



## TT1260

### Transport Stream Processor

Contribution and distribution of video services requires decoding capability of premiere quality. The wide variety of scenarios in which such receivers are used require that the receiver must be extremely flexible in operation, and incorporate a large and sophisticated array of features. The TANDBERG Television TT1260 is a professional grade integrated receiver decoder, leading the field with a level of quality and large feature range that make the unit the perfect choice for contribution, distribution and mobile applications.

The TT1260 is designed to decode MPEG-2 SD 4:2:2 video and present it for onward use at the highest possible quality. Matching the high quality video capabilities, the TT1260 similarly supports all major professional audio standards. This highly flexible unit offers a vast array of input interface options - allowing the receiver to connect to almost every type of satellite, terrestrial, or telco network.

## PRODUCT OVERVIEW

### Flexibility

The TT1260 offers a vast variety of input interface options, making the unit suitable for connecting to almost every type of network. Highlights include support for the new DVB-S2 standard as well as legacy DVB-S and DVB-DSNG satellite transmission standards. For connection to telco networks, the receiver can also be fitted with G.703 or IP inputs.

### Secure Transmission

Security of content is all-important - something that is taken seriously by the TT1260. The TT1260 supports all major encryption systems including BISS 1 & E, RAS, Common Interface and TANDBERG DirectorV5 CA.

### Low Cost of Operation

The TT1260 can be integrated into a TANDBERG DirectorV5 control system - enabling large populations of receivers to be remotely controlled over-air from a central location, simplifying the system control structure and reducing the need for costly on-site local operators.

### Transfer of Private Data

As well as providing video and audio capabilities, the TT1260 also provides simultaneous carriage of additional data services. The TT1260 can receive several data formats including low-speed, high-speed and high-speed over IP data.

## BASE UNIT FEATURES

### TT1260 – Common Interface (TT1260/CIBAS)

The Common Interface (CI) version can accept one CA module (CAM) enabling the user to select the desired CA system and have the flexibility to change the CA system at a later stage.

### TT1260 – Common Interface, 48Vdc (TT1260/CIBAS/48V)

Base unit as the TT1260/CIBAS but with 48Vdc power supply for telco installations.

### TT1260 - Director (TT1260/DIRBAS)

The TANDBERG Director version of the TT1260 enables a secure transmission of valuable content with the added benefit of over-air control reducing the need for local operators.

Standard features for base units:

- Dual SDI output with embedded de-compressed audio and VBI
- Dual analog (PAL/NTSC) BNC outputs
- Dual ASI transport stream outputs
- Frame synchronization input
- Remote control via SNMP or web page
- Single alarm relay
- Descrambling of MPEG-4 AVC via a CAM
- CAM menu browsing via web browser

## TT1260 MPEG-2 Standard Definition Integrated Receiver Decoder

## HARDWARE OPTIONS

**Transport Stream Inputs****ASI Input (TT1260/HWO/ASI)**

- 2 x ASI inputs, up to 160 Mbps data rate

**COFDM Input (TT1260/HWO/COFDM678)**

- DVB-T OFDM input, compatible with 6, 7, 8 MHz bandwidth signals

**COFDM Diversity Input (TT1260/HWO/COFDM678D)**

- Dual diversity input for DENG applications

**QPSK Input (TT1260/HWO/QPSK)**

- 2 x L-band DVB-S QPSK satellite inputs

**QPSK and ASI Input (TT1260/HWO/QPSK/ASI)**

- DVB-S QPSK satellite and ASI input module
- 2 x L-band inputs, 2 x ASI inputs

**DVB-S2 Input (TT1260/HWO/DVBS2)**

- 4 x L-band DVB-S QPSK satellite inputs
- DVB-S2 QPSK, 8PSK demodulation upgrade with license keys

**DVB-S2 and ASI Input (TT1260/HWO/DVBS2/ASI)**

- DVB-S QPSK satellite and ASI input module
- 4 x L-band inputs, 2 x ASI inputs
- DVB-S2 QPSK, 8PSK demodulation upgrade with license keys

**DVB-S2, ASI, IF Inputs & Constellation Output (TT1260/HWO/DVBS2/ASI/IF/C)**

- Perfect for up-link monitoring
- 3 x L-band inputs, 1 x IF input
- I/Q constellation output
- DVB-S QPSK demodulation
- DVB-S2 QPSK, 8PSK demodulation upgrade with license keys

**Higher Order Modulation Input (TT1260/HWO/HOM)**

- 4 x L-band inputs
- DVB-S BPSK, QPSK demodulation
- DVB-DSNG 8PSK, 16QAM demodulation with license keys

**Higher Order Modulation Input & Constellation Output (TT1260/HWO/HOM/CONST)**

- 4 x L-band inputs
- DVB-S BPSK, QPSK demodulation
- DVB-DSNG 8PSK, 16QAM demodulation with license keys
- I/Q constellation output

