BETTER CONNECTED LIVING

INTELLIGENT FTTH SOLUTIONS

- Fiber Network Termination
- Managed Fiber Gateways
- Managed Ethernet Routers & Access Points
- Wi-Fi App & Network Monitoring

Icotera

ABOUT ICOTERA

Icotera is a leading European developer and manufacturer of Fiber-to-the-Home (FTTH) CPE solutions. Our intelligent FTTH Gateways, Managed Ethernet Routers and Access Points include best-in-class Wi-Fi and are optimized by our real time network and in-home Wi-Fi monitoring solution.

As a technological leader in our field, we create and deliver products with superior design, quality and performance, and we are dedicated to providing fiber network operators and internet service providers with tailor-made, flexible and cost-effective solutions to fit their individual needs. All hardware and software development are produced inhouse, guaranteeing our customers the quality they need.

Our mission is to enable our customers to deliver an outstanding user experience based on our high quality FTTH solutions and services which will provide them with additional revenue streams that contribute to their sustainable growth, both now and in the future.

“Our mission is to enable our customers to deliver an outstanding user experience...

René Brøchner,
Chief Executive Officer at Icotera

OUR PROMISE: EFFICIENT OPERATION & SUPERIOR CUSTOMER EXPERIENCE

User Experience

Key to success is satisfied customers. A successful customer journey, powerful technology and efficient support make the difference.

Best-in-class Wi-Fi

High performance antenna designs secure customers with the best in-home internet experience – in all rooms of the house.

Unique Nordic design

The stylish and aesthetic appearance makes the products fit easily into the environment – a discreet equipment that looks great in every room

Tailor made solutions

Intelligent solutions are flexible solutions. And that's why we bring bespoke solutions to medium sized network operators and ISP's. Together we create the right solutions - not because they fit all, but because we make them all fit.

Quality that lasts

State-of-the-art FTTH P2P and GPON solutions, crafted with superior quality of design, components, software, and manufacturing, optimize total cost of ownership.

CUSTOMER TESTIMONIALS

"Our goal was to provide our customers with the best on the best wireless network standard in the current market: Wi-Fi 6. The new router must deliver maximum performance and coverage, but it must be compatible with our demand for simple, elegant, minimalist design. Icotera's ability to unite modern design with high technical capacity is exceptional, and we look forward to offering our customers the benefits that such expertise implies."

Carl Gunnstam, Head of Products and Customer Value Proposition
Telenor, Sweden

"We spent a lot of time researching different companies and decided to go with Icotera as we could see the potential to make our services more attractive to our customers. The high-quality onebox solution would provide our customers with the maximum speed they needed."

Dobrina Penkova, Sales and Marketing Director
Cooolbox, Bulgaria

"Companies like ours will be buying lots of routers, but they must be top quality. If we have any issues, we cannot wait six months for a technical solution, as we will lose the customer within that timeframe. That is why it was important for us that Icotera's CPE met – and continues to meet – our customers' needs for strong Wi-Fi connectivity."

Richard Robinson, Managing Director
Grain Connect, United Kingdom

DESIGN THAT MAKES A DIFFERENCE

Unique Industrial Design

The housing of Icotera CPEs has been designed with both aesthetics and functionality in mind. In addition to holding the most powerful optical fiber residential gateways on the market, they also set a unique standard for ease-of-installation and maintenance. The innovative design minimizes the total cost of ownership, delivering significant savings to network operators and ISPs. What's more, our units have been created to seamlessly fit in with the interiors of both modern and traditional households, with a discreet and compact design that still leaves a lasting impression.

It is not all about design though - optical fiber networks including the fiber infrastructure that sits within end-users households, benefits from an extremely long life. At Icotera we appreciate the longevity of this technology, which means that our fiber termination units (FTUs) have also been engineered to support future generations of optical fiber gateways.

ADVANCED SLIDE-ON SYSTEM

The innovative slide-on system built into our optical fiber gateways has been designed to make it simple to change gateways without interfering with the fiber installation. This makes it easy for end-users to replace their gateways, and thereby dramatically cuts the costs for network operators. This system is an integral part of Icotera FTUs and gateways, allowing for mechanical fixtures and the simple removal of the gateway, as well as facilitating stable and reliable optical interconnections. The mechanical interface is universal in design, and will be featured in future generations of gateways, making for easy upgrades, simple maintenance and reduced costs.

MULTI-PURPOSE FIBER TERMINATION UNIT

To support the expected impressive longevity of fiber installations, Icotera has designed an advanced, universal Fiber Termination Unit (FTU). This FTU supports all types of fiber installation methodologies and facilitates the use of single or dual-fiber in both cable and tube. The FTU provides sufficient space for winding up and reversing the fibers in accordance with minimum bending radius requirements of standard fibers. There is also plenty of room for a gas block, fixtures for splicing rods, and a Wavelength Division Multiplex (WDM) filter. This innovative design allows for a high-quality standard of the fiber installation, while minimizing labor and reducing the cost of installation and maintenance.

P2P LAYER 2 SWITCH

i6400-series

Residential Switch

The Icotera i6400 Layer 2 residential fiber switch, prepared for Open Access networks, integrates optical Ethernet-based data transmission with Layer 2-4 functionality, CATV and USB.

- Ease of use & installation
- Vendor independent
- Award-winning industrial design
- Lowest Total Cost of Ownership

Strong hardware base

The Icotera i6400 is a fully featured Layer 2 fiber switch with an advanced feature set. i6400 is targeted towards open access networks and, in general, operators with a layer 2 demarcation point. All switching is done in hardware, resulting in lightning fast wirespeed gigabit transfer rates and giving the instant-on feeling for the end-user.

State of the art features

The i6400 is a complete, feature-full package of Layer 2 functionalities. Gigabit rates and instant forwarding due to powerful switching capability, optical signal auto-detection and support of 100Base-BX-10/20 and 1000Base-BX standards is a clear token of this high quality switch. The CATV AGC receiver gives the subscriber cable television access with power level configuration and monitoring. To top it off, this fiber switch offers (optionally) individual RF channel plans in a complete filter solution with high-block band attenuation.

Extensive functionality

The i6400 offers an advanced array of traffic control and shaping features, such as: Ethernet and IP filtering up to layer 4, MAC address limiting, IP source guard and VLAN forwarding and filtering. Agile reduction of traffic overhead is managed by jumbo frame forwarding leading to lower packet rates. Adaptive mechanisms control the quality of optical signal (both CATV and DATA) and enable the user to swiftly zero in on any problems in the upstream network. Ethernet link performance is continuously controlled by 802.3ah OAM instruments that allow prompt resolution of any arising problems. Link state information is propagated on both WAN and LAN side and power consumption is managed with advanced management capabilities.

Full control and management

The i6400 can easily be managed by protocols such as EOAM, SNMP v1/v2, SSH/Telnet and TR-069. Supported by our zero-touch auto provisioning mechanism it allows for easy and trouble-free daily operations.

i6400 Residential Switch

FEATURES

- Vendor-independent
- Award-winning industrial design
- Low power consumption
- Optional operator branding

NETWORK COMMUNICATION

WAN INTERFACE

- Single-mode fiber (ITU-T G.652) SC/PC connector
- 100BaseBX10/20 compliant
- 1000BaseBX10/20 compliant
- Tx: 1310nm, Rx: 1480nm – 1600nm
- Operating distance: 20km
- Transmit power: -7dBm – -2dBm
- Receive sensitivity: -3dBm – -23dBm
- Class 1 laser product
- Auto detection of 100Mbps or Gigabit
- 1 x 1G/SFP for 6407 variant
- Auto detection of 100Mbps or Gigabit

LAN INTERFACES

- 4 x 1G LAN
- Auto-negotiation for speed and duplex
- Integrated cable tester, detects:
  - Short
  - Open
  - Impedance mismatch
  - Cable length

LAYER 2

- Jumbo 9k packets
- IGMP v1/v2 snooping
- Transparent IPv6 forwarding
- Forwarding up to 2k MAC addresses
- Multicast support
- VLAN Translation
- VLAN 802.1Q support
- Port mirroring

LAYER 3

- Management WAN interface
- OSI Layer 3 and 4 filtering by ACLs

USB

- 1 x USB 2.0 host port

CATV (OPTIONAL)

OPTICAL PARAMETERS

- Input wavelength: 1310nm - 1550nm
- Input level range: -9dBm - 2dBm
- Optical connector: SC/APC

RF PARAMETERS

- RF output impedance 75Ω
- Frequency range: 45Mhz - 890MHz
- Slope (maximum): 5dB
- RF output level (4% OMI, -8dBm - 0dBm): 80 ± 2dBμV
- CNR ≥ 45dB
- CSO ≥ 60dB
- CTB ≥ 60dB
- Management: via OMCI

MANAGEMENT & MONITORING

- IPv4 management interface
- Separate VLAN (optional)
- Access filtering based on IP source network
- Zero-touch provisioning with DHCP/TFTP/HTTP/FTP and TR-069/TR-181 with HTTPS
- Multicast analyzer
  - Debugging of live Multicast streams
  - Provides detailed information from MPEG-TS and RTP layers
- Host simulation tool
- Adjustable outage portal
- 64-bit port counters
  - Unicast
  - Packet size (64, 128, 256, 512, 1024, 1518, 9k)
  - Multicast
  - Broadcast
  - FCS error
  - Align error
  - Undersized
  - Fragmented
  - Too long
  - Good byte
  - Bad byte
  - Overflow
  - Filtered
  - Collisions
- SNMP v1/v2
  - IF-MIB2
  - Icotera private MIB
  - Community protected
  - Traps
- 802.3ah OAM
  - Link performance monitoring
  - Fault detection
  - Loopback testing
- Automatic firmware and configuration update (polling)
- Dual bank firmware w/ fail-safe upgrading

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 6.7W
- Power consumption in idle state: 1.9W
- Operating temperature: 5°C – 45°C
- Storage temperature: 5°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 233 x 162 x 41 mm (W x H x D)
- WAN LED - Connection status
- VoIP LEDs - Registration status
- CATV LED - Signal status
- LAN status LEDs (link/traffic, duplex) per interface

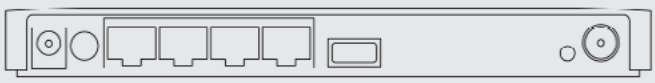
FIBER TERMINATIONS

- Slide-on mechanism for easy installation (optional)
- FTU support for:
  - Gas block unit (sold separately)
  - WDM filter (sold separately)
- Blind cover for FTU (optional)

INCLUDED IN THE BOX

- CPE
- 12V PSU adapter
- 2 x label with SN
- FTU (optional)

i6400 Residential Switch
Configuration possibilities



Gateway Interface Configurations:

Model	Uplink	LAN	USB	CATV	Bottom
i6401	BX20	4x	1x	1x	FTU / Patch
i6405	BX20	4x	1x		FTU / Patch
i6407	RJ45/SFP	4/5x	1x		Patch (Roll-up)

NOTE: Please contact Sales for further details on information listed and feature requests.

