MSM628

16* RF/500 IP to RF Modulator

DVB C CABLE DVB S2 DVB S2X
DVB T2 ISDB-T ATSC

MSM628 is a high-density, modular and professional TS processor equipped with 16 independent tuners, which can be either of DVB-S2X/S2/S, DVB-T/ T2, DVB-C, ISDB-T and ATSC types works with Two GbE Ports and Two DVB-ASI Ports inputs. It's very suitable for any industry which needs to integrate live video content and provide variety of TV channels on the local Coax Cable deployment of Digital TV broadcasting commercial buildings, apartments, hotels, hospitals, schools and government Institutes.

MSM628 Equipped with two IP In/Out data ports reception or streaming of MPEG compliant transport streams over UDP/RTP. Each port operates independently and can be configured as either IP in and IP out supporting full 840 Mbit/s TS data rate and up to 512 MPEG services. The full content of an input port can be mapped transparently and Multiplex to an output modulated Carrier Channel with the option to perform PID filtering or service filtering.

MSM628 enables an all-IP headend architecture, resulting in a more scalable and lower-cost transition in contribution and distribution services. This is an ideal solution for environments where you have a large number of air Channel, MPEG-TS IP Content and used largely to Medium-Scale Cable TV operator, Hotel facilities, or any kinds of Source signals convert to Cable TV broadcast environments in limited budget severely.This unit is designed especially for high channel density environments where rapid deployment, advanced management and compatibility are critical. Used in some of famous ballparks in the world, this is an ideal solution for environments where you have a large number of displays, such as stadiums, entertainment facilities, or broadcast environment.

Business Benefits

- Enhanced Modulated Channel resource utilization
- Cost efficiencies
- Reduced cost and complexity of management
- Concurrent high availability for all services
- Really can also use highest cost performance in low budget