**TTV G.703 Telco Interface (TT1260/HWO/G703)**

- E3 or DS-3 inputs
- 34 or 45 Mbps rates

**10/100 BaseT IP Input (TT1260/HWO/IP)**

- MPEG Transport Stream over IP
- 1 x 10/100BaseT Ethernet input
- DVB IPI FEC support

**10/100 BaseT IP Input w/FEC (TT1260/HWO/IP/PROFEC)**

- MPEG Transport Stream over IP
- 1 x 10/100BaseT Ethernet input
- ProMPEG FEC with license key

**100/1000 BaseT IP Input w/FEC (TT1260/HWO/IP/GIGE)**

- MPEG Transport Stream over IP
- 2 x 100/1000BaseT Ethernet input
- Very low latency
- ProMPEG FEC with license key (check for availability)

**ATM E3 Telco Interface (TT1260/HWO/ATM-E3)**

- E3 data rates

**ATM DS3 Telco Interface (TT1260/HWO/ATM-DS3)**

- DS3 data rates

**Alarm Relay (TT1260/HDC/ALRM)**

- 5 Alarm relay contacts

**High Speed Serial Data Output (TT1260/HWO/HSDATA)**

- RS422 over 9-pin D-Type connector
- 2048kbit/s max data rate

## SOFTWARE OPTIONS

**Input Options****Low Symbol Rate License (TT1260/SWO/LSYM)**

- For input card: TT1260/HWO/QPSK
- Extends symbol rate range down to 300kSymbols/s

**DVB-S2 QPSK License (TT1260/SWO/DVBS2/QPSK)**

- Adds DVB-S2 QPSK capability to DVB-S2 input option card

**DVB-S2 8PSK License (TT1260/SWO/DVBS2/8PSK)**

- Adds DVB-S2 QPSK, 8PSK capability to DVB-S2 input option card

**DVB-S2 Low Symbol Rate License (TT1260/SWO/DVBS2/LSYM)**

- Enables DVB-S2 symbol rate of 1 to 5 Msyms

**DVB-DSNG 8PSK License (TT1260/SWO/8PSK)**

- Adds DVB-DSNG 8PSK capability to DVB-DSNG input option card

**DVB-DSNG16QAM License (TT1260/SWO/16QAM)**

- Adds DVB-DSNG 8PSK, 16QAM capability to DVB-DSNG input option card

**ProMPEG FEC License (TT1260/SWO/IP/PROFEC)**

- For: TT1260/HWO/IP/PROFEC
- Adds ProMPEG FEC capability

**Data Transfer****High Speed Data over Ethernet (TT1260/SWO/HSEETHER)**

- Ideal for telephony, IP traffic, video streaming
- Uses TT1260's RJ-45 control port
- Up to 5 Mbps data rate

**Conditional Access****BISS (TT1260/SWO/BISS)**

- BISS Mode 1 & E

**RAS 1 (TT1260/SWO/RAS)**

- TANDBERG Television RAS 1 Transport Stream CA protection

**RAS 2 (TT1260/SWO/RAS2)**

- TANDBERG Television RAS 2 Transport Stream CA protection

**TANDBERG DirectorV5 (TT1260/SWO/DIRV5)**

- TANDBERG DirectorV5 CA
- TANDBERG DirectorV5 over-air control
- TANDBERG DirectorV5 over-air software downloads

**Provider Lock (TT1260/SWO/PROV/LOCK)**

- Allows services listed by broadcaster ID to be displayed

**Signal protection (TT1260/SWO/SP)**

- TANDBERG Television Signal Protection Scrambling

**Video/Audio Processing****4:2:0 only Operation (TT1260/SWO/420)**

- Limits TT1260 to MPEG-2 SD 4:2:0 video decoding operation only

**Dolby Digital® Decoding (TT1260/SWO/DOLBY)**

- Enables Dolby Digital® audio decoding

**Audio Normalization License (TT1260/SWO/AUD/NORM)**

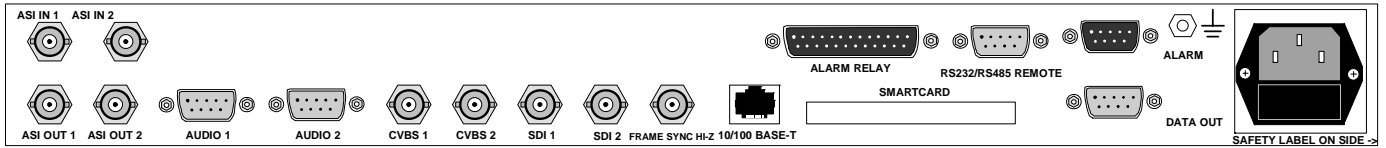
- Audio level attenuation of decoded audio
- Adjusts analog, digital & embedded audio level
- Audio levels can be normalized across numerous channels

**Other Software Options****Password Protection of Web Browser (TT1260/SWO/PW)**

- Protects Web browser from malicious or accidental changes

TT1260 MPEG-2 Standard Definition Integrated Receiver Decoder

SAMPLE CONFIGURATION



SPECIFICATIONS

Video and Audio Formats

Video

Decoding of one video service  
422P@ML up to 50 Mbps  
MP@ML up to 15 Mbps  
(4:2:0 video only mode option available)

