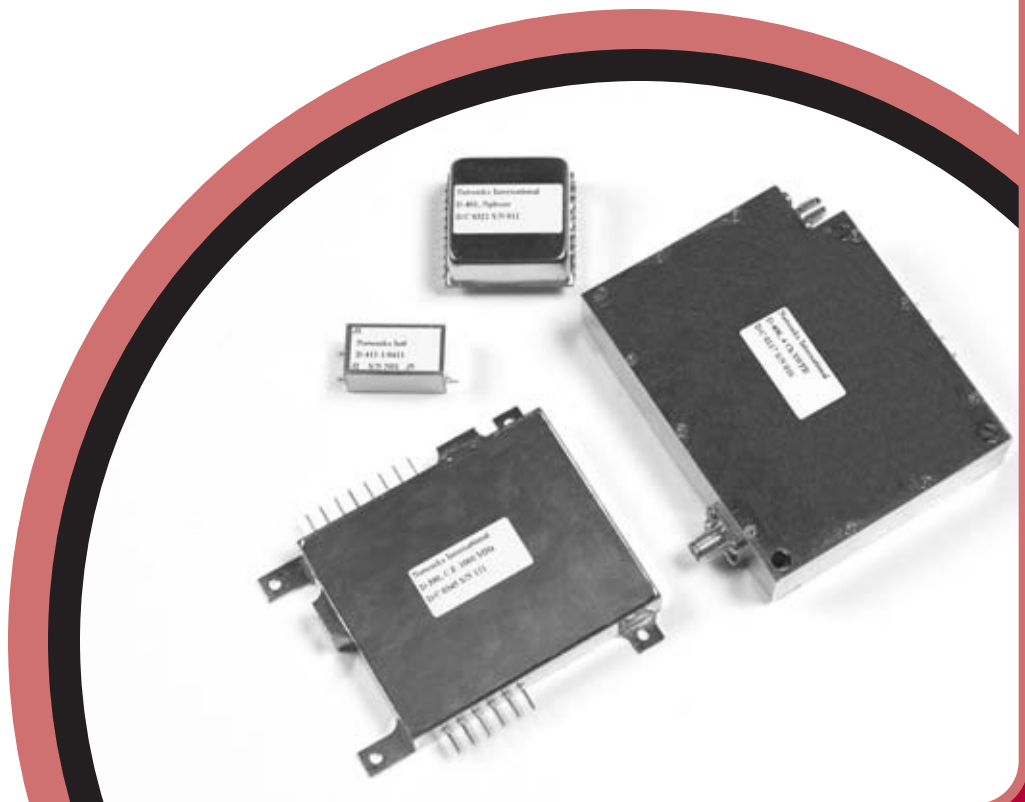


# RF + Microwave Assemblies



NIC manufactures custom integrated product assemblies that allow customers to achieve the high performance and reliability required for complex filter applications. These filter assemblies range from diplexers and multiplexers to switched filter banks and phase shifters. The assemblies consist of diverse components such as amplifiers, switches, filters, MMIC devices, power dividers and Bias T's. Using LNAs, Low I.L. filters and precisely selecting other components, NIC can offer assemblies with very low Noise Figure (NF). NIC's assemblies are designed to perform in both benign and rugged environments for applications such as Electronic Warfare, GPS systems, Point to Point communications and Radar systems.



# Switched Filter Banks

500 MHz - 6000 MHz

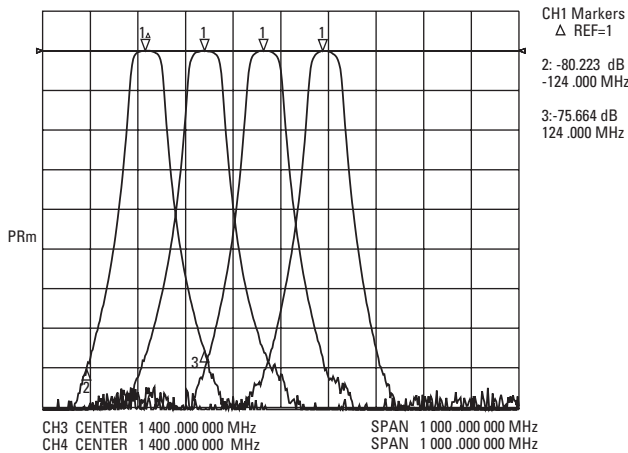


- User Customizable Channels 2 to 8
- High Isolation – Up to 70 dB between channels
- Switching speed < 50 nS
- Military, Space, Commercial Applications

