PRODUCT SPECIFICATIONS

GIGACORE 16tf

1. Applications

A 10-Gigabit Ethernet switch, designed for professional touring applications.

The GigaCore 16tf is a 10 Gigabit Ethernet switch for professional touring applications in lighting, audio and video with a frequent tear-down & built-up requirement or for any other application where ruggedized connectivity is necessary. It is designed to support the most advanced AV protocols out of the box and is the backbone for a converged network, allowing multiple applications to co-exist on the same network.

GigaCore 16tf provides ruggedised connectivity at the front and rear of the rack to accomodate multiple edge devices in a flexible way.

The combination of GigaCore 16tf and Araneo software platform is the ideal solution to deploy an entire AV network in just a few clicks. Each GigaCore switch can be configured by an intuitive built-in AV Web UI.

Araneo, the network monitoring, planning and management software will ensure consistent management across the entire Luminex network. The use of Araneo together with GigaCore switches will increase your productivity and confidence in the network as well as significantly reduce commissioning time. An e-ink display informs the user about important parameters of the switch also when the device is not powered.

GigaCore 16tf is an indispensable part of any mobile AV network where reliability and a quick and easy setup are needed. As a user, you don't need to make choices nor tradeoffs as GigaCore manages most AV protocols for you out of the box: Pre-defined QoS/DiffServ (Quality of Service) settings, optimized IGMP (Internet Group Management Protocol) per group (VLAN) and pre-defined yet editable groups (VLANs) to easily separate your network in different applications making converged networks obvious, easy, and reliable.

Also included out of the box, is the advanced, automated redundancy protocol RLinkX that ensures redundant links and ring topology within your GigaCore network.

Bandwidth, connectivity, and port availability are not an issue anymore with 4 x independent ruggedized fiber connectors, available in multiple configurations (2 on the front and 2 on the back OR 4 on the back) and capable of data transfer speeds of up to 10 Gbps.

Alternatively these port locations can also be equipped with extra copper ports. 12 x 1Gbps copper ports on the frontside with rugged EtherCON connectors ensure robust connectivity.

Time synchronization is crucial in many applications; GigaCore 16tf offers you a hassle free PTPv2 enabled switch which will work for most major audio protocols (e.g., AES67, ST2110, Dante, Q-sys/Q-lan, …) without the need for making complicated configurations.

Furthermore AVB/MILAN is supported out of the box on the management group (VLAN) and can operate simultaneously with the aforementioned PTPv2 applications in a converged network on different Groups (VLANS).

Entertainment and touring setups constantly push the limits. The deployment of PoE powered devices is continuously increasing. GigaCore 16tf is ahead of this trend by offering PoE++ as an option on all copper ports (90W per port with a total PoE budget of up to 500W – stand-alone unit or up to 1000W - when used in conjunction with a separate RPSU 5580 unit).

Alternatively, this separately available RPSU unit can also guarantee redundant power if a large total PoE budget is not needed for the application. (Note the second PSU connectivity is only offered on the PoE++Models.)
Great care has been taken to ensure silent operation by means of intelligent fan control, giving you more options with peace of mind that no live audience or recording session would be disturbed.

GigaCore 16tf is the ideal touring network solution offering rugged, out of the box performance and **#convergednetworkingmadeeasy.**

