

# DCP-3000

Digital Content Processing Platform



**All in One, One for All!**

## **Digital TV modules:**

- DVB-S2/T2/C demodulator
- QAM/COFDM modulator
- Encoder/Trans-coder
- Professional Decoder
- ReMUX/Scrambler
- ASI/IP/E3/DS3 converter

*Television Technologies*

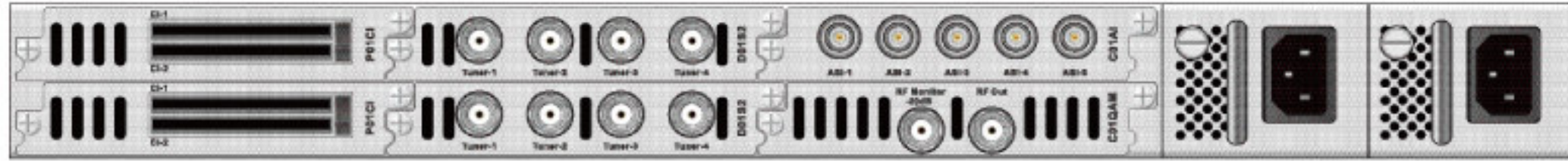
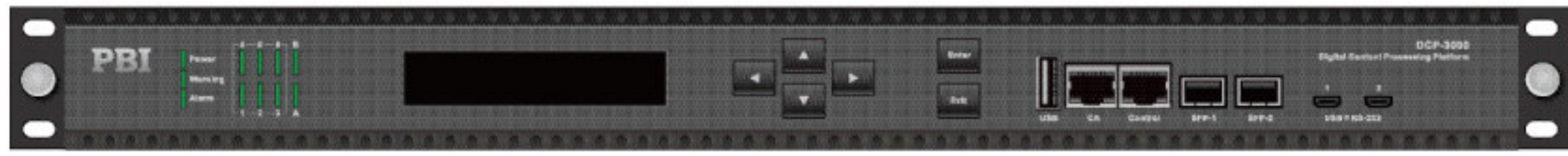
[www.TVTech.ru](http://www.TVTech.ru)

тел.: (812) 313-29-90



<http://dtv.pbicn.com>

# DCP-3000



## Front Panel: .....

Display: 2x20 character LCD  
 Control: 1xRJ45, 10/100/1000 Base-T  
 USB: 1xUSB (for upgrade)  
       2xMini USB (for debug)  
 Data: 1xRJ45, 10/100/1000 Base-T  
 TSolP Port: 2xSFP

