CMTS Module

JH-M3416B   DOCSIS3.0

Summary

JH-M3416B is a compact CMTS from D3-B family designed for outdoor environment. JH-M3416B can be deployed independently or implemented in 3-in-1 unit (CATV, CMTS and ONU).

JH-M3416B is the best upgrading option for traditional optical node (CATV/ONU) when IP service is needed. With JH-M3416B, an optic only CATV node/station can be integrated into a Multi-task optical node/station that provides CATV and Internet services (We call this D-Node). By using D-node, ISPs could benefit the potential value from the existing system.

JH-M3416B can be deployed independently as well, it has the full functionality as well as other CMTS from D3-B family, with a rich set of I/O ports. With its compact size, it has a relatively low power consumption, and easy installation procedure.

We are glad to provide solutions and technical support for companies who are interested in our product.

About D3-B Series

D3-B family is the upgrade version of D3 family, running DOCSIS 3.0 and C-DOCSIS protocol. The D3-B family includes the following forms of CMTS: compact rack-mountable type (1U), high-density type(3U) and D-node type(outdoor).

The benefits of D3-B family over D3 family are listed as follows:

► Upgrade from Dual core to Quad core processor for data forwarding;
► Upgrade from DDR2 to DDR3 RAM;
► Improved power management;
► Migrate to Linux operating system;

With these changes, the D3-B family provides faster forwarding capabilities and larger throughput for IP packet (especially smaller size packet or fragment packet are optimized).

All D3-B family products implement CMTS channel bonding technology, providing up to 16 QAM channels with total 1Gbps for DS (Down-Stream), and up to 4 QPSK/QAM channels with total 160 Mbps for US (Up-Stream). The DS can be easily configured to run as either data channel or IPQAM channel. It provides both electrical (RJ45) and optical (SFP, 1.25Gbps) connection for data forwarding. D3-B family also implements layer 3 routing function, QoS, DHCP/TFTP services, and DHCP relay. Users have 2 management methods, including CLI withTelnet and Web interface .

► Users can use CLI by login with Telnet (direct connection to the CMTS).
► Users can remote login to the CMTS embedded web interface through internet.

D3-B family is capable to run with DOCSIS 3.0/2.0 client cable modems, set-top boxes (built-in with modems) and eMTA.

Feature

► Fully compatible with DOCSIS 3.0, C-DOCSIS, supports both EURO-DOCSIS and DOCSIS, works with DOCSIS cable modems
► Users are free to configure the 16 DS channels bonding together, with 64/256/1024 QAM, with maximum 1.0Gbps @ 1024 QAM
► Users are free to configure the 4 US channels bonding together, with QPSK/3~8 orders QAM, with maximum 160Mbps
► Flexible channel bonding option.
► Supports maximum 500 clients (cable modems) online simultaneously
► Supports layer 3 routing, static route, policy route, VLAN, L2VPN, ACL
► Built-in DHCP/TFTP service, supports DHCP relay, CPE subnet arrangement, supports Option 82, Option 60
► Network interface has optical port (SFP) and RJ45 port
► Load balancing mechanic for both DS and US, based on the number of clients (static) or data flow (dynamic)
► Supports IPv6, multicast, remote-query, Flap (DOCSIS signal quality jitter diagnosis), etc
► Uses US and DS service flow classifier, QoS based on service flow ensures bandwidth and latency needs for various services
► Secures network transmit via BPI+, CM identification, anti-DOS attack , user isolation and IP source checking
► Supports US channel spectrum parameter analysis on web management
► Two management methods, including CLI with Telnet and Web interface
► Automatically updates configuration file, easy for massive deployment

Specification

	Down Stream		UP Stream		
	Euro-DOCSIS	DOCSIS	ATDMA/S-CDMA		
Modulation Mode	64/256/1024QAM*		8~256QAM/QPSK		
Frequency Range(MHz)	88~1002	88~1002	5~65		
Channel Bandwidth(MHz)	8	6	Single Channel Bandwidth(MHz)	6.4	3.2	1.6
Bonding Channel Quantity	16		4		
Max. Total Data Rate (Mbps)	1000	858	160		

Single Channel Data Rate (Mbps)	64QAM	41.7	30.3	Single Channel Data Rate (Mbps)	256QAM	40.96	20.48	10.24
					128QAM	35.84	17.92	8.96
	256QAM	55.6	42.9		64QAM	30.72	15.36	7.68
					32QAM	25.60	12.80	6.40
	1024QAM*	69.5	53.6		16QAM	20.48	10.24	5.12
					8QAM	15.36	7.68	3.84
Single Channel Symbol Rate (Msymps)	64QAM	6.952	5.056941		QPSK	10.24	5.12	2.56
	256QAM	6.952	5.360537	Single Channel Symbol Rate (Msymps)		5.12	2.56	1.28
	1024QAM*	6.952	5.360537					

Output Level (dBmV)	10~48 (1dB step)	Receive Level(dBmV)	-13~+23
Return Loss (dB)	> 12	> 14	
Output Impedance (Ω)	75	Input Imedance(Ω)	75

WAN Port	Fiber	1.25G SFP ×1	Uplink Data Rate	1Gbps
	Electronic	1000/100/10Base-T	Console	RJ45

Management Methods	CLI: after log in by telnet; NMS: based SNMP from third part; Embed Web: by remote log in
Supported Protocols	Euro-DOCSIS/DOCSIS3.0/2.0，CDOCSIS,TCP/IP，ARP，L2VPN，ICMP，ACL，VLAN，Multicast，DHCP-rely，SNMP，etc

Miscellaneous			
Input Voltage	DC 12~15V	Consume Power	< 30W
RF Interface	SMB Socket ×2	Net Weight	1.1Kg
Cooling Way	Aluminum Alloy Shell	Status Display	LED
Working Environment	Temp:-40-60℃；Hum < 90%	Dimension	282*1@5*25(mm)

* Requset CM support 1024QAM