

Datasheet

Description

Farran Technology offers Antenna Measurement Extension Modules for extending frequency range of customer systems to 500 GHz



Features

- ~ Coverage 40-500GHz
- ~ High output power
- ~ High dynamic range
- ~ Low weight and compact construction
- ~ Compatible with Agilent antenna measurement systems

Applications

- ~ Near and far field antenna measurement

Accessories

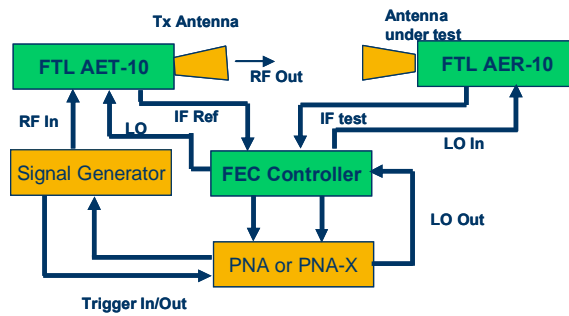
- ~ AC/DC converter with 2m cable
- ~ Manual

Specification (AER-02)	Unit	Min	Typ	Max
RF Frequency In	GHz	325		500
LO Input Frequency	GHz	11.6		17.85
RF Power Input	dBm	5		10
LO Input Power	dBm	5		10
LO Harmonic Number			28	
RF in VSWR			<1.4:1	
RF Port			WR-02	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Minimum Detectable Signal	dBm	<90		
DC Supply		12V@0.5A		

Datasheet

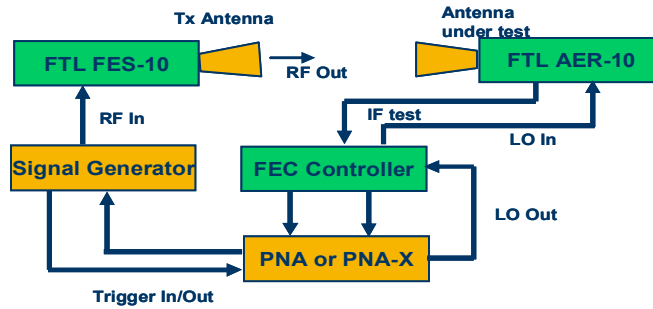
Specification (AET-02)	Unit	Min	Typ	Max
RF Frequency Out	GHz	325		500
RF Frequency In	GHz	10.83		16.67
RF Power Out	dBm		-20	
RF Power In	dBm	5		10
LO Harmonic Number			24	
RF Out VSWR			<3.0:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-02	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	11.6		17.85
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

**Antenna Measurement System with Reference Signal
 Coupled from Transmit Unit**

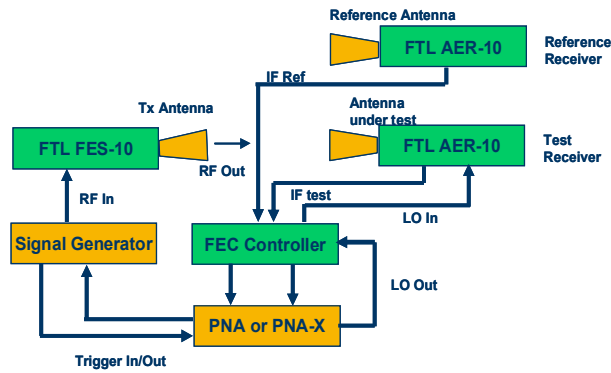


Datasheet

Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



Notes:

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Datasheet

Description

Farran Technology offers Antenna Measurement Extension Modules for extending frequency range of customer systems to 325 GHz



Features

- ~ Coverage 40-325GHz
- ~ High output power
- ~ High dynamic range
- ~ Low weight and compact construction
- ~ Compatible with Agilent antenna measurement systems

Applications

- ~ Near and far field antenna measurement

Accessories

- ~ AC/DC converter with 2m cable
- ~ Manual

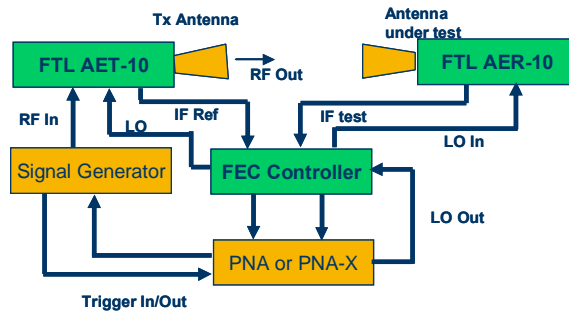
Specification (AER-03)	Unit	Min	Typ	Max
RF Frequency In	GHz	220		325
LO Input Frequency	GHz	9.1		13.5
RF Power Input	dBm	5		10
LO Input Power	dBm	5		10
LO Harmonic Number			24	
RF in VSWR			<1.4:1	
RF Port			WR-03	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Noise Figure (typ)	dB	45		
Minimum Detectable Signal	dBm	<110		
System Dynamic Range (typ)*	dB	>100 dB		
DC Supply		12V@0.5A		

* For IF BW of 10 Hz used together with AET-03

Datasheet

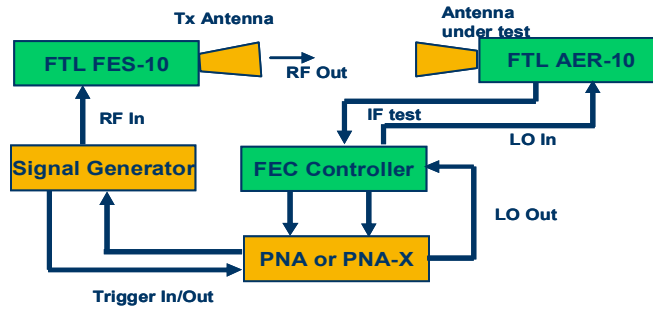
Specification (AET-03)	Unit	Min	Typ	Max
RF Frequency Out	GHz	220		325
RF Frequency In	GHz	12.2		18.05
RF Power Out	dBm		-12	
RF Power In	dBm	5		10
LO Harmonic Number			24	
RF Out VSWR			<3.0:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-03	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	9.1		13.5
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

Antenna Measurement System with Reference Signal Coupled from Transmit Unit

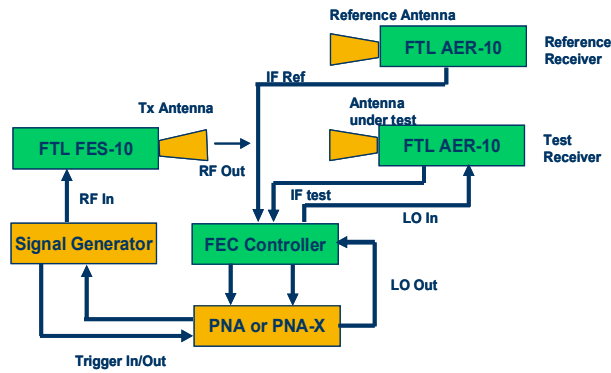


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Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



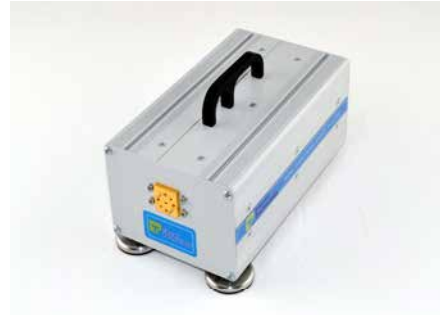
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Datasheet

Description

Farran Technology offers Antenna Measurement Extension Modules for extending frequency range of customer systems to 325 GHz



Features

- ~ Coverage 40-325GHz
- ~ High output power
- ~ High dynamic range
- ~ Low weight and compact construction
- ~ Compatible with Agilent antenna measurement systems

Applications

- ~ Near and far field antenna measurement

Accessories

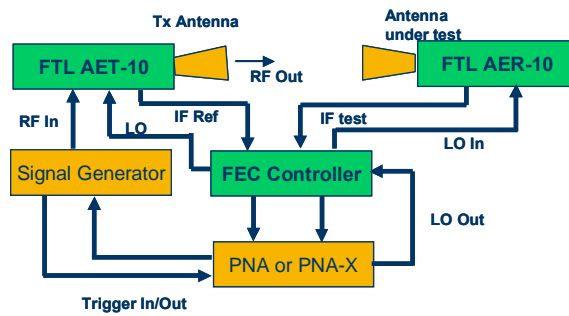
- ~ AC/DC converter with 2m cable
- ~ Manual

Specification (AER-03)	Unit	Min	Typ	Max
RF Frequency In	GHz	220		325
LO Input Frequency	GHz	9.1		13.5
RF Power Input	dBm	5		10
LO Input Power	dBm	5		10
LO Harmonic Number			24	
RF in VSWR			<1.4:1	
RF Port			WR-03	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Minimum Detectable Signal	dBm	<100		
DC Supply		12V@0.5A		

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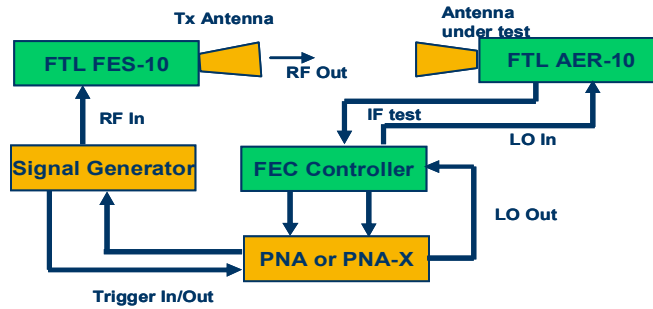
Specification (AET-03)	Unit	Min	Typ	Max
RF Frequency Out	GHz	220		325
RF Frequency In	GHz	12.2		18.05
RF Power Out	dBm		-12	
RF Power In	dBm	5		10
LO Harmonic Number			24	
RF Out VSWR			<3.0:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-03	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	9.1		13.5
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

**Antenna Measurement System with Reference Signal
 Coupled from Transmit Unit**

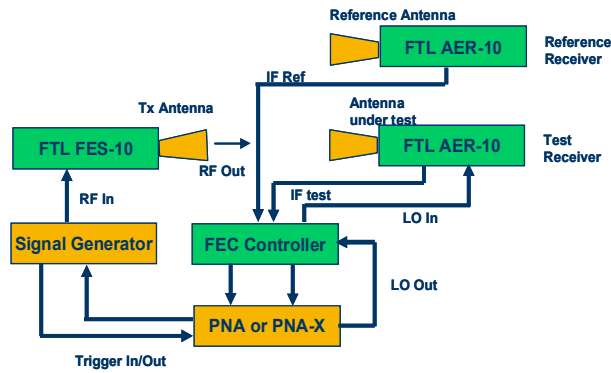


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Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



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Applications

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Accessories

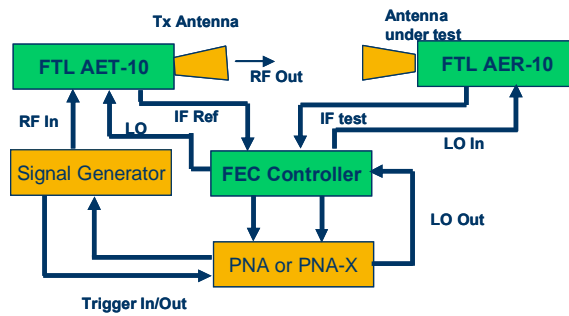
- ~ AC/DC converter with 2m cable
- ~ Manual

Specification (AER-15)	Unit	Min	Typ	Max
RF Frequency In	GHz	140		220
LO Input Frequency	GHz	11.67		18.33
RF Power Input	dBm			0
LO Input Power	dBm	5		10
LO Harmonic Number			12	
RF in VSWR			<1.4:1	
RF Port			WR-05	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Minimum Detectable Signal	dBm	<110		
DC Supply		12V@0.5A		

Datasheet

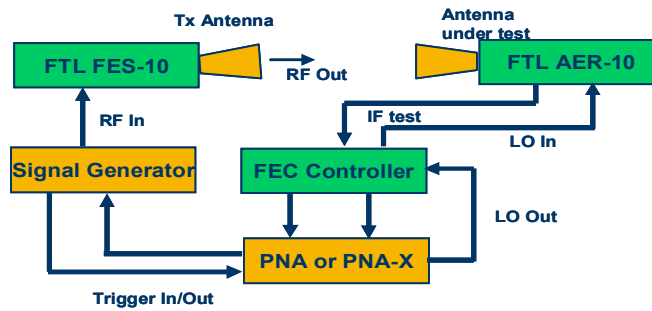
Specification (AET-15)	Unit	Min	Typ	Max
RF Frequency Out	GHz	140		220
RF Frequency In	GHz	11.67		18.33
RF Power Out	dBm		-8	
RF Power In	dBm	5		10
LO Harmonic Number			12	
RF Our VSWR			<1.4:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-05	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	11.67		18.33
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

**Antenna Measurement System with Reference Signal
 Coupled from Transmit Unit**

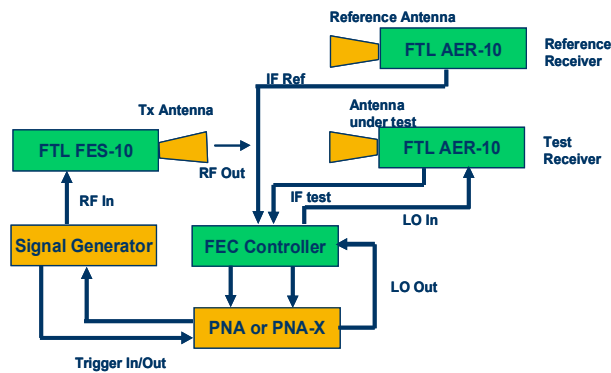


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Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



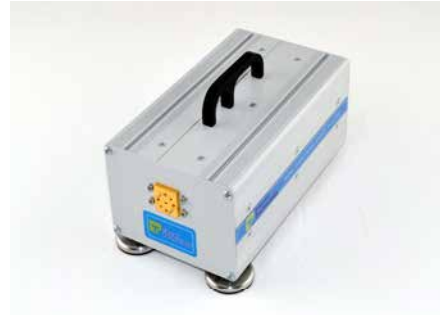
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Description

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Applications

- ~ Near and far field antenna measurement

Accessories

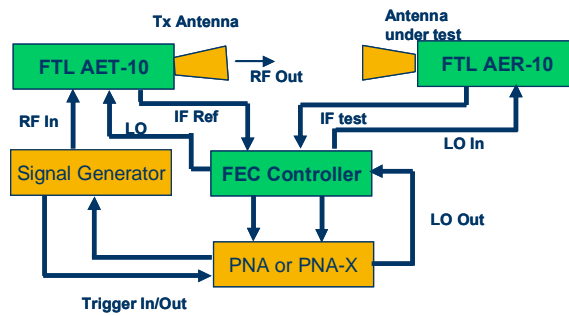
- ~ AC/DC converter with 2m cable
- ~ Manual

Specification (AER-15)	Unit	Min	Typ	Max
RF Frequency In	GHz	110		170
LO Input Frequency	GHz	10		17
RF Power Input	dBm			0
LO Input Power	dBm	5		10
LO Harmonic Number			10	
RF in VSWR			<1.4:1	
RF Port			WR-06	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Minimum Detectable Signal	dBm	<120		
DC Supply		12V@0.5A		

Datasheet

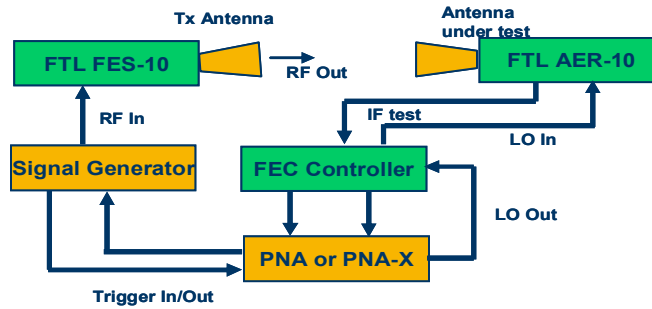
Specification (AET-15)	Unit	Min	Typ	Max
RF Frequency Out	GHz	110		170
RF Frequency In	GHz	9.14		14.2
RF Power Out	dBm		-6	
RF Power In	dBm	5		10
LO Harmonic Number			10	
RF Our VSWR			<1.4:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-06	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	10		17
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

**Antenna Measurement System with Reference Signal
 Coupled from Transmit Unit**

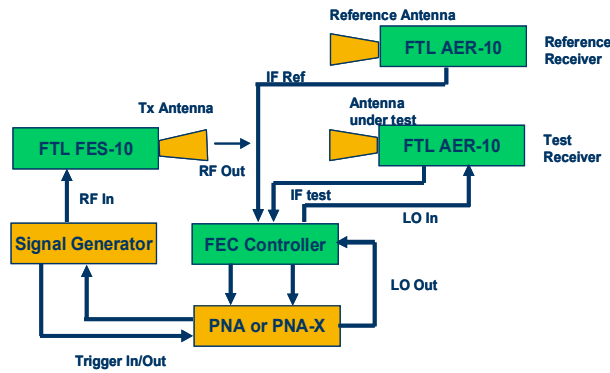


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Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



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Farran Technology offers Antenna Measurement Extension Modules for extending frequency range of customer systems to 325 GHz



Features

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Applications

- Near and far field antenna measurement

Accessories

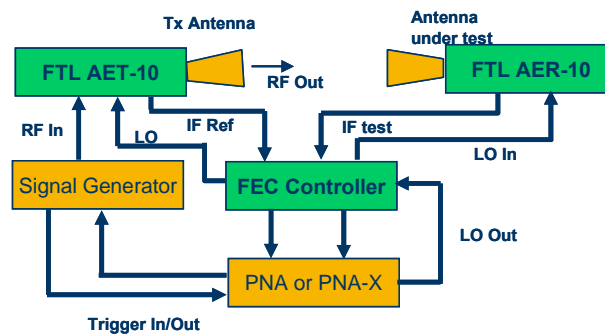
- AC/DC converter with 2m cable
- Manual

Specification (AER-10)	Unit	Min	Typ	Max
RF Frequency In	GHz	75		110
LO Input Frequency	GHz	9.4		13.8
RF Power Input	dBm			0
LO Input Power	dBm	0		10
LO Harmonic Number			8	
RF in VSWR			<1.4:1	
RF Port			WR-10	
IF Frequency	MHz	5		1000
LO/IF In Port			SMA(f)	
Input LO Damage Level	dBm		15	
Minimum Detectable Signal	dBm		<120	
DC Supply			12V@0.5A	

Datasheet

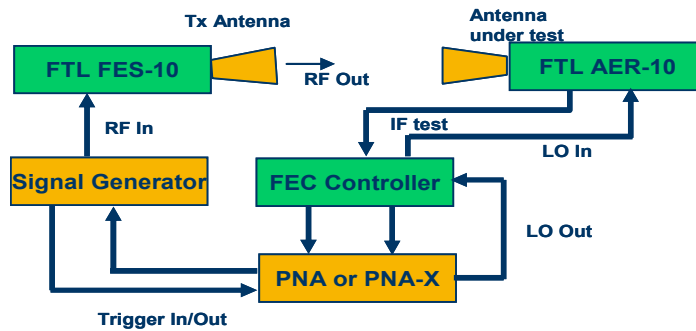
Specification (AET-10)	Unit	Min	Typ	Max
RF Frequency Out	GHz	75		110
RF Frequency In	GHz	12.5		18.4
RF Power Out	dBm		5	
RF Power In	dBm	0		10
LO Harmonic Number			8	
RF Our VSWR			<1.4:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-10	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	9.4		13.8
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

Antenna Measurement System with Reference Signal Coupled from Transmit Unit

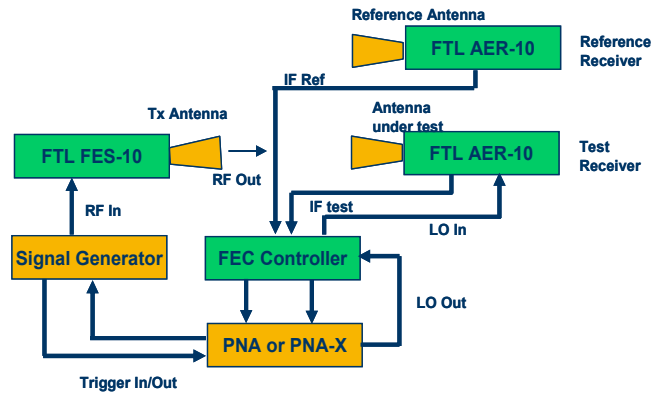


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Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



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Description

Farran Technology offers Antenna Measurement Extension Modules for extending frequency range of customer systems to 325 GHz