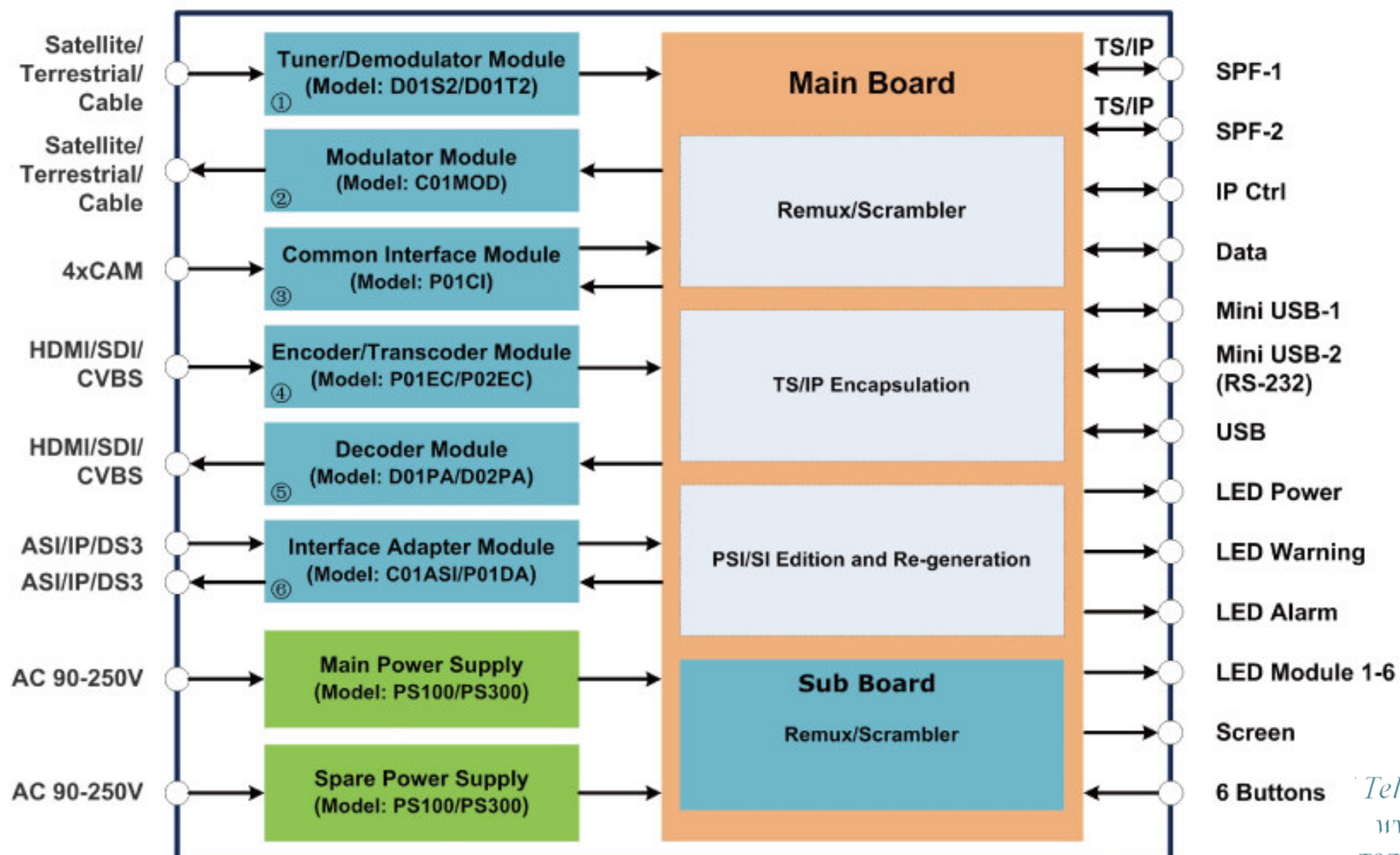
## Rear Panel: .....

Module Slot: 6 for different functional cards  
 Power Supply: 2xAC-90-250V in redundancy,  
                   100W&300W

## Main Features: .....

- Maximum data throughput 49Gb/s
- 16 TS processors on the main board, 100Mb/s bandwidth for each TS processor
- 2 SFP GbE IP ports with maximum 920Mbps input and output data rate
- Up to 256 MPTS/SPTS TS/IP input and 512 MPTS/SPTS output without IP-FEC
- Up to 24 MPTS/SPTS TS/IP input and 24 MPTS/SPTS output with IP-FEC
- PSI/SI edition and re-generation, PID re-mapping and filtering
- Control and monitoring by Front Panel, Menu, Web and SNMP
- Total 6 slots for different digital TV functional modules: modulator, demodulator, encoder, trans-coder, decoder, interface adapter, etc
- Removable cooling fan assembly with alarm & speed control
- Dual hot-swappable power supplier units
- 1RU rack with display screen, 6 buttons, RS-232, USB

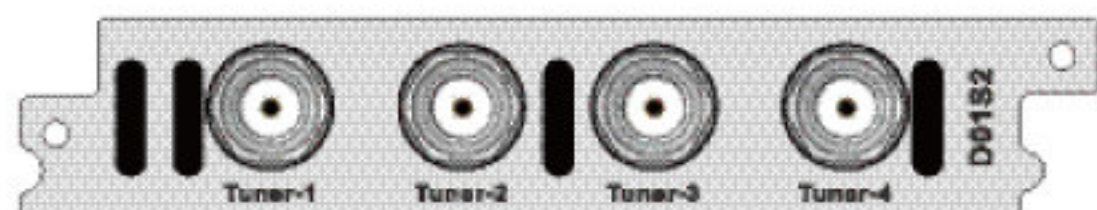
## Block Diagram: .....



