

# 8-in-1 IP Mux-Scrambler QAM Modulator



## Outline

The 8 IP Mux-Scrambling and modulation module is the latest generational Mux-scrambling-modulating all-in-one device. The modular design of this device makes each of its daughter cards stand-alone when operating. Each daughter card can receive the UDP format TS through GE port, it can also support up to 256 different IP address or port No. It's like the all-in-one device combined with 8 multiplexers(256 channels inputs), 8 scramblers and 8 QAM (DVB-C) modulators, which can output adjacent channel RF carrier ( 48M~860M ) through the two RF output interfaces. Additionally, 1U chassis supports up to 3 modules (256 channels mux-scrambling-modulation) while the 4U chassis supports up to 12 modules (1024 channels mux-scrambling-modulation). This 8 IP Mux-Scrambling and modulation module has excellent integrated level, powerful performance and low cost, which is especially adequate for the new generation CATV system.

# 8-in-1 IP Mux-Scrambler QAM Modulator

## Features

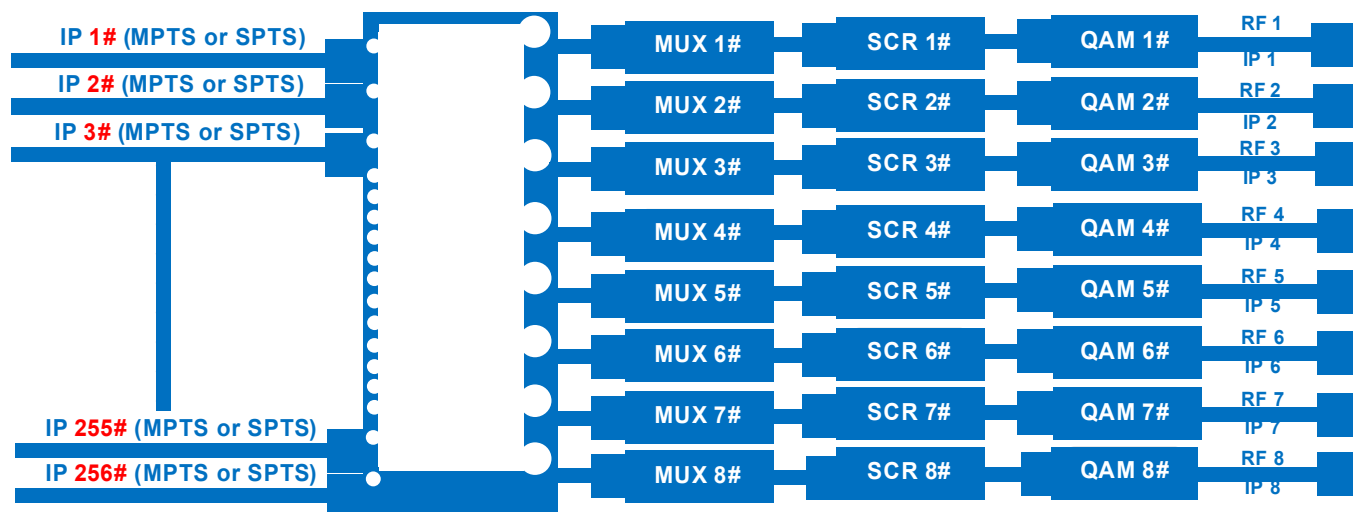
- 1 GE input, RJ45 interface or SFP
- Supports up to 256 channels TS over UDP/RTP, MPTS or SPTS input
- Supports unicast and multicast, supports IGMP v2/v3
- Max 840Mbps for all input
- Supports MPEG2 re-multiplexing and MPTS/SPTS multiplexing
- Supports accurate PCR adjusting
- Supports PID filtering, remapping and PSI/SI editing
- Supports up to 180 PIDS remapping per channel
- Support DVB general scrambling system(ETR289), simulcrypt standards ETSI 101 197 and ETSI 103 197
- Support multiplexed or scrambled TS over UDP/RTP output
- 8 adjacent QAM carriers output, compliant to DVB-C (EN 300 429) and ITU-T J.83

### A/B/C

- Supports symbol rate 5.0~9.0Msps, 1Ksps stepping
- Supports constellation: 16QAM/32QAM/64QAM/128QAM/256QAM
- Supports RS(204,188) encoding
- RF output frequency range: 30~860Mhz, 1Khz stepping
- RF output level: -16~0dbm(per QAM carrier), 0.5db stepping
- Excellent RF performance, MER≥40db
- Support NMS/SNMP
- Modular design, 1U chassis support 3 modules , 4U chassis support 12 modules

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## Principle Chart



## Specifications

<b>Input</b>	Interface	1GE (RJ45) or 1 SFP input port , hot backup
	Transport Protocol	TS over UDP/RTP, unicast and multicast, IGMP V2/V3
	Transmission Code	Max 840Mbps for all channels
<b>MUX</b>	Input Channel	256
	Output Channel	8
	Max PIDs	180 per channel
	Functions	PID remapping(auto/manually optional) PCR accurate adjusting PSI / SI table automatically generating
<b>Scrambling Parameters</b>	Max simulcrypt CA	4
	Scramble Standard	ETSI 101 197,ETSI 103 197
	Connection	Local/remote connection
<b>Modulation Parameters</b>	QAM Channel	8
	Modulation Standard	EN300 429/ITU-T J.83A/B/C
	Symbol Rate	5.0~7.0Msps , 1ksps stepping

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	Constellation	16、32、64、128、256QAM
	FEC	RS(204, 188)
<b>RF Output</b>	Interface	2 F typed output port for 8 carriers, 75Ω impedance
	RF Range	48~860MHz , 1kHz stepping
	Output Level	-16dBm~6dBm(output IP from one F type) , 0.5dB stepping
	MER	≥ 40dB
	ACLR	-60 dBc
<b>System</b>	Network management software (NMS) supporting	
<b>General</b>	Demission (WxLxH)	630mm×440mm×44.5mm
	Weight	9kg
	Temperature	0~45°C(operation) , -20~80°C(storage)
	Power Supply	AC 100V±10% , 50/60Hz or AC 220V±10% , 50/60Hz
	Consumption	15.4W

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System Connection Sample IP Base

