

PRINCETON MICROWAVE TECHNOLOGY INC.

ISO 9001-2000

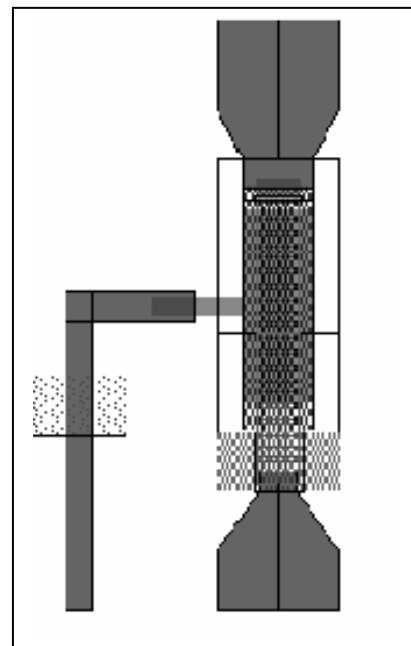
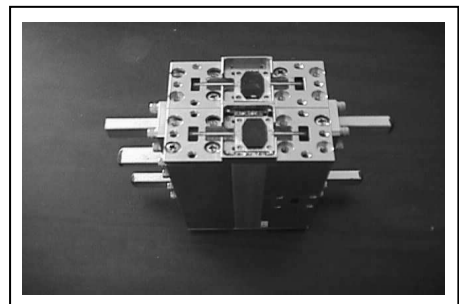
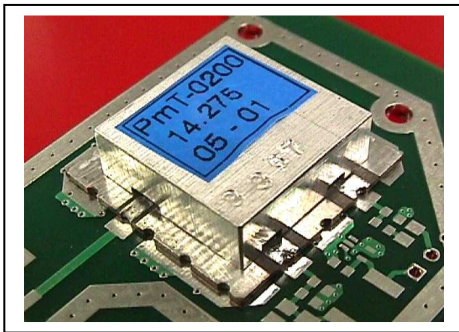
SOURCE FOR SOURCES

**RF MICROWAVE and MILLIMETER-WAVE POWER
AMPLIFIERS**

MEMs DEVICES

FREQUENCY SYNTHESIZERS

PHASE LOCKED AND FREE RUNNING OSCILLATORS



Corporate Profile

Introduction

Princeton Microwave Technology Inc. has been manufacturing high quality oscillators and amplifiers for the military and telecommunications markets for over five years. Our overall customer base has grown dramatically over the past few years, to a well-balanced mix, which includes a broad cross-section of industry, from local companies to Fortune 500 firms with sophisticated, global applications.

The engineering staff at PmT has many years of experience in the design and manufacturing of Dielectric Resonator Oscillators, Phase-Locked Dielectric Resonator Oscillators, Coaxial Resonator Oscillators and Microwave to Millimeter-wave Power Amplifiers found in applications worldwide for: personal communication networks, digital microwave radios, CATV, public and private networks, both commercial and military radars, surveillance receivers, and test equipment.

Facilities

To meet the continually evolving needs of our customers, PmT has a custom 5000 square feet facility, which is located near Princeton, New Jersey. The facility enables us to continue expanding our manufacturing, testing, and design areas.

In addition, our location, with quick access to international air connections via several major highways, helps us maintain our commitment to fast, responsive service.



ISO 9001-2000 Registration

As evidence of our commitment to quality, we are proud to report that PmT has achieved ISO9001-2000 registration and that the function, organization and responsibility of our Quality Assurance Department fully conform to the Total Quality Management model.

BVQI has granted registered firm status to Princeton Microwave.

Proven Capabilities and Experience

Through the years a key component of our success has been our nucleus of highly qualified management and engineering personnel, most of who worked successfully for many years before the firm was founded.

In addition to providing a solid foundation for growth, this stable environment has helped us maintain an unwavering commitment to quality and customer satisfaction.



Quality Assurance & Continuous Improvement

The goal of Princeton Microwave Technology is to provide our customers with the highest quality product, cutting edge technology, and total customer satisfaction. At PmT we are dedicated to achieving and maintaining a level of quality that meets our customer requirements and exceeds their expectations. In addition to ISO9001-2000 registration, our workmanship conforms to IPC200 soldering specifications.

In pursuit of our quality mission, our professional and management personnel at all levels participate actively in quality assurance activities, assess the effectiveness of the quality system on a regular basis and direct our internal efforts towards continual improvement.

Responsive Service

As we prepare for the highly sophisticated and demanding challenges of the new century, PmT is committed to broadening our capabilities into exciting new technologies, while sustaining our solid reputation for reliability, innovation, and customer service.