## Tuner and demodulator Module: -----

### Reference: **D01S2**

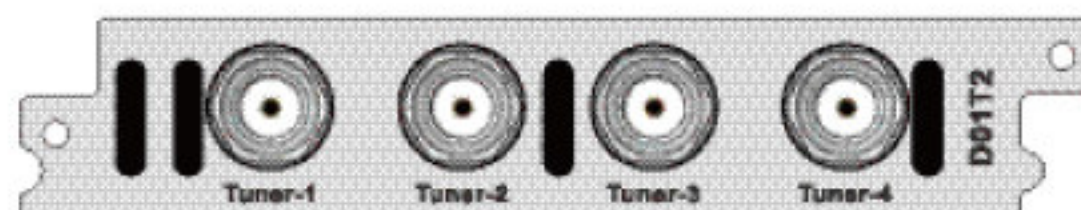
(4 x DVB-S/S2 Demodulator Module)



- 4 x F Type Female, 75Ω
- Input Frequency Range: 950 ~ 2150 MHz
- Input RF level: -65dBm ~ -25dBm
- Symbol Rate: 2 ~ 45MSps
- Roll Off factor: 0.35(DVB-S QPSK), 0.35/0.25/0.2(DVB-S2 8PSK)
- DVB-S2 FEC Puncture Rate: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10
- DVB-S FEC Puncture Rate: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8
- Up to 40 PID BISS-1/E de-encryption per tuner input
- Up to 8 PLP T2-MI demodulation per tuner input

### Reference: **D01T2**

(4 x DVB-C/T/T2 Demodulator Module)

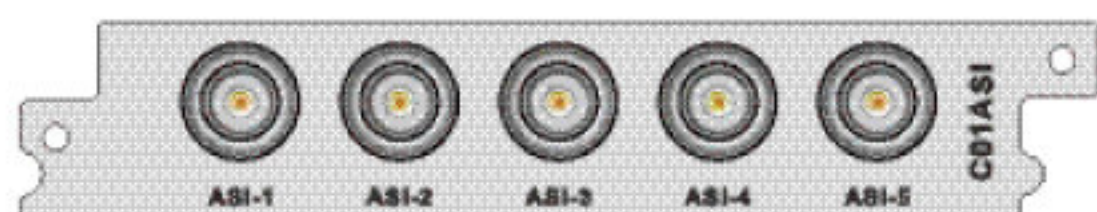


- 4 x F Type Female, 75Ω
- Full compliant with DVB-T2 v1.3
- Input Frequency, 48 ~ 860 MHz(DVB-C), 104 ~ 862 MHz(DVB-T/T2)
- Symbol Rate, 1 ~ 7MSps (ITU J.83 Annex A DVB-C)
- Constellation, 16/32/64/128/256 QAM(DVB-C), QPSK/16 QAM/64 QAM(DVB-T), QPSK/16 QAM/64 QAM/256 QAM(DVB-T2)
- FFT Mode, 2K/8K(DVB-T), 1K/2K/4K/8K/16K/32K(DVB-T2)
- Guard Interval, 1/4, 1/8, 1/16, 1/32(DVB-T) 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128(DVB-T2)
- FEC Code Rate, 1/2, 2/3, 3/4, 5/6, 7/8(DVB-T) 1/2, 3/5, 2/3, 3/4, 4/5, 5/6(DVB-T2)

## Interface converter Module: -----

### Reference: **C01ASI**

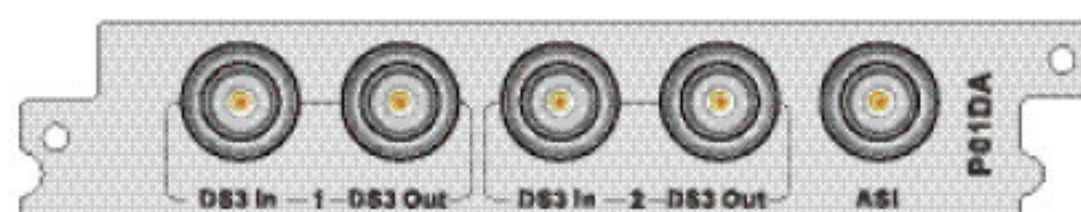
(5 x ASI In/Out Module)



