STA3485 Series, StellarMini™ 80 W, DBS-Band, Antenna Mount TWTA

The STA3485 range of DBS amplifiers from Spacepath Communications provide over 75W of output power in compact, lightweight rugged weatherproof enclosure. The advance cooling techniques enable the unit to operate in extreme environmental conditions.

The units can be deployed globally, are easy to integrate and user friendly. A serial RS422/485 interface is included as standard with comprehensive monitoring and control.

**OPTIONS**
- Integral BUC that can be supplied as a Dual Band version with selectable LO allowing the entire DBS frequency range to be covered by one unit
- Lineariser enabling the unit to provide over 42W Linear power

**FEATURES**
- Lightweight and compact
- Wide Operating temperature range –40°C to +60°C
- Intuitive Monitoring & Control through RS422/RS485
- Weatherproof antenna mount construction allows exposed mounting
- Redundant control – contains control and drive circuits for 1:1 redundancy
- Wide input supply 99V to 265V AC
- Wide range of accessories including: controllers, waveguide networks, cable assemblies, ducting adaptor and cowl
## TECHNICAL SPECIFICATION

### PERFORMANCE

#### Frequency Range
- Standard: 17.3 - 18.4 GHz

#### Frequency Range - BUC Option (See Note 1)

<table>
<thead>
<tr>
<th>Sub-Band</th>
<th>Output (GHz)</th>
<th>Input (MHz)</th>
<th>LO (GHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2</td>
<td>17.3 - 18.1</td>
<td>950 - 1750</td>
<td>16.35</td>
</tr>
<tr>
<td>DB3</td>
<td>18.1 - 18.4</td>
<td>1150 - 1450</td>
<td>16.95</td>
</tr>
</tbody>
</table>

#### External Reference - BUC Option (See Note 1)
- Frequency: 10 MHz
- Level: -3 to 7 dBm
- Impedance: 50 Ω

### Output Power

<table>
<thead>
<tr>
<th>Sub-Band</th>
<th>DB2</th>
<th>DB3</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWT Flange (min)</td>
<td>85 W (49.3 dBm)</td>
<td>67 W (49.3 dBm)</td>
</tr>
<tr>
<td>HPA Rated Output (min)</td>
<td>76W (48.8Wd8bm)</td>
<td>60 W (47.8 dBm)</td>
</tr>
</tbody>
</table>

#### Gain
- Sub-Band: DB2 | DB3
- Gain at Rated Power: 70 dB min.
- Small Signal Gain: 75 dB min.
- Gain Flatness - Full Band: 4 dB p-p | 3 dB p-p
- Gain Flatness - 36 MHz: 1 dB p-p
- Gain Stability - 24Hrs (Const. drive): 0.5 dB
- Gain Stability - Over Temp range: 2 dB p-p
- Gain Control: 25 dB min

#### Linearity
- Inter modulation: -25dBC, 2 equal carriers, 10MHz apart, Total OPBO
- No Linearizer | With Linearizer
- Prated-8dB | Prated-3dB
- Spectral Regrowth: -30dBc, 1 symbol rate from carrier (QPSK)
- No Linearizer | With Linearizer
- Prated-6dB | Prated-2dB

#### Phase Noise
- Continuous - Standard: 10dB below IESS phase noise profile
- Continuous - With Internal BUC: Meets IESS phase noise profile
- AC Fundamental: -50 dBc
- Sum of all spurs: -47 dBc

#### Noise & Spurious
- Harmonic: -60 dBc
- Spurious: -65 dBc
- Noise Power Density
  - Tx Band: 70 dBW/4kHz
  - Rx Band: 130 dBW/4kHz

#### VSWR
- Input VSWR: 1.3:1 (1:6:1 With Internal BUC)
- Output VSWR: 1.3:1

### Electrical
- Prime Power: Single Phase, Line-Neutral or Line-Line
- Voltage: 99 to 265 V
- Power Requirement: 660 VA typical at Prated
- Power Factor: 0.95 min.

### Mechanical
- Dimensions LxWxH: 348x183x132.5 mm
- Weight: 9.0kg (19.8 lbs)
- Cooling: Integral Forced-Air

### Connectors
- RF Input: N-Type (Female)
- RF Output: PBR140 with 6-32 UNC 2B threaded holes
- RF Output Sample: N-Type (Female)
- Prime Power: Amphenol T3110-000
- Control Interface: 62GB-12E-18-32-PN

### Monitor & Control
- Interface: RS422/485
- Monitor: Off | Output Power Monitor
- Transmit: TWT Temperature
- Summary Fault: Helix Current Monitor
- Redundancy Fault: Helix Voltage
- Reflected Power: Collector Voltages
- External Interlock: Heater Voltage
- TWT Too Hot: Elapsed Hours
- Mean/Peak Helix Current: Low/High Power Alarm
- Control: Off | High Power Alarm Set
- Transmit: Auto Redundancy Control
- RF Inhibit: RF Switch Control
- LO Select (Optional Note 1): Gain Control

### Environmental
- Temperature - Operating: -40°C to +55°C (derate 2°C/300m above sea level)
- Temperature - Storage: -40°C to +85°C
- Humidity: Up to 100%
- Altitude - Operating: 4.5 km (15,000 ft) max.
- Altitude - Non-Operating: 12 km (40,000 ft) max.
- Vibration/Shock: BS EN 60721-3-2 Level 2M3

### Compliance Standard
- EU Directives: EMC Directive 2014/30/EU
- Low voltage directive 2014/34/EU.
- ROHS Directive 2011/65/EU
- EMC - Emissions: EN60006-3
- FCC Part 15B
- EMC - Immunity: EN61000-6-2
- Safety: IEC 62368-1

### Notes

1) **Internal BUC Option**

The Internal BUC is available as single LO versions covering the bands DB2 & DB3 or a Dual Band version with selectable LO.

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