

less is more



DMP900

Digital Media Platform



Highlight

- ▶ **Any-to-Any configuration**
- ▶ **Compact modular design**
- ▶ **Multi-Function**
- ▶ **Power and module redundancy**
- ▶ **Hot swappable**
- ▶ **Future compatible**

Product Introduction

DMP900 is a 1RU scalable headend platform with flexible module-insertion structure (6 slots). The DMP can house up to six modules. All modules and the two power supplies are hot-swap and backup supported. With its powerful data processing mainboard, it can meet with different application needs such as receiving, decoding, encoding, transcoding, multiplexing, scrambling and modulation. All these features make the DMP a flexible yet powerful highly integrated solution for all levels of audio/video processing applications.

Key product features

Highly integrated digital TV solution

6 module slots in 1RU chassis, with more than 30 different module choices for different functions

Encoding/Transcoding

- ▶ Up to 20 SD or 10 HD programs encoding
- ▶ Up to 40 SD or 20 HD programs transcoding
- ▶ Multi-audio/AAC/AC3 encoding

Receiving

- ▶ Up to 20 frequencies of DVB-S/S2/C/T/T2/ISDB-T/ATSC receiving
- ▶ Support MPE decapsulation and multi-stream(msi) receiving (optional)

Modulating/Scrambling

- ▶ Up to 40-QAM modulating
- ▶ Up to 20-OFDM modulating
- ▶ Up to 16 frequency transmodulating
(DVB-S/S2/T/T2/ISDB-T/ATSC To QAM/OFDM/8 frequencies)

Stream processing

- ▶ 24 ASI ports of multiplexing
- ▶ 20 ASI-IP gateway
- ▶ Multiplexing or transparent passthrough
- ▶ EIT multiplexing (optional)
- ▶ Support SI and EPG data insertion.

Professional level stability and service assurance

- ▶ Support automatic input backup
- ▶ Support mirror backup for each output.
- ▶ All modules hot-swappable.
- ▶ Redundant dual power supplies.

User-friendly management interface

- ▶ Support both web-based and client-based NMS
- ▶ SNMP supported for system integration.
- ▶ Configuration file in/exportable for easy maintenance.
- ▶ Status monitoring.

Support different distribution/re-distribution applications

DMP900 is architected to house 6 modules of more than 30 various functional options to perform almost all kinds of video/audio application in a 1RU chassis, including receiving, decoding, encoding, transcoding, scrambling and modulation.

