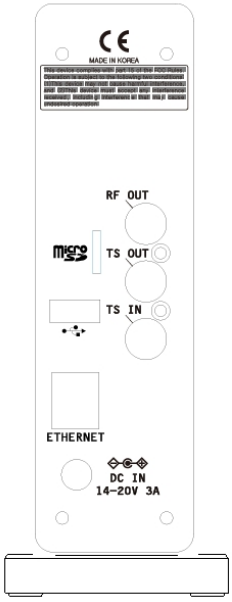
AdvancedDigital Inc.

TVB599/LAN Ver3

Network DTV Modulator



Overview

TVB599/LAN is a TVB599A integrated into dedicated housing unit which has Single-chip Embedded Linux computer. The TVB599/LAN has 10/100/1000Mbps Ethernet port, USB2.0 port and micro SD card slot. Ethernet based remote control software TVB_Manager is used to control this product from remote site and also used to upgrade firmware on the TVB599/LAN. The USB2.0 port and micro SD card slot can be used optionally to store transport stream file.

Features

- **Transport stream from RTP/UDP over Ethernet (up to 80Mbps) , USB 2.0 stick memory and micro SD memory card (up to 130Mbps) , and DVB-ASI/SMPTE-310M input**
- **DVB-ASI, SMPTE-310M output for monitoring**
- **Integrated VHF/UHF/L-BAND RF output up-converter**
- **Programmable RF output level (0.1dB step)**
- **White noise addition over modulated signal to have desired C/N ratio**
- **DVB-T/DVB-H, ATSC 8VSB, QAM(DVB-C & USA-QAM), DVB-S/DVB-S2, T-DMB, ISDB-T, ISDB-S, DTMB, CMMB, ATSC-M/H, DVB-T2, DVB-C2 modulation options are supported**
- **SNMP based remote control**

Module Specifications

Transport Stream Input RTP over IP, USB flash, microSD card, DVB-ASI/SMPTE-310M **Bit Rate** When playing thru RTP over IP: Up to 80Mbits/s When playing thru USB/micro SD card: Up to 130Mbits/s **ASI/ SMPTE-310M Input/Output** Connector: 75ohm BNC	**RF Output** Connector: 75ohm BNC Freq: 55~2150MHz in 1 Hz steps Level: Programmable RF output level (0.1 dB steps from 0 to -60dBm) Freq accuracy: Within 3ppm accuracy Phase noise <-90dBc/Hz @ 10KHz **Ethernet** 10/100/1000Mbit Ethernet port used for remote control and TS input	**USB** USB 2.0 for flash memory **Micro SD Card** SDHC class 2/4/6/10 supported **Physical/Environmental** HxWxL: 170mm x 70mm x 235mm **Application Software** Teleview TVB manager **Operating Condition** Temperature: 0~35˚C Humidity: 10% ~ 90%, Non-condensing

DVB-T/H Option Specifications

Standard ETSI EN300744 v1-4-1 compliant Non-hierarchical single program mode **Punctured Code Rate** 1/2, 2/3, 3/4, 5/6, 7/8 selectable **Constellation** QPSK, 16-QAM, 64-QAM	**Transmission Mode** 2K/4K/8K mode selectable 4K mode only for DVB-H **Guard Interval** 1/4, 1/8, 1/16, 1/32 selectable	**In-depth Interleaving** Only for DVB-H **Bandwidth** 5/6/7/8 MHz mode selectable 5 MHz only for DVB-H

8VSB Option Specifications

Standard ATSC A.53 Part 2: 8VSB compatible		

QAM Option Specifications

Standard ITU-T J.83 Annex A/C and B compliant	**Constellation** Annex A/C: 16-QAM, 32-QAM, 64-QAM, 128-QAM,256-QAM	Annex B: 64-QAM, 256-QAM

QPSK Option Specifications

Standard ETSI EN 300421 (DVB-S) compliant	**Code Rate** 1/2, 2/3, 3/4, 5/6, 7/8	**Symbol Rate** 1~45 M symbols/s **DC Blocking Voltage** 50V max

DVB-S2 Option Specifications

Standard ETS 302 307 broadcast services compliant **LDPC Code** 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, and 9/10 supports	**Modulation Mode** QPSK, 8PSK, 16APSK, 32APSK **Baseband Shaping Filter** Roll-off 0.20, 0.25, 0.35, none selectable	**Symbol Rate** 1~45 M symbols/s **DC Blocking Voltage** 50V max

