

### **Product Information**





#### WISI GV 01

- Infield upgrade-able for future flexibility and enhanced features
- FPGA & DSPs Flexibility of V-CMTS Chipset using programmable FPGAs
- All needed Server (DHCP/TFTP etc.) included
- Remote secure access via SNMP/HTTPS/SSH

#### Features:

- DOCSIS 2.0- compatible V-CMTS
- Modular technology
- Cost-effective solution for Triple-play services (Pay TV, Broadband & VoIP) over existing coax cable
- working with standard 2.0 EuroDOCSIS cable modems



#### **DESCRIPTION / OVERVIEW**

- The WISI V-CMTS (Video Cable Modem Termination System) is a "head-end in a box" providing IPTV video, broadband and VoIP (Telephony) to customers in cable TV, satellite & IPTV networks, Buildings, Hotels and Communities.
- It is a convenient solution for analog switch over, enabling digital SD Standard and HD High Definition TV over IPTV, Broadband Internet and VoIP.
- Traditional cable networks are supported with DVB-C compatible & EuroDOCSIS output, and IPTV networks are also supported via both Ethernet and Video over EuroDOCSIS.

The WISI V-CMTS is a 19" 4U chassis-based solution with IPTV capabilities and EuroDOCSIS support. The chassis houses up to 9 Input & Output Modules. The Output can be both QAM- and IP-based.

For customers that require a larger number of input or output modules, or require a flexible redundancy strategy, multiple WISI V-CMTSs can be deployed together like a single unit.

As an IPTV headend for coax networks, the WISI V-CMTS can convert input signals to multicast IP, creating an IPTV multicast network accessible through a EuroDOCSIS cable modem by any standard IPTV set-top box.

Existing coaxial terrestrial distribution networks are converted into high-speed triple-play bi-directional networks without the need for any modification or additional cabling. Unlike traditional head-ends, access is made available through a real-time video switching technique which means that the only programmes on the TV network are those that are currently requested from the interactive set-top hoxes.

WISI V-CMTS enables both unicast and multicast IPTV signals to be passed over the in-house coax network, accessible through a EuroDOCSIS 2.0 cable modem by an IPTV set-top box. It implements an 'accelerated IGMP' which reduces channel change time to a minimum.

We recommend to use WISI approved Cable Modems and firmware to get accelerated IGMPv2 switching times.



Broadband Internet services can also be offered and are delivered to EuroDOCSIS 2.0 cable modems within the homes. Up to 15 QAM output channels can contain broadband internet services sourced from either of the two 10/100/1000 base-T Ethernet ports. This delivers downstream bandwith to EuroDOCSIS cable modems up to 750Mbit/s in total. The V-CMTS supports up to 400 cable modems connected per chassis, offer configurable rate limiting and group contention ratios for broadband services. IPTV VOD services can be connected to gigabit Ethernet port and provided to IP set-top-boxes through the cable modems.

The V-CMTS can be connected to a back office to offer 'Remote Network Management'. Both SNMP and SSH (Secure Shell) are supported, allowing full remote configuration, diagnostics and maintenance.

The V-CMTS has been designed to be simple to install and supports an easy-to-use 'Secure Web interface' to assist the installer. A basic 'Spectrum Analyzer' function is available via this web interface, showing all the existing RF signals on the building network. A red/amber/green graphical representation of the V-CMTS status guick and easy identifies any problems.

The V-CMTS can either have its RF output manually configured or using the built-in spectrum analyzer to automatically scan the buildings coax network and place its output QAM channels in free space on the coax network. All options are stored in a single configuration file, which can be saved and uploaded via a Web interface, to reduce on-site configuration time. The software is upgradable either via the Gigabit Ethernet port locally or via remote access.



#### **FEATURES** at a Glance

#### **Triple-play Compact DOCSIS Head-End**

- QAM and IP Output
- IP over EuroDOCSIS/DOCSIS 2.0
- Secure Remote Monitoring and Management
- Remote Firmware Update and Upgrade

#### **DOCSIS** and Broadband headend

- Compatible with all coax networks
- No new wires installation needed
- Compatible with EuroDOCSIS 2.0 Cable Modems
- Fully automatic configuration available
- Automatic detection and management of RF changes
- 750 Mbps capacity for video/data
- 50 Mbps to any single client (per Modem)
- Up to 400 interactive clients
- Dual Gigabit Ethernet ports
- Fast IGMPv2 support

