EO INTERCEPT

Network Controller
EO-NC-3G-20RF4

Features and Benefits

The Intercept™ EO solution delivers Multigigabit data rates over existing legacy coaxial cabling for rapid and economical deployment in MDU, enterprise or campus environments. Capable of data rates of up to 2.5 Gbps downstream and up to 2 Gbps in the upstream, EO is highly competitive with FTTH services, at a fraction of the cost.

The EO network controller provides full featured functionality and management capabilities for intuitive subscriber management and superior QoE, time to market and rapid activation and implementation of revenue generating services. Designed specifically for MDU applications, the EO system can be implemented in a P2P or P2MP delivery design, and can be routed to the EO CPE device or via Wireless router for reliable high speed data coverage throughout the premise environment.

The Intercept™ EO-NC-3G-20RF4 Network controller is a 1-port Network Controller with full featured functionality targeted to the Multi Dwelling Unit market segment for high speed symmetrical data services. The EO-NC-3G-20RF4 Network controller has 1 RF port and enables high bandwidth services of up 2.5 Gbps downstream and 2 Gbps upstream and capable of serving up to 31 subscribers.

The EO solution can utilize RF spectrum between 400 MHz and 900 MHz for legacy networks which have cleared spectrum used for video services, but can also operate in a mode between 1125 MHz to 1675 MHz, leaving all legacy services in place below 1 Ghz. The EO uses MoCA access OFDM technology and can deliver a highly efficient modulation rates up to 1024 k QAM.

The EO solution and Network Controller portfolio provides a highly intuitive cloud management platform for easy onboarding of new subscribers and efficient subscriber and network management.

- **4 RF ports**

- **Up to 31 Modems per RF Port**

- **2.5 Gbps Downstream and 2 Gbps Upstream per RF Port**

- **2x 10G Optical Feed (SFP+)**

- **Compact Size, Low Power Consumption**

- **Carrier Grade Management**

- **Full Features L3 Switch Capabilities**

Specifications subject to change without notice

RoHS

INTERCEPT

System

MoCA Version MoCA 2.5 / MoCA Access 2.5

Protocol IEEE 802.3x

Maximum Segment Size - 31 MoCA Modems

Total Supported MoCA Access Modems Using 4 Segments is 124

MoCA Access Interfaces

RF Connector: F-type, Female

4 RF Connectors, 4 MoCA Access Segments

Impedance: 75 Ω

Max Transmit Power +3 dBm

Modulation - OFDM QAM 1024/512 /256/128/64/32/16/8/QPSK/ BPSK

Multiplexing - TDMA/TDD

RF Channels - 3, 4 or 5 with a Channel Width of 100 MHz Each

Maximum Attenuation for Full PHY Rate: 100% Link Quality at 55 dB

Return Loss >10 dB

MoCA Access 2.5 Band Support

MoCA Ext Band A Operation 400 - 900 MHz

MoCA Ext Band D Operation 1125 - 1675 MHz

MoCA/MoCA Access 2.5 Supported Maximum Application Data Rate

Up to 3.2 Gbps Bi-directional Combined Point to Point and Point-to-multipoint Mode

Management Port

Via the WAN Ethernet Interfaces

Web Access Through HTTP and HTTPS

CLI – Console Port

SSHv2

Management Access Filtering

IPv6 Management

System Syslog

Software Upgrade through Web

SNMP v1, v2c, v3

RMON Group 1, 2, 3, and 9

IEEE 802.1AB LLDP

TIA 1057 LLDP-MED

Cisco Discovery Filtering, CDP

Loop Detection Restore to Default

DNS Client, Proxy

DHCP Server and DHCP Client

Industry-standard CLI and Configuration

Configuration Download and Upload

Multiple SNMP Trap Destinations

WAN Side Interfaces

Interface 2 x SFP Slots 10 Gbps Ethernet

Interface 1 x RJ-45 1 Gbps Ethernet

Carrier Ethernet 2.0 Compliant

ITU-T G.8031/G.8032 Protection Switching

ITU-T G.8275.x PTP Telecom Profile Supported on Transparent Clock

Comprehensive Ethernet OAM Support: IEEE 802.1ag CFM, 802.3ah EFM, and ITU-T Y.1731

Service Activation Testers Incorporated: RFC2544, Y.1564

Non-blocking Wire-speed Switching

LEDs

Ethernet: Ethernet Interface Indicator LED

COAX: Coax Cable Link State Indicator LED

Power

Power Consumption System 9 Watts (4 Active RF Ports, 1 Active SFP+)

Power Supply 100-240 VAC/50-60 Hz 12 VDC/2 A or 5 VDC/4A

PWR Input 5 VDC-12 VDC (+/-5 %)