## Four Channel Switched Filter Bank

NETWORKS INTERNATIONAL CORP.  
4-CH SWFB

|     |     |     |                       |                |                   |
|-----|-----|-----|-----------------------|----------------|-------------------|
| CH1 | S21 | LOG | 1 dB/ REF -3.27 dB    | 1 = 0.0000 dB  | 0.000 000 MHz     |
| CH2 | S21 | LOG | 1 dB/ REF -3.312 dB   | 1 = -5.0880 dB | 1 364.000 000 MHz |
| CH3 | S21 | DEL | 5 ns/ REF -3.206.7 ns | 1 = -4.4975 dB | 1 240.000 000 MHz |
| CH4 | S21 | LOG | 1 dB/ REF -3.312 dB   | 1 = -5.5880 dB | 1 488.000 000 MHz |

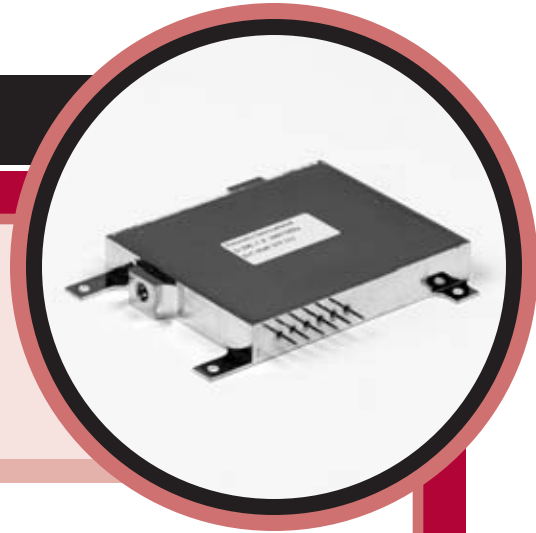


NIC manufactures custom Switched Filter Banks designed for high reliability environments. Covering a frequency range of 500 MHz to 6000 MHz, the channels are completely customizable by the user (2-8 channels). These assemblies are TTL controlled and feature a variety of filter and switch technologies and electrical characteristics such as: low insertion loss; high adjacent channel isolation (up to 70 dB), fast switching speeds and amplitude matching. Standard SMA RF connectors are used but a variety of mounting and connector options are available. Contact the factory with your specific requirements.

For NIC's screening and testing capabilities, refer to page 3.

# Phase Shifters

1 MHz - 6000 MHz

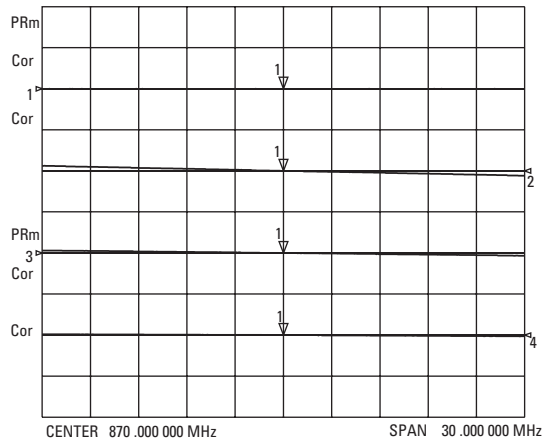


- Customizable Phase Shifts: Fixed or Variable
- $\pm 1^\circ$  performance over temperature
- Integral TTL Drivers
- Switching Speed < 1nS
- Military, Space, Commercial Applications

NIC manufactures custom Phase Shifters designed for high reliability environments. The assemblies consist of diverse components such as amplifiers, switches, filters, and MMIC devices. Each component is carefully designed and adapted to meet all custom specifications. NIC designs phase shifters to enable the end-user to shift phase states from 0°C to 360°C at any user-defined delta with various phase transitions and stability over temperature. A variety of mounting and connector options are available. Contact the factory with your specific requirements.

