PMI TECHNICAL CAPABILITIES & FACILITIES PRESENTATION
ON DC TO 40GHz, RF/MICROWAVE COMPONENTS & MULTIFUNCTION MODULES / SUBSYSTEMS
MAY 25th 2014
EAST COST DIVISION: 7311 SUITE F, GROVE ROAD, FREDERICK, MD 21704, USA
WEST COAST DIVISION: 4921 ROBERT J. MATHEWS PKWY, SUITE 1, EL DORADO HILLS, CA 95762
WEBSITE: http://www.pmi-rf.com EMAIL: sales@pmi-rf.com SALES: 301-662-5019
Planar Monolithics Industries, Inc. (PMI), an “S” Corporation, was founded on November 11th, 1989 to take advantage of the growing demand in monolithic based products using Hybrid MIC/MMIC technology. PMI offers its unique DC to 40GHz products for applications in space, military, telecommunications, communications and consumer electronics.

Today, PMI is being directed into the 21st Century by expanding the applications of RF/Microwave components and subsystems into new, low cost, RF/Microwave receiving and transmitting systems for both civilian and military customers.

Effective April 30 2013, Planar Monolithics Industries Inc. (PMI), 7311-F Grove Road, Frederick, Maryland, USA 21704, USA, http://www.pmi-rf.com acquired 100% of all the assets & property of HARI, LLC, www.harillc.com (Formerly operating as Genesis Microwave Inc., www.genesismicrowave.com) located at 4980 Hillsdale Circle, Suite B, El Dorado Hills, CA 95762, USA.

These assets include all the test and manufacturing equipment and machinery, designs, Documentation, drawings and Intellectual property in the form of hard copies and in computer format in servers, CD’s, storage areas, etc. Also included in these assets are the Office Equipment & Machinery, etc. and Computers, Office furniture, Finished goods, In-process and Raw Materials & Inventories and other Miscellaneous items. In addition to these assets, included are, all the stock in trade, merchandise, fixtures, equipment, goodwill and trade of the known business as "HARI LLC".

All the RF/MICROWAVE products, components, subsystems, etc. being designed, manufactured, serviced and produced by HARI, LLC www.harillc.com (Formerly operating as Genesis Microwave Inc., www.genesismicrowave.com) until 30th April 30 2013, will now be offered, provided, produced, manufactured and serviced by Planar Monolithics Industries Inc. (PMI), at its West Coast Facilities Operations located at 4921 Robert J. Mathews Parkway, Suite 1, El Dorado Hills, CA 95762, USA.
Planar Monolithics Industries, Inc.

EAST COAST OPERATIONS
Offering a complete line of Components & Integrated Assemblies to 40GHz

7311 F Grove Road, Frederick, Maryland 21704 USA
Tel: 301-662-5019 | Fax: 301-662-1731

WEST COAST OPERATIONS
Assets of Hari, LLC (Formally Genesis Microwave) Acquired By PMI
Specializing in Log Amplifiers, SDLVAs, DLVAs, ERDLVAs and Threshold Detectors to 40GHz

4921 Roberts J. Mathews Parkway, Suite 1 El Dorado Hills, CA 95762 USA
Tel: 916-542-1401 | Fax: 301-662-1731
Email: sales@pmi-rf.com | www.pmi-rf.com
Hermetic Sealing, High Reliability to Mil-Std-883, Small Quantity Requirements accepted.
We offer Custom Designs at low prices.
ISO9001:2008 Certified
\[ V_{\text{Input}} = A \cos(\omega_c \tau + \phi \tau) \]

- **Amplitude**
- **Frequency**
- **Phase & Modulation**
TYPICAL RECEIVER

\[ V_{\text{Input}} = A \cos(\omega_c t + \phi t) \]
Typical Transceiver Block Diagram

All Components except Mixers manufactured by PMI. Integrated Transceivers can be manufactured by PMI to your specifications.

For more information please contact PMI via email at: sales@pmi-rf.com or via telephone at: 301-662-5019
RADAR WARNING RECEIVER (RWR), DIRECTION FINDING (DF)

All Components Manufactured by PMI, Band Pass Filters, Limiters, Pre-Amps etc. may be internal or external to the DLVA.