Features

- Coverage 40-325GHz
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- High dynamic range
- Low weight and compact construction
- Compatible with Agilent antenna measurement systems

Applications

- Near and far field antenna measurement

Accessories

- AC/DC converter with 2m cable
- Manual

Specification (AER-12)	Unit	Min	Typ	Max
RF Frequency In	GHz	60		90
LO Input Frequency	GHz	10		15
RF Power Input	dBm			5
LO Input Power	dBm	0		10
LO Harmonic Number			6	
RF in VSWR			<1.4:1	
RF Port		WR-12		
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Detectable Signal	dBm	<115		
DC Supply		12V@0.5A		

Datasheet

Specification (AET-12)	Unit	Min	Typ	Max
RF Frequency Out	GHz	60		90
RF Frequency In	GHz	10		15
RF Power Out	dBm		5	
RF Power In	dBm	0		10
LO Harmonic Number			6	
RF Our VSWR			<1.4:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-12	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	10		15
RF In Port			SMA(f)	
Input LO Damage Level	dBm		15	
DC Supply			12V@1.5A	

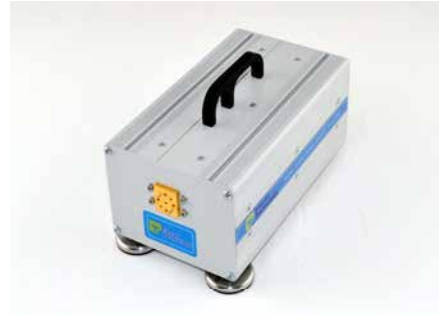
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Description

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Features

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Applications

- ~ Near and far field antenna measurement

Accessories

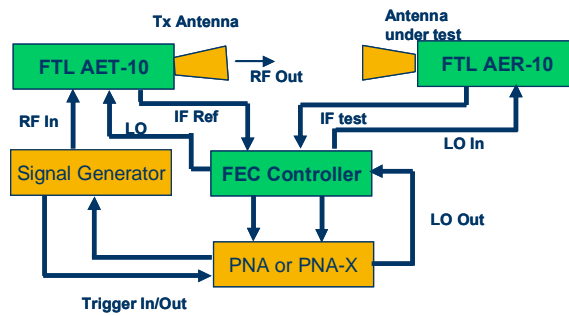
- ~ AC/DC converter with 2m cable
- ~ Manual

Specification (AER-15)	Unit	Min	Typ	Max
RF Frequency In	GHz	50		75
LO Input Frequency	GHz	8.33		12.5
RF Power Input	dBm			0
LO Input Power	dBm	0		10
LO Harmonic Number			6	
RF in VSWR			<1.4:1	
RF Port			WR-15	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Minimum Detectable Signal	dBm	<120		
DC Supply		12V@0.5A		

Datasheet

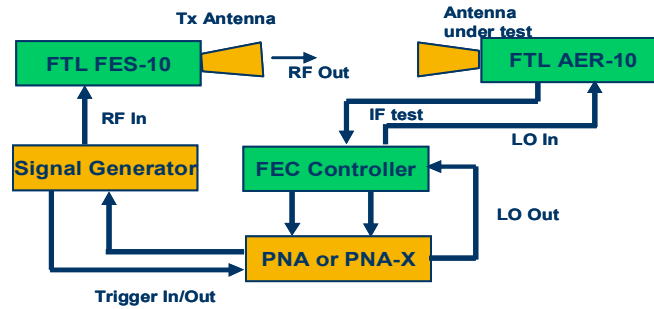
Specification (AET-15)	Unit	Min	Typ	Max
RF Frequency Out	GHz	75		110
RF Frequency In	GHz	12.5		18.75
RF Power Out	dBm		7	
RF Power In	dBm	0		10
LO Harmonic Number			6	
RF Our VSWR			<1.4:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-15	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	8.33		12.5
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

**Antenna Measurement System with Reference Signal
 Coupled from Transmit Unit**

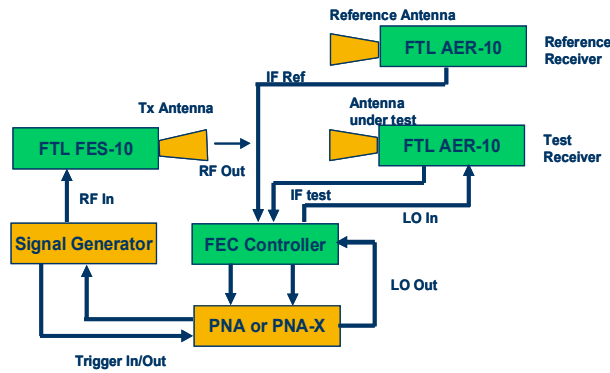


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Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



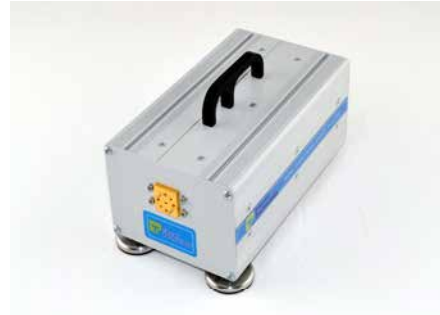
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Features

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- ~ High dynamic range
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Applications

- ~ Near and far field antenna measurement

Accessories

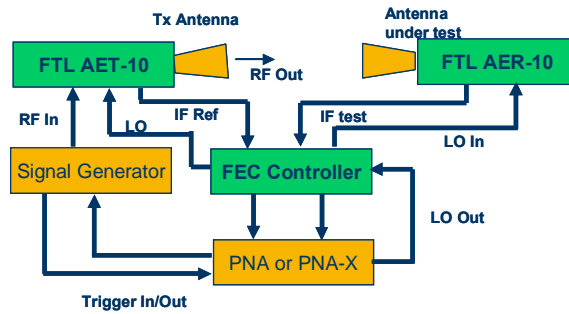
- ~ AC/DC converter with 2m cable
- ~ Manual

Specification (AER-15)	Unit	Min	Typ	Max
RF Frequency In	GHz	40		60
LO Input Frequency	GHz	10		15
RF Power Input	dBm			0
LO Input Power	dBm	5		10
LO Harmonic Number			4	
RF in VSWR			<1.4:1	
RF Port			WR-19	
IF Frequency	MHz	5		1000
LO/IF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
Minimum Detectable Signal	dBm	<125		
DC Supply		12V@0.5A		

Datasheet

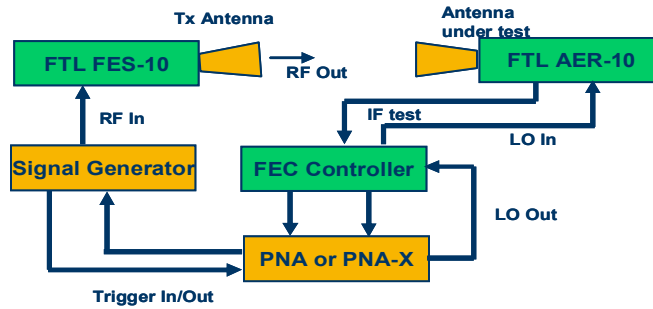
Specification (AET-15)	Unit	Min	Typ	Max
RF Frequency Out	GHz	40		60
RF Frequency In	GHz	10		15
RF Power Out	dBm		+8	
RF Power In	dBm	5		10
LO Harmonic Number			4	
RF Our VSWR			<1.4:1	
RF In VSWR			<1.4:1	
RF Out Port			WR-19	
IF Frequency	MHz	5		1000
LO Input Frequency	GHz	10		15
RF In Port		SMA(f)		
Input LO Damage Level	dBm	15		
DC Supply		12V@1.5A		

**Antenna Measurement System with Reference Signal
 Coupled from Transmit Unit**

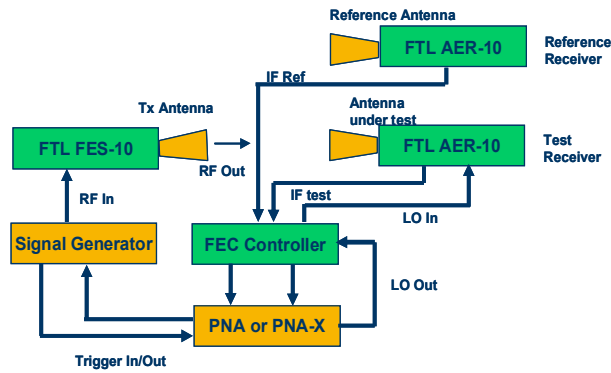


Datasheet

Antenna Measurement System without Reference Signal



Antenna Measurement System with Reference Receiver



Notes:

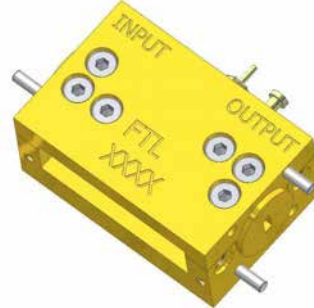
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Description

A comprehensive range of MMIC-based amplifiers covering 18-110GHz region are available. FLNA-10-0005 is a full W-band low noise amplifier.

Interfaces can be designed to suit the application as well as custom designs being available,



Features

- ~ Low noise figures
- ~ Full waveguide band
- ~ Single power supplies
- ~ Compact size

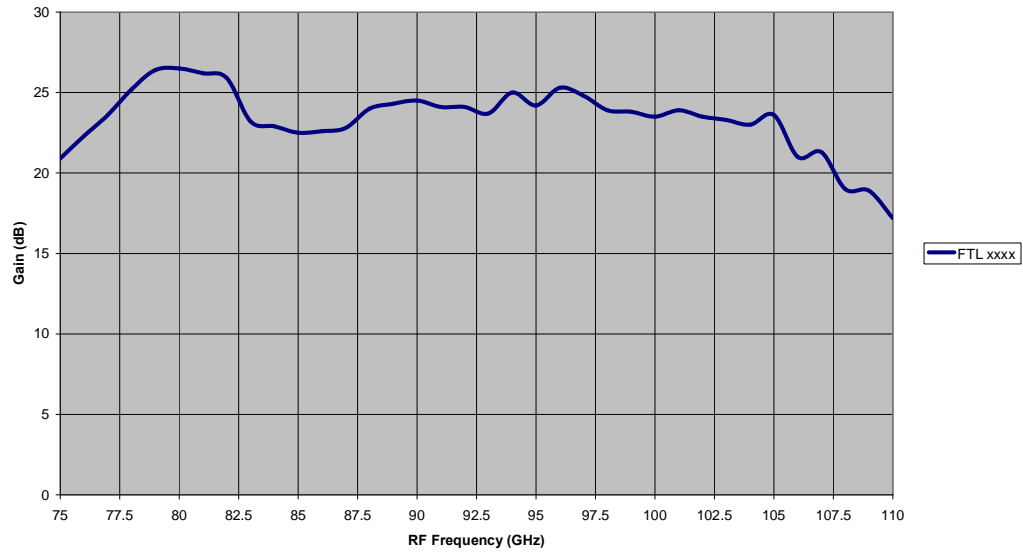
Applications

- ~ Communication receivers
- ~ Radar front ends
- ~ Driver amplifiers
- ~ Point to point communication

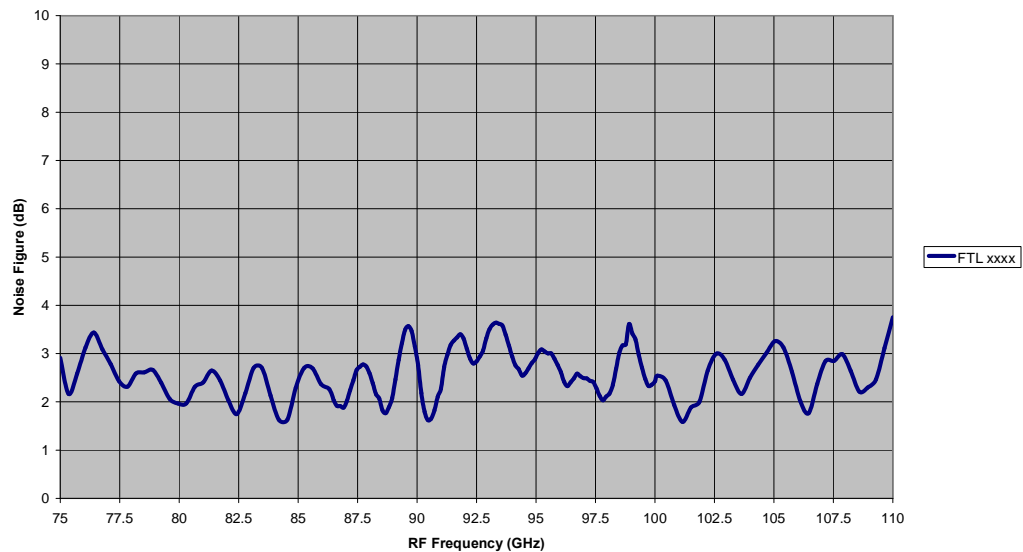
Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Bandwidth	GHz		35	
Noise Figure	dB		4	6
Gain	dB	15	20	
DC Power	V/mA		6/50	
VSWR			2.0:1	

Datasheet

Gain v RF Frequency



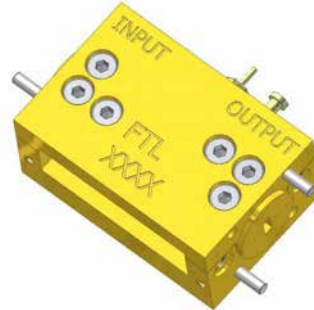
FLNA-10 Noise Figure v RF Frequency



Datasheet

Description

A comprehensive range of MMIC-based amplifiers covering 18-110GHz region are available. Interfaces can be designed to suit the application as well as custom designs being available,



Features

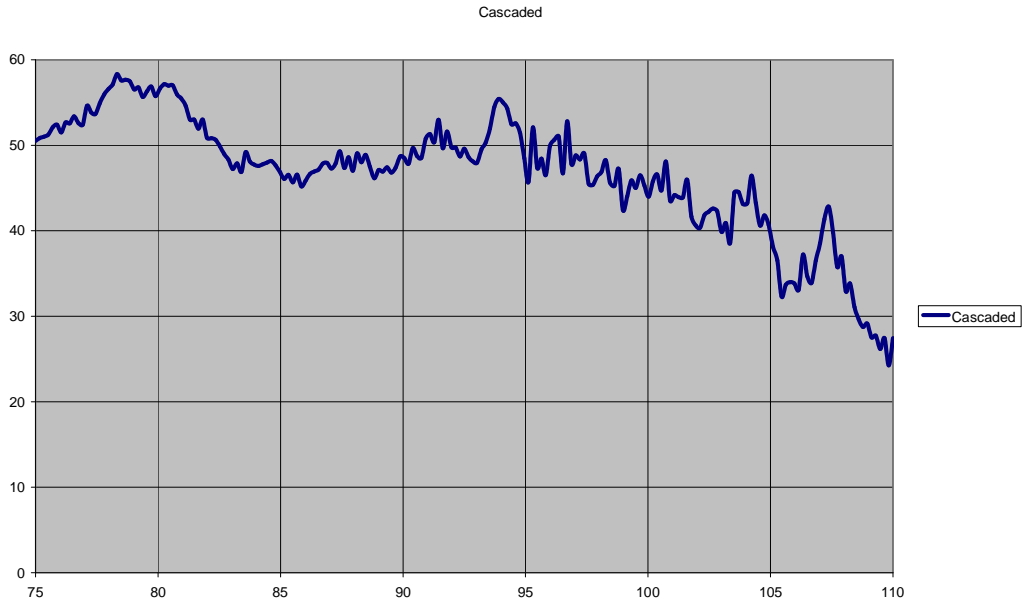
- ~ Low noise figures
- ~ Full waveguide band
- ~ Single power supplies
- ~ Compact size

Applications

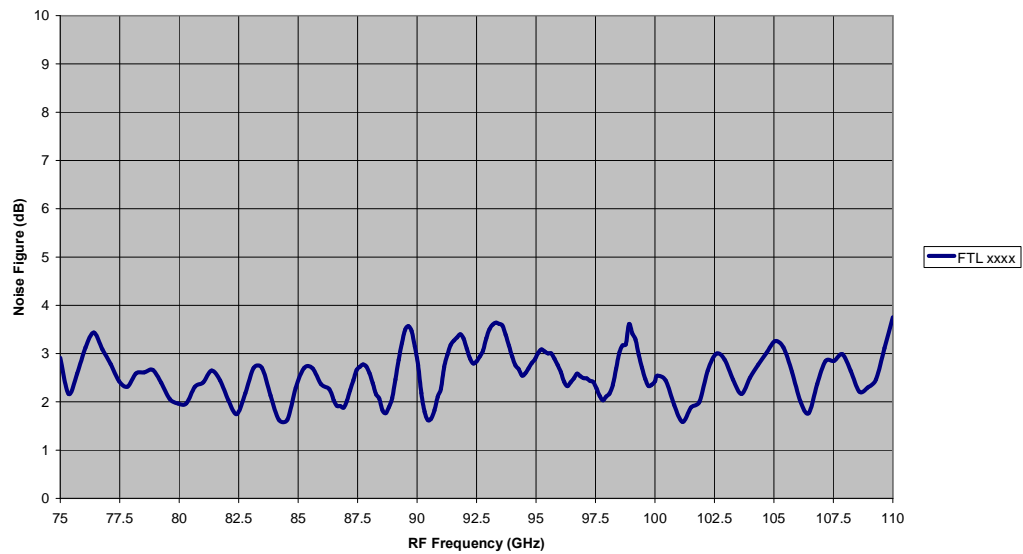
- ~ Communication receivers
- ~ Radar front ends
- ~ Driver amplifiers
- ~ Point to point communication

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Bandwidth	GHz		35	
Noise Figure	dB		4	6
Gain	dB	24	45	
DC Power	V/mA		6/100	
Maximum Input RF	dBm		-60	
VSWR			2.0:1	

Datasheet



FLNA-10 Noise Figure v RF Frequency

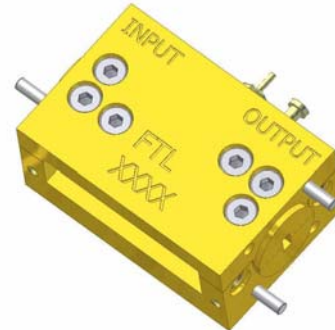


Datasheet

Description

A comprehensive range of MMIC-based amplifiers covering 18-110GHz region are available. FLNA-10-110 is a full W-band low noise amplifier.

