The Technalogix TM800 ATSC 1.0 Exciter provides maximum efficiency for Broadcasters and Transmitter Manufacturers.

Besides a high RF and MER performance, the exciter offers the possibility to be upgraded to ATSC 3.0 by a software license installation.

- Software upgradable to **ATSC 3.0**.
- **OPTIPOWER®** - market leading enhanced adaptive precorrection and PAPR clipping technology for maximum optimization of transmitter power efficiency (Option TM3756).
- **VHF and UHF** (selectable frequency from 30MHz to 860 MHz in steps of 1Hz).
- Three choices of internal precision (Local Oscillator) according to the needs of the system: 2ppm, 0.25ppm or 0.01ppm.
- **4x Ethernet Gigabit** interfaces for control and data transport.
- User friendly intuitive WEB GUI control for use with standard Web Browser (Internet Explorer, Mozilla Firefox, Google Chrome and Opera compatible).
- **SNMP** client Get/Set/Trap.
- Available SW based Automatic Level Control to regulate any third party power amplifier output. (Option TM3770/00).
- Modes M/H and SFN supported. 

**Available for all digital broadcasting systems**
- ATSC 1.0 / ATSC 3.0
- DVB-T/T2
- ISDB-T/Tb
- DAB/DAB+/T-DMB

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Optipower is a ProTelevision Technologies’ proprietary solution developed to provide an increase of quality (MER) and efficiency to new or existing TV transmitters.

**Optipower consists of:**
1) Enhanced Nonlinear Precorrection algorithm with **DEEP MEMORY EFFECTS** based on the Volterra polynomial series.
2) Adaptive PAPR clipper.

These two adaptive mechanisms, allow achieving the maximum MER value on any transmitter system (VHF, UHF, Class AB, Doherty, etc..) compared with other precorrection solutions on the market.

This MER extra increase, can be used to **enhance the overall efficiency of the transmitter system**.

In addition, ProTelevision Optipower (Option TM3756) will provide **live measurements** on the WEB Graphical User Interface: Shoulders, MER, PAPR, MER vs Carrier and a Spectrum graphic on the channel transmitted (see picture).

Main specifications for (Optipower) precorrection and feedback signals: Connectors: SMA 50 ohm // Level: -10dBm to +10dBm // Return Loss > 20dB //Frequency: 30MHz to 860MHz.
**Supported Modulator Modes**

A/53 ATSC
A/153 ATSC M/H (option **TM3713**)
A/110B and A/110.2011 SFN mode (option **TM3714**)

Test modes: Single carrier, BVS8 spectrum driven by null-packet input (PRBS mode)

**Output**

**RF-output**
Connector: N female, 50 ohm
Center frequency: Adjustable 30-860 MHz in steps of 1 Hz
Frequency stability: Internal ref 2 ppm to 0.01 ppm or in accordance with external ref. accuracy
Spectrum polarity: Inverted and non-inverted, user selectable
Level: Adjustable [-10, +10] dBm (up to +20 dBm with PT 3740 Option)
Stability: ± 0.5 dB
Return loss: > 16 dB

Spectrum outside band (for RF Output 0 dBm @ 6 MHz)
+/-3.8 MHz: 0 dB
+/-4.25 MHz (shoulders): < -50 dB (typically -55 dB)
Harmonics and spurious: < -55 dBc
MER: > 45 dB (typically 50 dB)

Internal frequency reference
Selectable Local Oscillator for customer's specific requirements
**TM3710/00**
**TM3710/10**
**TM3710/20**

**Control Interface**

**Ethernet interface**
Connector: RJ45 (1 in front panel, 4 in rear panel)

**RS232/RS485 Interface**
Connector: 9-pin SUB-D Male in rear panel

**HW Interface**
Connector: 15-pin SUB-D Female in rear panel
Alarm output: Two user programmable alarms via separate floating relays, common make-break contacts, contact rating 60V/0.2 A (5 W max)
Input: Separate Reset control and Output muting control, user programmable activation: ground closure or open

**Power Supply**
Voltage: Accepts all the DC range from 100-240 VAC
Frequency: 47-63 Hz
Power consumption: Max. 40 W

**Electrical Specifications**

**Inputs**

ASI inputs/SMTE-310M inputs
No. of ASI inputs: 2
Connector: BNC
Input Impedance: 75 ohm
Return Loss: > 13 dB
Redundancy: User selectable switching policy between “Primary” and “Secondary” ASI source
Seamless Switching: Supported for any combination of inputs (ASI/ IP) in SFN Configuration

Ethernet ports (1GBit/sec)
Total No. of ports: 4 (2 of them optimized for Data Input)
Connector: RJ45 quadruple PCB connector

**Outputs**

GNSS Receiver Input (Option **TM3711**)
Connector: TNC 50 ohm PCB connector
Frequency: 1.575 GHz (GPS) / 1.598-1.606 GHz (Glonass)
Antenna gain range: 0 to +32 dB
Antenna: Passive or active antenna (not included)
Antenna DC supply: OFF, 3 Vdc or 5 Vdc (+0.5 V) user selectable
Antenna DC current: max 50 mA

External Clock reference (carrier frequency and SFN timing)
Connector: BNC
Frequency: 10 MHz
Level: 100 mV-3 Vpp
Impedance: 50 ohm/ > 1 kohm, user selectable
Coupling: AC

Time reference (SFN timing)
Connector: BNC
Frequency: 1 PPS
Level: 0-5 V, user selectable trigger point IV or 1.6V
Trigger: Rising / falling edge, user selectable
Impedance: 50 ohm/ > 1 k ohm, user selectable

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**Environmental Specification**

| Climates Temperature | range operating: | -5°C to +55°C  
(+23°F to +131°F) |
|-----------------------|------------------|
| Temperature range     | within specs:    | +5°C to +45°C  
(+41°F to +113°F) |
| Temperature range     | storage:         | -30°C to +70°C  
(-22°F to +158°F) |
| Humidity operating    | max 90% RH       |
| Humidity storage:     | max 90% RH       |
| EMC                   | compliant to EN55022 (emission) and EN55024 (immunity) |
| Safety                | compliant to EN60950-1 |
| RoHS                  | compliant with directive 2011/65/EU |

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<thead>
<tr>
<th>Mechanical Specification</th>
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<tbody>
<tr>
<td>Cabinet:</td>
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<tr>
<td>Width:</td>
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<tr>
<td>Depth:</td>
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<td>Weight:</td>
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<td>Cooling:</td>
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<td>Transport and storage:</td>
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**Ordering codes:**

- **ATSC Exciter**
  - TM800: ATSC 1.0 Exciter

- **Options, software**
  - TM3713: A/153 ATSC M/H mode*
  - TM3714: A/110-B and A/110-2011 SFN timing*
  - TM3754: Adaptive Digital Pre-corrector
  - TM3756: OPTIPOWER™ Enhanced precorrection and adaptive PAPR clipper
  - TM3770/00: Automatic Level Control
  - TM3263: ATSC 3.0 License
  - TM3740: +20 dBm output amplifier

- **Options, hardware**
  - TM3711: GNSS module (GPS and GLONASS support)
  - TM3710/10: Medium Precision Oscillator OCVCXO 0.25 ppm
  - TM3710/20: High Precision Oscillator OCVCXO 0.01 ppm

*For transmission to air of these transmission modes/features, it is required a license from the patent owner. Please check: [http://atsc.org/policies/patent-statements/](http://atsc.org/policies/patent-statements/)