data delivered

ASFOM

Bus Transmission System

USB DVI SDI V A D C T L

Product Description

The KBC ASFOM range allows optical bus systems to be configured simply and easily. Utilizing CWDM (Coarse Wavelength Division Multiplexer) technology, up to 16 optical wavelengths can be combined in a single fiber to create an add/drop bus arrangement.

Each transmitter module must have a corresponding receiver module. In effect, the system is 16 individual point-to-point links integrated via the CWDM.

As with all ASFOM products, the system provides a path for analog video, data, analog audio, contact closure, telephone and Ethernet signals. All signals are digitized providing excellent quality and guaranteed performance throughout the system. Video is offered with 8-bit digital resolution without compression providing real-time video images across the network.

Each wavelength provides an electrical bandwidth that can be filled with different signal types depending on the system requirement.

The number and type of signal required to be combined at a location will dictate the number of wavelengths used. If return signals are required at the same location, another wavelength or wavelengths would be required to carry the signals.

As an example, if the requirement is for 12 video signals, 2 duplex data signals, and a LAN connection at 4 locations, to be sent back to a control room, the design would be as follows:

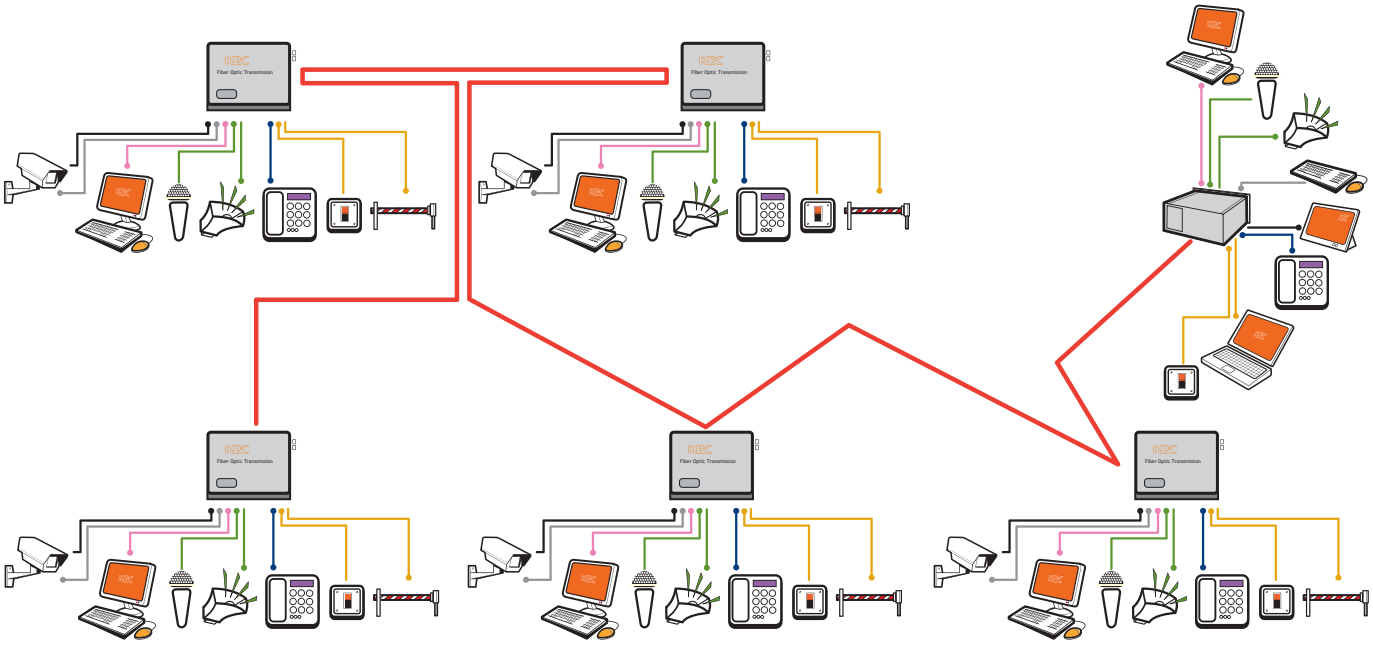
The 12 video signals with the forward data and Ethernet paths would take up 2 wavelengths and the return data and Ethernet would use a 3rd wavelength. In total, this system would use 12 wavelengths (3 from each of the 4 locations) and would therefore be configured on one fiber.