Interfaces can be designed to suit the application as well as custom designs being available,



Features

- Low noise figures
- Full waveguide band
- Single power supplies
- Compact size

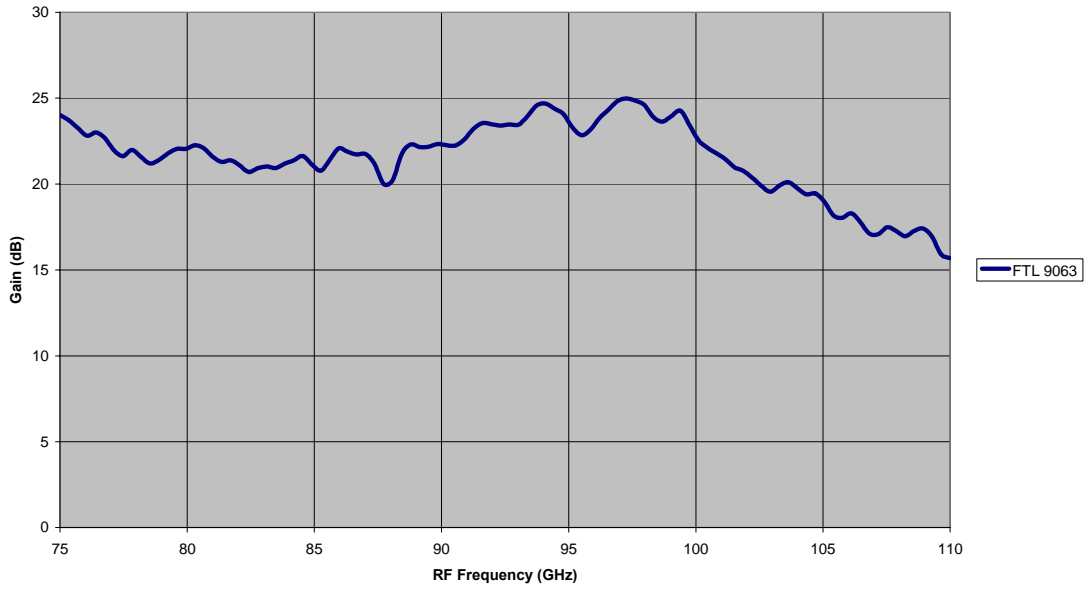
Applications

- Communication receivers
- Radar front ends
- Driver amplifiers
- Point to point communication

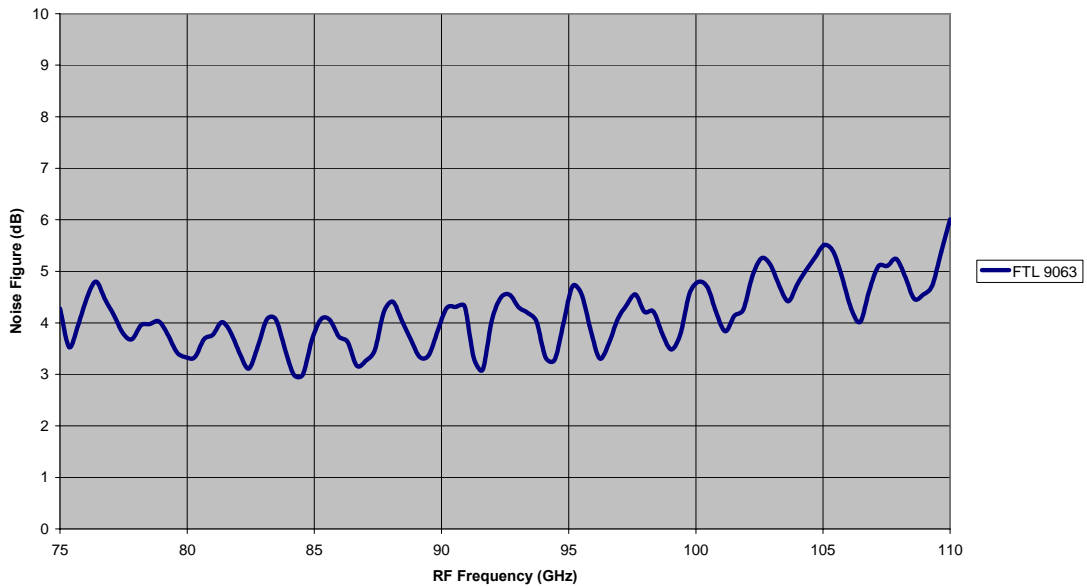
Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Bandwidth	GHz		35	
Noise Figure	dB		4	6
Gain	dB	15	20	
DC Power	V/mA		6/50	
VSWR			2.0:1	

Datasheet

FTL 9063 Gain v RF Frequency



FTL 9063 Noise Figure v RF Frequency

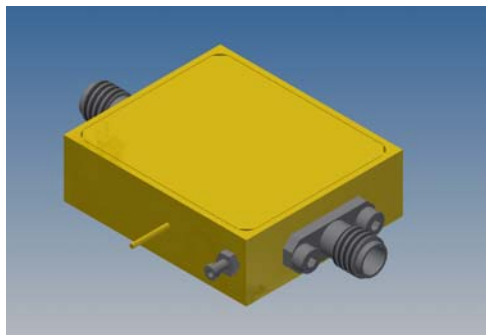


Datasheet

Description

A comprehensive range of MMIC-based amplifiers covering 18-110GHz region are available. The FLNA-28 is a full Ka-band low noise amplifier.

Interfaces can be designed to suit the application as well as custom designs being available,



Features

- Low noise figures
- Full waveguide band
- Single power supplies
- Compact size

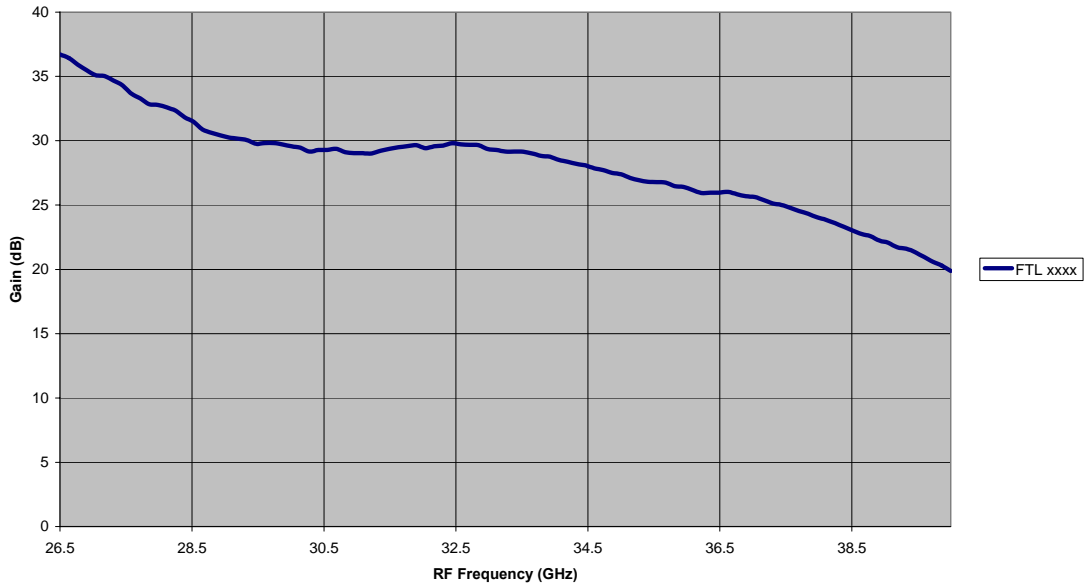
Applications

- Communication receivers
- Radar front ends
- Driver amplifiers
- Point to point communication

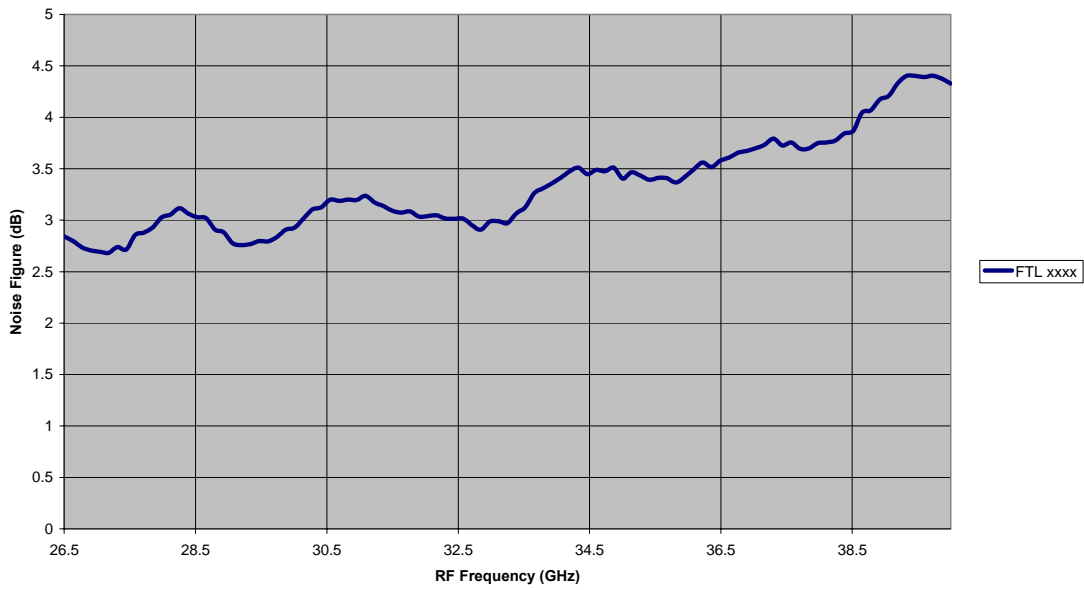
Specification	Unit	Min	Typ	Max
Frequency	GHz	26.5		40
Bandwidth	GHz		13.5	
Noise Figure	dB		4	5
Gain	dB		20	
DC Power	V/ma		8/100	
VSWR			2.0:1	

Datasheet

Gain v RF Frequency



Noise Figure v RF Frequency

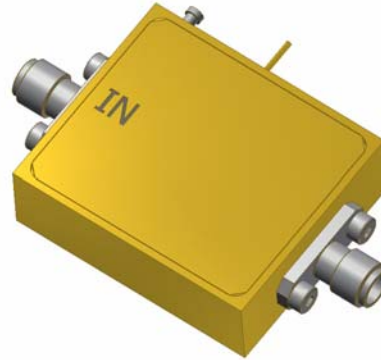


Datasheet

Description

A comprehensive range of MMIC-based amplifiers covering 18-110GHz region are available. The FLNA-42 is a full K-band low noise amplifier.

Interfaces can be designed to suit the application as well as custom designs being available,



Features

- Low noise figures
- Full waveguide band
- Single power supplies
- Compact size

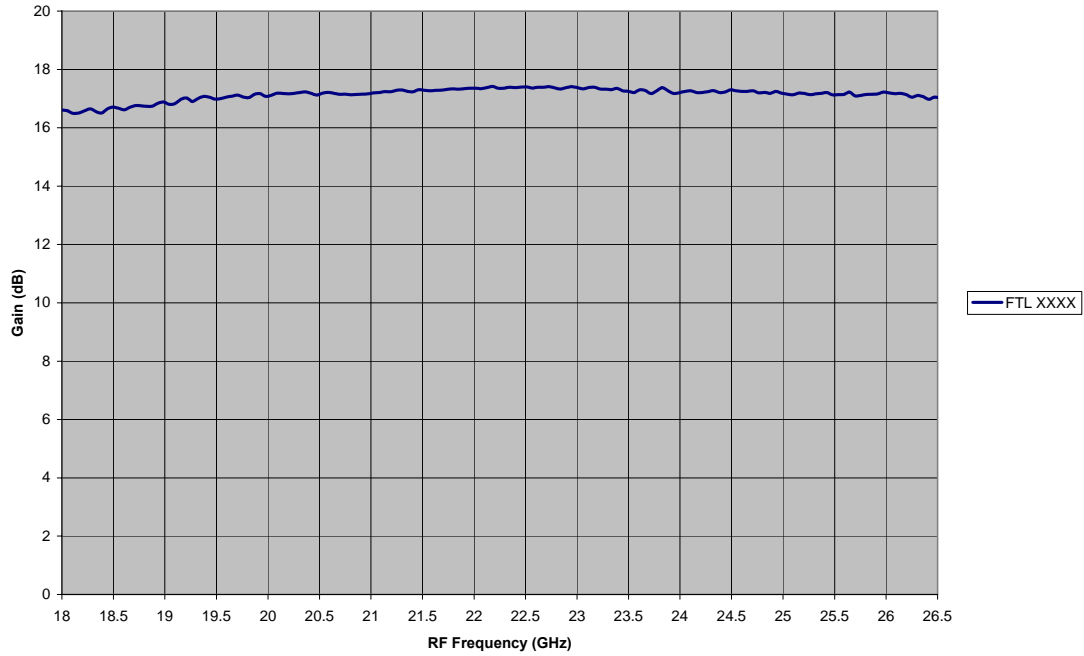
Applications

- Communication receivers
- Radar front ends
- Driver amplifiers
- Point to point communication

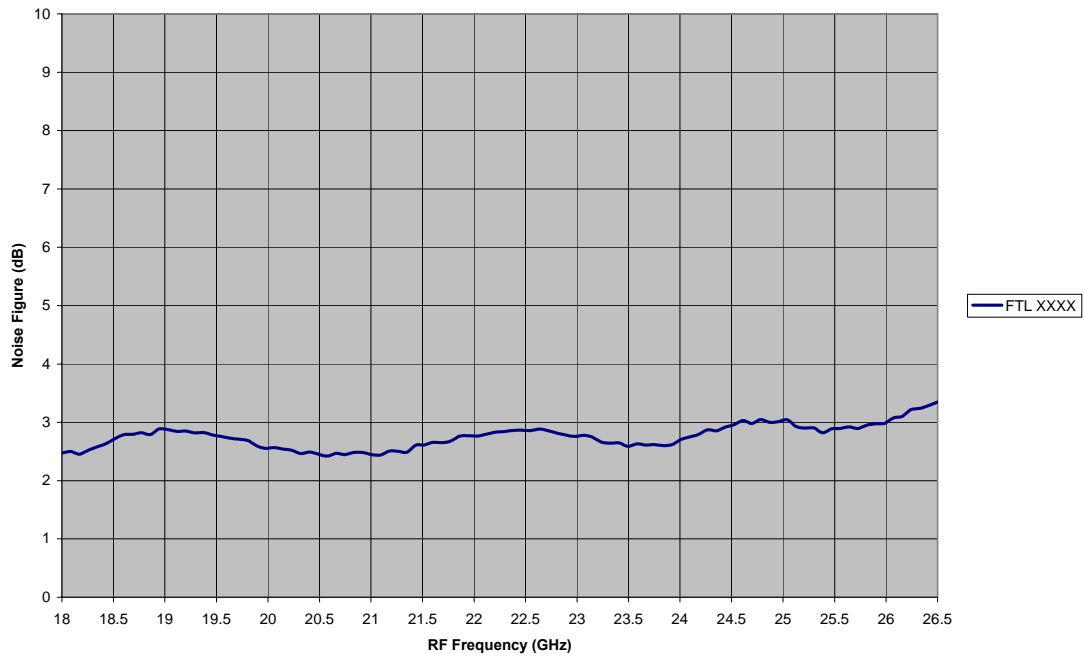
Specification	Unit	Min	Typ	Max
Frequency	GHz	18		26.5
Bandwidth	GHz		8.5	
Noise Figure	dB		3.0	3.5
Gain	dB		15	
DC Power	V/mA		8/100	
VSWR			2.0:1	

Datasheet

FTLXXXX Gain v RF Frequency



FTLXXXX Noise Figure v RF Frequency

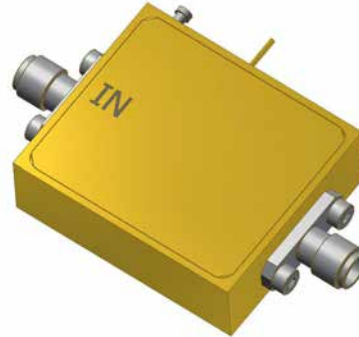


Datasheet

Description

A comprehensive range of MMIC-based amplifiers covering 18-110 GHz region are available. The FLNA-42-30 is a full K-band low noise amplifier.

Interfaces can be designed to suit the application as well as custom designs being available,



Features

- Low noise figures
- Full waveguide band
- Single power supplies
- Compact size

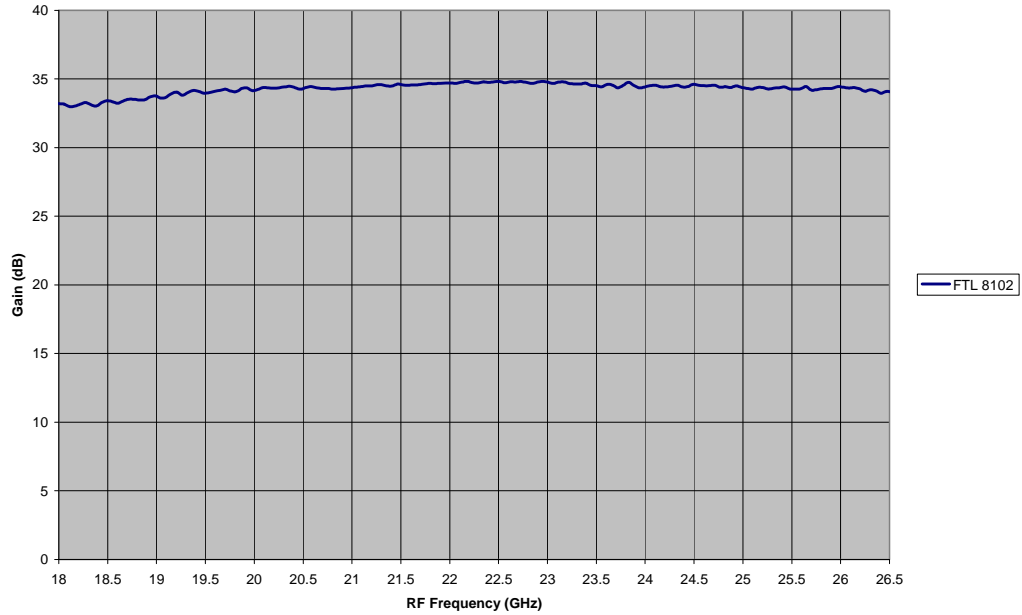
Applications

- Communication receivers
- Radar front ends
- Driver amplifiers
- Point to point communication

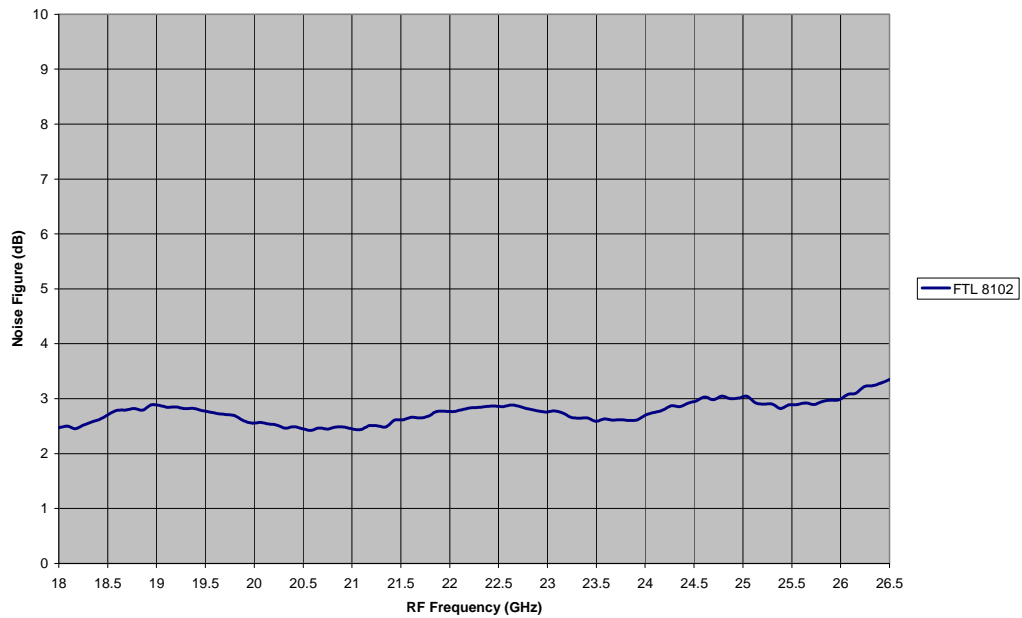
Specification	Unit	Min	Typ	Max
Frequency	GHz	18		26.5
Bandwidth	GHz		8.5	
Noise Figure	dB		3.0	3.5
Gain	dB		30	
DC Power	V/mA		8/200	
VSWR			2.0:1	

Datasheet

FTL8102 Gain v RF Frequency



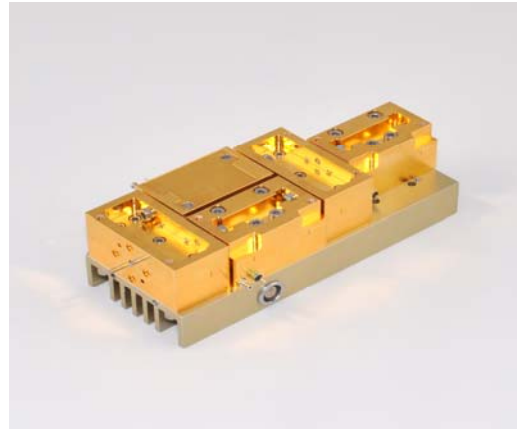
FTL8102 Noise Figure v RF Frequency



Datasheet

Description

A state of the art W-Band high power amplifier giving 1W of output power over a broad band in a WR-10 waveguide assembly. The unit comes with integrated cooling to allow operation without the need for expensive heat-sinking or specific mounting to dissipate heat.