GPON ONT

i5205

Residential Open Access ONT

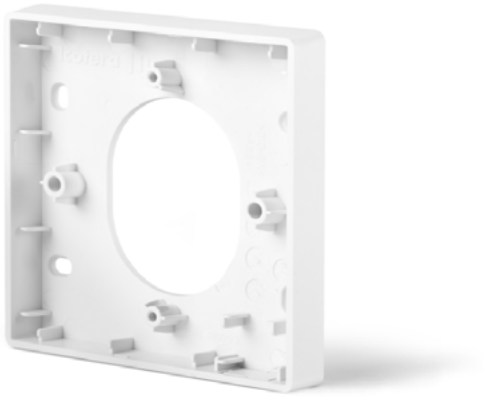
The Icotera i5205 residential ONT is designed as a long-term GPON termination point in a two-box installation. Optional VoIP and CATV, ITU-T OMCI standards compliant provisioning, a vendor independent approach and easy installation together with Icotera's focus on design and usability, make the i5205 an obvious choice for GPON fiber termination.

- Aesthetic design
- Unique slide-on mechanism
- Flexible FTU with in-wall installation option
- Vendor independent provisioning and management
- Lowest Total Cost of Ownership
- Designed for long lifetime installations

Full Flexibility

Together with the vendor independent provisioning and management, the i5205 creates the standards setting for a residential Open Access ONT. For installation with in-wall fiber termination within the standard wall-can, the i5205 is hiding all sensitive fiber termination and splicing inside the wall secured with the uniquely designed FTU, exposing only customer essential interfaces. The alternative scenario is without FTU as in a common patch installation, where the ONT is directly mounted on the wall.

FTU installation



Wall plate

i5205 Residential Open Access ONT

FEATURES

- Vendor-independent GPON ONT
- Hardware forwarding
- Long-lifetime standard interfaces
- Protocol transparent forwarding

NETWORK COMMUNICATION

PON INTERFACE

- GPON 2.488/1.244Gbps (DS/US)
- Wavelength: TX: 1310nm, RX: 1490nm
- G.984.1,2,3,4,5 compliant
- G.988 compliant
- Multi-vendor support
- Forward Error Correction (FEC)
- Ethernet GEM support
- AES encryption
- Dying gasp
- Class B+ optics

LAN INTERFACE

- 1 x 1G LAN
- Auto-negotiation for speed and duplex
- Integrated cable tester, detects:
  - Short
  - Open
  - Impedance mismatch
  - Cable length

LAYER 2

- 64 byte forwarding at line rate
- Jumbo 9k packets
- Forwarding up to 256 MAC addresses
- VLAN QinQ support
- VLAN 802.1ad support
- Transparent IPv6 forwarding
- Multicast support

QoS

- Support DBA in SR and NSR modes
- Support for Strict Priority and Weighted Fair Queuing
- Support for TCONTs 1 - 5
- Support up to 32 T-CONTs
- 8 Upstream/Downstream Queues configurable via OMCI
- Class of Service Based on VLAN-ID, 802.1p
- Marking/Remarking of 802.1p
- Marking/Remarking of DSCP/ToS

CATV (OPTIONAL)

OPTICAL PARAMETERS

- Input wavelength: 1550nm - 1560nm
- Operating optical input power: -10dBm - 0dBm
- Optical connector: SC/APC
- WDM filter: present

RF PARAMETERS

- RF output impedance 75Ω
- Frequency range: 45Mhz - 890MHz
- Slope (maximum): 5dB
- RF output level (4% OMI, -8dBm - 0dBm): 80 ± 2dBμV
- CNR ≥ 45dB
- CSO ≥ 60dB
- CTB ≥ 60dB
- Management: via OMCI

VoIP (OPTIONAL)

- 1 x POTS line
- BS 6312 compliant socket
- SIP (RFC3261) over IPv4
- 3 REN support
- DTMF signaling - SIP INFO - Inband
- Auto - RFC 2833
- Caller ID support (DTMF/FSK)
- CLIR
- Advanced dialplan
- Class 5 services:
  - Forward all calls
  - Forward on busy
  - Forward on no answer
  - Call waiting
- Codecs:
  - G.711A a-law
  - G.711U μ-law
  - G.722
  - G.729AB
- Codec negotiation
- Modem/Fax detection

MANAGEMENT & MONITORING

- Zero-touch configuration with OMCI provisioning
- Dual bank firmware w/ fail-safe upgrading
- Hardware watchdog

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 4.4W
- Power consumption in idle state: 2.7W
- Operating temperature: 5°C – 45°C
- Storage temperature: 5°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 100 x 100 mm (W x H)
- Area for visible PON label right side - 16 x 30 mm for optional PON SN label
- Product SN, PON SN, FW version and MAC address label - ONT bottom
- PON LED - Connection status
- LAN LED - Link status

FIBER TERMINATIONS

- Slide-on-mechanism for easy installation
- Mountable on Schuko in-wall installation

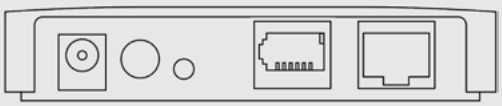
INCLUDED IN THE BOX

- ONT
- 12V PSU adapter
- 2 x label with PON SN
- FTU for Schuko installation

SUPPORTED PLATFORMS

- Nokia ISAM 7330/7360
- Huawei MA5600/5800
- ZTE C320
- Other specific platforms supported on a per integrational basis, contact sales for more information.

i5205 Residential GPON ONT
Configuration possibilities



Gateway Interface Configurations:

Model	LAN	VoIP	CATV	Termination	Size (mm)
i5205-00	1x1G	optional	optional	FTU	100x100

NOTE: Please contact Sales for further details on information listed and feature requests.

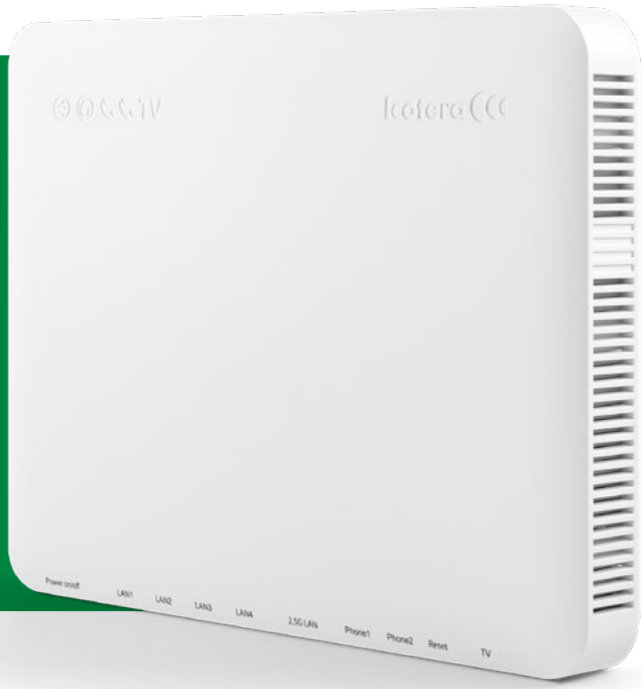
GPON FTTH ONT

i5900-series

Residential ONT + Multi-Service Gateway for wholesales network operators

The Icotera i5900 residential ONT integrates optical Ethernet-based gigabit data transmission with Layer 2-4 functionality, VoIP, and optional CATV.

- Ease of use & installation
- OLT vendor independent
- Designed for Open Access / Wholesales deployment
- Award-winning industrial design



Powerful hardware platform

The Icotera i5900 Fiber-to-the-Home (FTTH) Multi-Service Gateway demonstrates its great strength by bringing together a wide feature set and flawless performance. Its foundation is built on a powerful, cutting-edge dual-core architecture. This, paired with an ASIC for packet forwarding, ensures the platform is always ready to cope with additional tasks while processing VoIP, Gigabit routing of IPv4 with NAT, IPv6 and stateful filtering, traffic switching/bridging.

Innovative feature set

The i5900 provides exceptional Layer 2 functionality that can effortlessly handle 16 bridging instances, exceptional Layer 2 and Layer 3 functionality, multiple WAN interfaces, PPPoE and in-band secure management. The CATV AGC receiver offers broadband cable-television services to the subscriber with seamless monitoring and configuration of the power levels. As an optional feature, this fiber gateway offers a complete and customizable filter solution with low-pass filters for individual RF channel plans.

