IMC-1000MS

100/1000Base–T to 100/1000Base–X SFP Managed Fiber Converter

IMC-1000MS is a 10/100/1000Base-T to 100/1000Base-X manageable gigabit Ethernet media converter which offers dual speed fiber transmission. Housed in rugged DIN rail or wall mountable enclosures, these converters are designed for harsh environments, such as industrial networking and intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. The converters are manageable by Web, SNMP or In-Band management for Operation, Administration, Maintenance & Provisioning, which includes bandwidth control, speed, VLAN, Diagnostic, storm filter and converter configurations. In addition, network administrators can manage IMC-1000MS via standard SNMP manager such as SmartView™. It also provide loop-back test and dying gasp, and can be monitored from a centrally located OAM-enabled FRM220-1000MS converter via remote in-band management.

Features

- Conversion between 10/100/1000Base-T and 100/1000Base-X Fiber cable interface
- Supports Dual Rate (100/1000) SFP for selectable Fast or Gigabit speed on fiber
- Redundant dual DC input power 12/24/48VDC (9.6 ~ 60VDC)
- IP30 rugged metal housing and fanless
- Wide operating temperature -20~75°C (IMC-1000MS-E)
- UL60950-1, CE, FCC, RailWay traffic EN50121-4 certification
- Industrial grade EMS, EMI EN61000-6-2, EN61000-6-4 certification
- MIB counters
- Supports LFPT (Link Fault Pass Through)
- Auto Laser Shutdown (ALS)
- Supports SmartView for centralized management (Figure 4)
- Supporting Central EMS for management of upto 50 SmartView Server ,and 25,000 device (maximum) (Figure 5)
- Web management (Figure 3)
- SNMP management (Figure 1)
- Supports 16 IEEE 802.1Q Tag VLAN Group
- SNMP alarm trap for power loss and port link down
- Supports in-band management from FRM220 Chassis With FRM220-1000MS (Figure 2)
- Remote loop-back test
- Dying gasp (remote power failure detection)

Specifications

Standard	IEEE802.3 10Base-T 10Mbit/s Ethernet
	IEEE802.3u 100Base-TX, 100Base-FX, Fast Ethernet
	IEEE802.3ab 1000Base-TX Gbit/s Ethernet over twisted pair
	IEEE802.3z 1000Base-X Gbit/s Ethernet over Fiber-optic
	IEEE802.3x Flow Control and Back pressure
	IEEE802.3ah OAM management
Fiber Ports	100Base-X or 1000Base-X set by Web Supports Auto Laser Shutdown (ALS)
RJ45 Ports	10/100/1000Base-T
CPU watch dog	Present
Push Button	Reset, Load default seting
Jumbo Frame	9K bytes
Fiber Parameters	Fiber Cable (Multi-mode): 50/125um,62.5/125um
	Fiber Cable (Single-mode): 9/125um
	Wavelength: 1310nm (Multi-mode/Single-mode)
	SFP, Distance depend on plug-in Fiber Tranceiver
Link Fault Pass Through (LFPT)	TX-Fiber: If TX port link down, the media converter will force Fiber port to link down
	Fiber-TX: If Fiber port link down, the media converter will force TX port to link down
Connector	RJ-45: CAT 5e (10/100/1000Mbps) Twisted Pair cable
	Auto MDI/MDI-X and Auto-Negotiation Function Supports
LED	Per Unit : Power 1 (Green), Power 2 (Green), Fault (Amber)
	Fiber LNK/ACT (Green): ON: Connected to network OFF: Not connected to network BLK: Receive /Transmit Data Fiber speed : Yellow : 1000Base-X Green : 100Base-X
	RJ-45 port: Speed: 10 (OFF), 100 (Green), 1000 (Yellow)
	LNK/ACT for RJ45(Green): ON : Connected to network/ OFF: Not connected to network/ BLK: Networking is active