Less input for system construction and maintenance

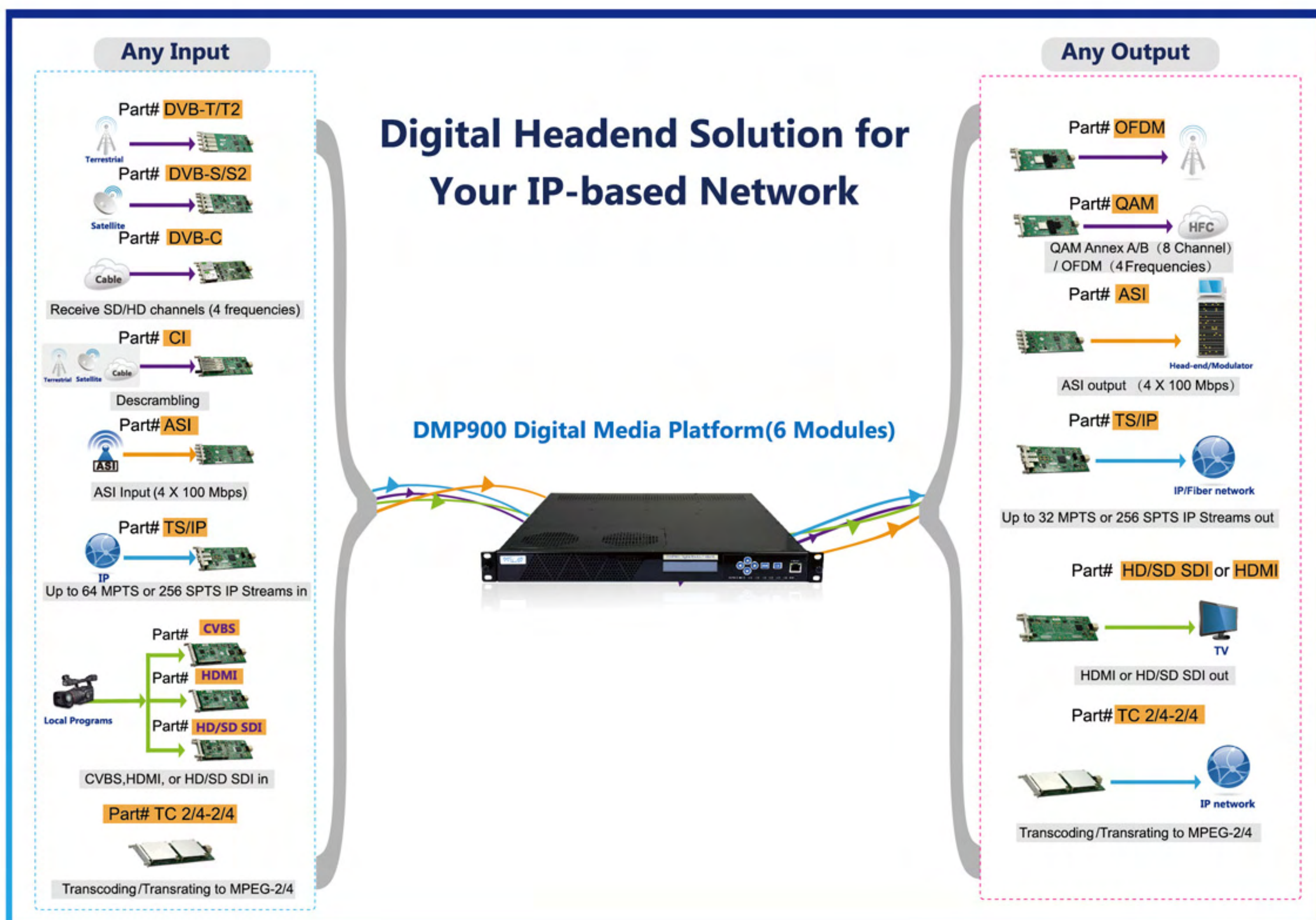
The highly integrated DMP with module-insertion structure not only greatly reduces the overall system space occupation and power consumption, but much simplify the system operation and maintenance.

Enable smooth transition to other distribution platform

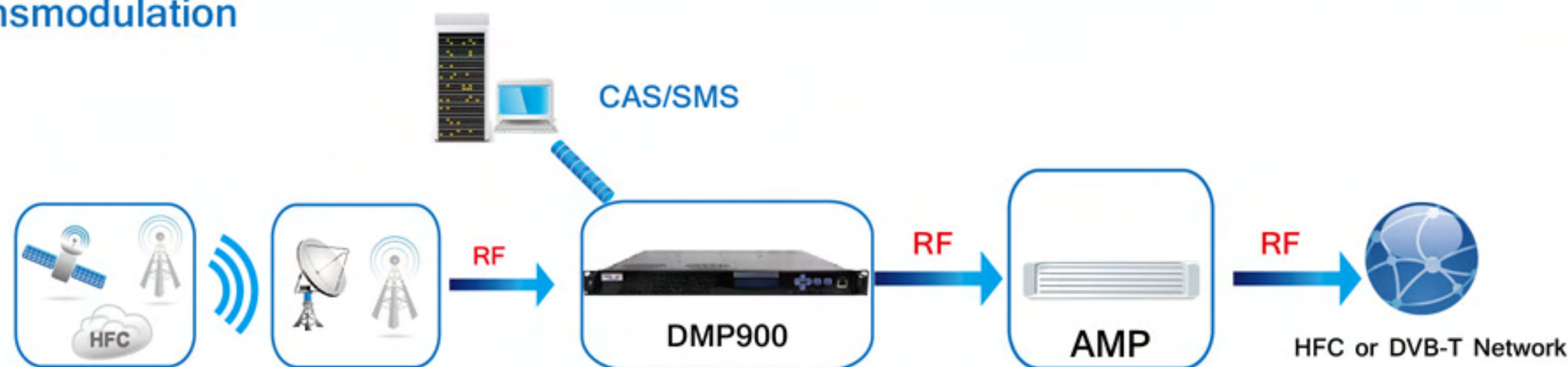
DMP900 supports fully operation based on all IP architecture, which provides a much cost-effective distribution solution for operators comparing with traditional network. It helps the traditional digital TV operators to have more smooth access to the IP network transmission.

