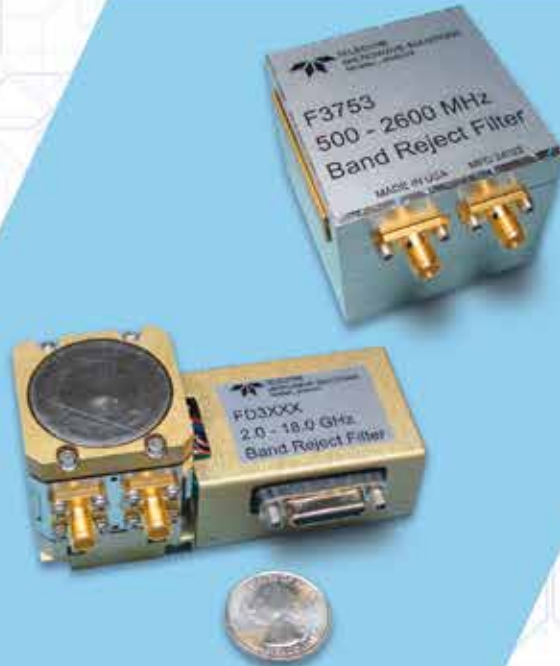


Closer to the "Perfect Notch"

Engineers know the 'perfect notch' in YIG band-reject filters is an unattainable goal. However, Teledyne Microwave Solutions (TMS) has developed new patented technology to deliver a **YIG Tuned Notch Filter Line** that brings the technology *far closer to the ideal 'notch' than ever before.*

Introducing Teledyne's New YIG Tuned Band-Reject Filters



A Design Trifecta:

- Wider Notch Bandwidth
- Greater Notch Depth
- Narrower 3dB BW

These TMS BRFs deliver improved performance at lower frequencies with reduced spurious responses.

*Add these benefits to the "TMS Design Trifecta," and it becomes clear that TMS should be your **ONE SOURCE** for demanding YIG band-reject filter requirements.*



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Teledyne Microwave Solutions Announces Breakthrough Technology to Deliver Unprecedented New Performance Levels for YIG Band-Reject Filters

At IMS 2015, TMS unveils patent-pending technology that makes major advancements towards the ideal notch filter: a deeper and wider notch BW at lower frequencies with a narrower 3dB BW and reduced spurious

MOUNTAIN VIEW, CA – May 19, 2015 – [Teledyne Microwave Solutions](#) (TMS) today revealed a new line of YIG Tuned Band-Reject Filters that covers the frequency range of 125MHz to 18GHz. Powered by a new patent-pending technology that overcomes several of the long-time design limitations inherent to YIG Band-Reject, or “notch” filters, the new TMS product line delivers to customers several major performance advancements that are unparalleled to date in the industry.

“As any veteran engineering professional in our field knows, achieving the “perfect notch” in YIG band-reject filters is the long-sought but ultimately unachievable goal,” said Isaac Pimentelli, Product Line Director for YIG, BAW and Filter Products whose team developed the technology. “That said, this new technology brings us far closer to the ideal YIG Tuned Notch filter than we’ve ever seen before now. My colleagues in the industry will find these filters with their vastly improved design margin able to make their future system design projects much, much easier and cost-effective while simultaneously achieving higher performance levels.”

Used primarily for electronic warfare (EW), electronic countermeasures (ECM), and microwave receiver applications in military markets, some of the major performance advantages of the new TMS product line are:

- increased minimum rejection bandwidths and notch depth at lower frequencies vs. standard band-reject filters;
- a reduction in the maximum 3dB bandwidth at higher frequencies vs. standard band-reject filters;
- a reduction in spurious responses across the board;
- higher Frequency Bands available up to 20GHz.

Until now, the performance of YIG band-reject filters was significantly limited by the unavoidable trade-offs between the 3dB bandwidth at the high end and the notch bandwidth at the low end of the frequency range. The new TMS technology allows design engineers to make the 3dB bandwidth at the high end much narrower while making the notch at the low end deeper and wider than ever before without degrading any other electrical parameter.