For more information please contact PMI via email at: sales@pmi-rf.com or via telephone at: 301-662-5019
SUPERHETERODYNE RECEIVER

All Components except mixers are Manufactured by Planar Monolithics Industries, Inc (PMI)
For more information please contact PMI via email at: sales@pmi-rf.com or via telephone at: 301-662-5019
Hybrid MIC/MMIC RF & Microwave Components, Subsystems, and Systems

MILITARY & INDUSTRIAL PRODUCTS TO 40GHz

- AIRSTROKE SIGINT & DF RF DISTRIBUTION UNITS
- DIRECTIONAL DETECTORS
- SWITCHED FILTER BANKS & FILTERS
- FREQUENCY SYNTHESIZERS
- FREQUENCY & POLAR DISCRIMINATORS AND IFM's
- INTEGRATED SUPER COMPONENTS & RECEIVER FRONT ENDS
- IQ VECTOR MODULATORS
- LIMITERS & DETECTORS
- LOG RF/IF AMPLIFIERS
- LOW NOISE AMPLIFIERS
- PASSIVE & ACTIVE DOUBLER MODULES
- PHASE SHIFTERS & BI-PHASE MODULATORS
- POWER DIVIDERS & COMBINERS
- QUADRATURE & DIRECTIONAL COUPLERS
- SUBSYSTEMS & CUSTOM ASSEMBLIES
- SUCCESSIVE DETECTION LOG VIDEO AMPLIFIERS (SDLVA'S)
- SYSTEMS
- THRESHOLD DETECTORS

SCREENING TO MIL-STD-883 AVAILABLE

PLANAR MONOLITHICS INDUSTRIES, INC
7311-F Grove Road, Frederick, MD 21704 USA Tel: 301-631-1579 Fax: 301-662-2029
Email: sales@planarmonolithics.com Web: www.planarmonolithics.com/omi
TOLL FREE: 1-877-PLANAR1 (1-877-762-6271)

PET Website: www.planarelec.com PFC Website: www.planarfilter.com
<table>
<thead>
<tr>
<th>CUSTOMER</th>
<th>PROGRAM</th>
</tr>
</thead>
</table>
| NORTHROP GRUMMAN CORPORATION           | CORVAIR  
BALTIMORE, MD & ROLLING MEADOWS, IL  
EA-18G  
ICAP-III  
LR-100  
FALCON EDGE  
ALQ-186  
PDF |
| BAE SYSTEMS, NH                       | DEWS, F15  
KNIGHT Program |
| TRANFORMATIONAL SECURITY               | CUSTOM THRESHOLD DETECTORS |
| MITSUBISHI AIRCRAFT (JAPAN)            | SUCCESSIVE DETECTION LOG VIDEO AMPLIFIERS (SDLVAs), F-2 |
| NAVAL RESEARCH LAB, WASH, DC           | AMPLIFIER DETECTOR PRE-AMPLIFIER  
RF MONITOR FOR ANACHOIC CHAMBER  
TRANCEIVER |
| RAYTHEON MISSILE SYSTESM, AZ           | SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVAs) |
| L-3 COMMUNICATIONS, TX                 | SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVAs) |
| LOCKHEED MARTIN CO, TX                 | MK92 FIRE CONTROL SYSTEM (FORM, FIT & FUNCTION SPARES) |
| MIKES, TURKEY                          | SPEWS-II (F16) Turkey |
| ARGONST, VA                            | RF DISTRIBUTION UNIT |
| IDF (ISRAELI AIR FORCE)                | GUNN DIODE OSCILLATORS |
| WARNER ROBINS AFB, GA                  | IF LOG AMPLIFIERS (FORM, FIT & FUNCTION SPARES), B-1B |
| L-3 COMMUNICATIONS, UT                 | CUSTOM LIMITERS |
| MECTRON, BRAZIL                        | SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVAs)  
MARS-1, BRAZILIAN AF |
TRYING TO MAINTAIN AN OLD SYSTEM?

OBsolete Parts A Problem?