- 5 x BNC Female, 75Ω
- Standard: DVB-ASI, EN50083-9
- Input/output configurable
- Maximum bit of rate each port: 213Mbps
- Signal level: 200mV-880mV
- T2-MI mode: Input from ASI-5; 1 to 4 TS of different PLP output to ASI-1,2,3 and 4

### Reference: **P01DA**

(2 x DS3 Input/2 x DS3 Output/1 x ASI Adaptor Module)

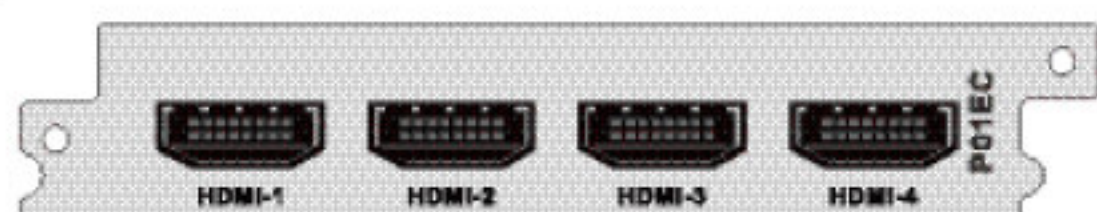


- 5 x BNC Female, 75Ω
- Standard: DVB-ASI, EN50083-9 / ITU-T G.703
- Frame Structure: ITU-T G.752 / ITU-T G.804
- ASI Input or Output configurable
- 2 DS3 inputs and 2 DS3 outputs
- Bit rate: 44.736Mbps

## Encoder/Trans-coder Module: -----

### Reference: **P01EC**

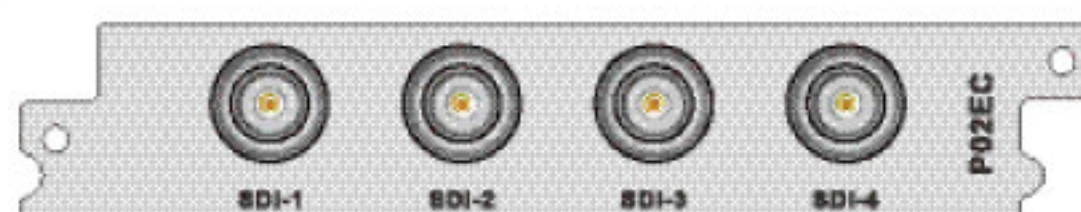
(4 x HDMI MPEG-2/H.264 Transcoder/Encoder Module)



- 4 x HDMI Inputs
- Video coding H.264/AVC Baseline, Main & High Profile @ L4.0 or less & MPEG-2 MP@ML
- Audio Coding MPEG-1 Layer II, MPEG-2/4, AAC-LC/HE-AAC
- Trans-coding or encoding mode configurable
- Video Input Resolution: 1080i, 720p, 576i, 480i.
- Support video resolution downscaling
- Support VBR & CBR mode
- Sampling Format: 4:2:0, 10-bit, YCbCr
- Bit Rate per channel: 300K ~ 20Mbps
- Aspect Ratio: 4:3, 16:9

### Reference: **P02EC**

(4 x SDI MPEG-2/H.264 Transcoder/Encoder Module)

