DMP900

Digital Media Platform

Introduction

Less space, less connection, less power consumption, more capacity, more flexibility, more reliability and more customer satisfaction - this is what Wellav DMP900 brings to you.

The DMP900 is Wellav's most advanced technology solution which service operators, offers you a compact and reliable head-end with comprehensive video delivery solutions in a 1RU chassis. It's the best choice for all service providers.

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 and more.
- Power and I/O redundancy.
- Hot swappable power supplies and modules.
- Future module/function supported.

Benefits

24/7 non-stop service guaranteed

DMP900 offers the best reliability with power supply and I/O redundancy 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 head-end system. This design also offers a 40% reduction in energy usage and simplifies the Headend system operation and maintenance.

Reliable Multiplexing Platform

Receiver/Decoder

Encoder/Transcoder

Modulator/Transmodulator

Edge QAM

ASI/IP Gateway

Features

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 encoding.
- Up to 40 SD or 10 HD programs transcoding①.
- Multi-audio MPG/AAC/AC3 encoding options available.

Receiving

- Up to 20 frequencies of DVB-S/S2/C/T/T2/ISDB-T/ATSC receiving.

Modulation/Scrambling

- Up to 40-QAM stream modulation.
- Up to 20-OFDM stream modulation.
- Up to 16 frequencies transmodulation. (DVB-S/S2/T/T2/ISDB-T/ATSC to QAM/OFDM)

Stream processing

- Up to 6 Gbps processing (approx. 1500 programs)
- 24 ASI ports of multiplexing
- 20 ASI to IP gateway
- 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.
- Configuration importable or exportable for easy maintenance.
- Signal status monitoring.

***Not all features are listed above, and please find more information on the specification page.**

① With 5 TCHD-M modules and IP module

Benefits

Flexible distribution with Any-In-Any-Out feature

DMP900 has a variety of popular I/O interface modules that can be easily integrated into a new or existing video distribution network 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.

DMP/SMP Order Information

Base Unit

DMP900	Base unit (Mux/Dual-Power/Management/6xslots), w/ or w/o BISS
SMP100	Base unit (ASI/Mux/Power/Management/3xslots), w/ or w/o BISS/IP

Available Module

DVBS2	DVB-S2 receiver (4 channel)
DVBC	DVB-C receiver (4 channe, J.83 A/C or B)
DVBC+	DVB-C receiver (4 channel, J.83 A/B/C)
DVBT	DVB-T receiver (4 channel)
ATSC	ATSC receiver (4 channel)
DVBT2	DVB-T2 receiver (4 channel, future option)
ISDBT	ISDB-T receiver (4 channel)
CI	Common interface module (2 CAM slots)
Scrambler	Scrambler (max.12 channel)
TSIP	TSIP with SFP (64 In 32 Out, or 16In256 Out)
ASI	ASI input or output (4 channel)
DS3	DS3 2In2Out or 4In4Out
QAM	QAM Annex A/B/C (max.8 channel)
OFDM	OFDM (2/4 channel)
IPQAM	QAM Annex A/B/C (8 channel)/OFDM (4 channel)
SQAM	QAM (4/8 channels, w/Scrambler, w/o IP)
SOFDM	OFDM (2/4 channels, w/Scrambler, w/o IP)

EN2AV-2S+	New MPEG-2 AV encoder (2 SD programs)
EN2AV-4S	MPEG-2 AV encoder (4 SD programs)
EN4AV-4SM	H.264/MPEG-2 low-bit rate AV encoder (4 SD programs)
EN2SDIS+	New MPEG-2 SDI/AV encoder (2 SD programs)
EN2SDIS-MPG	EN2SDIS+ with additional 2xMPEG1L2 (multi-audio)
EN2SDIS-AC3	EN2SDIS+ with additional 2xAC3 (multi-audio)
EN4SDIS+	New H.264 SD SDI/AV encoder (2 SD programs)
EN4SDIS-MPG	EN4SDIS+ with additional 2xMPEG1L2(multi-audio)
EN4SDIS-AC3	EN4SDIS+ with additional 2xAC3 (multi-audio)
EN4SDIH+	New H.264 HD SDI/AV encoder (2 HD programs)
EN4SDIH-MPG	EN4SDIH+ with additional 2xMPEG1L2(multi-audio)
EN4SDIH-AC3	EN4SDIH+ with additional 2xAC3 (multi-audio)
EN4SDISM+	New H.264/or MPEG-2 low-bit rate SDI/AV encoder (2 SD programs)
EN4SDISM-MPG	EN4SDISM+ with additional 2xMPEG1L2
EN4SDISM-AC3	EN4SDISM+ with additional 2xAC3