Ease of control

A great variety of management protocols (e.g. OMCI v2, SNMP v1/v2, syslog, SSH, Telnet and TR-069) is integrated and supported, which guarantees effortless control over the i5900. Paired with our fail-proof, zero-touch auto provisioning mechanism, they provide easy and trouble-free daily operations.
To guarantee effortless firmware roll-outs, in harsh network environments, the i5900 also comes with dual-bank firmware.

i5900 Residential ONT

FEATURES

- Best-in-class Wi-Fi solution
- Vendor-independent
- Award-winning industrial design
- Low power consumption
- Optional operator branding

NETWORK COMMUNICATION

PON INTERFACE

- GPON 2.488/1.244Gbps (DS/US)
- Wavelength: Tx: 1310nm, Rx: 1490nm
- G.984.1,2,3,4,5 compliant
- G.988 compliant
- Multi-vendor support
- Forward Error Correction (FEC)
- Ethernet GEM support
- AES encryption
- Dying gasp
- Class B+ optics

LAN INTERFACES

- 1 x 2.5G LAN
- 4 x 1G LAN
- Auto-negotiation for speed and duplex
- Integrated cable tester, detects:
  - Short
  - Open
  - Impedance mismatch
  - Cable length

LAYER 2

- 16 bridge instances
- 64 byte forwarding at line rate
- Jumbo 9k packets
- IGMP v1/v2/3 snooping
- Transparent IPv6 forwarding
- Forwarding up to 2K MAC addresses
- Multicast support
- VLAN Translation
- VLAN 802.1Q support
- Port mirroring

LAYER 3

- Virtual interfaces
- Multiple WAN interfaces in one router
- 64 byte forwarding at line rate with routing/NAT
- IGMP v1/v2 proxy with fast-leave and monitoring
- Stateful Firewall
- IPv4 - SNAT, DNAT, DMZ - DNS proxy - DHCP client and server
- IPv6 - prefix delegation
- PPPoE (termination)
- 32K NAT/NAPT flows
- SW connection tracking
- RTSP stateful proxy
- Protocol helpers for: SIP, RTSP, FTP, TFTP, PPTP, L2TP and IPSec
- Guest access
- Input wavelength: 1550nm - 1560nm
- Input level range: -9dBm - 2dBm
- Optical connector: SC/APC

QoS

- Support for Strict Priority and Weighted Fair Queuing
- Support for TCONTs 1 - 5
- Support up to 32 T-CONTs
- 8 Upstream/Downstream Queues (configurable via OMCI)
- Class of Service Based on VLAN-ID, 802.1p (configurable via OMCI)
- Marking/Remarking of 802.1p (configurable via OMCI)
- Marking/Remarking of DSCP/ToS (configurable via OMCI)

CATV

Optical parameters

- Input wavelength: 1550nm - 1560nm
- Input level range: -9dBm - 2dBm
- Optical connector: SC/APC
- WDM filter: present

RF parameters

- RF output impedance 75Ω
- Frequency range pass-band: 45Mhz - 890MHz
- Frequency range Filter1 : 430Mhz - 890MHz
- Frequency range Filter2 : 590Mhz - 890MHz
- Slope (maximum): 5dB
- RF output level (2.5% - 4% OMI, -8dBm - 0dBm): 80 ± 2dBμV
- RF output level @ AGC-high mode (2.5% - 4% OMI, -6dBm - 0dBm): 85 ± 2dBμV
- CNR ≥ 45dB
- CSO ≥ 60dB
- CTB ≥ 60dB
- Management: via OMCI

VoIP

- 2 separate POTS lines SIP (RFC3261)
- 5 REN support
- DTMF signaling - SIP INFO - Inband - Auto - RFC 2833
- Caller ID support (DTMF/FSK)
- CLIR
- Advanced dialplan
- B-Number manipulation
- Class 5 services - Forward all calls - Forward on busy - Forward on no answer - Call waiting
- Codecs: G.711A a-law - G.711U μ-law - G.722 - G.729
- Codec negotiation
- Modem/Fax detection
- G.165 Echo Cancellation

MANAGEMENT & MONITORING

- Shared or separate IP interface for management
- L1 and L3 filters for all local services
- SSHv2 with key authentication
- Telnet with authentication
- End-user oriented Web interface (configurable) - LAN network - Port forwarding, NAT loopback, DMZ, DynDNS, Status and monitoring
- Zero-touch provisioning with DHCP/TFTP/HTTP/FTP or TR-069
- TR-069 with TLS, supporting - TR-104 (VoIP) - TR-181 (Network)
- SNMP v1/v2
- CLI with auto-completion
- Extensive debug possibilities
- Packet dumping
- All settings stored locally in flash
- Automatic firmware and configuration update (polling)
- Dual bank firmware w/ fail-safe upgrading
- LED brightness configurable by the operator and/or end-user
- Hardware watchdog
- Wake-on-LAN for Web UI and CLI

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 11W
- Power consumption in idle state: 5.5W
- Operating temperature: 5°C – 45°C
- Storage temperature: 5°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 190 x 150 x 48 mm (W x H x D)
- PON LED - Connection status
- LAN LED - Link status
- VoIP LEDs - Registration status
- CATV LED - Signal status
- LAN status LEDs (link/traffic, duplex) per interface
- LED auto off after timeout period

FIBER TERMINATIONS

- Slide-on mechanism for easy installation
- FTU support for - Gas block unit (sold separately) - WDM filter (sold separately)
- Blind cover for FTU (optional)

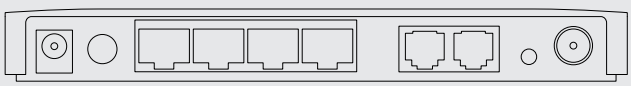
INCLUDED IN THE BOX

- ONT
- 12V PSU adapter
- 2 x label with PON SN
- FTU

SUPPORTED PLATFORMS

- Nokia ISAM 7330/7360
- ZTE C320

i5900 Residential ONT
Configuration possibilities



Gateway Interface Configurations:

Model	Uplink	LAN ports	POTS ports	USB 2.0 ports	USB 3.0 ports	Wi-Fi	Antennas	CATV output	Gateway top	Gateway bottom
i5901-00	GPON MSGW	4x1G 1x2.5G	2	0	0	None	None	High output	Printed English port + logo	FTU

NOTE: Please contact Sales for further details on information listed and feature requests.

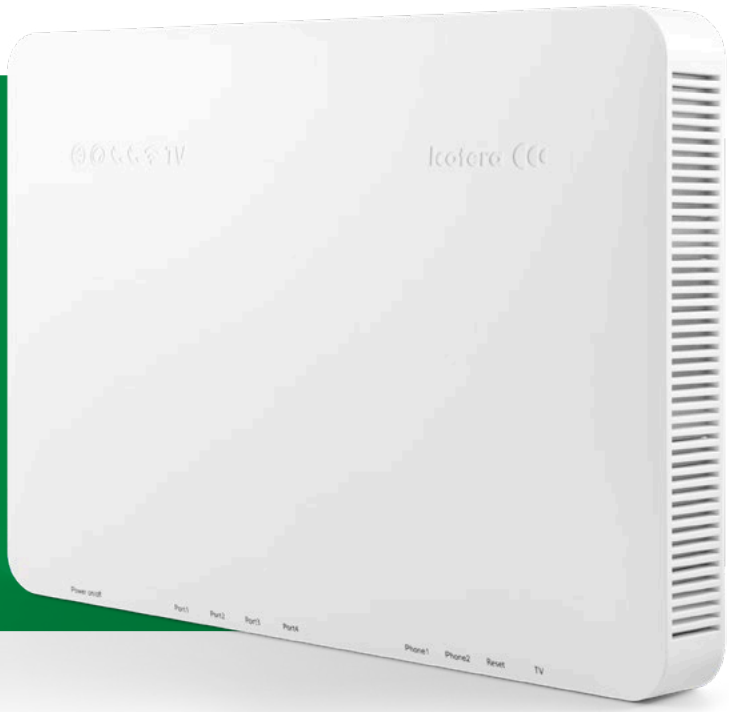
P2P FTTH GATEWAY

i6900-series

Residential Multi-Service Gateway

The Icotera i6900 Multi-Service Gateway integrates optical Ethernet-based gigabit data transmission with Layer 2-4 functionality, and CATV.

- Ease of use & installation
- Vendor independent
- Multi-Service Gateway for wholesales network operators
- Award-winning industrial design



Powerful hardware platform

The Icotera i6900 Fiber-to-the-Home (FTTH) Multi-Service Gateway demonstrates its great strength by bringing together a wide feature set and flawless performance. Its foundation is built on a powerful, cutting-edge dual-core architecture. This, paired with an ASIC for packet forwarding, ensures the platform is always ready to cope with additional tasks while processing VoIP, Gigabit routing of IPv4 with NAT, IPv6 and stateful filtering, traffic switching/bridging.

Innovative feature set

The i6900 provides exceptional Layer 2 functionality that can effortlessly handle 16 bridging instances, multiple WAN interfaces, PPPoE and in-band secure management. The CATV AGC receiver offers broadband cable-television services to the subscriber with seamless monitoring and configuration of the power levels. As an optional feature, this FTTH gateway offers a complete and customizable filter solution with low-pass filters for individual RF channel plans.