If you cannot find the required components due to parts obsolescence please contact us. We offer form, fit, and function replacement parts for any system. If a Source Control Drawing (SCD) is available we can offer a complete solution to meet all of the given electrical, mechanical, and environmental specifications. We have designed, manufactured, and delivered many of these replacement components such as:

- IF & RF LOG AMPLIFIERS
- LOW NOISE AMPLIFIERS
- VARIABLE GAIN AMPLIFIERS
- SUCCESSIVE DETECTION LOG VIDEO AMPLIFIERS (SDLVA’s)
- BI-PHASE MODULATORS
- PHASE SHIFTERS
- I & Q VECTOR MODULATORS
- FREQUENCY DISCRIMINATORS
- FILTERS
- DIPLEXERS & MULTIPLEXERS
- SWITCH FILTER BANKS
- SUPERCOMPONENTS, SUBSYSTEMS AND SYSTEMS

Planar Monolithics Industries, Inc.
7311-F Grove Road, Frederick, MD 21704
Tel: 301-662-5019, Fax: 301-662-1731
Email: sales@pmi-rf.com  Web: www.pmi-rf.com
PMI East Coast Facility
Select Product Photos – Page 2

- Low Noise Amplifier
- Bi-Directional Amplifier
- Limiter
- Solid-State Switch 40GHz
- Laboratory Amplifier
- Switched Output Amplifier
- SDLVA
- SDLVA
- Broadband Amplifier
- Switched Output Amplifier
- SDLVA
- Phase Shifter
- Band-Pass Filter
- High Power Switch
7311-F GROVE ROAD, FREDERICK, MD:

- 5,000 sq. ft. Facility
- Components Manufacturing
- Sub-Assembly Manufacturing
- Hybrid Assembly
- Filter Manufacturing
- 1,000 sq. ft. Class 10,000 Clean Room
- Engineering Department
- Test Department
- Production Officer
- QA/QC Office
- Sales & Marketing
- Executive Offices
- Conference Room

4921 Robert J. Mathews Pkwy, El Dorado Hills, CA:

- 5,100 sq. ft. Facility
- Components Manufacturing
- Hybrid Assembly
- Test and Engineering Departments
- Production and Quality Departments
- Continued Manufacturing Previous HARI, LLC (formally Genesis Microwave) Products as listed at www.harillc.com and www.genesismicrowave.com

6590 WATERS EDGE CT, NEW MARKET, MD:

- 4,000 sq. ft. Facility
- CORPORATE HQ
- Conference Rooms & Executive Offices

5715 INDUSTRY LANE, FREDERICK, MD:

- 2,500 sq. ft. Facility
- Accounting Offices
- Machine Shop
- 600 sq. ft. 10,000 Clean Room

ACCOUNTING & CORPORATE INFO:

- Type “S” Corporation, Pennsylvania
- Peachtree Sage 50, 2013
- EXACT Alliance MRP
- Accrual Basis Accounting Practice
- Fiscal Year is December 31st
- GAAP Guidelines Followed
- Monthly Internal Financial Reports
- Weekly Cash Flow Analysis Reports
Network Analyzers:
- (3) Agilent N5230A PNA (10MHz to 40GHz)
- (2) Agilent N5230A PNA (10MHz to 20GHz)
- (1) Agilent 8720ES VNA (50MHz to 20GHz)
- (1) Agilent N4691 E-CAL (10MHz to 20GHz)
- (1) Agilent N4692 E-CAL (10MHz to 40GHz)
- (1) HP Network Analyzer (10kHz to 300MHz)
- (1) HP 5100 Network Analyzer (0.5 to 26.5GHz)
- (1) Agilent N5230C-420 PNA Network Analyzer (10MHz to 40GHz)

Noise Figure Meter:
- (1) Agilent N8975A (10MHz to 26.5GHz)

Spectrum Analyzer:
- (1) HP 8593E
- (1) HP E4448A PSA Spectrum Analyzer (3Hz to 50GHz)

Power Meter:
- (1) Gigatronics 85418
- (1) Agilent E4418B

Pulse/Signal Generators:
- Agilent E8257D
- HP 8015A
- HP 8350B Sweep Oscillator
- HP Arbitrary Waveform Generator 33120A
- Agilent 33522A Arbitrary Waveform Generator

Oscilloscopes:
- Tektronix TES 210 (60MHz BW)
- Agilent DSO6034A (300MHz BW)