Features

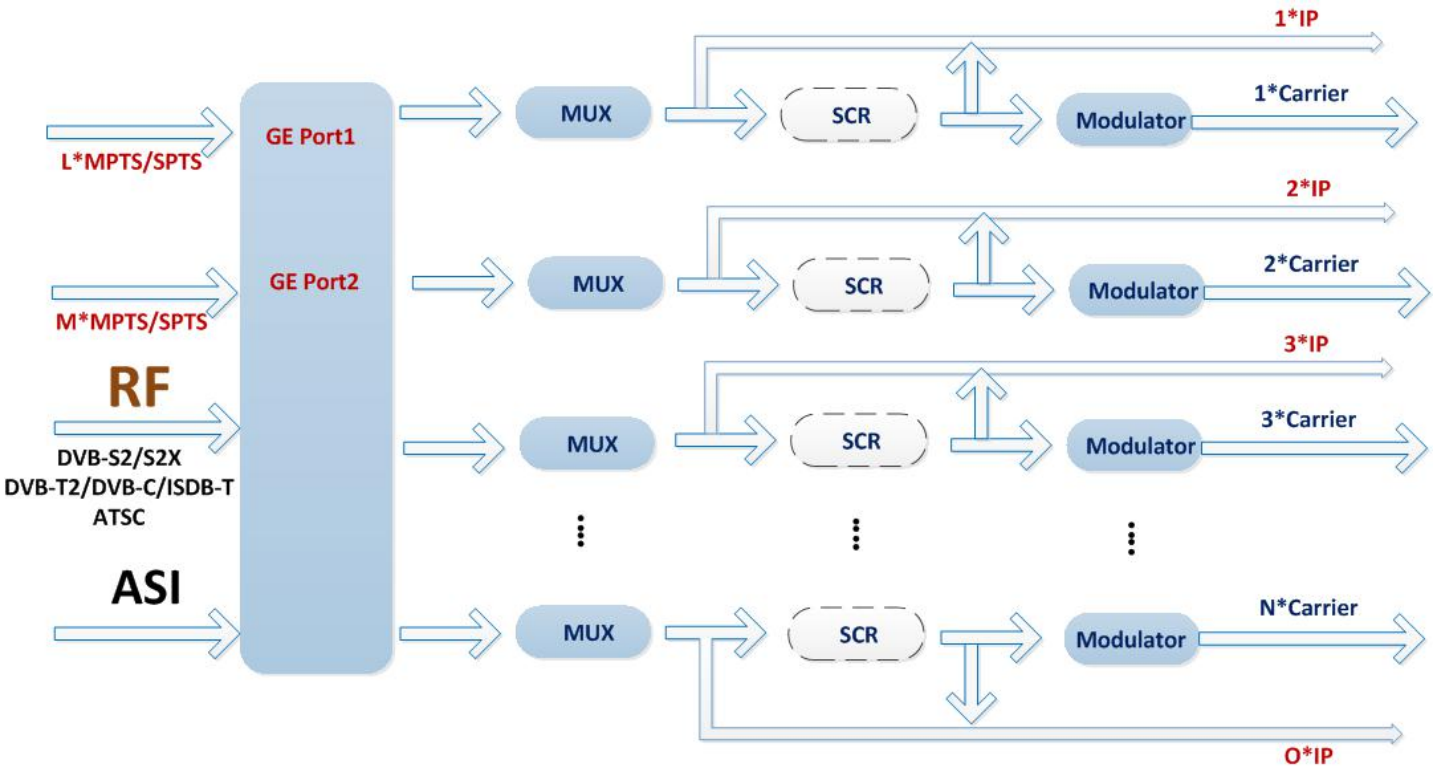
- Selectable RJ45 interfaces port of 2 GbE IP, 2*DVB-ASI and up to 16 FTA RF inputs and modulated carriers RF outputs of DVB-T, DVB-C modulation per 1RU Chassis
- 16* FTA Tuners Input, Supports variety of input options DVB-T2/S2/S2X/C/ATSC/ISDB-T
- Multi-mode tuners switchable (DVB-T/T2, DVB-C, ISDB-T)
- Up to 512*SPTS or MPTS Inputs over GbE Port
- 16*DVB-C or 8*DVB-T No-adjacent Carrier RF output as mirror of IP out after Multiplexing or Scrambling
- PID Filtering, Remapping and Passthrough Capabilities with User-Defined PID Value and any Index of In/Out TS
- EPG EIT Table passthrough
- LCN (Logical Channel Number) support
- VCT(Virtual Channel Table) Insertion for DVB-C
- Support NIT Table Insertion from Web, PSI/SI Editor and IP source inputs
- Multiplexing and transparent pass-through of two operating modes for each modulated carrier output
- TS Re-multiplexers with PSI/SI regeneration, Editing & inserting and PID processing
- PCR correction to accurately correct several PCR of the input data
- High density, high quality, high performance, high flexibility
- Excellent RF performance, Gain Level: -20 - +10dBm;
- Gain offset:10dB; BW: 50-960Mhz; MER ≥ 40dB
- Max.Level RF out much higher than the normal standard output level 0dBm, it will reduce the number of amplifier during the long distance transmission of the project. Increase reliability and cut the cost
- Easy-to-Use System Management via Web
- Diagnostics report, log printing of Kernal and System information
- Low Cost per Modulated channel - Breakthrough Price !

 ¦ www.dibvision.com ¦ sales@dibvision.com ¦ +86 571 8971 4580 ¦ Skype:dibdvb

Main Application

- Upgrade all your analog Head-ends to digital TV Solution
- Enterprise, Hotel, campus, hospital, Public Place
- Convert Huge FTA Channels into Cable TV networks
- Highest cost effective Digital TV deployment

Principle Chart



Modulated RF out	GbE1 Port (L)	GbE2 Port (M)	Tuners Inputs					ASI Inputs	Multiplexer	Scrambler	Max.Carriers (N)	IP out (O)
			S2	T2	ISDBT	ATSC	DVBC					
DVB-C	512	×	√	√	√	√	√	2	√	√	16	1
DVB-T	256	256	√	√	√	×	√	2	√	×	8	8

TECHNICAL SPECIFICATIONS

Tuners Inputs

Number of Tuners	16 FTA Tuners In/Loop Out
Type	DVB-C, DVB-T/T2, DVB-S/S2/S2X, ATSC, ISDB-T
Connector	F female, 75 Ω

DVB-S/S2 tuners Version 1

Input Frequency	950-2150Mhz
Symbol rate	1~45Mbauds(QPSK) 1~45Mbauds(8PSK)
Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Constellation	QPSK, 8PSK

