



Digital Media Platform

DMP900



OVERVIEW

The DMP900 is Wellav's most advanced product for service operators. It provides proven headend technology in a compact, 1RU chassis. With over 30 different input and output module options that can be combined as needed, it offers a true, comprehensive video delivery solution.

Whether it is for multiplexing, receiving, encoding, transcoding, modulating, scrambling or descrambling applications, the DMP900 provides more capacity, flexibility and reliability while requiring less space, fewer connections and less power.

KEY FEATURES

With specific modules, DMP900 provides:

- Any Input to Any Output
- Compact modular design: 1RU with 6 modules
- Multi-Function: multiplexing, receiving, encoding, transcoding, modulation, scrambling, descrambling and more.
- Power and I/O redundancy
- Hot swappable power supply modules
- Future modules/functions supported

Highly integrated digital TV solution

- 6 module slots in 1RU chassis, with more than 30 different modules to meet any requirements.

Encoding/Transcoding

- Up to 20 SD or 10 HD programs of encoding
- Up to 40 SD or 10 HD programs of transcoding (With 5 TCHD-M modules and IP module)
- Multi-audio MPG/AAC/AC3 encoding options available

Receiving

- Up to 20 frequencies of DVB-S/S2/C/T/T2/ISDB-T/8VSB receiving

Modulation/Scrambling

- Up to 40-QAM stream modulation
- Up to 20-OFDM stream modulation
- Up to 16 frequencies trans-modulation(DVB-S/S2/T/T2/ISDB-T/8VSB to QAM/OFDM)

KEY FEATURES (cont.)

Stream processing

- Up to 6 Gbps processing (approx. 1500 programs)
- 24 ASI ports of multiplexing
- 20 ASI to IP gateways
- Internal multiplexing
- EIT multiplexing
- Supports SI and EPG data insertion

Management interface

- Supports both Web GUI and client-based NMS
- SNMP supported for system integration
- Configurations importable or exportable for easy maintenance
- Signal status monitoring

BENEFITS

24/7 Non-stop Service Guaranteed

DMP900 offers the best reliability with redundant power supply and I/O design. Each DMP900 has been tested under the strictest aging conditions before delivery. All features give you a guarantee for 24/7 service.

Reduced Rack Space and Energy Savings

The DMP900 modular design reduces the rack space required for your headend system. This design also offers a 40% reduction in energy usage and simplifies the headend system operation and maintenance.

Flexible Distribution with Any-In-Any-Out Features

DMP900 has a variety of popular I/O interface modules that can be easily integrated into a new or existing video distribution networks for Digital/Cable TV or IPTV/OTT operators.

Easy Management and Configuration

DMP900 comes with a Web GUI or Network Management Software (NMS) which provides operators a convenient way to monitor, manage and configure the installed modules. SNMP protocol is also supported for external management integration on every chassis.

Digital Media Platform

DMP900

SPECIFICATIONS

COMPREHENSIVE DIGITAL MEDIA PLATFORM (CHASSIS)

Module:	DMP900
Kernel Processing Capacity:	384 TS
Data Processing:	6 Gbps (approx. 1500 programs)
Slot Number:	6 slot
Multiplexing:	Support, including EPG, EIT.
Hot Swappable PS:	Support
Hot Swappable Module:	Support
Redundancy Power Supply:	Support
BISS Descrambling:	Support(Optional)
Power Consumption:	Max. 40W
Chassis Dimension:	480mm x 44mm x 490mm
Management:	Web-based and client-based NMS

MPEG2/H.264 SD/HD DECODER

Module:	Decoder
Decoding programs:	2xSD/HD via HDMI/SDI
Video Resolution:	480i, 576i, 720p, 1080i
Video Decoding:	SD: MPEG2 MP@ML MPEG4 AVC MP@L3 HD: MPEG2 MP@HL MPEG4 AVC MP@L4 / HP@4
Audio Decoding:	MPEG1 Layer II MPEG2 Layer II AAC Dolby Digital (AC3) (optional)
Program/PID-level decoding:	Support
Subtitle:	DVB / EBU subtitles & Closed Captions

