OFM-4216

16 Channel CWDM Fibre Optic Multiplexer/Demultiplexer

IRT COMMUNICATIONS

User Manual

Revision History:

Revision	Date	By	Change Description	Applicable to:
00	24/03/2016	AL	Original Issue.	Serial Numbers ≥ 1410001

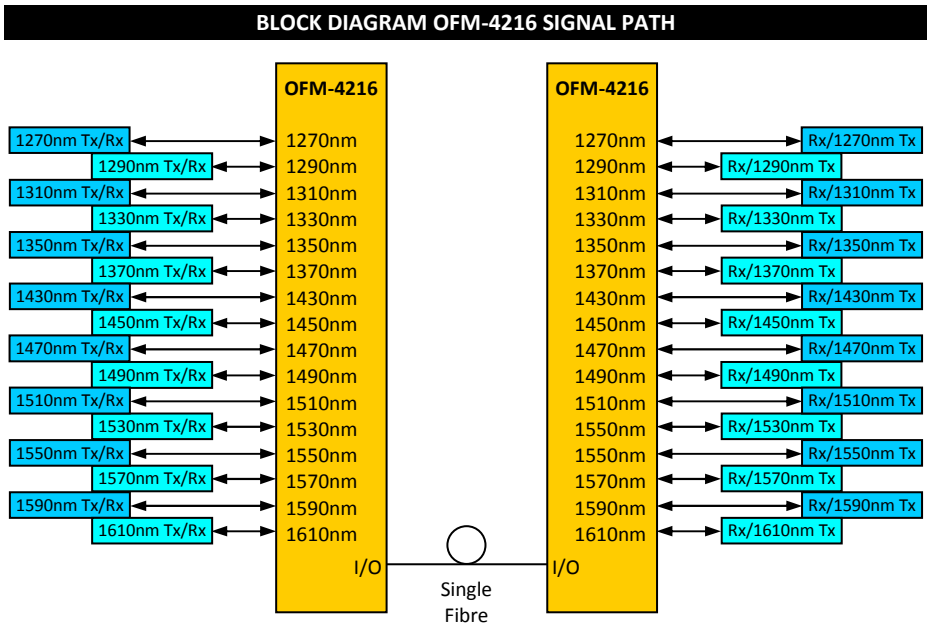
Table of Contents:

This instruction book applies to units later than S/N 1410001.

Optical Safety

The light emitted from the LASER diode used in this system is invisible and may be harmful to the human eye. Avoid looking directly into the fibre optic cable or connectors or into the collimated beam along their axis when the device is in operation. Operating the LASER diode outside of its maximum ratings may cause device failure or a safety hazard.

GENERAL DESCRIPTION



The OFM-4216 is coarse wave division optical wavelength division multiplexer / demultiplexer (CWDM) for combining and separating up to sixteen optical signals of 1270nm, 1290nm, 1310nm, 1330nm, 1350nm, 1370nm, 1430nm, 1450nm, 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm and 1610nm wavelengths for either uni-directional or bi-directional transmission on the one fibre.

With the high cost of hiring or installing additional dark fibre it makes economical sense to maximise the use of existing infrastructure.

Used in combination with IRT's extensive range of fibre transmitters / receivers and interface modules, a myriad of different signals types can be sent down the one fibre. With IRT's sixteen channel fibre multiplexer/demultiplexer modules, for example, up to 128 SDI signals can be sent down a single fibre. Or up to 512 ASI signals can be sent when also used with IRT's ASI multiplexer/demultiplexer modules.

The OFM-4216 is designed to mount in IRT's 1RU or 4000 series 3RU frame.

Standard features:

- **Sixteen set CWDM optical wavelength inputs and outputs.**
- **Uni-directional or bi-directional operation.**
- **Low insertion loss.**
- **Connections made by LC/PC and SC/PC connectors.**

TECHNICAL SPECIFICATIONS

Type	16 Channel CWDM multiplexer.
Wavelengths	1270 nm, 1290 nm, 1310 nm, 1330 nm, 1350 nm, 1370 nm, 1430 nm, 1450 nm, 1470 nm, 1490 nm, 1510 nm, 1530 nm, 1550 nm, 1570 nm, 1590 nm and 1610 nm.
Fibre	Single mode.
Connector Type	16 x LC/PC; and 1 x SC/PC Common I/O.
Maximum Power Handling	500 mW.
Channel Passband	± 6.5 nm.
Insertion loss	≤ 2.8 dB (typically 2.6 dB).
Passband Ripple	< 0.3 dB.
Return Loss	> 45 dB (typically 50 dB).
Directivity	> 50 dB.
Channel Isolation	> 30 dB (typically 40 dB).
Non Adjacent Channel Isolation	> 40 dB (typically 50 dB).
Polarization Dependent Loss	< 0.2 dB.

Other:

Temperature range		-10 - 70° C ambient.
Mechanical		Suitable for mounting in IRT 19" 1RU or 4000 series 3RU rack chassis with input and output connections on the rear panel.
Finish	**Front panel**	Grey background, black lettering & red IRT logo.
	Rear assembly	Common connection mounted on bracket from main PCB.
Dimensions		6 HP x 3 U x 220 mm IRT Eurocard.

