

In:xtnd Control C251 is an Ethernet over Coax access node.

In:xtnd Control C251 is capable of 2.5 Gbps on one RF-port supporting up to 31 in:xtnd Access modems.

In:xtnd Control C251 communicates with in:xtnd Access modems using the MoCA Access™ 2.5 standard.

In:xtnd Control C251 combined with in:xtnd Access modem A101 allows full advantage of new system benefits.



KEY FEATURES

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

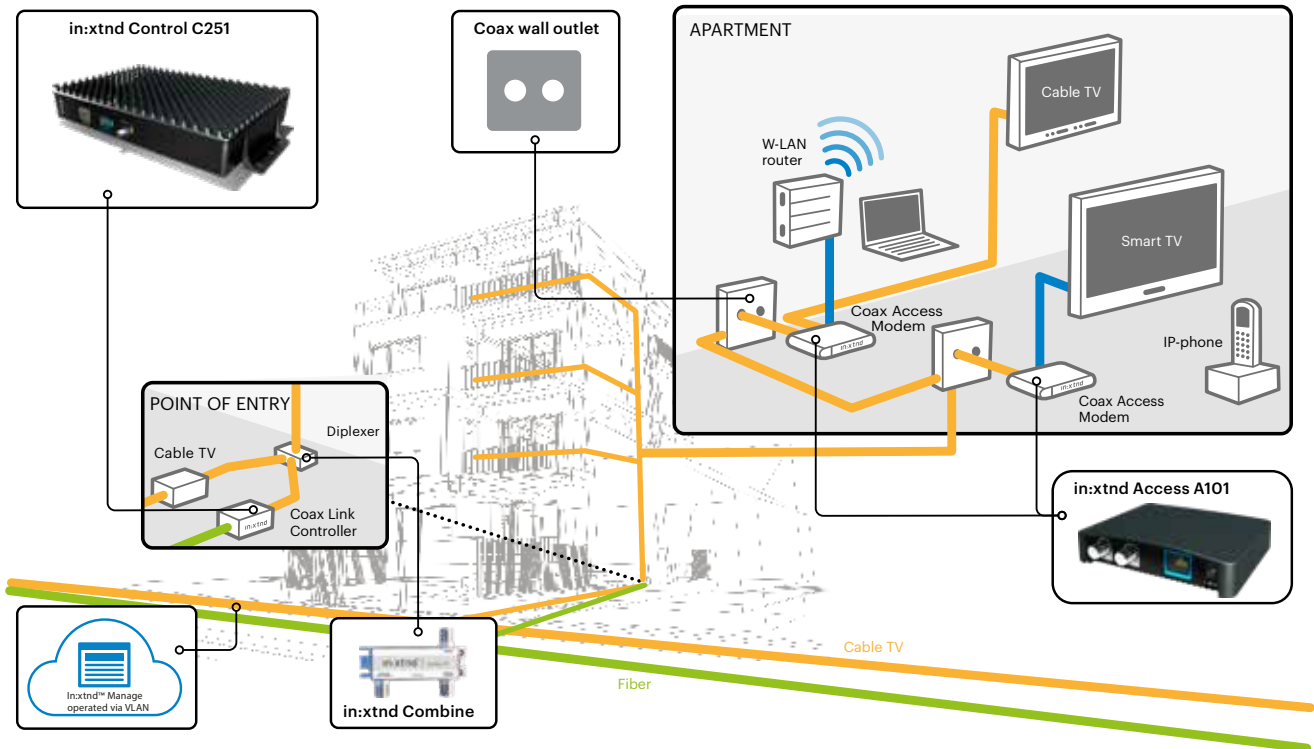
Improved features with the new in:xtnd Control C251

- Improved link budget when combined with in:xtnd Access modem A101
- 17dBm output power
- Improved filters to minimize signal interference
- Approved for both Europe and North America
- Fully compatible with previous in:xtnd versions

NEW FEATURE

- Auto Configuration by ZTP (Zero Touch Provisioning)

SYSTEM OUTLINE



in:xtnd Control C251

In:xtnd Control C251 is a one channel Ethernet over Coax access node, capable of 2.5 Gbps broadband services on the RF-port, supporting up to 31 in:xtnd Access modems. It communicates with the Access modems using the MoCA Access 2.5 standard. Auto configuration by Zero Touch Provisioning (ZTP) functionality makes it easy, fast and cost-effective to deploy new systems or add new devices.

