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M50

IP To RF Modulator

DVB C CABLE DVB T TERRESTRIAL ISDB-T

M50 IP to RF Modulator is an ideal solution for environments where you have a large number of displays over almost any distance such as Small and Medium Scale of Digital TV broadcasting System, Hotel, stadiums, Campus, entertainment facilities, Education Markets in limited budget. Designed especially for high channel density Distribution Video Engineering project where rapid deployment, compatibility **IP and ASI inputs and Multi-Modulated Carrier RF outputs** Simultaneously as like Brazil, Japan **ISDB-T** or Europe/Asia/Africa **DVB-T** and **DVB-C** standard.

M50 is a Multi-functional DVB-C/DVB-T/ISDB-T Modulator combining multiple GE input, transport stream multiplexing, RF modulation channels in a 1U rack mount unit. With IP In/Out data ports reception or streaming of MPEG compliant transport streams over UDP/RTP, M50 operates independently and can be configured as either IP in and IP out supporting full 840 Mbit/s TS data rate and up to 1024 MPEG services.

Business Benefits

- Enhanced Modulated Channel resource utilization
- LCD for easy IP address lookup and device management
- 6 ASI inputs and 2 ASI outputs
- multiple input interfaces, RJ45 and SFP
- Concurrent high availability for all services

Features

- 4*(RJ45 and SFP) interfaces, Data1 is bi-directional ports, max 512/1024* IP in, 16/32 or 8/16*IP out, Data2&3&4 ports only for input
- Supports accurate PCR adjusting
- Max 840Mbps for each input
- accurate PCR adjusting/CA filtering, PID remapping and PSI/SI editing
- up to 256 PIDs remapping per channel
- Supports 6 ASI input and 2 ASI output
- 16 or 32(DVB-C), 8 or 16 (DVB-T/ISDB-T) multiplexed TS over UDP/RTP/RTSP output
- 16 or 32 (DVB-C), 8 or 16 (DVB-T/ISDB-T) non-adjacent carriers output
- RS(204,188) encoding
- Web-based Network management

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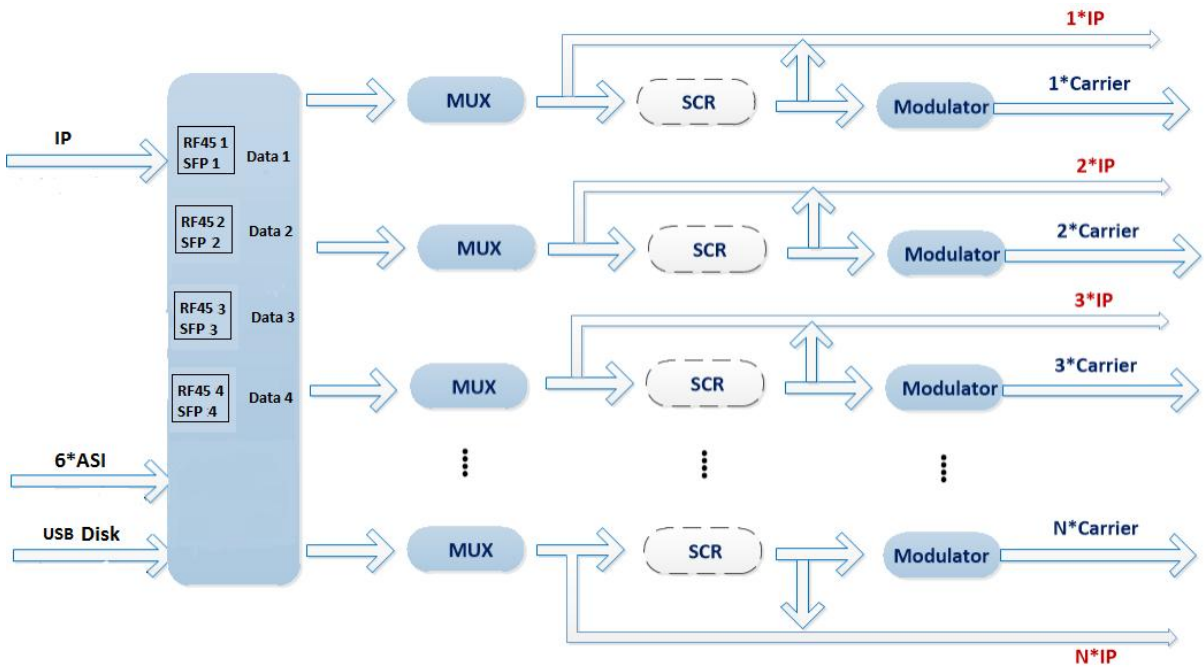
Main Application

