# LIGHTSAND

## i7100F



## KEY FEATURES

### FICON Extension Gateway

### Low Cost FICON Without Traditional Limits

*LightSand's i-7100F overcomes standard FICON distance limitations. FICON devices separated by thousands of kilometers can now communicate via a wide variety of line types. The i-7100F gateway is designed to interface directly with FICON mainframe and storage devices. No expensive FICON directors are necessary to provide FICON extension across the WAN.*

### Multi-Service Connectivity

*The i-7100F, which can easily be customized to meet the needs of particular applications, provides tunneling of L2 Ethernet traffic and FICON through the same WAN infrastructure. Multiple configurations of FICON, GbE L2 and GbE IP extension ports are possible in a single box.*

### Cost Reduction Plus High Availability

*The i-7100F implements a trunking mechanism which allows the use of a single WAN connection for up to seven FICON channels. When multiple IP extension interfaces are installed, each FICON input can be directed through a separate WAN interface, providing optimal data traffic distribution. If one WAN connection fails, traffic is automatically redistributed through the remaining healthy connections, keeping all FICON channels available.*

### Engineered for Long Distance

*The i-7100F is connected to the WAN over industry standard Gigabit Ethernet 1000BaseFX interfaces with software configurable speed. The Congestion Avoidance mechanism implemented on the IP extension interfaces assures maximum performance in shared or low bandwidth IP WAN environments.*

*The i-7100F implements a connection-oriented, frame-based protocol that moves FICON and L2 Ethernet over IP for distances of thousands of kilometers without performance degradation, and with data delivery and order guaranteed. Any frame loss or corruption is completely recovered by the i-7100F, rather than by the FICON application.*

## OVERVIEW

FICON is rapidly replacing ESCON as the connection choice for mainframe computers with storage devices, especially for their long distance connections. FICON (FIbre CONection) is a high-speed input/output channel based on the Fibre Channel protocol used in mainframe environments. FICON offers higher performance and connection flexibility than ESCON, and supports increased distance between end devices. However, the maximum distance of a native FICON connection traditionally has been limited to 20km. LightSand's i-7100F renders that limit obsolete for applications that are well suited for use over routed IP networks in a mainframe environment. The i-7100F can transport FICON and Layer 2 Ethernet mainframe metadata across a wide area ranging from campus to continental level.

The i-7100F is especially suited for use in a data center infrastructure. Combining high availability with unique support for a multi-site environment, the i-7100F provides WAN fail-over protection without need for expensive FICON directors. By using industry standard networking protocols, the i-7100F is easily integrated into existing routed IP WAN environments, or interconnected over dark fiber and metropolitan CWDM or DWDM. The i-7100F's multiple IP extension links increase throughput while maintaining redundancy protection for remote applications.
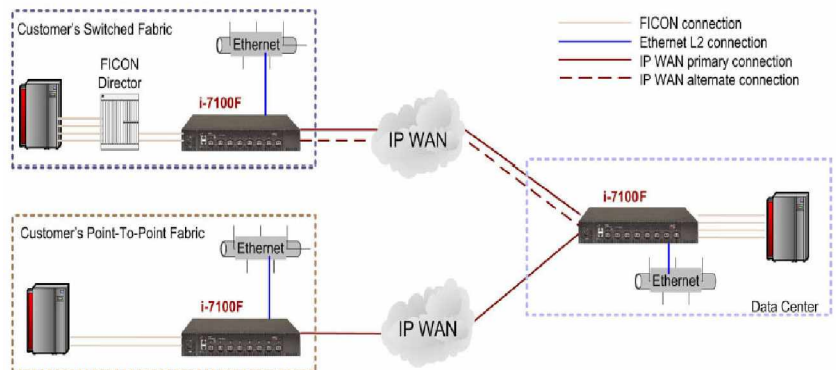


**Data Protection**
- Synchronous and asynchronous mirroring
- Remote tape vaulting

**Storage Consolidation**
- Centralized tape backup
- Data migration

**IT Cost Reduction**
- Extended use of remote equipment
- Reduction of storage through consolidation

**High Availability Access to Data**
- Distributed clustering applications

## APPLICATIONS

FICON extension with the LightSand i-7100F gateway over metro and wide area networks can support a wide variety of applications, with an emphasis on data migration, consolidation of storage, business continuity and disaster recovery.

## SPECIFICATIONS

### SYSTEM ARCHITECTURE

Gateway Architecture................... 8 ports, wire-speed, unblocked, aggregate bandwidth - 16 Gbit/sec

SAN Ports.................................. 4 to 7 ports
SAN Port Media.......................... Fibre Channel, 1.0625 Gb/s, SFP, multi-mode (850nm), as a standard
FC Standards.............................. FC-PH-2, FC-MI, FC-PH, FC-FS
FC Port Type.............................. FICON port
FC CoS ..................................... Class 2, Class 3
B2B Credits ............................... Up to 16
L2 Tunneling Ports...................... 1 to 3 ports (pre-configured)
L2 Port Media ............................ Gigabit Ethernet, 1.25 Gb/s, SFP, multi-mode (850nm), as a standard
Gigabit Ethernet Standards ........... IEEE 802.3z

WAN Ports ................................ 1 - 4 ports (pre-configured)
WAN Port Media ........................ Gigabit Ethernet, 1.25 Gb/s, SFP, multi-mode (850nm), as a standard
Gigabit Ethernet Standards ........... IEEE 802.3z
Encapsulation.............................. FICON over IP, Ethernet over IP
Extension Distance....................... 6000 km at Full Wire-Speed
Dark Fiber: 80km

### SPECIAL FEATURES SET

Redundancy ................................ WAN port fail-over, box level redundancy
Compression ............................... Over IP, maximum ratio 1:21
Bandwidth Management .............. Manual rate provisioning; Rate auto-adjustment (congestion avoidance)

### MANAGEMENT

Supported Software...................... SANman™ (GUI); Telnet, SNMP; MIB-II, Fiber Alliance MIB, SONET MIB, RFC 2837, configurable traps
Management Access...................... 10/100BaseT Ethernet (RJ-45); Serial port; In-band (DCC)
Diagnostics ................................. BIST (built-in self test); Local Spin Test; Remote Spin Test; Bandwidth probing

### MECHANICAL SPECIFICATIONS

Dimensions ................................. Width: 17.4" x Depth: 17.9" x Height: 2.6" - 1.5u
Weight ....................................... 22.9 pounds (10.4 kg)
Rack Mounting............................ 19" rack
Cooling ...................................... Front to back (fans FRU, hot swap)

### POWER SPECIFICATIONS

Dual Power Supply (optional) ....... FRU (hot swap)
Supported Power.......................... Nominal: 320mA at 220-240V; Nominal: 640mA at 110-115V (auto-select)
Frequency ................................... 50/60 Hz
Power Consumption ..................... 75 Watts (maximum)

### ENVIRONMENT AND REGULATIONS

Temperature................................. 0ºC to 40ºC (32ºF to 104ºF)
Humidity..................................... 5% to 85% non-condensing
Regulatory .................................. UL Listed, FCC Class A product, complies with Canadian ICES-003