Ease of control

A great variety of management protocols (e.g. SNMP v1/v2, syslog, SSH, Telnet and TR-069) is integrated and supported, which guarantees effortless control over the i6900. Paired with our fail-proof, zero-touch auto provisioning mechanism, they provide easy and trouble-free daily operations. To guarantee trouble-free firmware roll-outs in harsh network environments, the i6900 also comes with dual-bank firmware.

i6900 Multi-Service Gateway

FEATURES

- Best-in-class Wi-Fi solution
- Vendor-independent
- Award-winning industrial design
- Low power consumption
- Optional operator branding

NETWORK COMMUNICATION

PON INTERFACE

- Single-mode fiber (ITU-T G.652) SC/PC connector
  - 100BaseBX10/20 compliant
  - 1000BaseBX10/20 compliant
- Tx: 1310nm, Rx: 1480nm–1600nm
- Full-duplex transmission
- Operating distance: 20km
- Transmit power: -7dBm – -2dBm
- Receive sensitivity: -3dBm – -23dBm
- Class 1 laser product
- Auto detection of 100Mbps or Gigabit

LAN INTERFACES

- 4 x 1G LAN
- Auto-negotiation for speed and duplex
- Integrated cable tester, detects:
  - Short
  - Open
  - Impedance mismatch
  - Cable length

LAYER 2

- 16 bridge instances
- 64 byte forwarding at line rate
- Jumbo 9k packets
- IGMP v1/v2 snooping
- Transparent IPv6 forwarding
- Forwarding up to 2K MAC addresses
- Multicast support
- VLAN Translation
- VLAN 802.1Q support
- Port mirroring

LAYER 3

- Virtual interfaces
- Multiple WAN interfaces in one router
- 64 byte forwarding at line rate with routing/NAT
- IGMP v1/v2 proxy with fast-leave and monitoring
- Stateful firewall
- IPv4 - SNAT, DNAT, DMZ - DNS proxy - DHCP client and server
- IPv6 - prefix delegation
- PPPoE (termination)
- 32K NAT/NAPT flows
- SW connection tracking
- RTSP stateful proxy
- Protocol helpers for: SIP, RTSP, FTP, TFTP, PPTP, L2TP and IPSec
- Guest Access

QoS

- Support for Strict Priority and Weighted Fair Queuing (available for Layer2 mode)
- 8 Upstream/Downstream Queues (available for Layer2 mode)
- Class of Service Based on VLAN-ID, 802.1p (available for Layer2 mode)
- Marking/Remarking of 802.1p (available for Layer2 mode)
- Marking/Remarking of DSCP/ToS (available for Layer2 mode)

CATV (OPTIONAL)

OPTICAL PARAMETERS

- Input wavelength: 1550nm - 1560nm
- Input level range: -9dBm - 2dBm
- Optical connector: SC/APC

RF PARAMETERS

- RF output impedance 75Ω
- Frequency range pass-band: 45Mhz - 890MHz
- Frequency range Filter1: 430Mhz - 890MHz
- Frequency range Filter2: 590Mhz - 890MHz
- Slope (maximum): 5dB
- RF output level (2.5% - 4% OMI, -8dBm - 0dBm): 80 ± 2dBμV
- RF output level @ AGC-high mode (2.5% - 4% OMI, -6 dBm - 0dBm): 85 ± 2dBμV
- CNR ≥ 45dB
- CSO ≥ 60dB
- CTB ≥ 60dB
- Management: via OMCI

VoIP

- 2 separate POTS lines SIP (RFC3261)
- 5 REN support
- DTMF signaling - SIP INFO - Inband - Auto - RFC 2833
- Caller ID support (DTMF/FSK)
- CLIR
- Advanced dialplan
- B-Number manipulation
- Class 5 services - Forward all calls - Forward on busy - Forward on no answer - Call waiting
- Codecs: G.711A a-law - G.711U μ-law - G.722 - G.729
- Codec negotiation
- Modem/Fax detection
- G.165 Echo Cancellation

MANAGEMENT & MONITORING

- Shared or separate IP interface for management
- L1 and L3 filters for all local services
- SSHv2 with key authentication
- Telnet with authentication
- End-user oriented Web interface (configurable) - LAN network - Port forwarding, NAT loopback, DMZ, DynDNS, Status and monitoring
- Zero-touch provisioning with DHCP/TFTP/HTTP/FTP or TR-069
- TR-069 with TLS, supporting - TR- 104 (VoIP) - TR-181 (Network)
- SNMP v1/v2
- CLI with auto-completion
- Extensive debug possibilities
- Packet dumping
- All settings stored locally in flash
- Automatic firmware and configuration update (polling)
- Dual bank firmware w/ fail-safe upgrading
- LED brightness configurable by the operator and/or end user
- Hardware watchdog
- Wake-on-LAN for Web UI and CLI

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 16.7W
- Power consumption in idle state: 5.5W
- Operating temperature: 5°C – 45°C
- Storage temperature: 5°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 233 x 162 x 41 mm (W x H x D)
- WAN LED - Connection status
- LAN LED - Link status
- VoIP LEDs - Registration status
- CATV LED - Signal status
- LAN status LEDs (link/traffic, duplex) per interface
- LED auto off after timeout period

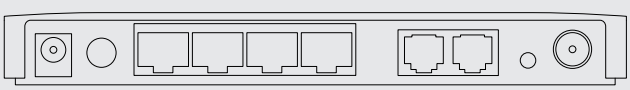
FIBER TERMINATIONS

- Slide-on mechanism for easy installation
- FTU support for - Gas block unit (sold separately) - WDM filter (sold separately)
- Blind cover for FTU (optional)

INCLUDED IN THE BOX

- CPE
- 12V PSU adapter
- 2 x label with PON SN
- FTU

i6900 Multi-Service Gateway Configuration Possibilities



Gateway Interface Configurations:

Model	Uplink	LAN ports	POTS ports	USB 2.0 ports	USB 3.0 ports	Micro SD card	Wi-Fi	Antennas	CATV output	Gateway top	Gateway bottom
i6901-20	P2P MSGW	4xGE	2x	0	0	No	None	None	1 x	Printed: English ports + logo	FTU
i6902-20	P2P MSGW	4xGE	-	0	0	No	None	None	1 x	Printed: English ports	FTU
i6905-20	P2P MSGW	4xGE	2x	0	0	No	None	None	-	Printed: English ports + logo	FTU

NOTE: Please contact Sales for further details on information listed and feature requests.

RESIDENTIAL XGS-PON ONT

i7208

Open Access XGS-PON ONT

BBF.247 XGS-PON CERTIFIED

The Icotera i7208 residential ONT is designed as a long-term XGS-PON termination point in a two-box installation. The ITU-T OMCI standards compliant provisioning, a vendor independent approach, and easy installation together with Icotera's focus on design and usability, make the i7208 an obvious choice for XGS-PON fiber termination.

- Aesthetic design
- Vendor independent provisioning and management
- Lowest Total Cost of Ownership
- Designed for long lifetime installations
- 2.5 Gigabit fiber termination
- BBF.247 certification

Future Proof Solution

The i7208 series is an XGS-PON Layer 2 termination device with a single 2.5Gbps LAN port. This solution makes it cost-effective for operators to implement two-box installations, as the i7208 is compatible with any Layer 3 device.

The ONT supports securely encrypted and signed FW, environmentally friendly materials, and is certified with the BBF.247 certification, fulfilling the latest test plans developed by the Broadband Forum.

Icotera

i7208 Residential XGS-PON ONT

FEATURES

- Vendor-independent XGS-PON ONT
- Hardware forwarding
- Long-lifetime standard interfaces
- Protocol transparent forwarding

NETWORK COMMUNICATION

PON INTERFACE

- WDM filter included (support for CATV and GPON signal coexistence)
- ITU-T G.9807.1 compliant
- Wavelength: US 1260nm - 1280nm, DS 1575nm - 1580nm
- 10Gbit/s symmetric line rate
- G.988 compliant
- Forward Error Correction (FEC)
- AES encryption
- Dying gasp
- Class N1 optics

LAN INTERFACE

- 1 x 2.5G LAN
- Auto-negotiation for speed and duplex

LAYER 2

- 64 byte forwarding at line rate
- Jumbo 9k packets
- Forwarding up to 256 MAC addresses
- VLAN QinQ support
- VLAN 802.1ad support
- Transparent IPv6 forwarding
- Multicast support

QoS

- Support DBA in SR and NSR modes
- Support for Strict Priority and Weighted Fair Queuing
- Support for TCONTs 1 - 5
- Support up to 32 T-CONTs
- 8 Upstream/Downstream Queues configurable via OMCI
- Class of Service Based on VLAN-ID, 802.1p
- Marking/Remarking of 802.1p
- Marking/Remarking of DSCP/ToS

MANAGEMENT & MONITORING

- Zero-touch configuration with OMCI provisioning
- Dual bank firmware w/ fail-safe upgrading
- Hardware watchdog

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 4.5W
- Power consumption in idle state: 3.5W
- Operating temperature: 5°C – 45°C
- Storage temperature: 5°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 130 x 130 mm (W x H)
- Area for visible PON label right side - 16 x 30 mm for optional PON SN label
- Product SN, PON SN, FW version and MAC address label - ONT bottom
- PON LED - Connection status
- LAN LED - Link status

FIBER TERMINATIONS

- Wall mountable

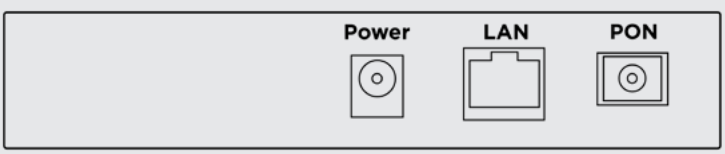
INCLUDED IN THE BOX

- ONT
- 12V PSU adapter
- 2 x label with PON SN

SUPPORTED PLATFORMS

- Nokia ISAM 7330/7360
- Huawei MA5600/5800
- Other specific platforms supported on a per integrational basis, contact sales for more information.

i7208 Residential XGS-PON ONT



ONT Interface Configuration:

Model	LAN	Termination
i7208-00	1 x 2.5G	Patch

NOTE: Please contact Sales for further details on information listed and feature requests.

XGS-PON FTTH ONT

i7400-series

Residential ONT for wholesales network operators

BBF.247 XGS-PON CERTIFIED

The Icotera i7400 residential ONT integrates optical Ethernet-based gigabit data transmission with Layer 2 functionality and optional CATV.

- Ease of use & installation
- OLT vendor independent
- Designed for Open Access / Wholesales deployment
- Award-winning industrial design
- 10G LAN port
- BBF.247 certification

Future Proof Solution

The i7400 series is an XGS-PON L2 termination with full port flexibility and multi-10G + multi-1G ports. This solution allows operators to implement wholesale solutions in a flexible way without compromising on performance and develop a future-proof home setup. The ONT supports secure encrypted and signed FW, environmentally friendly materials, and is certified with the BBF.247 certification, fulfilling the latest test plans developed by the Broadband Forum.

