

# HIGH POWER AMPLIFIERS 750 WATT

HPA 2712 SERIES FOR KU-BAND



HPA 2712 A (indoor)



HPA 2712 B (outdoor)

ND SatCom has been a supplier to the Satcom industry for over 25 years. All necessary features required in today's satellite communication applications such as serial/parallel M&C interfaces, local and remote panels are available in this HPA product line. All RF parameters can be monitored and controlled on the front panel. The modular construction ensures easy servicing. The high voltage section is potted and all other electrical components are coated to protect against humidity and dust.

The outdoor versions of this series are available with two choices of remote panel. The standard panel allows the user to control the operating status of the amplifiers (standby, run, RF-on). An optional microprocessor-controlled remote panel displays additional status information and gives extended control options.

**// Unmatched TWT durability and reliability through our intelligent high-tech power supply unit //**

## Key Features

- / Unmatched RF performance
- / Enhanced TWT longevity
- / High-tech power supply unit for highly reliable operation
- / Indoor and outdoor versions
- / Integrated power factor correction
- / Low power consumption (max. 2350 W)
- / Light-weight (only 36 kg / 79 lbs)
- / Small dimensions
- / Low phase noise (typ. IESS 308/309)

## Options

- / Integrated linearizer
- / Redundancy switching
- / Remote control panel (outdoor version)

# TECHNICAL SPECIFICATION

## HPA 2712 SERIES FOR KU-BAND

### RF-SPECIFICATION

|                              |   |
|------------------------------|---|
| Frequency Range              | 12.75 - 14.50 GHz   |
| Flange Power                 | > 630 W, > 58 dBm   |
| TWT Power                    | 750 W Tube  |
| Gain at Rated Power          | > 72 dB   |
| Gain at 10 dB Backoff        | > 76 dB   |
| Gain Variation               | < 1.0 dB / in any 80 MHz, < 2.5 dB / in any 500 MHz, < 5.5 dB / full band   |
| Gain Slope                   | < 0.02 dB / MHz   |
| Gain Stability               | < ±0.25 dB / °C / 24 hrs after 30 min warm-up   |
| Gain Adjust                  | > 0 - 20 dB, ±0.1 dB setability   |
| Group Delay (in any 40 MHz)  | < 0.01 ns / MHz linear, < 0.005 ns / MHz <sup>2</sup> parabolic, < 0.5 ns ripple  |
| Intermodulation              | < -21 dBc at 6 dB below rated power without linearizer<br>< -30 dBc at 4 dB below rated power with linearizer                         |
| Noise Figure                 | < 15 dB max.  |
| AM/PM Conversion             | < 2.5° / dB at 7 dB below rated power, < 6° / dB at rated output power  |
| Harmonic Output Suppression  | < -80 dBc at rated output   |
| Noise and Spurious Emissions | < -65 dBW / 4 kHz (inband), < -120 dBW / 4 kHz 10.7..12.2 GHz<br>< -100 dBW / 4 kHz 12.2..12.5 GHz, < -115 dBW / 4 kHz 18.0..19.0 GHz |
| Phase Noise                  | Meets IESS 308/309  |
| VSWR                         | 1.3:1 Input, 1.2:1 Output (waveguide)   |

### MECHANICAL SPECIFICATION

|                           | Version A (indoor)  | Version B (outdoor)                                   |
|---------------------------|---|---|
| RF Connectors             |   |   |
| Inputs                    | SMA (input) / N-Jack (testport)                             | N -Jack (input/testport)                              |
| Outputs                   | WR 75 Waveguide Output,<br>grooved, threaded M4 or UNC 6/32 | WR 75 Waveguide Output,<br>grooved, threaded UNC 6/32 |
| Serial Remote Interface   | 9-pin D fem. RS422/RS485 (optional RS232)                   | PT 851-00R12-10S50 RS422/RS485                        |
| Alarm / Mute Interface    | 15-pin D fem.   | PT 851-00R12-10S50                                    |
| Parallel Remote Interface | 25-pin D fem.   | PT 851-00R19-10S50                                    |
| Main Power Inlet          | AMP C 16-1 4 pol. P   | AMP C 16-1 4 pol. P                                   |
| Dimension                 | 483 x 133 x 650 mm (3 RU)                                   | 294 x 233 x 649 mm                                    |
| Weight                    | < 36 kg / 79 lbs  | < 36 kg / 79 lbs                                      |
| Cooling                   | forced air min. 200 m³/h                                    | forced air min. 200 m³/h                              |
| Noise Level (cooling fan) | < 65 dBA measured in 1 m distance                           | < 65 dBA measured in 1 m distance                     |

### ELECTRICAL SPECIFICATION

|                   |  |
|-------------------|--|
| Prime Power       | 190 to 240 VAC / 50 - 60 Hz, single phase    |
| Power Consumption | < 2350 W max.                                |
| CE Directive      | 73/23/EEC and 92/31/EEC 89/336/EEC 1999/5/EC |

### ENVIRONMENTAL SPECIFICATION

|                             |                                 |                                 |
|-----------------------------|---------------------------------|---------------------------------|
| Operating Temperature Range | -10°C to +50°C                  | -40°C to +50°C                  |
| Operating Humidity          | < 95% non-condensing at 40°C    | < 95% condensing at 40°C        |
| Shock and Vibration         | for normal commercial transport | for normal commercial transport |



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