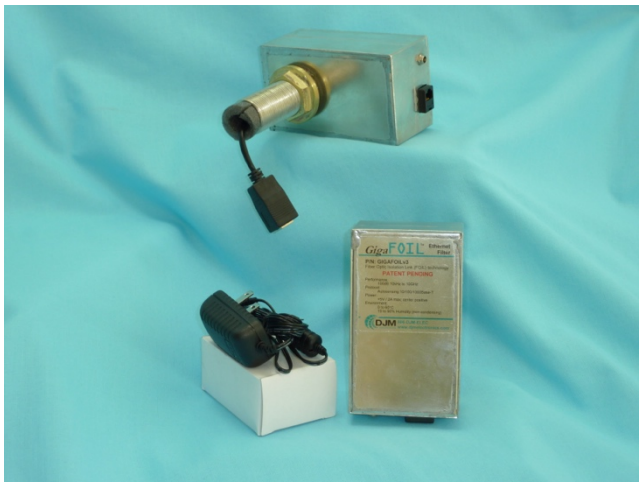
GigaFOIL™v4 Ethernet Filter Standard Version

NOTE: As of 2022, GigaFOIL Filters are no longer in production. Please contact sales@djmelectronics.com for suitable replacement filters.

Overview



The DJM Electronics GigaFOIL™ line of Ethernet filters utilize patented technology and are the only EMI/RFI filters for Ethernet on the market that offer 100dB performance from 10kHz to 18GHz and higher. Housed in a single, convenient filter package, FOIL™ Ethernet Filters are the easiest and most reliable solution for bringing Ethernet access to all varieties of shielded rooms and enclosures.

Standard signal line filters rely on capacitors and inductors to eliminate unwanted RF signals. However, these types of filters often eliminate the high frequencies that make up the sharp edges of high speed digital square wave signals thereby degrading the integrity of the signal. In order to avoid this side effect, it is necessary for standard signal line filters to have extended passbands that allow the higher frequencies to pass unimpeded. Also, it is important to note that standard signal line filters do not differentiate between Ethernet signals and undesirable signals. They act like a "hole" in the shielded enclosure to all signals - good and bad - within the passband.

Unlike standard signal line filters, FOIL™ Ethernet Filters utilize a fiber optic isolation link (FOIL) to maintain 100dB shielding integrity. The filter converts ONLY Ethernet packets, so there is no passband and no transmission of unwanted signals. And we guarantee that FOIL™ Ethernet Filters will not interfere with your network, increase hop counts or degrade network performance - a common problem with standard signal line filters.

FOIL™ Ethernet Filters come in five models:

- The standard GigaFOILv4 for 10/100 and Gigabit Ethernet networks;
- The GigaFOILv4 – PLENUM model designed for use in plenum rated spaces;
- The GigaFOILv4 – POE for Power Over Ethernet applications; and
- The GigaFOILv4 – EMP for protection against electromagnetic pulses.
- The GigaFOILv4 – INLINE for streaming audio and computer controlled devices.

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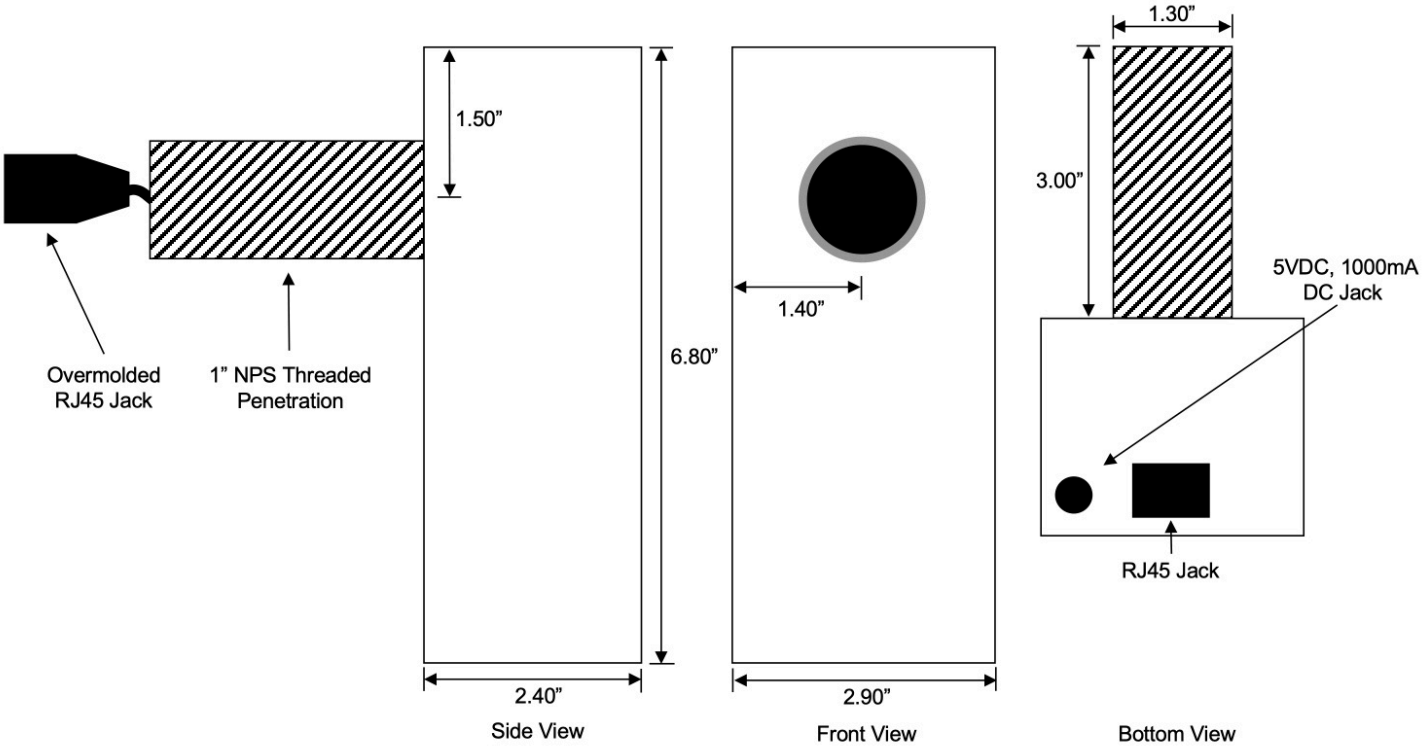
Specifications