T-DMB Option Specifications

Standard ETS 300401, ETS300799 compliant **Transmission Mode** DAB transmission modes I, II, III, IV	- Transmission mode automatically selected from the ETI stream	Supports ETI(NI, G.703), ETI(NA, G.704)5592 and ETI(NA, G.704)5376 file format *T-DMB modulation from TS input is not supported

ISDB-T Option Specifications

Standard ARIB STD-B31 v1.6 compliant **Mode** Mode I, Mode II, Mode III **Code Rate** 1/2, 2/3, 3/4, 5/6, 7/8 selectable **Mapping** DQPSK, QPSK, 16QAM, 64 QAM	**Guard Interval** 1/4, 1/8, 1/16, 1/32 **Time Interleaving Length** Mode I - 0, 4, 8, 16 Mode II - 0, 2, 4, 8 Mode III - 0, 1, 2, 4 **The Number of Segment** 1 / 13 Segment	**Support TMCC Information and Generation** (ISDB-T information and IIP) *ISDB-T direct modulation from DVB-ASI input is supported

ISDB-S Option Specifications

Standard ARIB STD-B20 v3 compliant **FEC** inner:Trellis, convolutional coders outer:RS(204,188) **Modulation** TP8PSK, QPSK, BPSK (hierarchical)	**Code Rate** 1/2, 2/3, 3/4, 5/6, 7/8 selectable	*ISDB-S modulation from DVB-ASI input is not supported *Supports framed TS with TMCC (1~8 TS have totally 48 slots can be selected)

DTMB Option Specifications

Standard GB20600-2006 compliant **Number of Carrier** 1 or 3780 sub-carriers selectable **Frame Length** 4200, 4335, 4725 symbols	**Constellation** 4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM **Code Rate** 0.4, 0.6, 0.8	**Time Interleaving Length** 240, 720 symbols **Bandwidth** 8MHz

CMMB Option Specifications

Standard GY/T 220.1-2006 compliant **Constellation** BPSK, QPSK, 16QAM	**Subcarrier** 4096/8MHz	*CMMB modulation from DVB-ASI input is not supported *CMMB stream should have control information table (CMCT)

ATSC-M/H Option Specifications

Standard ATSC A/153 Part2 compliant	*Supports captured file play, live from external ATSC-M/H MUX through ASI-SMPTE-310M input	*Supports up to 40Mbps stream * In case of Multi PLP, it is recommended to use T2MI multiplexed stream due to CPU performance issue

DVB-T2 Option Specifications

Standard ETSI EN302 755 compliant **MISO/SISO** SISO/MISO Tx1, Tx2 Support **FFT Size** 1K, 2K, 4K, 8K, 16K, and 32K (normal and extended) **Guard Interval** 1/4, 1/8, 1/16, 1/32, 1/128, 19/128, 19/256 **PAPR** None **L1 Modulation** BPSK, QPSK, 16QAM, 64QAM **Pilot Pattern** PP1 ~ PP8 **The Number of RF (TFS)** Single	**FEF** FEF-Null Support **PLP Type** Common, Type1 PLP Support **The Number of PLP** Single PLP, Multi PLP (8 PLPs) **PLP Code Rate** 1/2, 3/5, 2/3, 3/4, 4/5, 5/6 **PLP Modulation** QPSK, 16QAM, 64QAM, 256QAM **Constellation Rotation** Supports at QPSK, 16QAM, 64QAM, 256QAM **PLP FEC Type** 16K, 64K **Frame Interval** '1'	**Time Interleaving Length** '0' ~ '255' **Time Interleaving Type** '0', and Frame Interval(I_Jump)=1 Support **Bandwidth** 1.7/5/6/7/8 MHz mode selectable *L1 post scrambling is supported *T2-Lite is supported *DVB-T2 modulation from DVB-ASI input is supported *Supports T2MI multiplexed stream *Supports up to 40Mbps stream * In case of Multi PLP, it is recommended to use T2MI multiplexed stream due to CPU performance issue

DVB-C2 Option Specifications

Standard ETSI EN302 769 compliant **L1 TI Mode** NONE, BEST FIT, 4 Symbols, 8 Symbols **Guard Interval** 1/64, 1/128 **Data Slice Type** TYPE1, TYPE2 **Time Interleaving** '00'	**FEC Header Type** ROBUST, HEM **BBHeader Format** NORMAL, HEM **The Number of PLP** Single PLP, Multi PLP (8 PLPs) **PLP Code Rate** 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 **PLP Modulation*** 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM	**PLP FEC Type** 16K, 64K **Bandwidth** 6/7/8 MHz mode selectable *256QAM,1024QAM,4096QAM configurations could have some post LDPC errors

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