# RMALDCBS1X32

## GPS Rack Mounted Amplified 1X32 Splitter Technical Product Data

## Features

- Excellent Amplitude Balance
  - Less than 1 dB variation between ports.
- Flat Group Delay
  - Less than 1ns variation between L1 and L2.
- High Output Gain
  - 14.0 dB gain is typical across all operating frequencies in standard configuration.
- Wide Accepted Frequency Range
  - Accepts signals from the entire L-Band, covering all major GNSS constellations.
- Efficiently Blocked Ports
  - Uses 200Ω resistors to prevent antenna alarm faults from connected devices.
- LED Power Light
- -48VDC Power Option Available
- Durable Rugged Standard 3U Chassis


## Description

This **R**ack **M**ounted **A**mplified **L**oaded **DC B**locked **S**plitter **1X32 (RMALDCBS1X32)** is an active one input, thirty-two output RF splitter that splits signals from 1.1 GHz to 1.7 GHz and has a formfactor which will fit in a server rack. This equipment is designed to amplify and split signals within the L-band to provide multiple devices with the signal from a single antenna. In the standard configuration, the J1 port will pass DC voltage from a connected device and pass this power to the antenna or other devices upline from the splitter via the antenna port. The other ports (J2-J32) are DC blocked and loaded with 200Ω resistors to simulate antenna current draw which prevents antenna alarm faults. Custom gain configuration, DC configuration, and connector configuration are available upon request. With the larger form factor, we are able to add additional equipment to meet requirements not included in the default device at an additional cost and lead time.

### Use Cases

- Splitting and amplifying a roof antenna signal between 32 GPS/GLONASS/GNSS receivers.
- Splitting and amplifying an antenna signal to 32 passive antennas to re-radiate a large facility.
- Usable as a small part of a larger signal distribution network.

# RMALDCBS1X32

## Electrical Specifications, TA=25°C

## General Specification

| Parameter | Notes | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| **Frequency Range** | Covers all major GNSS constellations. | 1.1 | | 1.7 | GHz |
| **Characteristic Impedance** | Unused ports should be terminated with 50Ω loads. | | 50 | | Ω |
| **Req. DC Input V.** | Operating voltage range for non-networked units. | 3.3 | | 15 | VDC |
| **Current Draw** | Typical current consumption. | | 100 | | mA |

## GPS L1 & L2 RF Specification(1)

| Parameter | Notes | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| **Gain** | The relative increase in signal power provided by the amplifier. | 13.0 | 14.0 | 15.0 | dB |
| **High Isolated Gain** | The relative increase in signal power provided by the amplifier when the device is high isolated. | -3.0 | 0.0 | 3.0 | dB |
| **Input SWR** | Input Standing Wave Ratio: S11 | | 1.5:1 | 2.0:1 | - |
| **Output SWR** | Output Standing Wave Ratio: S22 | | 1.5:1 | 2.0:1 | - |
| **Gain Flatness** | The difference in loss or gain between the L1 and L2 frequencies. | | 0.5 | 1.0 | dB |
| **Amplitude Balance** | The difference in gain or loss between each output port. | | | 1.0 | dB |
| **Isolation** | The amount of attenuation between two output ports. | L1:41<br>L2:27 | | L1:74<br>L2:70 | dB |
| **Group delay flatness** | The difference in signal delay between the L1 and L2 frequencies. | | 1.0 | | ns |
| **Input P1dB** | The 1dB compression point. | | -24 | | dBm |