Easy management and configuration

The client-based and web-based network management software provides operators a much more convenient way to monitor, manage and configure the DMP devices.



DVB transmodulation



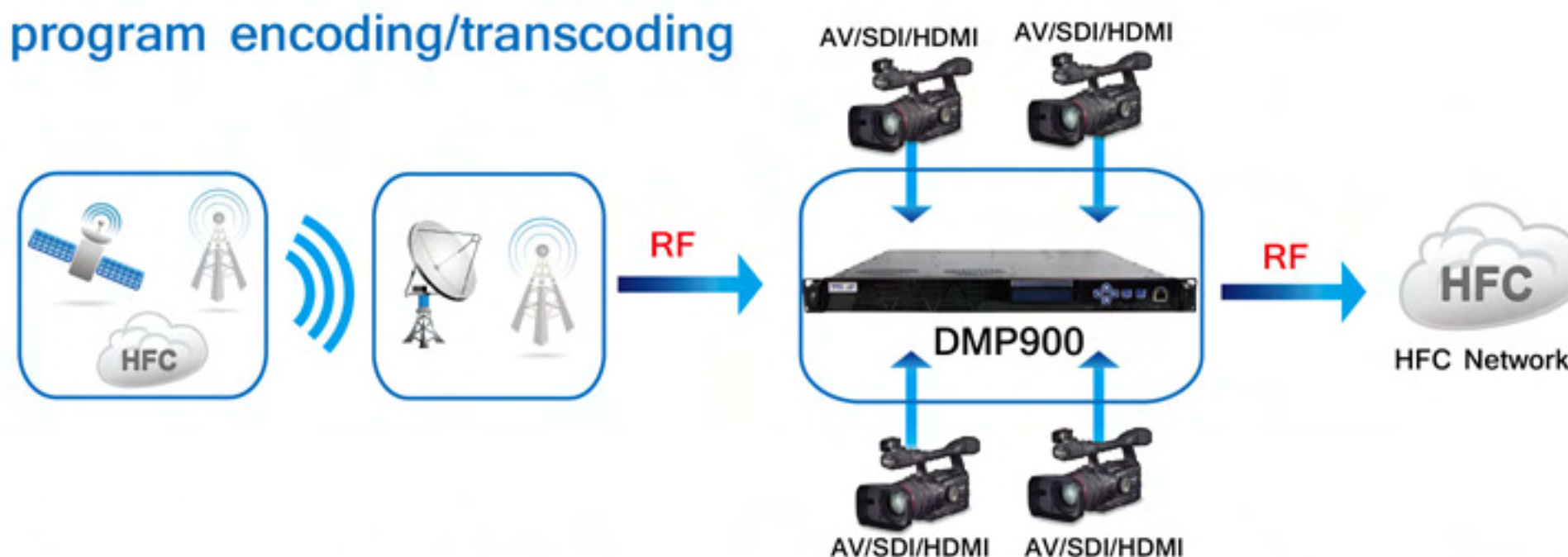
- Embedded with the receiving modules (DVB-S2/S/T2/T/ISDB-T or ATSC) and QAM modules, DMP can support up to 16 frequencies receiving, multiplexing and modulation that realize the transition from satellite and terrestrial digital TV signal to HFC network. The typical application is especially suitable for HITS, hotel, apartment, community and other SMATV system.