DVB-S/S2/S2X tuners Version 2

DVB-S Mode

Input Frequency	950-2150Mhz
Symbol rate	0.5~45Mbauds
Signal Strength	- 65~-25dBm
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Constellation	QPSK
Max input bitrate	≤129 Mbps

DVB-S2 Mode

Input Frequency	950-2150Mhz
Symbol rate	QPSK/8PSK /16APSK: 0.5~45 Msps 32APSK: 0.5~40Msps;
FEC	QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10
Constellation	QPSK, 8PSK, 16APSK, 32APSK
Max input bitrate	≤129 Mbps

DVB-S2X Mode

Input Frequency	950-2150Mhz
Symbol rate	QPSK/8PSK /16APSK: 0.5~45 Msps 8APSK/32APSK: 0.5~40Msps
FEC	QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 8APSK: 5/9-L, 26/45-L 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36 , 2/3-L, 25/36, 13/18, 7/9, 77/90 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10, 2/3-L, 32/45, 11/15, 7/9
Constellation	QPSK, 8PSK, 8APSK, 16APSK, 32APSK
Max input bitrate	≤129 Mbps

ATSC tuners version

Frequency range	30~1000 MHz
Key reference spec	ATSC A/53
Input level	-34 to +40 dBmV
Constellation	8-VSB
Bandwidth	6Mhz

Multi-mode tuners switchable

DVB-T/T2 Mode

Frequency Range	60~890Mhz
Bandwidth	6Mhz, 7Mhz, 8Mhz
Level	-87 ~ -20dBm
Constellation	QPSK, 16QAM, 64QAM (Only DVB-T)
FEC Demodulation	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-T2:1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Guard Interval	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2:1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128

DVB-C Mode

Input Frequency Range	60 ~ 890MHz
Input Level	51~75dBμV
Symbol Rate	1~7MBaud
QAM Encoding	ITU-T J.83 Annex A(DVB), Annex B, Annex C
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz

ISDB-T Mode

Input frequency range	60 ~ 890MHz
Bandwidth	6MHz
Constellation	DQPSK, QPSK, 16QAM, 64QAM
Interleave	0, 4, 8, 16
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode	2K, 4K, 8K (FFT)
FEC (Code Rate)	1/2, 2/3, 3/4, 5/6, 7/8

IP Interfaces

Types	Two independent Gigabit Ethernet GbE1 and GbE2 port 100/1000Base-T auto-sensing
Connector	Each providing 1000Base-T (twisted pair, RJ-45)
IP Encapsulation	MPEG-TS over UDP/RTP IP
I/O Speed (1Gbe ports)	840 Mbps per port

IP Input

Addressing & Protocols	Unicast, Multicast(IGMP V2/V3)
MPEG Format	188/204 Bytes per TS packet
Maxinumber of services	512 IP inputs via GbE1 (Only for DVB-C output) 256 IP inputs via each GbE Port (Only for DVB-T output)
Transport stream	Reception of MPTS and SPTS

IP Output

DVB-T Configuration	mirroring per Carrier Channel
DVB-C Configuration	1xMPTS mirror of any one Carrier Channel
TS out	GbE1
Packet Length	1-7
MPEG Format	188 Bytes per TS packet
Null Packet Processing	Filtering & Insertion

DVB-ASI Inputs

Standard	GY-T 170-2001, EN50083-9
Interface port	2 port, BNC-Famale, 75Ω
Date Bitrate	≦150Mbps
Packet Length	204/188bytes
Input amplitude	200-880mV
Reflection loss	15dB
Work Mode	Burst, Smooth

Multiplexing

Maximum PID Remapping	360 output per channel PID remapping (automatically or manually) Accurate PCR adjusting Generate PSI/SI table automatically
PSI Insert	PAT, CAT, PMT extraction and generation
SI Insert	SDI, NIT, TOT, BAT, TDT generation
PSIP Insert	VCT (Only for DVB-C out)
IPTV Sync	Setting Sync period
NIT Insert	Web, PSI/SI Editor, Any TS inputs
Operating modes	multiplexing and transparent pass-through
PID Processing	CA Filter, PID Remap, PID passthrough
Program Information	Service Name, Program number LCN(Logic Channel Number) Service Type,Service Provider PMT Descriptor Tag, PMT Descriptor Data PMT, PCR, Video, Audio PID
PCR accurate adjusting	PCR Speed BW, PCR State BW
Source Select	Scrambled TS or Multiplexed TS