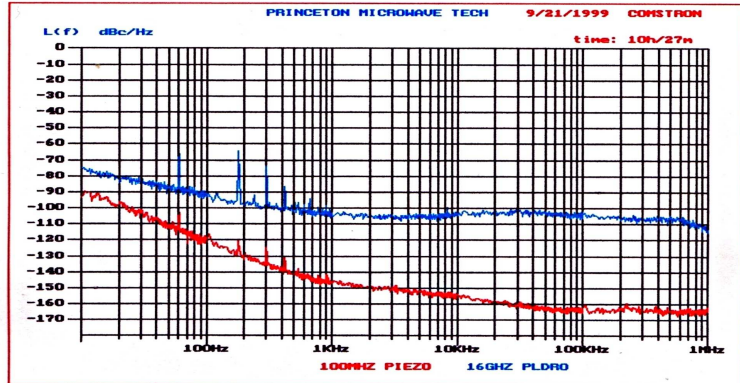
We recognize that our past success is due in large measure to our ability to meet the needs of customers who have high expectations for customer service and responsiveness, and we look forward to continuing to improve our performance in these critical areas.

In addition to the components and products depicted here, PmT also designs and manufactures a wide variety of custom products. Our staff of experienced design engineers is available to assist you in specifying microwave components for your special requirements.

Our Products

The SOURCE for High Frequency Performance

- 300 MHz to 27 GHz
- Low Phase Noise
- -30 °C to 80 °C operational
- Drop in modules
- Standard Packages
- Surface mount DROs
- Single, Dual Loop



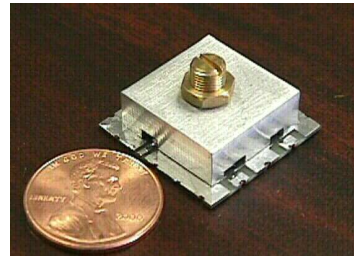
Phase Locked Oscillators

External / Internal	Reference
Low Phase noise	
Power Supply	+12V@ 0.3A
Output Power	10 -20 dBm
Reference Frequency	5 - 120 MHz
Standard Housing	



Dielectric Resonator Oscillators

Low cost	
High Stability	
Output Power	> 10 dBm
Power Supply	3V @ 30 mA



Phase Locked YIG - Tuned Synthesizer

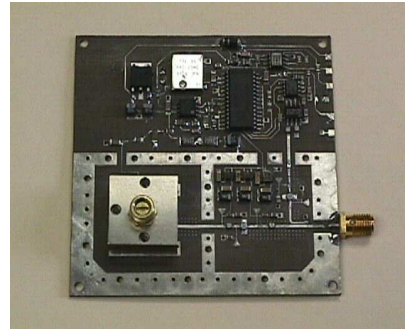
2 - 6 GHz in one unit

Frequency Coverage	2 - 6 GHz
Step Size	5 MHz
Reference frequency	5 - 150 MHz
Power Supply	+15V @ 1A
Phase Noise @ 100 kHz	- 125 dBc/Hz
@ 10 kHz	- 90 dBc/Hz
Dimensions	4.5" x 3" x 1"



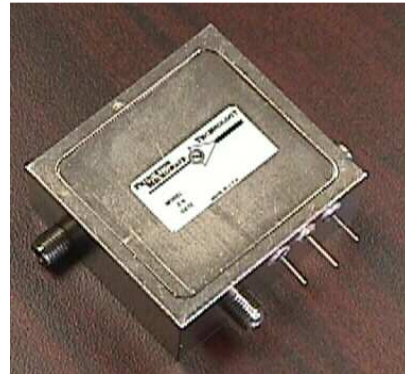
Drop in Modules to 26 GHz

Digital / Analog
Low Phase Noise
Reference frequency 5 – 850 MHz
Power Supply 5 -12 V
Size 2" x 2" x 0.5"



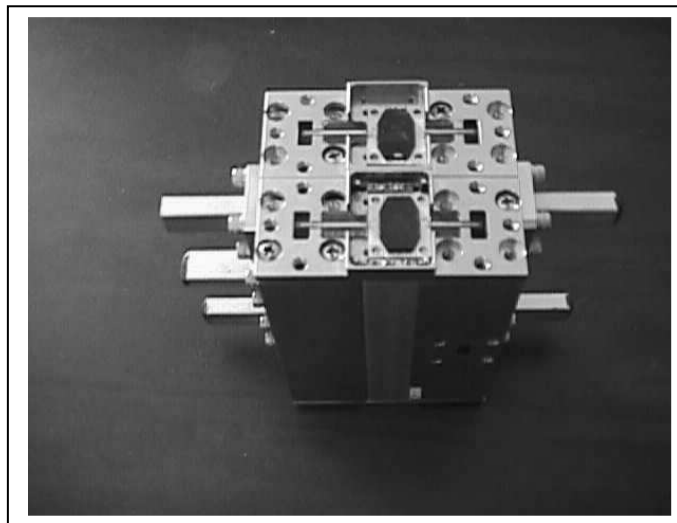
Our Other Products...