Reverse Polarity Protection	Present for power Input
Overload Current Protection	Present
Power Supply	12/24/48VDC (9.6~60VDC) , Redundant power with polarity reverse protect function and removable terminal block
	Provides DC Power JACK adapter cable for external power adapter
Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
	Relay alarm output for power fail or port link down
Removable Terminal Block	Provides 2 redundant power, alarm relay contact, 7 Pin
Power Consumption	4.8 W
Operating Humidity	5% ~ 95% (Non-condensing)
Operating Temperatur	-10° ~ 60°C (IMC-1000MS)
	-20 ~ 75°C (IMC-1000MS-E)
Storage Temperature	-40 ~ 85°C
Housing	Rugged Metal, IP30 Protection and fanless
Dimensions	106 x 38.6 x 142.1mm (D x W x H)
Weight	0.62kg
Installation	DIN Rail mounting or wall mounting
MTBF	544,905 hrs (IMC-1000MS, IMC-1000MS-E) (MIL-HDBK-217)
Warranty	5 years

Certification	
EMI	CE
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A,CE EN55022 Class A
Railway Traffic	EN50121-4
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4

EMS	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
Safety	UL60950-1
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Software Specifications

SNMP or Web Mode (figure 1, 3)	
Management	Ingress/Egress bandwidth control with 64K granularity
	Web management, Firmware upgrade via Web
	Supports SNMP, MIB for management
	Supports DHCP client for automatic IP configuration
	Supports 802.1Q tag VLAN, 16 Tag VLAN group, MIB counters display
Configuation	IP configuration, password setting, converter configuration
	port configuration, MIB counter, SNMP configuration
	VLAN group configuration, alarm configuration
	PoE Configuration
Diagnostic & Monitor	Supports Link Fault Pass-Through (LFPT) Function
	Broadcast/Multicast/Unicast storm filter
	SNMP alarm trap for power loss and port link Up/Down

In-Band Remote mode (Figure 2)	
Management	Supports in-band management from FRM220 Chassis With FRM220-1000MS card
	Ingress/Egress bandwidth control with 64K granularity
Configuation	IP configuration, converter configuration, port configuration, MIB counter
	VLAN group configuration, alarm configuration, PoE Configuration
Diagnostic & Monitor	Remote loop-back test
	Supports Link Fault Pass-Through (LFPT) Function
	Broadcast/Multicast/Unicast storm filter