IP based content distribution



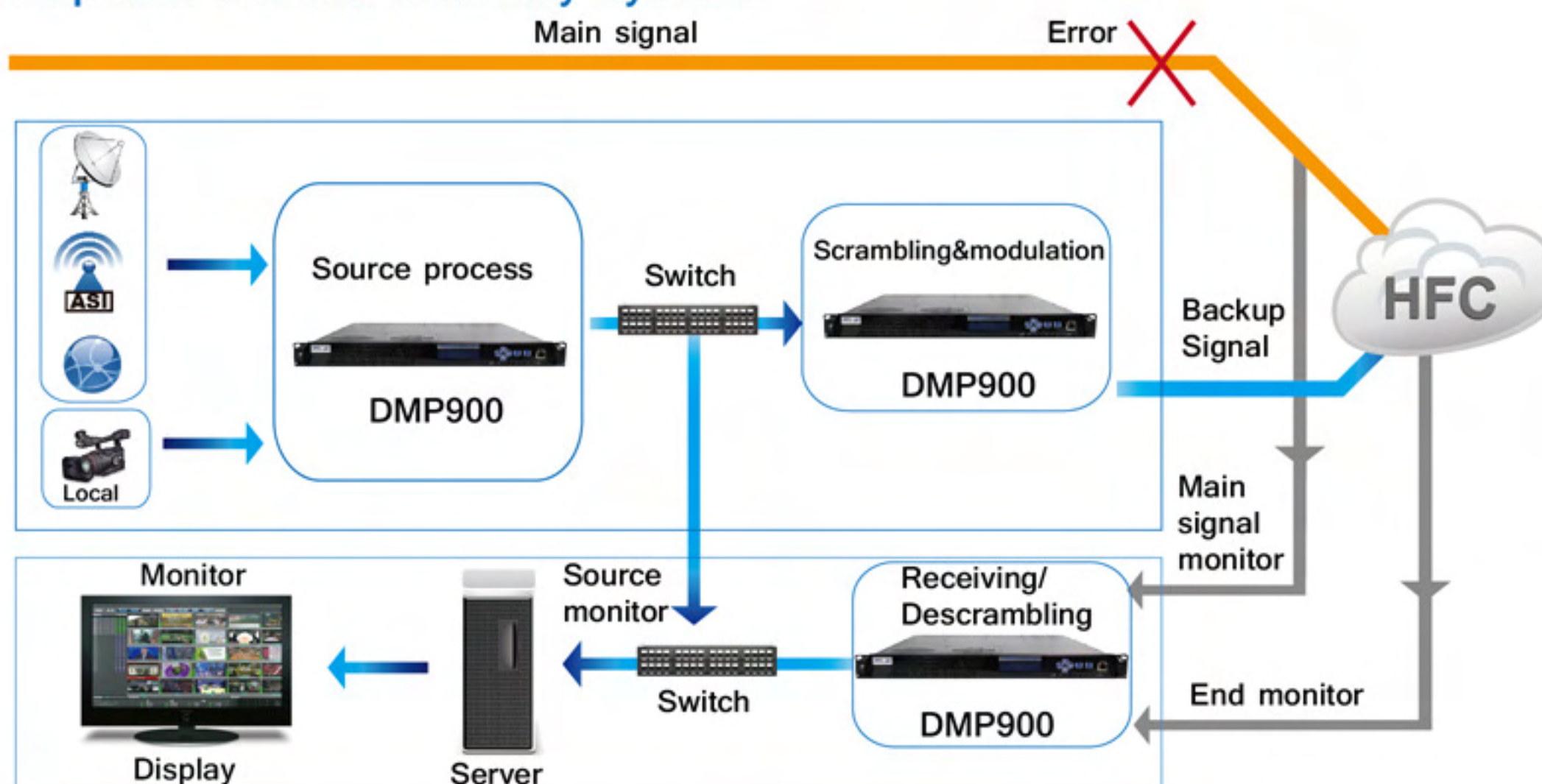
- Equipped with the receiving modules (DVB-S2/S/T2/T/C/ISDB-T/ATSC or ASI), encoder module and the TSIP module, the DMP is transformed to a IP content distribution platform which supports to receive frequency signals, encoded signals and then transmit through IP network. Such application fits for the needs of point to point IP transmission, IPTV, and other IP-based distribution application.

MPEG-2/H.264 program encoding/transcoding



- With the encoder and transcoder modules, operator can easily manage the program transmission bitrate and format (MPEG-2 or H.264) to best suits for the existing headend system and transmission network. Legacy can be best respected.

Redundant backup and disaster recovery system



- The DMP supports seamlessly source and transmission backup. The backup can be based on modular level or the whole unit level. Once any failure happens on the host, the backup module or the backup equipment can seamlessly take over the receiving/transmission of the host to ensure non-stop operation.