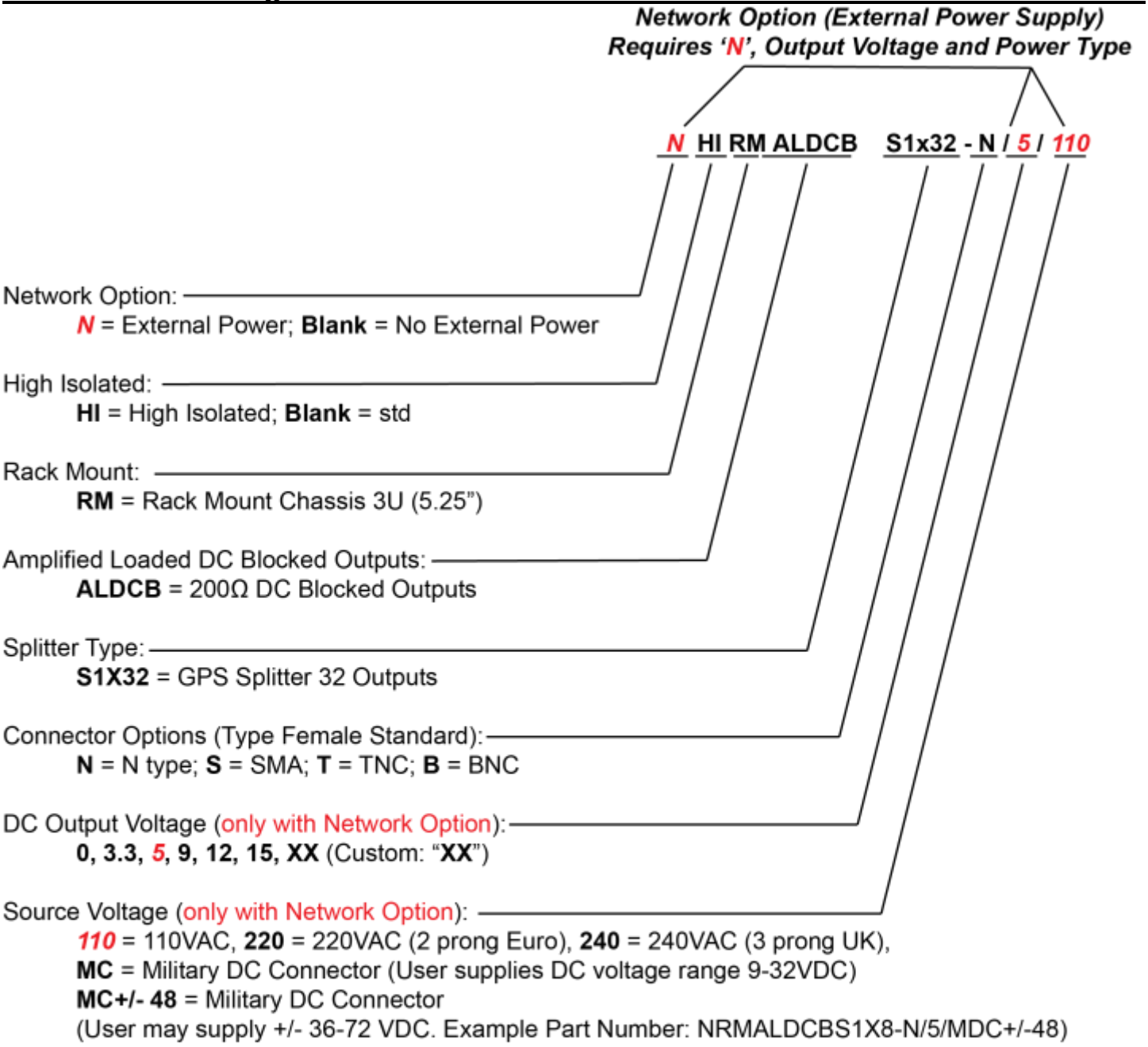
(1): Performance is slightly reduced around GPS L5. If working on sensitive L5 applications, please request performance data.

| **External Power Options (Networked Option)** | | |
|---|---|---|
| **Source Voltage Options** | Voltage Input | Style |
| | 110VAC | Transformer (ITA Type A Wall Mount) |
| | 220VAC | Transformer (ITA Type C Wall Mount) |
| | 240VAC (United Kingdom) | Transformer (ITA Type G Wall Mount) |
| | Customer Supplied DC 9-32 VDC | MIL-DTL-5015 10SL DC Connector (Includes Mate) |
| **Output Voltage Options (1)** | **DC Voltage Out** | **Max Current out For Corresponding Vout** |
| | 3.3 V | 110mA |
| | 5V | 130mA |
| | 9V | 140mA |
| | 12V | 180mA |
| | 15V | 220mA |
| | Custom | Custom |
| **Standard DC Configuration without External Power Option** | | |
| **J1/Output 1 Pass DC, J2-J32/Output 2-32 Block DC, Input Pass DC** | | |
| Standard DC Configuration with any External Power Option (AC/DC or Military DC) | | |
| **All Outputs DC Blocked with 200Ω load standard** | | |
| **Any port can be custom selected to Pass or Block DC** | | |
| Connector Options | **Connector Style** | **Charge** |
| | Type N-female | No Charge |
| | Type SMA-female | No Charge |
| | Type TNC-female | No Charge |
| | Type BNC-female | No Charge |
| | Other | Contact GPS Networking |

(1)With Network Option, any RF port (input or output) can be specified to Pass DC or Block DC

# RMALDCBS1X32

## Part Number Configuration




Network Option:
*N* = External Power; **Blank** = No External Power

High Isolated:
**HI** = High Isolated; **Blank** = std

Rack Mount:
**RM** = Rack Mount Chassis 3U (5.25")