Features

- High gain
- P1dB
- Wide bandwidth

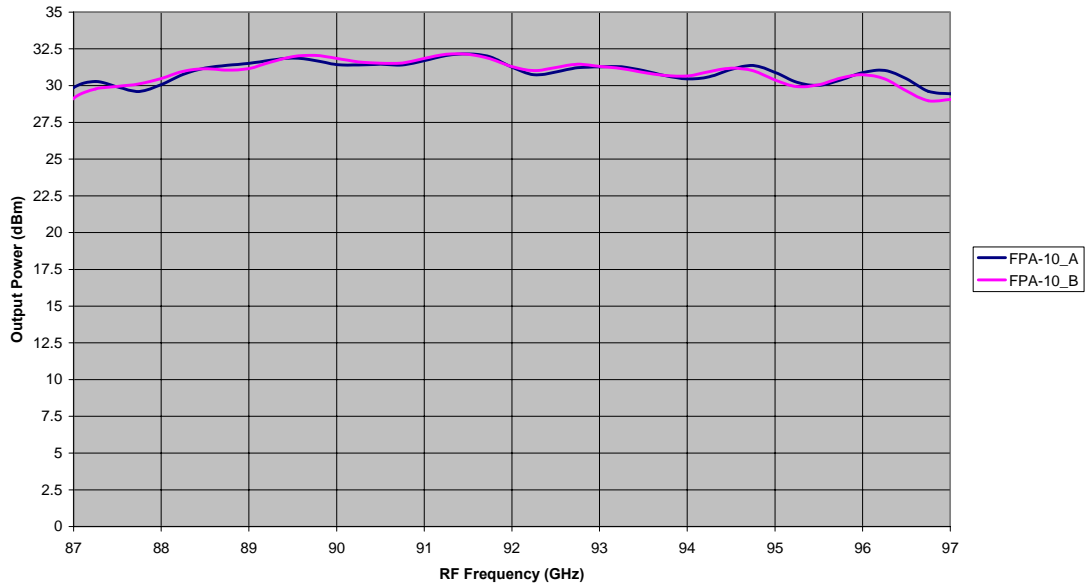
Applications

- Communication receivers/Wireless links
- Driver amplifiers
- Point to point communication
- Sensors/Radars

Specification	Unit	Min	Typ	Max
Frequency	GHz	88		96
Bandwidth	GHz		8	
Output Power	dBm		30	
Gain	dB		25	
DC Power	V/ma		15/1200	
VSWR			2.5:1	

Datasheet

Output Power v RF Frequency



Datasheet

Description

A medium power full WR-10 waveguide band amplifier giving +10 dBm typical output power.



Features

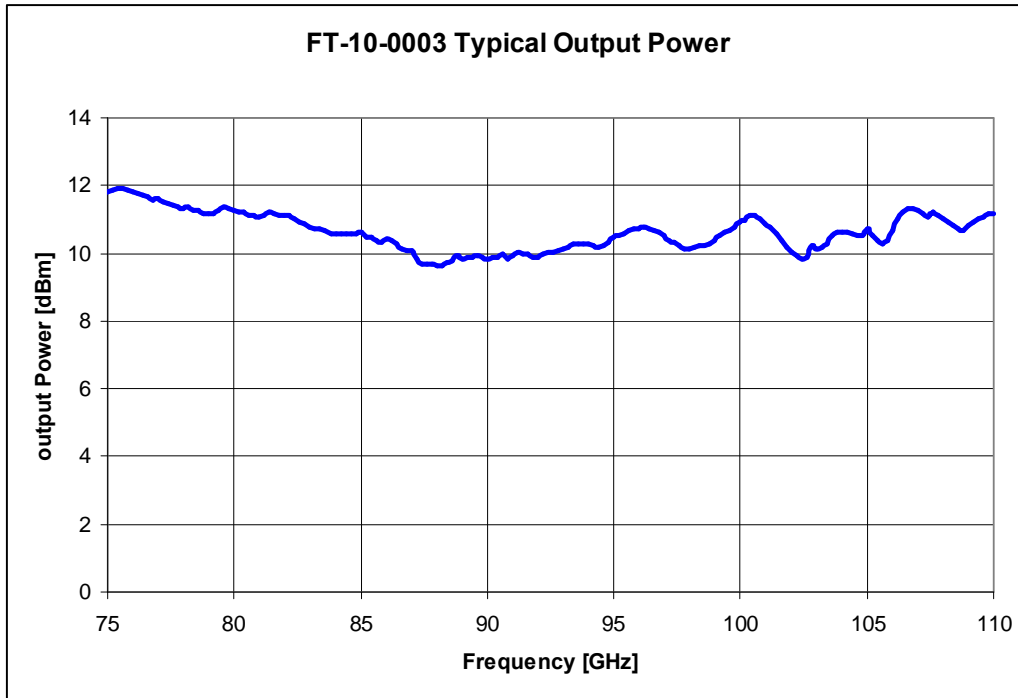
- ~ High gain
- ~ High P1dB
- ~ Wide bandwidth

Applications

- ~ Communication receivers/Wireless links
- ~ Driver amplifiers
- ~ Point to point communication
- ~ Sensors/Radars

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Bandwidth	GHz		35	
Output Power Psat	dBm		+10	
Gain	dB		10	
DC Power	V/mA		6/150	
In/Out VSWR	-		2.5:1	

Datasheet



Datasheet

Description

A state of the art W-Band high power amplifier giving 0.5W of output power over a broad band in a WR-10 waveguide assembly.



Features

- High gain
- High P1dB
- Wide bandwidth

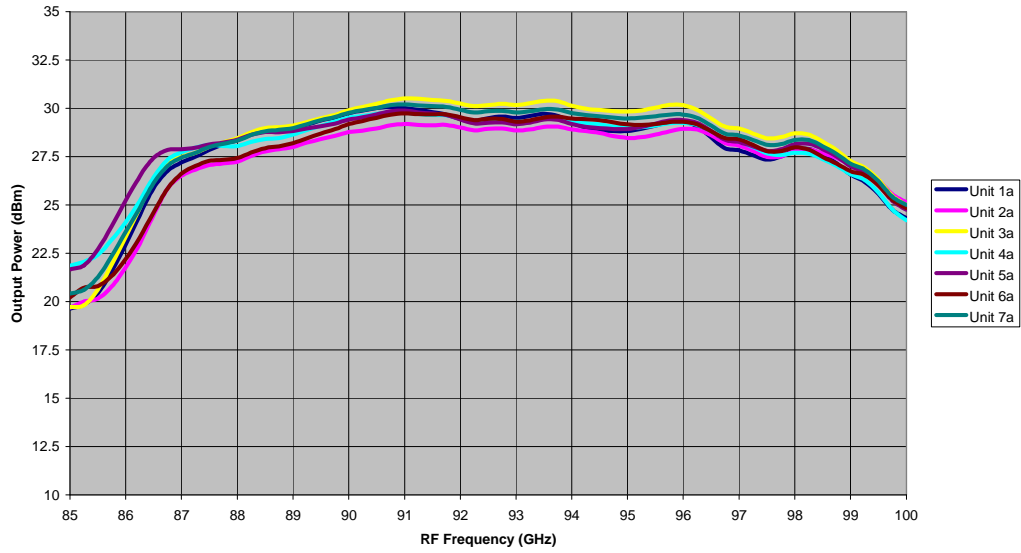
Applications

- Communication receivers/Wireless links
- Driver amplifiers
- Point to Point communication
- Sensors/Radars
- Laboratory Equipment

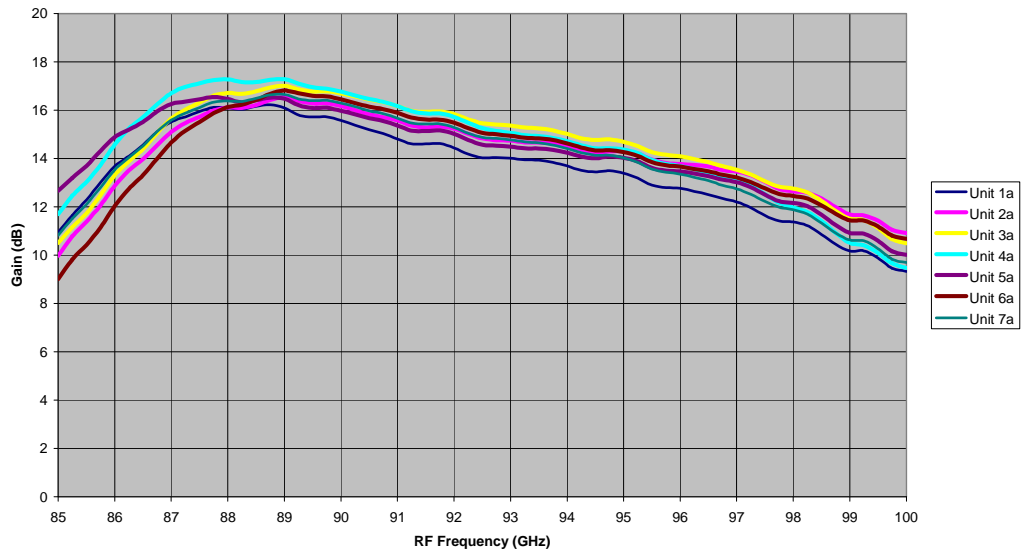
Specification	Unit	Min	Typ	Max
Frequency	GHz	88		96
Bandwidth	GHz		8	
Output Power	dBm		27	
Gain	dB		13	
DC Power	V/ma		15/400	
VSWR			2.5:1	

Datasheet

Output Power v RF Frequency



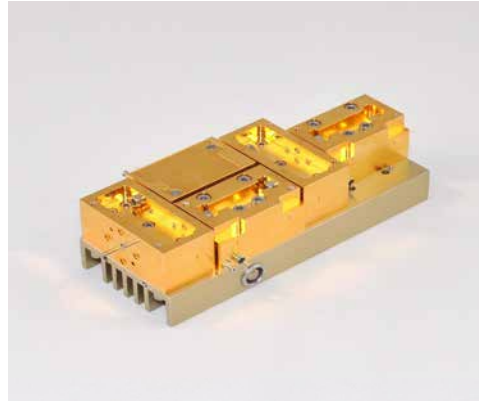
Gain v RF Frequency



Datasheet

Description

A state of the art W-Band high power amplifier giving 1W of output power over a broad band in a WR-10 waveguide assembly. The unit comes with integrated cooling to allow operation without the need for expensive heat-sinking or specific mounting to dissipate heat.



Features

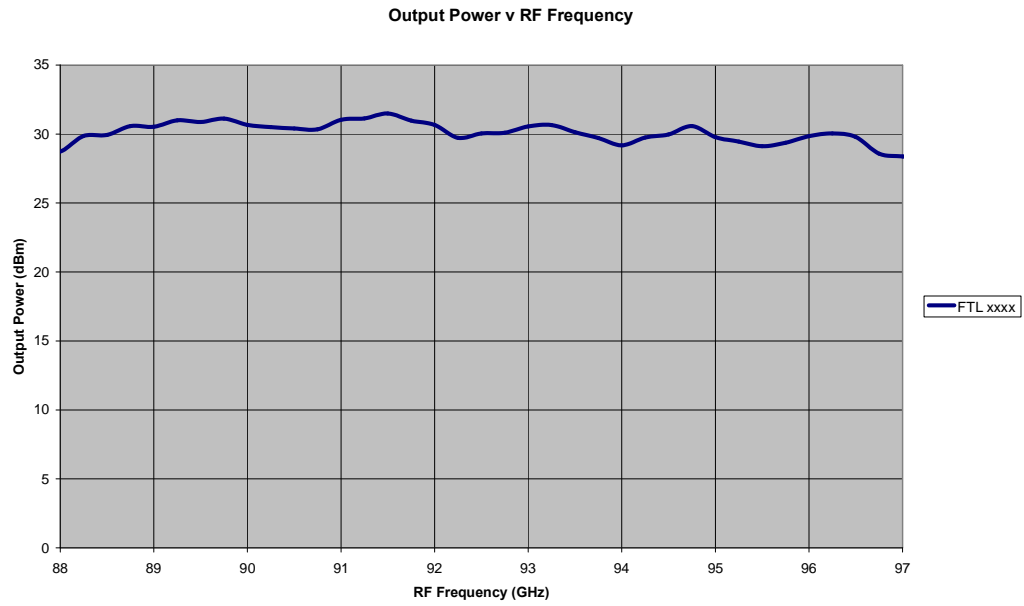
- ~ High gain
- ~ P1dB
- ~ Wide bandwidth

Applications

- ~ Communication receivers/Wireless links
- ~ Driver amplifiers
- ~ Point to point communication
- ~ Sensors/Radars

Specification	Unit	Min	Typ	Max
Frequency	GHz	88		96
Bandwidth	GHz		8	
Output Power	dBm		30	
Gain	dB		25	
DC Power	V/ma		15/1200	
VSWR			2.5:1	

Datasheet



Datasheet

Description

A high power full WR-10 waveguide band amplifier giving +20 dBm typical output power.



Features

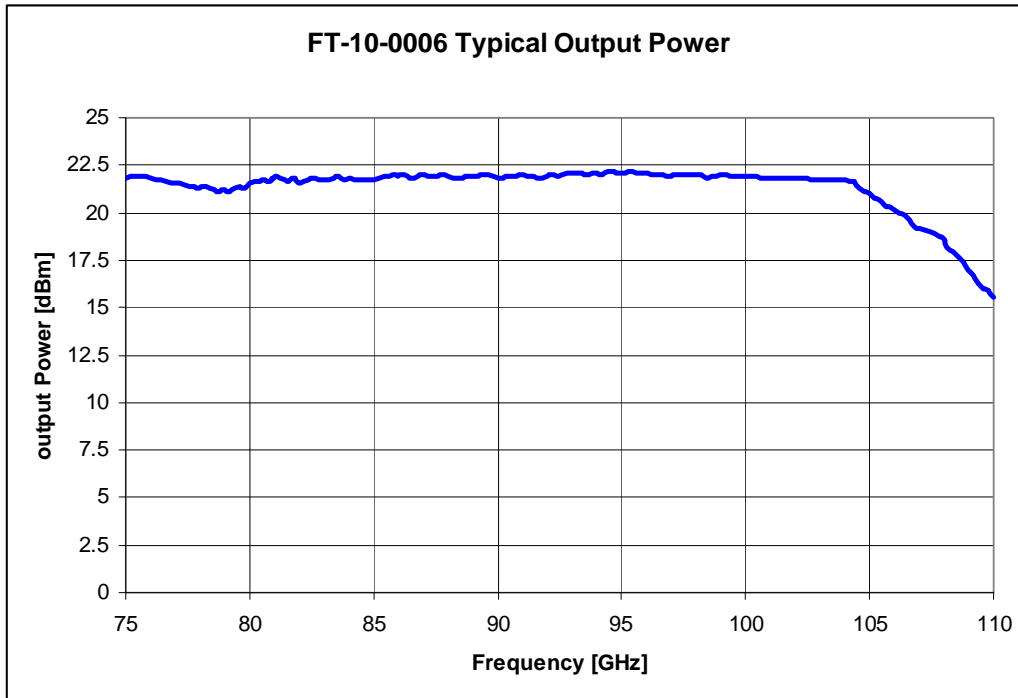
- High gain
- High P1dB
- Wide bandwidth

Applications

- Communication receivers/Wireless links
- Driver amplifiers
- Point to point communication
- Sensors/Radars
- Laboratory Equipment

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Bandwidth	GHz		35	
Output Power Psat	dBm		+20	
Gain	dB		15	
DC Power	V/mA		15/200	
In/Out VSWR	-		2.5:1	

Datasheet



Datasheet

Description

A state of the art E-Band high power amplifier giving >0.5W of output power over a broad band in a WR-12 waveguide assembly. The amplifier can be supplied as a stand alone product or as a transmit power booster for the FMCW-12 range of products.



Features

- ~ High saturated output power
- ~ High Gain
- ~ Wide bandwidth

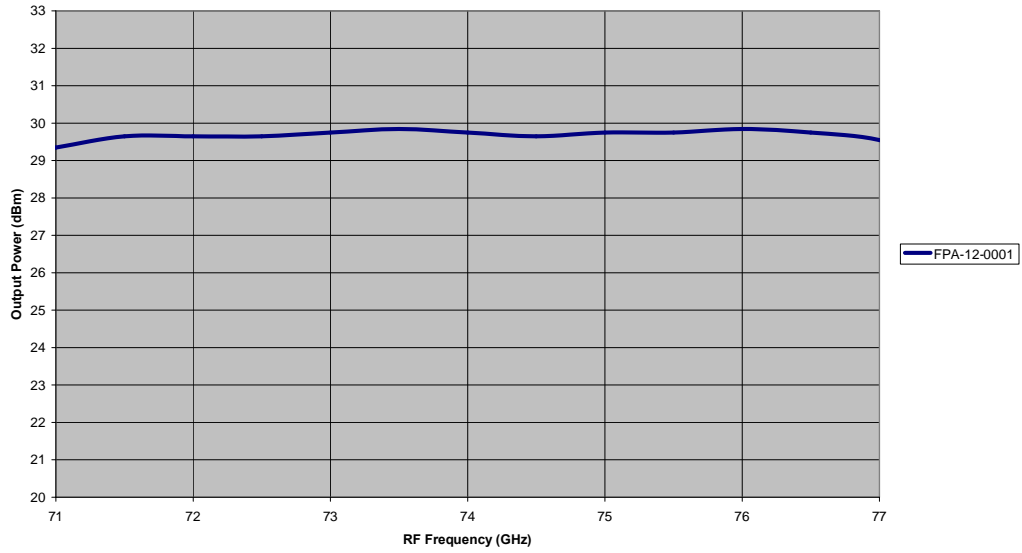
Applications

- ~ FMCW systems
- ~ Communication receivers/Wireless links
- ~ Driver amplifiers
- ~ Point to point communication
- ~ Sensors/Radars

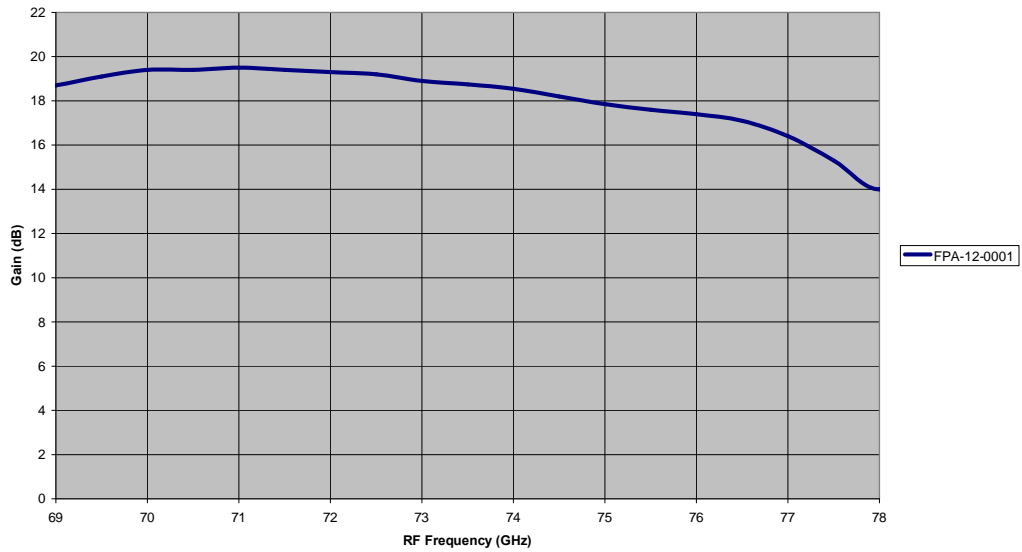
Specification	Unit	Min	Typ	Max
Frequency	GHz	71		77
Bandwidth	GHz		6	
Output Power	dBm	+27	+28.5	
Gain	dB		16	
DC Power	V/ma		15/450	
VSWR			2.5:1	

Datasheet

O/P power v RF Frequency



Gain v RF Frequency



Datasheet

Description

A state of the art E-Band high power amplifier giving 0.25W of output power over a broad band in a WR-12 waveguide assembly.