Manufacturing Equipment:
- TSE-11-A ESPEC Thermal Shock Chamber
- JEN410 IR Reflow Oven
- Thermo Electron Oven
- Anatech Plasma Cleaner
- Metallurgical Microscope MT1000
- (3) Westbond 747677E Convertible Wire Bonder
- (1) Westbond 747630E-79 Wire Bonder
- (1) Westbond 7400A Welder
- (1) Westbond Bond Pull Center
- (1) Dage Bond Puller
- (1) Mech-EI Ribbon Bonder
- (1) Unitek Unibond-II Parallel Gap Welder
- (1) HAAS VF0 CNC Milling Machine
- (1) HAAS DT1 CNC Milling Machine
- (1) Hardinge Turret Lathe
- (1) Di-Acro Power Shear
- (1) Brady Label Machine BP-THT-600-11

CAD Software:
- AutoCAD 2005
- AutoCAD 2013
- Altium Designer
- Microwave Office
- Gibbs Cam

Standards:
- ISO9001-2008
- MIL-STD-454
- MIL-STD-202
- MIL-STD-883
- MIL-E-5400
- MIL-I-45208
- IPC-A-610 Workmanship Standard
- IPC-J-STD-001 Soldering Standard
- MIL-STD-45662 Calibration Standard
Network & Spectrum Analyzers:
- (5) HP 8757D Scalar Analyzers
- (1) HP 8720D Network Analyzer
- (1) HP 8563E Spectrum Analyzer
- (1) HP 8592L Spectrum Analyzer

Noise Figure Meters:
- (1) HP 8970A Noise Meter
- (1) HP 8970B Noise Meter
- (1) Agilent 346C Noise Source

Power Meters:
- (1) HP EPM-442 Power Meter
- (2) HP E4412A Power Meter
- (1) HP 437B Power Meter

Pulse/Signal Generators:
- (1) HP 83731B Signal Generator
- (1) HP 83620A Signal Generator
- (1) HP 8013B Pulse Generator
- (4) HP 83620A Sweep Generators

Oscilloscopes:
- (1) HP 54503A Digital Scope & Probe
- (1) Agilent 54624A 100MHz BW
- (1) Tektronix 2246 100MHz BW
- (1) Tektronix 2465A 350MHz BW

Manufacturing Equipment:
- (1) Quincy Model 40 Oven
- (1) Sym-Tek P162P5J Oven
- (1) Cole/Parm 05015-50 Oven
- (1) Branson 821D Ultrasonic Cleaner
- (1) Pronto 474 Label Maker
- (4) UNITEK Gap Welders
- (1) March Plasmod Plasma Cleaner
- (4) Westbond 7400A Wedge Bonders
- (1) Westbond 70PT-M Bond Pull Center
- (4) Westbond1200A Die Attach Stations

CAD Software:
- AutoCAD 2005
- AutoCAD 2013

Standards:
- ISO9001-2008
- MIL-STD-454
- MIL-STD-202
- MIL-STD-883
- MIL-E-5400
- MIL-I-45208
- IPC-A-610 Workmanship Standard
- IPC-J-STD-001 Soldering Standard
- MIL-STD-45662 Calibration Standard
Certificate of Registration

FM Approvals 1151 Boston-Providence Turnpike, Norwood, MA 02062 issues this certificate to the Firm named below:

Headquarters
Planar Monolithics Industries, Inc.
7311-F Grove Road
Frederick, MD 21704

7515 Unit 11 Industry Lane
Frederick, MD 21704

after assessing the Firm's Quality System and finding it in compliance with
ISO 9001:2008
for the following Scope of Registration:
Design, Development and Manufacture of Microwave Frequency Components, Sub-Systems and Systems, and Contract Manufacturing Services

Exclusions: Service Provision (7.5)

Registration No. 120804.1Q

Effective Date: August 27, 2012
Expiration Date: August 27, 2015

John P. Hill
Manager, Quality System Registration

August 27, 2012

This agreement is made and entered into by FM Approvals. Any change to the basis of this registration requires agreement in writing by FM Approvals.
Organizational Chart – PMI West Coast Operations

Kevin Mason  
General Manager

John Merriner  
Director West Coast Operations

John Stokes  
Sales & Marketing  
(East & West Coast Operations)

Paul James  
Accounting & Production Mgr  
(West Coast Operations)

Paul James  
Purchasing / Planning  
Sue Gonzales  
(Sales/Marketing)

Paul James  
Stock Room  
Isabel Merriner  
[Temporary]  
(West Coast Operations)

Paul James  
Shipping / Receiving

John Merriner  
Acting Engineering Manager  
(West Coast Operations)