The new design also offers enhanced performance at much lower frequencies than were possible ever before with current technology. Using these filters, engineers can overcome today’s design limitations by achieving a previously unachievable trifecta: wider notch bandwidth **plus** greater notch depth **plus** narrower 3dB bandwidth. With the added benefit of reduced spurious responses, this filter line delivers **unequaled** performance.

Featured products in the new TMS filter product line include:

- two new YIG Tuned Band-Reject Filter models F3750 and F3751 covering 125MHz to 1500MHz never before available with YIG technology;
- a single 500MHz to 2600MHz filter with 6 MHz minimum 40dB rejection bandwidth, with only 70MHz maximum 3dB bandwidth with 3dB maximum rejection spurs;
- a single 2-18GHz filter with 12MHz minimum 40dB rejection bandwidth, with only 125MHz maximum 3dB bandwidth and 4dB maximum tracking spurs.

ABOUT TELEDYNE MICROWAVE SOLUTIONS

Teledyne Microwave Solutions (TMS), your single source for microwave electronics, delivers the world’s most advanced microwave technologies for the most demanding aerospace, military, commercial, and industrial applications. Forged from the consolidation of seven leading microwave companies, TMS leverages its expansive R&D capabilities to research, design, develop, and manufacture products from RF through 220 GHz. www.teledynemicrowave.com. TMS is a business unit of Teledyne Technologies, Inc., a leading provider of sophisticated instrumentation, digital imaging products and software, aerospace and defense electronics, and engineered systems. www.teledyne.com.

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**“Closer to the Perfect Notch”...
Teledyne’s new YIG Tuned Band-Reject Filters**



**F3753 500MHz-2600MHz
Band Reject Filter**



**FD3755 14 Stage 2.0GHz-18.0GHz
Band Reject Filter W/ 12 Bit Serial Driver**

RF Specs and DC Parameters

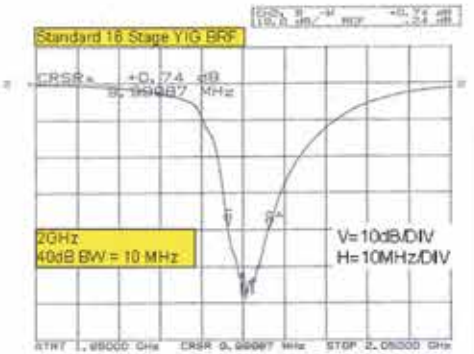
RF Parameters									
Model	Frequency Range, Notch (MHz)	Frequency Range, Passband (MHz)	Passband Insertion Loss (dB)	Passband Return Loss (dB)	Minimum 40dB Rejection Bandwidth (MHz)	Maximum 3dB Notch Bandwidth (MHz)	Maximum Notch Tracking Spur Amplitude (dB)	Temperature Drift, +0 to +70°C (MHz)	Input Power, Minimum (dBm)
F3750	125-500	110-575	≤1.5	≥10	4	75	3	5	0
F3751	250-1500	220-1600	≤1.5	≥10	4	110	3	5	+3
F3752	500-2000	400-3000	≤1.5	≥10	6	50	3	10	+5
F3753	500-2600	400-3000	≤1.5	≥10	6	70	3	10	+5
F3754	2000-6000	1800-18200	≤1.6	≥10	20	125	4	10	+10
F3755	2000-18000	1800-18200	≤1.6	≥10	12	125	4	20	+10

DC Parameters							
Model	Tuning Sensitivity (MHz/mA)	Tuning Coil Resistance (ohms)	Tuning Coil Inductance (mH)	Heater Voltage (VDC)	Heater Current Steady State (mA)	Heater Current Surge (mA)	Outline Drawing
F3750	10	8	200	28	150	1000	IN-052166-000
F3751	10	8	200	28	150	1000	IN-052166-000
F3752	10	8	200	28	150	1000	IN-051166-000
F3753	10	8	200	28	150	1000	IN-052166-000
F3754	20	6	65	28	150	1000	IN-052148-000
F3755	20	6	65	28	150	1000	IN-052148-000

