M60

48/64 in 1 IP QAM modulator

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64QAM



48QAM



M60 is a Multi-functional QAM (DVB-C) Modulator combining multiple GE input, transport stream multiplexing, scrambling, QAM modulation channels in a 1U rackmount unit.

Designed to allow CATV operators to aggregate multiple SDTV/HDTV programs received in IP format and to deliver them over a standard coaxial distribution network, M60 supports scalable, reliable, high performance video stream services to cable operators. It is mainly applied to the cable DTV head-ends, sub head-ends and VOD networks.

M60 48/64 QAM Modulator enables cost-effective distribution of SD/HD digital signage and SD/HD subscriber sources using existing broadband coax cabling in sports, retail and entertainment facilities, corporate offices, colleges, schools and worship centers. Highest cost performance in low budget.

Key Features

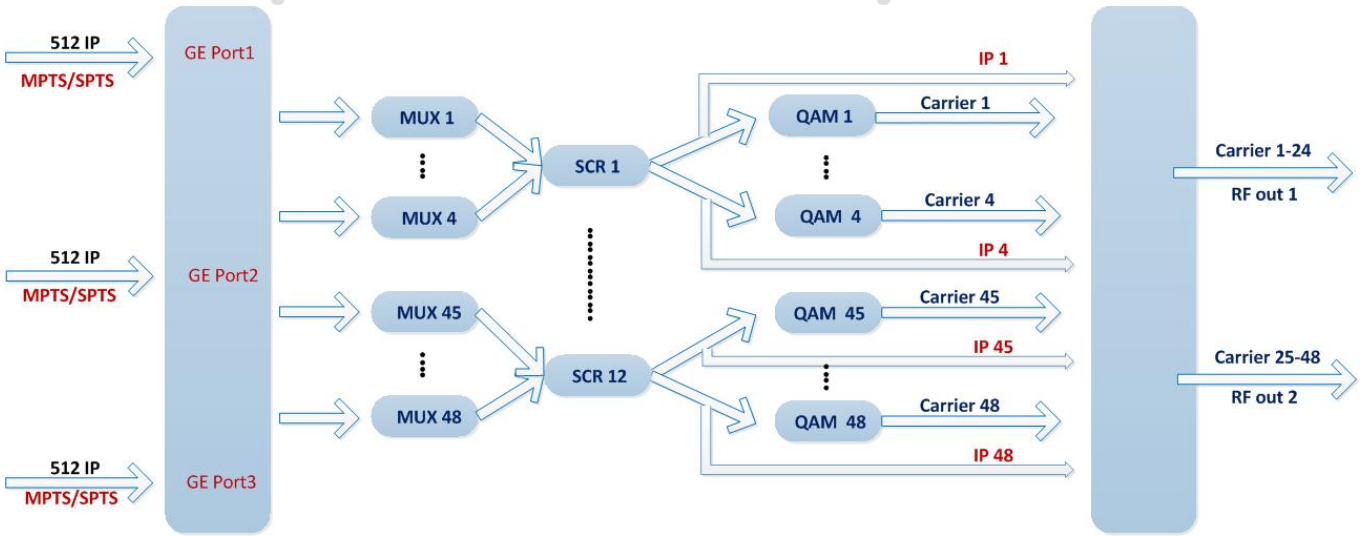
- **Max 1536 IP in thru 3 GE ports (each port can input max 512 IP), 100/1000M self-adaption Ethernet Port (SFP interface optional)**---48QAM version
- **Max 512 IP in thru 6 GE ports (4*RJ45, 2*SFP), 100/1000M self-adaption Ethernet Port** ---64QAM version
- **48/64 non-adjacent QAM carriers output from 2 RF interfaces**
- Support ITU-T J.83 A/B/C modulation, the output RF range is: 50~960MHz, 1kHz stepping
- Modulation module can work in 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
- Supports 6 simul-crypt CAs and 12/64 scrambling channels
- 48/64 IP output over UDP/RTP/RTSP, unicast/multicast, 2*100/1000M self-adaption, Ethernet Ports (SFP)
- Supports RS (204,188) encoding
- Supports PID remapping per channel
- Support DVB general scrambling system (ETR289), simulcrypt standards ETSI 101 197 and ETSI 103 197
- PSI/SI table automatically generating
- Easy-to-Use System Management via Web
- passed the EU CE&RoHS certification

