

**Introduction  
to  
Media Converters**

***O F Networks Co., Ltd.***

# Introduction to Media Converters

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**OFN's Media Converters are available in 3 Series to provide a variety of selection and optimum system configuration depending upon required transmission speed (10Mbps, 100Mbps, 1Gbps, 2Gbps and 4Gbps) and transmission distance. All the models are designed for use with a single optical fiber, not a pair of optical fibers.**

- ◆ **FNB Series**
- ◆ **FNC Series**
- ◆ **FNT Series**

# Features of FNB Series Media Converter

- ◆ Designed for use in high speed IP network using single mode fiber for 1.3  $\mu$  m
- ◆ Allows bi-directional transmission and reception based upon WDM technology for best utilization of optical fiber resources
- ◆ 2 models are available; Sub-rack chassis type for center side and compact standalone desk-top type for customer premises side
- ◆ Allows Long haul transmission with transmission pass loss of 0~15dB without repeater
- ◆ Transmission speed: 100MBps
- ◆ High density accommodation of Sub-rack chassis type: 16 ports in 2U height for 19" rack mounting
- ◆ Power supply selection between AC and DC-48V with redundancy (option) (sub-rack chassis type )
- ◆ Automatic adaptation of transmission speed and mode among 10Mbps/100Mbps/half-duplex/full-duplex allows plug and play installation(stand-alone type)
- ◆ Fiber cable termination and housing space are available with desk-top type
- ◆ SNMP based management
- ◆ Supervisory functions (loop-back, TP link disconnection, power failure notification)



# Specifications of FNB Series Media Converter



Item		Specifications	
Type		Sub-chassis Rack-mount Type	Standalone Desk-top Type
Model		FNB3019-15	FNB3011-13
Transmission Speed (LAN Port)		100Mbps (full-duplex)	10/100Mbps (half/full-duplex) (auto-negotiation/preset)
No. of Ports	OPT Port	SC Connector, 1 port	
	LAN Port	RJ-45 type connector, 1 port	
Wave Length	Transmission	1.55 $\mu\text{m}$ (FP-LD)	1.31 $\mu\text{m}$ (FP-LD)
	Reception	1.31 $\mu\text{m}$ (FP-LD)	1.55 $\mu\text{m}$ (FP-LD)
Transmission Loss		0 ~ 15dB	
Cable Interface	UTP Cable	Category 5 (max 100m)	
	Optical Fiber	Single Mode Fiber 10/125	
	Optical Connector	SC type	
Notes		SNMP control (option) (sub-rack -chassis type)	Switch function included (standalone desk-top type)

## Rack-mount Chassis

Item	Specifications
Product Name	Rack-mount Chassis for Small Media Converter
Model	FNB0900
No. of Slots	Power Supply : 2 slots
	FNB3019-15: 16 slots
	FNB1900 : 1 slot
Power Supply	AC 100V/DC-48V, redundancy (option)
Note	Hot swappable

## SNMP Unit

Item	Specifications
Product Name	SNMP Package Rack-mount Chassis for Small Media Converter
Model	FNB1900
Interface	LAN Port : RJ-45 1 port
	Console Port : D-Sub 9 pins, 1 port
Note	Status monitor of FNB3011-13/ FNB3019-15 possible

# Features of FNC Series Media Converter

- ◆ Designed for use in point-to-point high speed Ethernet using single mode fiber with a single core for  $1.3 \mu\text{m}$
- ◆ Simple long haul transmission of Ethernet signals taking advantage of duplex communications as well as low loss and broad band-width of optical fiber
- ◆ 2 types are available; Sub-rack chassis type for head-end side and compact standalone desk-top type for customer premises side
- ◆ 3 models are available depending upon transmission speed requirements: 10Mbps, 100Mbps, 1Gbps
- ◆ SNMP based management (except for stand-alone desk-top type for 10/100Mbps)



Sub-rack chassis type for central office



Stand-alone Desk-top Type

# Specifications of FNC Series Media Converter



## Sub-rack Chassis Mounting Type

Model	Transmission Speed	No. of Ports			Distance	Loss	Wave-length	Notes
		SC Port	TP Port	1000BASE-SX				
FNC0900-A1/A2							13 slots/chassis (AC, redundancy option)	
FNC0900-D1/D2							13 slots/chassis (DC48V, redundancy option)	
FNC1900							SNMP unit	
FNC2019S	10Mbps	1	1		30Km	15dB	1310nm	SNMP management option
FNC2019L-13/FNC2019L15	10Mbps	1	1		60Km	27dB	1310/1550nm	SNMP management option
FNC3019S	100Mbps	1	1		30Km	15dB	1310nm	SNMP management option
FNC3019L-13/FNC3019L-15	100Mbps	1	1		60Km	27dB	1310nm/1550nm	SNMP management option
FNC4019L-13/FNC4019-15	1Gbps	1		1	30Km	20dB	1310nm/1550nm	SNMP management option
FNC4019L-1/FNC4019L-2	1Gbps	1		1	80Km	24dB	1500nm x 2	SNMP management option
FNC4019-1T/FNC4019-2T	1Gbps	1	1		36Km	18dB	1300nm/1550nm	SNMP management option
FNC4019UL-1/FNC4019UL	1Gbps	1		1	120Km	32dB	1500nm x2	SNMP management option