Ease of Assembly

The i7400 series comes with the universal Fiber Termination Unit from Icotera that supports all types of fiber installation methodologies and facilitates the use of single or dual-fiber in both cable and tube. The FTU set consists of only 2 parts. The top cover simply locks on the FTU base and stays firmly secured. There is no need to use screws, pins, or other separate elements to join both FTU parts. SCA caps are integrated with the cover - no risk of losing separate caps. Pre-cut kerfs simplify making openings for fiber - no need to drill holes in sides of the FTU cover.

FTU installation

Patch installation

Icotera

i7400 Residential ONT

FEATURES

- Vendor-independent XGS-PON ONT
- Hardware forwarding
- Long-lifetime standard interfaces
- Protocol transparent forwarding

NETWORK COMMUNICATION

PON INTERFACE

- WDM filter included (support for CATV and GPON signal coexistence)
- ITU-T G.9807.1 compliant
- Wavelength: US 1260nm - 1280nm, DS 1575nm - 1580nm
- 10Gbit/s symmetric line rate
- G.988 compliant
- Forward Error Correction (FEC)
- AES encryption
- Dying gasp
- Class N1 optics

LAN INTERFACES

- 1 x 10/5/2.5G LAN
- 4 x 1G LAN
- Auto-negotiation for speed and duplex

LAYER 2

- 64 byte forwarding at line rate
- Jumbo 9k packets
- Forwarding up to 256 MAC addresses
- VLAN QinQ support
- VLAN 802.1ad support
- Transparent IPv6 forwarding
- Multicast support

QoS

- Support DBA in SR and NSR modes
- Support for Strict Priority and Weighted Fair Queuing
- Support for TCONTs 1 - 5
- Support up to 32 T-CONTs
- 8 Upstream/Downstream Queues configurable via OMCI
- Class of Service Based on VLAN-ID, 802.1p
- Marking/Remarking of 802.1p
- Marking/Remarking of DSCP/ToS

CATV (OPTIONAL)

Optical parameters

- Input wavelength: 1550nm - 1560nm
- Input level range: -9dBm - 2dBm
- Optical connector: SC/APC
- WDM filter: present

RF parameters

- RF output impedance 75Ω
- Frequency range pass-band: 45Mhz - 890MHz
- Frequency range Filter1: 430Mhz - 890MHz
- Frequency range Filter2: 590Mhz - 890MHz
- Slope (maximum): 5dB
- RF output level (4% OMI, -8dBm - 0dBm): 80 ± 2dBμV
- CNR ≥ 45dB
- CSO ≥ 60dB
- CTB ≥ 60dB
- Management: via OMCI

MANAGEMENT & MONITORING

- Zero-touch configuration with OMCI provisioning
- Dual bank firmware w/ fail-safe upgrading
- Hardware watchdog

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 5.5W
- Power consumption in idle state: 3.6W
- Operating temperature: 5°C – 45°C
- Storage temperature: 5°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 190 x 150 x 48 mm (W x H x D)
- Area for visible PON label right side - 16 x 30 mm for optional PON SN label
- Product SN, PON SN, FW version and MAC address label - ONT bottom
- PON LED - connection status
- LAN LED - link status

FIBER TERMINATIONS

- Slide-on mechanism for easy installation

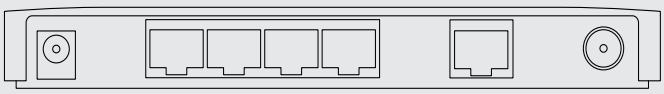
INCLUDED IN THE BOX

- ONT
- 12V PSU adapter
- FTU
- 2 x label with PON SN

SUPPORTED PLATFORMS

- Nokia ISAM 7330/7360
- Huawei MA5600/5800
- Other specific platforms supported on a per integrational basis, contact sales for more information.

i7400 Residential ONT
Configuration possibilities



Gateway Interface Configurations:

Model	Uplink	1G LAN port	10G LAN port	CATV output	Installation
i7404-00	XGS-PON	4	1	High output	FTU
i7408-00	XGS-PON	4	1	-	FTU

NOTE: Please contact Sales for further details on information listed and feature requests.

Wi-Fi 6 ETHERNET ROUTER

i4880-series

Residential Wi-Fi 6 Router

The i4880 ethernet gateway takes performance to the next level with 2.5 Gbps IPv4 and IPv6 routing engine and premium Wi-Fi 6 with a configuration of 8x8 + 4x4. Special attention has been put into creating a beautiful, minimalistic yet fully flexible design, which fully matches the modern home. Full backward compatibility for both WAN/LAN, VoIP and Wi-Fi makes the i4880 the obvious choice for a high-end residential router for all serious service providers.

- Premium Wi-Fi 6 configuration
- Non-blocking 2.5 Gbps architecture
- Modern Scandinavian design
- Fully managed

Model: i4883

Flexible installation

The i4880 is designed for all types of installations, both wallmount and free standing. In any installation the i4880 allows for practical cable management, easy access to user-configurable buttons and intuitive LEDs for easy troubleshooting.

Easy cable management

With all interfaces hidden practically on the back of the i4880, all cables can be managed in an easy way regardless of the installation method. Ports are coloured for intuitive installation for first-time users.

i4880 Residential Wi-Fi 6 Router

FEATURES

- Enterprise 8x8+4x4 Wi-Fi 6 configuration
- Vendor-independent
- Non-blocking 2.5 Gbps architecture
- Wi-Fi Data Link speed above 8Gbps
- Low power consumption
- Optional operator branding
- Customized firmware

NETWORK COMMUNICATION

WAN INTERFACE

- 1 x RJ45 10/100/1000/2500 BaseT(x)
- Full-duplex transmission
- Auto-negotiation for speed and duplex

LAN INTERFACE

- 2 x RJ45 10/100/1000 BaseT(x) + 1 x RJ45 10/100/1000/2500 BaseT(x)
- Auto-negotiation for speed and duplex
- Jumbo packets
- Integrated cable tester, detects:
  - Short
  - Open
  - Impedance mismatch
  - Cable length

LAYER 2

- 16 bridge instances
- 64 byte forwarding at line rate
- Jumbo 9k packets
- IGMP v1/v2 snooping
- 802.1p marking
- VLAN support
- 802.1x
- Wi-Fi support
- Transparent IPv6 forwarding
- DHCP relay with option 82
- 2k address entries
- Rate-limit per switch port
- Flexible L1 and L3 Access Control List

Wi-Fi INTERFACES

- Advanced WMM designed for longrange and resilient video and voice delivery
- Authentication methods - Open - WPA2 - WPA3
- Up to 8 SSIDs
- MAC filtering
- Beamforming
- 802.11v band steering and client roaming
- Neighbour scanning
- Advanced channel selection
- Software Tx power control
- Wireless Client Isolation
- Meshing - built-in controller for i3560 Access Points

802.11ax Wi-Fi

- 802.11AX 8x8:8 5GHz + 4x4:4 2.4GHz
- BW support: 20MHz, 40MHz, 80MHz
- Modulation support: MCS 0-11
- Downlink MU-MIMO and OFDMA
- Up to 1024QAM modulation
- Support for unequal MCS
- Support for LDPC, STBC
- Support Target Wake Time

802.11ac Wi-Fi

- 802.11AC Wave-2 8x8:8
- BW support: 20MHz, 40MHz, 80MHz, 160MHz
- MU-MIMO
- Support for LDPC, STBC
- Modulation support: MCS 0-11
- Up to 1024QAM modulation

802.11bgn Wi-Fi

- 802.11B/G/N 4x4:4
- MIMO
- Modulation support: MCS 0-76

LAYER 3

- Virtual interfaces
- Multiple WAN interfaces in one router
- 64 byte forwarding at line rate with routing/NAT
- IGMP v1/v2 proxy with fast-leave and monitoring
- Stateful IPv4 and IPv6 Firewall
- Supports routing for IPv4 and IPv6
- IPv4 - SNAT, DNAT, DMZ - DNS proxy - DHCP client and server
- IPv6 - Prefix delegation
- PPPoE (termination)
- 32k HW connection tracking
- RTSP stateful proxy
- Protocol helpers for: SIP, RTSP, FTP, TFTP, PPTP, L2TP and IPSec
- Guest Access

USB

- 1 x USB 2.0 host port

VoIP - Optional

- 2 separate POTS lines SIP (RFC3261)
- 5 REN support
- DTMF signalling - SIP INFO - Inband - Auto - RFC 2833
- Caller ID support (DTMF/FSK)
- CLIR
- Advanced dialplan
- B-Number manipulation
- Class 5 services - Forward all calls - Forward on busy - Forward on no answer - Call waiting
- Codecs: G.711A a-law - G.711U μ-law - G.722 - G.729
- Codec negotiation
- Modem/Fax detection
- G.165 Echo Cancellation

MANAGEMENT & MONITORING

- Shared or separate IP interface for management
- Monitoring via Telemetry Streaming (ICONS)
- L1 and L3 filters for all local services
- SSHv2 with key authentication
- Optional Telnet with authentication
- End-user oriented Web interface (configurable) - PPPoE WAN - Wi-Fi - Guest network - LAN network - Port forwarding, NAT loopback, DMZ, DynDNS, Status and monitoring
- Zero-touch provisioning with DHCP and TR-069
- TR-069 with TLS, supporting - TR-104 (VoIP) - TR-181 (Network)
- SNMP v1/v2
- Firmware upgrade from USB drive
- Extensive debug possibilities
- Packet dumping
- All settings stored locally in flash
- Dual bank firmware w/ fail-safe upgrading
- LED brightness configurable by the operator and/or end user
- Hardware watchdog
- Wake-on-LAN for Web UI and CLI

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 31.7W
- Power consumption in idle state: 7.5W
- Operating temperature: 5°C – 45°C
- Storage temperature: -20°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

