

A-301-150

Satellite Radio Combiner

Technical Datasheet

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Overview

Ultralife's A-301-150 satellite radio combiner (diplexer) enables simultaneous transmission and reception of any two military UHF satellite radio channels operating in the 243 – 318 MHz SATCOM band on a single antenna. Designed for continuous operation in tactical environments, the A-301-150 is packaged in a compact rugged, weatherproof housing. Flexibility extends to fixed site locations, boats, aircraft, vehicles, shelters, and racks.

The A-301-150 is ideal for SATCOM on the move (SOTM) requirements where limited antenna availability may hinder operations (maritime surface craft, vehicles, aircraft, and submarines). The satellite radio combiner incorporates extensive transmit and receive filtering to ensure no performance degradation in either channel during simultaneous transmit and receive operations. Multiple modes of operation provide users with flexibility while configuring communications networks.

The A-301-150 satellite radio combiner allows users to interface their own RF power amplifiers (up to 150 watts per channel).

Features

- Simultaneous 2-channel transmit & receive
- Up to 150 watts per channel
- LNA Gain +25 dBm
- No T/R switching (full duplex)
- Wired remote control capable
- 3 modes of operation optimize RF performance

Technical Specifications

Part No.	A-301-150
Size H x W x D (inches)	5.6 x 8.25 x 11.0
Weight	< 16lbs
Frequency Range	Transmit: 292-318 MHz Receive: 243-270 MHz
Primary Power	8-36 VDC @ 20W (max)
Input/Output	50 ohm (nominal)
Radio Port to Port Isolation	50 dB
VSWR	< 2.0:1
Environmental	MIL-STD-810G
Shock/Vibration/Crash Safety	D0160F (Rotary Wing)
Reliability	19,000 hours
Operating Temperature	-30°C to +60°C
Finish	FED-STD 959B, Black

Indicators

Active Forward Power Meter

Protection

VDC Input Under/Over Voltage

VDC Input Over Current

LNA - I/P & O/P

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Transmit Performance

Bypass Mode (Off)

Frequency	200-400 MHz
Impedance	50 ohm
VSWR	2:1 max.
Insertion Loss	0.35 dB (typical)

Single Mode

Frequency	292-318 MHz
Impedance	50 ohm
VSWR	2:1 max.
Insertion Loss	1.6 dB (typical)

Dual Mode

Frequency	292-318 MHz
Impedance	50 ohm
VSWR	2:1 max.
Insertion Loss	4.7 dB (typical)

Receive Performance

Bypass Mode (Off)

Frequency	200-400 MHz
Impedance	50 ohm
VSWR	2:1 max.
Insertion Loss	0.35 dB (typical)

Single Mode

Frequency	243-270 MHz
Impedance	50 ohm
VSWR	2:1 max.
P1dB	-25 dBm
Gain	+28 dBm (typical)
Noise Figure	4.3 dB (typical)

Dual Mode

Frequency	243-270 MHz
Impedance	50 ohm
VSWR	2:1 max.
P1dB	-25 dBm
Gain	+25 dBm (typical)
Noise Figure	7.2 dB (typical)