Equalizers
Bias tee
Pin diode modulators
Couplers
MMIC Packages
Multipliers
Amplifiers



Millimeter-Wave Solid State Power Amplifiers

Frequency	Gain	Power	Gain	Power
25-31 GHz	45	10 Watts	45	20 Watts

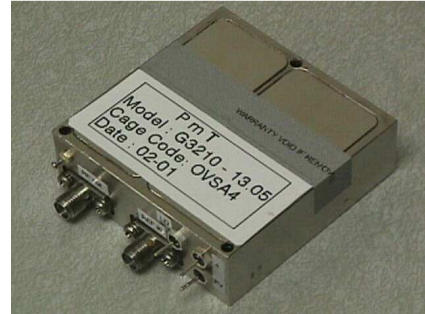


Phase Locked Oscillators

External Reference PLDRO

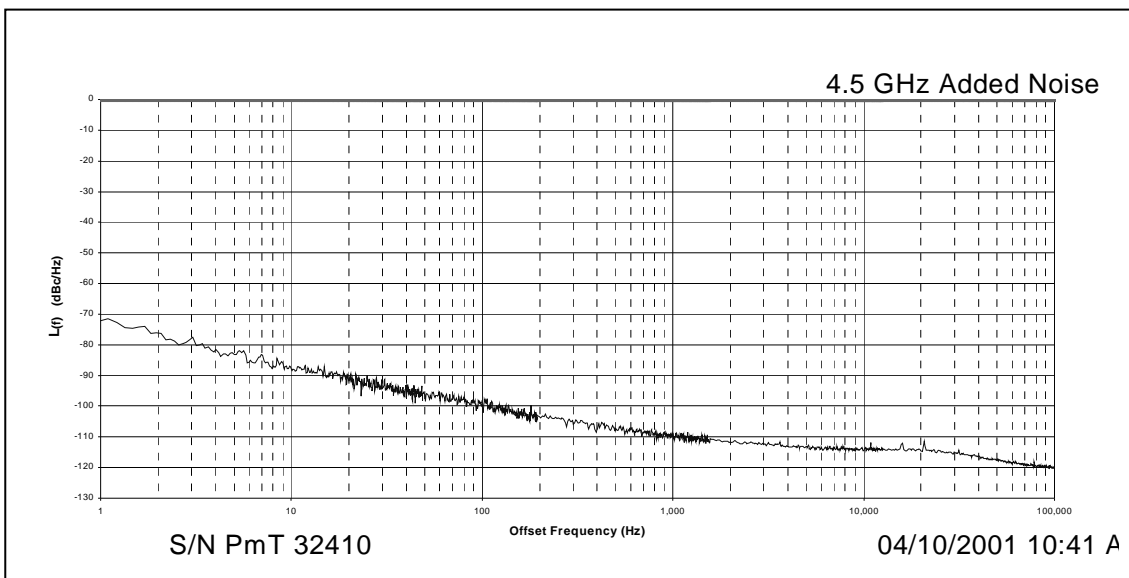
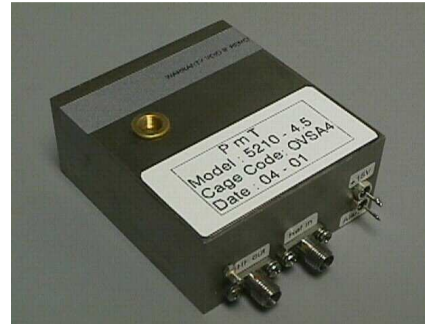
Model: PmT 3210

RF Frequency	7.0 to 22.0 GHz
Ref. Frequency	50 to 150 MHz
Ref. Power in	0 dBm
RF Power out	10 min
Spurious	<-70
Harmonics	<-20
Power Supply	12 - 15
Alarm Type	TTL
Temperature	-30°C to + 70°C
Size	2.25" x 2.25" x 0.75"



Model: PmT 5210

RF Frequency	2.5 to 8.0 GHz
Ref. Frequency	50 to 150 MHz
Ref. Power in	0 dBm
RF Power out	10 min
Spurious	<-70
Harmonics	<-20
Power Supply	12 - 15
Alarm Type	TTL
Temperature	-30°C to + 70°C
Size	2.5" x 2.25" x 1.1"



Phase Locked Oscillators PLVCO

Model: PmT 3311

RF Frequency	0.3 to 6.0 GHz
Ref. Frequency	5 to 50 MHz
Ref. Power in	0 dBm
RF Power out	10 min
Spurious	<-60
Harmonics	<-20
Power Supply	+15
Alarm Type	TTL
Temperature	-30 to + 70 (guaranteed)
Size	2.25" x 2.25" x 0.75"