Amplified Loaded DC Blocked Outputs:
**ALDCB** = 200Ω DC Blocked Outputs

Splitter Type:
**S1X32** = GPS Splitter 32 Outputs

Connector Options (Type Female Standard):
**N** = N type; **S** = SMA; **T** = TNC; **B** = BNC

DC Output Voltage (only with Network Option):
**0, 3.3, *5*, 9, 12, 15, XX** (Custom: "**XX**")

Source Voltage (only with Network Option):
***110*** = 110VAC, **220** = 220VAC (2 prong Euro), **240** = 240VAC (3 prong UK),
**MC** = Military DC Connector (User supplies DC voltage range 9-32VDC)
**MC+/- 48** = Military DC Connector
(User may supply +/- 36-72 VDC. Example Part Number: NRMALDCBS1X8-N/5/MDC+/-48)

(Military DC Mating Connector is included standard with the MC power option).

When no external power supply option (AC or DC) is selected, Output 1/J1 is Pass DC Standard.
When external power supply option is selected, all outputs are DC blocked standard.

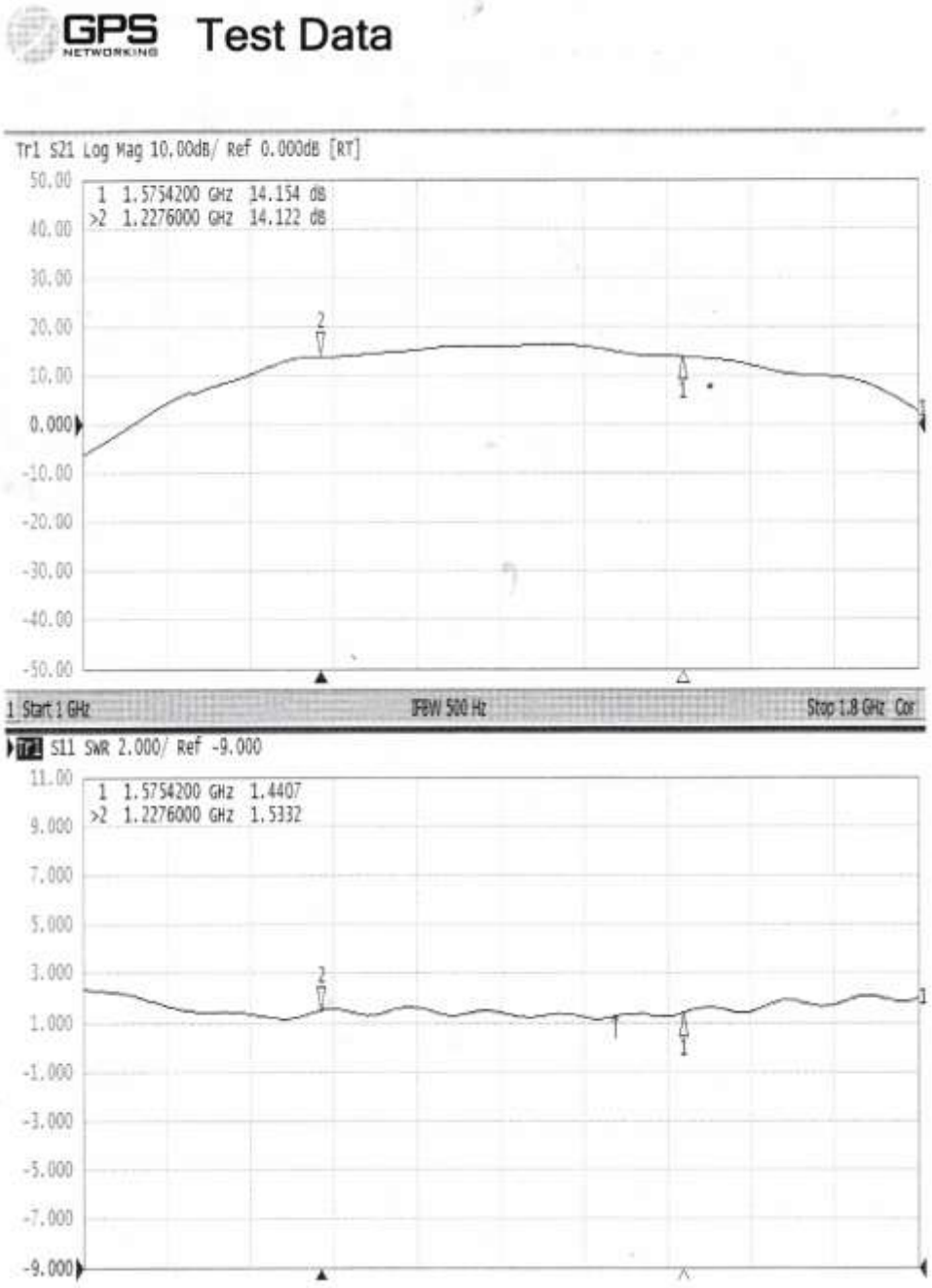
Contact GPS Networking Technical Support at 1-800-463-3063 or salestech@gpsnetworking.com for any questions regarding non-standard configurations and corresponding part numbers.