John Merriner  
Engineering Technician  
Edd Benson

John Merriner  
Engineering Assembler  
Marlene Ratuita

Technician and QA  
Harold Holvick  
(West Coast Operations)

Steve Baughman  
Jerry Emperador  
Ken Schwarz  
Dan Almond  
Technicians  
(West Coast Operations)

Assembly  
Lydia Yu  
Tome Lamb  
Sophie Oh  
(West Coast Operations)

Design Engineer & Program Management  2
Sales & Marketing  1
Assemblers  4
Technicians  4
Purchasing  1
QA  1
Stock Room & Kitting  1
TOTAL  14

4921 Robert J. Matthews Parkway, Suite 1, El Dorado Hills, CA 95762
PMI PRODUCTS LIST

- LOW NOISE, LIMITING AND VARIABLE GAIN AMPLIFIERS
- SOLID STATE SWITCHES AND SWITCH FILTER BANKS
- ANALOG AND DIGITALLY CONTROLLED VARIABLE ATTENUATORS
- DLVAs, ERDLVAs, SDLVAs AND LOG AMPLIFIERS
- DTOs, DROs, PHASE LOCKED DROs & SYNTHESIZERS
- IFMs, FREQUENCY DISCRIMINATORS & FREQUENCY DOUBLERS
- INTEGRATED MIC / MMIC MODULES
- BI-PHASE MODULATORS & PHASE SHIFTERS
- I/Q VECTOR MODULATORS
- SINGLE SIDEBAND MODULATORS
- TRANCIEVERS, RECEIVERS & RECEIVER FRONT ENDS
- LIMITERS, DETECTORS & THRESHOLD DETECTORS
- FILTERS & DIPLEXERS
- POWER DIVIDERS, COMBINERS AND HYBRID COUPLERS
- SMT & QFN PRODUCTS
- USB PRODUCTS
- SWITCH AND ATTENUATOR MATICES
- RACK & CHASSIS MOUNT PRODUCTS
- FORM, FIT & FUNCTION REPLACEMENT PRODUCTS
PLANAR MONOLITHICS
INDUSTRIES, INC.
A TRADITION OF EXCELLENCE SINCE 1989
ISO9001-2000 CERTIFIED

7 CHANNEL SWITCH FILTER BANK
PFC MODEL NUMBER: 7SFB-0R258R3-5-15-SFF

KEY FEATURES:
- 60dBc REJECTION TO 20GHz
- BROADBAND (0.25 TO 8.30 GHz)
- ULTRA-SMALL PACKAGE
- LOW PASSBAND LOSS

SPECIFICATION:

<table>
<thead>
<tr>
<th>FILTER PATH</th>
<th>-65dBc REJECT BAND</th>
<th>LOW LOSS PASSBAND (GHz)</th>
<th>-60dBc REJECT BAND (GHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
<td>DC to 200 MHz</td>
<td>0.25 to 1.50</td>
<td>2.25 to 20.00</td>
</tr>
<tr>
<td>No. 2</td>
<td>DC to 300 MHz</td>
<td>0.95 to 1.70</td>
<td>2.45 to 20.00</td>
</tr>
<tr>
<td>No. 3</td>
<td>DC to 350 MHz</td>
<td>1.15 to 2.00</td>
<td>2.85 to 20.00</td>
</tr>
<tr>
<td>No. 4</td>
<td>DC to 500 MHz</td>
<td>1.45 to 2.55</td>
<td>3.65 to 20.00</td>
</tr>
<tr>
<td>No. 5</td>
<td>DC to 700 MHz</td>
<td>2.00 to 3.50</td>
<td>5.00 to 20.00</td>
</tr>
<tr>
<td>No. 6</td>
<td>DC to 700 MHz</td>
<td>2.95 to 5.20</td>
<td>7.45 to 20.00</td>
</tr>
<tr>
<td>No. 7</td>
<td>4.65 to 8.30</td>
<td>11.95 to 20.00</td>
<td></td>
</tr>
</tbody>
</table>

7311-F Grove Road, Frederick, MD 21704 USA Tel: 301-662-5019 Fax: 301-662-1731
Email: sales@pmi-rf.com Web: www.pmi-rf.com
**PMI MODEL No: SDLVA-0120-70**

This is a SUCCESSIVE DETECTION LOG VIDEO AMPLIFIER (SDLVA), which operates over the 0.1 to 2.0 GHz range (it is useful up to 2.5 GHz). This unit has a Dynamic Range of 65 to 70dB and a TSS of 67dBm, and a nominal video bandwidth of 20MHz. These SDLVA's offer typically fast rise and fall times as well as superior delay times of only 5ns. The standard SDLVA-0120-70 is commercially screened and characterized from -55°C to +85°C. Military Screenings up to MI-Sld-883 are available for extra cost, please contact the factory for a quotation.