Industries

- Live events
- Film Studios
- Touring
- Large system integrations
- Sports arenas
- Convention centers
- Broadcast and recording studios, OB vans
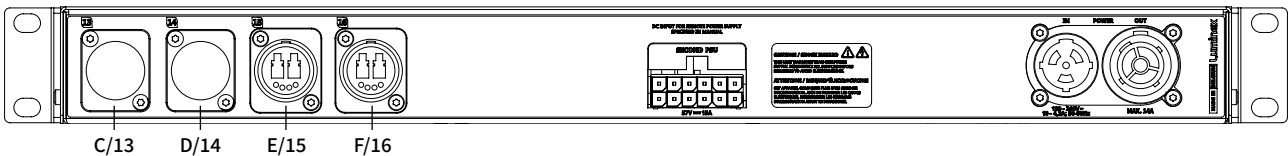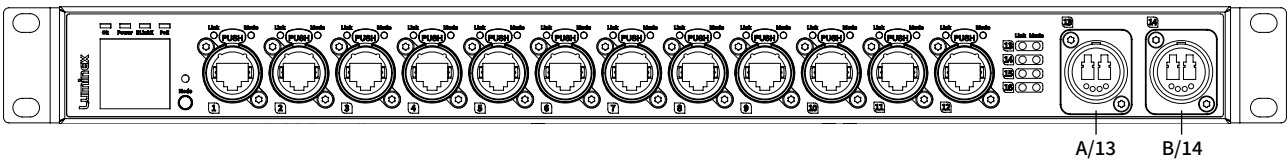- Theme parks
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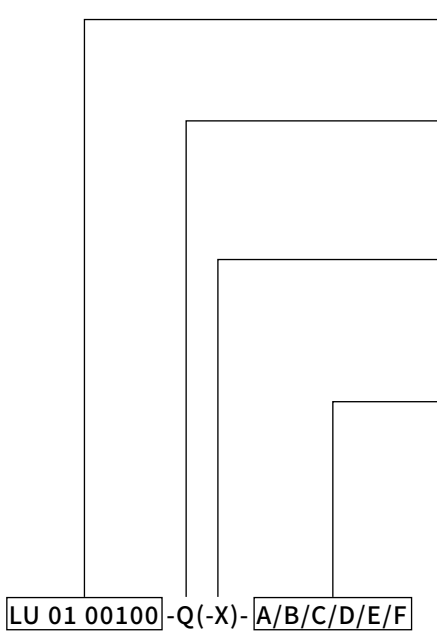
Product Number	
LU 01 00100	GigaCore 16tf

SFP+ mode	
1G	1Gbps
10G	10Gbps

Model Version: (–X) optional	
(Blank)	Non PoE version
POE	PoE++ version

Connector Type	
NDM	Neutrik opticalCON Duo Multi-mode
NDS	Neutrik opticalCON Duo Single-mode
NQM	Neutrik opticalCON Quad Multi-mode
NQS	Neutrik opticalCON Quad Single-mode
F2M	FiberFox 2Channel Multi-mode
F4M	FiberFox 4Channel Multi-mode
ETC	Neutrik EtherCON
0	No Connector

Connector Position – Port number	
A	Port 13 Front side
B	Port 14 Front side
C	Port 13 Rear Side
D	Port 14 Rear Side
E	Port 15 Rear Side
F	Port 16 Rear Side