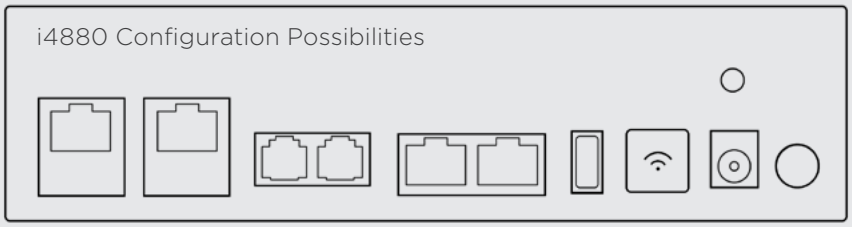
CASING

- Size: 220x160x60 mm (W x H x D)
- Weight: 858 g variant without VoIP, 883 g with VoIP
- Front LEDs configurable by operator and/or end user: Power/WAN status (link/provisioning) - VoIP ports - Wi-Fi
- LAN status LEDs (link-speed/traffic, duplex) per interface
- WPS button

INCLUDED IN THE BOX

- CPE
- 12V PSU adapter

i4880 Configuration Possibilities



Gateway Interface Configurations:

Model	Uplink	LAN	USB	POTS	Wi-Fi	Antennas
i4882	100/1000/2500 BaseT(x)	2 x 10/100/1000 BaseT(x) + 100/1000/2500 BaseT(x)	1 x USB 2.0	N/A	Wi-Fi 6	8x8 + 4x4
i4883	100/1000/2500 BaseT(x)	2 x 10/100/1000 BaseT(x) + 100/1000/2500 BaseT(x)	1 x USB 2.0	2x	Wi-Fi 6	8x8 + 4x4

NOTE: Please contact Sales for further details on information listed and feature requests.

WI-FI 5 ETHERNET ROUTER

i4850-series

Residential Router

The Icotera i4850 residential ethernet router integrates Ethernet-based gigabit data transmission with Layer 2-4 functionality, VoIP, 802.11ac & bgn Wi-Fi, and USB 3.0.

- State of the art 4x4 Wave 2 MU-MIMO Wi-Fi
- Ease of use & installation
- Vendor independent
- Award-winning industrial design
- Lowest Total Cost of Ownership

Powerful hardware architecture

The Icotera i4850 ethernet router demonstrates its great strength by bringing together a wide feature set and flawless performance. Its foundation is built on a powerful, cutting-edge dual-core architecture. This, paired with an ASIC for packet forwarding, ensures the platform is always ready to cope with additional tasks while processing VoIP, Gigabit routing of IPv4 with NAT, IPv6 and stateful filtering, traffic switching/bridging and high speed Wi-Fi.

Next generation Wi-Fi solution

With Wi-Fi becoming the preferred communication technology inside the home, the need for fast and stable wireless connections is becoming ever more important. The i4850 delivers not only backwards compatibility with any 802.11a/b/g/n Wi-Fi certified device, but also includes the very latest standard — 802.11ac. With the added 802.11ac Wave 2 solution, the i4850 is capable of delivering 1700+300 Mbps and throughput which combined with MU-MIMO is able to deliver more than 1Gbps in real home and office environment.

Innovative feature set

The i4850 provides exceptional Layer 2 functionality that can effortlessly handle 16 bridging instances, 8 Wi-Fi APs over 2 radios, multiple WAN interfaces, PPPoE and in-band secure management.

Ease of control

A great variety of management protocols (e.g. SNMP v1/v2, syslog, SSH, Telnet and TR-069) is integrated and supported, which guarantees effortless control over the i4850. Paired with our fail-proof, zero-touch auto provisioning mechanism, they provide easy and trouble-free daily operations. To guarantee trouble-free firmware roll-outs, in harsh network environments, the i4850 also comes with dual-bank firmware.

i4850 Residential Router

FEATURES

- Best-in-class Wi-Fi solution
- Vendor-independent
- Award-winning industrial design
- Low power consumption
- Optional operator branding
- Customized firmware

NETWORK COMMUNICATION

WAN INTERFACE

- 1 x RJ45 connector 10/100/1000 Base T(X)
- Full-duplex transmission
- Auto-negotiation for speed and duplex

LAN INTERFACE

- 4 x RJ45 connectors 10/100/1000 Base T(X)
- Auto-negotiation for speed and duplex
- Integrated cable tester, detects:
  - Short
  - Open
  - Impedance mismatch
  - Cable length

LAYER 2

- 16 bridge instances
- 64 byte forwarding at line rate
- Jumbo 9k packets
- IGMP v1/v2 snooping
- 802.1p marking
- 802.1x
- VLAN support
- Wi-Fi support
- Transparent IPv6 forwarding
- DHCP relay with option 82
- 2k address entries
- Rate-limit per switch port
- Flexible L1 and L3 Access Control List

Wi-Fi INTERFACES

- Authentication methods - Open - WEP64 - WEP128 - WPA - WPA2
- MAC filtering
- Advanced channel selection
- Software Tx power control
- Wireless Client Isolation
- Band steering
- Neighbour scanning
- Meshing - built-in controller for i3550 Access Points
- Client roaming
- Airtime management

802.11ac Wi-Fi

- 4x4 Wave 2 MU-MIMO
- 5GHz band w/QAM256 and 80MHz
- Beamforming
- LDPC + STBC

802.11bgn Wi-Fi

- 802.11B/G/N 2x2:2 MIMO
- 2.4GHz band w/QAM64 and 40MHz

LAYER 3

- Virtual interfaces
- Multiple WAN interfaces in one router
- 64 byte forwarding at line rate with routing/NAT
- IGMP v1/v2 proxy with fast-leave and monitoring
- Stateful Firewall
- IPv4 - SNAT, DNAT, DMZ - DNS proxy - DHCP client and server
- IPv6 - Prefix delegation
- PPPoE (termination)
- SW connection tracking
- RTSP stateful proxy
- Protocol helpers for: SIP, RTSP, FTP, TFTP, PPTP, L2TP and IPSec
- Up to 32K NAT/NAPT flows depending on the scenario used (IPv4/DS-Lite/PPPoE/SIP/L2TP)
- Guest Access

USB

- 1 x USB 3.0 host port
- 1 x USB 2.0 host port

QoS

- Support for 8 configurable upstream queues
- Layer 2 and 3 QoS features - Packet classification marking - Queuing - Scheduling - Rate-limiting
- Marking and Queuing w/ 802.1p, ToS, DiffServ classification
- Globally shared rate-limiting queues

VoIP (OPTIONAL)

- 2 separate POTS lines SIP (RFC3261)
- 5 REN support
- DTMF signaling - SIP INFO - Inband - Auto - RFC 2833
- Caller ID support (DTMF/FSK)
- CLIR
- Advanced dialplan
- B-Number manipulation
- Class 5 services - Forward all calls - Forward on busy - Forward on no answer - Call waiting
- Codecs: G.711A a-law - G.711U μ-law - G.722 - G.729
- Codec negotiation
- Modem/Fax detection
- G.165 Echo Cancellation

MANAGEMENT & MONITORING

- Shared or separate IP interface for management
- Monitoring via Telemetry Streaming (ICONS)
- L1 and L3 filters for all local services
- SSHv2 with key authentication
- Telnet with authentication
- End-user oriented web interface (configurable) - PPPoE WAN - Wi-Fi - Guest network - LAN network - Port forwarding, NAT loopback, DMZ, DynDNS, Status and monitoring
- Zero-touch provisioning with DHCP/TFTP/HTTP/FTP or TR-069
- TR-069 with TLS, supporting TR- 104 (VoIP) - TR-181 (Network)
- SNMP v1/v2
- CLI with auto-completion
- Firmware upgrade from USB drive
- Extensive debug possibilities
- Packet dumping
- All settings stored locally in flash
- Automatic firmware and configuration update (polling)
- Dual bank firmware w/ fail-safe upgrading
- LED brightness configurable by the operator and/or end user
- Hardware watchdog
- Wake-on-LAN for Web UI and CLI

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 26.5W
- Power consumption in idle state: 6.8W
- Operating temperature: 5°C – 45°C
- Storage temperature: -20°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

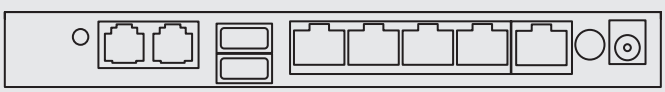
CASING

- Weight: 597g
- Size: 215 x 215 x 50 mm (W x H x D)
- Front LEDs configurable by operator and/or end-user: Power/WAN status (link/traffic/provisioning) - VoIP port 1 - VoIP port 2 - Wi-Fi
- LAN status LEDs (link/traffic, duplex) per interface
- WPS button

INCLUDED IN THE BOX

- CPE
- 12V PSU adapter

i4850 Residential Router
Configuration possibilities



Gateway Interface Configurations:

Model	Uplink	LAN	USB	POTS	Wi-Fi	Antennas
i4850-20	RJ45	4x	2x	2x	802.11b/g/n + 802.11ac	2x2 + 4x4 Int.
i4850-25	RJ45	4x	-	-	802.11b/g/n + 802.11ac	2x2 + 4x4 Int.
i4850-31	RJ45	4x	2x	2x	802.11b/g/n + 802.11ac	2x2 + 4x4 Int.

NOTE: Please contact Sales for further details on information listed and feature requests.

Wi-Fi 6 ACCESS POINT

i3560-series

Residential Wi-Fi Access Point

The i3560 Wi-Fi access point takes performance to the next level with best-in-class Wi-Fi 6, the premium configuration of 5x5 + 4x4 guarantees maximum range and performance in all cases. To interconnect with the rest of the network, the i3560 features two gigabit LAN ports. Special attention has been put into creating a beautiful, minimalistic yet flexible design, which fully matches the modern home.

- Best possible Wi-Fi 6 configuration
- Non-blocking offloaded architecture
- Modern Scandinavian design
- Fully managed

Flexible installation

The i3560 is designed for both wall-mount and free standing. In any configuration it allows for practical cable management, easy access to user-configuration buttons, and intuitive LEDs for easy troubleshooting.