### TYPICAL SPECIFICATIONS ON PMI SDLVA'S:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>FREQUENCY RANGE</td>
<td>0.1 to 2.0 GHz Wideband or Narrow Band, Models (Usable up to 2.5 GHz)</td>
</tr>
<tr>
<td>DYNAMIC RANGE</td>
<td>±20 dB. (Models available up to 70 dB)</td>
</tr>
<tr>
<td>LOG LINEARITY</td>
<td>±2 dB Maximum (-20 dBm to 6 dBm)</td>
</tr>
<tr>
<td>DYNAMIC RANGE</td>
<td>±15 dB Maximum (-65 dBm to +5 dBm)</td>
</tr>
<tr>
<td>INPUT VSWR</td>
<td>2:1 Maximum (1:1 Typical)</td>
</tr>
<tr>
<td>MINIMUM LOGGING RANGE</td>
<td>-40 dBm (-45 dBm Typical)</td>
</tr>
<tr>
<td>MAXIMUM LOGGING RANGE</td>
<td>+5 dBm (+4 dBm Typical)</td>
</tr>
<tr>
<td>TANGENTIAL SENSITIVITY (TSS)</td>
<td>-42 dBm Minimum</td>
</tr>
<tr>
<td>LIMITED IF OUTPUT</td>
<td>-15 dBm</td>
</tr>
<tr>
<td>MAXIMUM RF INPUT POWER</td>
<td>-15 dBm</td>
</tr>
<tr>
<td>LOG VIDEO OUTPUT</td>
<td>-15 dBm</td>
</tr>
</tbody>
</table>

### OUTPUT COUPLING
- DC
- Maximum Output Voltage: 2.7 Vdc
- Rise Time: 50 ns Maximum
- Fall Time: 50 ns Maximum
- Settling Time: 40 ns Maximum
- DC Offset: 0.1 Vdc Nominal (Adjustable)
- Slope: 25 mV/µs Nominal (Adjustable to 25 mV/µs)
- Log Slope Variation Over Frequency: ±5 mV/µs (Over 80 MHz RF Bandwidth)
- Log Slope Variation Over Temperature: ±1 mV/M Increment
- Propagation Delay: 10 µs Maximum, 7 µs Typical
- Video Load: 100 ohm ± 10%
- DC Power Supply: +15 Vdc @ 100 mA (Other Voltages Available)
- -15 Vdc @ 100 mA
- Size: 3.75" x 1.59" x 0.40" (Shown at Right)
  - 0.285" x 0.285" x 0.305" (Shown at Right)
  - 0.750" x 0.750" x 0.15" (Shown at Right)

7311 F Grove Road, Frederick, MD 21704 USA  Tel: 301-662-5019  Fax: 301-662-1731
Email: sales@pmiRF.com  Web: www.pmiRF.com
Configurable System Platform

PMI Model No: PET-VI is a highly configurable computer controlled systems platform. The PET-VI uses an integrated ARCOM SBC-GX533 400 MHz single board computer, 6 inch VGA touch screen LCD user interface, with front panel troubleshooting, internal noise source calibration and plug & play modular design. It is capable of many applications including RF Distribution, Broadband Switch Matrices, High Speed Frequency Synthesizer or Log Amplification with selectable Log Slopes. Commercial, Industrial and Military versions are available.

19" Rack Mount Systems & Subsystems

PMI can now supply products in a 19 inch Rack Mount chassis. These units all feature a built 115 VAC, 60 Hz, power supply (other power supply voltages and conditions available). Any of our standard amplifiers, components, integrated assemblies or a custom designed item for your specific requirement can be supplied. Commercial, Industrial and Military versions are available.

