# NetRing® TN703A

# SDN-ENABLED PACKET OPTICAL TRANSPORT NETWORK SOLUTION

# 

# Features

- o MPLS-TP&CE BASED
- CARRIER-CLASS DESIGN
- POWER SUPPLY REDUNDANCY
- SMALL FOOTPRINT
- O VPLS/H-VPLS SUPPORT
- **QUALITY OF SERVICE**
- o FE/GE/10GE, E1, STM-1
- **O** SYNCHRONOUS ETHERNET
- IEEE 1588V2

# **Description**

The rapid growth of mobile and cloud-based services, on-demand media streaming and social networking, as well as fast emergence of new applications and services, sets new requirements not only for considerably higher volumes of traffic, but also makes it essential for operators to be able to adapt their telecom infrastructure and respond very fast to deliver these dynamic changing services to users at anywhere and anytime. The ever-increasing number and importance of data centers are also pushing telecom operators to build more dynamic and automated metro network to support on-demand, instantaneous connectivity from data center cloud to end users.

SDN (Software Defined Networking) technology revolutionizes the way that service providers operate and meet rapidly evolving requirements of their customers. The rapid growth of mobile and cloud services, media streaming and social networking, as well as fast emergence of new applications and services, sets new requirements not only for ever-increasing network capacity, but makes it essential for operators to be able to adapt their telecom infrastructure and respond very fast to changing environment.

UTStarcom's NetRing® TN703A combines the advantages of our proven packet optical transport NetRing platform and our innovative Control and Management platforms to create a unique combination of automation and flexibility with bandwidth efficiency and strong carrier-grade features of packet optical network. As a result, customers and operators gain unprecedented programmability, automation, and network control, which enable them to build highly scalable, flexible networks that readily adapt to changing business needs.

See more carrier-class solutions online at www.utstar.com



UTStarcom, Inc.

2635 North First Street, #148 San Jose, CA 95134, USA 1:+1 408 791 6168 1:+1 408 791 6167



A global telecom infrastructure provider of innovative carrier-class broadband transport and access solutions.

© 2020 UTStarcom, Inc.



Unified Services Packet Transport Access/CPE Device



# NetRing® TN703A

SDN-ENABLED PACKET OPTICAL TRANSPORT NETWORK SOLUTION



# **Product Details**

# SYSTEM CHASSIS

Dimensions (WxDxH)	440/403.8/44.45mm
	1U, 19"/ETSI rack mountable
Operation temper- ature	-15°C to 65°C. Cold start at min -10°C
Operation humidity	5% to 95% non-con- densing
Power supply	100-240VAC/-48VDC
	Redundant PS
Max power con- sumption	100W (max.)

# STANDARDS

IETF RFC 826, RFC 2212, RFC 2474, RFC 2475, RFC 2597, RFC 2598, RFC 2698,

RFC 2998, RFC 3031, RFC 3032, RFC 3140, RFC 3298, RFC 3270, RFC 3032, RFC 3140, RFC 3246, RFC 3270, RFC 3443, RFC 3670, RFC 3916, RFC 3985, RFC 4115, RFC 4197, RFC 4377, RFC 4378, RFC 4379, RFC 4385, RFC 4448, RFC 4553, RFC 4664, RFC 4842, RFC 5254, RFC 5462, RFC 5586, RFC 5654, RFC 5659, RFC 5860, RFC 5921, RFC 5950, RFC 5951, RFC 5960, RFC 6073, RFC 6370, RFC 6371, RFC 6718, RFC 6215, RFC 6291, RFC 6372, RFC 6669, RFC 6427, RFC 6136

IEEE 802.3, 1588V2, 802.1ad, 802.1ag, 802.3ad, 802.1p, 802.1q, 802.3ah, 802.1d, 802.1w, 802.3ab, 802.3u, 802.3z, 802.3ae

