TT1260

MPEG-2/DVB (4:2:2)
Professional Single Channel Receiver

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 G703 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 Director V5 CA.

Low Cost of Operation

The TT1260 can be integrated into a TANDBERG Television Director V5 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.

OPTIONS

Transport Stream Inputs

The TT1260 comes with an extensive range of interface formats covering many applications - offering a space efficient, cost optimized solution.

Hardware Options

ASI Input	(TT1260/HWO/ASI)
COFDM Input	(TT1260/HWO/COFDM678)
COFDM Diversity Input	(TT1260/HWO/COFDM678D)
QPSK Input	(TT1260/HWO/QPSK)
QPSK and ASI Input	(TT1260/HWO/QPSK/ASI)
DVB-S2 Input	(TT1260/HWO/DVBS2)
DVB-S2 and ASI Input	(TT1260/HWO/DVBS2/ASI)
DVB-S2, ASI, IF Inputs and Constellation Output	(TT1260/HWO/DVBS2/ASI/IF/C)
Higher Order Modulation Input	(TT1260/HWO/HOM)
Higher Order Modulation Input Constellation Output	(TT1260/HWO/HOM/CONST)
TTV G.703 Telco Interface	(TT1260/HWO/G703)
10/100 BaseT IP Input	(TT1260/HWO/IP)
10/100 BaseT IP Input w/FEC	(TT1260/HWO/IP/PROFEC)
ATM E3 Telco Interface	(TT1260/HWO/ATM-E3)
ATM DS3 Telco Interface	(TT1260/HWO/ATM-DS3)

Software Options

Low Symbol Rate License for TT1260/HWO/QPSK	(TT1260/SWO/LSYM)
DVB-S2 QPSK License	(TT1260/SWO/DVBS2/QPSK)
DVB-S2 8PSK License	(TT1260/SWO/DVBS2/8PSK)
Low Symbol Rate License for DVB-S2	(TT1260/SWO/DVBS2/LSYM)
8PSK License	(TT1260/SWO/8PSK)
16QAM License	(TT1260/SWO/16QAM)
PRO MPEG FEC License	(TT1260/SWO/IP/PROFEC)

Data Transfer

The transport stream is increasingly being used for transferring data for applications such as telephony, Internet, non real-time video transfer or price book download. The TT1260 can transfer data alongside the video signals at up to 5 Mbit/s (2 Mbit/s for RS-4:2:2 data) and there is a choice of data interface depending on the transfer rate required.

High Speed Data Output	(TT1260/HWO/HSDATA)
High Speed Data over Ethernet	(TT1260/SWO/HSETHER)

Conditional Access

The TT1260 with DVB Common Interface can be used with all major vendor security systems. Used with TANDBERG Television's own highly secure TANDBERG Director CA and control software, the operator has complete management of a network of receivers.

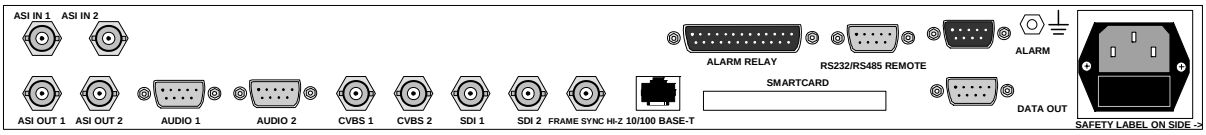
BISS	(TT1260/SWO/BISS)
RAS 1	(TT1260/SWO/RAS)
RAS 2	(TT1260/SWO/RAS2)
TANDBERG Director V4	(TT1260/SWO/DIR)
TANDBERG Director V5	(TT1260/SWO/DIRV5)

Transport Stream Processing

Options include operating at very low symbol rates for mobile applications and 4:2:0 only operation for cost sensitive applications.

4:2:0 only operation	(TT1260/SWO/420)
Dolby® AC-3 operation	(TT1260/SWO/DOLBY)
Alarm Relay options	(TT1260/HDC/ALRM)

SAMPLE CONFIGURATION



SPECIFICATIONS

Video and Audio Formats

Video
Decoding of one video service
422P@ML up to 50 Mbit/s
MP@ML up to 15 Mbit/s
(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: 2x F-type (F), 75 Ohm
Frequency range: 950 - 2150MHz
Symbol rates: 1 - 45 Msymbol/s
LNB power: 13V, 18V or off, 22 kHz on or off

DVB ASI input
Standard: EN50083-9
Connector: 2x BNC (F), 50Ω
Max input rate: 160 Mbit/s
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 Mbit/s versions

MPEG over IP
Connector: RJ 45
Format: 10/100 BaseT
FEC: Auto Detect

QPSK/8PSK/16QAM
Standard: EN300 421, EN301 210
Connector: 4x F-type (F), 75 Ohm
Frequency Range: 950 – 2150 MHz
Symbol Rate: 5 - 45 Msymbol/s
FEC, 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: 4x F-Type (F), 75 Ohm
Frequency Range: 950 – 2150 MHz
Symbol Rate: 1 - 45 Msymbol/s (DVB-S)
Symbol Rate: 5 - 31 Msymbol/s (DVB-S2)
Symbol Rate: 1 - 31 Msymbol/s (DVB-S2) (option)
Bit-rate: 81 Mbit/s 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

DVBS2/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 autodetected
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 Mbit/s (CA system dependent)
Enable/disable descrambling of selected service

Data
RS-232 Low speed data (Max 38.4 Kbit/s)
RS-422 High speed data (Max 2048 Kbit/s)
Ethernet High speed data (Max 5000 kbit/s)
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

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 Alteia 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
110/240Vac or –48 Vdc

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

Environmental Conditions

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

Storage Temperature
-20°C to +60°C (4° to 140°F)

Relative Humidity
5 to 95%

Compliance

CE compliant

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