LU 01 00100 -Q(-X)- A/B/C/D/E/F

Connector designation / port number

A/13   B/14

C/13   D/14   E/15   F/16

2. Application Diagram

CONVERGED

MON
Audio console

araneo

BROADCAST NETWORK INFRASTRUCTURE

Stage box

16tf — **STAGE** — **10 Gigabit**

16tf — **OB VAN** — **10 Gigabit**

NDI Camera

Amplifier rack

LUMINODE

Intercom

Audio mixing console

16tf — **FOH** — **10 Gigabit**

FOH
Audio console

Lighting console

Video playback

Storage
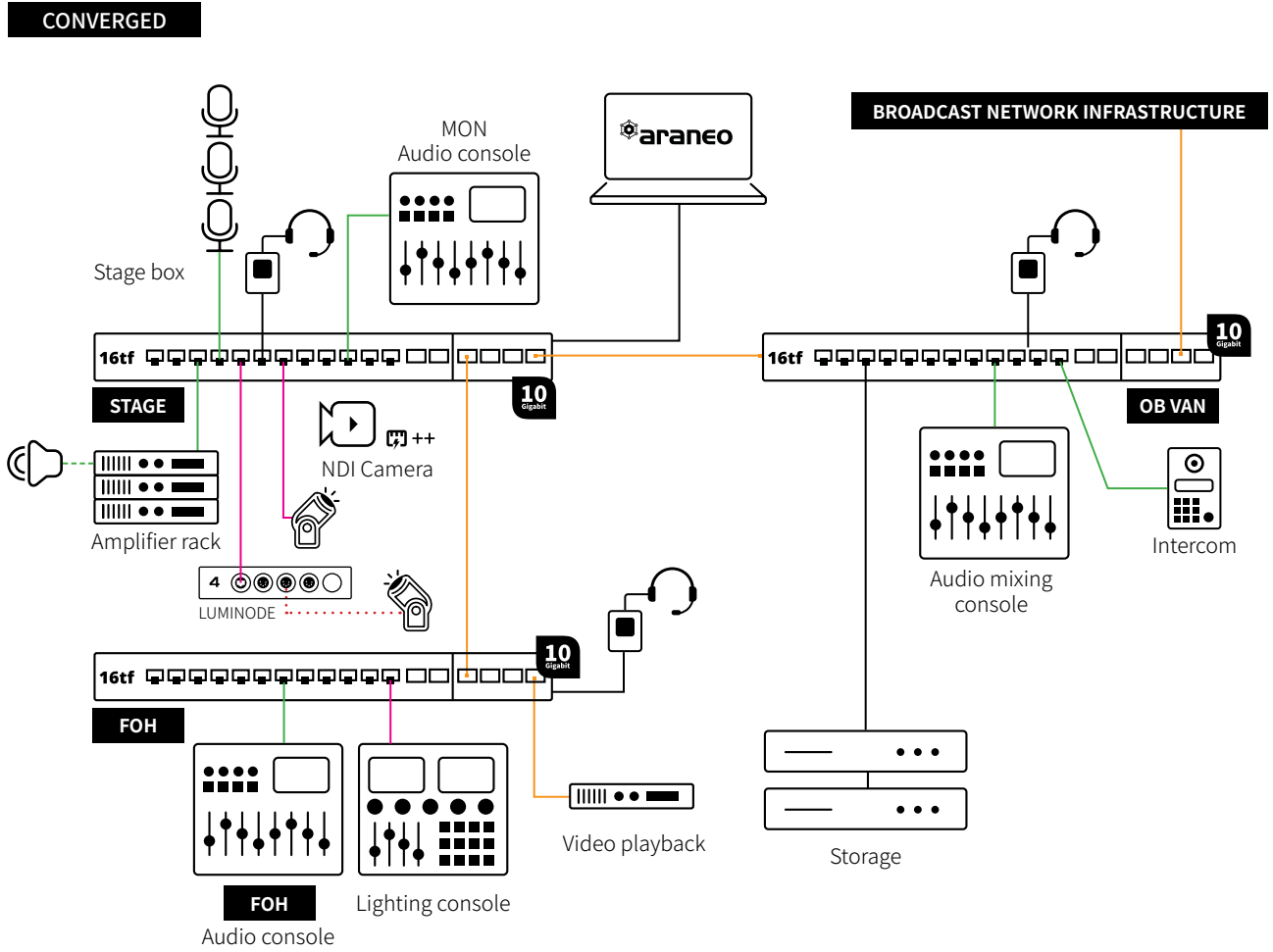
VLAN ID

10 Gigabit fiber		Light | sACN	
Audio | Dante, AES67		● ● ● DMX	
Video | NDI		++ PoE++	

Luminex

3. Technical Specifications

MECHANICAL	GigaCore 16tf
Enclosure	Robust all metal housing
Dimensions (WxDxH)	482 x 237.6 x 44 mm (19" x 9.35" x 1.73")
Material thickness	2 mm
Mounting type	Rack mount
Weight	4kg
Packaging dimensions	550 mm x 335mm x 68 mm
Packaged weight	4,24kg
CONNECTIVITY	
Network	12x Gigabit (10/100/1000 BASE-T) EtherCon connectors on front panel Optional: • 2x 10 Gbps / 1 Gbps rugged fiber connectors on front panel, independent from other ports AND • 2x 10 Gbps / 1 Gbps rugged fiber connectors on rear panel, independent from other ports OR • 4x 10 Gbps / 1 Gbps rugged fiber connectors on rear panel, independent from other ports
Power	1x PowerCON True1 in/out
Backup power	Through proprietary connector and optional RPSU (PoE model only)
Backup PoE	Through proprietary connector and optional RPSU
TEMPERATURE MANAGEMENT	
Intelligent control	Yes
Number of fans	2
Position of fans	side panel
Airflow direction	Right to left
USER INTERFACE	
Device status	RGB LEDs • OK • Power • RLinkX • PoE
LCD Display & Jog	No
Dynamic labeling	E-ink Display
Fiber port status	2x RGB LED Port Speed/Activity Port Status • Group indication
Copper port status	2x RGB LED Port Speed/Activity Port Status • Group indication • PoE
FIBER PORT SPECIFICATIONS	
Port speed	10G BASE-X or 1000 BASE-X
Port sensing	Fixed speed
COPPER PORT SPECIFICATIONS	
Port speed	10/100/1000 BASE-T
Port sensing	Auto Negotiation
Auto crossover	MDI/MDIX (allows use of straight or cross wired cable)
Auto sensing	Full or Half Duplex (Gigabit is Full Duplex)