Application

Figure 1 : IMC-1000MS Management by SNMP, SmartView

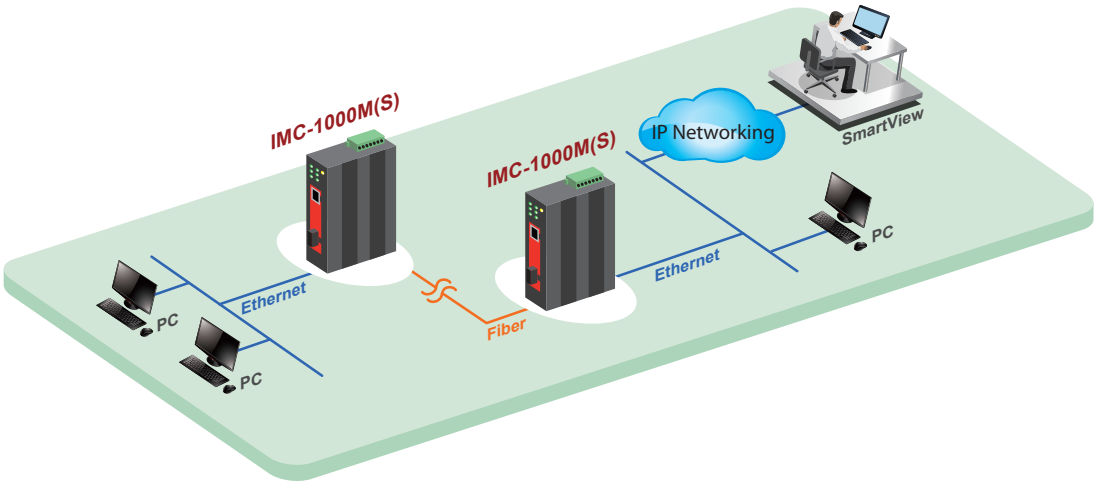


Figure 2 : IMC-1000MS Application in Remote, in-band Management

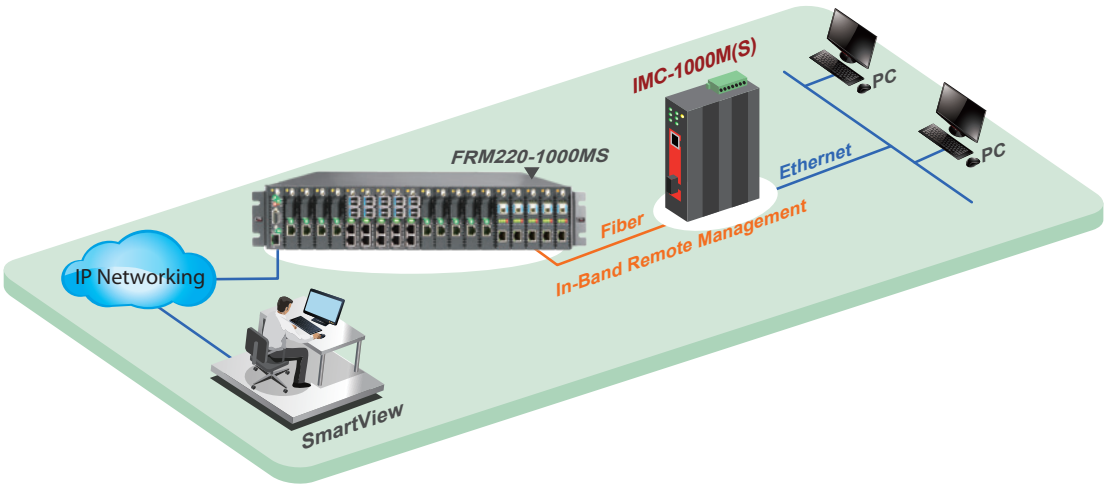


Figure 3 : IMC-1000MS Application in Web Management

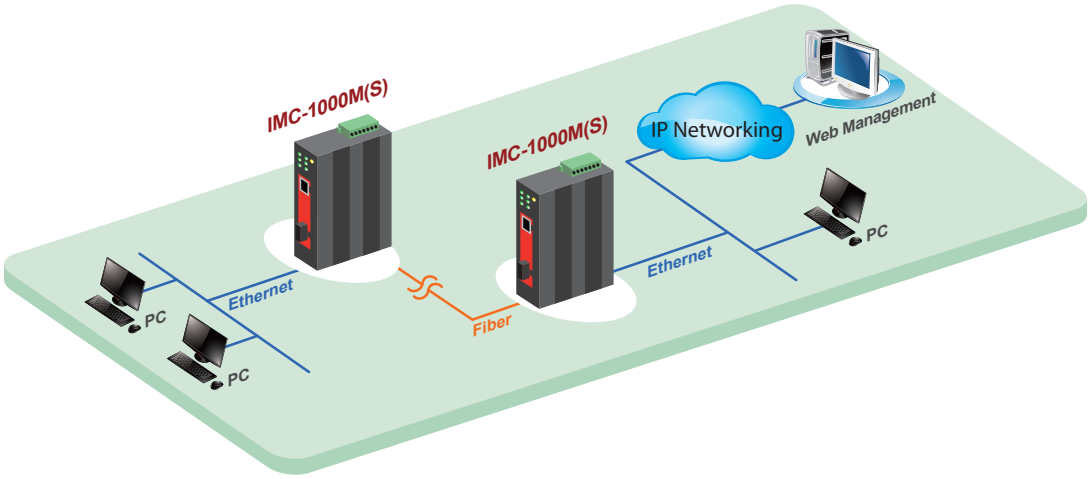
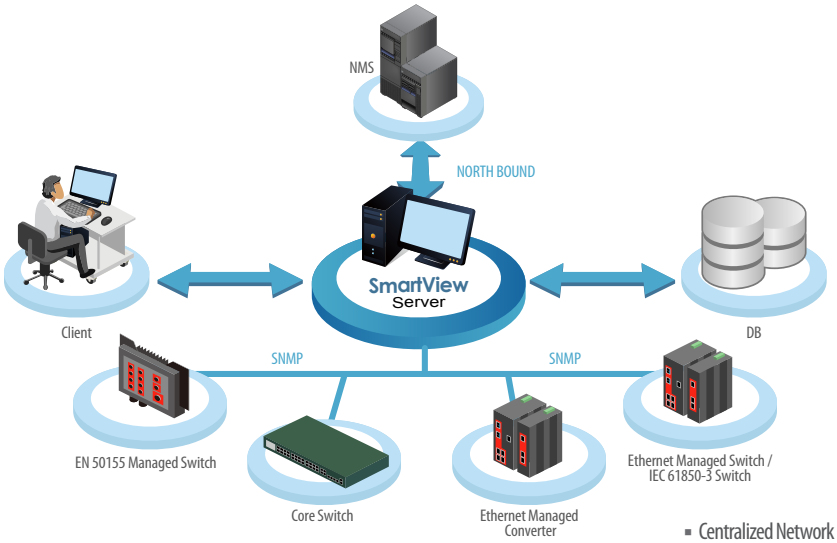


