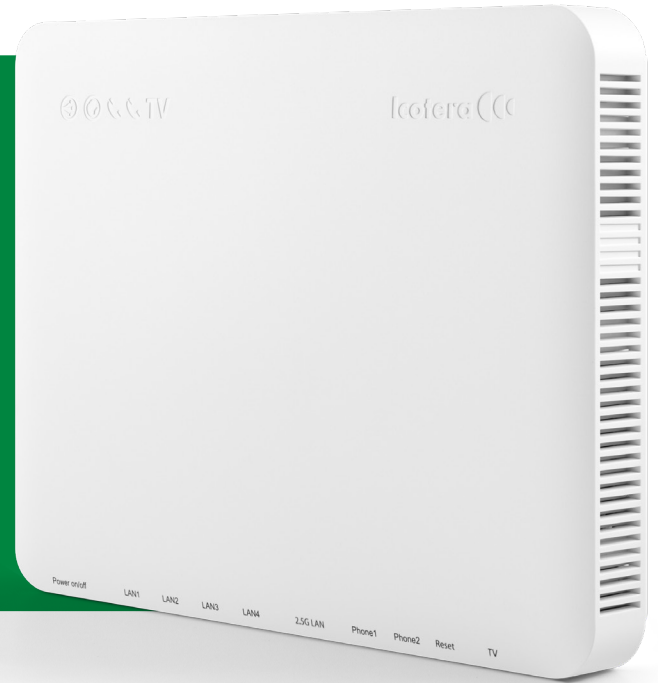# GPON FTTH ONT

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 and installation
- OLT vendor independent
- Designed for open access and wholesale 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, and traffic switching or 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 (such as 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 flash memory.

Icotera

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: 1310 nm, Rx: 1490 nm
- 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 to detect the following metrics:
  - 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 or 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: 1550 nm - 1560 nm
- Input level range: -9 dBm to 2 dBm
- 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 and remarking of 802.1p (configurable via OMCI)
- Marking and remarking of DSCP/ToS (configurable via OMCI)

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

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

- CSO ≥ 60dB
- CTB ≥ 60dB
- Management: via OMCI

VoIP
- 2 separate POTS lines SIP (RFC3261)
- Up to 5 ringer equivalence numbers (REN)
- DTMF signaling
  - SIP INFO
  - Inband
  - Auto
  - RFC 2833
- Caller ID support (DTMF/FSK)
- CLIR
- Advanced dialplan
- Called party (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
- Modemor 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
- Configurable web interface for end users:
  - 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 for VoIP and TR-181 for network
- SNMP v1/v2
- CLI with auto-completion
- Extensive debug possibilities
- Packet dumping
- All settings are stored locally in flash memory

- Automatic firmware and configuration update (polling)
- Dual bank flash memory with fail-safe firmware upgrading
- LED brightness configurable by the operator or end-user
- Hardware watchdog
- Wake-on-LAN for the web interface and CLI

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

PHYSICAL SPECIFICATIONS
CASING
- Size: 235 x 164 x 36 mm (W x H x D)
- Weight: 462 g
- PON LED indicator displays connection status
- LAN LED indicator displays link status
- VoIP LED indicators display registration status
- CATV LED indicator displays signal status
- Status LED indicators display link, traffic, and duplex for each LAN port
- 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)
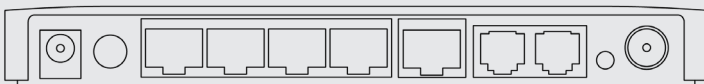- Blind cover for FTU (optional)

INCLUDED IN THE BOX
- Icotera i5900 ONT
- 12 V power supply unit
- 2 x label with PON SN
- FTU

SUPPORTED PLATFORMS
- Nokia ISAM 7330/7360
- ZTE C320

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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
i5900-00	GPON/MSGW	4x1G 1x2.5G	2	0	0	N/A	N/A	High output	Printed English port + logo	FTU

For more information and feature requests, contact our Sales department at sales@icotera.com.