EN4HDMI	H.264 HDMI encoder (2 SD/HD programs)
EN4SDIHM	High-quality encoding module for broadcast distribution (2 SD or 1HD, future option)
TC2-4S	Transcoder to MPEG2 (4 SD programs, or 2 SD programs with downscaling)
TC2-2S	Transcoder to MPEG2 (2 SD programs, w/o downscaling)
TC4-4S/2H	Transcoder/Transrating to MPEG-4 (4 SD or 2 HD programs)
TC4-2S	Transcoder/Transrating to MPEG-4 (2 SD programs, w/o downscaling)
TCSD-4SM	Transcoder/Transrating to Low-bit Rate SD MPEG-2/H.264 (4 SD programs, or 2 SD programs with downscaling)
TCHD-M	8 SD or 2 HD low-bite transcoding (MPEG2 &4)
TCMS-M	Multi-screen low-bit transcoding (2 programs, 13 H.264 profiles, available for DMP900)
Decoder	2-SD&HD SDI&HDMI Decoder Module

Solution

Fixed Configuration model based on SMP platform

Model	Order Info.	Features
SMP180 (Multi-channel Receiver)	SRS2	DVB-S2 Receiver (12 channel)
	SRSCI	DVB-S2 Receiver (4 channel w/ 4 CI)
	SRC	DVB-C Receiver (12 channel)
	SRCCI	DVB-C Receiver (4 channel w/ 4 CI)
SMP260E (Encoder)	SEN2AV6S	MPEG-2 AV encoder (6 SD programs)
	SEN2AV12S	MPEG-2 AV encoder (12 SD programs)
	SEN4AV12SM	H.264/or MPEG-2 SD low-bit rate AV encoder (12 SD programs)
	SEN2SDI6S	MPEG-2 SDI/AV encoder (6 SD programs)
	SEN2SDI6S-MPG	MPEG-2 SDI/AV multi-audio encoder (6 SD programs)
	SEN2SDI6S-AC3	MPEG-2 SDI/AV multi-audio encoder (6 SD programs, MPEG1L2+AC3)
	SEN4SDI6S	H.264 SDI/AV encoder (6 SD programs)
	SEN4SDI6S-MPG	H.264 SDI/AV multi-audio encoder (6 SD programs)
	SEN4SDI6S-AC3	H.264 SDI/AV multi-audio encoder (6 SD programs, MPEG1L2+AC3)
	SEN4SDI6SM	H.264/or MPEG-2 low-bit rate SDI/AV encoder (6 SD programs)
	SEN4SDI6SM-MPG	H.264 SDI/AV low-bitrate multi-audio encoder (6 SD programs)
	SEN4SDI6SM-AC3	H.264 SDI/AV low-bitrate multi-audio encoder (6 SD programs, MPEG1L2+AC3)
	SEN4SDI6H	H.264 SDI/AV encoder (6 HD programs)
	SEN4SDI6H-MPG	H.264 SDI/AV multi-audio encoder (6 HD programs)
	SEN4SDI6H-AC3	H.264 SDI/AV multi-audio encoder (6 HD programs, MPEG1L2+AC3)
	SEN4HDMI6H	H.264 HDMI encoder (6 SD/HD programs)
SMP260T Transcoder	STC2-12S	Transcoder to MPEG2 (12 SD programs, or 6 SD programs with downscaling)
	STC2-6S	Transcoder to MPEG2 (6 SD programs, w\o downscaling)
	STC4-12S	Transcoder/Transrating to MPEG-4 (12 SD or 6 HD programs)
	STC4-6S	Transcoder/Transrating to MPEG-4 (6 SD programs w\o downscaling)
	STCSD-12SM	Transcoder/Transrating to Low-bit Rate MPEG-2/H.264 (12 SD programs, or 6 SD programs with downscaling)
SMP330M Modulator	QAM	QAM Modulator (24 channel), IP64IN (mainboard)
	OFDM	OFDM Modulator (12 channel), IP64IN (mainboard)
	SQAM	QAM Modulator w/scrambling (24 channel), IP64IN (mainboard)
	SOFDM	OFDM Modulator w/scrambling (12 channel), IP64IN (main board)
SMP330T Transmodulator	SQAM	DVB-S2 to QAM/OFDM Transmodulator (4/8 channel)
	ATQAM	ATSC to QAM Transmodulator (8 channel)
SMP350 ASI/IP Gateway	SASIIP	ASI/IP mutual conversion (10 streams)

Specifications

Comprehensive Digital Media Platform(Chassis)

