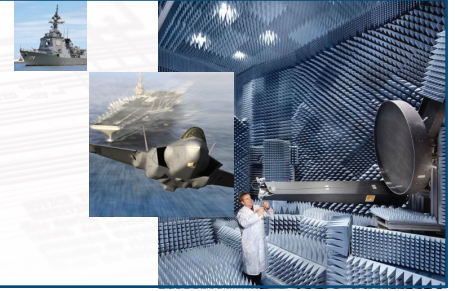




# Products & Services

[pmi-rf.com](http://pmi-rf.com)

## Visionary Design & Performance for Mission-Critical Applications



## Components, Modules & Subsystems to 70 GHz

Planar Monolithics (PMI) was founded in 1989 and soon established its reputation as a leading supplier of custom, high-reliability radio frequency and microwave components and subsystems. Delivering industry-standard performance for mission-critical applications in the military, communications, commercial and consumer industries, PMI continues to expand its portfolio of state-of-the-art hybrid MIC/MMIC components, modules, and subsystems. As part of an extended engineering ecosystem and powerful supply chain, PMI delivers a competitive advantage to every customer.

PMI offers more than 4500 commercial off-the-shelf models with test results, S-parameters, 3D models and detailed specs available online on demand.

## Featured Products



### Amplifiers – Solid State

PMI offers a full-line of RF and Microwave Amplifiers that range from 250 kHz up to 70 GHz. Available in Narrow Band, Octave and Half Octave Band, Broadband, Multi-Octave and ultra-Broadband models. Our Amplifiers are available in a variety of types: Variable Gain, Gain Correction, Positive Gain Slope, Limiting Amplifiers and High IP Amplifiers for SIGINT applications. PMI designs and manufactures Portable Test-Bench Amplifiers for mobile or laboratory applications which can be designed for use with various power supplies.

### Attenuators – Digital / Analog Control, Fixed & Mechanical

PMI offers the highest quality RF and Microwave, Solid State digital and analog controlled attenuators for commercial, industrial, and military applications. Choice of attenuation ranges with resolution as low as 0.015 dB and operating frequency ranges up to 50 GHz in Octave, Sub-Octave and Broadband models. Manually adjustable or fixed versions are also available. PMI's attenuators provide industry-leading attenuation flatness versus frequency.

### Couplers - Quadrature, 90°, 180° & Directional

PMI offers the highest quality Quadrature, 90°, 180°, and Directional Couplers for commercial and military applications in the frequency range up to 40 GHz with broadband response, high isolation, excellent amplitude, and phase balance in small package size. Design options can include hermetic sealing, military or space screening and custom packaging.



## Detectors

PMI's RF and Microwave Detector products are available in a variety of designs that include high sensitivity Successive Diode Detectors, Directional Detectors, Low Barrier Schottky Diodes, Zero Bias Schottky Detectors and Threshold Detectors (Fixed and Adjustable Threshold Levels, input power levels from -60 to 5 dBm and either ECL or TTL outputs). Features include frequency coverage up to 40 GHz, connectorized or surface mount, connector options and hermetic sealing, military or space screening and custom packaging.



## Detector Logarithmic Video Amplifiers

PMI's Detector Logarithmic Video Amplifiers (DLVA's, ERDLVA's, SDLVA's) are offered covering DC to 40 GHz with extended range models offering dynamic ranges over 70 dB. Our standard product provides exceptional temperature stability, log linearity and frequency response. Custom DLVA's and SDLVA's are available to meet your requirements or replace obsolete products.



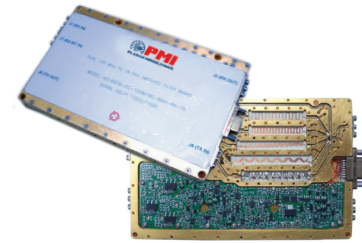
## DTOs, VCOs, PLOs, DROs, & Frequency Synthesizers

PMI offers military, aerospace grade Frequency Sources in a variety of frequency bands up to 18 GHz. Please contact us to discuss your desired specifications. Frequency Sources are designed to be Form, Fit and Functional replacements for many legacy platforms.