DMP900

Specification - 1

Chassis

Kernel processing capacity	384 TS (1500 programs)
Data processing	6Gbps
Slot number	6 slot
Control& monitor	LCD front panel SNMP network management
Multiplexing	support
Hot swappable PS	Support
Hot swappable module	Support
Internal high-speed data transmission	Support
Redundant power supply	Support
Cooling fan	High-speed & replacable
Chassis dimension	Standard 1RU

4 Channel MPEG-2 AV SD Encoder (EN2AV-4S)

Inputs	
Video:	4xCVBS
Audio:	4 pairs of audio (unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG-2 MP@ML
Audio:	MPEG-1 Layer II
Encoding bitrate	
Video:	2.0~15.0 Mbps

Premium 4 Channel H.264 / MPEG-2 AV SD Encoder (EN2AV-4SM)

Inputs	
Video:	4xCVBS
Audio:	4 pairs of audio (unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG-2 MP@ML, MPEG-4 AVC / H.264 MP@L3
Audio:	MPEG1 L2/AAC, LC/HE AAC
Encoding bitrate	
Video:	0.8 ~ 9Mbps (H.264) 1.5 ~ 15 Mbps (MPEG-2)

2 Channel MPEG-2 SDI/AV SD Encoder (EN2SDIS)

Inputs	
Video:	2×CVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG-2 MP@ML
Audio:	MPEG-1 Layer-I/II
Encoding bitrate	
Video:	2.0 ~ 15Mbps

2 Channel H.264 SDI/AV SD Encoder (EN4SDIS)

Inputs	
Video:	2×CVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG-4 AVC / H.264 MP@L3
Audio:	MPEG-1 Layer-I/II
Encoding bitrate	
Video:	1.0 ~ 20Mbps

2 Channel H.264 SDI/AV SD/HD Encoder (EN4SDIH)

Inputs	
Video:	2×CVBS/SDI(BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i, 720p, 1080i, 1080p
Encoding Format	
Video:	MPEG-4 AVC / H.264 MP@L3/HP@L4
Audio:	MPEG-1 Layer-I/II, AAC
Encoding bitrate	
Video:	1.0 ~ 20Mbps

Premium 2 Channel MPEG-2 / H.264 SDI/AV SD Encoder (EN4SDISM)

Inputs	
Video:	2×CVBS/SDI(BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG-4 AVC / H.264 MP@L3
Audio:	MPEG1 L2/AAC LC/HE AAC
Encoding bitrate	
Video:	0.8 ~ 9Mbps (H.264) 1.5 ~ 15 Mbps (MPEG-2)

Multi-Audio SDI/AV SD/HD Encoder (EN2SDIS-MPG/ EN4SDIS-MPG/ EN4SDIH-MPG/ EN4SDISM-MPG)

Inputs	
Video:	2×CVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced) Up to 4 pairs of SDI embedded audio
Video Resolution:	480i, 576i, 720p, 1080i, 1080p (EN4SDIH-MPG)
Encoding Format	
Video:	MPEG-2 MP@ML (EN2SDIS-MPG)
	MPEG-4 AVC / H.264 MP@L3 (EN4SDIS-MPG/ EN4SDISM-MPG)
	MPEG-4 AVC / H.264 MP@L3/HP@L4 (EN4SDIH-MPG)

Audio:	MPEG-1 Layer-I/II
Encoding bitrate	
Video:	2.0~ 15 Mbps (EN2SDIS-MPG)
	1.0~ 20 Mbps (EN4SDIS-MPG/ SEN4SDIH-MPG)
	0.8 ~ 9Mbps (H.264)
	1.5 ~ 15 Mbps (MPEG-2) (EN4SDISM-MPG)

AC-3 Encoder (EN2SDIS-AC3/ EN4SDIS-AC3/ EN4SDIH-AC3 / EN4SDISM-AC3)