Depending on system requirements, units are available in wall-mount, 1U or 2U 19" rack or 4U chassis card for integration within the FR4 chassis.

Product Features

- Video, audio, data, telephone, contact closure, Ethernet, DVI, SDI & USB interfaces
- Add-drop bus configuration
- Application specific product configuration
- All digital non-compressed
- 8 bit video encoding
- Multimode and singlemode
- Wall-mount, rack or chassis configurations
- Unique Configurator software package

Typical System Configuration



Specifying your ASFOM Product

The easiest way to specify your ASFOM products is via our Configurator software which is available on-line at www.kbcnetworks.com. Using the Configurator, simply enter the number of channels for each signal type you require, and it will work out the product and the part number for you. Alternatively, please contact your local agent or KBC direct, who will configure your product.

Optical Budget

Due to the nature and operation of the bus system no optical budget figures are provided. As a rule the maximum distance between any transmitter and receiver on the bus should not exceed 100km / 62 miles. Please consult with KBC when configuring any bus system.

Specifications

Video

Format	PAL / NTSC / SECAM
Input/Output	1.0V pk-pk typical, 75Ω
Bandwidth	5 Hz ~ 6.5 MHz
Digital Encoding (non compressed)	8 bit
Differential Gain (10-90% APL)	<2%
Differential Phase (10-90% APL)	<2°
Signal to Noise Ratio (SNR) weighted	>60dB

SDI

Interface Standard	SMPTE 259M, 292M, 424M
Input/Output	800mV pk-pk ±15%

DVI

Interface Standard	DVI 1.0
Video Display Resolution DVI	Up to 1920 x 1200 @ 60 Hz
HDTV	Up 1080p
Color Depth	24 bit
Pixel Clock	165 MHz max.
Video Bandwidth	3.96 Gbps
DDC Standard	DDC2/EDID 1.0/2.0

Data[1]

Data Formats	RS232, RS422, RS485 (2W & 4W)
Number of Two-way Channels	1
RS-232 Data Rate	DC - 115.2 kbps
RS-422/485 Data Rate	DC - 250 kbps
Bit Error Rate	<1 x 10^{-12}
Encoding Schemes	Manchester, Bi-Phase, NRZ, NRZI

Audio

Bandwidth	10 Hz ~ 20 kHz
Audio Input/Output Levels	+/-9dBm, typical 0dBm
Input Impedence	600Ω unbalanced or balanced
Output Impedence	20kΩ unbalanced or balanced
Digital Encoding	24 bits (AES-3)
Sampling Rate	192 kHz
Signal to Noise Ratio	≥80dB
Total Harmonic Distortion	≤0.01%

Contact Closure

Response Time	500µs
Input	Dry Contact Closure, TTL
Output	SPST Relay, Normally Open
Switch Rating	1A @ 30 Vdc max, 0.5A @ 125 Vac max

Ethernet

Standard	IEEE 802.3 Compliant
Data Rate	10 / 100 Mbps auto sensing

Telephone

Voice Encoding	8 bits PCM encoded
Operating	Mode Telco, PBX/telephone

USB

Interface Standard		USB2.0 / USB1.1
Data Rate	Low Speed	1.5Mbps
	Full Speed	12Mbps
	High Speed	480Mbps
Port Power		500mA max