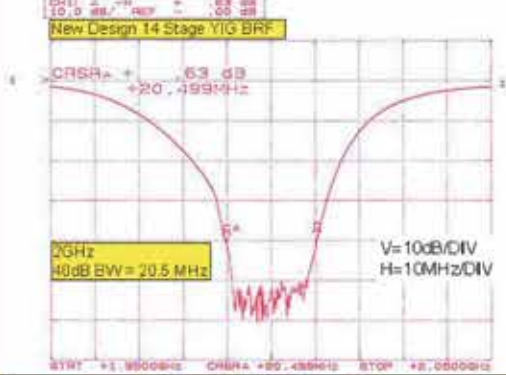
**“Closer to the Perfect Notch”...
Teledyne’s new YIG Tuned Band-Reject Filters**

Plot Graphs for New Model F3755 YIG Tuned Notch Filter

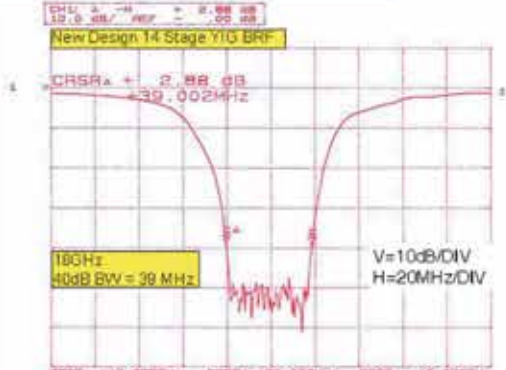
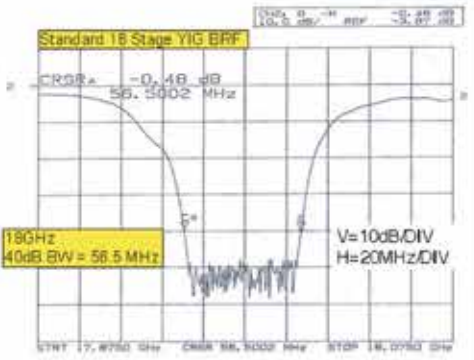
**Standard 16 Stage
2-18GHz YIG BRF**



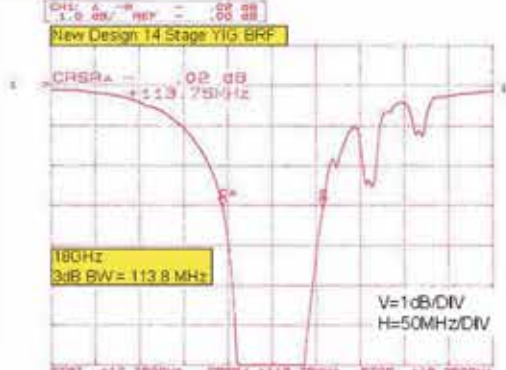
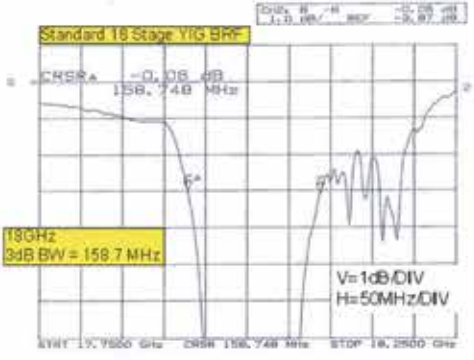
**New Design 14 Stage 2-18GHz YIG
BRF, Patent Pending, Model F3755**



Increased Notch BW at the low end



**Greatly reduced notch BW
growth at high end**



**Reduced 3dB BW at high end with
greatly reduced spurious responses**