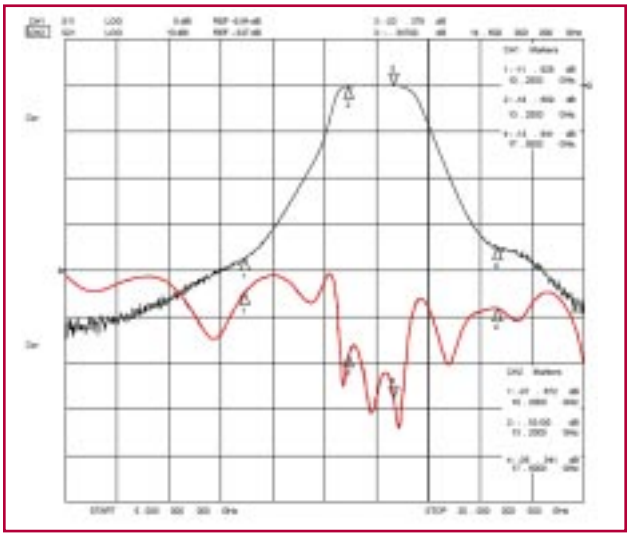
# Broadband Terminated BPF for Up-Converters

## ◆ Description:

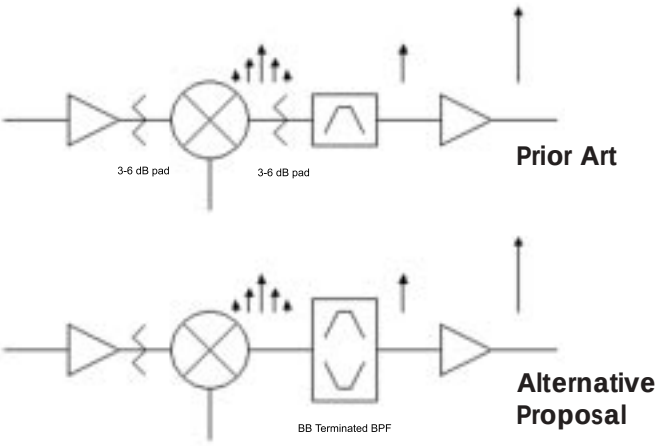
Typically in up-conversion applications, matching is accomplished through the placement of an attenuator pad between the mixer and filter, followed by the re-amplification of the RF signal further down the chain (see **Prior Art**). K&L's Broadband Terminated Bandpass Filter eliminates the need to attenuate then re-amplify the signal (see **Alternative Proposal**). This is accomplished by minimizing the amount of signal reflected back to the RF source, providing a smooth RF transition into the system, requiring less gain and improving the mixer's efficiency. For this purpose, a printed miniature terminated bandreject filter is utilized in parallel with a high 'Q' TEM cavity bandpass filter. K&L Microwave has developed a series of highly effective design tools that allow different technologies to be combined and manufactured in a precise and robust manner. Another possible use for this device is to cascade a series of terminated bandpass filters to form a multiplexer. These products can be developed to operate in a variety of frequency bands, including applications in the microwave frequency range.

## ◆ Specifications:

| | |
|---|---|
| Frequency Range: | 5-20 GHz |
| Passband: | 1.3 GHz |
| Return Loss: | Return Loss over Rejection Bands is 8 dB min. (15 dB min. over Passband) |
| Insertion Loss: | 1.0 dB |
| Rejection: | 30 dB at $f_0$+/-3.65 GHz |
| Size: | .95" x .75" x .45" |
| Connectors: | GPO |



**Forward Transmission (S21) and Input Matching (S11) characteristics**




- Less Gain is Needed
- Better Mixer Efficiency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