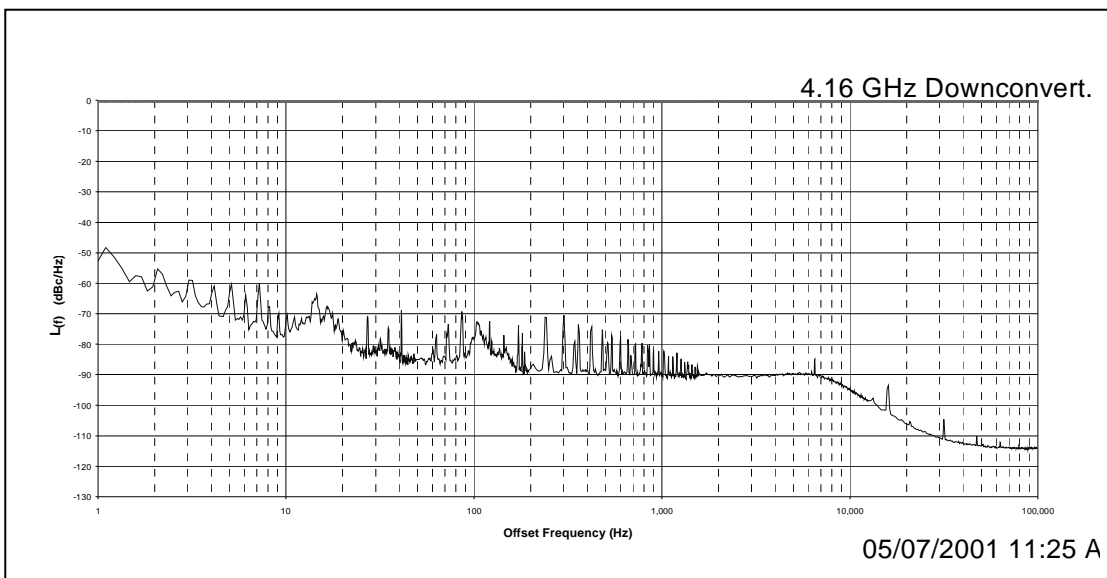
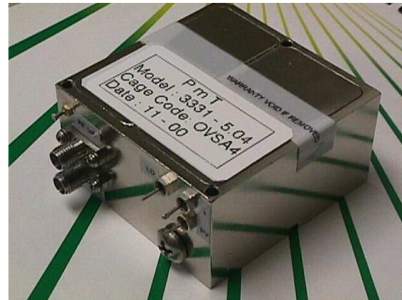
External Reference



Model: PmT 3330

RF Frequency	0.3 to 6.0 GHz
Int. Ref. Stability	+/-3 ppm or better
Ref. Power in	0 dBm
RF Power out	10 min
Spurious	<-60
Harmonics	<-20
Power Supply	+15
Alarm Type	TTL
Temperature	-30 to + 70 (guaranteed)
Size	2.5" x 2.25" x 1.25"

Internal Reference



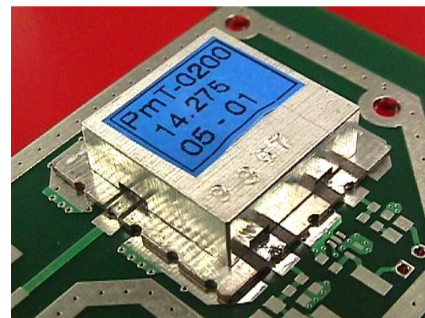
Model: PmT 5200

RF Frequency	4.0 to 26.0 GHz
Frequency accuracy	0.1%
Temperature Stability	0.05%
RF Power out	13 min
Spurious	<-60
Harmonics	<-20
Power Supply	+5 to +15
Temperature	-30°C to + 70°C
Phase Noise 10 kHz	<-95 dBc/Hz
Tuning Sensitivity	1 MHz/V



Model: PmT 0200

RF Frequency	10 to 16 GHz
Frequency accuracy	0.1%
Temperature Stability	0.05%
RF Power out	6 min
Spurious	<-60
Harmonics	<-20
Power Supply	+5 V
Temperature	-30°C to + 70°C
Phase Noise 10 kHz	<-95 dBc/Hz
Tuning Sensitivity	1 MHz/V



Model: PmT 7200

RF Frequency	10 to 16 GHz
Frequency accuracy	0.1%
Temperature Stability	0.05%
RF Power out	6 min
Spurious	<-60
Harmonics	<-20
Power Supply	+5 V
Temperature	-30°C to + 70°C
Phase Noise 10 kHz	<-95 dBc/Hz
Tuning Sensitivity	1 MHz/V



Phase Locked YIG - Tuned Synthesizer

Parallel load Frequency Synthesizer

Model PmT 1710

Parameter	Unit	Specification
RF Frequency	GHz	2.0 to 6.0 in single unit
Frequency Step	MHz	5
Frequency Setup		Parallel data or Ref Frequency Variation
Data Port		18 bit TTL
RF Power Out	dBm	10 min
Variation FR Power Out over Temp	dB	+/- 1
Load VSWR		1.5:1
Ref. Frequency	MHz	10 to 100
Ref. Power in	dBm	0 +/- 3
Spurious	dBc	< -70
Harmonics	dBc	<-15
Phase Noise @ 10 kHz	dBc/Hz	<-90
Phase Noise @ 100 kHz	dBc/Hz	-115
Supply Voltage	Volt	+15
Current	A	1.2 max
Alarm		TTL High in Lock
Dimensions		4.5 "x 3.0" x 0.95"
Connections		RF and REF ports - SMA female
Temperature Operating	degree C	-30 to +70