## Filters & Switch Filter Banks

PMI offers the highest quality Filters, Switch Filter Banks, Filter Assemblies, Diplexers and Multiplexers available for both commercial and military applications. The frequency range is DC to 40 GHz and the filter topology includes Lumped Element, Combine, Inter-digital, Narrow Band and Cavity Filters, Suspended Substrate Filters, Bandpass, Band Reject or "Notch" Filters as well as Low-Pass and High-Pass Filters. All PMI's Switch Filter Banks use PMI's proprietary Solid-state Switch designs, which offer high speed and improved performance. While there are many standard models, PMI can design and build to meet your specifications.



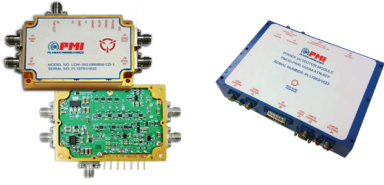
## Form, Fit, Functional Products & Services

Are you faced with the problem of locating obsolete devices to maintain an older system? Or replacing products from vendors who are no longer available? PMI has over 35 years of experience designing products to replace obsolete electronic devices, while meeting or exceeding the original product's performance. PMI uses today's modern technology to build the old, obsolete device while maintaining full form, fit, and functional compatibility. Full screening services are also available.



## Frequency Discriminators & IFMs

PMI offers a full line of RF and microwave Frequency Discriminator products that range up to 40 GHz with many options available. Contact PMI to discuss your specific requirements.



## Integrated MIC/MMIC Assemblies (IMAs)

PMI offers the highest quality Multi-Function Integrated Microwave Assemblies and modules for commercial, industrial and military applications with operating frequency range up to 70 GHz. Custom designed modules and assemblies can be built to your SCD or specifications with a variety of options including integrated amplification, attenuation, filtering, switching, phase shifting, power detection, modulation, coupling, limiting, digital control, hermetic sealing and military or space screening. Form, fit & functionality is our specialty!



## I/Q Vector Modulators & Single Sideband Modulators

PMI Modulators are available with high-speed modulation, low spurious response, low insertion loss, high absolute phase accuracy and low current consumption as well as standard and custom designed housings. PMI offers unique designs that cover wide bandwidths such as a single unit covering 85 MHz to 18 GHz as an example.



## Limiters

PMI offers a wide range of Limiters covering the DC to 70 GHz frequency range. These Limiters offer low loss, high speed, low leakage levels, high peak power handling, small size & standardized packaging. Available options include surface mount or connectorized; form, fit & function designs; choice of connectors; hermetic sealing, military or space screening and custom packaging.



## Gain & Loss Equalizers

PMI offers a wide range of Equalizers that are available in narrow bandwidths or broadband up to 40 GHz. Features include low Insertion loss & VSWR; various frequency equalization values; and small size & standardized packaging.



## Miscellaneous Products

PMI offers bias tees, circulators, isolators, mixers, active mixers, prescalers, and through package housings to offer complete design solutions.



## Monopulse Comparators

PMI offers a variety of Monopulse Comparators with a wide range of options and custom specified hardware for beamforming antenna applications up to 21.5 GHz. Features include rugged coaxial design; high power handling; excellent Isolation between channel ports for optimum phase and amplitude balance; custom designs for narrowband and specified frequencies; connector options; hermetic sealing, military, and aerospace screening available. Form, fit and functional designs can also be replicated to meet your specific requirements.



## Phase Shifters & Bi-Phase Modulators

PMI offers the highest quality Phase Shifters and Bi-Phase Modulators for commercial, industrial and military applications in the frequency range up to 40 GHz. Analog or digital control, high phase accuracy, high speed and low insertion loss are available. Phase Shifters can cover from 0° to 360° while Bi-Phase Modulators can switch from either of two-phase levels, such as: 0° to 90°, 90° to 180° or 180° to 360°.