MPEG2 AV SD ENCODER

Module:	EN2AV-2S+(C), EN2AV-4S(C)
Inputs	
Video:	2 or 4xCVBS
Audio:	2 or 4 pairs of audio (unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG2 MP@ML
Audio:	MPEG1 Layer II
Encoding bitrate	
Video:	2.0~15 Mbps

LOW-BITRATE H.264/MPEG2 AV SD ENCODER

Module:	EN2AV-4SM(Q)
Inputs	
Video:	4xCVBS
Audio:	4 pairs of audio (unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG2 MP@ML, H.264 AVC/H.264 MP@L3
Audio:	MPEG1 L2/AAC, LC/HE AAC
Encoding bitrate	
Video:	0.8 ~ 9Mbps (H.264), 1.5 ~ 15 Mbps (MPEG2)

MPEG2 SDI/AV SD ENCODER

Module:	EN2SDIS+ (C)
Inputs	
Video:	2xCVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	MPEG2 MP@ML
Audio:	MPEG1 Layer-I/II
Encoding Bitrate	
Video:	2.0 ~ 15Mbps

H.264 SDI/AV SD ENCODER

Module:	EN4SDI+ (Q)
Inputs	
Video:	2xCVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	H.264 AVC / H.264 MP@L3
Audio:	MPEG1 Layer-I/II
Encoding Bitrate	
Video:	1.0 ~ 20Mbps

H.264 SDI/AV SD/HD ENCODER

Module:	EN4SDIH+(Q)
Inputs	
Video:	2xCVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i, 720p, 1080i, 1080p
Encoding Format	
Video:	H.264 AVC / H.264 MP@L3/HP@L4
Audio:	MPEG1 Layer-I/II, AAC
Encoding bitrate	
Video:	1.0 ~ 20Mbps

LOW-BITRATE MPEG2/H.264 SDI/AV SD ENCODER

Module:	EN4SDISM+(Q)
Inputs	
Video:	2xCVBS/SDI (BNC)
Audio:	2 pairs of audio (balanced/unbalanced)
Video Resolution:	480i, 576i
Encoding Format	
Video:	H.264 AVC / H.264 MP@L3
Audio:	MPEG1 L2/AAC LC/HE AAC
Encoding Bitrate	
Video:	0.8 ~ 9Mbps (H.264) 1.5 ~ 15 Mbps (MPEG2)



Digital Media Platform

DMP900

SPECIFICATIONS

MULTI-AUDIO SDI/AV SD/HD ENCODER

Module:	EN2SDIS-MPG(C), EN4SDIS-MPG(Q), EN4SDIH-MPG(Q), EN4SDISM-MPG(Q)
Description:	SDI/AV encoder with additional 2 pairs of MPEG1L2 audio
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:	MPEG2 MP@ML (EN2SDIS-MPG) H.264 AVC / H.264 MP@L3 (EN4SDIS-MPG/ EN4SDISM-MPG) H.264 AVC / H.264 MP@L3/HP@L4 (EN4SDIH-MPG)
Audio:	Additional 2xMPEG1 Layer-I/II
Encoding Bitrate	
Video:	2.0 ~ 15 Mbps (MPEG2) (EN2SDIS-MPG) 1.0 ~ 20 Mbps (H.264) (EN4SDIS-MPG/ EN4SDIH-MPG) 0.8 ~ 9Mbps (H.264) 1.5 ~ 15 Mbps (MPEG2) (EN4SDISM-MPG)

MULTI-AUDIO SDI/AV SD/HD ENCODER(AC3)