Environmental

Operating Temperature 0 ℃ to 40 ℃ (32 ℉ to 104 ℉)

Storage Temperature -20 ℃ to 65 ℃ (-4 ℉ to 149 ℉)

Operating Humidity 20 % to 85 % RH, Non-condensing

Non-Operating Humidity 5 % to 95 % RH, Non-condensing

Physical Size

22.0(H)x18.5(D)x6(W) cm

8.66(H)x7.28(D)x2.36(W) inch

Weight

0.55 Kg

Compliance

CE

FCC Part 15b

RoHS

RoHS

SPECIFICATIONS
EO-NC-3G-20RF4

ESD
DC Voltage on Power Connector +15 VDC
DC Voltage on RF Connector +60 VDC
Impulse Sparkover on RF Connector 500 V Slope 1000 V/usec
Impulse Sparkover on RF Connector 600 V Slope 1000 V/usec
Maximum Power Consumption 14 W - 2 SFP+ Ports Operating 4 RF Ports, Maximum RF Throughput

Carrier Ethernet Services
E-LINE, E-LAN, E-TREE, and E-Access Supported
MEF-Compliant Dual Rate Policing and Shaping

Carrier Ethernet OAM
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
IEEE 802.1ag Connection Fault Management (CFM)
IEEE 802.3ah Ethernet in the First Mile (EFM)
IETF RFC 2544 Performance Benchmarking Test

Timing and Synchronization
IETF RFC 5905 NTPv4 Client
ITU-T G.8275.x PTP Telecom Profile Supported on Transparent Clock

Protection
IEEE 802.3ad LACP
IEEE 802.1w/s RSTP / MSTP
ITU-T G.8031 ELPS & G.8032 v1/v2 ERPS

Quality of Service
8 Hardware Priority Queues
Per-EVC QoS, Policing and Shaping for Service
Isolation and Traffic Engineering
Strict Priority and Weighted Round-Robin (WRR)
Scheduling
Per-Port/VLAN/ToS/DSCP Classification
Per-Port/VLAN/Flow Rate Limiting

Port Control
Port Speed, Duplex Mode, Flow Control
Port State (Administrative Status)
Port Status (Linking Monitoring)
Port Statistics (MIB Counters)
Cable Diagnostics
On-the-Fly SFP Detection

Ethernet Layer 2 Switching
IEEE 802.1D Bridge
IEEE 802.1Q VLAN
VLAN Translation
Private Static VLAN
Port Isolation (static)
Loop Guard
MAC-based and Protocol-based VLAN
Multiple Registration Protocol (MRP)
Multiple VLAN Registration Protocol (MVRP)
GARP VLAN Registration (GVRP)
IEEE 802.1ad Provider Bridge (Native or Translated VLAN)
IEEE 802.3ad Link Aggregation; Static & LACP
Bridge Protocol Data Unit (BPDU)
Guard and Restricted Role
Transparency and Forwarding
Voice VLAN & Auto VoIP
VLAN Trunking
DHCP Snooping
ARP Inspection
Port and Flow Mirroring
Protocol-based and IP Subnet-based VLAN
Error Disable Discovery
Classification of Layer 3 Flow

Multicast Management
IGMPv2 and IGMPv3 Snooping
MLDv1 and MLDv2 Snooping
IP Multicast (IPMC) Throttling, Filtering, Fast Leave and Leave Proxy
Multicast VLAN Registration (MVR) and Profile
Broadcast/Multicast Storm Control
Unknown Multicast Filtering
Well-known Protocol Forwarding

Ethernet Layer 3 Switching
DHCP Option 82 Relay
IPv4/IPv6 Unicast Static Routing
OSPFv3 Routing

RoHS

SPECIFICATIONS

EO-NC-3G-20RF4

Security
Network Access Server – Port-based IEEE 802.1X
Single and Multiple IEEE 802.1X – MAC-based Authentication – VLAN and QoS Assignment – Guest VLAN
RADIUS Accounting
MAC Address Limit
TACACS+
Web and CLI Authentication
Authorization (15 User levels)
ACLs for Filtering, Policing, and Port Copy
IP Source Guard
IP MAC Binding Dynamic to Static

RF Configuration
The RF frontends cover the full EO frequency range from 400 – 1675 MHz. Different RF configurations can be configured via the EO SET management platform:

EO Frequency Range (MHz)	Required Coexistence (MHz)	Required External RF Passive
400 – 900	Satellite Services 950-2150	EO-SPLITTER_860_950
400 – 900	no other service	no external passive required
1125 – 1625	TV/DOCSIS up to 862	EO-SPLITTER_860_950
1125 – 1625	TV/DOCSIS up to 1002	EO-SPLITTER_1000_1100
1125 – 1625	no other service	no external passive required