

In:xtnd Control 4 Channel is an ethernet over coax access node, capable of 2.5 Gbps per RF-port, a total of 10 Gbps.

In:xtnd Control 4 Channel communicates with In:xtnd Access. In:xtnd™ uses the MoCA Access™ 2.5 standard.

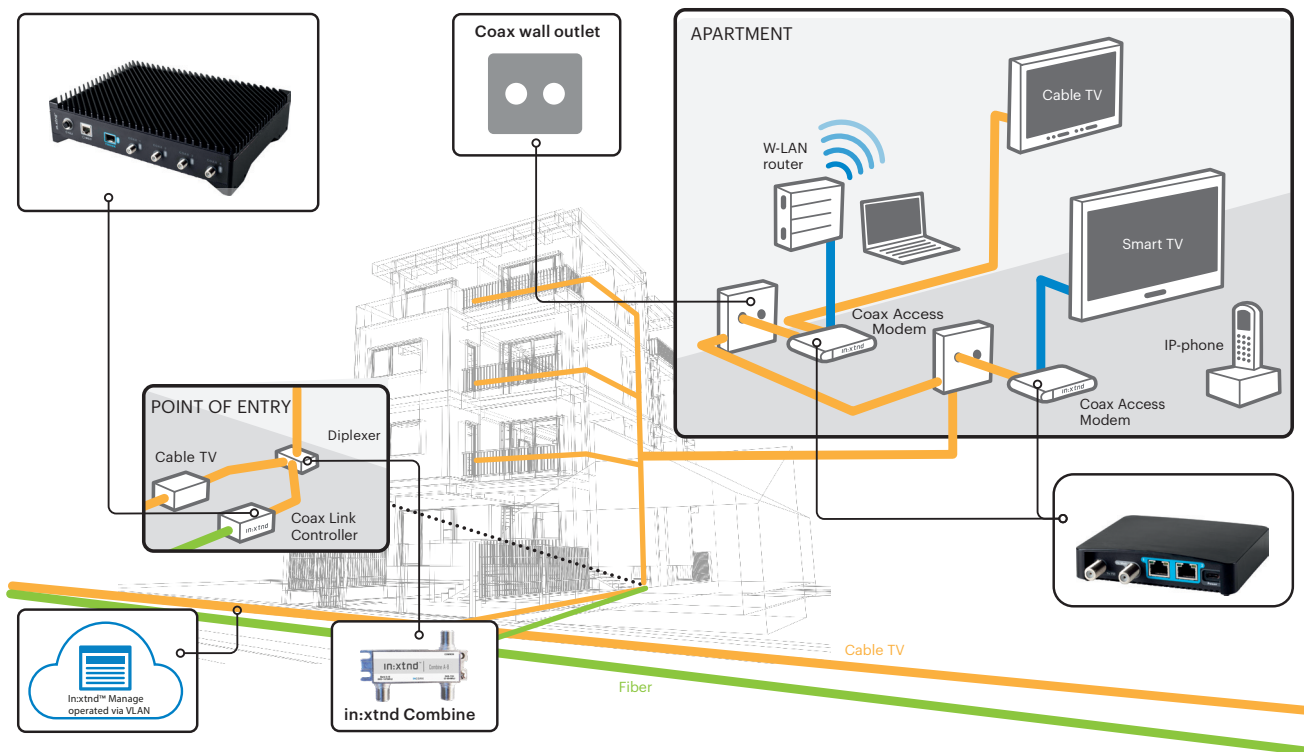
The in:xtnd Control 4 Channel supports up to 124 in:xtnd Access modems.



KEY FEATURES

- Designed for service providers delivering internet broadband and triple play services
- Accumulated 10 Gbps over four RF-ports
- Each RF-port delivers up to 2.5 Gbps
- Delivers IPTV, VoIP and high-speed Internet
- Operational bands between 400–1675 MHz
- Coexist with terrestrial and cable-TV services
- Uses existing in-building coaxial cables
- Delivers ethernet broadband through existing antenna outlets
- Fast and cost-efficient in-building deployment
- Based on MoCA Access™ 2.5 Profile D

SYSTEM OUTLINE



In:xtnd Control

In:xtnd Control is a four channel ethernet over coax access node, capable of 2.5 Gbps broadband services per RF-port, a total of 10 Gbps supporting up to 124 in:xtnd Access modems. It communicates with in:xtnd Access using the MoCA Access 2.5 standard.

EASY

- No need to pull new cables.
- Minimal operational disturbance.
- Can be rolled out in stages.
- Coexists with existing satellite or cable TV.
- Upgraded and supported remotely.

FAST

- Fiber performance.
- Symmetrical upload and download.
- Low latency.

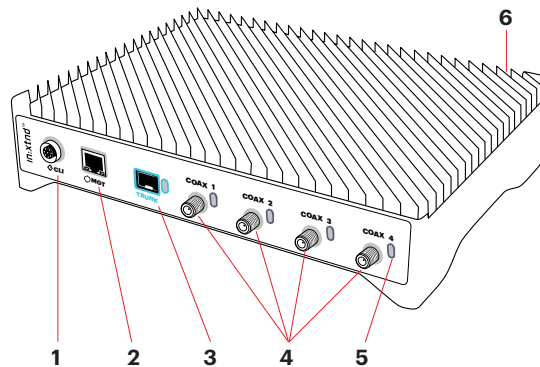
SMART

- Fiber operators get better payback on investments.
- System owners get short time to revenue.
- The sustainable choice.

RELIABLE

- Based on MoCA Access™ 2.5, an industry standard for networking and broadband access over coax cabel (2017).