Signal Processing Subsystem

PMI Model No: RFC0-811-QRC is an 8.0 to 11.0 GHz RF Subsystem with integrated Pulse and Amplitude Modulation. It consists of three (3) independent subsystems, eight (8) 60dB Voltage Controlled Attenuators, eight (8) High Speed PIN Diode Switches and a total of 29 integrated components inside an 8.90" X 3.90" X 1.85" custom designed drawer assembly.
Signal Modulation Subsystem

PMI Model No: LSP-0518-SK is a 500 MHz to 18.0 GHz Analog, Level, Scan and Pulse Modulation Module which uses highly reliable digital processing techniques.

Digitally Switched Attenuator

PMI Model No: SAA-218-6-093-013542 is an Array of Six Octave Band Attenuators which covers the Frequency Range of 2.0 to 18.0 GHz. The Assembly provides Switchable RF Attenuator thru the six signal paths. Digital Control of the Analog output is provided.

Detection / Amplification Module

PMI Model ADP-140M-51DR-TD with Options HS, NRL and LOG is a Detection and Amplification Module which provides Amplification, Video Detection and Video Amplification with an input of 140 MHz Pulsed RF with a 25 MHz Bandwidth. The RF Power Input sensitivity is from −5dBm to +5dBm with a Log Slope of 0.014 Volt/dB (adjustable) and an adjustable Threshold Level from −55dBm to −30dBm. The size is only 3.50” X 3.00” X 0.50”.

Direction Finding Receiver Front End

PMI Model RFE-218-70-BB with Option JT is a 2.0 to 18.0 GHz High Sensitivity, High Dynamic Range, Direction Finding Receiver Front End which utilizes a matched pair of Extended Range Detector Logarithmic Video Amplifiers. The Logging Range is −60 to +5dBm minimum and the TSS is −65dBm minimum while the Log Slope is 50mV/dB ±10% maximum.
IFM Subsystem

PMI Model No. RSM-618-65 is a 6.0 to 18.0 GHz Receiver Front End. IFM Subsystem with Analog Output through three DC-Coupled Frequency Discriminators. The Logging Range is -65dBm to 0dBm with a TSS of -68dBm minimum.

Broadband Frequency Discriminator

PMI Model No. FD-0518-10 with Option 118 is a Custom Designed 1.0 to 18.0 GHz, 6 channel Frequency Discriminator that is 8.50" X 5.00" X 3.75".

Low Band Direction Finding Module

PMI Model No. LBDFM-052-BD-DP is a 500 MHz to 2.0 GHz Directional, Multifunction Device that provides signal path switching, conditioning and modulation.

High Band Direction Finding Module

PMI Model No. HBDFM-052-BD-DP is a 2.0 to 18.0 GHz Directional, Multifunction Device that provides signal path switching, conditioning and modulation.
PMI has developed a full product line of RF Switch Matrices that operate over the 20MHz to 40GHz frequency range. Three standard models are offered that cover this frequency range, namely 20MHz to 3.0GHz, 2.0GHz to 18.0GHz, and 18.0GHz to 40.0GHz. Any of the three models can be supplied as either a 4 X 4, 8 X 8, 16 X 16, or 32 X 32 non-blocking matrix.

All models offer switching control via TTL, RS232, RS422/485, Ethernet and via the front panel touch screen LCD. All units are supplied in a ruggedized 6U, 19” Chassis.

### Model No. SM-20M13G (20MHz to 3.0GHz)

<table>
<thead>
<tr>
<th></th>
<th>4 X 4</th>
<th>8 X 8</th>
<th>16 X 16</th>
<th>32 X 32</th>
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</thead>
<tbody>
<tr>
<td>Insertion Loss</td>
<td>10dB</td>
<td>14dB</td>
<td>16dB</td>
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</tr>
<tr>
<td>IP3</td>
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</tr>
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<td>Switching Speed</td>
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<tr>
<td>SWR</td>
<td>2.01</td>
<td>2.01</td>
<td>2.01</td>
<td>2.01</td>
</tr>
<tr>
<td>Input Power</td>
<td>+20dBm CW</td>
<td>+20dBm CW</td>
<td>+20dBm CW</td>
<td>+20dBm CW</td>
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</table>

### Model No. SM-2G18G (2.0GHz to 18.0GHz)

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<td>Insertion Loss</td>
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</tr>
<tr>
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<td>55dB</td>
<td>55dB</td>
<td>55dB</td>
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<tr>
<td>IP3</td>
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<td>1000ns</td>
<td>1000ns</td>
<td>1000ns</td>
</tr>
<tr>
<td>SWR</td>
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<td>2.01</td>
<td>2.01</td>
<td>2.01</td>
</tr>
<tr>
<td>Input Power</td>
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<td>+20dBm CW</td>
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### Model No. SM-10G40G (18.0GHz to 40.0GHz)