Easy cable management

With all interfaces hidden practically on the back of the i3560, all cables can be managed in an easy way regardless of the installation method. Ports are coloured for intuitive installation for first-time users.

i3560 Residential Wi-Fi 6 Access Point

FEATURES

- Best-in-class Wi-Fi solution
- Award-winning industrial design
- Low power consumption
- Optional operator branding
- Customized firmware

NETWORK COMMUNICATION

LAN INTERFACE

- 2 x RJ45 10/100/1000 BaseT(x)
- Auto-negotiation for speed and duplex
- Jumbo packets

LAYER 2

- 64 byte forwarding at line rate
- Jumbo 9k packets
- IGMP v1/v2 snooping
- Transparent IPv6 forwarding
- 2k address entries

Wi-Fi INTERFACES

- Advanced WMM designed for long-range and resilient video and voice delivery
- Authentication methods - Open - WPA2 - WPA3
- Up to 8 SSIDs
- MAC filtering
- Beamforming
- 802.11kvr band steering and client roaming
- Neighbour scanning
- Advanced channel selection
- Software Tx power control
- Wireless Client Isolation

802.11ax Wi-Fi

- 802.11AX 5x5:5 5 GHz + 4x4:4 2.4GHz
- BW support: 20MHz, 40MHz, 80MHz
- Up to 3002.5Mbps PHY/Data Link Speed
- Modulation support: MCS 0-11
- Downlink MU-MIMO and OFDMA
- Up to 1024QAM modulation
- Support for unequal MCS
- Support for LDPC, STBC
- Support Target Wake Time

802.11ac Wi-Fi

- 802.11AC Wave-2 5x5:5
- BW support: 20MHz, 40MHz, 80MHz, 160MHz
- MU-MIMO
- Support for LDPC, STBC
- Modulation support: MCS 0-11
- Up to 1024QAM modulation

802.11bgn Wi-Fi

- 802.11B/G/N 4x4:4
- MIMO
- Modulation support: MCS 0-76

MANAGEMENT & MONITORING

- Monitoring via Telemetry Streaming (ICONS)
- L1 and L3 filters for all local services
- SSHv2 with key authentication
- End-user oriented web interface (configurable) - Wi-Fi - LAN network - Status and monitoring
- Zero-touch configuration with TR-069 or via the local gateway
- TR-069 supporting - TR-181 (Network)
- All settings are stored locally in flash
- Dual bank firmware w/ fail-safe upgrading

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 26W
- Power consumption in idle state: 13W
- Operating temperature: 0°C – 45°C
- Storage temperature: -20°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

CASING

- Size: 150 x 150 x 30 mm (W x H x D)
- Front LED configurable by operator and/or end user: Power/WAN status (link/provisioning)
- LAN status LEDs (link-speed/traffic, duplex) per interface
- LED auto off
- WPS button

INCLUDED IN THE BOX

- CPE
- 12V PSU adapter

WI-FI 5 ACCESS POINT

i3550-series

Residential Access Point

The Icotera i3550 is a Wi-Fi Access Point, repeater, Ethernet and wireless bridge. It delivers 1733 (4x4) + 300 (2x2) Mbps Wi-Fi throughput and includes the latest 4x4:4 802.11ac Wave 2 & 2x2:2 bgn Wi-Fi standard.

- State of the art 4x4 Wave 2 MU-MIMO Wi-Fi with multiple Wi-Fi access points, client roaming, beamforming, and band steering
- Ease of use & installation
- Vendor independent
- Award-winning industrial design
- Lowest Total Cost of Ownership

Remote management
CWMP (TR-069, TR-181) support. Also supports local Web UI, configuration by the local gateway.

2 Gigabit LAN ports
With full IGMP and multicast support to allow for easy in-home installation and network expansion.

Easy and simple installation
Designed for installations by end-users, it's plug n' play!

Expand the wireless home
Without complicated configuration, the i3550 simply configures itself and other Icotera network products to deliver the best possible networking experience whether it be cabled or wireless using techniques such as wireless roaming, and secure authentication.

Guest access
Both on cabled and wireless media, your private network is protected against the untrusted devices you allow into your home and network.

Backward compatible
Compatible with 802.11a/b/g/n/ac wireless standards.

MSSID (Multi SSID)
Multiple SSIDs can be created to allow different users access to the Internet network, even creating public Hotspots are done simply with a click of a button.

Designed for the operator
But with the customer in mind. The operator will always have the possibility to support their clients with full remote access for monitoring and debugging.

Advanced wireless security
WPA2-PSK, WPA2-802.1x.

Power efficient
Product goes to Network standby mode immediately if there is no LAN or Wireless activity.

Great aesthetic design
Both in form and shape the i3500 has great design attributes, but it also does an outstanding job making itself hidden by only using the LEDs if there is actually something to tell – and that in the most intuitive way possible.

Icotera

i3550 Residential Access Point

FEATURES

- Best-in-class Wi-Fi solution
- Award-winning industrial design
- Low power consumption
- Optional operator branding

NETWORK COMMUNICATION

LAN INTERFACE

- 2 x RJ45 connectors 10/100/1000 Base T(X)
- Auto-negotiation for speed and duplex
- Jumbo packets

LAYER 2

- 8 bridge instances
- 64 byte forwarding at line rate
- Jumbo 9k packets
- IGMP v1/v2 snooping
- Wi-Fi support
- Transparent IPv6 forwarding
- 2k address entries
- 802.1x

Wi-Fi INTERFACES

- Authentication methods - Open - WPA2
- Up to 8 SSIDs
- Advanced channel selection
- Software Tx power control
- Neighbour scanning
- Wireless Client Isolation
- Band steering
- Client roaming

802.11ac Wi-Fi

- 4x4 Wave 2 MU-MIMO
- 5GHz band w/QAM256 and 80MHz
- Background DFS scan
- Beamforming
- LDPC + STBC

802.11bgn Wi-Fi

- 802.11B/G/N 2x2:2 MIMO
- 2.4GHz band w/QAM64 and 40MHz

MANAGEMENT & MONITORING

- Monitoring via Telemetry Streaming (ICONS)
- L1 and L3 filters for all local services
- End-user oriented web interface (configurable) - Wi-Fi - LAN network
- TR-069 supporting - TR-181 (Network)
- All settings are stored locally in flash
- Zero-touch configuration with DHCP/ TFTP or TR-069 or via the local gateway
- Automatic firmware and configuration update (polling)
- Dual bank firmware w/ fail-safe upgrading

OPERATIONAL SPECIFICATIONS

- DC 12V input
- Power consumption maximum: 13W
- Power consumption in idle state: 5.5W
- Operating temperature: 0°C – 45°C
- Storage temperature: -20°C – 85°C
- Humidity: 5% – 95% (non-condensing)

PHYSICAL SPECIFICATIONS

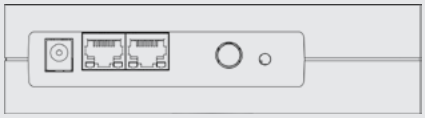
CASING

- Weight: 597g
- Size: 215 x 215 x 50 mm (W x H x D)
- Front LED: Power/WAN status (link/ provisioning)
- LAN status LEDs (link/traffic, duplex) per interface
- WPS button

INCLUDED IN THE BOX

- CPE
- 12V PSU adapter

i3550 Residential Access Point
Configuration possibilities



Gateway Interface Configurations:

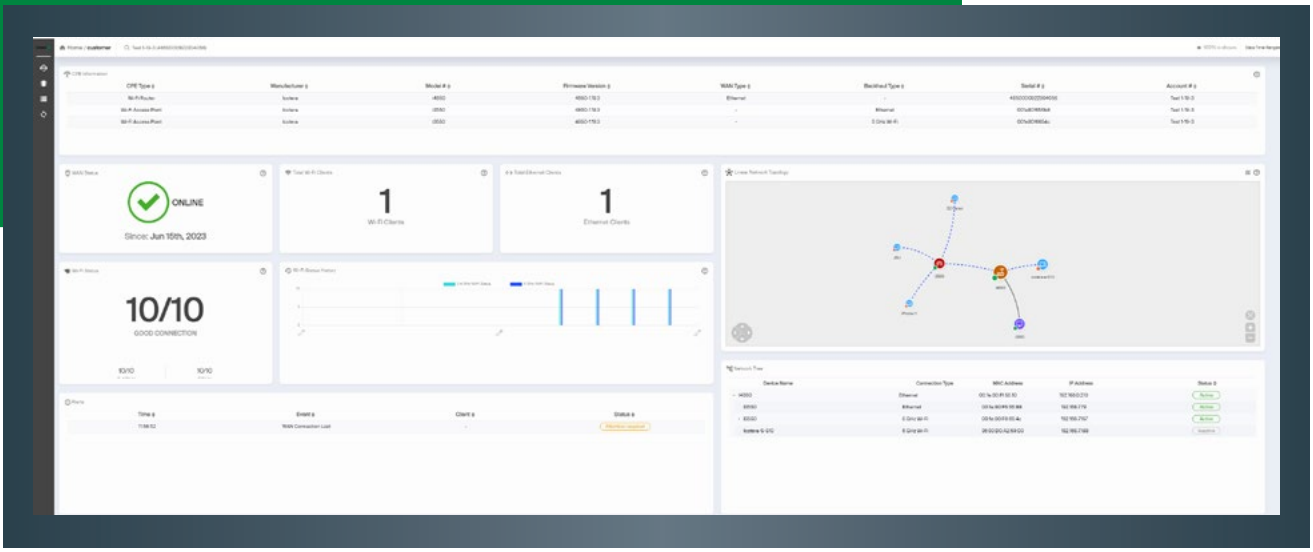
Model	LAN	Wi-Fi
i3550-00	2x	11.BGN 2x2:2 + 11.ANAC 4x4:4

NOTE: Please contact Sales for further details on information listed and feature requests.