Features

- ~ High gain
- ~ High P1dB
- ~ Wide bandwidth

Applications

- ~ Communication receivers/Wireless links
- ~ Driver amplifiers
- ~ Point to point communication
- ~ Sensors/Radars

Specification	Unit	Min	Typ	Max
Frequency	GHz	71		86
Bandwidth	GHz		15	
Output Power (Psat)	dBm		24	
Output Power (P1dB)	dBm		22	
Gain	dB	15	20	
DC Power	V/ma		5/800	
VSWR			2.5:1	

Datasheet

Description

A comprehensive range of MMIC-based amplifiers covering 18-110GHz region are available including some new W-band and U-band, Interfaces can be designed to suit the application as well as custom designs being available,

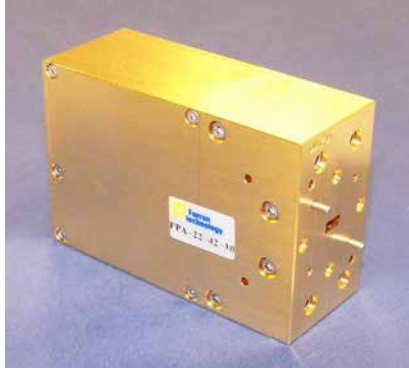
Features

- ~ High gain
- ~ P1dB
- ~ Wide bandwidth

Applications

- ~ Communication receivers
- ~ Radar front ends
- ~ Driver amplifiers
- ~ Point to point communication

Specification	Unit	Min	Typ	Max
Frequency	GHz	55		65
Bandwidth	GHz		10	
P1dB	dB		16	
Gain	dB		25	
DC Power	V/ma		8/200	
VSWR			2.0:1	



Applications

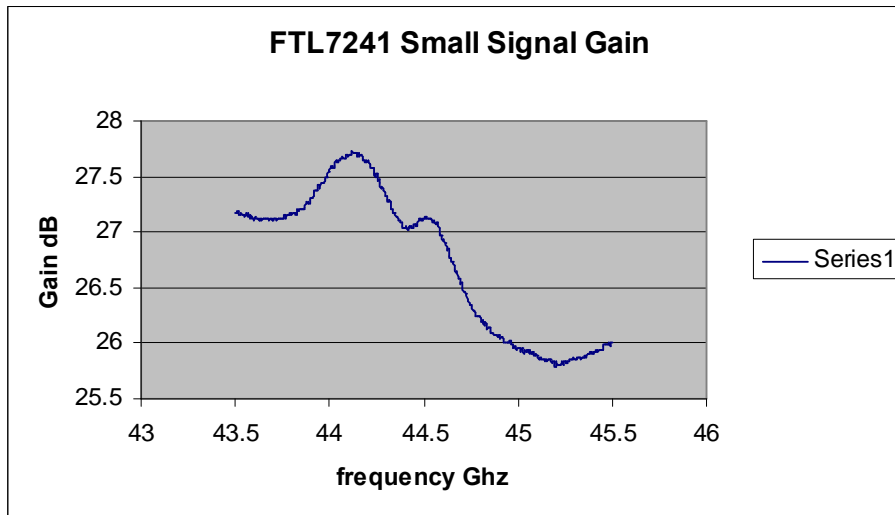
- Driver amplifier
- Base Station TX
- Instrumentation
- Point to point communications

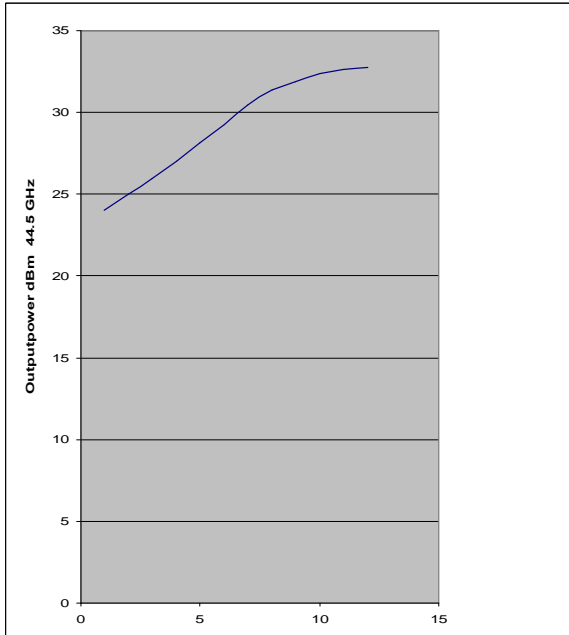
Features

Product features	Min	Typ	Max	Unit
RF Frequency	43		46	GHz
Linear Gain	25	27		dB
Psat		33		dBm
P1dB	30	31		dBm
Supply Voltage	+7	+8	+9	V
Supply Current		4600		mA
Connectors	Input	2.4 mm	Output	WR-22

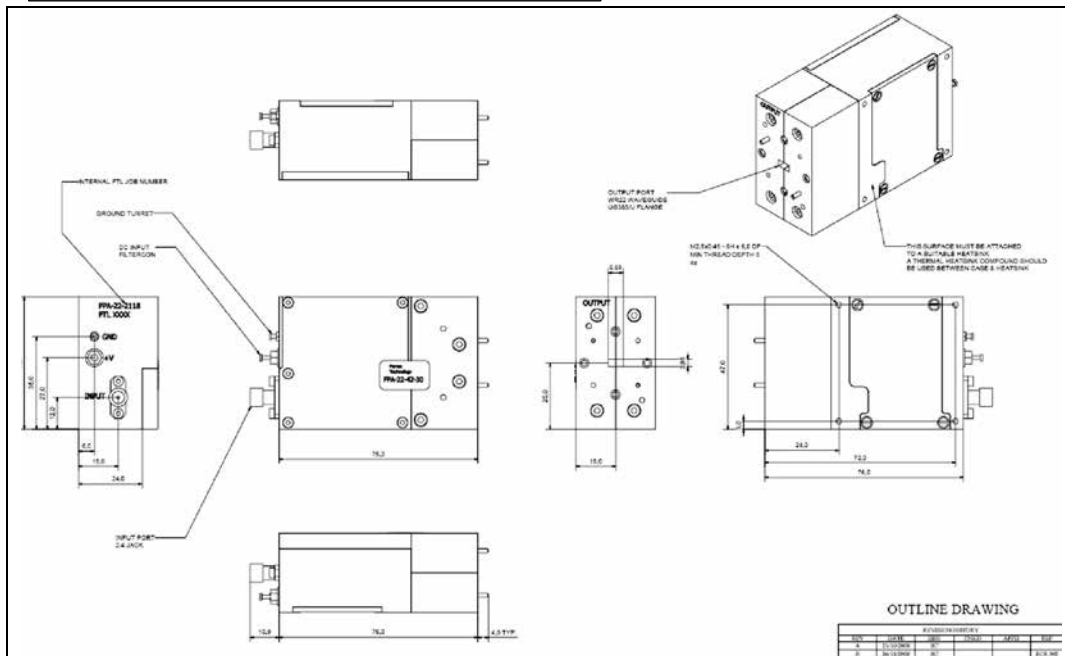
Description

A general purpose 1 watt CW power amplifier in the 43-46 GHz frequency range. The unit is used with a heatsink.





1dB compression point at 44.5 GHz



Note :

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without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

Farran Technology offers a wide variety of balanced mixers. These are based on planar technology and GaAs Schottky barrier beam lead diodes. They feature low conversion loss, low noise figure, excellent noise suppression and LO-RF isolation. The LO drive requirement can be reduced by operating the mixers with bias. They are extremely rugged devices for small physical size and mass. Designs are chosen from a portfolio of mixer architectures depending on the customer's detailed requirements. IF frequency coverage to at least 18GHz is available and full RF/LO bandwidths may be provided in certain frequency bands.



Features

- Planar GaAs diodes
- Rugged compact design
- High reliability
- Low noise figure conversion loss
- Broad bandwidth
- Biased designs available

Applications

- Communications
- Radiometry
- Radar
- Laboratory Test Systems

Specification	Unit	Min	Typ	Max
RF Frequency Range	GHz	140		220
Conversion Loss	dB		9	
Noise Figure DSB	dB			10

Notes:

1. The Conversion loss values are for IF bandwidth DC to 4 GHz. The BMC spec are for fixed LO frequency and a 4GHz IF bandwidth.
2. Mixers are operational over the specified full band (performance will vary over full band). Please consult factory with exact LO, RF and IF range for expected mixer performance.
3. RF/LO/IF VSWR typically <2.5:1.
4. BMC-XXB model uses bias to allow LO drive levels 0 to +3dBm.
5. LO level +13dBm as standard
6. Consult factory with LO, RF and IF range for performance specifications
7. IF bandwidths up to 40GHz are available with fixed LO, for certain models consult factory
8. Models covering frequencies beyond 220GHz are available, consult factory
9. FTL recommends the use of a precision PSU (FDB-F4) for best practice protection of Schottky diodes in all mixers.

Datasheet

Note:

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Datasheet

Description

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Features

- Planar GaAs diodes
- Rugged compact design
- High reliability
- Low noise figure conversion loss
- Broad bandwidth
- Biased designs available

Applications

- Communications
- Radiometry
- Radar
- Laboratory Test Systems

Specification	Unit	Min	Typ	Max
RF Frequency Range	GHz	90		140
Conversion Loss	dB		7.5	
Noise Figure DSB	dB			8.5

Notes:

1. The Conversion loss values are for IF bandwidth DC to 4 GHz. The BMC spec are fixed for LO frequency and a 4GHz IF bandwidth.
2. Mixers are operational over the specified full band (performance will vary over full band). Please consult factory with exact LO, RF and IF range for expected mixer performance.
3. RF/LO/IF VSWR typically <2.5:1.
4. BMC-XXB model uses bias to allow LO drive levels 0 to +3dBm.
5. LO level +13dBm as standard
6. Consult factory with LO, RF and IF range for performance specifications
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Datasheet

Description

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Features

- Planar GaAs diodes
- Rugged compact design
- High reliability
- Low noise figure conversion loss
- Broad bandwidth
- Biased designs available

Applications

- Communications
- Radiometry
- Radar
- Laboratory Test Systems

Specification	Unit	Min	Typ	Max
RF Frequency Range	GHz	75		110
Conversion Loss	dB		7.2	
Noise Figure DSB	dB			7.5

Notes:

1. The Conversion loss values are for IF bandwidth DC to 4 GHz. The BMC spec are fixed for LO frequency and a 4GHz IF bandwidth.
2. Mixers are operational over the specified full band (performance will vary over full band). Please consult factory with exact LO, RF and IF range for expected mixer performance.
3. RF/LO/IF VSWR typically <2.5:1.
4. BMC-XXB model uses bias to allow LO drive levels 0 to +3dBm.
5. LO level +13dBm as standard
6. Consult factory with LO, RF and IF range for performance specifications
7. IF bandwidths up to 40GHz are available with fixed LO, for certain models consult factory
8. Models covering frequencies beyond 220GHz are available, consult factory
9. FTL recommends the use of a precision PSU (FDB-F4) for best practice protection of Schottky diodes in all mixers.

Datasheet

Note:

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Datasheet

Description

Farran Technology offers a wide variety of balanced mixers. These are based on planar technology and GaAs Schottky barrier beam lead diodes. They feature low conversion loss, low noise figure, excellent noise suppression and LO-RF isolation. The LO drive requirement can be reduced by operating the mixers with bias. They are extremely rugged devices for small physical size and mass. Designs are chosen from a portfolio of mixer architectures depending on the customer's detailed requirements. IF frequency coverage to at least 18GHz is available and full RF/LO bandwidths may be provided in certain frequency bands.



Features

- Planar GaAs diodes
- Rugged compact design
- High reliability
- Low noise figure conversion loss
- Broad bandwidth
- Biased designs available

Applications

- Communications
- Radiometry
- Radar
- Laboratory Test Systems

Specification	Unit	Min	Typ	Max
RF Frequency Range	GHz	60		90
Conversion Loss	dB		7	
Noise Figure DSB	dB			7

Notes:

1. The Conversion loss values are for IF bandwidth DC to 4 GHz. The BMC spec are fixed for LO frequency and a 4GHz IF bandwidth.
2. Mixers are operational over the specified full band (performance will vary over full band). Please consult factory with exact LO, RF and IF range for expected mixer performance.
3. RF/LO/IF VSWR typically <2.5:1.
4. BMC-XXB model uses bias to allow LO drive levels 0 to +3dBm.
5. LO level +13dBm as standard
6. Consult factory with LO, RF and IF range for performance specifications
7. IF bandwidths up to 40GHz are available with fixed LO, for certain models consult factory
8. Models covering frequencies beyond 220GHz are available, consult factory
9. FTL recommends the use of a precision PSU (FDB-F4) for best practice protection of Schottky diodes in all mixers.

Datasheet

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Datasheet

Description

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Features

- Planar GaAs diodes
- Rugged compact design
- High reliability
- Low noise figure conversion loss
- Broad bandwidth
- Biased designs available

Applications

- Communications
- Radiometry
- Radar
- Laboratory Test Systems

Specification	Unit	Min	Typ	Max
RF Frequency Range	GHz	40		60
Conversion Loss	dB		6	
Noise Figure DSB	dB			5.5

Notes:

1. The Conversion loss values are for IF bandwidth DC to 4 GHz. The BMC spec are fixed for LO frequency and a 4GHz IF bandwidth.
2. Mixers are operational over the specified full band (performance will vary over full band). Please consult factory with exact LO, RF and IF range for expected mixer performance.
3. RF/LO/IF VSWR typically <2.5:1.
4. BMC-XXB model uses bias to allow LO drive levels 0 to +3dBm.
5. LO level +13dBm as standard
6. Consult factory with LO, RF and IF range for performance specifications
7. IF bandwidths up to 40GHz are available with fixed LO, for certain models consult factory
8. Models covering frequencies beyond 220GHz are available, consult factory
9. FTL recommends the use of a precision PSU (FDB-F4) for best practice protection of Schottky diodes in all mixers.

Datasheet

Note:

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Datasheet

Description

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Features

- Planar GaAs diodes
- Rugged compact design
- High reliability
- Low noise figure conversion loss
- Broad bandwidth
- Biased designs available

Applications

- Communications
- Radiometry
- Radar
- Laboratory Test Systems

Specification	Unit	Min	Typ	Max
RF Frequency Range	GHz	26.5		40
Conversion Loss	dB		7	
Noise Figure DSB	dB			7

Notes:

1. The Conversion loss values are for IF bandwidth DC to 4 GHz. The BMC spec are fixed for LO frequency and a 4GHz IF bandwidth.
2. Mixers are operational over the specified full band (performance will vary over full band). Please consult factory with exact LO, RF and IF range for expected mixer performance.
3. RF/LO/IF VSWR typically <2.5:1.
4. BMC-XXB model uses bias to allow LO drive levels 0 to +3dBm.
5. LO level +13dBm as standard
6. Consult factory with LO, RF and IF range for performance specifications
7. IF bandwidths up to 40GHz are available with fixed LO, for certain models consult factory
8. Models covering frequencies beyond 220GHz are available, consult factory
9. FTL recommends the use of a precision PSU (FDB-F4) for best practice protection of Schottky diodes in all mixers.

Datasheet

Note:

The data contained in this document describes new products in the pre-production phase of development, and is for information only. Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet**Description**

The BDC-K-Ka-18-40 is for an 18-40GHz down-converter for use with a 2-20GHz tuned receiver. It is designed to be small in size, with low noise and spurious, and has a built-in phase-locked local oscillator. The local oscillator consists of a Dielectric Resonator Oscillator (DRO) which is phase locked to a 100MHz reference. The 100MHz reference may also be locked to an external 10 MHz reference. There are two separate lock detect signal provided from the module. One is from the DRO to indicate lock to the 100MHz reference signal and the second is from the 100MHz reference to indicate lock to the 10MHz externally applied reference. The two output signals are accessed through a 9-way D-Type connector.



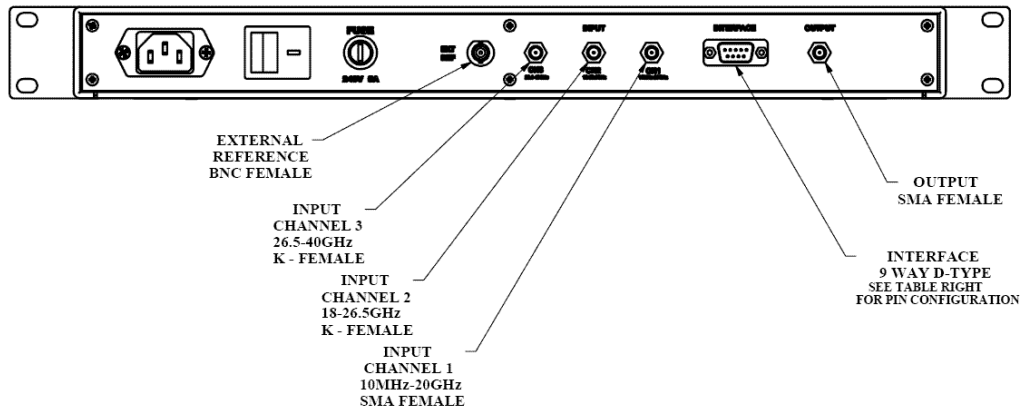
The down-converter can operate in two bands, 18-26.5GHz and 26.5-40GHz, with the IF output in the range 2.5-17.5GHz to make it compatible with existing communications equipment. The unit is designed to fit into a 1U high rack chassis, with its own integral power supply.

Features

- Converts 18-40 GHz to 2-20 GHz in Switched bands
- Excellent Spurious performance
- Excellent SSB Phase Noise characteristics
- TTL Switching
- Internal or External Reference option
- Immediate availability
- Heavily discounted price for a limited period (until stock lasts)

Datasheet

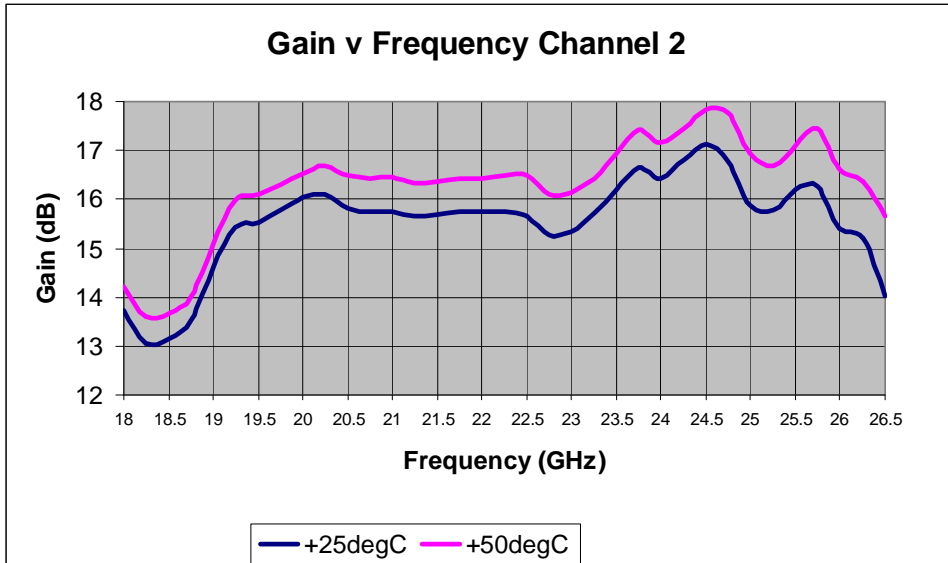
Frequency bands:	
Input 1	10MHz-20GHz
Input 2	18-26.5 GHz (LO frequency 29GHz)
Input 3	26.5-40 GHz (LO frequency 43.5GHz)
Maximum input power	+12 dBm
IF outputs Input 2 and Input 3	2.5-17GHz
VSWR	2:1 max
Output switching	TTL control
RF to IF Gain	15dB +/-3dB
Noise Figure	13dB typical
Phase locking	Internal XCO or external 10MHz ref.
LO Spurious Signals	<-60dBc
LO SSB Phase Noise	-85dBc/Hz at 1kHz offset
LO-RF leakage	-65dBm max
Connectors:	
IF Output	SMA
Input 1	SMA
Input 2	K
Input 3	K
External 10 MHz reference	BNC
TTL & Signal interface	9-Way D-Type
Power supply	230VAC+/-10% 50/60 Hz power
Operating temperature range	0 - 50 deg C



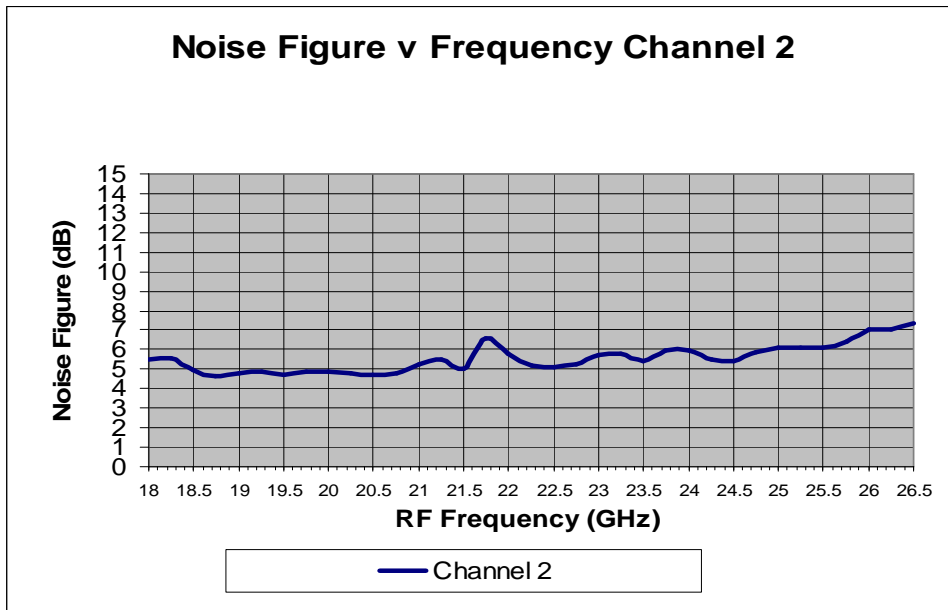
Datasheet

**Test Data:
CHANNEL 2**

TYP. GAIN:



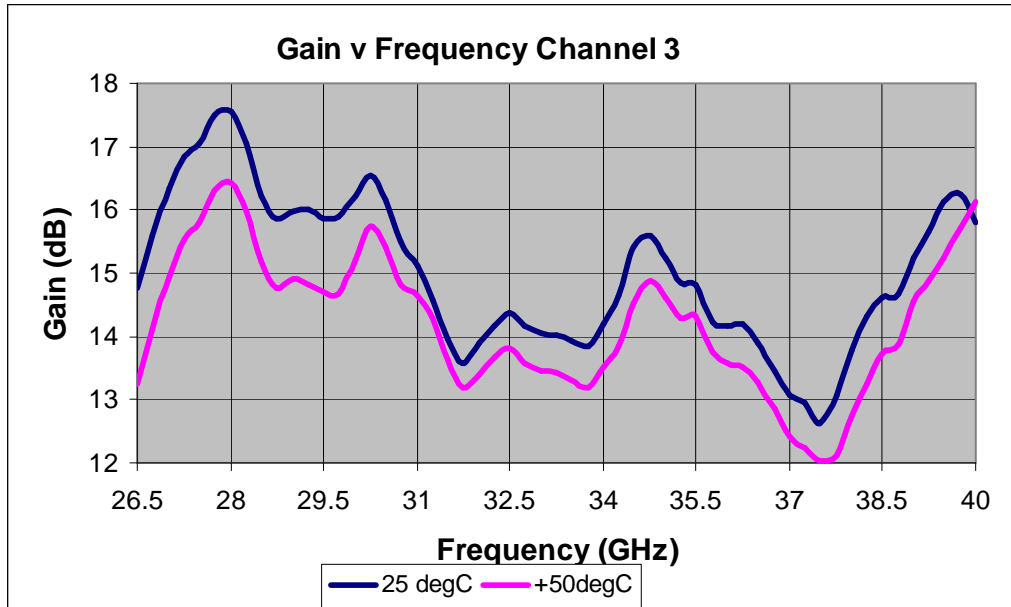
TYP. NOISE FIGURE:



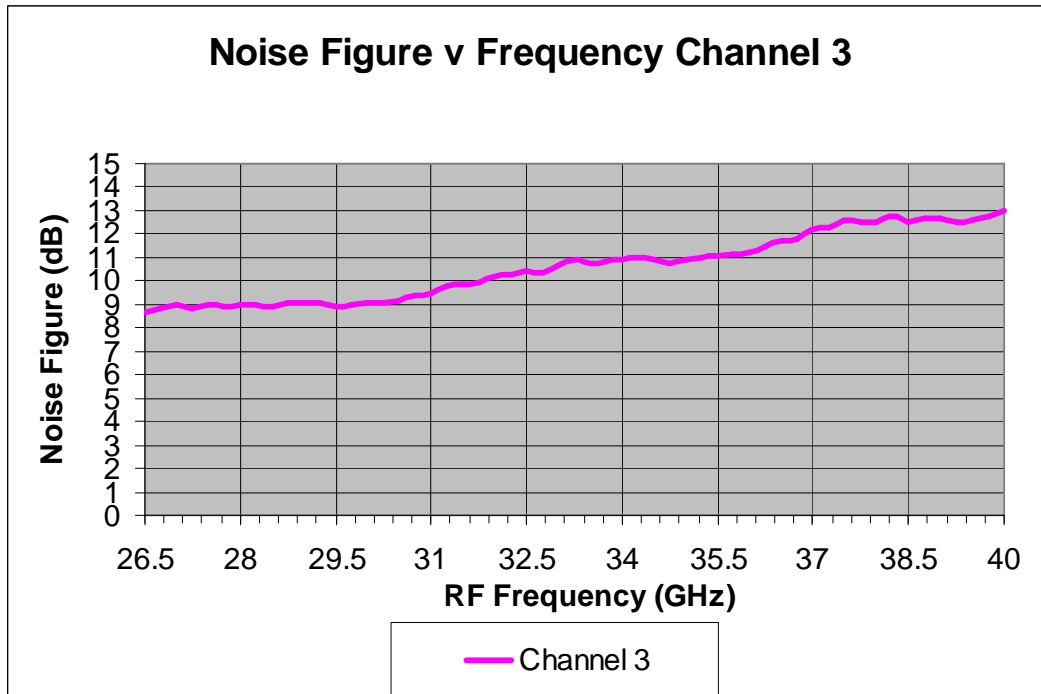
Datasheet

CHANNEL 3

GAIN:

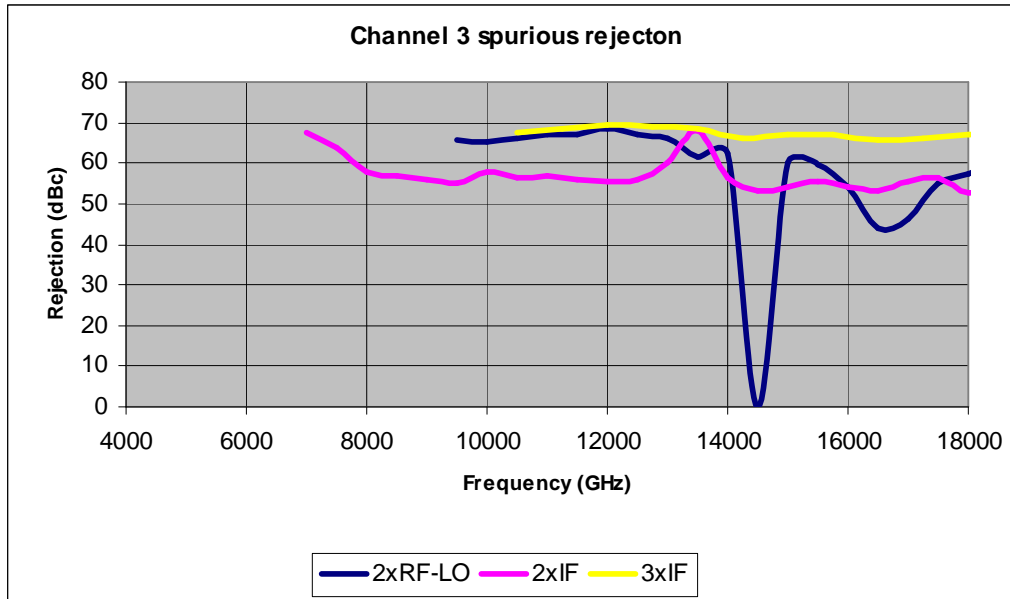


NOISE FIGURE:



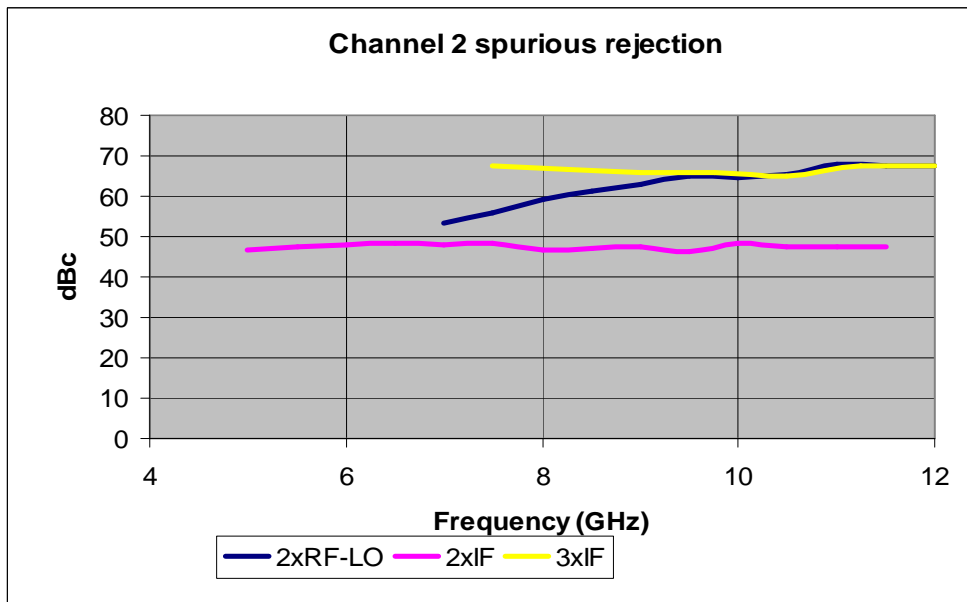
Datasheet

HARMONICS/SPURIOUS:



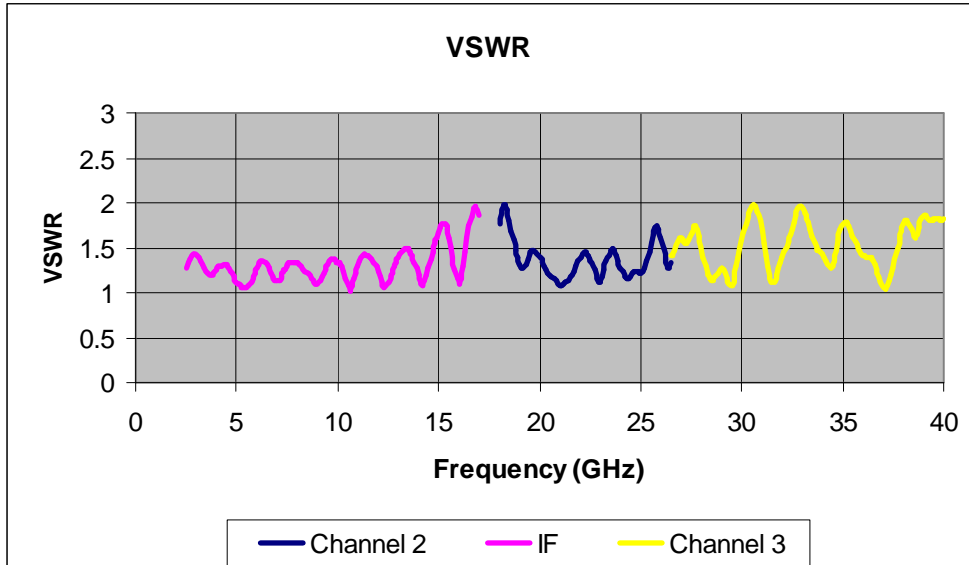
VSWR:

TYP. HARMONICS/SPURIOUS:



TYP. VSWR:

Datasheet



Datasheet
Description

The FEK-03 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-03 band. It is compatible with TRL and SOLT calibration techniques.


Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	220		325
Frequency Band		J		
Waveguide Designation		WR-03, WG-32		
Flange Type		UG387/U-M-PF (Precision style)		
Cut Off Frequency	GHz	173.43 GHz		
Fixed Load VSWR		< 1.08:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset – Band 1	1 off
¾ Lambda Offset – Band 1	1 off
K – Section Offset	1 off
¼ Lambda + K Section Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

The FEK-05 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-05 band. It is compatible with TRL and SOLT calibration techniques.



Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	140		220
Frequency Band		G		
Waveguide Designation		WR-05, WG-30		
Flange Type		UG387/U-M-PF (Precision style)		
Cut Off Frequency	GHz	115.71 GHz		
Fixed Load VSWR		< 1.06:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset – Band 1	1 off
¾ Lambda Offset – Band 1	1 off
K – Section Offset	1 off
¼ Lambda + K Section Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

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Datasheet

Description

The FEK-06 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-06 band. It is compatible with TRL and SOLT calibration techniques.



Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	110		170
Frequency Band		D		
Waveguide Designation		WR-06, WG-29		
Flange Type		UG387/U-PF (Precision style)		
Cut Off Frequency	GHz	90.76 GHz		
Fixed Load VSWR		< 1.04:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset – Band 1	1 off
¼ Lambda Offset – Band 1	1 off
K – Section Offset	1 off
¼ Lambda + K Section Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

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Datasheet
Description

The FEK-10 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-10 band. It is compatible with TRL and SOLT calibration techniques.


Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	75		110
Frequency Band		W		
Waveguide Designation		WR-10, WG-27		
Flange Type		UG387/U (Precision style)		
Cut Off Frequency	GHz	59.0143 GHz		
Fixed Load VSWR		< 1.04:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet
Description

The FEK-12 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-12 band. It is compatible with TRL and SOLT calibration techniques.


Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	60		90
Frequency Band		E		
Waveguide Designation		WR-12, WG-26		
Flange Type		UG387/U (Precision style)		
Cut Off Frequency	GHz	48.3692 GHz		
Fixed Load VSWR		< 1.04:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

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Datasheet

Description

The FEK-15 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-15 band. It is compatible with TRL and SOLT calibration techniques.



Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	50		75
Frequency Band		V		
Waveguide Designation		WR-15, WG-25		
Flange Type		UG385/U (Precision style)		
Cut Off Frequency	GHz	39.8765 GHz		
Fixed Load VSWR		< 1.03:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

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Datasheet

Description

The FEK-19 calibration kit provides accurate calibration of the Vector Network Analyzer (VNA) in WR-19 band. It is compatible with TRL and SOLT calibration techniques.



Features

- Ensures accurate and repeatable measurements
- Contains characterisation data for the kit components in a suitable format for the VNA

Applications

- Millimeter wave S-parameter measurements that require system error correction

Specification	Unit	Min	Typ	Max
Operating Frequency Range	GHz	40		60
Frequency Band		U		
Waveguide Designation		WR-19, WG-24		
Flange Type		UG383/U (Precision style)		
Cut Off Frequency	GHz	31.3919 GHz		
Fixed Load VSWR		< 1.03:1		
Flush Short Flatness	mm	< 0.006		
Operating Temperature Range	°C	+20		+30

Content	Q-ty
Fixed Termination	1 off
Sliding Termination	1 off
Flush Short	1 off
¼ Lambda Offset	1 off
Accessories	
Torque Hex Driver 5/64" A/F	1 off
Hex Driver – 1/8" A/F	1 off
Flange Screws -Short	8 off
Flange Screw - Long	8 off
Alignment Pins	8 off
USB Flash Memory	1 off

Note :

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Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-170 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-06-FB covers the full W-band 110-170 GHz range.



Features

- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	110		170
System Conversion Gain	dB	+10		
System Noise Figure	dB		18	20
IF Output Frequency	MHz		11.139	
LO Input Frequency	GHz	6		15
LO Input Power	dBm	+5		+10
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-06 UG-387/U-M		
LO Connector	-	SMA 3.5 mm (F)		
IF Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	288 x 120 x 90		

Datasheet

Notes:

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Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-110 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-10-FB covers the full W-band 75-110 GHz range.



Features

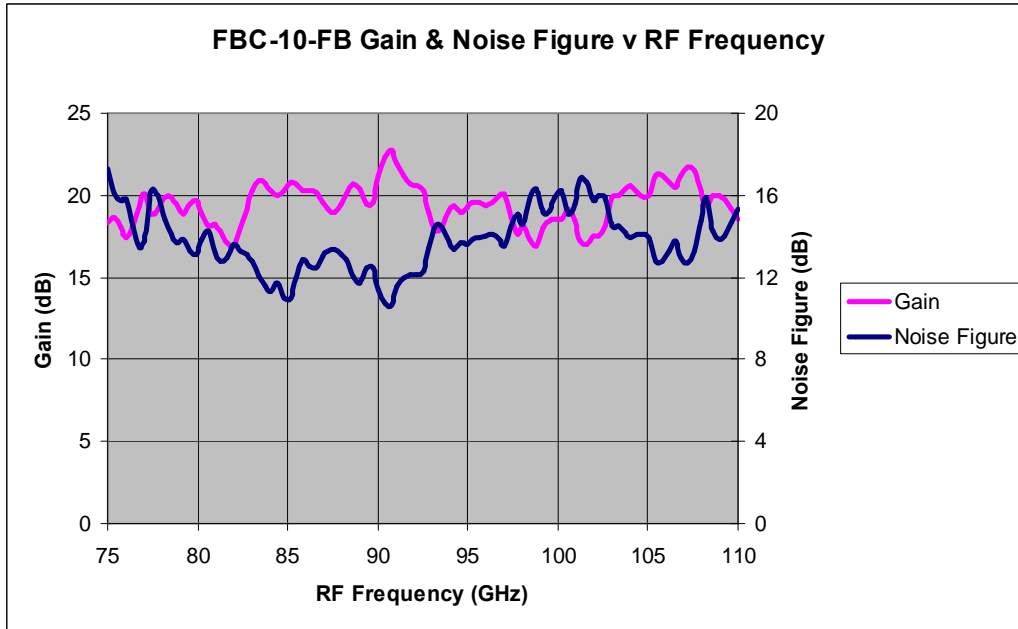
- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	75		110
System Conversion Gain	dB	+10		
System Noise Figure	dB		18	20
IF Output Frequency	MHz		11.139	
LO Input Frequency	GHz	9.375		13.75
LO Input Power	dBm	+5		+10
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-10 UG-387/U-M		
LO Connector	-	SMA 3.5 mm (F)		
IF Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	288 x 120 x 90		

Datasheet



Notes:

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Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-110 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-12-FB covers the full E-band 60-90 GHz range.



Features

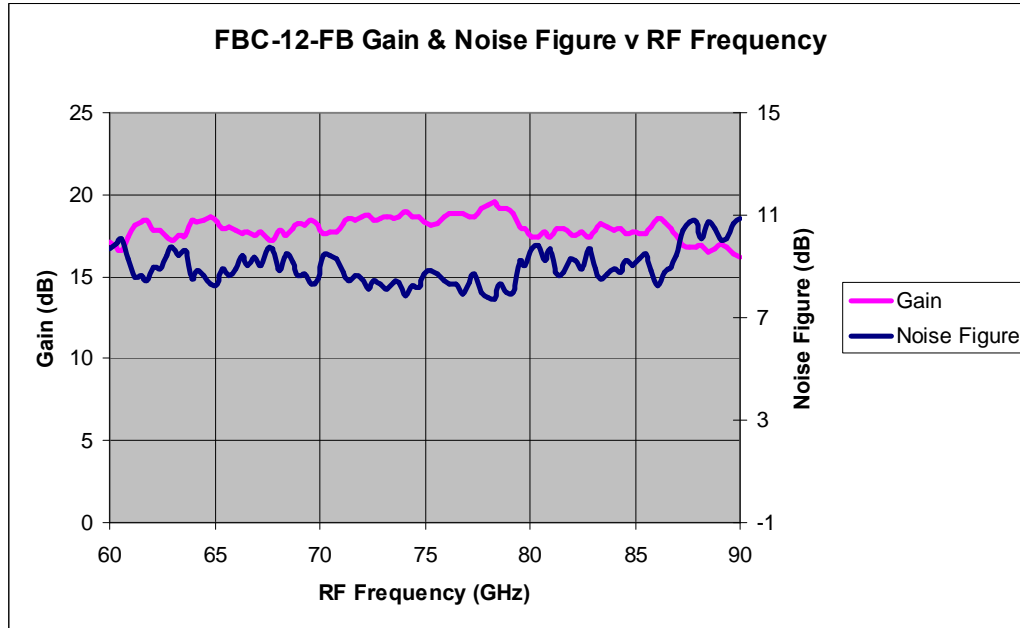
- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	60		90
System Conversion Gain	dB	+10		
System Noise Figure	dB		14	17
IF Output Frequency	MHz		11.139	
LO Input Frequency	GHz	7.5		11.25
LO Input Power	dBm	+5		+10
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-12 UG-387/U		
LO Connector	-	SMA 3.5 mm (F)		
IF Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 120 x 90		

Datasheet



Notes:

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Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-110 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-15-FB covers the full V band 50 . 75 GHz.