Optical

Wavelength	Single & WDM	1310nm, 1550nm
	CWDM	1310 ~ 1610nm
Fiber		Multimode, Singlemode
Number of Fibers		1 or 2

Power

Power Input Wall-mount	+12 Vdc
Power Supply for Wall-mount[2]	Input: 100 ~ 240 Vac; Output: +12 Vdc
Rack Module[2]	Input: 100 ~ 240 Vac @ 2A
Chassis Card	Supplied from FR4 PSU

Environmental

Operating Temperature	-40°~ +74°C / -40°~ +165°F
Storage Temperature	-40°~ +74°C / -40°~ +165°F
Operating Humidity	0 to 95% non-condensing
Mean Time Between Failure (MTBF)	>100,000 Hours

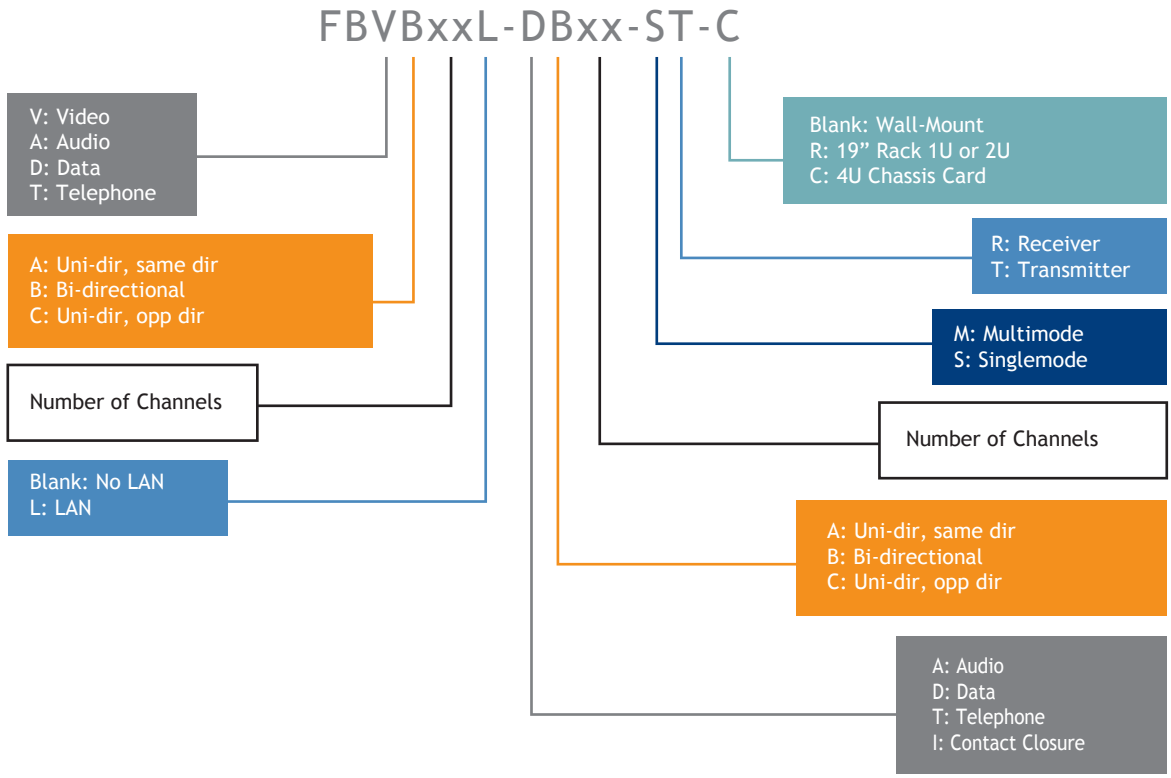
Mechanical

Dimensions (Wall-mount L x W x H)		221mm x 155mm x 36mm (8.7" x 6.1" x 1.42")
Dimensions (Rack)	1U	19" 1U
	2U	19" 2U
Number of 4U Chassis Card Slots[3]		Depends on product configuration