Inputs	
Video:	2×CVBS/SDI(BNC)
Audio:	2 pairs of audio (balanced/unbalanced) Up to 4 pairs of SDI embedded audio
Video Resolution:	480i, 576i, 720p, 1080i, 1080p (EN4SDIH-AC3)
Encoding Format	
Video:	MPEG-2 MP@ML (EN2SDIS-AC3)
	MPEG-4 AVC / H.264 MP@L3 (EN4SDIS-AC3 / EN4SDISM-AC3)
	MPEG-4 AVC / H.264 MP@L3/HP@L4 (EN4SDIH-AC3)
Audio:	MPEG-1 Layer-I/II
	Dolby Digital AC-3
Encoding bitrate	
Video:	2.0~ 15 Mbps (EN2SDIS-AC3)
	1.0~ 20 Mbps (EN4SDIS-AC3 / EN4SDIH-AC3)
	0.8 ~ 9Mbps (H.264)
	1.5 ~ 15 Mbps (MPEG-2) (EN4SDISM-AC3)

H.264 HDMI Encoder (EN4HDMI)

Inputs	
Video:	2×HDMI
Audio:	HDMI embedded
Video Resolution:	480i , 576i, 720p, 1080i, 1080p
Encoding Format	
Video:	HD: MPEG-4 AVC / H.264 HP@L4 SD: MPEG-4 AVC / H.264 MP@L3
Audio:	MPEG-1 Layer II , AAC
Encoding bitrate	
Video:	1.0~20 Mbps

H.264 SD/HD Decoder

Video Resolution:	480i, 576i, 720p, 1080i
Video Decoding :	SD: MPEG-2 MP@ML MPEG-4 AVC MP@L3
	HD: MPEG-2 MP@HL MPEG-4 AVC MP@L4.0 / HP@4.0
Audio Decoding :	MPEG-1 Layer II MPEG-2 LayerII AAC Dolby Digital (AC3) (optional)
Support program & PID level decoding	
Subtitle:	DVB / EBU subtitle & Close Caption

DMP900

Specification - 2

MPEG2/4 to 4 Transcoder (TC4-2/TC4)	
Process channels:	2× SD programs 1× HD programs (TC4-2) 4x SD programs 2x HD programs (TC4)
Video Resolution:	480i, 576i, 720p,1080i, 1080p
Transcoding format	
Video:	HD: MPEG-4 AVC / H.264 HP@L4 SD: MPEG-4 AVC / H.264 MP@L3
Audio:	MPEG-1 Layer- II, AAC, AC3 pass through
Encoding bitrate	
Video:	1.0~15 Mbps

2 Channel H.264 HD Transcoder (TC4-H)	
Process channels:	2× HD programs
Video Resolution:	480i, 576i, 720p,1080i, 1080p
Transcoding format	
Video:	HD: MPEG-4 AVC / H.264 HP@L4
Audio:	MPEG-1 Layer- II, AAC, AC3 pass through
Encoding bitrate	
Video:	1.0~20 Mbps

Premium MPEG-2/H.264 Transcoder (TCSD-2M/TCSD-M)	
Process channels:	2× SD programs (TCSD-2M) 4x SD programs (TCSD-M)
Video Resolution:	480i, 576i
Transcoding format	
Video:	MPEG-4 AVC / H.264 MP@L3 MPEG-2 MP@ML
Audio:	MPEG-1 Layer- II, AAC, AC3 pass through
Encoding bitrate	
Video:	0.8~9Mbps (H.264) 1.5~15Mbps (MPEG-2)

2 Channel MPEG-2/H.264 SD Transcoder (TC24)	
Process channels:	2× SD programs
Video Resolution:	480i, 576i
Transcoding format	
Video:	MPEG-2 MP@ML MPEG-4 AVC / H.264 MP@L3
Audio:	MPEG-1 Layer- II, AAC, AC3 pass through
Encoding bitrate	
Video:	1.0~20Mbps (H.264) 2.0~15Mbps (MPEG-2)

Premium SD/HD Transcoder (TCHD-M)	
Transcoding Program No.	FHD x 1 (Up to 1080P@60fps) HD x 2 HD x1 + SD x4 SD x8
Video Resolution:	FHD, HD, SD & User define (below 1080p)
Frame Rate	60, 59.94, 50, 30, 29.97, 25, 24, 23.98;
Transcoding Format	
Video:	H.264 High/Main/Constrained Baseline MPEG-2 Input
Audio:	MPEG-1 Layer-I/II
Supported Video bitrate:	Max. 100Mbps