# RMALDCBS1X32

## Performance

RMALDCBS1X32 (Standard Gain)

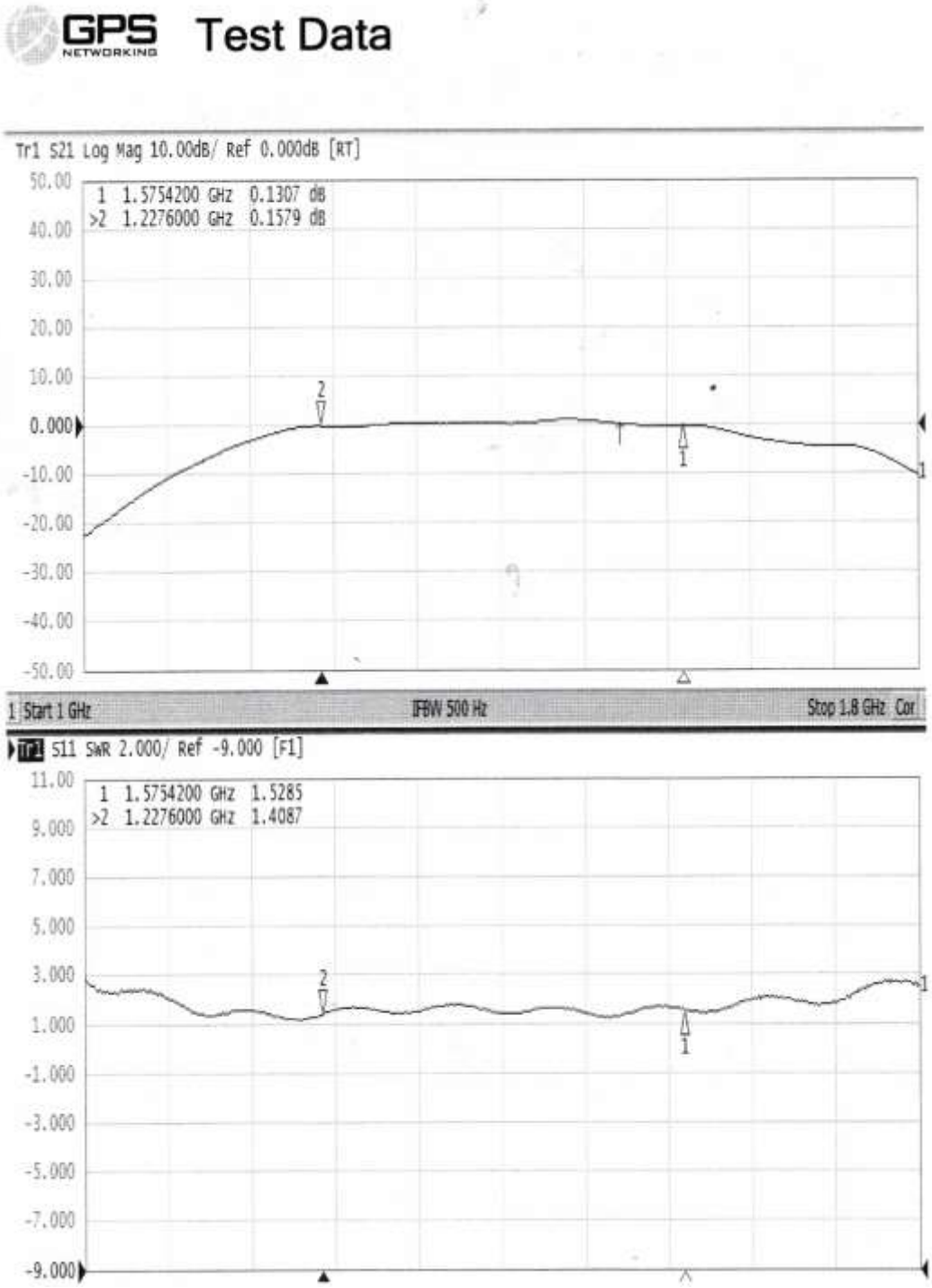
Each RMALDCBS1X32 ships with a test sheet that verifies critical performance characteristics, such as gain, input VSWR, and amplitude balance; a typical VNA test sheet is shown below.