Module	DMP900
Kernel processing capacity	384 TS
Data processing	6Gbps (approx.1500 programs)
Slot number	6 slot
Multiplexing	Support
Hot swappable PS	Support, including EPG, EIT.
Hot swappable Module	Support
Redundant power supply	Support
BISS descrambling	Support(future option)
Power consumption	Max.40W
Chassis dimension	480mm x 44mm x 490mm
Management	Supports both Web-based and client-based NMS SNMP supported for system integration

Cost-effective Digital Media Platform(Chassis)

Module	SMP100
Kernel processing capacity	384 TS
Data processing	4Gbps(approx.1000 programs)
Slot number	3 slot
Interface	2 x ASI Input 2 x ASI output 1 GbE TS/IP(disabled, 4I4O w/ EIT, 12I12O, 64I, 28O) 1 management (RJ45)
Multiplexing	Support
BISS descrambling	Support(future option)
Power consumption	Max.20W
Chassis dimension	480mm x 44mm x 440mm
Management	Supports both Web-based and client-based NMS SNMP supported for system integration

MPEG-2 AV SD Encoder

Module	EN2AV-2S+(C)①, EN2AV-4S(C)
Inputs	
Video	2 or 4xCVBS
Audio	2 or 4 pairs of audio (unbalanced)
Video resolution	480i, 576i
Encoding format	MPEG-2 MP@ML
Encoding bitrate	MPEG-1 Layer II
Video	2.0~15.0 Mbps

Low-bitrate H.264/MPEG-2 AV SD Encoder

Module	EN2AV-4SM(Q)②
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）

MPEG-2 SDI/AV SD Encoder

Module	EN2SDIS+(C)
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

H.264 SDI/AV SD Encoder

Module	EN4SDI+ (Q)
Inputs	
Video	2×CVBS/SDI (BNC)
Audio	2 pairs of audio (balanced/unbalanced)
Video resolution	480i, 576i
Encoding format	
Video	H.264 AVC / H.264 MP@L3
Audio	MPEG-1 Layer-I/II
Encoding bitrate	
Video	1.0 ~ 20Mbps

H.264 SDI/AV SD/HD Encoder

Module	En4SDIH+(Q)
Inputs	
Video	2×CVBS/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	MPEG-1 Layer-I/II, AAC
Encoding bitrate	
Video	1.0 ~ 20Mbps

Low-bitrate MPEG-2/H.264 SDI/AV SD Encoder

Module	EN4SDISM+(Q)
Inputs	
Video	2×CVBS/SDI(BNC)
Audio	2 pairs of audio (balanced/unbalanced)
Video resolution	480i，576i
Encoding format	
Video	H.264AVC / 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

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	MPEG-2 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 2x MPEG-1 Layer-I/II
Encoding bitrate	
Video	2 .0~ 15 Mbps（MPEG-2） （EN2SDIS-MPG） 1 .0~ 20 Mbps（H.264） （EN4SDIS-MPG/ SEN4SDIH-MPG） 0.8 ~ 9Mbps（H.264） 1.5 ~ 15 Mbps（MPEG-2） （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	MPEG-2 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	2x MPEG-1 Layer-I/II Additional 2xAC3
Encoding bitrate	
Video	2 .0~ 15 Mbps（MPEG-2） （EN2SDIS-AC3） 1 .0~ 20 Mbps（H.264） （EN4SDIS-AC3 / EN4SDIH-AC3） 0.8 ~ 9Mbps（H.264） 1.5 ~ 15 Mbps（MPEG-2） （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
Audio	MPEG-1 Layer II , AAC
Encoding bitrate	
Video	1.0~20 Mbps

MPEG-2/H.264 SD/HD Decoder

Module	Decoder
Decoding programs	2xSD/HD via HDMI/SDI
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 / HP@L4
Audio decoding	MPEG-1 Layer II MPEG-2 LayerII AAC Dolby Digital (AC3) (optional)
Program & PID level decoding	Support
Subtitle	DVB / EBU subtitle & Close Caption

MPEG-2 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	MPEG-2 MP@ML
Audio	MPEG-1 Layer- II, AC3 pass through
Video Bitrate	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	MPEG-1 Layer- II, AAC, AC3 pass through
Video bitrate	SD: 1.0 ~ 15 Mbps HD: 1.0 ~ 20 Mbps

Low-bitrate MPEG-2/H.264 SD Transcoder

Module	TCSD-4SM(Q)
Transcoding programs	4x SD programs
Video resolution	480i, 576i
Video profile	MPEG-4 AVC / H.264 MP@L3 MPEG-2 MP@ML