Scrambling(Only for DVB-C)

Simul-Crypt CAS number	4
Scramble Standard	ETR289, ETSI 101 197, ETSI 103 197
Connection	Local/remote connection
Table update	CAT/PMT
ECMG interface	TCP
EMMG interface	TCP/UDP
EMM bandwidth	0~3Mbps/TS

General RF Modulation

Connector Type	1×F type Female in front panel, 75Ω
MER	≥ 40dB
Output Return Loss	14 dB
RF frequency	50~960MHz, 1KHz step
Output Level	-20~+10dbm(87~107 dbμV),0.1db step
Modulated Carrier Enable	On/Off
Shoulder Attenuation	55dBc (typical.)
Spectrum Flatness	4dB over full output frequency range
Configure Mode	All Configuration or Each Modulated Carrier
Max.BandWidth	192Mhz(From Start to End freqs)

QAM Modulating

Modulation Standard	DVB-C EN300429
Num of QAM Channels	**16** 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(Annex A) 64/256QAM(Annex B)
Bandwidth	8M (Annex A) 6M (Annex B)

DVB-T Modulating

Modulation Standard	EN300744
Num of Cofdm Channels	**8** Non-adjacent Carrier
FFT mode	2K, 8K
Bandwidth	6Mhz, 7Mhz, 8Mhz
Constellation	QPSK, 16-QAM, 64-QAM
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC Code	1/2, 2/3, 3/4, 5/6, 7/8

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)	482mm×300mm×44.5mm
Weight	4kg
Temperature	0~45℃(operation), -20~80℃(storage)
Power Voltage	AC 100V±1050/60Hz; AC 220V±10%, 50/60HZ

ORDERING INFORMATION

Product category	Product Model	Detail Description	Application
Related Products	16/32Ch IP -QAM Modulator **IPM6000**	2GbE port/1024*IP inputs. 16/32*QAM(Annex A/B/C, Scrambling) /8 *DVB-T/8*ATSC/6***ISDBT** RF and MPTS over UDP/RTP out	-Small-scale CATV networks -Upgrade Analog to Digital TV DVB-S2 to DVB-T Converter -Hotel, Campus -**Breakthrough Price !**
	High Density Digital TV Transmodulator **MSM628**	16*DVB-S2 FTA/2*ASI/512*IP Input, 16*DVB-C (Scrambling, Annex A/B) /8*DVB-T RF/MPTS over UDP/RTP out	
	Professional IP QAM modulator **IPQ6250**	**16** QAM no-adjacent/Two GbE IP per Module, 3 Modules/**48QAM** per 1RU, Annex A/B/C, Multiplexer/ Scrambling; 5 Years Warranty	
	4Chs Digital TV Transmodulator **QAM6248Plus**	12*FTA DVB-S2 or 12*FTA DVB-T2 or 8*FTA DVB-S2+ 4*FTA DVB-T2 or 4*FTA DVB-S2+8*FTA DVB-T2 and 128*IP in; 4*DVB-T or 4*DVB-C (Scrambling, Annex A/B)/ 4*MPTS over UDP/RTP out	
Companion Products	24 AV SD MPEG2 Encoder **ENC3081H**	8/12/24 AV Ports; MPEG-2 MP@ML, MPEG1-L2/AC3 audio, UDP/RTP IP out	-Distribute HD/SD to Coax & IP TV; -DVB-C/DVB-T/ISDB-T/ATSC -Hotel, Campus -IPTV
	8Chs MPEG-2/H.264 Magnun SD Encoder **ENC3184**	Low bitrate ; 8*AV(PAL, NTSC, SECAM)/ASI inputs; ASI/IP out; MPEG2/H.264; MPEG-1 L2/LC-AAC/ HE-AAC V1/HE-AAC	
	8* HDMI H.264 FullHD Encoder **ENC3381**	8*HDMI/ASI MUX input ASI/IP out, H.264 Up To 1080p50/59.94/60fps, MPEG 1 L2/AAC 8*SPTS/1*MPTS UDP/RTP out; 3 Years Warranty	
	24* HDMI HD Encoder **ENC3281**	4*HDMI input per module, up to 6 Modules, GbE RJ45 port, H.264 Up To 1080p30/25fps, MPEG 1 L2, **N***SPTS/1*MPTS	

