Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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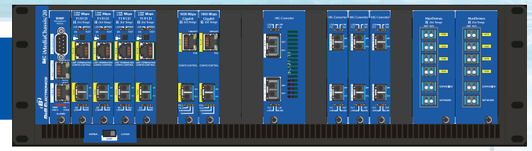
MIXED PROTOCOLS



A mix of up to eight conversion modules, E1, GigE and 10GigE. For E1 the interface to the local equipment will be via RJ-48, for GigE the interface could be optical or copper and finally for 10GigE the interface will be optical. In each of the modules the applicable CWDM SFP, SFP+ would be installed.

Typical application for this solution would be multi-service provisioning over a dedicate ponit to point fiber e.g. ISP/telco provided optical link, or a rented dark fiber.

COMPONENT LIST

PN	DESCRIPTION	COMMENT
850-10960-2AC	iMediaChassis/20-2AC (20-slot, dual AC input, two AC power modules)	
850-39950	iMediaChassis SNMP Management Module	Optional
850-18100	IE-iMcV-T1/E1/J1-LineTerm, TP/SFP (requires one SFP/155 module)	E1 copper to CWDM
850-19500	IE-iMcV-ModeConverter, SFP/SFP (requires two SFP Modules)	For up to 2.4Gig
860-12100	iMcV-10G-Converter, XFP/XFP (requires two XFP Modules)	For up to 10Gig - XFP
860-12102	iMcV-10G-Converter, SFP+/ SFP+ (Requires two SFP+ Modules)	For up to 10Gig - SFP+
844-18147	IE-iMcV-MUX/DEMUX/4 Module, 1470-1530nm-LC	Four channel, 1470nm to 1530nm
844-18155	IE-iMcV-MUX/DEMUX/4 Module, 1550-1610nm-LC	Four channel, 1550nm to 1610nm

The iMediaChassis family offers operators, ISP's, data center users with a low cost and extremely compact (3U high, one box solution), for CWDM services. In addition to the physical conversion of either local fiber or copper to a specific CWDM wavelengths, the product also offers advanced management features allowing the operator to monitor a wide variety of parameters, most importantly quality of the optical signal.

Contact B&B Electronics

B&B ELECTRONICS
Make The Right Connections

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B&B ELECTRONICS
Make The Right Connections

INTEGRATED CWDM SOLUTIONS

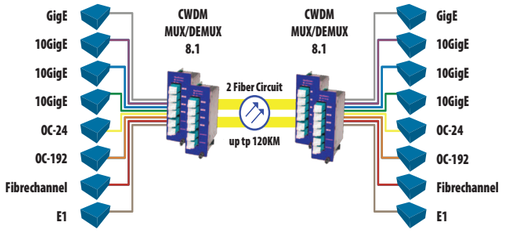
For Internet Service Providers, Data Centres and Telecom Operators

www.bb-elec.com

For high speed and long distance, fiber optic cabling is the only solution available for Telecom Providers, ISP's, Inter Building Connectivity and Data Centers. Fiber offers unlimited bandwidth and distances can exceed 100KM.

Fiber installations have not kept pace with the demands made of the physical infrastructure. As an operator/owner of fiber going back to install new 'dark' fiber is cost prohibitive. For a customer, renting extra dark fiber will obviously involve extra costs.

A solution to limited fiber availability is provided by CWDM technology, a method by which multiple wavelengths of light are multiplexed into a dedicate fiber pair and demultiplexed at the other end of the link. CWDM links are traditionally point to point and all wavelengths are independent of each other, they can carry data from different devices, services or customers. Multiplexing effectively increases the bandwidth of the pre-installed fiber or offering substantial cost savings vs. installing or renting new fiber.



CWDM Sample Application

Active Equipment combined with passive MUX/DEMUX

B&B ELECTRONICS – SOLUTIONS

CWDM devices are often thought of as being expensive, especially if active optics are employed to create the different wavelengths. In addition, CWDM is normally achieved by using two boxes – one to create the different wavelengths, the other to MUX/DEMUX the wavelengths.

However, for cost effective CWDM solutions, B&B Electronics can provide a compact single chassis solution. This chassis and associated modules can offer:

- Copper to CWDM conversion (E1, 100Mbps, GigE, 10GigE [CX4])
- Optical to CWDM conversion (GigE, 10GigE, FibreChannel, 10Gig FibreChannel)

Within one chassis, the CWDM wavelengths can be created and in addition up to 8 CWDM channels can be MUX/DEMUX'd.

This solution also has the advantage of being SNMP compliant, the operator can monitor optical information such as receive and transmit strengths.

MODULES – ACTIVE & PASSIVE

Most CWDM installations are normally deployed as an 'after thought' i.e. in the initial network design no account was taken on fiber availability or the need to run multiple services over a dedicated fiber link. In these situations the active devices – servers, storage arrays, switches etc.. are already in place and will normally not be CWDM capable. Some form of conversion is required – take the interface from the switch and then convert it to a CWDM wavelength. B&B Electronics offers a wide variety of modules which install into the iMediaChassis family which can achieve this conversion:

iMcV-Gigabit TX/SFP

A GigE converter with 1x copper interface and 1x SFP interface. The SFP port will be populated with the CWDM SFP.