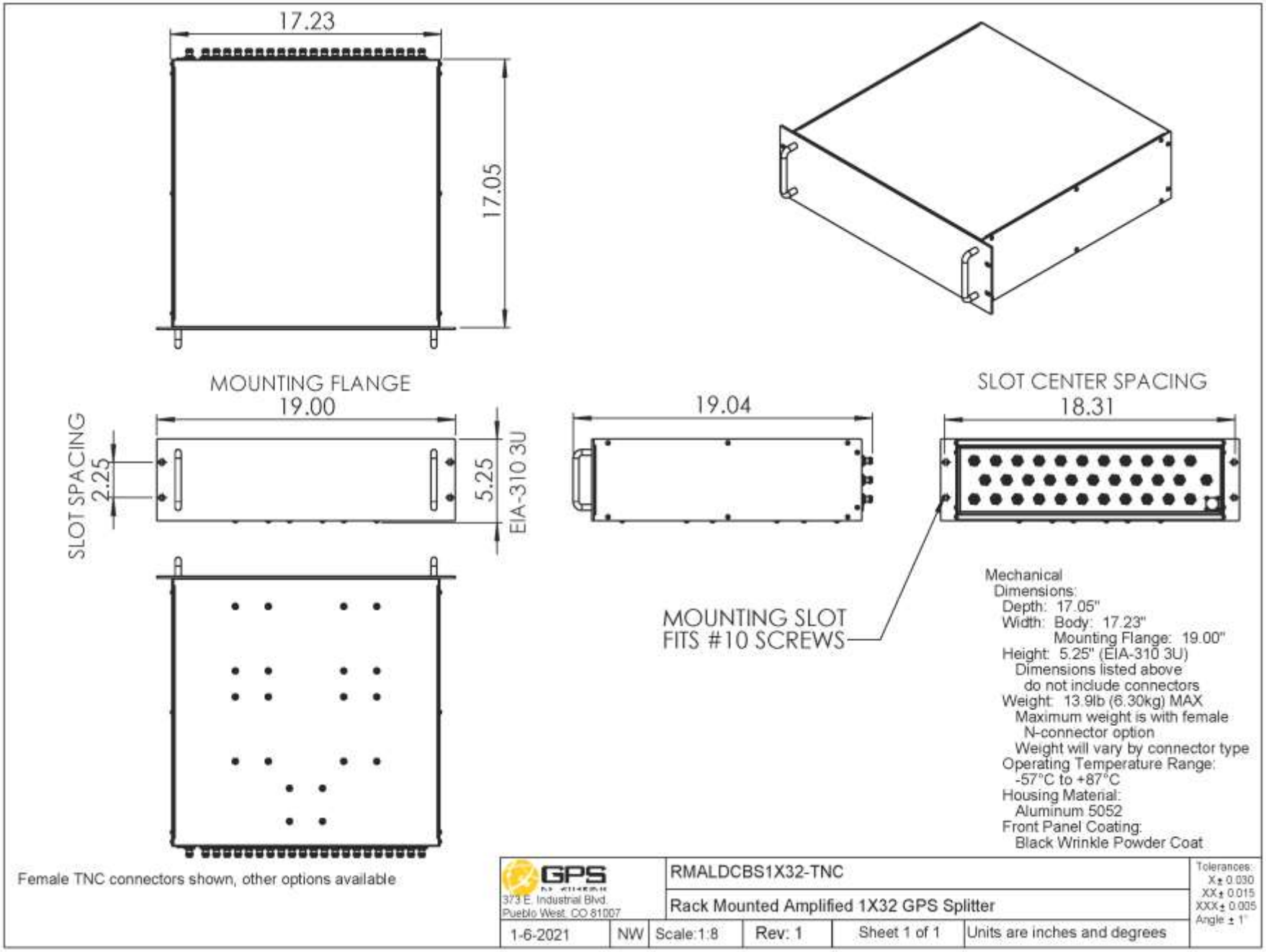
# RMALDCBS1X32

HIRMALDCBS1X32 (High Isolation Typical Gain)

Each HIRMALDCBS1X32 ships with a test sheet that verifies critical performance characteristics, such as gain, input VSWR, and amplitude balance; a typical VNA test sheet is shown below.



## Mechanical




Contact us at salestech@gpsnetworking.com for 3D models or CAD drawings.