Multi-screen Transcoder (TCMS-M)	
Input/Output:	Max. 1 x FHD or 2 x SD/HD input Max. 8 x SD/HD output Output profiles(per input) 1/2/3 x HD/SD 1 x HD + 3 x SD 2 x HD + 2 x SD 4 x SD
Video Transcoding: (CBR & VBR)	MPEG-4 AVC MP@L4.2; MPEG-4 AVC HP@L4.2 MPEG-4 AVC BP@L4.1
Aspect Ratio:	4: 3 or 16: 9 or follow the input
Resolution:	720x576(PAL), 720x480(NTSC) and other SD Resolution 1080i(1920x1080), 720p(1280x720) and other HD Resolution
Conversion:	Format(H.264), Resolution(up to 1080P/I), frame rate(up to 60)
Audio format:	MPEG1 Layer II, AAC,Dolby Digital AC-3(option) Support audio pass through
User-defined profiles:	Support 4 profiles (resolution and framerate)
Aligned output:	GOP, IDR, PTS
VBI Subtitle:	PID passthrough
Video Output Bit-rate: (CBR & VBR)	H.264 SD: 0.3 Mbps ~ 15 Mbps H.264 HD: 0.5 Mbps ~20 Mbps

TSIP Module	
Connector:	2×10/100/1000Base-T,RJ-45 2 x 1000Base-X,SFP
Package format:	RTP/UDP
Traffic type:	Unicast or Multicast

ASI Module	
Inputs/Outputs:	4×ASI
TS Max Bit Rate:	up to 150 Mbps (each ASI)

DVB Scrambler	
Max TS streams:	8 streams
EMM Bitrate:	up to 3Mbps
Simulcrypt Scrambling:	4 CA systems simultaneously
Encryption:	DVB EMM and ECM data insertion

CI Module	
Connector:	PCMCIA Dual CI slots
CA module:	Multicrypt/Simulcrypt, Hot Plug

DVB- S/S2 Receiver	
Inputs:	4×RF input
Frequency Range:	950 ~ 2150 MHz
Constellation:	QPSK, 8PSK
Signal level:	-65dBm ~ -25 dBm
Symbol Rate:	QPSK: 1M ~ 45MBauds 8PSK: 1M ~31.5MBauds
LNB:	13/18V DC
22KHz:	on/off

DVB-T/T2 Receiver	
Inputs:	4xRF input
Frequency Range:	48 ~ 862MHz
Constellation:	QPSK, 16/64QAM (DVB-T), QPSK, 16/ 64/256(DVB-T2)
Guard Interval:	1/4, 1/8, 1/16, 1/32 (DVB-T), 1/4, 1/8, 1/16, 1/32, 1/128, 19/256,19/128 (DVB-T2)
OFDM spectrum:	2K , 8K (DVB-T), 1K, 2K, 4K, 8K, 16K, 32K (DVB-T2)
Signal Level:	-80 ~ -20 dBm

DVB-C Receiver	
Inputs:	2×RF input
Frequency Range:	48 ~ 862 MHz
QAM Mode:	16/32/64/128/256 QAM
Symbol Rate:	3.6 ~ 6.952 MBauds
FEC Mode:	ITU-T J.83 Annex A/C, Annex B
Per RF input bit-rate:	up to 55Mbps
Signal Level:	40~80 dBuV

ATSC Receiver	
Inputs:	4×RF input
Frequency Range:	54 ~ 803MHz
Demodulation	8VSB
Channel Bandwidth:	6MHz
Per RF input bitrate:	19.39Mbps

ISDB-T Receiver	
Inputs:	4×RF input
Frequency Range:	174M~216MHz 470—806MHz
Constellation:	QPSK/16/64QAM/DQPSK
Guard Interval:	1/4, 1/8, 1/16, 1/32
Carrier Mode:	modes 1, 2,and 3
Transmission Mode	Mode I -0, 4, 8, 16
	Mode II -0, 2, 4, 8
	Mode III -0, 1, 2, 4