Application

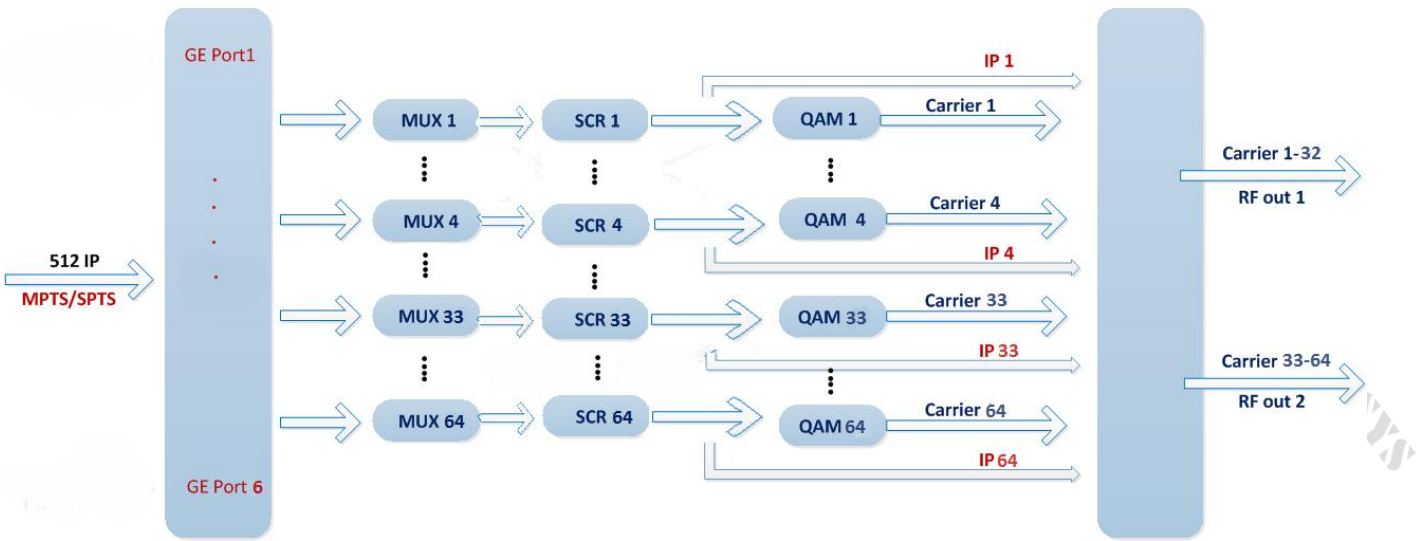
- Cable digital TV headend system base on IP network
- Broadcast Application built-in multiplexing and scrambling function
- Advertising, monitoring, training and educating
- Upgrade all your analog Head-ends to cable DTV Solution
- Enterprise, Hotel, campus, hospital, Public Place

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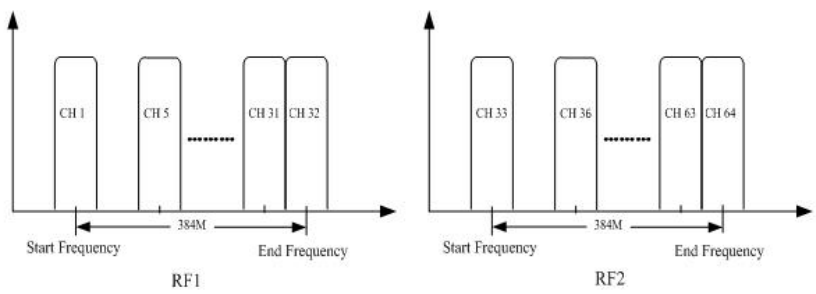
Principle Chart (48QAM)



Principle Chart (64QAM)



Carrier Setting Illustration(64QAM)



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TECHNICAL SPECIFICATIONS

IP Interface

Input---(48QAM version)	Max 1536 IP in thru 3 GE ports each port can input max 512 IP
Input---(64QAM version)	Max 512 IP in thru 6 GE ports, (4*RJ45, 2*SFP)
Output---(48QAM version)	Up to 48 IP output
Output---(64QAM version)	Up to 64 IP output
Data Format	MPEG TS-Over-IP/UDP/RTP
Addressing&Protocol	Multicast and Unicast (IGMP V2/V3)
Transmission Rate	Max 840Mbps for each GE input

Multiplexing

Capacity of Processing Input Channel	1536**(48QAM version)** **512 (64QAM version)**
Output Channel	48/64
Max PIDs Remapping	512 per output channel **(48QAM version)** 256 per output channel **(64QAM version)**
PID remapping	by automatically and manually
PCR	accurate adjusting
PSI/SI	PSI/SI table auto-generation

Scrambling Parameters

Max simulcrypt CA	6
Scrambling algorithm	Comply with DVB-CSA
Scramble Channel	12 **(48QAM version)** 64 **(64QAM version)**
Scramble Standard	ETR289, ETSI 101 197, ETSI 103 197
Connection	Local/remote connection

Modulation Output (QAM Module)

Output Connector	2 x RF output ports Connector Type F-Type (Female, 75Ω) Carrier 1~24 out thru RF1, 25~48 thru RF2 **(48QAM)** Carrier 1~32 out thru RF1, 33~64 thru RF2 **(64QAM)**
RF Frequency	50~960MHz, 1kHz stepping
MER	≥ 40dB
Output Level	-20dBm~+10dBm(87~117dbμV), 0.1dB stepping
Bandwidth	6M (J.83B/C) or 8M (J.83A)
Qty of QAM channel	48/64 non-adjacent carrier
Modulation Standard	EN300 429/ITU-T J.83A or J.83B/C optional
QAM Constellations	16/32/64/128/256QAM (Annex A) 64/256QAM (Annex B/C)
Symbol Rate	3600~7000Ksps, 1ksps stepping 5057Ksps (J.83B, 64QAM) 5361Ksps (J.83B, 256QAM)
FEC	RS (204, 188)

Management

Management Port	Web-GUI, RJ45, 100M
Management	Web management Network management software (NMS) supporting
Language	English

Environment

Power Supply	AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz
Power consumption	15.4W
Operation temperature	0°C ~45°C (32°F ~113°F)
Storage temperature	-20°C ~80°C (-4°F~176°F)
Dimensions	420 (W)x440(L)x44.5mm(H) (1RU)
Weight	3 kg

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