

PT2060 ATSC Modulator

document revision: Preliminary



Introduction

Designed to meet the most demanding requirements of today's Digital Terrestrial Broadcast Market, the ATSC Modulator PT2060 from ProTelevision Technologies is ranked number one in its class. The unit is based on the popular PT2000 Terrestrial Gateway platform from ProTelevision Technologies. This means that the product at the same time offers superior performance and ultimate flexibility.

The superior performance is noted all the way from the transport stream input to the RF output. The product employs state-of-the-art digital signal processing for the channel coding and modulation process plus fully integrated top quality RF performance. The single printed circuit card on which the product is based delivers the RF signal directly on the television channel for which it is required. The selection of transmission frequency is completely agile in the extensive range from 30 MHz to 1 GHz. To minimize the signal degradation which is normally the result of passing the modulated RF signal through any power amplifier and antenna/combiner filter for broadcasting purposes the unit offers as an option market leading adaptive pre-correction of both the amplifiers non linearity (gain vs. power and phase vs. power) as well as the filters non linearity (amplitude and group delay vs. frequency).

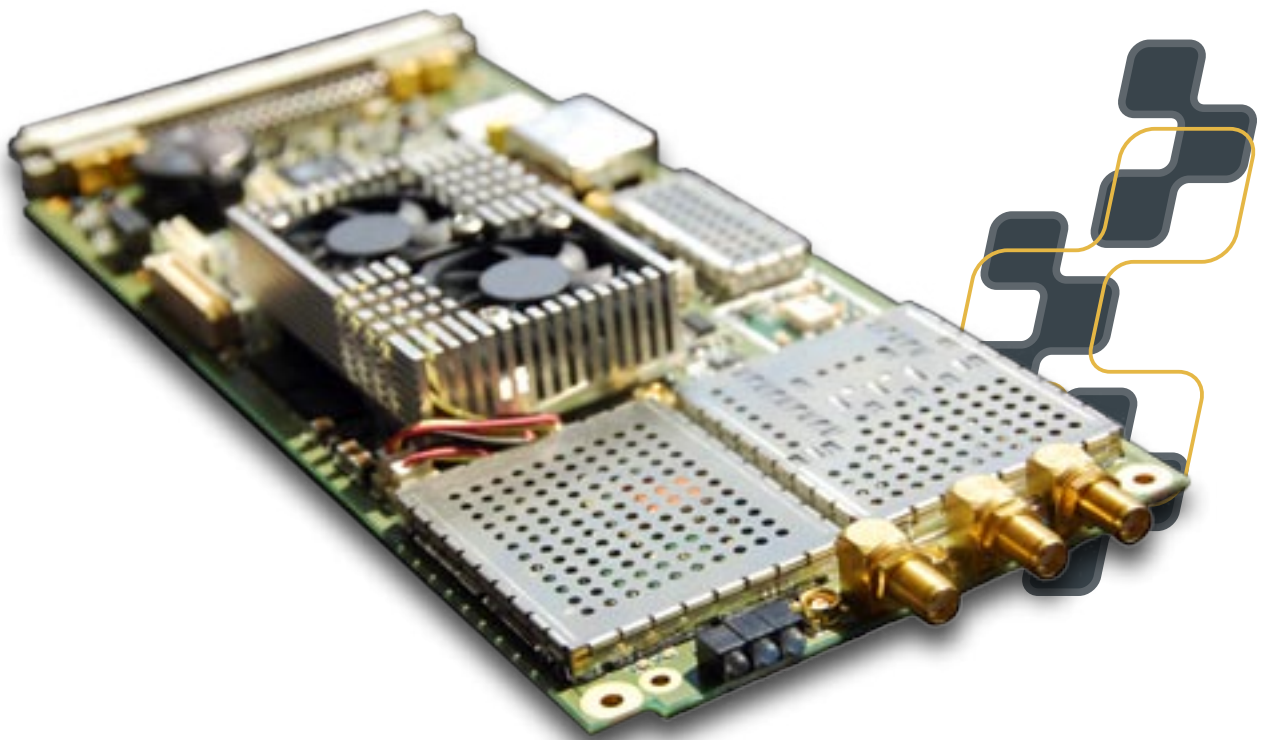
The device is controllable by a highly intuitive GUI (Graphical User Interface) over Ethernet by using a web browser. The navigation to the various functions in the GUI is based on a graphic rendering of the block schematic for the unit itself; it is therefore extremely easy to locate the 'right menu' for setting any parameter without need for first navigating through a series of text based menu entries as typically seen with web interfaces.

The flexibility of the unit is an inherent concept of the PT2000 Terrestrial Gateway platform. The complete input signal management as well as the channel coding and modulation process itself is implemented in programmable circuitry as a FW image. In case of changes of or updates to the modulation standard it will only require implementation of the changes in SW/FW and thereafter loading of the modified code into the device over the Ethernet interface. In principle the unit could even be changed to for example a MediaFLO modulator or a DVB-T/H modulator is so desired; the flexibility is complete.

Application

The typical application for the PT2060 ATSC Modulator is to work in combination with any third party RF power amplifier and provide a high quality RF-signal in a ATSC broadcasting network. The PT2060 constitutes in itself a state-of-the-art product with market leading RF-performance.

The built-in linear and non-linear pre-corrector function (IMD Buster McTwo Soft-Clip) included as standard with PT2060 facilitates furthermore easy and efficient optimization of the overall transmitter system performance (Modulator plus RF power amplifier and channel combiner filter) by allowing manual compensation of the nonlinearities usually encountered with any RF power amplifier and analogue RF filter. Addition of the optional adaptive precorrector solution PT2754 will enhance the ease of operation further by providing continuous automatic optimization of the transmitter performance (modulator plus RF power amplifier). The automatic optimization includes the RF power amplifier non-linearities (phase and gain response vs. power) as well as non linearities in the channel/combiner filter following the power amplifier (amplitude and group delay vs. frequency).



PT2000 Terrestrial Gateway OEM board

Key features

Applicable standards

- ▶ ATSC: A/53, A/54, A/64, SMPTE-310M
- ▶ DVB-ASI: EN50083-9, ETSI TR 101 891
- ▶ MPEG-TS: ISO/IEC 13818-1

Stream Inputs (primary & secondary)

- ▶ Configurable DVB-ASI or SMPTE-310 M
- ▶ 188/204 bytes, bit rate adaptation

RF Outputs

- ▶ RF from 30 MHz to 1000 MHz
- ▶ Bandwidth: 6 MHz

Clock and Synchronization

- ▶ High quality internal clock
- ▶ External 10 MHz clock input
- ▶ Optional onboard GPS

Modulation

- ▶ 8 levels VSB trellis for ATSC transmission



TERRESTRIAL GATEWAY

PRO  **TELEVISION**
TECHNOLOGIES
TECHNOLOGIES
PRO TELEVISION

ProTelevision Technologies A/S
Marielundvej 16
DK-2730 Herlev, Denmark

Ph : +45 44 700 000
fax: +45 44 700 001

www.protelevision.com
e-mail: sales@protelevision.com