

Amphenol Broadband Solutions has the tools technicians will need to measure the high MER signals at the node output from DOCSIS 3.1 forward path signals. Our filter kit is essential for being able to correctly estimate the EQ-MER per carrier at the output of a Node or even an amplifier that is supporting a forward path bandwidth greater than 870 MHz and effectively all Nodes that are now designed to support a 1218 MHz bandwidth.

These new signals from 100 MHz to 1218 MHz output will have a minimum of 18dB tilt and more than likely up to 22dB tilt. Simply put, this means that one is forced to desensitize (add attenuation) to avoid being driven non-linear by the upper 400 MHz of output power in order to measure the EQ-MER anywhere below roughly 750 MHz and certainly below 450 MHz without question. When the systems expand to 1800 MHz, the tilt will be 32-36dB making these filters a requirement for any MER measurements. When FDX comes into play, this will be mission critical.

Therefore, when measuring EQ-MER, the technician is effectively raising its own internal noise floor (thereby lowering the overall SNR or MER possible) to avoid being clipped by the upper end of the power spectrum.

Who needs this kit? Operators to test and maintain their systems. Equipment makers to verify their products can meet the high specifications of the operators. Analyzer manufacturers to prove the readings they measure are not the limitations of the analyzer itself, but the system tilt is the reason for low measurements.



Band Pass Filter

Kit Includes:

- 1 – 200 – 400 MHz Band Pass Filter
- 1 – 300 – 500 MHz Band Pass Filter
- 1 – 400 – 600M Hz Band Pass Filter
- 1 – 500 – 700M Hz Band Pass Filter
- 1 – 600 – 800M Hz Band Pass Filter
- 1 – Protective Weatherproof Hard Case



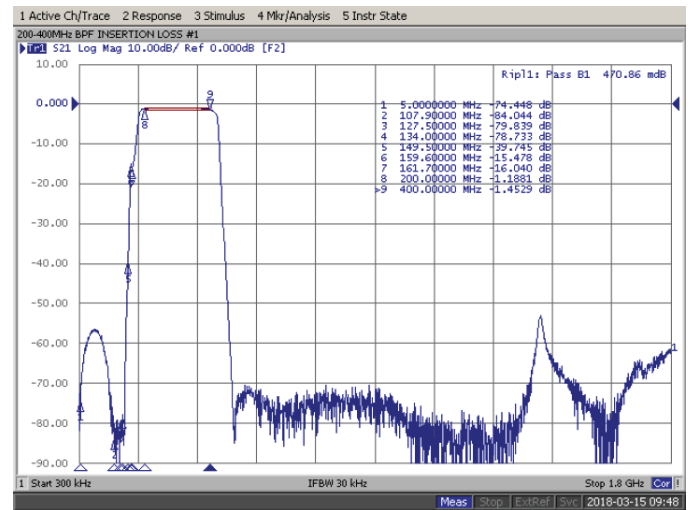
Typical Specs for BPF-200-400

Pass Band Loss	1.8dB	2.0dB Max	200~400 MHz
Pass Band Flatness		0.7dB Max	200~400 MHz
Return Loss		12.0dB Min	200~400 MHz
Operating Temperature	-40°C~+60°C		
Impedance	75 Ohm All Ports		
Connectors	"F" Female All Ports		

Testing Examples:

A \$250,000 Keysight UXA or Rhode & Schwartz FSW 26 Vector Signal Analyzers MER measurements improve from ~45dB EQ-MER at 450 MHz to >54dB EQ-MER with our 200-400 MHz filter inline. All other meters will show similar measurement improvements as they are no longer being over driven.

All Filters Will Have Similar Specs:

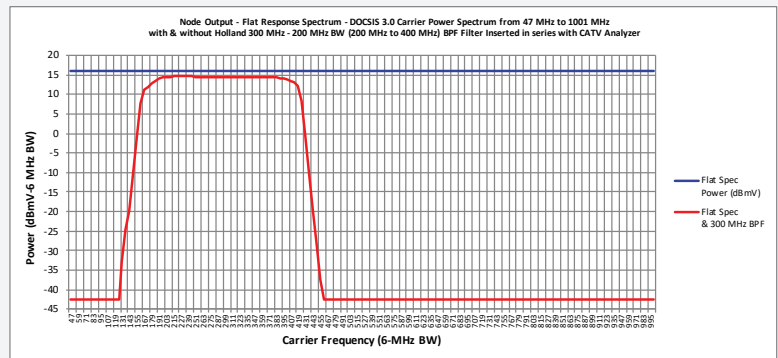


Application Results:

Power reduction in a Flat Spectrum Forward Path Signal Condition - Example 1a – BPF = 300 MHz

Flat Output Spectrum total power vs Flat Spectrum reduction using BPF Filter

Total power displayed in the Blue Trace above & present at the CATV Analyzer Input	38.04dBmV
Total power displayed in the Red Trace above & with a 300 MHz BPF Filter installed in series with Input to CATV Analyzer	30.6dBmV
Total power reduction attained by using a BPF Filter in series with the Input to the CATV Analyzer	-7.44dBc



Power reduction in a 18dB Slope (tilt) Spectrum Forward Path Signal Condition - Example 2a – BPF = 300 MHz

Flat Output Spectrum total power vs Flat Spectrum reduction using BPF Filter

Total power displayed in the Black Trace above & present at the CATV Analyzer Input	40.83dBmV
Total power displayed in the Red Trace above & with a 500 MHz BPF Filter installed in series with Input to CATV Analyzer	26.46dBmV
Total power reduction attained by using a BPF Filter in series with the Input to the CATV Analyzer	-14.36dBc

