



# Planar Monolithics Industries, Inc.

## Instantaneous Frequency Measurement (IFM) & Direction Finding (DF) Assemblies & Modules

PMI offers the highest quality multi-function modules and integrated microwave assemblies for industrial and military applications that include radar warning (RW), electronic countermeasures (ECM), electronic support measures (ESM) and electronic intelligence (ELINT) systems. We built to your specifications with functions that include amplification, attenuation, filtering, switching, phase shifting, power detection, modulation, coupling, limiting and digital/analog control. PMI offers many other standard models with various options that are available at:

<https://www.pmi-rf.com/categories/frequency-discriminators>,

<https://www.pmi-rf.com/categories/integrated-mic-mmhc-assemblies>

Amplifiers - Solid State

Attenuators - Variable/  
Programmable

Bi-Phase Modulators

Couplers (Quadrature, 180,  
Directional)

Detectors - RF / Microwave  
DLVAs, ERDLVAs & SDLVAs

Filters & Switched Filter  
Banks

Form, Fit, Functional  
Products & Services

Frequency Converters

Frequency Sources

Frequency Discriminators  
& IFM

Frequency Synthesizers

Gain & Loss Equalizers

Integrated MIC/MMIC  
Assemblies (IMAs)

IQ Vector Modulators

Limiters - RF / Microwave

Log Amps

Miscellaneous Products

Monopulse Comparators

Multifunction Integrated  
Assemblies (IMAs)

Phase Shifters & Bi-Phase  
Modulators

Power Dividers/Combiners  
(Passive & Active)

Pulse Modulators - SP1T

Rack & Chassis Mount  
Products

Receiver Front Ends &  
Transceivers

Single Side Band  
Modulators

SMT & QFN Products

Switch Matrices

Switch Filter Banks

Switches - Solid-State

Systems - Radar Sense &  
Avoid

Systems - Fly Eye Radar

Threshold Detectors

USB Products



### Receiver Front-End IFM Systems

#### RSM-218-65 & RSM-618-65

<https://www.pmi-rf.com/product-details/rsm-218-65>

<https://www.pmi-rf.com/product-details/rsm-618-65>

- Broadband Frequency Coverage
- -65 dBm To 0 dBm Dynamic Range
- 100 ns Minimum Pulsewidth Handling
- Includes DC-Coupled Log Video Amplifier
- DC-Coupled Frequency Discriminator Video Outputs:

**RSM-218-65:** 2.0 GHz to 4.0 GHz, 4.0 to 6.0 GHz, 6.0 to 10.0 GHz, 10.0 to 14.0 GHz, and 14.0 to 18.0 GHz

**RSM-618-65:** 6.0 GHz to 10.0 GHz, 10.0 GHz to 14.0 GHz and 14.0 GHz to 18.0 GHz



#### SPECIFICATIONS

Frequency Range	RSM-218-65: 2 - 18 GHz RSM-618-65: 6 - 18 GHz
Frequency Flatness	±2.5 dB Max, ±1.75 dB Typ
Dynamic Range	-65 dBm to 0 dBm
LOG Linearity	±2.5 dB Max
VSWR Input	3.0:1 Max @ -20 dBm, 2.5:1 Typ
Tangential Sensitivity	-68 dBm Max
LOG Video Output	Rise Time: 25 ns Max Slope: 50 mV/dB (±10% Max)
RF Input Power	+15 dBm
Power	+15 VDC @ <950 mA (850 mA Typ) -15 VDC @ <450 mA (275 mA Typ)
Frequency Discriminator	Accuracy: ±300 MHz Max, ±200 MHz Typ Slope: -50 mV/GHz (±10% Max)
Physical	Connectors: SMA Female Size: 5.5" x 9.6" x 1.5"

### Digital Frequency Discriminator (DFD)

#### DFD-2G18G-5512

<https://www.pmi-rf.com/product-details/dfd-2g18g-5512>

- Broadband frequency coverage (2 to 18 GHz)
- Incorporates conduction cooling and the ability to be mounted via screw holes located on the underside of the unit or via the wedge locks located at the top of the unit.



#### SPECIFICATIONS

Frequency Range	2.0 to 18.0 GHz
Frequency Accuracy	3 MHz (Peak RMS) @ 3 dB SNR Typ
Peak Frequency Error	15 MHz
Linear Bandwidth	16 GHz
Dynamic Range	-50 to +15 dBm
Max Input Power, Survival	+17 dBm CW
Mean Frequency Resolution	1 MHz
Recovery Time (After High Power Pulse Input)	100 ns Max
Control Logic:	14-Bit TTL Digital Output (Single Ended)
Physical	RF Connectors: SMA female Power/Control: 51-Pin Micro-D Calibration/Test: 15-Pin Micro-D Size: 5.98" x 5.79" x 1.28"

### Direction Finding Modules

#### LBDFM-052-BD-DP & HBDFM-218-BD-DP

<https://www.pmi-rf.com/product-details/lbdfm-052-bd-dp>

<https://www.pmi-rf.com/product-details/hbdfm-218-bd-dp>

- Low Band (0.5 - 2 GHz) & High Band (2.0-18.0 GHz) Configurations



- Uni-Directional, Multi-Function Device that routes the signal present at the RF Input Connector through one of its four channels to the RF Output Connector, to amplitude modulate the input signal.

- Input and output ports can be switched to internal 50 Ohm terminations to ensure matched source and load impedance for interfacing devices during off-times and Isolation or VSWR tests.

#### SPECIFICATIONS

Frequency Range	LBDFM-052-BD-DP: 0.5 - 2.0 GHz HBDFM-218-BD-DP: 2.0-18.0 GHz
RF Input Signal Level Range	LBDFM-052-BD-DP: +5 dBm to +8 dBm Typ, +10 dBm Max HBDFM-218-BD-DP: 0 dBm to +3 dBm Typ, +6 dBm Max
RF Input Spectral Purity	Input Spurious Levels: - 60 dBc Max Input Harmonic Levels: - 10 dBc Max
RF Input Signal-To-Noise Ratio:	70 dB Min
RF Output Power Level & Gain Compression:	LBDFM-052-BD-DP: Power Out = +14 dBm Min at all frequencies with Input Power = +5 dBm and Attenuation set at minimum, Gain Compression at 0.9 dB Max HBDFM-218-BD-DP: Power Out = +21 dBm Min at all frequencies with Input Power = +0 dBm and Attenuation set at minimum, Gain Compression at 0.9 dB Max
Physical	Connectors: SMA Female Size: 6.9" x 2.48" x 0.85"

### Analog Frequency Discriminator

#### FD-0518-10-118

<https://www.pmi-rf.com/product-details/fd-0518-10-118>

- 1.0 to 18.0 GHz frequency coverage
- Six Output Channels, Voltage vs Frequency
- Modular Design and Rugged Construction



#### SPECIFICATIONS

Frequency Range	1.0 to 18.0 GHz
Output Channels (6)	Channel 1: 1 to 2 GHz Channel 2: 2 to 4.2 GHz Channel 3: 4.2 to 6.1 GHz Channel 4: 6.1 to 8.7 GHz Channel 5: 8.7 to 12.5 GHz Channel 6: 12.5 to 18 GHz
Input VSWR:	2.0:1
Video Output Rise/Fall Time	20 ns Max
Video Impedance	100 Ω
Operating Input Power	+10 ± 0.1 dBm
Accuracy:	±300 MHz Typical, ±450 MHz Max
Physical	RF Connectors: SMA female TTL Control Connector: DB9 Size: 8.5"L x 5.0"W x 3.75"H

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