

11000 W DAB

# 11 kW DAB TV TRANSMITTER LQ



DAB TRANSMITTER

  
HIGH EFFICIENCY

  
HOT PLUG-IN POWER  
SUPPLY/PSU

  
MULTI-PLATFORM

  
MULTI INPUT

  
MULTI-STANDARD  
DVB-T/T2 ATSC/ATSC 3.0  
ISDB-Tb DTMB NTSC (analog)

  
MONITORING  
SNMP, WEB BASED GUI,  
DRY CONTACTS

  
WIDE BAND

  
HOT SWAPPABLE  
AMPLIFIER

  
LIQUID COOLED

  
GNSS  
(GPS, GLONASS, BEIDU, GALILEO)



FRONT VIEW



The P75 Line is the multi amplifier liquid cooled Transmitter family from SYES.

P75-08 is equipped with Driver (Dual Driver Optiond) and N° 8 plug-In Amplifiers.

It is equipped with High Efficiency Wideband DAB state-of-the-art amplifiers characterized by high-power density and excellent signal quality granting optimal parameters such as shoulder attenuation and MER.

The P75 amplifiers are hot pluggable and are equipped with 3x redundant Hot Plug-in power supplies each, assuring the maximum reliability and the easiest maintenance.

- ☐ Multimode platform: Transmitter, Heterodyne Transposer, Regenerative Transmitter, Gap Filler and Single Frequency Echo Cancellor
- ☐ Multi Input: Nr.2 Hitless EDI/ETI switches+ 1xSFP (optical/electrical), Nr.1 SAT (DVB-S2/SX with CAMSlot)
- ☐ Double Transmitter: Includes the ability to transmit two DAB+ frequencies with the same transmitter
- ☐ COT Feature (Continuity of Transmission) : null packet insertion to compensate for micro input interruptions
- ☐ The most advanced manual, automatic and adaptive linear and nonlinear pre-corrector.
- ☐ Sky-High efficiency to minimize energy consumption and OPEX up to 51%;
- ☐ Fully frequency agile without need for any tuning or trimming.
- ☐ ON Board GNSS receiver (GPS, GLONASS, BEIDU, GALILEO) for SFN Applications.
- ☐ USB input to fast save/load configurations.
- ☐ Hot Pluggable Power Amplifiers (option);
- ☐ Power Amplifiers with triple redundant Hot Plug-in power supplies;
- ☐ Use of tools reduced almost to zero including pallet replacement.
- ☐ Dual Independent temperature controlled redundant pumps for better efficiency and performance (plug-in tool free pump swap)
- ☐ Dual Blower Heat exchanger
- ☐ Remote control via SNMP, friendly web browser GUI, no need of plug-in or apps, dry contacts.

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| TECHNICAL SPECIFICATIONS                                    |                                                                                                                                                                                                       |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RF OUTPUT                                                   |                                                                                                                                                                                                       |
| Output power*                                               | • 11000 Wrms DAB                                                                                                                                                                                      |
| Spurious / Harmonics                                        | EN 302-296-2 / EN 302 077                                                                                                                                                                             |
| Shoulders/MER                                               | Typical: >48dB/>38dB                                                                                                                                                                                  |
| Connector / Impedence                                       | 3 1/8", other available - 50 Ohm                                                                                                                                                                      |
| Bandwidth                                                   | DAB                                                                                                                                                                                                   |
| Frequency stability                                         | 1 Hz                                                                                                                                                                                                  |
| Amplification Class:                                        | Either High efficiency (Doherty type) or AB class available                                                                                                                                           |
| Final Stage                                                 | No. 6 Amplifiers each with No. 6 Pallets with 4 final transistors each (LDMOS latest technology).                                                                                                     |
| GENERAL                                                     |                                                                                                                                                                                                       |
| Mechanical                                                  |                                                                                                                                                                                                       |
| Composition<br>(Main components in one rack 44U)            | <ul style="list-style-type: none"><li>• 1x Exciter (Dual Driver Option)</li><li>• 8x P75-V Amplifier</li><li>• 1x Tx control logic</li><li>• 1x cooling drawer, close vase type, dual pump.</li></ul> |
| Dimensions (WxHxD) mm - Weight)                             | 600x2320x1100 - 480 kg                                                                                                                                                                                |
| Rack Input Connections                                      | Mains, Input and Cooling from TOP of Rack. Rear, Side, Bottom inputs are available without additional HW                                                                                              |
| Cooling                                                     |                                                                                                                                                                                                       |
| Cooling System                                              | Liquid cooling, close vase type                                                                                                                                                                       |
| Cooling redundancy                                          | Single or dual pump / single or dual heat exchanger                                                                                                                                                   |
| Environmental                                               |                                                                                                                                                                                                       |
| Relative humidity                                           | 95% max. (non-condensing)                                                                                                                                                                             |
| Operation temperature range                                 | 0° to 50°C                                                                                                                                                                                            |
| Storage temperature range                                   | -20° to 70°C                                                                                                                                                                                          |
| Max. installation altitude                                  | 4.600 m a.s.l. (higher altitudes kit on request)                                                                                                                                                      |
| Power supply & Safety                                       |                                                                                                                                                                                                       |
| Voltage***                                                  | 208/ 400 Vac (three phase) 47 to 63 Hz (auto range p.s.)<br>power factor > 0.98                                                                                                                       |
| Power Supply                                                | 3x Power supplies In hot plug-in configuration each amplifier.<br>2+1 PS redundancy configuration available                                                                                           |
| Efficiency**<br>(typical value referred to OFDM modulation) | Up to 50%                                                                                                                                                                                             |
| Safety /EMC                                                 | EN 60215 (IEC 21S), EN301-489-53, FCC-73, IS09001-2010.<br>RED 2014/53/UE, RoHS 2002/93/EC                                                                                                            |
| Safe Operations                                             | Interlock Circuit provided and configurable.                                                                                                                                                          |
| DTV MODULATIONS                                             |                                                                                                                                                                                                       |
| DAB                                                         |                                                                                                                                                                                                       |
| Standard                                                    | DAB, DAB+ (Ref. Standards EN 3000401, EN 302077-2, EN 300799) DMB, TS 102428                                                                                                                          |
| Inputs                                                      | 2xETI hitless switching (SFN), 2xEDI ProMPEG COP3 - Electrical + 1xSFP GBE (Opt./Elec)                                                                                                                |
| DAB modes                                                   | I, II, III, IV                                                                                                                                                                                        |
| RF channel Bandwidth                                        | 1.536 MHZ blocks                                                                                                                                                                                      |