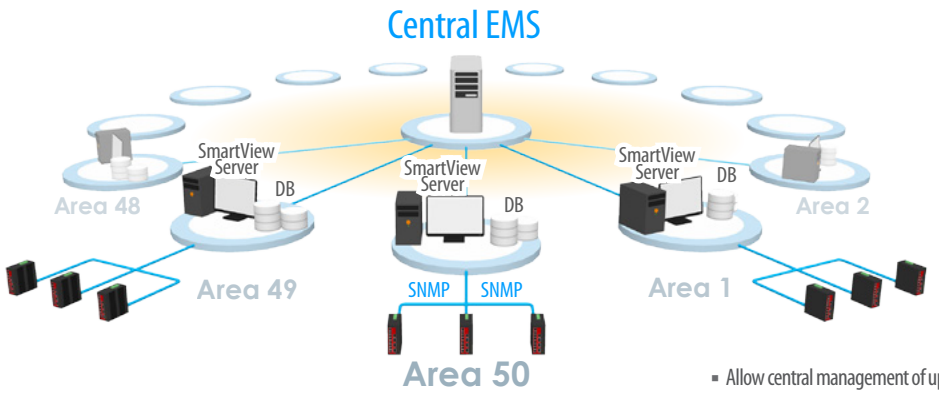
Figure 4 : SmartView™



SmartView™ management architecture

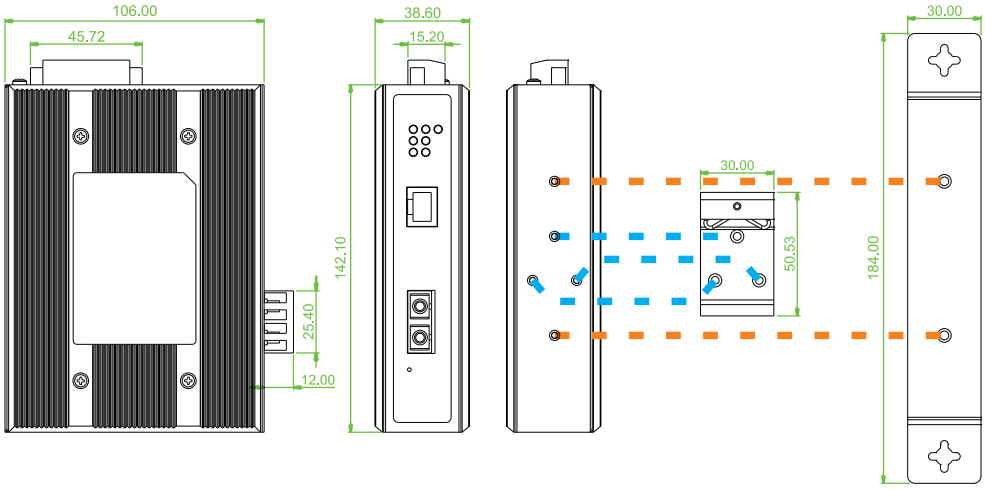
- Centralized Network Management Platform
- Long term events storage (up to 1 year)
- Alarm trap and event log management
- Real-time visual representations
- Remote access control
- Traffic/performance monitoring and management