Drop in Modules

PLDRO

Model: PmT 0210

RF Frequency	8.0 to 26.0 GHz
Ref. Frequency	5 to 50 MHz
Ref. Power in	0 dBm
RF Power out	10 min
Spurious	<-60
Harmonics	<-20
Power Supply	+15
Alarm Type	TTL
Temperature	-30 to + 70 (guaranteed)
Size	2.8" x 2.5" x 0.6"

External Reference

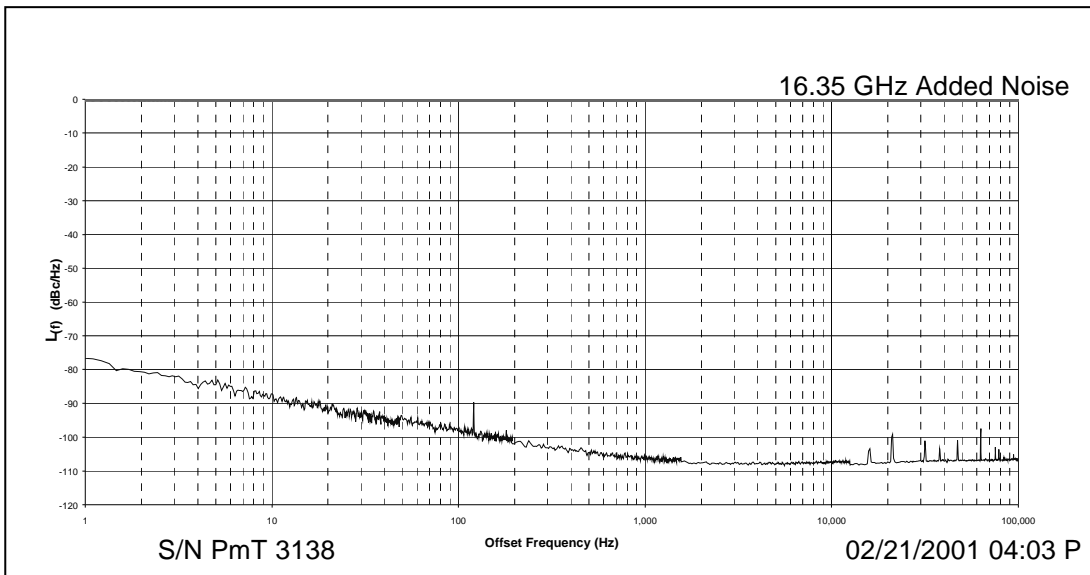
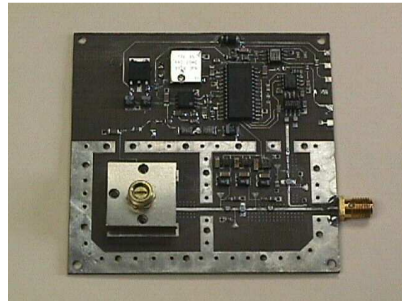


Model: PmT 0231

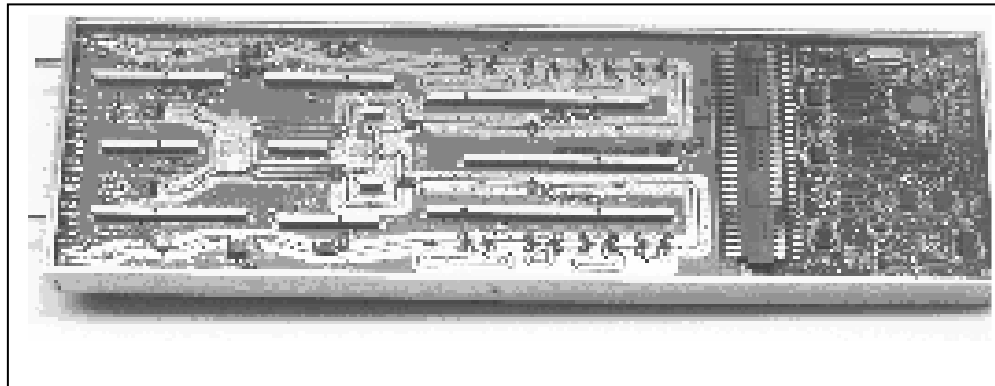
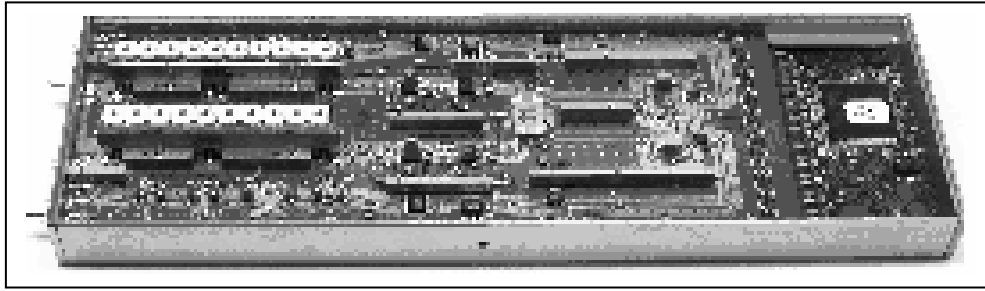
Reference