Module:	EN2SDIS-AC3(C), EN4SDIS-AC3(Q) EN4SDIH-AC3(Q), EN4SDISM-AC3(Q)
Description:	SDI/AV encoder with additional 2 pairs of AC3 audio
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:	MPEG2 MP@ML (EN2SDIS-AC3) H.264 AVC / H.264 MP@L3 (EN4SDIS-AC3 / EN4SDISM-AC3) H.264 AVC / H.264 MP@L3/HP@L4(EN4SDIH-AC3)
Audio:	2xMPEG1 Layer-I/II Additional 2xAC3
Encoding Bitrate	
Video:	2.0~ 15 Mbps (MPEG2) (EN2SDIS-AC3) 1.0~ 20 Mbps (H.264) (EN4SDIS-AC3 / EN4SDIH-AC3) 0.8 ~ 9Mbps (H.264) 1.5 ~ 15 Mbps (MPEG2) (EN4SDISM-AC3)

H.264 HDMI SD/HD ENCODER

Module:	EM4HDMI(Q)
Inputs	
Video:	2×HDMI
Audio:	HDMI embedded
Video Resolution:	480i , 576i, 720p, 1080i, 1080p
Encoding Format	
Video:	HD: H.264 AVC / H.264 HP@L4 SD: H.264 AVC / H.264 MP@L3 MPEG1 Layer II , AAC
Audio:	
Encoding bitrate	
Video:	1.0~20 Mbps

MPEG2 SD TRANSCODER

Module:	TC2-2S(C), TC2-4S(C)
Transcoding programs:	2xSD programs (TC2-2S) 2xSD programs with downscaling(TC2-4S) 4xSD programs or 2xHD programs (TC2-4S)
Video resolution:	480i, 576i
Video Profile:	MPEG2 MP@ML
Audio:	MPEG1 Layer-I/II, AC3 pass through
VideoBitrate:	2.0~15 Mbps

H.264 SD/HD TRANSCODER

Module:	TC4-2S(Q), TC4-4S/2H(Q)
Transcoding programs:	2xSD programs, 1xHD programs (TC4-2S) 4xSD programs, 2xHD programs (TC4-4S/2H) 2xHD programs (TC4-4S/2H)
Video resolution:	480i, 576i, 720p,1080i, 1080p
Video Profile:	HD: H.264 AVC / H.264 HP@L4 SD: H.264 AVC / H.264 MP@L3
Audio:	MPEG1 Layer- II, AAC, AC3 pass through
Video bitrate:	SD: 1.0 ~ 15 Mbps, HD: 1.0 ~ 20 Mbps

LOW-BITRATE MPEG2/H.264 SD TRANSCODER

Module:	TCSD-4SM(Q)
Transcoding programs:	4x SD programs
Video resolution:	480i, 576i
Video Profile:	H.264 AVC / H.264 MP@L3 MPEG2 MP@ML
Audio:	MPEG1 Layer- II, AAC, AC3 pass through
Video Bitrate:	SD:0.8~9Mbps (H.264), SD:1.5~15Mbps (MPEG2)

Digital Media Platform

DMP900

SPECIFICATIONS

HIGH-DENSITY MPEG2/H.264 SD/HD TRANSCODER

Module:	TCHD-M(H)
Transcoding Program No	1 x FHD/2 x HD/1 x HD + 4 x SD/8 x SD
Video Transcoding:	MPEG2 MP@HL; MPEG4 AVC HP@L4.2; MPEG4 AVC MP@L4.2; MPEG4 AVC BP@L4.1
Output Resolution:	1920/1440/1280/960x1080p/i 1208/960/640x720p 720/704/544/528/480/352x576i 720/702/640/544/528/480/352x480i
Frame Rate:	Max. 60
VBI/VANC data processing:	AFD/BAR, Closed caption, V-CHIP
De-Interlacing Support:	Yes
Video Input Bitrates:	Max 128Mbps @MPEG2 Max 120Mbps @H.264
Video Output Bitrates:	MPEG2 SD: 0.6 Mbps ~ 16 Mbps MPEG2 HD: 1 ~ 20 Mbps H.264 SD: 0.3 Mbps ~ 15 Mbps H.264 HD: 0.5 Mbps ~20 Mbps
Audio Format:	MPEG1 Layer II AAC. Dolby digital AC-3 (optional) Supports audio pass through
Support Audio Pass Through	Yes
Audio Output Bitrates:	MPEG1 Layer II: 32 - 384 Kbps AAC: 32 - 504 Kbps AC3: 32 - 504 Kbps
Extra Functions:	AFD modification, Channel branding, PIP (future option)