Indicators & Connections



- 1 CLI - Factory setup & testing
- 2 MGT - System Manager LAN port
- 3 TRUNK - Fiber port
- 4 COAX 1-4 - channel network connections
- 5 Coax channel status indicator
- 6 Power port

TECHNICAL SPECIFICATIONS

Performance

- Ethernet over coax
- Based on MoCA Access 2.5 Profile D
- 10 Gbps WAN interface
- 2.5 Gbps throughput per MoCA port
- 31 Modems per port
- MoCA Bands: A-A, A-B, A-C, A-D, A-E
- Frequency range: 400 - 1675 MHz
- RF-channel bandwidth: 100 MHz
- Bonded operation 3, 4 or 5 RF-channels supporting
- MAC Rate typically 1,5/2,0/2,5 Gbps (up to 3,0 Gbps)
- PHY/MAC rate: up to 730/600 Mbps per 100 MHz RF channel
- Attenuation 100% link quality up to 55 dB
- 15 dBm ± 3 dBm Max Output Power; automatically adjusted per modem
- Configurable beacon frequency
- Modulation: OFDM, QAM 1024/512/256/128/64/32/16/8, QPSK, BPSK
- Multiplexing methods: TDMA/TDD

Physical

- 4x MoCA Access ports, individually enabled/disabled
- 1x SFP+ port: Multi Source Agreement (MSA) Compliant, SERDES – 10 Gbps data rate, SFF8472 – Diagnostics interface
- 1x Management Ethernet port: 10/100 Mbps, configuration and statistics port
- RJ-45 Connector, support CAT5 UTP
- F-female Connector - 3/8-UNEF32, 75 Ω

Indicators

- Power on-, Management-, Trunk, Coax Link traffic and alerts

Dimensions

- 278 × 61 × 224 mm (W × H × D)
- Prepared for 19" rack chassis installation
- Handles can be rotated 90° for direct wall mount
- Vertical, horizontal or angled installation

Weight

- 3.7 kg

Environmental

- Operating Temperature: -25 °C to +50 °C
- Humidity: 20% to 80%
- Altitude: max 2000 m
- Dynamic Temperature Control with Cooling Redundancy
- Abnormal Operation Conditions Alarms
- Storage (non-condensing): -40 °C to +70 °C and 5% to 90%
- RoHS, RoHS2, UL94-V0

Power

- 48 VDC nominal
- Power consumption normally 32 W
- Automatic power on after power grid failure

IEEE Standards

- IEEE 802.3u (Fast Ethernet)
- IEEE 802.3ac (Q-tag)
- IEEE 802.1p (QoS)
- IEEE 802.1q (with full VLAN-ID range. Up to 200 VLAN. Configurable internal VLAN for policing, shaping, and prioritization for ingress untagged frames)

Approvals

- Marking: CE, FCC, IC, cNUS
- EMC: EN 300386 V2.1.1, EN 55032:2015, EN 55035:2017, FCC Part 15B Class A
- Safety: EN 60950-1:2006/A11/A1/A2/A2, IEC 62368-1:2014, EN 62368-1:2014+A11:2017, CSA/UL 62368-1:2014
- ROHS: EN 50581:2012

Security

- DHCP snooping, Option 82 rewrite and trusted/untrusted clients, limit setting, configurable options per VLAN.
- Blocking of unknown CPE
- Broadcast storm protection from clients
- Support for PPPoE IA option 0x105 Remote ID

Multicast

- IGMP snooping (v1, v2, v3 (partially))
- IGMP filtering per VLAN
- Configurable IGMP timeout
- MVR
- Bandwidth reservation per multicast group

QoS

- Traffic classification
- Mapping and remarking
- Congestion management
- Strict priority, four separate queues for broadcast, multicast and unicast
- Configurable Rate limitation per queue
- Configurable Upstream/Downstream ratio

Management

- WEB GUI via https
- SOAP/XML interface via https://
- Statistics and system/version information
- Configuration
- Define and assign service profiles
- Built in spectrum analyzer
- Access through management VLAN or separate Management ethernet port.
- Remotely upgradable



¹ InCoax recommends to use the SFP+ module MikroTik 10G S+RJ10
Other tested SFP+ modules are: Ubiquiti 10G UDC-2; Fiber MM: Ubiquiti 10G UF-MM-10G; Fiber SM: Ubiquiti 10G UF-SM-10G, InCoax 10G OS-SP96-3110D, and Ubiquiti Bi-Di UF-SM-10G-S

About the Multimedia over Coax Alliance®

The Multimedia over Coax Alliance (MoCA®) is an industry standard alliance developing technology for the connected home. MoCA technology runs over the existing coaxial cabling, and is the in-home backbone for Wi-Fi®. Products integrating MoCA technology are found in the service provider, custom installer and consumer/retail channels.

The Alliance has more than 200 certified products and 27 members, including service providers, OEMs, CE manufacturers and IC vendors.

About MoCA Access™

MoCA Access is point-to-multipoint. It is designed to coexist with legacy services such as TV, DOCSIS, and cellular (4G/5G) technologies.

As a fiber extension technology, MoCA Access is well suited for operators and ISPs that are installing fiber-to-the-basement (FTTB) or fiber deep into the network, and want to use the existing coax for connection to each apartment or unit.

MoCA Access also appeals to commercial integrators in market segments such as hospitality/hotels, restaurants, offices, and any other buildings wired with coax.



About InCoax Networks

InCoax Networks is innovating the future of broadband access. Through in:xtnd™, we provide the next-generation smart and sustainable networking solutions to the world's leading telecom and broadband service operators. For additional information about in:xtnd™, visit inxtnd.com.

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