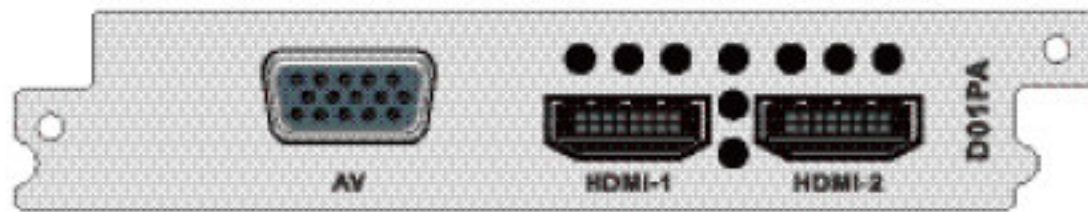


- 4 x SDI Inputs, BNC Female, 75Ω
- Video coding: H.264/AVC Baseline, Main & High Profile @ L4.0 or less & MPEG-2 MP@ML
- Audio Coding: MPEG-1 Layer II, MPEG-2/4, AAC-LC/HE-AAC
- Transcoding or encoding mode configurable
- Video Input Resolution: 1080i, 720p, 576i, 480i.
- Support video resolution downscaling
- Support VBR & CBR mode
- Sampling Format: 4:2:0, 10-bit, YCbCr
- Bit Rate per channel: 300K ~ 20Mbps
- Aspect Ratio: 4:3, 16:9
- Second audio encoding with extension encoding card

## Decoder Module: -----

### Reference: **D01PA**

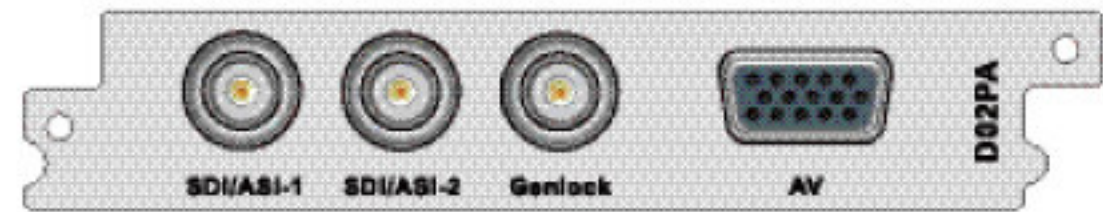
(2 x Channels Multi-format Signal SD/HD Decoder Module)



- TV Service input from any modules and TS processor of main board and sub board
- 2 x HDMI outputs, 2 x CVBS outputs via D-sub 15 to RCA convertor
- Video Format: MPEG-2(MP@ML for SD, MP@HL for HD), MPEG-4/H.264 AVC Part 10(MP@L3 for SD, HP@L4.1 for HD)
- Audio Format: MPEG-1 Layer II, AAC-LC, HE AAC V1/V2
- Aspect Ratio: 16:9, 4:3 Self-adaptation
- Resolution and Frame Rate: 1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60, 720p x 59.94, 720p x 50, 576i x 25, 480i x 29.97
- Video PID Bit Rate: <= 50Mbps

### Reference: **D02PA**

(2 x Channels Multi-format Signal SD/HD Decoder Module)

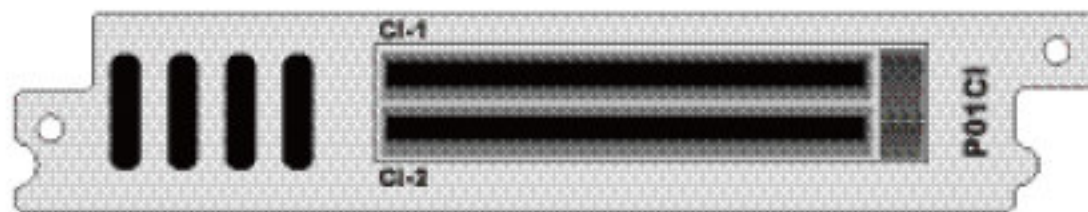


- 2 x SDI outputs, 1xGenlock input, BNC Female 75Ω,
- 2 x CVBS outputs by D-sub 15 to RCA convertor
- Video Format: MPEG-2(MP@ML for SD, MP@HL for HD), MPEG-4/H.264 AVC Part 10(MP@L3 for SD, HP@L4.1 for HD)
- Audio Format: MPEG-1 Layer II, AAC-LC, HE AAC V1/V2
- Aspect Ratio: 16:9, 4:3 Self-adaptation
- Resolution and Frame Rate: 1080i x 30, 1080i x 29.97, 1080i x 25, 720p x 60, 720p x 59.94, 720p x 50, 576i x 25, 480i x 29.97
- Max video bit rate: <= 50Mbps