#### **Broadband via EuroDOCSIS 2.0**

- Supports up to 400 cable modems
- Acts as a EuroDOCSIS bridging CMTS
- Multicast support for IPTV services, e.g. WISI Ingesuite
- 750 Mbps Data Throughput max. (IP)
- Dynamic RF channel change (DCC) for load balancing
- Compatible with IPTV set-top boxes

#### **OAM Modulation**

- Up to 15 QAM channels (750Mbps),
- Symbol Rate 6.952 MSym/s



EASY to Use & extremely Easy to INSTALL

Automatic detection of RF changes

Compatible with all mayor IPTV set-top boxes

Remote firmware update and upgrade

Secure remote monitoring and control via extensive SNMP MIBs/WEB/ SSH for fault resolution & remote telemetry

The web interface allows easy configuration of the main parameter

- SNMP for automated remote monitoring
- Web server for user friendly interface
- Web Interface can show analysed RF Spectrum for diagnostics



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TECHNICAL SPECIFICATION	QAM OUTPUT	OAM OUTPUT		OPERATING ENVIRONMENT		
	Number of channels	up to 15 (3 Modules)	Voltage / current	230VA	C/ 50 Hz / 2A	
MAIN CHASSIS GV01 DOCSIS V-CMTS	Frequency range	100 – 1000 MHz	Power		250 W max.	
	MER Modulation error ratio	>40 dB	Temperature		0 - 50° C	
System	Output level range	30 to 45 dBmV	·			
2x 1 Gbps switched	Connector	F-type, 75 Ω	MECHANICAL INFORMATI	ON		
3x QAM module slots per system	Return loss	>10 dB	Form Factor		4 RU / HE	
5 Downstreams per QAM module	Monitor port:		Height	7	in /177.8mm	
3 Upstreams per receiver	Connector	F-type, 75 Ω	Width	19ii	n. / 482.6mm	
EuroDOCSIS 2.0 A-TDMA compatible	Output level	-20 dBc	Depth	12.	8 in / 325mm	
Management				(w/o f	front handles)	
RS232 Serial port (DB9)	QAM OUTPUT Module		Weight		12 kg approx.	
10/100/1000 BaseT port	Connector SI	Mx -> to internal combiner	Mounting Dimension	ns 19"	rack, 4 HE/U	
CF Compact Flash Slot (opt.)	Number of channels per card	5	Front Panel LED	Power, Status, Aları	m (error), I/Os	
Graphical Interface (Web GUI)	Channel width	8 MHz				
Command Line Interface (CLI)	Symbol rate	6.952 Msym/s	[ This specification is subject to improvement and change			
SQLite Database	Constellations	64/256 QAM	without notice ]			
Telnet, SSH	Power step size	1 dB				
SNMPv2			무			
IETF MIBs	UPSTREAM BURST RECEIVER		Canada Ballan Ba			
MPEG Stream Processing (Licence A)	Number of channels	Up to 3 (by 12/2010)				
Static MPEG de-multiplexing and re-multiplexing	Symbol rate	640, 2560, 5120 ksym/s				
Unicast to Multicast conversion	Modulation A-TDMA	QPSK				
PAT and PMT	Data rate per channel	10 Mbps				
PID filtering and remapping	Frequency range	5 to 39 / 43 to 65 MHz				
SI table generation and insertion			Slot 10 Slot 9 Slot 8 Slot 7	Slot 6 Slot 5 Slot 4 Slot 3	Slot 2 Slot 1	
	Combiner / Upstream Module		Ordering Information :			
IP Features (Licence B)	Combines the 3 Output Cards and Input RF signals		Chassis/Modules WISI Type WISI Part code			
Layer 2 switching / bridge	Internal Diplexer for the Upst	ream DOCSIS channels				
DHCP Relay and option 82	-20dB output Test Point		GV01 VCMTS CHASSIS M	AINBOARD AC	071622	
Internal /or external DHCP servers support	RF Scanning port (100-950MHz) for Autoconfig		GV30 VCMTS 5X QAM OI	JTPUT BOARD	071644	
Internal /or external TFTP servers support			GV31 VCMTS COMBINER	BOARD	071645	
Internal /or external Syslog servers support			GV60 VCMTS ASI INPUT C	ARD	071660	
Internal /or external time servers support			GL01 VCMTS SW LICENCE	E DATA B	071620	
IGMP v2			GL02 VCMTS SW LICENCE	BROADCAST A	071621	
DOCSIS 2.0 Multicast / QoS						
Gigabit ETHERNET						
Number of ports 2						
Speed 10/100/1000 BaseT						
Connector RJ45						

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