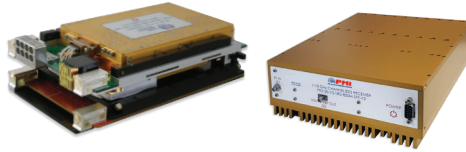
## Power Dividers/ Combiners (Passive & Active)

PMI offers the highest quality Power Dividers and Power Combiners for commercial, industrial and military applications in the frequency range up to 40 GHz. Features include low loss, high isolation, excellent amplitude and phase balance; and small package sizes. Available options include hermetic sealing, military or space screening and custom packaging.



## Rack & Chassis Mount Products

PMI RF & Microwave products can be supplied in military grade ruggedized 1U to 6U rack/chassis that are designed to meet your specific application needs. Various functions are offered including Amplification, Attenuation, Switching, Power Detection/fault Detection, Phase Shifting/Phase Modulation, Pulse Modulation, Noise Generation, RF Filtering, RF Limiting, Power Splitting as well as RF Signal Distribution. Send us a block diagram for review and PMI will offer you a turn-key solution.



## Receiver Front Ends & Transceivers

PMI designs and manufactures a wide variety of high frequency Receiver Front Ends and Transceivers for state-of-the-art applications. PMI is developing and offering these systems that interface with Open VPX architecture and use VITA 67 high frequency interconnects. Standard models are available. PMI can also design a device to meet your specific requirements.



## SMT & QFN Products

PMI offers custom surface mount and QFN packaging for many types of devices, including SDLVAs, Log Amplifiers, Phase Shifters, Attenuators, Switches and Low Noise Amplifiers. PMI offers multifunction options in a single QFN package such as Limiter/LNA or LNA/Detector. Let PMI offer you a custom solution to reduce the size of your PCB layout.



## Switches – Solid State, Switch Matrices & Pulse Modulators

PMI's line of RF, Microwave and mmWave Solid State Switches covers the frequency range of up to 70 GHz in many standard

models with several options available: Ultra-Broadband, Ultra-High Isolation, Low Loss, Low Video Transients, Ultra-High Switching Speed, Very Low Power Consumption, SPST through SP64T, Reflective or Absorptive and available in small packaging. While all Switch products are available connectorized, many are also available in drop-in configuration.



PMI Switch Matrix products can be supplied as 4 x 4, 8 x 8, 16 x 16 or 32 x 32 blocking or non-blocking matrices. Options include switching control via TTL, RS232, RS422/485, ethernet and/or front panel touch screen LCD. Units can be supplied in a ruggedized 1U to 6U 19" Chassis. Custom designs are welcome.



## USB Controlled & Powered Products

PMI offers the highest quality RF and Microwave Control Products and Amplifiers that are self-contained within a small package and receive all control commands and DC power via a built-in USB port. PMI provides a GUI that can be installed on a Windows based PC which allows control of the various switches and attenuators. Additional products can be supplied, including Phase Shifters, Bi-Phase Modulators, I/Q Modulators, Pulse Modulators, Oscillators, Detectors, and Threshold Detectors.



PMI is a dedicated Engineering and Manufacturing Company that strives for total customer satisfaction by providing rapid response time and high quality products. In-stock are options available via direct sales as well as private label distributors. PMI offers Industry-leading sales and applications support, leading to lower costs and faster lead times than competitive options.

## Design

PMI has more than 35 years of experience in the design and manufacturing of technologically superior RF, Microwave, mmWave Devices, Components and Sub-Systems for Commercial, Military and Industrial applications. At PMI, application of the most powerful and up-to-date design simulation and modeling software ensures effective and efficient results even prior to hardware prototyping.



## Manufacturing

Every product PMI produces is built to rigorous MIL-STD specs. With ISO9001 and AS9100 certified facilities in Frederick, MD, USA and El Dorado Hills, CA, USA, PMI provides solutions and products that will ensure your program's success.



## Testing

Highly capable in the rigorous testing that's mission-critical to the success of every PMI solution, every component is tested to ensure 100% compliance with stated requirements. Our processes are fluid and our protocols are constantly upgraded to accommodate evolving program requirements in military, aerospace and commercial applications.



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