Audio	MPEG-1 Layer- II, AAC, AC3 pass through
Video bitrate	SD:0.8~9Mbps (H.264) SD:1.5~15Mbps (MPEG-2)

High-density MPEG-2/H.264 SD/HD Transcoder

Module	TCHD-M(H)
Transcoding program No.	1xFHD/2xHD/1xHD+4xSD/8xSD
Video transcoding	MPEG-2 MP@HL; MPEG-4 AVC HP@L4.2 MPEG-4 AVC MP@L4.2; MPEG-4 AVC BP@L4.1
Output resolution	1920/1440/1280/960 x 1080p/i 1280/960/640 x 720p 720/704/544/528/480/352 x 576i 720/704/640/544/528/480/352 x 480i
Frame rate	Max.60
VBI/VANC data processing	AFD/BAR, Closed Caption, V-CHIP
Video input bitrates	Max 128Mbps @MPEG-2 Max 120Mbps @H.264
Video output bitrates (CBR & VBR)	MPEG-2 SD: 0.6 Mbps ~ 16 Mbps MPEG-2 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(future option) Support audio pass through
Audio output bitrates	MPEG1 Layer II: 32 – 384Kbps AAC: 32 – 504Kbps AC3: 32 – 504Kbps

High-end Multi-screen Transcoder

Module	TCMS-M(H)
Input	Max. 1 x FHD or 2 x SD/HD input (MPEG-2/H.264)
Output profiles (per input)	Max.7 porfiles
Video transcoding	MPEG-4 AVC MP@L4.2 MPEG-4 AVC HP@L4.2; MPEG-4 AVC BP@L4.1
Output resolution	1920/1440/1280/960/720/640 x 1080 1280/960/854 x 720 960 x 640 1024/768/720/704/544/528/480/352 x 576 960 x 540 854/720/704/640/544/528/480/352 x 480 768 x 432 640/480 x 360 480 x 320 512/352 x 288 480/360 x 270 144 x 256 480/320 x 240 400 x 224 384 x 216 320/240 x 180 192 x 192
Frame rate	Max.60
User-defined profiles	Yes
Aligned output	GOP, IDR, PTS
Video output bitrates (CBR & VBR)	H.264 SD: 128 Kbps ~ 15 Mbps H.264 HD: 500 Kbps ~20 Mbps
Audio format	MPEG1 Layer II, AAC , Dolby Digital AC-3(option) Support audio pass through
Audio output bitrates	MPEG1 Layer II: 32 – 384Kbps AAC: 32 – 504Kbps AC3: 32 – 504Kbps

TS over IP Module

Module	TSIP
Connector	2×100/1000Base-T,RJ-45 2 x 1000Base-X,SFP
Package format	RTP/UDP
Traffic type	Unicast or Multicast
Channels	64In32Out or 16In256Out
FEC	Support

① C=Cost-effective
② Q=Quality
③ H=High-end

ASI Module

Module	ASI
Inputs/Outputs	4×ASI
TS Max bit rate	up to 100 Mbps (each ASI)

DVB Scrambler

Module	Scrambler+
Max TS streams	12 streams
EMM bitrate	up to 3Mbps
Standard 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 Swapped

DVB- S/S2 Receiver

Module	DVBS2
Inputs	4×RF 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

DVB-T/T2 Receiver

Module	DVBT , DVBT2
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）
Transmission mode	2K , 8K (DVB-T), 1K，2K，4K，8K， 16K，32K（DVB-T2）
Signal Level	-80 ~ -20 dBm
FEC	Support

DVB-C Receiver

Module	DVBC, DVBC+
Inputs	2×RF input （Support 4 frequency）
Frequency range	48 ~ 862 MHz
Qam mode	16/32/64/128/256 QAM
Symbol rate	3.6 ~ 6.952 Ms/s
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 ~ 803MHz
Demodulation	8VSB
Bandwidth	6MHz
Input bitrate	19.39Mbps

ISDB-T Receiver

Module	ISDBT
Inputs	4×RF input
Frequency range	48 ~ 862 MHz
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
QAM constellations	16/32/64/128/256QAM
Symbol rate	4.4 ~ 6.952 Ms/s
Output leve	30~46dBmV@8channels 30~52dBmV@4channels 30~55dBmV@1channel

OFDM Module

Module	OFDM
Outputs	F-type Female, RF Monitor
Channels	2 or 4 adjacent channels
Output range	48 ~ 862 MHz
Constellation	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@4channels 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 ~ 6.952 Ms/s
Output level	30~46dBmV@8channels 30~52dBmV@4channels 30~55dBmV@1channel

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@1channel

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	4CA 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@1channels