RF Frequency	6.0 to 26 GHz
Int. Ref. Stability	+/-3 ppm or better
Ref. Power in	0 dBm
RF Power out	10 min
Spurious	<-60
Harmonics	<-20
Power Supply	+15
Alarm Type	TTL
Temperature	-30 to + 70 (guaranteed)
Size	2.5" x 2.5" x 0.75"

Internal

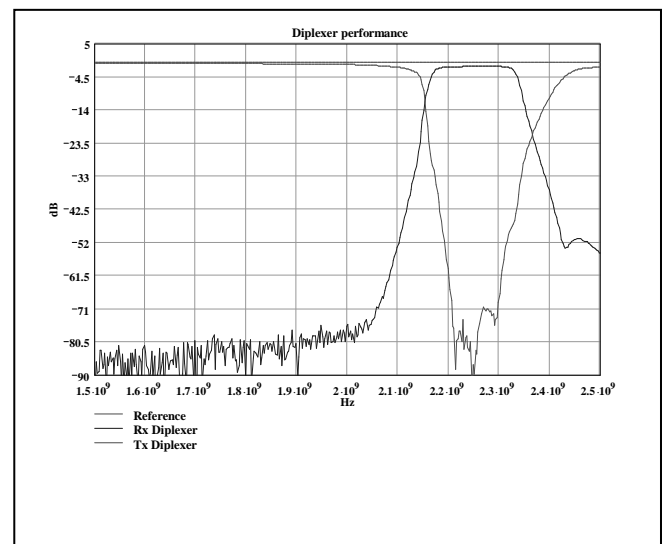


Phase Shifters and Transmit Receive Modules



Princeton Microwave has developed and produced phase shifters, using low-pass and delay line methodology for Transmit Receive modules. The T/R modules have complete on board health monitoring and telemetry. The dual transmit, dual receive modules have a capability of transmitting 1 Watt per channel and can be addressed in a serial or parallel mode.

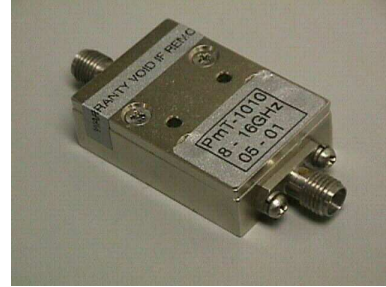
RF Frequency	Receiver: 2.2 to 2.3 GHz Transmitter: 1.7 to 1.8 GHz
RF Power in	Receiver: -30 dBm Transmitter: 0 dBm
RF Power out	Receiver: 0 dBm Transmitter: 30 dBm
Phase Shifting	0 to 360 degrees
Phase Step	22.5 degrees
Power Supply	+/-5V, +8V
Control	TTL Serial Data
Temperature	-30 to + 70
Size	7" x 2.9" x 0.6"