**Fixed:  $\pm 60^\circ$ ,  $\pm 120^\circ$ ,  $\pm 180^\circ$**

| NETWORKS INTERNATIONAL CORP. |     |     |                     |                |                 |  |
|------------------------------|-----|-----|---------------------|----------------|-----------------|--|
| PHASE SHIFT 0 CH1            |     |     | PHASE SHIFT 60 CH2  |                |                 |  |
| PHASE SHIFT 120 CH3          |     |     | PHASE SHIFT 180 CH4 |                |                 |  |
| CH1                          | MEM | PHA | 30° / REF 0°        | 1 = 0.0000°    | 870.000 000 MHz |  |
| CH2                          | MEM | PHA | 30° / REF 60.05°    | 1 = 60.046°    |                 |  |
| CH3                          | MEM | PHA | 30° / REF 120°      | 1 = -4.120.00° |                 |  |
| CH4                          | MEM | PHA | 30° / REF 180°      | 1 = -180.00°   |                 |  |



For NIC's screening and testing capabilities, refer to page 3.

# Multiplexers + Diplexers

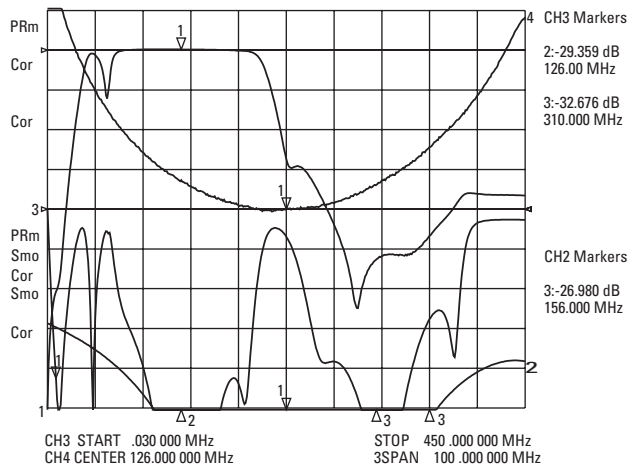
DC - 6000 MHz

- Crystal, LC & Ceramic Designs
- Compact Size and High Selectivity
- Broadband and Narrowband
- Military, Space, Commercial Applications

## Broadband Point to Multipoint Multiplexer

NETWORKS INTERNATIONAL CORP.  
MULTIPLEXER

|     |     |     |        |              |                |                 |
|-----|-----|-----|--------|--------------|----------------|-----------------|
| CH1 | S21 | LOG | 10 dB/ | REF -564 dB  | 1 = -35540 dB  | 126.000 000 MHz |
| CH2 | S22 | LOG | 5 dB/  | REF -.554 dB | 1 = -28.823 dB | 126.000 000 MHz |
| CH3 | S11 | LOG | 5 dB/  | REF 0 dB     | 1 = -21.284 dB | 8.000 000 MHz   |
| CH4 | S21 | DEL | 1 ps/  | REF 5.438 ns | 1 = 5.4357 ns  | 126.000 000 MHz |

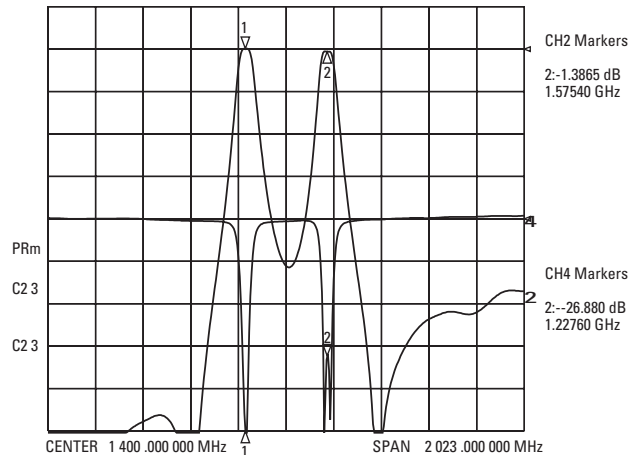


NIC designs and manufactures Multiplexers and Diplexers for broadband and narrowband applications. Filters within any of the bandpass series or combinations of different series may be used to form the basic networks of diplexers and multiplexers. NIC offers custom designs with phase linearity, group delay and in matched sets. Contact the factory with your specific requirements.

## Dual Bandpass GPS Filter

NETWORKS INTERNATIONAL CORP.  
GPS DIPLEXER

|     |     |     |       |               |                |                   |
|-----|-----|-----|-------|---------------|----------------|-------------------|
| CH2 | S21 | LOG | 5 dB/ | REF -1.077 dB | 1 = -.99410 dB | 1 227.600 000 MHz |
| CH4 | S11 | LOG | 5 dB/ | REF 0 dB      | 1 = -16.134 dB | 1 575.400 000 MHz |



For NIC's screening and testing capabilities, refer to page 3.