HIGH-END MULTI-SCREEN TRANSCODER

Module:	TCMS-M(H)
Input:	Max.1 x FHD or 2 x 2 SD/HD input (MPEG2/H.264)
Output Profiles: (Per Input)	Max. 7 profiles
Video Transcoding:	H.264 AVC MP@L4.2 H.264 AVC HP@L4.2 H.264 AVC BP@L4.1
Output Resolution:	1920/1440/1280/960/720/640x1080 1208/960/954x720 960x640 1024/768/720/704/544/528/480/352x576 960/540 854/720/702/640/544/528/480/352x480 768x432 640/480x360 480x320 512/352x288 460/360x270 144x256 480/320x240 400x224 384x216 320/240x180 192x192

Frame Rate:	Max. 60
De-Interlacing:	Support
User-Defined Profiles:	Yes
Aligned Output:	GOP, IDR, PTS
Video Output BitRates: (CBR & VBR)	H.264 SD: 128 Kbps ~ 15 Mbps H.264 HD: 500Kbps ~ 20 Mbps
Audio Format:	MPEG1 Layer II, AAC, Dolby Digital AC-3 (option), Support audio pass through
Audio Output Bitrates:	MPEG1 Layer II: 32 - 384 Kbps AAC: 32 - 504 Kbps, AC3: 32 - 504 Kbps
Extra Functions:	AFD modification, Channel branding, PIP(future option)

TS OVER IP MODULE

Module:	TSIP
Connector:	2 x 100/1000Base-T, RJ-45 2 x 1000Base-X, SFP
Package format:	RTP/UDP
Traffic type:	Unicast or Multicast
Channels:	64 in 32 out or 16 in 256 out
FEC:	Support

ASI MODULE

Module:	ASI
Inputs/Outputs:	4xASI
TS Max Bit Rate:	up to 100 Mbps (each ASI)

DS3 MODULE

Module:	DS3
Inputs/Outputs:	E3/DS3
TS Max Bit Rate:	44.736Mbps

DVB SCRAMBLER

Module:	Scrambler+
Max TS streams:	12 streams
EMM Bitrate:	up to 3Mbps
Simulcrypt Scrambling:	4 CA systems simultaneously
Encryption:	DVB EMM and ECM data insertion

CI MODULE

Module:	CI
Connector:	2 x PCMCIA CI slots
CA Module:	Multicrypt/Simulcrypt, Hot swappable

DVB-S/S2 RECEIVER

Module:	DVBS2
Inputs:	4xRF input
Frequency Range:	950 ~ 2150 MHz
Constellation:	QPSK, 8PSK,
Signal Level:	-65dBm ~ -25 dBm
Symbol Rate:	1 ~ 45 Ms/s,
Lnb:	13/18V DC
22khz:	on/off
FEC:	Support



Digital Media Platform

DMP900

SPECIFICATIONS

DVB-T/T2 RECEIVER

Module: DVBT, DVBT2
Inputs: 4×RF 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)
Transmission Mode: 2K, 8K (DVB-T), 1K, 2K, 4K, 8K, 16K, 32K
(DVB-T2)
Signal Level: -80 ~ -20 dBm

DVB-C RECEIVER

Module: DVBC, DVBC+
Inputs: 2×RF input (supports 4 frequencies)
Frequency Range: 48 ~ 862 MHz
Qam Mode: 16/32/64/128/256 QAM
Symbol Rate: 3.6 ~ 6.952 Ms/s
FEC Mode: ITU-T J.83 Annex A/B/C
Per RF Input Bit-Rate: up to 55Mbps
Signal Level: 40~80 dBuV