INSTALLATION

Installation in frame or chassis:

The OFM-4216 will only mount within an IRT 1RU or 4000 series 3RU frame.

Slide the unit through the front of the frame on the frame's inside runners. If adjacent to another card's rear assembly it may be necessary to gently guide the optical connectors past the edge of the adjacent rear assembly. Screw in the front panel mounting screws to lock into place. Screw the supplied rear cover plate that shows the wavelength locations onto the rear of the frame using the supplied M2.5x10 pan head screws.

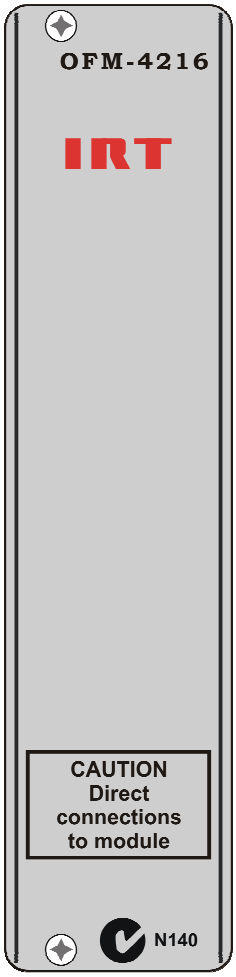
Fibre Connections:

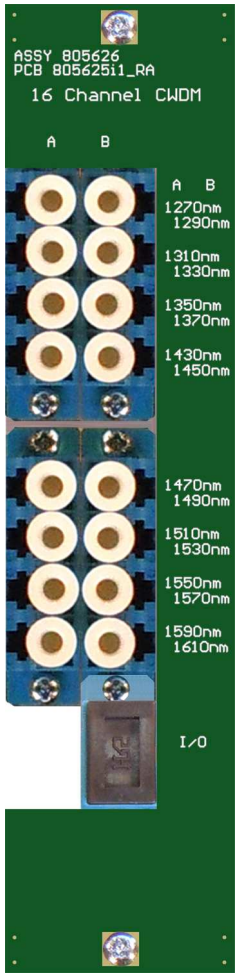
The OFM-4216 card comes standard with sixteen LC/PC and one SC/PC female types of connectors for connection with single mode fibre fitted with the corresponding mating male connectors.

There are sixteen LC/PC inputs/outputs labelled 1270nm, 1290nm, 1310nm, 1330nm, 1350nm, 1370nm, 1430nm, 1450nm, 1470nm, 1490nm, 1510nm, 1530nm, 1550nm, 1570nm, 1590nm and 1610nm. Each of these inputs/outputs must mate with the same corresponding wavelength of a dFB (CWDM) type of laser transmitter/receiver. Transmitters may be any type of IRT laser transmitter such as ASI/SDI, L-Band etc. just so long as they are fitted with a dFB laser at the appropriate wavelength. Receiver modules are not wavelength sensitive and will work with any of the input wavelengths.

The I/O output of the OFM-4216 is the multiplexed version of the combined inputs. This feeds into the input of a second OFM-4216 receiving unit via the SC/PC connector.

Front & rear panel connector diagrams:





MAINTENANCE & STORAGE

Maintenance:

No regular maintenance is required.

Care however should be taken to ensure that all connectors are kept clean and free from contamination of any kind. This is especially important in fibre optic equipment where cleanliness of optical connections is critical to performance.

Storage:

If the equipment is not to be used for an extended period, it is recommended the whole unit be placed in a sealed plastic bag to prevent dust contamination. In areas of high humidity a suitably sized bag of silica gel should be included to deter corrosion.

Where individual circuit cards are stored, they should be placed in antistatic bags. Proper antistatic procedures should be followed when inserting or removing cards from these bags.

WARRANTY & SERVICE

Equipment is covered by a limited warranty period of three years from date of first delivery unless contrary conditions apply under a particular contract of supply. For situations when "**No Fault Found**" for repairs, a minimum charge of 1 hour's labour, at IRT's current labour charge rate, will apply, whether the equipment is within the warranty period or not.

Equipment warranty is limited to faults attributable to defects in original design or manufacture. Warranty on components shall be extended by IRT only to the extent obtainable from the component supplier.

Equipment return:

Before arranging service, ensure that the fault is in the unit to be serviced and not in associated equipment. If possible, confirm this by substitution.

Before returning equipment contact should be made with IRT or your local agent to determine whether the equipment can be serviced in the field or should be returned for repair.

The equipment should be properly packed for return observing antistatic procedures.

The following information should accompany the unit to be returned:

1. A fault report should be included indicating the nature of the fault
2. The operating conditions under which the fault initially occurred.
3. Any additional information, which may be of assistance in fault location and remedy.
4. A contact name and telephone and fax numbers.
5. Details of payment method for items not covered by warranty.
6. Full return address.
7. For situations when "**No Fault Found**" for repairs, a minimum charge of 1 hour's labour will apply, whether the equipment is within the warranty period or not. Contact IRT for current hourly rate.

Please note that all freight charges are the responsibility of the customer.

The equipment should be returned **to the agent who originally supplied the equipment** or, where this is not possible, to IRT directly. Details of IRT's direct address can be found at I.R.T. Communications' website.

Web address: www.irtcommunications.com

Email: sales@irtcommunications.com