IN-HOME REAL TIME NETWORK MONITORING

including in-home end-user devices

- Valuable insights through real time network monitoring
- Flexible widgets based on advanced algorithms
- Quicker troubleshooting
- Reduce and shorten support calls
- Increased customer satisfaction



Intuitive overview on alerts and device status, improves efficiency and speeds up root-cause analysis.

New level of ISP support
ICONS is an in-home monitoring tool for ISPs enabling 1st, 2nd and even 3rd line supporters to troubleshoot customer issues efficiently.

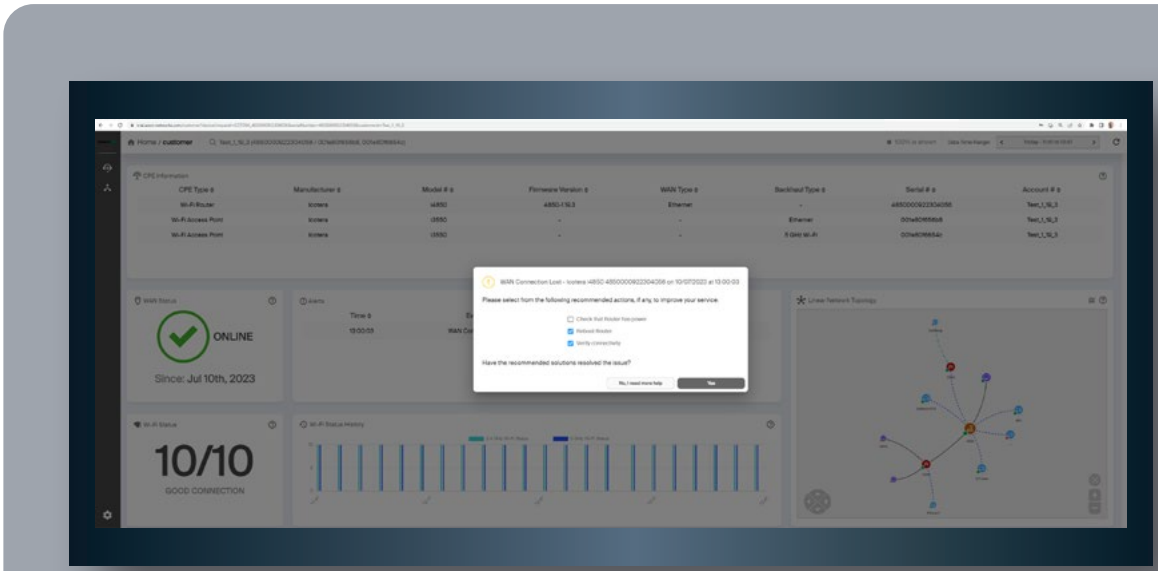
Through intelligent insights based on advanced algorithms, ICONS makes it possible to reduce the time on support calls dramatically. With a real time view directly on customer CPEs and even end-user devices, ICONS is helping support-personnel to efficiently solve issues with the customer on a one-call basis. Using the Time-Picker functionality helps the supporter to look for periodic problems and efficiently identify the root cause.

Dynamic widgets for customised dashboards

ICONS is a widget based system, where dashboards are designed to match the different expertise levels. The support supervisor creates the user groups; their rights and even the design of the dashboard.

1st, 2nd and 3rd line supporters do not have the same technical insights and hence should not be presented to the same type of data. While the 1st line supporter prefers intuitive data and color coded graphs, the more experienced 2nd line supporter needs a more detailed view on network- and Wi-Fi metrics to do an in-depth troubleshooting.

3rd line supporters like senior network engineers, will typically look at overall trends and global network performance and need data supporting that.



When an issue is resolved, data is collected to build a knowlegde database for advicing other supporters. Future option is to do CPE-adjustments automatically before the issue appears.

Wi-Fi network analysis

From the very moment a customer calls the support desk, time is a critical factor. Often the customer is already frustrated about his in-home network and waiting time on rebooting and random troubleshooting is not the way to go. It's crucial quickly to acknowledge or politely reject the issues by having the right data available and have a convincing and professional approach to the customer.

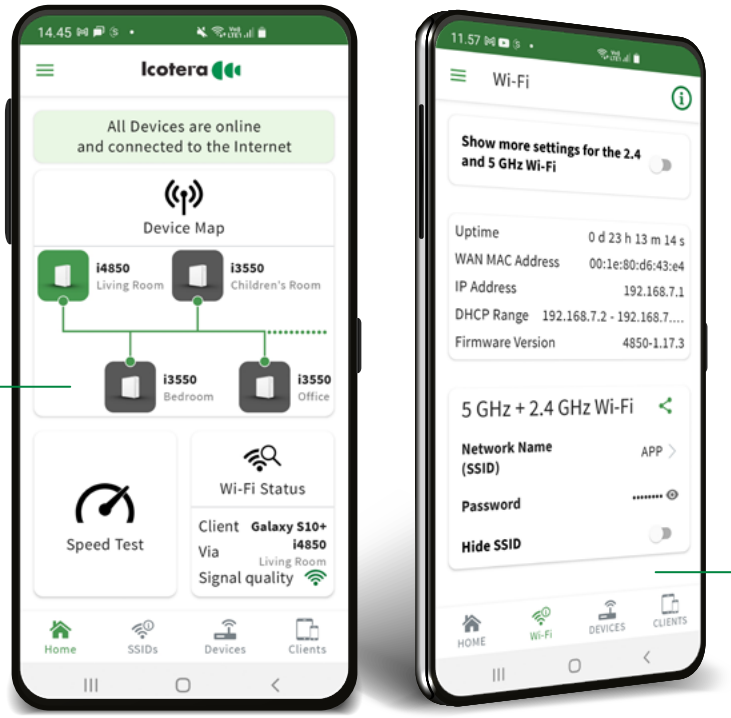
Insights also help reduce the amount of units replaced by support because the root-cause was not identified and a replacement of the CPE was the only way out. Handling, shipping and refurbishing of units typically take a big part of the revenue.

MAKE THE MOST OF YOUR Wi-Fi NETWORK

Intelligent self-service App secures easy onboarding and the best in-home Wi-Fi performance

On-boarding and Home Screen

- Intelligent QR-based on-boarding feature makes it possible to install and connect the router in a few steps
- Home Screen provides overview of devices and current Wi-Fi status



SSID and Password change

- Customer is encouraged to change SSID and Password during the onboarding procedure
- This improves security and reduce support calls

Optimise your customers Wi-Fi experience with an intuitive and comprehensive Smartphone App.

The App includes an intelligent QR-based on-boarding feature enabling the customers to install and connect the new router in a few steps. After completion, the full featureset of Wi-Fi control and -optimisation is available. All Icotera routers and access points in the network will automatically be identified and listed. Devices can be identified with a simple tap and new devices can be added. When an access point is installed, the clear color-coding indicates if the location is optimal or should be changed.

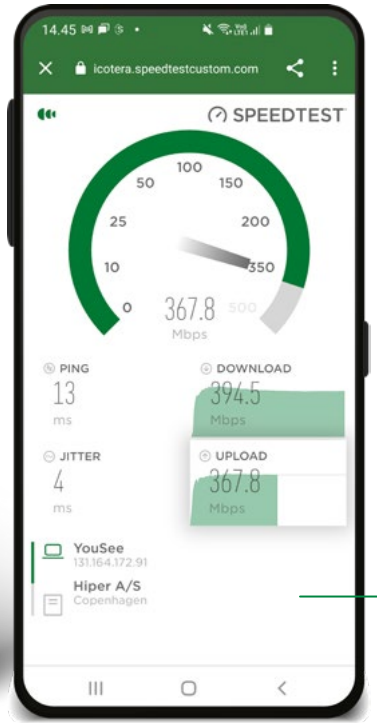
The App easily identifies how well any client device in the network is connected and whereto. If a client has no connectivity or internet performance issues, the App can be used to quickly investigate what might be the problem. The ultimate blue-print of the connection can be done by initiating a Speedtest measuring up- and download speeds as well as latency jitter directly in the App.

Increased customer experience

The intelligent self service App helps free support team resources as it enables the customers to handle simple coverage issues or forgotten passwords themselves. The increased customer control and faster resolution of issues, means better customer satisfaction and reduced churn.

Easy overview of all connected clients

- All clients are easily identified and connectivity status checked
- Click on a device to see connection details



Integrated Ookla™ Speedtest

- Shows current throughput performance
- Download, Upload, Ping and Jitter

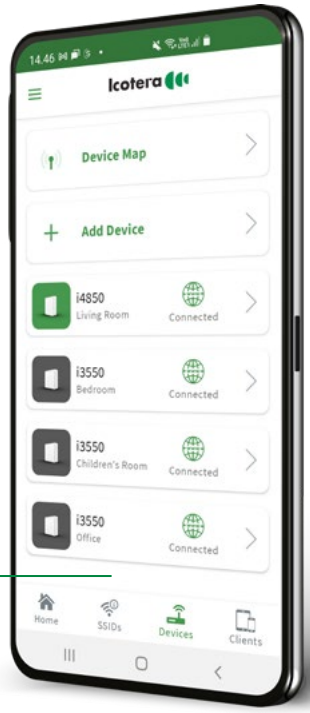
Easy and quick to validate quality and performance of the in-home Wi-Fi network – and optimise it if necessary

Most important Wi-Fi settings can be changed on the spot and results are validated through instant speed tests. Wherever the Smartphone or any other client is in the house, its momentary Wi-Fi signal strength will be displayed in the App.

- Intuitive customer-onboarding process
- Automated Device Scan and login procedure
- Initial change of SSID & password
- Optimise Access Point location
- Overview of all connected Devices and Clients
- Add new Access Points
- Ookla™ Speedtest

Device Screen

- Overview of connected devices and their associated end-user clients is shown
- When entering the Device Map a graphical representation of the network is shown



Color featured Device map

- Intuitive color coded interconnectivity status
- Optimize Access Point locations

Icotera A/S
Hovedvejen 3A
2600 Glostrup
Denmark

Phone: +45 7010 0033
Mail: info@icotera.com
Web: www.icotera.com