## TS Processor Module: -----

### Reference: **P01CI**

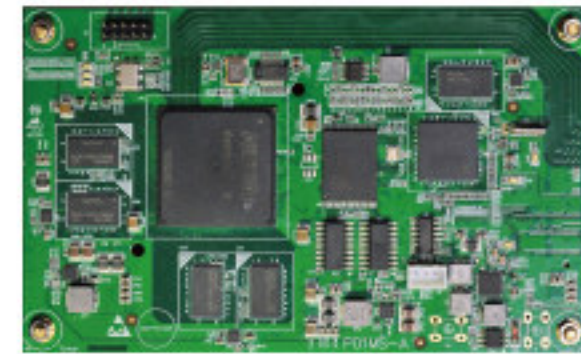
(4 x CI De-encryption Module)



- 4 x Common Interface CAM slots
- Multiple programs CAS or BISS-1/E De-encryption
- CAM watchdog
- Compatible with most commercial CA systems

### Reference: **P01MS**

(reMUX & Scrambler Extension Module)

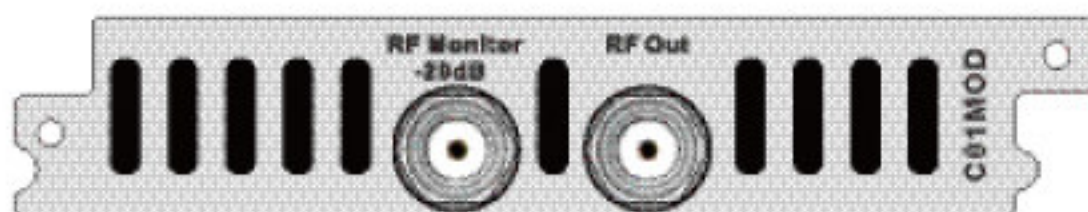


- 15Gbps data processing capability
- 24 TS processors for remux and scrambling (48 TS without scrambling)
- Compliant with MPEG2/DVB standards
- MPEG2/H.264 TS re-Multiplexing & Scrambling
- Local & Remote CAS simulcrypt, BISS
- PID filtering, remapping, pass through & mapping
- Insert & Edit PSI/SI tables
- EIT pass through or re-construction
- PCR re-stamp & calibrate
- Real time board temperature monitoring

## Modulator Module: -----

### Reference: **C01MOD**

(8 x QAM/2 x COFDM Modulator)



- 2 x F Type Female, 75Ω, 1 x main output and -20dB monitor output
- Support QAM/COFDM Modulation (cannot simultaneously work)
- 2 groups of 4 adjacent channel carriers QAM RF output, 2 x Un-adjacent channel carries COFDM RF output
- RF output range: 48 ~ 996MHz, step by 1KHz
- Symbol rate: 2.5 ~ 6.99MBauds
- RF total output level: 94 ~ 120dBuV (111dBuV each carrier)
- Spurious rejection > 55dB
- Output return loss -10dB
- QAM Modulation, support ITU-T J.83 Annex A, C
- Constellation, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
- COFDM Modulation, support QPSK, 16QAM, 64QAM
- FFT Mode, 2K/8K
- Guard Interval, 1/4, 1/8, 1/16, 1/32
- Code Rate, 1/2, 2/3, 3/4, 5/6, 7/8

## More new modus in 2017

*reMultiplexer Scrambler sub board*

*16/24 x non-adjacent IPQAM Modulator Module*

*8 x QAM/COFDM/DTMB Modulator Module*

*4 x RJ-45 GbE TS/IP Module*

*4 x HDMI/SDI 4:2:2 HEVC/H.265 HD/SD Encoder Module*

*2 x HDMI HEVC/H.265 1080P/4K Decoder Module*

*4 x ATSC Demodulator Module*

*4 x ISDB-T Demodulator Module*

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