POWER OVER ETHERNET	GigaCore 16tf
Standards	802.3af
	802.3at
	802.3bt
PoE Ports	802.3af, 802.3at, 802.3b
Total PoE power budget	Mains 100 - 240 VAC:
	450 W
	850 W (With RPSU 5580)
LLDP Support	Yes
Power allocation	User configurable:
	• Priority per port
	• Consumption vs Class/LLDP based
Power limit	• Total power budget firmware limit – port shutdown at overload based on port priority
	• Per port hardware and firmware power limits based on classification – port shutdown at overload

SWITCH FEATURES	
Boot time	45 s
Redundant links (RLinkX)	Yes
Link Aggregation (MultiLinkX)	Yes
Group function (VLANS)	Yes
Ethernet compliance	IEEE 802.2
	IEEE 802.3
	IEEE 802.3u
	IEEE 802.3x Flow Control
	IEEE 802.3ab Gigabit Ethernet
	IEEE 802.3af PoE(optional)
	IEEE 802.3at PoE+(optional)
	IEEE 802.3bt PoE++ 90W(optional)
	IEEE 802.3ae
	IEEE 802.1p CoS
	IEEE 802.1d Spanning Tree
	IEEE 802.1w Rapid Spanning Tree
	IEEE 802.1s Multiple Spanning Tree
	IEEE 802.1Q VLAN
	IEEE 802.1Qav MVRP
	IEEE 802.1 BA-2011 -> AVB (Audio Video Bridging)
	IEEE 802.1ab LLDP
	IEEE 1588-2008 PTPv2
	IETF RFC2710
	IETF RFC3810
Jumbo frames	Yes, supported up to 12000 MTU (with restrictions when using AVB)
Supported protocols	Avnu AVB/Milan (Free of license)
	Dante
	RAVENNA/AES67
	Ethersound
	Q-SYS/Q-LAN
	IPMX
	sACN
	ArtNet
	MANet
	HogNet
	RTTrPL (BlackTrax)
	…

Audio protocol compliance	Yes, low jitter and hardware timestamping (IEEE 1588-2008)
Ethernet switch type	Full non- blocking wire-speed switching performance
Memory	Flash 1 Gb RAM – 8 Mb NOR flash 4 Gb EMMC storage
MAC Address table	16384 entries
Address learning / aging	Self learning, Auto aging
Switching Capacity	104Gbps (10Gbps versions)
Switching Throughput	77381 Mpps
IGMP Querrier	Yes (V1|V2) (V3 compatible)
IGMP Snooping	Yes, enabled by default (V1|V2|V3)
MANAGEMENT	
Configuration	Built-in WebUI
Network wide configuration	Yes, with Araneo software
Firmware upgrades	Via WebUI or network wide with Araneo - Contingency option with second FW file stored
POWER	
Power input	100-240 VAC
Backup power	Yes with 2nd PSU (Note the second PSU connectivity is only offered on the PoE++Models.)
Backup PoE	Yes with 2nd PSU
Power consumption	Max 50W - Max 1050W (Depending on PoE and PSU configuration)
ENVIRONMENTAL	
Operating temperature	0 to +50 °C	0 to 40°C - with RPSU 5580 connected
Storage temperature	-40 to +70 °C
Humidity (non condensing)	5 to 95% RH
APPROVALS	
Electromagnetic emissions and immunity	FCC Part 15 CFR 47 class A
	CAN/ICES-003
	EN 61000
	EN 55032
	EN 55024
Safety	IEC 62368-1
	EN 62368-1
	UL 62368-1
	CAN/CSA-C22.2 No. 62368-1
Certificates and approvals	cSGSus Mark (UL)
	CE Mark
	UKCA Mark
	CB Certificate
Green	RoHS
	REACH

GIGACORE 16tf

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482 mm / 19"

44 mm / 1,73"

440 mm / 17.32"

240.10 mm / 9,45"