Audio

Decoding of two audio PIDs  
Musicam: Analog and digital output  
Linear 20bit PCM@48 kHz: Analog and digital output  
Dolby® AC-3 2.0: Analog and digital output  
Dolby® AC-3 5.1: Digital pass-through  
Dolby® E: Digital pass-through  
All de-compressed audio embedded in SDI  
Dual Composite and Dual SDI video output  
Simultaneous analogue and digital audio output  
Extensive VBI support, including VBI in picture  
VBI inserted in both composite and SDI output

Inputs

DVB QPSK Input

Standard: EN300 421  
Connector: 2 x F-type (F), 75 Ohm  
Frequency range: 950 - 2150MHz  
Symbol rates: 1 - 45 Msyms  
LNB power: 13V, 18V or off, 22 kHz on or off

DVB ASI Input

Standard: EN50083-9  
Connector: 2 x BNC (F), 50Ω  
Max input rate: 160 Mbps  
Packet Length: Auto-detect 188/204 byte packets

TTV G.703

Connector: BNC (F)  
Network: G.703 compliant PDH  
Input: E3 or DS-3 (selectable)  
Bit-rates: 34 or 45 Mbps versions

MPEG over IP

Connector: 1x RJ 45  
Format: 10/100BaseT  
FEC: ProMPEG

Gigabit MPEG over IP (Check availability)

Connector: 2x RJ 45  
Format: 100/1000BaseT

FEC: ProMPEG

DVB-DSNG Higher Order Modulation

Standard: EN300 421, EN301 210  
Connector: 4 x F-type (F), 75 Ohm  
Frequency Range: 950 – 2150 MHz  
Symbol Rate: 5 - 45 Msyms  
FEC, BPSK/QPSK: 1/2, 2/3, 3/4, 5/6, 7/8  
FEC, 8PSK: 2/3, 5/6, 8/9  
FEC, 16QAM: 3/4, 7/8  
LNB power: 13V, 18V or off, 22 kHz on or off

DVB-S2

Standard: EN300 421, EN302 307  
Connector: 4 x F-Type (F), 75 Ohm  
Frequency Range: 950 – 2150 MHz  
Symbol Rate: 1 - 45 Msyms (DVB-S)  
Symbol Rate: 5 - 31 Msyms (DVB-S2)  
Symbol Rate: 1 - 31 Msyms (DVB-S2) (option)  
Bit-rate: 81 Mbps Max (DVB-S2)  
FEC, DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8  
FEC, DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10  
FEC, DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10  
DVB-S2 FEC Frames: Normal Frames  
LNB power: 13V, 18V or off, 22 kHz on or off

DVB-S2/ASI/IF/C Option

Inputs: 3x L-band  
1x IF BNC (F) 75 Ohm  
2x ASI BNC (F) 75 Ohm  
IF Input Freq Range: 50 – 180 MHz (Monitor input)  
Constellation Output: 2x BNC I/Q (F)

DVB-T COFDM Input

Connector: F-type (F), 75Ω  
Frequency range: 47-862 MHz  
Channel bandwidth: 6/7/8 MHz switchable  
Carrier mode: 2K and 8K selectable  
Carrier modulation: QPSK, 16QAM, 64QAM auto detected  
Hierarchy: High/Low  
Spectral inversion: Normal/Inverted

Frame Synchronization

Connector: BNC (F)

Outputs

DVB ASI Output

Connector: BNC (F) 75Ω

Sustained transport stream data rate: 160 Mbps  
(CA system dependent)

Enable/disable descrambling of selected service

Data

RS-232 Low speed data (max. 38.4 Kbps)  
RS-422 High speed data (max. 2048 Kbps)  
Ethernet high speed data (max. 5000 Kbps)  
Tandberg Proprietary Data Piping only

Alarm Relay

Alarm Relays (summary and user customizable)  
Connector: 9D-type, (M)

Conditional Access Options

DVB Common Interface  
TANDBERG Director V4, V5  
TANDBERG RAS-1 & 2  
BISS mode-1 & E  
MPEG-4 decryption via DVB CI

Control

Front panel keypad and LCD  
nCompass Control and Monitoring  
Remote control via RS-232, TANDBERG remote control protocol  
Remote control via RS-232 / RS-485, fully implemented Altea remote control protocol  
TANDBERG Director inband remote control (only available with TANDBERG Director CA version)  
Web browser control

Physical and Power

Dimensions (W x D x H)

435 x 275 x 44mm (17.2 x 10.75 x 1.75" approx.

Input Voltage

110/240 VAC or –48 VDC

Cooling

Integrated fan, units may be stacked on top of each other

Power Consumption

45W max. (depending on options fitted)

Environmental Conditions

Operating Temperature

0°C to +50°C (32° to 122°F) without DVB CI module

Relative Humidity

5 to 95%

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