



## **“Parrot” Tunable Repeater**

### **FEATURES**

- Linear transponder with input and output separately tunable
- 30-3000 MHz receiver and transmitter
- 100 db AGC range
- 70 MHz crossing
- Selectable 70 MHz bandwidths
- Modular expansion to multi-channel
- Customize cosite filter(s)
- Expandable power amplifiers
- Miniature, lightweight, low power

### **APPLICATIONS**

- Ideal for small UAVs
- Hand emplaced on hilltops, buildings
- Integrate into larger systems
- Use in vehicles, larger aircraft
- Pseudo-satellite transponder on a high altitude balloon
- SIGINT SOI crossband relay

### **DESCRIPTION**

The *Parrot* is a modular repeater system designed for miniature, lightweight tactical applications. The repeater consists of an input cosite filter and translator, a 70 MHz IF crossover module that gain controls the input into the repeater output, and an output translator, power amplifier and cosite filter. Antennas may be selected for the mission or platform; any 50 ohm antenna(s) may be used consistent with the isolation requirements of the desired repeater channels. Because the repeater functions as a linear transponder with no demodulation, the repeater works equally well with all waveforms. The input signal is amplified with 100 db of AGC range, band limited, and amplified to the desired transmitter power level (according to the planned repeater range). Cosite filters (usually COTS) are external to the repeater modules with the expectation that they are custom to a particular user mission requirement. The power amplifier modules are available in 1 and 10 watt versions; larger standard 50 ohm amplifiers may be added. The 70 MHz IF module contains switchable bandpass filters to set/limit the bandwidth (typ. 10-100 KHz) of the repeater. Multiple IF modules may be installed and summed to prevent “power hogging” by one signal. The repeater may be programmed pre-mission, and will retain its settings in non-volatile memory.

Each module is approximately 4x8x0.75 inches, with a basic repeater consisting of four modules (input translator, IF module, output translator, power amplifier) plus COTS cosite filters. Each translator contains multiple serial output ports for filter and accessory control. The system may be controlled via Ethernet or USB ports, and operates from 10-30 VDC. A separate remote data link may be used to control the repeater.



# Wireless Innovations Inc

Wireless Innovations also offers a miniature version of the Parrot called the Micro Parrot that weighs only about 5 ounces with single band coverage and is ideally suited as a payload on a micro UAV. Please contact Wireless Innovations for details.

## SPECIFICATIONS

### INPUT RECEIVER PARAMETERS

Frequency range.....30 MHz to 3000 MHz  
Selectivity.....Set by 70 MHz filters (Typically >50 dB out of band rejection)  
Noise figure.....10 db (typical)  
AGC dynamic range.....100 dB  
Cosite RF filter.....External (user selected)  
Antenna..... External (user selected)  
Input impedance.....50 ohms

### OUTPUT TRANSMITTER PARAMETERS

Frequency range.....30 MHz to 3000 MHz  
Power output.....1w, 10w PEP/Average modules standard;  
External booster amplifiers may be added  
IMD3.....-35 dbc (typical)  
Harmonic/Cosite RF filter.....External (user selected)  
Antenna..... External (user selected)  
Output impedance.....50 ohms

### CONTROL CHARACTERISTICS

Remote control/programming.....Mini-B USB or Ethernet

### PHYSICAL/ENVIRONMENTAL CHARACTERISTICS

Power input.....10-30 vdc  
Power consumption.....Approximately 5w with 1w amplifier  
Approximately 25w with 10w amplifier  
Weight (less cosite filters, antennas).....Approximately 2 lb, 1w repeater  
Approximately 3 lb, 10w repeater  
Module size (10w PA is double-width).....4 x 8 x 0.75 inches  
Connectors.....SMA, Mini-B USB, RJ45  
Operating temperature range.....-20 to +55°C  
Non-operating temperature range.....-40 to +70°C  
Operating altitude.....0 to 12,000 ft (0 to 3657 m)  
Operating humidity.....10 to 90% non-condensing (non-waterproof)

*Specifications are subject to change without notice as we continuously strive to improve our products*

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2/16/2013