at various points in the technology chain. With PCB real estate at a premium, Integrated Connector Modules (ICM) provide the perfect partner to 5G, by integrating the electrical interfacing circuitry, or magnetics, into the connector. Adding 5G levels of bandwidth to existing forms of connectivity, such as wireless access points and base stations, security cameras and industrial control, will see ICMs becoming even more important. It will also see an increase in the use of Power over Ethernet (PoE) solutions, to help build out networks in a minimally invasive way. Access to ICMs offering up to four ports with PoE at 1GBase-T bandwidths will help 5G extend its reach as network operators look to monetize increased capacity quickly.

MagJack® ICMs - 100W to 10GBaseT

As the inventor and largest supplier of Integrated Connector Modules (ICM), Bel has the broadest portfolio of ICM products available, perfectly suited to meeting the needs of 5G. Bel and TRP ICMs support 10/100 Base-T to 10GBase-T, for up to 100W PoE (PSE and PD), and non-PoE applications. Bel multirate compatible 10G ICMs are designed to meet today's bandwidth requirements and those that will come with 5G deployment, including single-port, 4-port side-by-side and high density 2x8 stacked ICMs. All ICMs meet IEEE 802.3 standards and include protection from 6kV ESD strikes, to deliver reliability and long service in the harshest environments.





About Bel Magnetic Solutions

Bel Magnetic Solutions offer an extensive line of Integrated Connector Modules (ICM), where the Ethernet magnetics solution is integrated into a connector package. The ICM product line covers every Ethernet application on the market today. Our products include one of the broadest ranges of magnetic based solutions for high-speed networking and computer applications. ICMs cover a range of Ethernet speeds and technologies from 10/100Base-T, 1GBase-T, 10GBase-T, and Power over Ethernet (PoE).



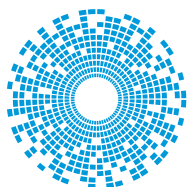
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