IE-iMcV-ModeConverter

2x SFP interfaces supporting speeds up to 2.4Gbps. One port will normally be populated with an SFP to connect to the active equipment (typically 850nm), the second port populated with a CWDM SFP.

iMcV-10G XFP/XFP

2x XFP ports, supporting speeds up to 10Gig (OC192, 10GigE, FibreChannel). One port populated with either an optical XFP (typically 850nm) or a copper XFP (CX4), then second port with a CWDM XFP module.

iMcV-10G SFP+/SFP+

2x SFP+ ports, supporting speeds up to 10Gig (OC192, 10GigE, FibreChannel). One port populated with an optical SFP+ (typically 850nm), to connect to the existing equipment, then the second port is populated with a CWDM SFP+

IE-iMcV-T1/SFP

An E1 media converter offering layer one conversion for E1 equipment. An RJ-48 connects to the existing E1 equipment, then a CWDM SFP is installed into the optical port.

MODULES - MUX/DEMUX

A passive MUX/DEMUX module is offered. Two versions are available:

- IE-iMcV-MUX/DEMUX ,1470 to 1530
- IE-iMcV-MUX/DEMUX, 1550 to 1610

Both units have a 5th port which offers one of two functions:

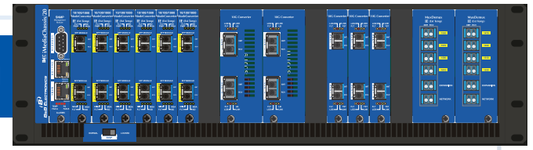
- 1310nm channel – allowing legacy optical equipment to be transported over the CWDM link
- Cascade – allows two units to be connected so that eight wavelengths can be multiplexed over a dedicated fiber pair.

OVERVIEW

In order to utilize CWDM the different wavelengths need to be generated by the active optics, normally this is achieved by using specific SFP's, SFP+'s or XFP's. These wavelengths are then multiplexed via a passive device, normally 4 or 8 channel. The multiplexer also normally includes a de-multiplexer so that the various wavelengths can be directed to the correct hardware e.g. 1270nm is used to create a link over a dedicated dark fiber between two Fibrechannel arrays, the MUX is responsible for inserting the 1270nm wavelength into the fiber and then at the other end of the fiber the DEMUX is responsible for ensuring that this light signal exits the correct interface on the DEMUX and then onto the opposite device.

EXAMPLE CONFIGURATIONS

GIGABIT ETHERNET SX TO CWDM, OR 10GIGE SX TO CWDM



Up to eight ModeConverters (GigE), or 10GigE converters (either XFP or SFP+), are installed into the chassis. Each optical port is populated with the applicable SFP module (or SFP+/XFP), one optical module will typically be 850nm (SX standard), the other a specific CWDM optical module.

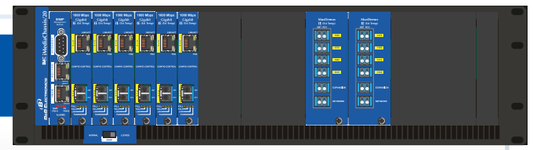
The above solution provides eight CWDM wavelengths plus the necessary mux/z equipment in one 3U rack mount chassis.

Typical applications for this solution would be: increasing optical bandwidth availability for an ISP, running multiple services on a dark fiber.

COMPONENT LIST

PN	DESCRIPTION	COMMENT
850-10960-2AC	iMediaChassis/20-2AC (20-slot, dual AC input, two AC power modules)	
850-39950	iMediaChassis SNMP Management Module	Optional
850-19500	IE-iMcV-ModeConverter, SFP/SFP (requires two SFP Modules)	For up to 2.4Gig
860-12100	iMcV-10G-Converter, XFP/XFP (requires two XFP Modules)	For up to 10Gig - XFP
860-12102	iMcV-10G-Converter, SFP+/ SFP+ (Requires two SFP+ Modules)	For up to 10Gig - SFP+
844-18147	IE-iMcV-MUX/DEMUX/4 Module, 1470-1530nm-LC	Four channel, 1470nm to 1530nm
844-18155	IE-iMcV-MUX/DEMUX/4 Module, 1550-1610nm-LC	Four channel, 1550nm to 1610nm

GIGABIT ETHERNET TO CWDM



Up to eight iMcV-Gigabit TX/SFP modules are installed into the chassis. Each module interconnects to the existing GigE equipment via an RJ-45 cable. A CWDM SFP module is installed into each of the iMcV-Gigabit TX/SFP's.

Typical applications for this solution would be: increasing bandwdith availability on a dedcated fiber link between two data centers.

COMPONENT LIST

PN	DESCRIPTION	COMMENT
850-10960-2AC	iMediaChassis/20-2AC (20-slot, dual AC input, two AC power modules)	
850-39950	iMediaChassis SNMP Management Module	Optional
850-18510	IE-iMcV-Gigabit, TX/SFP	GigE copper to CWDM
844-18147	IE-iMcV-MUX/DEMUX/4 Module, 1470-1530nm-LC	Four channel, 1470nm to 1530nm
844-18155	IE-iMcV-MUX/DEMUX/4 Module, 1550-1610nm-LC	Four channel, 1550nm to 1610nm