QAM Module

Outputs:	F-type Female, RF Monitor
Channels :	8 adjacent channels
Output Range:	48 ~ 862 MHz
QAM constellations:	16/32/64/128/256QAM
Symbol Rate:	1.0 ~ 6.9 Ms/s
Output level:	30~46dBmV@8channels
	30~52dBmV@4channels
	30~55dBmV@1channels
Output step size:	50kHz

OFDM Module

Outputs:	F-type Female, RF Monitor
Channels:	4 adjacent channels
Output Range:	48 ~ 862 MHz
QAM constellations:	QPSK/16/64QAM
Transmission mode :	2k, 8k
FEC:	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval:	1/4, 1/8, 1/16, 1/32
Output level:	30 ~ 46dBmV (Four adjacent channels)
Output level:	30~46dBmV@8channels
	30~52dBmV@4channels
	30~55dBmV@1channels

IP QAM Module (IPQAM)

Outputs:	F-type Female, RF Monitor
Package format:	RTP/UDP
Output Range:	48 ~ 862 MHz
QAM constellations:	16/32/64/128/256QAM
Symbol Rate:	1.0 ~ 6.9 Ms/s
Output level:	30~46dBmV@8channels
	30~52dBmV@4channels
	30~55dBmV@1channels

Scrambler QAM Module (SSQAM)

Outputs:	F-type Female, RF Monitor
Max TS streams:	8 streams
EMM Bitrate:	Up to 3Mbps
Simulcrypt Scrambling:	4CA system simultaneously
Encryption:	DVB EMM and ECM data insertion
Output Range:	48 ~ 862 MHz
QAM constellations:	16/32/64/128/256QAM
Symbol Rate:	1.0 ~ 6.9 Ms/s
Output level:	30~46dBmV@8channels
	30~52dBmV@4channels
	30~55dBmV@1channels

Available Module

Base	Base unit (Mux/Power/Management)		
DVBS2	DVB-S2 receiver (4 channel)	EN4SDISM	H.264/or MPEG-2 SD low-bit rate SDI/AV encoder (2 programs)
DVBC	DVB-C receiver (4 channel)	AC3	AC3 Encoder for two audio pairs (added options to above ENxSDIxxx modules)
DVBT	DVB-T receiver (4 channel)	Multi-Audio	MPEG Encoder for two audio pairs
ATSC	ATSC receiver (4 channel)	EN4AVM4	H.264/or MPEG-2 SD low-bit rate AV encoder (4 programs)
DVBT2	DVB-T2 receiver (4 channel)	TC2	Transcoder to MPEG2 (4 programs)
ISDBT	ISDB-T receiver (4 channel)	TC2-2	Transcoder to MPEG2 (2 programs)
CI	Common interface module (2 CAM slots)	TC4	Transcoder/Transrating to MPEG-4 (4 programs)
TSIP	TSIP with SFP (64In 32Out, or 256 Out, or 256 In)	TC4-2	Transcoder/Transrating to MPEG-4 (2 programs)
ASI	ASI input or output (4 channel)	TC4-H	2 Channel H.264 HD Transcoder
Scrambler	Scrambler (up to 12 Stream)	TCSD-M	Transcoder/Transrating to Low-bit Rate SD MPEG-2/H.264 (4 programs)
QAM/OFDM	QAM Annex A/B/C (8 channel)/OFDM (4 channel)	TCHD-M	Transcoder/Transrating to Low-bit Rate SD/HD MPEG-2/H.264(8SD or 2HD)
IPQAM	QAM Annex A/B/C (8 channel)/OFDM (4 channel)	TCMS-M	Transcoder/Transrating to multi-screen SD/HD H.264(2 SD/HD inputs, 4 profiles per input)
SSQAM	QAM/OFDM (w/Scrambler, w/o IP)	Decoder	2-SD&HD SDI&HDMI Decoder Module
EN2AV	MPEG-2 AV encoder (2 programs)		
EN2AV4	MPEG-2 AV encoder (4 programs)		
EN2SDI	MPEG-2 SDI/AV encoder (2 programs)		
EN4SDIS	H.264 SD SDI/AV encoder (2 programs)		
EN4SDIH	H.264 HD SDI/AV encoder (2 programs)		
EN4HDMI	H.264 HDMI encoder (2 programs)		