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<td>IP2</td>
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</tr>
<tr>
<td>Input Power</td>
<td>+20dBm CW</td>
<td>+20dBm CW</td>
<td>+20dBm CW</td>
<td>+20dBm CW</td>
</tr>
</tbody>
</table>

**Available Options:**

- **TL:** Zero Insertion Loss
- **LV:** Low Video Transients
- **HI:** Higher Isolation

7311-F Grove Road, Frederick, MD 21704 USA Tel. 301-692-6019 Fax: 301-692-1731

Email: sales@pmi-rf.com Web: www.pmi-rf.com

*Specifications are typical
High Gain Amplifiers with Integrated Digital Attenuation Control
PTB-50-0R118-6R5-18-120VAC-SFF-DVA and PEC-50-0R118-6R5-18-120VAC-1U-SFF

Features and Typical Specifications:
- Frequency Range: 100MHz to 18.0GHz
- Gain: 50dB Minimum
- Gain Flatness: ± 2.0dB (Up to 55dB Attenuation)
- Noise Figure: 6.0dB @ 100MHz, 3.0dB @ 18GHz
- Attenuation Range: 0 to 60dB (1dB Resolution)
- OP’1dB: +18dBm
- Internal Power Supply: 112/120VAC 50/60Hz

Key Features:
- 6 Foot Power Cord Supplied
- On/Off Power Switch with LED Indicator
- Attenuation Displayed on LCD Display
- Attenuation Controlled via Front Panel Optical Encoder Knob or via RS232
- Real-Time Attenuation Control

Available Options:
- Ultra-Fine 0.25dB/Step Attenuation Resolution
- Internal High Speed Pulse Modulator
- Other Gain Levels - From 0dB to 80dB
- Frequency Ranges from 10MHz to 40GHz
- Higher Output Power Levels up to +30dBm
- 220VAC (European Compatible) Voltage Supplies

Full Test Reports are available. These reports contain swept data at every attenuation level from 0dB to 60dB. Please contact our Sales Department for more information.

7311-F Grove Road, Frederick, MD 21704 USA Tel: 301-662-5019 Fax: 301-662-1731 Email: sales@pml-rf.com Web: www.pml-rf.com
PMI offers various RF and Microwave products that range from 250kHz up to 40.0GHz which are supplied in a ruggedized, 1U to 6U chassis.

Our ruggedized, military grade chassis products are built to meet the customers exact application needs.

A mixed set of functions can be included:

- Amplification
- Attenuation (Digital Solid-State)
- Switching (Ultra High Speed)
- Power Detection / Fault Detection
- Phase Shifting / Phase Modulation
- Pulse Modulation
- Noise Generation
- RF Filtering
- RF Limiting
- Power Splitting
- RF Signal Distribution
SIGINIT & DF RF Distribution Units

- Airborne Ruggedized 19" Rack Mount Chassis, 6U Height, 18" Deep
- Linux or Windows CE Operating System
- Compact Flash contains all boot up and operation software. Can be removed for security purposes.
- Current monitoring of every internal RF component. Failures are displayed on the front panel display.
- Cooling Fan speed monitoring. Fan failures are displayed on the front panel display.
- RF module internal temperature monitoring. Over temperature conditions are displayed on the front panel display.
- Plug and Play, Modular design to allow in-the-field repairs and flexibility for custom configurations. (3 Modules)
  - Power Supply Module can contain any required power supply.
  - Computer Module can be switched out in minutes.
  - RF Module can contain any set of RF components required. Up to 320 individual control lines can be accommodated.
ITAR – International Traffic in Arms Regulations

- Trained and Experienced ITAR/Export Administrator
- Export Compliance Manual
- AES (Automated Export System) certified export staff
- Long Term Relationships with both DDTC and SNAP-R Personnel
- U.S. Government Registration Numbers:
  - Cage Code: 05XQ0 (East Coast)
  - Cage Code: 71A34 (West Coast)
  - DUNS Number: 829998517
  - SAM (CCR) Registration: 1998E211401
  - Federal Tax ID (TIN): 52-1756966
  - DDTC Registrant Code: M16913