\*: Power outputs are subject to change due to out-of-band regulations and the required shoulder attenuation / MER, voltage, channel of operation and type of RF output filter. VSWR: 2:1

\*\* HE High Efficiency Syes transmitting platform are WIDE BAND native, without any need for software or hardware change, tuning or other setting. Efficiency depends on several parameters such as operating standard and frequency, output power settings, spectrum performances, environmental conditions etc.

\*\*\*: Single mains supply per cabinet, with power isolator switch, accessible from the outside

**SV**  
**Syes**

SY.E.S. S.r.l. • Via Zanella, 21

20851 Lissone (MB) Italy Tel. +39.039.9897.1

Fax +39.039.9897.363 C.F. / P.IVA 06358330964

sales@sy.es.eu | www.syes.eu

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| DIGITAL ADAPTIVE PRECORRECTION    |                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------|
| Type                              | Linear / non linear; selectable                                                                     |
| Clipping                          | 12 dB                                                                                               |
| Operation mode                    | Continuous / Automatic (triggering: time/shoulder level)                                            |
| Precorrection status              | Running/Stopped                                                                                     |
| PAPR                              | Provided                                                                                            |
| REPEATER                          |                                                                                                     |
| Type                              | SFN gap filler, transposer and MFN re transmitter                                                   |
| RF input                          | N-Connector                                                                                         |
| Rfm frequency range               | 146 to 861 MHz                                                                                      |
| Input level                       | -10dBm to -60dBm (SFN Gap filler)<br>-20dBm to -70dBm (QEF reception)                               |
| Input ret. Loss                   | better than -16 dB                                                                                  |
| RF in connector                   | N type . 50 Ohm                                                                                     |
| Echo cancellation                 | Resilient to static and dynamic echoes                                                              |
| Residual echo suppression         | up to more than 30 dB<br>(30dB are obtained at 0dB input echo)                                      |
| Noise figure                      | max 10 dB (SFN Gap filler)<br>max 8 dB (Transposer)                                                 |
| Immunity to other channel         |                                                                                                     |
| N+1                               | OFDM/OFDM > 30 dB                                                                                   |
| others                            | OFDM/OFDM > 40 dB                                                                                   |
| SATELLITE TRANSPOSER              |                                                                                                     |
| SatTV standard                    | DVB-S - DVB-S2 - EN300421                                                                           |
| Frequency range                   | 950 - 2150 MHz (Ku band)                                                                            |
| Signal level                      | -65 to -25 dBm                                                                                      |
| Connector                         | SMA f - CAM slot (Cond. Access)                                                                     |
| LNB control                       | Available through RF input. PS, polarity / band selection: by standard 13/18VDC and 22kHz signaling |
| CLOCK AND SYNCHRONIZATION         |                                                                                                     |
| Internal clock                    | OCXO single oven or dual oven (optional)                                                            |
| External 10 MHz / 1pps reference  | BNC (F). Impedance: 50 ohm / high (selectable).                                                     |
| NTP Server                        | Available                                                                                           |
| SFN                               | SFN resolution 1100 ns SFN configurable delay $\pm 500$ ms                                          |
| Stability                         | time: max $\pm 10^{-7}$ /year - temperature: max $\pm 2.5 \cdot 10^{-8}$ (-20°C to +70 °C)          |
| MONITORING                        |                                                                                                     |
| Local Full Monitoring and Control | Local operation through LCD display and keyboard located on the front panel                         |
| Front RJ-45<br>Rear RJ-45         | Local operation through a Web Server Graphical User Interface, Remote Network management (via SNMP) |
| FW & SW Upgrade                   | Via web pages, self-upgrade function available via OTA or remote server.                            |
| GUI                               | Web Server Graphical User Interface xHTML based                                                     |
| SNMP                              | V2c / V3 provided                                                                                   |

**SV  
Yes**