FTTH Network Termination

Gemini40F

In Iskratel, the latest improvements in the Next- Generation- Access product evolution are focused to bring a significant value for the operators as well as the end-users. Gemini40F, is the newest green technology FTTH NT product, with probably the lowest power consumption among FTTH CPE products on the market.

With Gemini40F, based on the FTTH Ethernet Point-to-Point access technology, Iskratel helps the operators to build carrier-class and low-power-consumption solutions for the open-access networks. This enables wholesale broadband services for different service providers. The Gemini40F combines an opto-electrical converter and a LAN switch in a single device. Network providers are able to offer connections up to 100Mbps in both directions using the standard Ethernet technology.

The Gemini40F FTTH NT supports the delivery of all triple play services: internet data, Voice over IP (VoIP) and IP video, including bandwidth consuming HDTV. With per-port per-VLAN quality of service (QoS), the Gemini40F enables real-time multimedia services, such as IPTV and telephony services.
It provides four Ethernet ports for packet-based terminal devices and home gateways.
The Gemini40F enables multiple profile arrangements for symmetrical or asymmetrical connections with CO. This provides the desired bandwidths even on much longer subscriber loops – up to 20km with full throughput – the fiber-optics technology enables it.

The advanced, centralized management of the product supports remote configuration of multiple devices in the access network simultaneously, applying the same profile settings to all devices, along with software upgrades. This is yet another possibility to considerably lower the OPEX in all FTTH deployments. With its integration with the Iskratel SSP (Service-Selection Portal), the end customers are able to configure services and choose their service providers (per service domain).

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The product's most differentiated value is in its very low power consumption. It is up to four times lower than the limits defined by the latest EU Code of Conduct on Energy Consumption of Broadband Equipment (version 3, November 2008). The reference benchmarking results are presented in the table (power measured on the 230 Vac input):

Function	LPS (Low Power State)		FPS (Full Power State)	
	09/10	2011	09/10	2011
Fibre Ptp Ethernet WAN (100/1000Base-BX or FX)	3.4W	2.9W	7.1W	5.6W
Fast Ethernet switch, up to 4 ports	0.8W	0.6W	2.2W	1.8W
Total EU CoC target	**4.2W**	**3.5W**	**9.3W**	**7.4W**
Gemini40F reference	**1.3W**		**3.0W**	

The above power consumption of the Gemini40F already includes the power consumption of its local power adapter (which consumes 0.3W). Optionally, the device uses power-supply over UTP cabling (e.g. from the connected Home Gateway), which further eliminates the need for a local power-supply adapter.

The improved power-saving option of the Gemini40F enables the stand-by mode with sub-100mW power consumption. It functions as scheduled or as on-demand. The differentiation from other similar products on the market is in its wake-on-LAN function, which eliminates the need for the inconvenient wake-up button.

End-user benefits

- **Significantly lower power consumption than similar products on the market**
- **Automatic wake-up from stand-by mode (no buttons)**
- **Remote power-supply using PoE (optional)**
- **Functional design (small compact housing)**

Operator benefits

- **Lower operator's TCO**
- **Carrier class FTTH NT; very convenient for open access networks**
- **Service separation and prioritization with bandwidth policing**
- **Support for integrated remote management on Fiber Access Node, possible integration with SSP**
- **Multiple housing options**

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Technical specifications

Local Interface

- 4 port Ethernet 10/100Base-TX (RJ-45), complies with IEEE802.3 and IEEE802.3u
- Automatic MDI/MDIX crossover, Auto-negotiation and speed-auto-sensing, Half/Full duplex support
- Support for 802.1Q and 802.1p VLAN

WAN Specifications

- 1x 100baseBX or FX interface
- Interface types
  - Multimode MM, 2km, Tx/Rx=1310nm
  - Singlemode (SM) 15km, Tx/Rx=1310nm
  - Bidirectional singlemode BiDi, 20km, Tx=1310nm/Rx=1550nm
- LC and SC (for BiDi only) connector type

Bridging

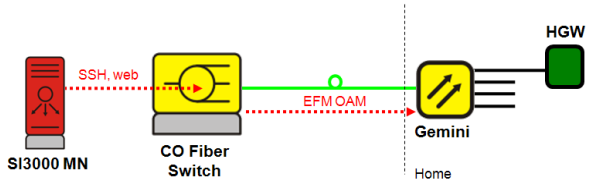
- Transparent Bridging (IEEE 802.1D)
- VLAN tagging (IEEE 802.1Q)
- Supporting QoS (IEEE 802.1p)
- IGMP transparent snooping

Visual Indicators

- Power – indicates power and WAN status

Environment

- Operating Temperature: 0°C ~ 45°C, Humidity: 5% ~ 95% (non condensing)
- Storage Temperature: -20°C ~ +85°C, Humidity: 5% ~ 95% (non condensing)



Configuration & Network Management

- Ethernet OAM
- CLI
- Integrated SI3000 MSAN and SI3000 FTTH management and SSP support
- CATV RF module management option

Power

- External 230 VAC, 50 - 60 Hz, 5VDC 1,2A
- Option for PoE (IEEE 802.3af), Powered Device (PD)
- Power consumption, less than 4W

Physical Dimensions

- (W x D x H) 160mm x 10mm x 30mm, 0.2 kg

Certification

- CE mark, CB, RoHS compliant

Note: some features are hardware dependant, some feature my not be included in dedicated software release

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