EASY

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

FAST

- Fiber performance
- Symmetrical upload and download
- Low latency

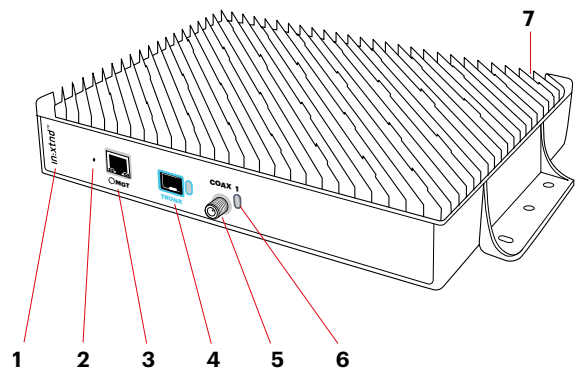
SMART

- 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 cable (2017)

Indicators & Connections



- 1 Controller status indicator
- 2 RESET - System reset button
- 3 MGT - System Manager LAN port
- 4 TRUNK - Fiber port
- 5 COAX - Channel network connection
- 6 Coax channel status indicator
- 7 Power port

TECHNICAL SPECIFICATIONS

Performance

- Ethernet over Coax
- Southbound MoCA Access 2.5 Profile D (based on)
- 10 Gbps WAN interface
- 2.5 Gbps throughput (3.2 Gbps in turbo mode)
- 31 Modems on 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
- 100% link quality up to 60 dB attenuation (w/ Access A101)
- 17 dBm Max Output Power; automatically adjusted per modem
- Configurable beacon frequency

Physical

- Northbound fiber port
- 1x SFP+ port¹⁾: 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
- Reset button for executing system reset and enter a default state

Indicators

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

Dimensions

- 323 × 57 × 194 mm (W × H × D)
- Prepared for 19" rack chassis installation
- Prepared for wall mount

Weight

- 3,2 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

- 12 VDC, 5 A nominal
- Power consumption normally 17 W
- Automatic power on after power grid failure

IEEE Standards

- IEEE 802.3 (Ethernet)
- IEEE 802.3u (Fast Ethernet)
- IEEE 802.1p (Priority tags)
- IEEE 802.1q (VLAN with full VLAN-ID range. Up to 500 VLAN Configurable internal VLAN for policing, shaping and prioritization for ingress untagged frames)
- IEEE 802.1ad (QinQ)

Approvals

- Marking: CE, FCC, IC, cNUS
- EMC: EN55032:2015 Class A, EN55035:2017, FCC Part 15 B Class A, ICES-003 Class A
- Safety: IEC62368-1:2014, EN62368-1:2014 + A11:2017, AS/NZS 62368.1:2018, CSA/UL 62368-1:2014
- ROHS: ROHS 2.0

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

- IPv4 WEB GUI via https
- SOAP/XML interface via https
- Statistics and system/version information
- Auto Configuration by ZTP (Zero Touch Provisioning) **NEW!**
- Define and assign service profiles
- Built in spectrum analyzer
- Access through management VLAN or separate Management ethernet port
- Remotely upgradable



¹⁾ The SFP+ models below have been tested and verified with the InCoax product.

Copper: MikroTik 10G S+RJ10 and Ubiquiti 10G UDC-2.

Fiber MM: Ubiquiti 10G UF-MM-10G

Fiber SM: InCoax 10G OS-SP96-3110D, Ubiquiti 10G UF-SM-10G, Ubiquiti Bi-Di UF-SM-10G-S, Finisar FTLX1475D3BTL, NorthLab NORT-1031-LR, FS SFP-GE-BX BiDi 1Gbps and FS 100OMBASE-BX. BiDi SFP+

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.

Contacts

E-Mail: sales@incoax.com
Address: InCoax Networks AB
Utmarksvägen 4, S-802 91 Gävle, Sweden
Phone: +46 26 420 90 42

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