- Distribute IP source to All TVs Over Existing TV Coax
- Advertising, monitoring, training and educating
- Upgrade all your analog Head-ends to digital TV Solution
- Enterprise, Hotel, campus, hospital, Public Place
- Works with Digital TV transmitter in wireless TV broadcasting
- Low cost Digital TV distribution

Principle Chart



Modulation Mode	DATA 1	DATA 2&3&4	Max. Bandwidth	Multiplexer	Scrambler	Max.Carriers and IP out(N)
DVB-C	1024*IP in 16*IP out	1024*IP in	384M	√	√	16
	1024*IP in 32*IP out	1024*IP in	384M			32
DVB-T	512*IP in 8*IP out	512*IP in	192M	√	×	8
	1024*IP in 16*IP out	1024*IP in	192M	√	×	16
ISDB-T	512*IP in 8*IP out	512*IP in	192M	√	×	8
	1024*IP in 16*IP out	1024*IP in	192M	√	×	16

TECHNICAL SPECIFICATIONS

IP Interfaces

Types	Four independent GE Ports 100/1000Base-T auto-sensing
Connector	4*Ports (SFP interface) 4*Ports (4*RJ45)
IP Encapsulation	MPEG-TS over UDP/RTP IP
I/O Speed (1Gbe ports)	840 Mbps per port
ASI	6 ASI input, BNC interface

IP Input

Addressing & Protocols	Unicast,Multicast(IGMP V2/V3)
MPEG Format	188/204 Bytes per TS packet
Maxinumber of services	1024 IP inputs (for 16/32 DVB-C) 512/1024 IP inputs (for 8/16 DVB-T) 512/1024 IP inputs (for 8/16 ISDB-T)
Transport stream	reception of MPTS and SPTS

TS Output

Configuration	Configurable mirroring per Carrier RF channel 16/32, (8/16) IP output over UDP/RTP/RTSP, unicast/multicast, Data1 100/1000M Ethernet Ports
Packet Length	1-7
MPEG Format	188 Bytes per TS packet
Null Packet Processing	Filtering & Insertion

Multiplexing

Input Channel	1024(DVB-C), 512 or 1024(DVB-T/ISDB-T)
Output Channel	16/32(DVB-C), 8 or 16(DVB-T/ISDB-T)
Max PIDs	256 per channel
Functions	PID remapping(auto/manually optional) PCR accurate adjusting PSI/SI table automatically generating

Scrambling (Only for DVB-C)

Simul-Crypt CAS number	6
Scramble Standard	ETR289, ETSI 101 197, ETSI 103 197
Connection	Local/remote connection

General RF Modulation

Connector Type	1×F type Female, 75Ω
MER	≥ 40dB
RF frequency	50~960MHz, 1KHz step

QAM Modulating

Modulation Standard	DVB-C EN300429
Num of QAM Channels	**16 or 32** Non-adjacent Carrier
QAM Encoding	ITU-T J.83 Annex A (DVB), Annex B
Symbol Rate	5.0~7.0Msps, 1Khz stepping
QAM Constellations	16/32/64/128/256QAM
FEC	RS (204, 188)
Output Level	-20dBm~+10dBm(87~117dbμV), 0.1dB stepping

DVB-T Modulating

Modulation Standard	EN300744
Num of Cofdm Channels	**8 or 16** Non-adjacent Carrier
FFT mode	2K, 4K, 8K
Bandwidth	6Mhz, 7Mhz, 8Mhz
Constellation	QPSK, 16-QAM, 64-QAM
FEC Code	1/2, 2/3, 3/4, 5/6, 7/8
Output Level	-20~+10dbm(for all carriers), 0.5db stepping
ACL	-55 dBc

ISDB-Tb Modulating

Modulation Standard	ARIB STD-B31
Num of Carrier Channels	**8 or 16** Non-adjacent Carrier
Bandwidth	6M
Constellation	QPSK, 16QAM, 64QAM
Transmission Mode	2K, 4K, 8K
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Output Level	-20dBm~+10dBm(87~117dbμV), 0.1dB stepping
ACL	-50 dBc

System function

Management Port	Web-GUI, RJ45, 100M
Configuration	Save/Restore/Facture Set/Backup/Load Setting English language Reset Button

Environment

Dimensions (W*L*H)	420mm*440mm*44.5mm
Temperature	0~45℃(operation), -20~80℃(storage)
Power Voltage	100 to 120/200 to 240V AC ±10%; 50/60Hz