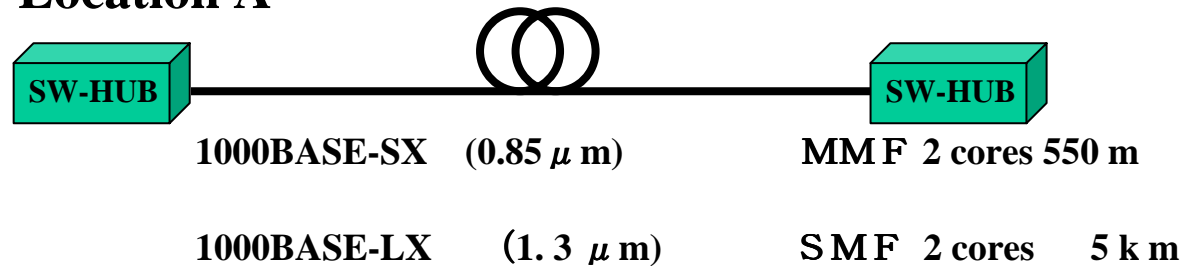
## Stand-alone Desk-top Type

Model	Transmission Speed	No. of Ports			Distance	Loss	Wave-length	Notes
		SC Port	TP Port	1000BASE-SX				
FNC2011S	10Mbps	1	1		30Km	15dB	1310nm	
FNC2011L-13/FNC2011L15	10Mbps	1	1		60Km	27dB	1310/1550nm	
FNC3011S	100Mbps	1	1		30Km	15dB	1310nm	
FNC3011L-13/FNC3011L-15	100Mbps	1	1		60Km	27dB	1310nm/1550nm	
FNC4011L-13/FNC4011-15	1Gbps	1		1	30Km	20dB	1310nm/1550nm	
FNC4011L-1/FNC4011L-2	1Gbps	1		1	80Km	24dB	1500nm x 2	SNMP management built-in
FNC4011-1T/FNC4011-2T	1Gbps	1	1		36Km	18dB	1300nm/1550nm	SNMP management built-in
FNC4011UL-1/FNC4011UL	1Gbps	1		1	120Km	32dB	1500nm x 2	SNMP management built-in
FNC4841-1/FNC4841-2	1Gbps (4ch)	1		1	30Km	13dB	1500nm x 8	SNMP management built-in