Passive Components Equalizer

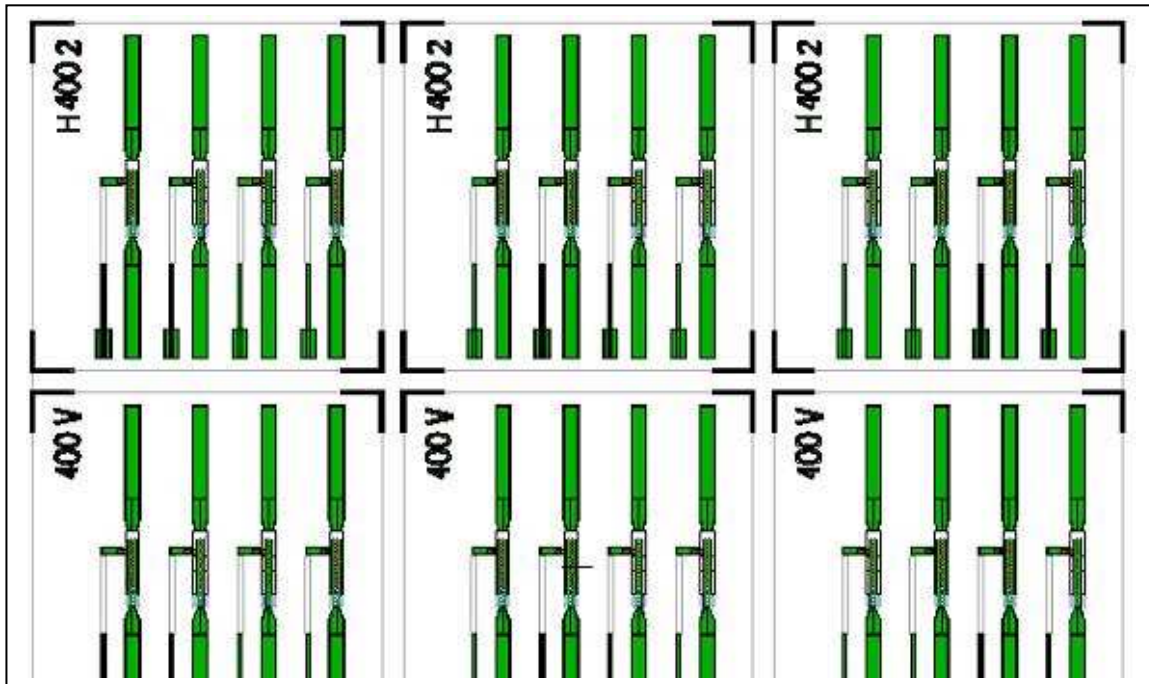
Model: PmT 1010

RF Frequency	8 to 16 GHz
Attenuation Slope:	Straight Line
Linearity	± 0.2 dB
Minimum Attenuation:	0.5 dB max.
Temp. Sensitivity:	0.001 dB/°C
Maximum Input Power:	1/2 W
Operating Temperature	-64°C to 95°C
Size	1.4" x 1" x 0.46"



MEMS DEVICES AND FOUNDARY

Princeton Microwave is at the forefront of MEMs technology for RF and Microwave applications. These include RF switches, Filters, Varactors and Oscillators. Custom designs are available.



PHASE NOISE MEASUREMENT SYSTEM

Princeton Microwave Technology's flexible phase noise measurement system PMT8080 allows accurate phase noise measurement to a far lower level than can be achieved using a spectrum analyzer.

The unit uses a phase locked system (outlined below) to convert the noise sidebands of the signal directly to base band. The base band is sampled using a fast A/D and converted to a data file for analysis.

A simple PC application provides all the necessary control and will run on a 486 or a faster machine. The data file produced can be ported to a MathCAD routine (also supplied) to provide scaled plots of phase noise at various offsets.

The software provided is also capable of indicating any spurious signals that may be present in the spectrum of the unit under test, thus enhancing the systems effectiveness, not only as a design and verification tool, but also as a quality verification tool for production environments.

Wide frequency range

Unlike similar systems, a single phase noise system covers a frequency range of 50 MHz to 18 GHz.

Wide bandwidth

PMT8080 covers over two octaves of RF frequency. Phase noise measurements can be made at offset frequencies from 1 Hz to 10 MHz.

Flexible

The PMT8080 can measure a wide variety of oscillator types, including free running VCOs, locked PLL systems, and test equipment.

Simple to use

PMT8080 uses only three front-panel coaxial connections to the reference signal generator, oscilloscope and the external mixer. Front panel meter and oscilloscope provide an indication of system lock.

Low phase noise floor

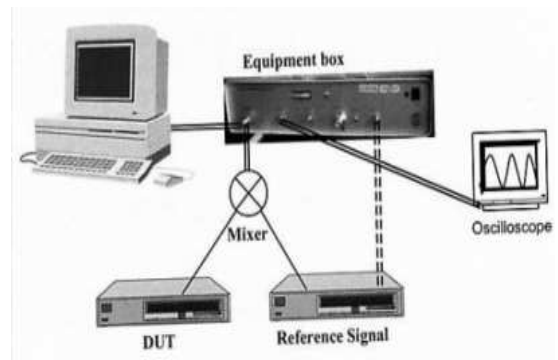
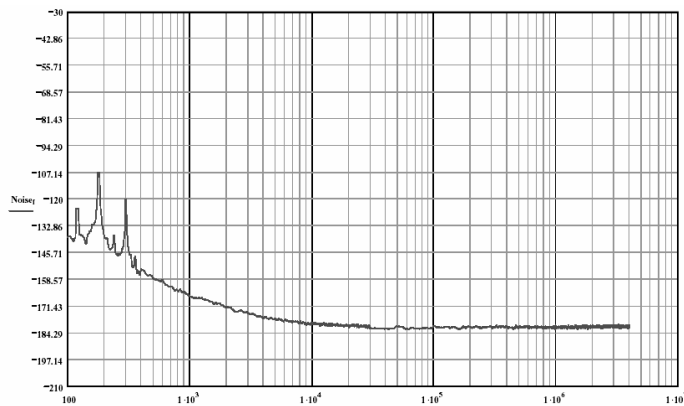
The exceptionally low phase noise floor of the PMT8080 allows even very low noise oscillators to be characterized.

Compact

The small size of the PMT8080 uses only a few square inches of valuable bench area.

SPECIFICATIONS

PARAMETER	UNITS	SPECIFICATIONS
Input Frequency Range	MHz	1- 26000
Oscillator Input level	dBm max	14
Local Oscillator level	dBm max	17
Phase noise floor	KHz	-165 dBc/Hz
	KHz	-175 dBc/Hz
	KHz	-175 dBc/Hz
	MHz	
Operating Temperature	Centigrade	0 to 50
Storage temperature	Centigrade	-50 to 100
Power Requirements	Volts AC	110 Volts
Dimensions	Rack Mounted	19 inch Rack



Terms & Conditions

General Terms and Conditions

Unless otherwise indicated, all price quotations are valid for 30 days. All sales are subject to Net 30 days, from the date of invoice, F.O.B. Mercerville, New Jersey, U.S.A. In accordance with our policy of continuous product improvement, we reserve the right to change product specifications without prior notice. Please contact us to verify that published specifications are current. Our Cage Code is OVSA4.