ITU-T G.664, G.703, G.707, G.773, G.774, G.774.1, G.774.2, G.774.3, G.774.5, G.775, G.783, G.8011, G.8011.1, G.8011.2, G.8011.3, G.8011.4, G.8011.5, G.805, G.806, G.809, G.8110.1/Y.1370.1, G.8110/Y.1370, G.8112/Y.1371, G.8113.1, G.8113.2\*, G.8121.1/Y.1381.1, G.8121.2/Y.1381.2\*, G.8121.1/Y.1381.1, G.8131/Y.1382, G.8151/Y.1374, G.823, G.825, G.826, G.8261, G.8262, G.8264, G.828, G.841, G.957, Y.1730, Y.1731, Y.1291, G.781, G.8265.1 (no PEC support), G.8273.2, G.8275.1

#### **REGULATORY COMPLIANCE**

CE: EN 55022, EN 55024, EN 300 386, EN 61000, EN 60950

FCC: FCC part 15 subpart B Class A

VCCI: VCCI class A

RoHS Directive EN 50581 Operating conditions: ETS 300 019, Class 3.2

Storage conditions: ETS 300 019, Class 1.2 Transportation conditions: ETS 300 019, Class 2.3

# **Technical Specifications**

#### ACCESS CAPACITY

Interface	Max. ports per shelf
10 GE	4
GE	28
FE	24
STM-1 (VC-4/VC-12)	16
E1	32

#### PACKET PROCESSOR

Packet processing<br/>capacity64Gbps full duplex<br/>switching fabric

#### **MPLS-TP FEATURES**

EXP-Inferred-PSC LSPs (E-LSP) Label-only-Inferred-PSC LSPs (L-LSP) Bi-directional MPLS-TP trail Diff-Serv support: 8 service levels for Ethernet traffic

QoS support: classification, mapping, metering, scheduling, congestion management MPLS-TP OAM including protection switching VPLS/H-VPLS EMS/SNMS manual control the setup and release

of PW and LSP

# TIMING/SYNCHRONIZATION

IEEE 1588v2 (PTP) Support SyncE with Synchronization Status Message (SSM) Free run: ±0.05ppm (better than ITU-T G.813: ±4.6ppm) Holdover: ±0.05ppm within 24 hours External 2Mbit/s or 2MHz input and output interfaces 1pps+ToD time input or output interface

# SDN/NFV FEATURES

Programmable provisioning through SDN controller

# **PROTECTION SCHEMES**

Hardware redundancy	1+1 AC/DC power supply
Network protection	N:1/1:1/1+1 Linear Protection for LSP
	N:1/1:1 PW protection
	LACP for GE/10GE client ports
	LPT (Link Failure Pass Through)
	1+1/1:1 MSP for STM-1

# **ETHERNET FEATURES**

32K MAC address table IEEE 802.3 Ethernet IEEE 802.1D MAC Bridges IEEE 802.1Q VLANs - Including .1p Priority IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.1AD Q-in-Q IEEE 802.1W RSTP (Rapid Spanning Tree Protocol) ACL (Access control list) Jumbo Frames to 10240 bytes Port mirroring: ingress/egress IEEE 802.1 ag Connectivity Fault Management (CFM) IEEE 802.3ah Ethernet in the First Mile (EFM) ITU-T Y.1731 Ethernet OAM - Performance Monitorina Unicast/Multicast/Broadcast Storm Control MEF CE 2.0 Compliant E-LINE: EPL, EVPL E-LAN: EP-LAN, EVP-LAN E-Tree: EP-Tree, EVP-Tree

#### NETWORK MANAGEMENT

Centralized Network Management System Geographical Redundancy of NMS LCT (Local Craft Terminal) Qx

\*Future support

Please note the information contained herein is for informational purposes only. Technical claims listed depend on a series of technical assumptions. Your experience with these products may differ if you operate the products in an environment, which is different from the technical assumptions. UTStarcom reserves the right to modify these specifications without prior notice. UTStarcom makes no warranties, express or implied, on the information contained in this document.