Figure 5 : Central EMS allows central management of up to 50 SmartView™ servers



- Allow central management of up to 50 SmartView™ servers
- Allow up to 25,000 devices management
- Hierarchical Network Management Architecture
- Easy and rapid expansion of SmartView™ EMS

Dimensions



Side View | Front View | Rear View | DIN-Rail Kit View | Wall-Mount Kit View

Ordering Information

Model Name	Managed	UTP	Fiber	Certification					Operating Temperature
		10/100/1000 Base-T	Dual Speed 100/1000Base-X	Safety UL60950-1	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC	
IMC-1000MS	V	1	1 SFP	V	V	V	V	V	-10~60 C
IMC-1000MS-E	V	1	1 SFP	V	V	V	V	V	-20~75 C

Model Naming Rule

IMC – 1000 M S – E → E: -20~75°C, Blank: -10~60°C

- IMC: Industrial Media Converter
- 1000: 1000Base-X Converter
- M: Managed
- S: SFP type

Optional Accessories

Industrial Power Supply

DR-4524	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50℃
MDR-40-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70℃

Industrial SFP Transceiver

(The ISFP series of industrial grade SFP modules have been fully tested with the IMC-1000MS for guaranteed compatibility and performance. The best performance can be guaranteed even in mission-critical applications.)
(Please see CTC Union's Industrial SFP datasheet for more details and more items.)

ISFP-M7000-85-D(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter,wave length 850nm, 7.5dB, DDMI, LC, -10~70℃ (-40~85℃)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDMI, -10~70℃ (-40~85℃)
ISFP-T7T00-00-(E)	Industrial SFP 1000Base-T UTP 100meter, -10~70℃ (-40~85℃)
ISFP-M5002-31-D(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, DDMI, -10~70℃ (-40~85℃)
ISFP-S5030-31-D(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDMI, -10~70℃ (-40~85℃)
ISFP-T3T00-MA-(E)	Industrial SFP 100Mbps , long reach UTP (2 wire) (500meter) , Master, -10~70℃ (-40~85℃)
ISFP-T3T00-SL-(E)	Industrial SFP 100Mbps , long reach UTP (2 wire) (500meter) , Slave, -10~70℃ (-40~85℃)

SFP Naming Rule

ISFP – M 7 040 – 31 – D E → E:-40~85°C, Blank:0~70°C

- ISFP: Industrial SFP Transceiver
- M: Multi Mode, S: Single Mode, T: UTP
- 9: 10G, 7: GbE, 5: FE, 3: Long Reach UTP
- Distance: T00: (UTP), 000: (500m), 002: (2km), 020: (20km), 040: (40km)
- Wavelength: 00: UTP, 85: 850nm, 31:1310nm, 55:1550nm, WA: TX/1310nm (Bidi mode A), WB: TX/1550nm (Bidi Mode B), MA: Master (for Long Reach UTP), SL: Slave (for Long Reach UTP)
- D: DDMI, Blank: Non DDMI

Package List

- CD (MIB file, Manual)
- Quickly installation guide
- Din Rail bracket with screws
- Wall mount bracket with screws
- Terminal block
- Protective caps for SFP ports
- DC Power JACK adapter cable