

***Integrated and  
Advanced  
Products***



**LORCH**  
**MICROWAVE**



### ***Two Channel Switch Filter Bank***

The 2IFA-3000/85-500-SR is a two channel switch filter bank centered at 3GHz. This bank features a narrow band 85 MHz channel and a broadband 500 MHz channel. The broadband channel features Lorch Microwave chip and wire filter capabilities while the narrowband utilizes a combine cavity filter. The bank maintains a 5.0 dB maximum insertion loss specification and 70 dB stop band attenuation points. The power requirements are a +5 V supply with < 50 mA current consumption. The switching is achieved using standard TTL.



### ***Three Channel Switch Filter Bank***

3IFA-280/494-SR is a three channel switch filter bank covering the frequency range of 250 to 500 MHz. This unit features a custom package designed to fit a specific mechanical configuration. The bank utilizes a +5V power supply and two TTL control lines for switching. The filter bandwidths are 1.5 dB with stop bands of 45, 50 and 60 dB. This unit has been designed to meet a stringent military environment of -55 to +85 degree operating temperature.



### ***Six Channel Switch Filter Bank***

6IFA-100/9500-SR is a six channel switch filter bank covering the frequency range of 100 to 9500 MHz. This unit features chip and wire filter technology up to 9500 MHz. The bank maintains 5 dB maximum insertion loss and 60 dB ultimate rejections. The typical switching speed is <400 ns with 3 bit TTL control. The bank maintains a low profile package height of .490 maximum with sma-female field removable connectors suitable for ground or airborne applications.



### ***S-Band Switch Filter Bank***

The 2IFA-2016/2436-MP is a two channel high isolation switch filter bank. This unit features 80 dB stop bands, 6.5 dB maximum insertion loss and 2.0:1 standard VSWR. This switch bank utilizes a +5V power supply with <50mA current draw. The control and voltage lines feature control line decoupling to reduce RF pick-up. The switching speed is specified as 100 ns maximum. The mechanical housing includes RF pins for surface mounting and .300 tall maximum height to fit low profile cards. This assembly has been designed to meet stringent environmental conditions.

## GPS-Preamplifiers

The Lorch GPS preamplifier is a modern high performance preamplifier. It incorporates a pair of three pole dielectric filters to select only the desired GPS signals, while rejecting unwanted out-of-band signals. The low-noise gain stage maintains the receiver sensitivity to guard against loss of GPS signal. Typical specifications are 26 dB gain and 2.0 dB max. noise figure. The unit is powered by DC applied to the center conductor of the output connector. The pre-amp may also be powered by an external DC bias connection.



## Receiver

BAI-RX390-OPT2 is an eight channel RF receiver covering the frequency range of 380 to 400 MHz. This unit features a lightweight low profile package for use on unmanned aerial vehicles. The receiver is operated from a +12V power supply with <140 mA of current. Channel selection is achieved via standard TTL inputs.



## C-Band Diplexer/LNA

The Lorch Microwave D10EZX-5362.5/5737.5-S is a C-Band diplexer with a low noise amplifier in the RX band. This assembly features high performance electrical specifications in a small rugged configuration for airborne environments. The diplexer features 85dB TX to RX isolation while maintaining a 1.0 dB maximum pass band insertion loss. This assembly also provides the option for additional filtering with an external filter option.



## RF Signal Processing Components

Lorch Microwave offers a complete line of custom engineered specialty components. These components include phase shifters (manual, voltage controlled or digital), phase comparators and attenuators (manual or voltage controlled). We also manufacture a complete line of standard mixers and power splitters.



## Design Considerations

### ELECTRICAL

Frequency Range  
Insertion Loss  
Pass Band Characteristics  
VSWR  
Time Delay  
Phase/Amplitude  
RF Input Power  
Control Logic  
Switching Speed

### ENVIRONMENTAL

Operating Temperature  
Hermeticity  
    Gross Leak  $10^{-5}$   
    Fine Leak  $10^{-8}$   
Moisture Resistance (Humidity)  
Thermal Shock  
Mechanical Shock  
Random Vibration  
Altitude  
Salt Spray  
  
Mechanical : Material  
              : Finish  
              : Dimensions



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