

TUX600

Technical Specification Summary

Frequency Range 470 – 862MHz
Max VSWR 3:1 (Self Protected)
DVB-T/H 600 Wrms
Supply Voltage 50V

Typ. Gain 64,7 dB
Temperature Range -5 to +45C
RF Monitoring $\pm 0,2$ dB over all 470-862MHz
Working Class AB



Key Features and functions

- UHF Broadcasting band (470 – 862MHz) full coverage.
- High PA gain allow the use of the most popular modulators with 0dBm RF Output.
- Provides optimal use of power devices at corresponding flange temperature.
- External Power Supply (OPTION) for max system flexibility
- Full protection against infinite VSWR, overdrive and over-temperature
- Extremely strong mechanical structure
- RS422, RS485, Parallel In/Out connections
- SNMP and TCP/IP Remote control



General Description

The XU600 Power Amplifier is designed specifically for digital signals with the 6^o generation of 50V LDMOS power devices. The broad band design of the PA architecture with extremely low loss, state of the art, combining systems, enables optimal use of the power devices at correspondent flange temperature, increasing – consequently – the MTBF of the system when compared with other broadband Power Amplifiers.

The logic control unit, designed specifically for this product line, accepts all necessary interfaces (TCP/IP, SNMP, USB and RS485) for maximum flexibility in every environment.

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Electrical Specifications

| Parameter | Min. | Typ. | Max | Units | Notes |
|--------------------|------|------|--------|-------|------------------------------|
| Frequency | 470 | | 862 | MHz | Full coverage without tuning |
| Power Input | | -7 | | dBm | |
| Gain | | 64.7 | | dB | @ 600Wrms |
| Power Consumption | | | 4200 | W | |
| V Supply | | 50 | | Vdc | |
| Input return loss | | -16 | | dB | |
| Gain Variation | | | +/-0,5 | dB | |
| F2 Second Harmonic | | -30 | | dBc | |
| Baseplate Temp. | | | +70 | °C | |

| Video Parameter | Min. | Typ. | Max | Units | Notes |
|-----------------------|------|------|-----|-------|---|
| Digital Power (DVB-T) | | 600 | | Wrms | Without Precorrection At ± 4.2 MHz / 600 W rms without precorrection |
| M.E.R. (DVB-T) | | -31 | | dBc | |
| Shoulders (DVB-T) | | -34 | | dBc | |

Physical Dimensions 482,6mm x 132.55mm x 500mm / 19"x5.2"x19,685 "
 Weight 20.4 kg / 45 lb

ABSOLUTE Maximum Ratings

| Parameter | Value | Units | Notes |
|-------------------|--------|-----------------|--------------------------|
| Output Power | 600 | W | rms |
| Input Power | -6.5 | dBm | |
| Operating Voltage | 52 | V _{DC} | Stable operations: 50Vdc |
| VSWR | 3:1 | | self protected |
| Operating Temp. | -5 +45 | °C | |
| Base Plate temp. | 80 | °C | Heatsink Temperature |

Electrical Interfaces

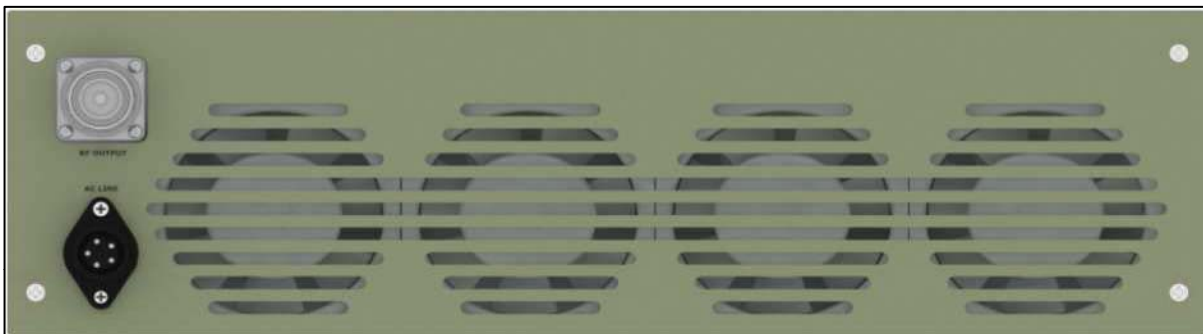
| | |
|----------------------------|--|
| Power and Signal Connector | 7-8 Pin Mixed Signal and Power Connector |
| RF input | N Female on Rear Panel |
| RF output | 7/16 DIN Female on Rear Panel |
| RF Monitor | SMA connector on Rear Panel |
| RS485 | Dsub 9 Pin on rear panel |
| TCP/IP AND SNMP | RJ45 on rear Panel |
| Parallel Input/Output | Two-Dsub 9 Pin on rear panel |

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Mechanical specifications

XU05 General data and layout Dimensions.
Physical Dimensions 482,6mm x 132.55mm x 500mm / 19"x5.2"x19,68"
Weight 6,65 kg / 14,7 lb

Rear Interfaces (Connector) from Left to right:



EXTERNAL POWER SUPPLY (OPTIONAL specify when ordering)

The XU600 has been designed for stand alone and for parallel system use. In order to provide maximum system design flexibility RES-Ingenium suggests two possible power supply units:

- PSX600-D3 @ 50 Volt (equipped with 3 Slots) for maximum flexibility and easy maintenance.
- Compact 50Volt / 5kW Power Supply.

Size: 19 Inch, 1 HE (Both PSU)

External High Power Supply Technical Specifications

| | |
|-----------------|--|
| Vout | 50 Volt DC |
| Iout | 2 x 62 A with DVB-T signal |
| Load Regulation | ± 0.5% from 10% up to 100% dynamic load change |
| Output Ripple | 400mV max |

External Service Power Supply Technical Specifications

| | |
|-----------------|--|
| Vout | 5/12 Volt DC selectable |
| Iout | 1 A |
| Load Regulation | ± 0.5% from 10% up to 100% dynamic load change |
| Output Ripple | 50mV max |
| Enable | This voltage must be present anytime to power the logic control unit |

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Integration and important Operating instructions

The XU600 is designed for operation up to 600Wrms (DVB signal) with very high linearity. This design uses 6th generation family LDMOS devices that are capable of very high power as long as the average power does not exceed specified ratings. The devices are protected by an internal circuit, for Overdrive and high Mismatch load.

However is mandatory to handle with care the Input level during the "precorrection operations" due to possible very fast and high spikes coming from the source.

The TUX600 has been designed for stand alone and for parallel system use. In order to provide maximum system design flexibility IRTE suggests two possible power supply units:

- PSX600-D3 @ 50 Volt (equipped with 3 Slots) for maximum flexibility and easy maintenance;
- Compact 50Volt / 5kW Power Supply ;

Size: 19 Inch, 1 HE (Both PSU)

When the XU600 is installed in a 19 Inch std Rack is recommended to leave a right space on the rear zone to facilitate the exhausted air extraction. It's suggested to leave one free unit (1 HE) at the top and bottom of the Amplifier. In case of use of more XU600 in parallel an appropriate power combiner has to be used. It is strongly recommended to use "Low Lose Cables" type for the connection between Amplifiers and the Power Combiner Input Ports.

The Amplifier is equipped with an RF Monitor Output available by a SMA connector where is possible to test the performances when the it's on duty. The RF Monitor Output is normally > -40 dB referred to the main output in order to have a right signal managed by std Instrumentation.

Anyway a SMA pad can be put in series to reduce the RF monitor amplitude. The Amplifier is delivered in cartoon box packaging. Use all professional caution during unpacking, handling and mounting..

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