Filter Performance	Shielding Effectiveness*	100dB from 10kHz to 18GHz
	Insertion Loss*	100dB from 10kHz to 18GHz
	Note: Insertion Loss performance is extrapolated from tests performed using a method as close to MIL-STD-220B as possible. The nature of twisted pair cabling and RJ-45 connectors makes testing to this standard extremely difficult.	
	Radiated Emissions*	Exceeds MIL-STD-461 CE102 Exceeds MIL-STD-461 RE102 Exceeds FCC Part 15 A, B Exceeds EN 55022 Class A, B Note: FOIL™ Ethernet filters are active filters and produce a limited amount of radiated emissions inside the shielded enclosure. Please contact DJM Electronics for information regarding your particular application.
	Note: Radiated emissions tests were performed using a method as close to CISPR22 and FCC Part 15 as possible. The nature of the filter required it be mounted in a shielded room and tested from 3 meters away instead of on a standard OATS. Actual emissions performance may differ from filter to filter.	
Network Performance	Auto MDI/MDI-X	Automatically detects and configures MDI or MDI-X.
	Auto Negotiation	Automatically configure 10Mbps, 100Mbps or 1000Mbps
	Flow Control	Supports 802.3x Flow Control for Full-Duplex mode and Back Pressure for Half-Duplex mode
	Hot Pluggable	Can be plugged in/out without affecting filter or other links.
	Auto Link Restoration	Automatically re-establishes network link after a link loss.
	Communication Standards	IEEE802.3 10Base-T (Ethernet) IEEE802.3u 100Base-TX (Fast Ethernet) IEEE802.3ab 1000Base-T/TX (Gigabit Ethernet)
Safety	File Number	E362686
	Standards	UL 60950-1 CSA C22.2 No. 60950-1 RoHS 2011/65/EU RoHS 2015/863 REACH 1907/2006 Article 33 POP 850/2004 EN 55024:2010 EN 55032:2012 + AC:2013 EN 61000-3-2:2014 EN 61000-3-3:2013 FCC 47 CFR Part 15B ICES-003 Issue 6
Environmental	Operating Temperature	-40ºC - 70ºC (-40ºF - 158ºF) Continuous -40ºC - 85ºC (-40ºF - 185ºF) <72 Hours
	Humidity	5% - 90% (non condensing)
Construction	Filter Housing	20 ga zinc plated cold rolled steel
	Power Requirements	+5VDC max / 1A min; Red Lead Positive
	Dimensions	5.50" x 3.25" x 2.50" with 3" threaded penetration (1" NPS)

Drawing



Connector Pinout

Pin	Gigabit Ethernet	
	Name	Description
1	BI_DA+	Bi-directional pair A +
2	BI_DA-	Bi-directional pair A –
3	BI_DB+	Bi-directional pair B +
4	BI_DC+	Bi-directional pair C +
5	BI_DC-	Bi-directional pair C –
6	BI_DB-	Bi-directional pair B –
7	BI_DD+	Bi-directional pair D +
8	BI_DD-	Bi-directional pair D -

Warranty

All GigaFOIL Filters have a 3 year parts and labor warranty

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