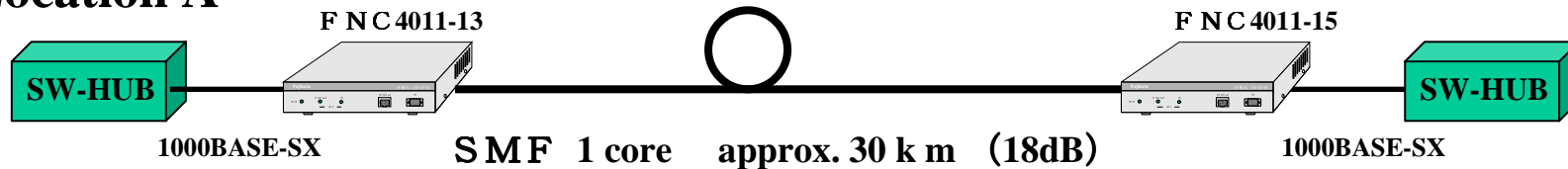
# Guide-line for Transmission Distance



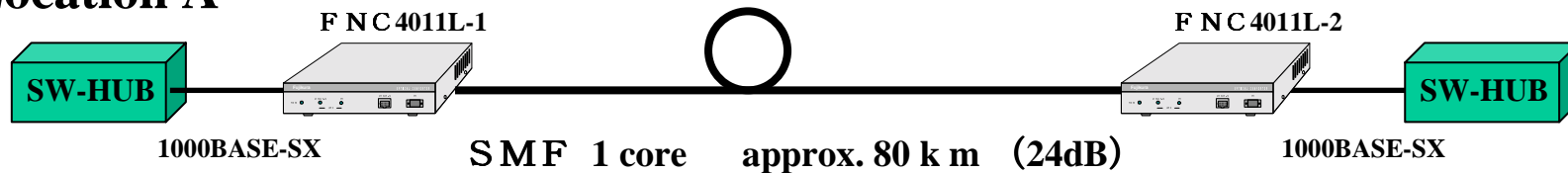
## Location A



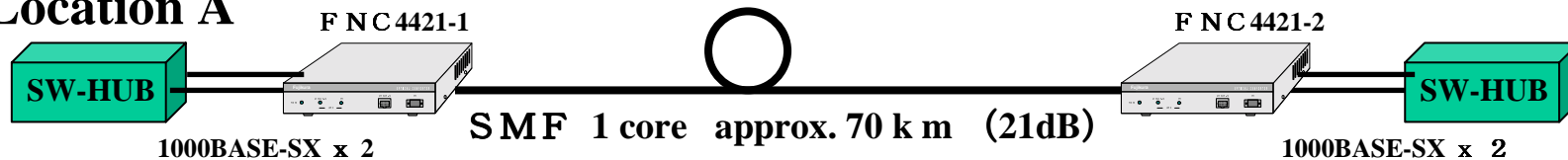
## Location A



## Location A



## Location A



# Features of FNC Series Media Converter

FNT Series Media Converter system consists of Model FNT3824 designed for installation at center side which has 24 ports and built-in layer 2 switch and Model FTN3001 a stand-alone desk-top type for installation at customer premise side

## Features

### Model FNT3824

- ◆ 24 Subscriber lines can be accommodated into 1U height
- ◆ 2 slots for gigabit NNI interface
- ◆ 3 type of gigabit interface cards available: 1000BASE-SX、-LX、
- ◆ Tagged VLAN function ensures security among users
- ◆ Remote management via Telnet/SNMP available
  - Operational status of each Customer side media converter is indicated by LED displays and monitored via Telnet/SNMP
  - Loop-back test function available
- ◆ Setting for broadcast filtering, limitation of MAC address registration , QoS and others can be performed each individual port basis

### Model FNT3011

- ◆ Compliant with TTC Standards (TS-1000)
- ◆ RJ-45 port can be preset by DIP type switch for 10/100Mbps and Half/Full duplex operation
- ◆ Provision for excess optical fiber cables included



Model FNT3824 for Center side

(To be released Aug. 2003)



Model FNT3011 for Customer Premise side

# Specifications of Media Converter Model FNT3824



<b>Model FNT3824 (Center Side)</b>			
	<b>Item</b>	<b>Specifications</b>	
<b>UNI Interface</b>	<b>Optical Interface</b>	as per TTC Standards (TS-1000) for center side	
<b>NNI Interface</b>	<b>No. of Slots/Communication Method</b>	2 slots Up-link card for 1000BASE-T/1000BASE-SX/1000BASE-LX accommodated	
<b>L2 Switch</b>	<b>Switching Capacity</b>	6.4Gbps	
	<b>MTU</b>	1536 byte	
	<b>Filtering (available for UNI side)</b>	<b>Broadcast filtering (port by port basis)</b>	
		<b>TYPE CODE filtering (port by port basis)</b>	
	<b>Priority Control</b>	4 level of priority control, port by port setting	
	<b>Band-width Control</b>	Port by port setting	
	<b>MAC Address Registration Control</b>	Port by port setting	
	<b>Multi-cast Transfer Control</b>	IGMP Snooping	
	<b>Spanning Tree</b>	as per IEEE802.1D Standards	
	<b>VLAN</b>	Port , Tagged VLAN (as pr IEEE802.1Q Standards)	
	<b>Port Trunking</b>	4 ports/group	
<b>Port Mirraing</b>	Any one of ports		
<b>Maintenance</b>	<b>Remote Management</b>	via Telnet/SNMP	
	<b>MIB Support</b>	MIB 2 , BridgMIB, RMON(Gr1,2,3,9), Private	
	<b>System Log</b>	1,000 Messages	
	<b>Time Setting</b>	By N T P server/manual setting	
	<b>MC Control of Terminal side</b>	as per TTC Standards TS 1000(center side)	
<b>Power Upply</b>	<b>Voltage</b>	AC100V±15%	
	<b>Frequency</b>	47-63Hz	

# Specifications of Media Converter Model FNT3011



<b>Model FNT3011 Terminal Side</b>	
<b>Interface</b>	<b>LAN Side Interface</b> RJ-45 Connector MDI/MDI-X selectable by DIP type switch Automatic setting by Auto-Negotiation function
	<b>Optical Interface</b> SC type optical connector (internal excess cable provision available)
<b>Applicable Optical Fiber</b>	SMF 10/125
<b>Optical Wavelength</b>	Transmission:1.3 $\mu$ m / Receptin :1.55 $\mu$ m
<b>Optical Interface</b>	as per TTC Standards TS-1000(terminal side )
<b>Switchiong Metho</b>	Stored and Forward
<b>MTU</b>	1536 bytes
<b>Maintenance Signal</b>	as per TTC Standards TS-1000(terminal side )
<b>EMI</b>	VCCI Class B
<b>Operating Temperature</b>	0~40 $^{\circ}$ C
<b>Humidity</b>	20~80% (without condensation)
<b>Power Supply (external adaptor)</b>	DC 12V (main unit) AC 100V 50/60Hz (AC adaptor )