

Huawei OptiXstar V166a-20 Datasheet

Main FTTR for Huawei iFTTR OptiXstar F50

Overview

Huawei OptiXstar V166a-20 is a main FTTR for the Huawei iFTTR OptiXstar F50. It uses the GPON and Wi-Fi 6 technologies to implement ultra-broadband access, with high performance and wide coverage for users. The high forwarding performance ensures the user experience in voice and data services, and provides users with an ideal all-optical access solution and future-oriented service support capabilities.

- Ultra-gigabit to room
- Unique seamless roaming coordinate network (SRCN) technology, enabling imperceptible roaming in the whole house
- C-WAN architecture, centrally controlling and coordinating network-wide Wi-Fi resources by the main FTTR to deliver ultra-gigabit broadband experience in the whole house
- IoT coffer, safeguarding home network security and privacy
- Youth mode¹ provided to safeguard Internet access by children
- 360-degree coverage and beamforming by built-in smart antennas, ensuring IoT connection reliability
- Vertically placed for less footprint



Device Parameters

Dimensions (H x W x D)	148 mm x 240 mm x 30 mm (excluding the base)	System power supply	12 V DC, 2 A
Weight (without power adapter)	About 550 g	Static power consumption	11 W
Installation mode	Vertically placed on a desk NOTE If wall-mounted scenario is involved, the wall-mounted bracket can be customized.	Maximum power consumption	22 W
Memory	256 MB Flash, 512 MB RAM	NNI	GPON
Operating temperature	0°C to +40°C	UNI	1x2.5GE+3xGE+1xPOTS+1xUSB2.0*+2.4GHz&5GHz Wi-Fi+1xoptical port
Operating humidity	5% to 95% RH, non-condensing	Optical connector	- NNI: SC/APC - UNI: SC/APC
Power adapter input	100 V to 240 V AC, 50/60 Hz	Indicator	- Indicators on front panel - Indicators on rear panel: PON/LOS/4-GE/3-GE/2-GE/1-2.5GE/USB/TEL/WLAN/WPS/F TTR

NOTE

*: A plug-and-play USB port reserved for users.

Interface Parameters

GPON	Wi-Fi
- Class B+ - Receiver sensitivity: -27dBm - Overload optical power: -8 dBm - Wavelengths: US 1310 nm, DS 1490 nm - Wavelength blocking filter (WBF) - Flexible mapping between GEM ports and T-CONTs - Authentication mode: SN/Password/SN + Password - Forward error correction (FEC) function in the upstream and downstream directions - SR and NSR DBA - Upstream and downstream rate: 1.244 Gbit/s upstream, 2.488 Gbit/s downstream	- IEEE 802.11 b/g/n/ax (2.4GHz) - IEEE 802.11 a/n/ac/ax (5GHz) 2x2 MIMO (2.4GHz&5GHz) - WMM(Wi-Fi Multi Media) 4096 QAM 160 MHz bandwidth - WPA3/WPA2/WPA1 - MU-MIMO - Multiple SSIDs - WPS - Air interface rate: 574 Mbps (2.4GHz), 2402 Mbps (5GHz)
	Ethernet port
	- Ethernet port-based VLAN tags and tag removal 1:1 VLAN, N:1 VLAN, or VLAN transparent transmission - QinQ VLAN

	- Limit on the number of learned MAC addresses - MAC address learning - GE port supports 10 Mbit/s, 100 Mbit/s and 1000 Mbit/s auto-sensing 2.5GE port supports 10 Mbit/s, 100 Mbit/s, 1000 Mbit/s and 2500 Mbit/s auto-sensing
POTS port	Downstream optical port - P2MP optical port - Theoretic upstream rate: about 1.244 Gbit/s; theoretic downstream rate: about 2.488 Gbit/s - Plug-and-play sub FTTR USB port - USB2.0 - FTP-based network storage - File/Print sharing based on SAMBA - DLNA function
- Maximum REN: 4 - G.711A/μ, G.729a/b, and G.722 encoding/decoding - T.30/T.38/G.711 fax mode - DTMF - Emergency calls (with the SIP protocol)	

Product Function

Smart interconnection	Smart O&M	Multicast	Layer 3 features
- Smart Wi-Fi coverage - SIP/H.248 auto-negotiation - Any port any service - Parental control	- IPTV video quality diagnosis - Rogue ONT detection and isolation from the OLT - WLAN simulation - PPPoE/DHCP simulation testing	- IGMP v2/v3 snooping - IGMP v2/v3 proxy - MLD v1/v2 snooping	- PPPoE/Static IP/DHCP - NAT/NAPT - Port forwarding - ALG, UPnP - DDNS/DNS server/DNS client - IPv6/IPv4 dual stack, DS-Lite and IPv6 SPI - Static/Default routes - Multiple services on one WAN port
Security	Common O&M	QoS	Power saving
- SPI firewall - Anti-DOS attack - Filtering based on MAC/IP/URL addresses	- OMCI/Web UI/TR069 - Variable-length OMCI messages - Dual-system software backup and rollback	- Ethernet port rate limitation 802.1p priority - SP/WRR/SP+WRR - Broadcast packet rate limitation	- Indicator power saving - TWT energy saving
Home network	Home network management		
- Fiber to the room, implementing all-optical home networking - C-WAN architecture, centrally controlling and coordinating network-wide Wi-Fi resources by the main FTTR - Home Wi-Fi slicing and ONT cross-network acceleration assurance - Intelligent Wi-Fi optimization for a home network - Seamless Wi-Fi roaming within a home network (SRCN roaming technology, compatible with 802.11k/802.11v²)	Supports the following functions with NCE: - Visualized home network management - Remote management and maintenance - Network management on a mobile app³ - Installation guide - Visible home network topology - Wi-Fi settings - Timed Wi-Fi on/off		

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| | <ul style="list-style-type: none"> - Blacklist and parental control - One-click network optimization - One-click diagnosis and recovery |
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NOTE

1. The youth mode needs to be used together with NCE and the user app.
2. The SRCN roaming technology is subject to the version provided by your operator. The 802.11k/802.11v technology must also be supported by user terminals.
3. Huawei provides the basic mobile app SDK for operators. Operators can develop and customize apps based on the SDK provided by Huawei.

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