ATSC RECEIVER

Module: ATSC
Inputs: 4×RF input
Frequency Range: 57 ~ 803 MHz
Demodulation: 8VSB
Bandwidth: 6MHz
Input Bitrate: 19.39Mbps

ISDB-T RECEIVER

Module: ISDBT
Inputs: 4×RF input
Frequency Range: 48 ~ 862MHz,
Constellation: QPSK/16/64QAM/DQPSK
Guard Interval: 1/4, 1/8, 1/16, 1/32
Carrier Mode: Modes 1, 2, 3
Transmission Mode: 1K, 2K, 3K

QAM MODULE

Module: QAM
Outputs: F-type Female, RF Monitor
Channels: 4 or 8 adjacent channels
Output Range: 48 ~ 862 MHz
Constellations: 16/32/64/128/256QAM
Symbol Rate: 4.4 ~ 6.952 Ms/s
Output Level: 30~46dBmV@8channels,
30~52dBmV@4channels
30~55dBmV@1channel

LQAM MODULE

Module: LQAM
Interface
1 x F-type female connector external RF input
1 x F-type female connector combined RF output of internal 1~4 RF

channels and external

RF Output
Standard: ITU-T J.83 Annex A/C, Annex B
Bandwidth: 6MHz/7MHz/8MHz
Channels: Up to 4 adjacent channels
Output Range: 48 ~ 862 MHz
Constellations: 16/32/64/128/256QAM
Symbol Rate: 4.4 ~ 6.956 Ms/s
Output Level: 30~55dBmV

IQAM MODULE

Module: IQAM
Interface
1 x F-type female connector 16 x RF output agile-frequency channels
Standard: ITU-T J.83 Annex A/C, Annex B
Bandwidth: 6MHz/7MHz/8MHz
Channels: Up to 16 agile-frequency channels (as per license)

RF Output
Output Range: 57 ~ 999 MHz
Constellations: 16/32/64/128/256QAM
Symbol Rate: 3.0 ~ 6.956 Ms/s
Output Level: 30~55dBmV

OFDM MODULE

Module: OFDM
Outputs: F-type Female, RF Monitor
Channels: 2 or 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@8channels
30~52dBmV@4channels
30~55dBmV@1channel

IP QAM MODULE

Module: IPQAM
Input: 1 GbE TS/IP
Outputs: F-type Female, RF Monitor
Channels: 8xQAM or 4xOFDM, A/C
Package Format: RTP/UDP
Output Range: 48 ~ 862 MHz
QAM Constellations: 16/32/64/128/256QAM
Symbol Rate: 4.4~ 6.952Ms/s
Output Level: 30~46dBmV@8channels
30~52dBmV@4channels
30~55dBmV@1channel

Digital Media Platform

DMP900

SPECIFICATIONS

SCRAMBLER QAM MODULE

Module:	SQAM
Interface of Scrambling:	1 x RJ45
Outputs:	F-type Female, RF Monitor
Max TS Streams:	4 or 8 streams, Annex A/C or B
Emm Bitrate:	Up to 3Mbps
Simulcrypt Scrambling:	4 CA system simultaneously
Encryption:	DVB EMM and ECM data insertion
Output Range:	48 ~ 862 MHz
QAM Constellations:	16/32/64/128/256QAM
Symbol Rate:	4.4 ~ 6.952 Ms/s
Output level:	30~46dBmV@8channels 30~52dBmV@4channels 30~55dBmV@1channels

SCRAMBLER OFDM MODULE

Module:	SOFDM
Interface of Scrambling:	1 x RJ45
Outputs:	F-type Female, RF Monitor
Max TS Streams:	2 or 4 streams
EMM Bitrate:	Up to 3Mbps
Simulcrypt Scrambling:	4 CA system simultaneously
Encryption:	DVB EMM and ECM data insertion
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@8channels 30~52dBmV@4channels 30~55dBmV@1channel