Ordering Information

Domestic and International orders may be place direct with PmT or through our sales representative in your area. We recommend that overseas customers direct their enquiries to the sales representative in their area first. Orders placed direct will be accepted by telephone or fax. Final acceptance of all purchase orders is made only at PmT. Purchase orders and correspondence should be directed to:-

Princeton Microwave Technology, Unit C-10, 3 Nami Lane, Mercerville NJ 08619
Telephone: 609-586-8140 Fax: 609-586-1231

Shipping Information

Delivery estimates are based on prevailing conditions at the time of quotation or order entry. All agreements as to delivery are subject to the contingencies of fires, accidents, or causes of delay beyond the control of PmT. Shipments are made using the carriers specified by the purchase order, with freight charges prepaid and added to the invoice. When mode of shipment is not specified, shipment will be made using, at our discretion, the best available surface carriers. Packages shall be in accordance with the best commercial practices. Special packaging is available on request.

Warranty

PmT warrants its products for a period of one year from date of shipment to be free of defects in material or workmanship. PmT liability under this warranty is limited to replacing, repairing or issuing a credit, at our option, for product which is returned by purchaser during the warranty period, subject to the following conditions: PmT is contacted for a Return Material Authorization (RMA) number prior to return. The material is returned to PmT with transportation charges prepaid by purchaser.

If upon examination of returned material by PmT, it is determined that the defects were not caused by misuse, neglect, improper handling, alteration, the warranty will be honored.

No express or implied warranties other than those expressly set forth herein shall apply to products sold by PmT and no waiver, alterations or modifications of the condition contained herein shall be valid unless made in writing and signed by an officer of PmT Inc.

Returns

If it is necessary to return merchandise, the following procedure must be followed: Contact PmT to receive a written Return Merchandise Authorization (RMA); Furnish the reason for the intended return, along with the invoice number, purchase order number, part number and date received. Include instructions for replacement shipment, once the return has been processed.



SUNSTAR商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有 10 多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌 IC 芯片和电子元器件的连锁经营综合性国际公司。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM 电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA 软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。专业以现代信息产业（计算机、通讯及传感器）三大支柱之一的传感器为主营业务，专业经营各类传感器的代理、销售生产、网络信息、科技图书资料及配套产品设计、工程开发。我们的专业网站——中国传感器科技信息网（全球传感器数据库）www.SENSOR-IC.COM 服务于全球高科技生产商及贸易商，为企业科技产品开发提供技术交流平台。欢迎各厂商互通有无、交换信息、交换链接、发布寻求代理信息。欢迎国外高科技传感器、变送器、执行器、自动控制产品厂商介绍产品到中国，共同开拓市场。本网站是关于各种传感器-变送器-仪器仪表及工业自动化大型专业网站，深入到工业控制、系统工程计 测量、自动化、安防报警、消费电子等众多领域，把最新的传感器-变送器-仪器仪表买卖信息，最新技术供求，最新采购商，行业动态，发展方向，最新的技术应用和市场资讯及时的传递给广大科技开发、科学研究、产品设计人员。本网站已成功为石油、化工、电力、医药、生物、航空、航天、国防、能源、冶金、电子、工业、农业、交通、汽车、矿山、煤炭、纺织、信息、通信、IT、安防、环保、印刷、科研、气象、仪器仪表等领域从事科学研究、产品设计、开发、生产制造的科技人员、管理人员、和采购人员提供满意服务。我们公司专业生产、代理、经销、销售各种传感器、变送器、敏感元器件、开关、执行器、仪器仪表、自动化控制系统：专业从事设计、生产、销售各种传感器、变送器、各种测控仪表、热工仪表、现场控制器、计算机控制系统、数据采集系统、各类环境监控系统、专用控制系统应用软件以及嵌入式系统开发及应用等工作。如热敏电阻、压敏电阻、温度传感器、温度变送器、湿度传感器、湿度变送器、气体传感器、气体变送器、压力传感器、压力变送、称重传感器、物（液）位传感器、物（液）位变送器、流量传感器、流量变送器、电流（压）传感器、溶氧传感器、霍尔传感器、图像传感器、超声波传感器、位移传感器、速度传感器、加速度传感器、扭距传感器、红外传感器、紫外传感器、火焰传感器、激光传感器、振动传感器、轴角传感器、光电传感器、接近传感器、干簧管传感器、继电器传感器、微型电泵、磁敏（阻）传感器、压力开关、接近开关、光电开关、色标传感器、光纤传感器、齿轮测速传感器、时间继电器、计数器、计米器、温控仪、固态继电器、调压模块、电磁铁、电压表、电流表等特殊传感器。同时承接传感器应用电路、产品设计和自动化工程项目。

更多产品请看本公司产品专用销售网站：

商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

商斯达工控安防网：<http://www.pc-ps.net/>

商斯达电子元器件网：<http://www.sunstare.com/>

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达消费电子产品网：<http://www.icasic.com/>

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