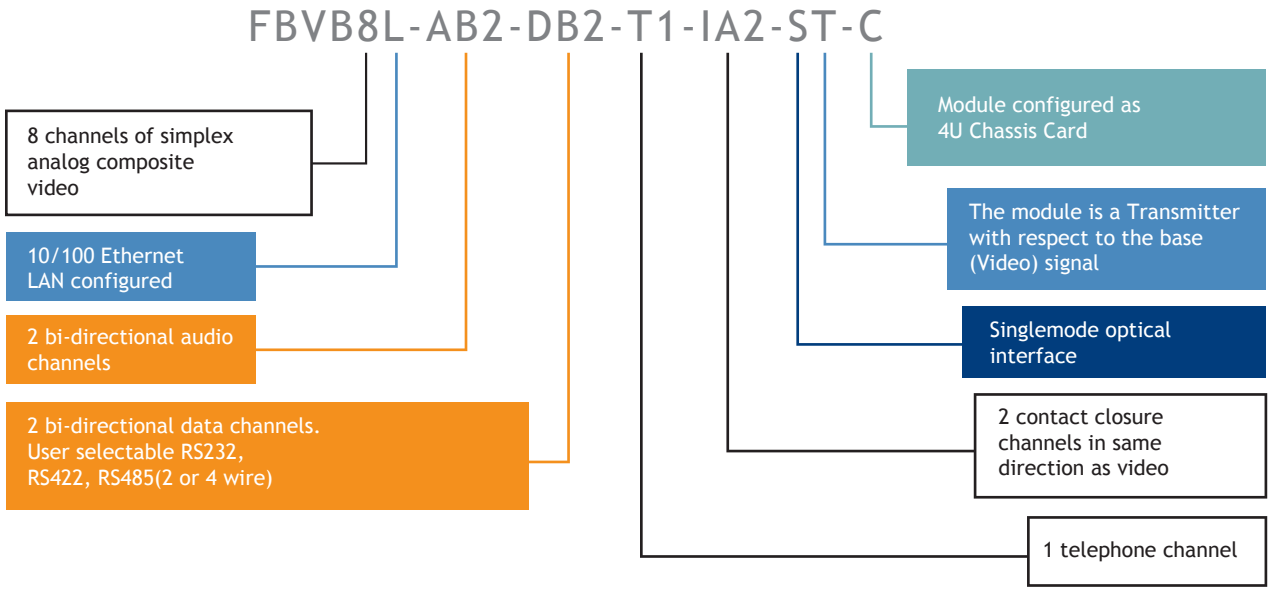
Connectors

Video		BNC 75Ω
SDI		BNC 75Ω
DVI		DVI-I Female
Data		Screw Block Terminal
Audio		Screw Block Terminal
Contact Closure		8 Way Screw Block Terminal
Telephone		RJ11
Ethernet		RJ45
USB Transmitter		1 x Type B
Receiver		4 x Type A
Fiber		ST or FC (ST fitted as standard)
Power[4]	Wall-mount	Screw Block Terminal
	Rack	IEC

Part Number Configurator



Part Number Example



1. Data interface is switch selectable, with switchable termination and biasing. Data rates of up to 1Mbps are available upon request. Please consult the factory for details.
2. Please select the power plug from US Standard, Euro 2 Circular or UK 3 Pin Square when placing order.
3. Support maximum up to 14 single slot cards in each 4U Chassis.
4. Power lines are crimped and fitted to screw block connector in factory.
5. Part codes show reference Video but other primary signals would change part number. Please consult either KBC for further information or use KBC Configurator software.
6. 15dB Optical budget units are only available in certain configurations. Please consult either KBC for further information or use KBC Configurator software.
7. Transmission distance is limited by optical loss of the fiber and loss introduced by connectors, splices and patch panels. Fiber bandwidth also limits the transmission distance.