Features

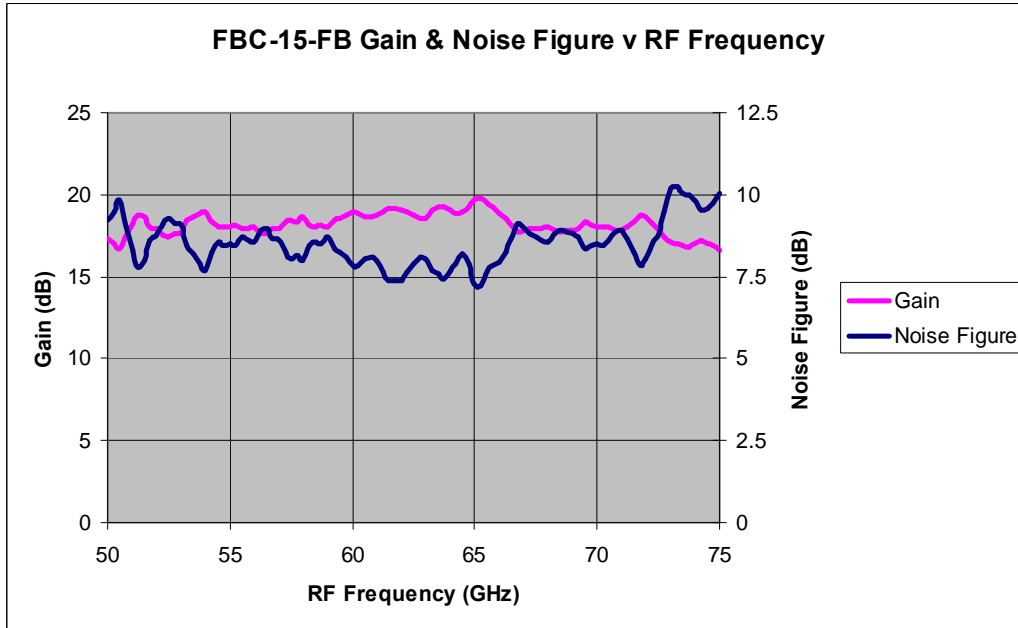
- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	50		75
System Conversion Gain	dB	+10		
System Noise Figure	dB		13	16
IF Output Frequency	MHz		11.139	
LO Input Frequency	GHz	12.5		18.75
LO Input Power	dBm	+5		+10
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-15 UG-385/U		
LO Connector	-	SMA 3.5 mm (F)		
IF Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 120 x 90		

Datasheet



Notes:

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Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-110 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-15-FB covers the full U band 40 . 60 GHz.



Features

- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	40		60
System Conversion Gain	dB	+10		
System Noise Figure	dB		13	16
IF Output Frequency	MHz		11.139	
LO Input Frequency	GHz	10		15
LO Input Power	dBm	+5		+10
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-19 UG-383/U-M		
LO Connector	-	SMA 3.5 mm (F)		
IF Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 120 x 90		

Datasheet

Notes:

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Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-110 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-22-FB covers the frequency Band 36.5 . 50 GHz and has a built in internal LO so operates without the need for the external signal generator.



Features

- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

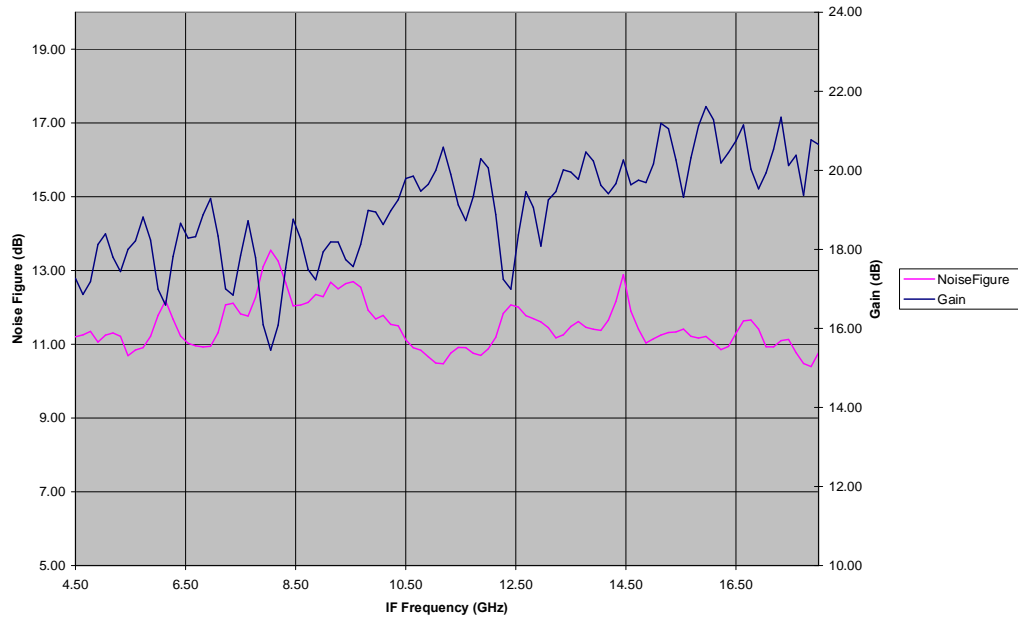
Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	36.5		50
System Conversion Gain	dB	10		
System Noise Figure	dB		13	15
IF Output Frequency	MHz	4.5		18
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-22 UG-599/U		
LO Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	288 x 120 x 90		

Datasheet

BDC 22 FTL 0541S Date 14/06/2011



Datasheet

Description

Farran Technology offers the FBC series of down converters for use as frequency extenders for noise figure measurement test system. The FBC-FB-XX is a fullband system can be built upon an Agilent N8975A Noise Figure Analyzer (NFA) or X-Series Signal Analyzers with Option N9069A. The system allows the user to extend the frequency range of the NFA to allow for accurate noise figure measurements to be performed on a device covering Ka, U, V, E, W bands (26.5-110 GHz), when used with an Agilent E8247C signal generator (or equivalent). The FBC-28-FB covers the full Ka Band 26.5 . 40 GHz and has a built in internal LO so operates without the need for the external signal generator.



Features

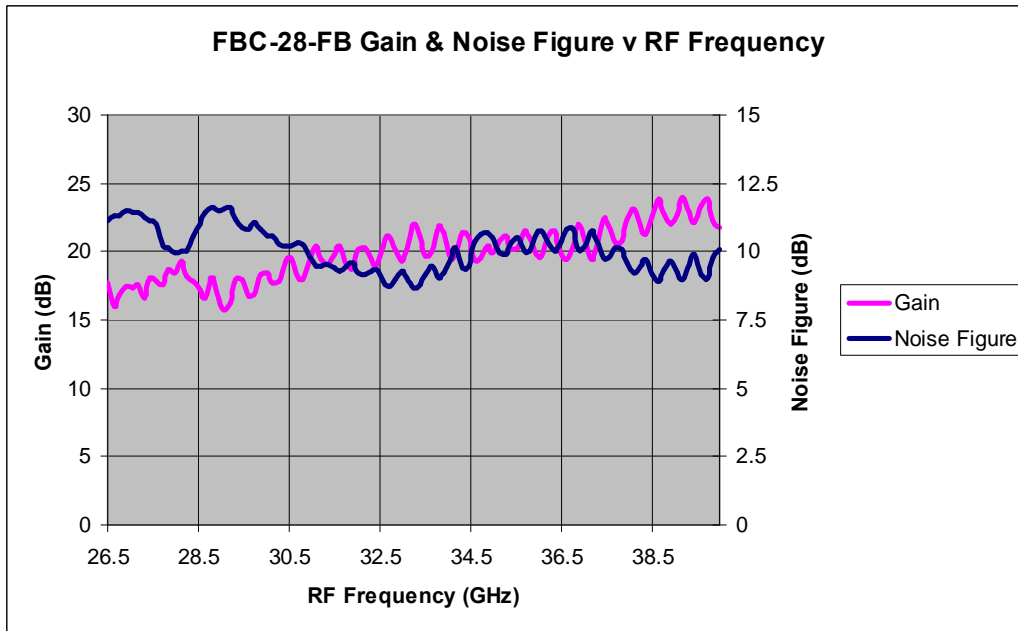
- ~ Full band noise figure measurements
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Low noise figure for high system accuracy
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	26.5		40
System Conversion Gain	dB	+10		
System Noise Figure	dB		15	18
IF Output Frequency	MHz	4.5		18
Test Port Damage Level	dBm	+5		
Test Port Interface	-	WR-28 UG-599/U		
LO Connector	-	SMA 3.5 mm (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	288 x 120 x 90		

Datasheet



Datasheet
Description

The FEC-02 Frequency Extension Controller is part of the FTL mm-wave measurement extension solution. It ensure that FTL mm-wave extender products FEV-XX are fully compatible with Agilent PNA-X Vector Network Analyzers and offers the best S-parameters accuracy available on the market.


Features

- RF/LO and IF signal routing and amplification
- Fast switching speed
- Compatibility with PNA-X
- DC bias source for FEV-XX

Applications

- Frequency extension
- Mm-Wave instrumentation
- S-parameters measurement
- Antenna measurements

Specification	Unit	Min	Typ	Max
RF Input Frequency	GHz	7		20
Lo Input Frequency	GHz	7		20
IF Input/Output Frequency	MHz	5		50
Switching Speed	µs		<1	
Power Requirements		110-230 V @ 0.65/0.35 A		
Weight	kg	8.5		
Dimensions	mm	450 x 510 x 90		

Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet
Description

The FEC-03 Frequency Extension Controller is part of the FTL mm-wave measurement extension solution. It ensures that FTL mm-wave extender products FEV-XX are fully compatible with Agilent PNA-X Vector Network Analyzers and offers the best S-parameters accuracy available on the market.


Features

- RF/LO and IF signal routing and amplification
- Fast switching speed
- Compatibility with PNA-X
- DC bias source for FEV-XX

Applications

- Frequency extension
- Mm-Wave instrumentation
- S-parameters measurement
- Antenna measurements

Specification	Unit	Min	Typ	Max
RF Input Frequency	GHz	7		20
Lo Input Frequency	GHz	7		20
IF Input/Output Frequency	MHz	5		50
Switching Speed	µs		<1	
Power Requirements		110-230 V @ 0.65/0.35 A		
Weight	kg	8.5		
Dimensions	mm	450 x 510 x 90		

Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

The FES-03 series will expand your existing microwave Signal Generator capabilities to conduct measurement in WR-03 band (220-325GHz). These frequency extension modules easily connect to the output of your signal generator so you have a high performance source for your DUT characterisation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics will provide product accurate results.



Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

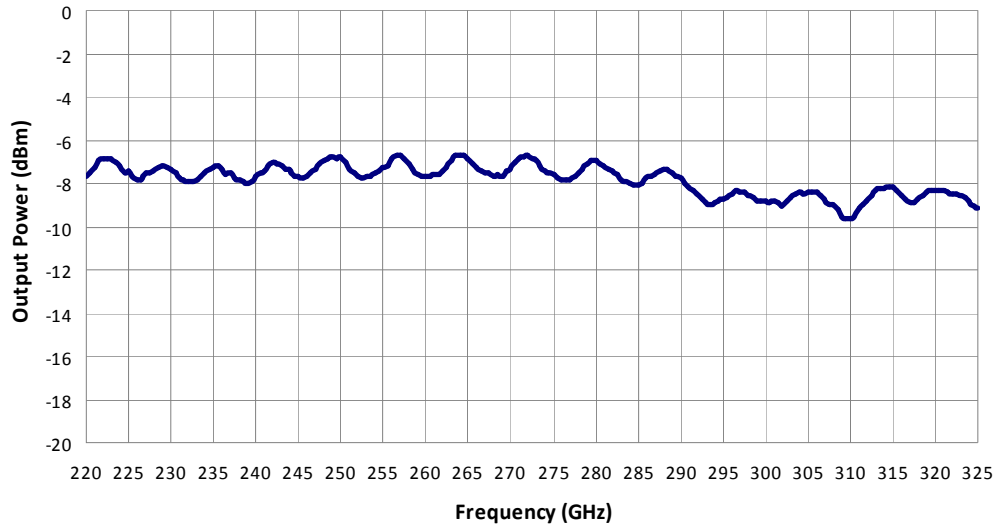
- AC/DC converter with 2m cable
- Manual

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	220		325
Test Port Output Power (2)	dBm		-10	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.22		18.05
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		18	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 2.5	
Test Port Interface	-	WR-03 UG-387/UM		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-03 Output Power



Datasheet

Description

The FES-05 series will expand your existing microwave Signal Generator capabilities to conduct measurement in WR05 (140-220GHz). These frequency extension modules easily connect to the output of your signal generator so you have a high performance source for your DUT characterisation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics will provide product accurate results.



Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

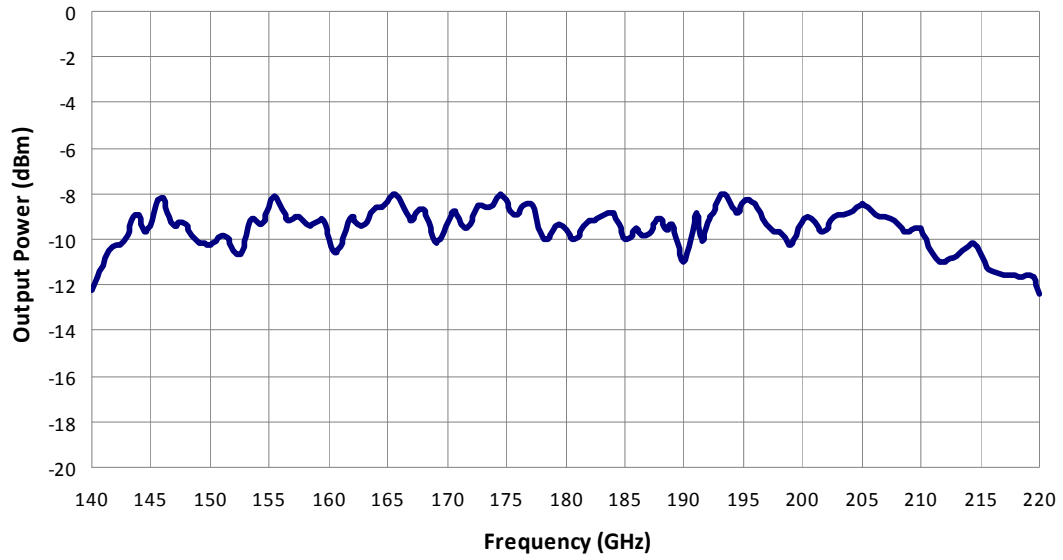
- AC/DC converter with 2m cable
- Manual

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	140		220
Test Port Output Power (2)	dBm		-12	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	11.67		18.33
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		12	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 1.5	
Test Port Interface	-	WR-05 UG-387/UM		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-05 Output Power



Datasheet
Description

The FES-06 series will expand your existing microwave Signal Generator capabilities to conduct measurement in WR06 (110-170GHz). These frequency extension modules easily connect to the output of your signal generator so you have a high performance source for your DUT characterisation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics will provide product accurate results.


Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

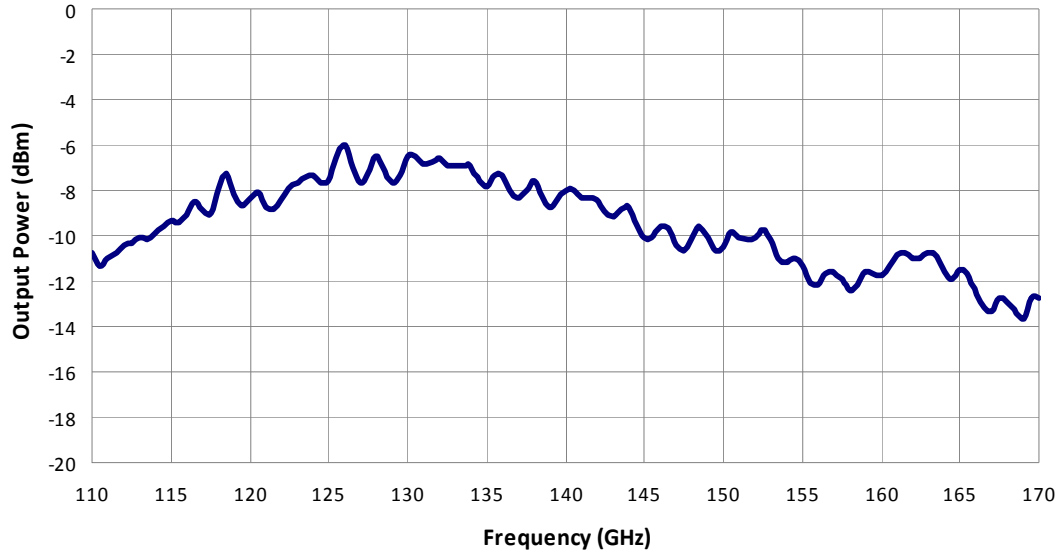
- AC/DC converter with 2m cable
- Manual

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	110		170
Test Port Output Power (2)	dBm		-10	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	9.17		14.17
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		12	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 1.5	
Test Port Interface	-	WR-06 UG-387/UM		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-06 Output Power



Datasheet
Description

The FES-10 series will expand your existing microwave Signal Generator capabilities to conduct measurement in WR10 (75-110GHz). These frequency extension modules easily connect to the output of your signal generator so you have a high performance source for your DUT characterisation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics will provide product accurate results.


Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

- AC/DC converter with 2m cable
- Manual

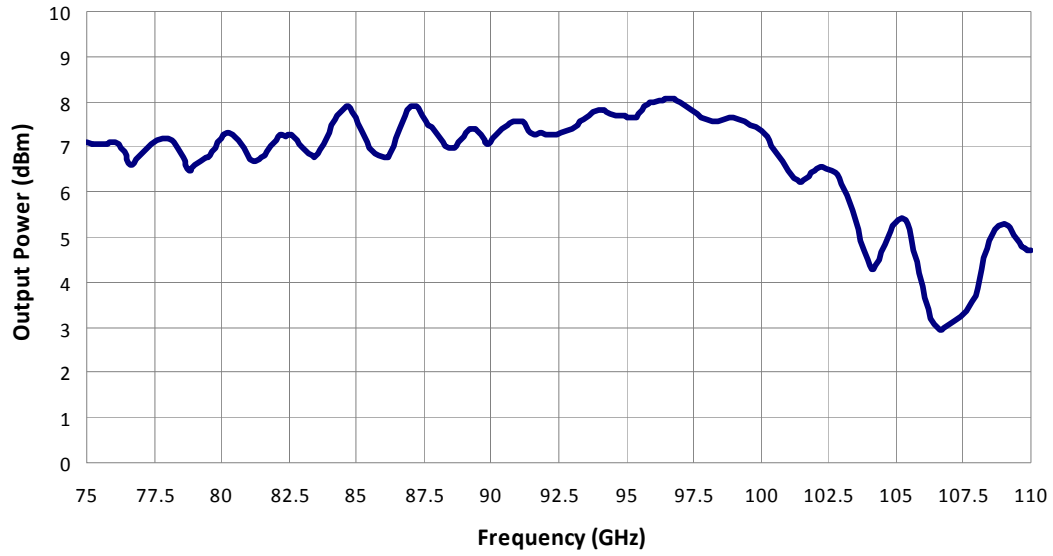
Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	75		110
Test Port Output Power (2)	dBm		+5	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.5		18.33
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		6	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 1.5	
Test Port Interface	-	WR-10 UG-387/UM		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

(1) Specifications are typical and subject to change without a notice.

(2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-10 Output Power



Datasheet
Description

The FES-12 series will expand your existing microwave Signal Generator capabilities to conduct measurement in WR12 (60-90GHz). These frequency extension modules easily connect to the output of your signal generator so you have a high performance source for your DUT characterisation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics will provide product accurate results.


Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

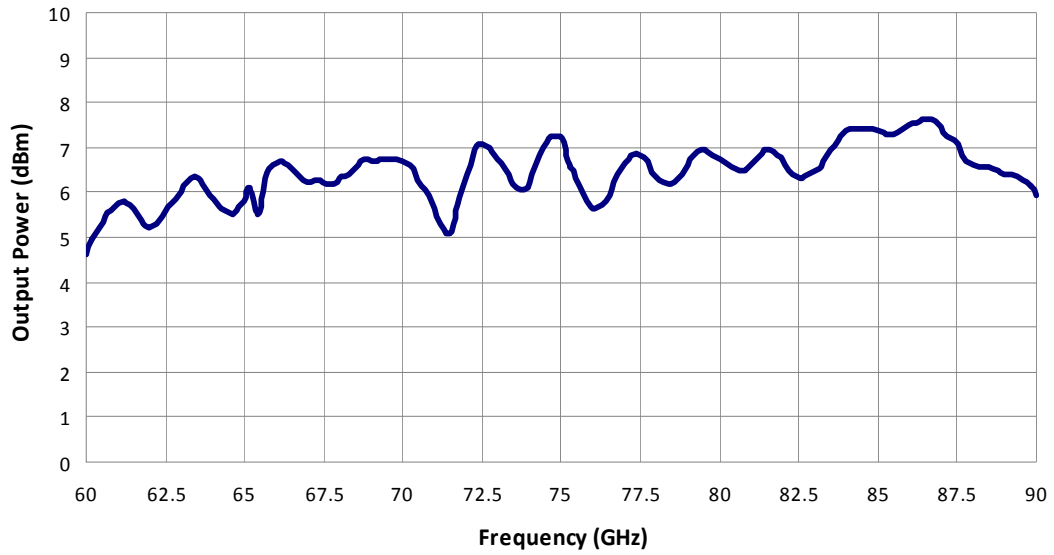
- AC/DC converter with 2m cable
- Manual

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	60		90
Test Port Output Power (2)	dBm		+6	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	10		15
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		6	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 1.5	
Test Port Interface	-	WR-12 UG-387/U		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-12 Output Power



Datasheet
Description

The FES-15 series will expand your existing microwave Signal Generator capabilities to conduct measurement in WR15 (50- 75GHz). These frequency extension modules easily connect to the ourput of your signal generator so you have a high performance source for your DUT characteristation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics will provide product accurate results.


Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

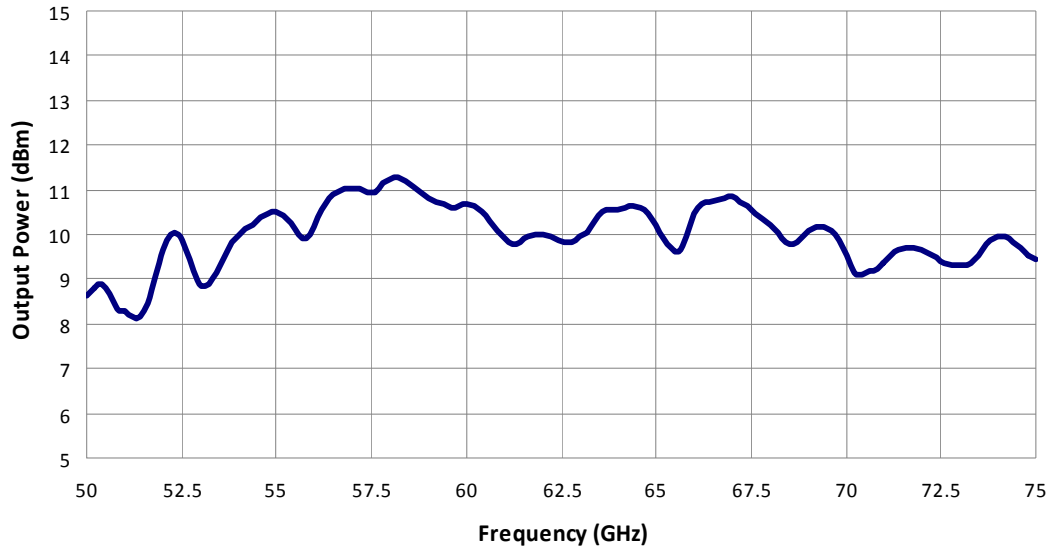
- AC/DC converter with 2m cable
- Manual

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	50		75
Test Port Output Power (2)	dBm		+10	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.5		18.75
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		4	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 1.5	
Test Port Interface	-	WR-15 UG-385/U		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-15 Output Power



Datasheet
Description

The FES-19 series will expand the frequency of your existing microwave Signal Generator to WR19 (40-60GHz) band. These frequency extension modules easily connect to the output of your signal generator so you have a high performance signal source for your DUT characterisation activities. Characterise your DUT with the confidence that the superior performance in terms of output power, spurious and harmonics level will provide accurate results.


Features

- Solid state multipliers
- Coverage 40 GHz to 325 GHz
- High output power specification
- Good harmonic suppression
- Separate AC/DC power source
- Low cost
- Stable and light weight
- Supports FM/PM and pulse modulations
- Compatible with standard signal generators
- Optional manual variable attenuator

Applications

- Test equipment extension
- Frequency sources for emerging mm-wave applications
- RF/LO sources for mixer measurements

Accessories

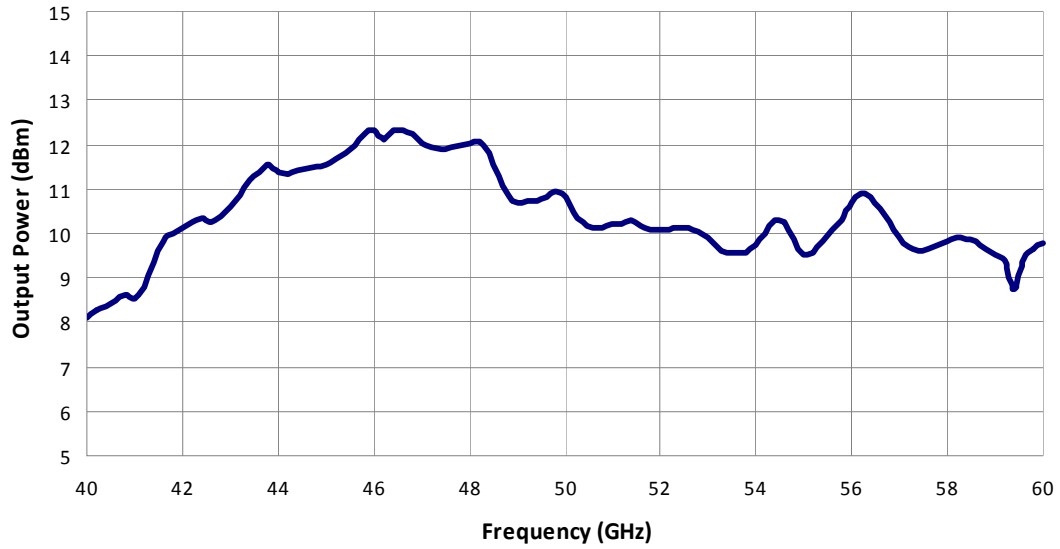
- AC/DC converter with 2m cable
- Manual

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	40		60
Test Port Output Power (2)	dBm		+10	
Optional Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	10		15
RF Input Power	dBm	+5		+10
RF Multiplication Factor	GHz		4	
RF Input Port Damage Level	dBm	+15		
RF Input VSWR	-		< 1.5	
RF Output VSWR	-		< 1.5	
Test Port Interface	-	WR-19 UG-383/UM		
RF Connector	-	SMA (F)		
DC Power Requirements	-	+12V at 1000 mA		
Weight	kg		1.5	
Dimensions (L x W x H)	-	250 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.

Datasheet

Typical FES-19 Output Power



Datasheet

Description

The FEV-03 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in H band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	220		325
Test Port Output Power (2)	dBm	-20	-15	
System Dynamic Range (3)	dB	70	90	
Raw Coupler Directivity	dB	25	30	
Trace Stability Magnitude (4)	dB		±0.8	
Trace Stability Phase (4)	degree		8	
Test Port Input 0.1dB Compression Point	dBm		0	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.22		18.05
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	9.17		13.54
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+5		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-03 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1750 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-05 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in G band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	140		220
Test Port Output Power (2)	dBm	-20	-12	
System Dynamic Range (3)	dB	70	90	
Raw Coupler Directivity	dB	30	35	
Trace Stability Magnitude (4)	dB		±0.6	
Trace Stability Phase (4)	degree		6	
Test Port Input 0.1dB Compression Point	dBm		0	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	11.67		18.33
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	11.67		18.33
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+5		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-05 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-06 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in D band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	110		170
Test Port Output Power (2)	dBm	-20	-10	
System Dynamic Range (3)	dB	80	100	
Raw Coupler Directivity	dB	35	40	
Trace Stability Magnitude (4)	dB		±0.4	
Trace Stability Phase (4)	degree		4	
Test Port Input 0.1dB Compression Point	dBm		+5	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	9.17		14.17
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	10		17
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+10		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-06 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-10 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in W band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic Range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	75		110
Test Port Output Power (2)	dBm	0	+4	
System Dynamic Range (3)	dB	100	110	
Raw Coupler Directivity	dB	40	45	
Trace Stability Magnitude (4)	dB		±0.2	
Trace Stability Phase (4)	degree		2	
Test Port Input 0.1dB Compression Point	dBm		+10	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.5		18.33
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	9.375		13.75
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+15		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-10 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-10 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in W band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- ~ Full simultaneous 2-port or 4-port network analysis
- ~ Extended range 67-110 GHz
- ~ Excellent dynamic range
- ~ Excellent stability
- ~ Compact and robust design
- ~ Convection cooled . no fans . hence no vibration.
- ~ T/R and T heads available
- ~ Electronic power control compatibility with Agilent PNA-X
- ~ 25 dB integrated manual variable attenuator on Port 1 heads
- ~ 2-Port controller available as standard
- ~ 4-port controller available for balanced and multi-port measurements to special order

Applications

- ~ Test and measurement frequency range extension
- ~ Balanced S-parameters
- ~ Multi-port S-parameters
- ~ Wafer probe measurement
- ~ Antenna measurements
- ~ Dielectric material characterisation

Accessories

- ~ Calibration kits
- ~ Cables
- ~ Manuals
- ~ Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	67		110
Test Port Output Power (2)	dBm	-2	+4	
System Dynamic Range (3)	dB	100	110	
Raw Coupler Directivity	dB	35	45	
Trace Stability Magnitude (4)	dB		±0.2	
Trace Stability Phase (4)	degree		2	
Test Port Input 0.1dB Compression Point	dBm		+10	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	11.17		18.33
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	8.375		13.75
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+15		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-10 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

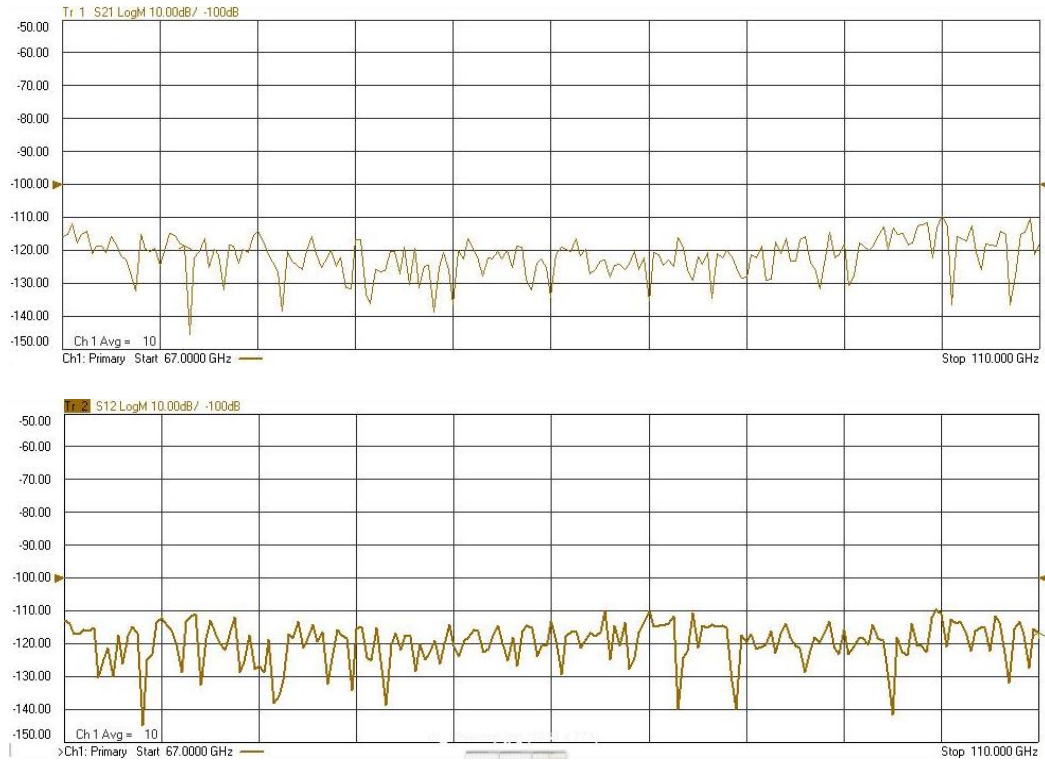


Figure 1. Typical dynamic range plot for FEV-10-TR-EXT. PNA-X direct connectivity setup.

Datasheet

Description

The FEV-10 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in W band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic Range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency (standard)	GHz	70		110
System Operating Frequency (high power)	GHz	71		86
Test Port Output Power (standard) (2)	dBm	-5	+3	
Test Port Output Power (high power) (2)	dBm	+15	+18	
System Dynamic Range (3)	dB	90	100	
Raw Coupler Directivity	dB	40	45	
Trace Stability Magnitude (4)	dB		±0.2	
Trace Stability Phase (4)	degree		2	
Test Port Input 0.1dB Compression Point	dBm		+10	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.5		18.33
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	9.375		13.75
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+15		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-10 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-10 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in W band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.

Features

- ~ Full simultaneous 2-port or 4-port network analysis
- ~ Excellent dynamic Range
- ~ Excellent stability
- ~ Compact and robust design
- ~ Convection cooled . no fans . hence no vibration.
- ~ T/R and T heads available
- ~ Electronic power control compatibility with Agilent PNA-X
- ~ 25 dB integrated manual variable attenuator on Port 1 heads
- ~ 2-Port controller available as standard
- ~ 4-port controller available for balanced and multi-port measurements to special order

Applications

- ~ Test and measurement frequency range extension
- ~ Balanced S-parameters
- ~ Multi-port S-parameters
- ~ Wafer probe measurement
- ~ Antenna measurements
- ~ Dielectric material characterisation

Accessories

- ~ Calibration kits
- ~ Cables
- ~ Manuals
- ~ Flight cases



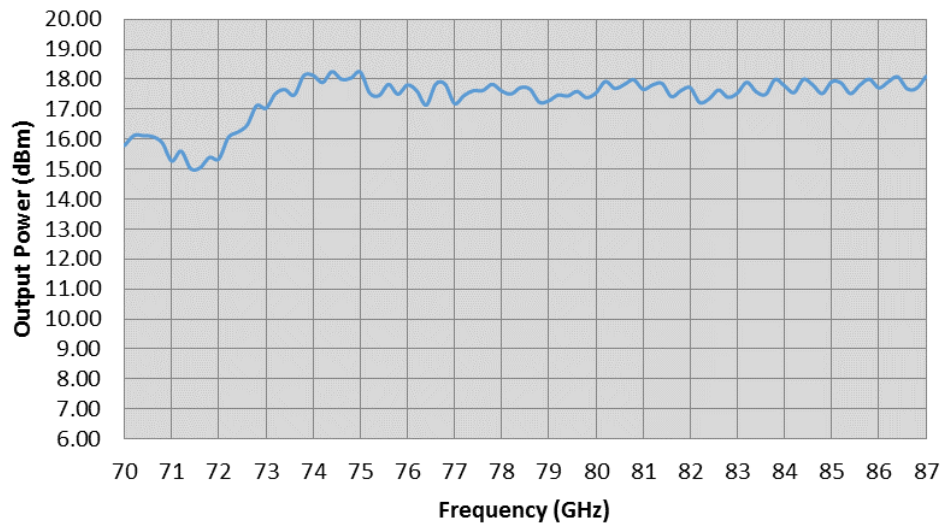
Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency (standard)	GHz	70		110
System Operating Frequency (high power)	GHz	70		87
Test Port Output Power (standard) (2)	dBm	-5	+2	
Test Port Output Power (high power) (2)	dBm	+14	+18	
System Dynamic Range (3)	dB	90	100	
Raw Coupler Directivity	dB	40	45	
Trace Stability Magnitude (4)	dB		±0.2	
Trace Stability Phase (4)	degree		2	
Test Port Input 0.1dB Compression Point	dBm		+10	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	11.67		18.33
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	8.75		13.75
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+15		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-10 UG-387/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 2500 mA		
TTL Control	-	D-sub 9-pin		
Weight	kg		4.5	
Dimensions (L x W x H)	-	320 x 130 x 85		
Operating Temperatures	°C	0		30

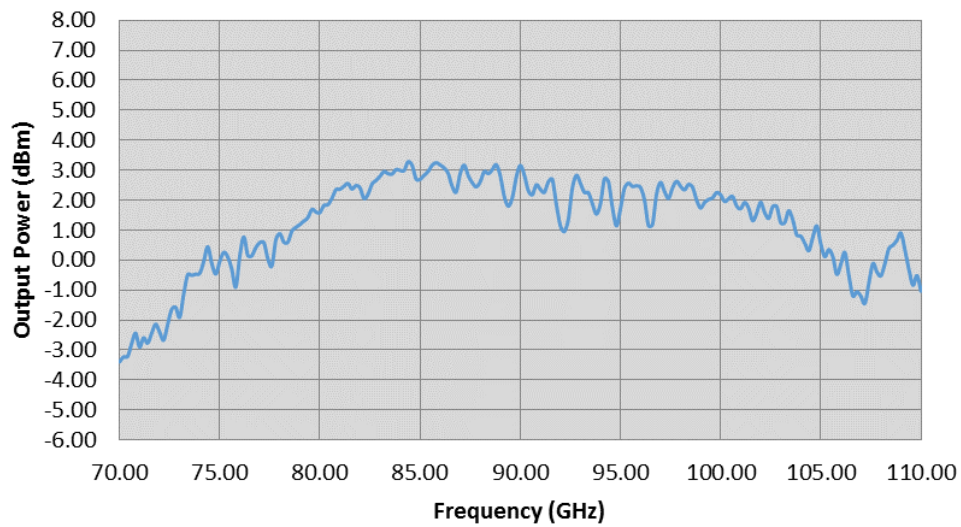
- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Output Power (High Power) vs Frequency



Output Power (Standard) vs Frequency



Datasheet

Description

The FEV-12 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurement in E band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic Range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	60		90
Test Port Output Power (2)	dBm	0	+4	
System Dynamic Range (3)	dB	100	110	
Raw Coupler Directivity	dB	40	45	
Trace Stability Magnitude (4)	dB		±0.1	
Trace Stability Phase (4)	degree		1	
Test Port Input 0.1dB Compression Point	dBm		+10	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	10		15
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	10		15
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+20		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-12 UG-387/U		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	290 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-15 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in V band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

Datasheet

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	50		75
Test Port Output Power (2)	dBm	+2	+7	
System Dynamic Range (3)	dB	100	120	
Raw Coupler Directivity	dB	40	45	
Trace Stability Magnitude (4)	dB		±0.1	
Trace Stability Phase (4)	degree		1	
Test Port Input 0.1dB Compression Point	dBm		+12	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	12.5		18.75
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	8.33		12.5
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+20		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-15 UG-385/U		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	305 x 130 x 85		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet

Description

The FEV-19 Series will expand your existing Vector Network Analyzer (VNA) capabilities so you can conduct industry leading millimeter wave S-parameters measurements in U band. These frequency extension modules connect to your existing test ports, and leverage the inherent microwave network analyzer's performance and features to display full port S-parameters: Two measurement architectures are available: 1-path/2-port and fully reversing 2-port. Waveguide calibration kits are available as separate accessories.



Features

- Full simultaneous 2-port or 4-port network analysis
- Excellent dynamic range
- Excellent stability
- Compact and robust design
- Convection cooled – no fans – hence no vibration.
- T/R and T heads available
- Electronic power control compatibility with Agilent PNA-X
- 25 dB integrated manual variable attenuator on Port 1 heads
- 2-Port controller available as standard
- 4-port controller available for balanced and multi-port measurements to special order

Applications

- Test and measurement frequency range extension
- Balanced S-parameters
- Multi-port S-parameters
- Wafer probe measurement
- Antenna measurements
- Dielectric material characterisation

Accessories

- Calibration kits
- Cables
- Manuals
- Flight cases

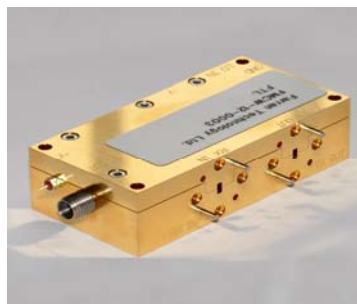
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Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	40		60
Test Port Output Power (2)	dBm	+3	+9	
System Dynamic Range (3)	dB	100	120	
Raw Coupler Directivity	dB	40	45	
Trace Stability Magnitude (4)	dB		±0.1	
Trace Stability Phase (4)	degree		1	
Test Port Input 0.1dB Compression Point	dBm		+15	
Manual Variable Attenuator	dB	0		25
RF Input Frequency	GHz	10		15
RF Input Power	dBm	+5		+10
LO Input Frequency	GHz	10		15
LO Input Power	dBm	+5		+10
IF Output Frequency	MHz	5		50
Test Port Damage Level	dBm	+25		
RF/LO Port Damage Level	dBm	+15		
Test Port Interface	-	WR-19 UG-383/UM		
RF/LO Connector	-	3.5 mm (F)		
IF Connector	-	SMA (F)		
DC Power Requirements	-	+6V at 1500 mA		
Weight	kg		3.5	
Dimensions (L x W x H)	-	345 x 140 x 90		
Operating Temperatures	°C	0		30

- (1) Specifications are typical and subject to change without a notice.
- (2) For frequencies greater than 110 GHz traceable only to FTL calorimeter.
- (3) Measured with PNA-X 5242A at 10 Hz of IF bandwidth.
- (4) Measured at 1h after 2h warm up and calibration. Assuming ideal RF and LO cables.

Datasheet
Description

Farran's 77 GHz FMCW Radar front end is based on a GaAs MMIC chipset offering wide bandwidth in a small outline package. The transmit signal is derived from an input VCO signal, which also acts as the LO for the receive mixer. The resulting IF is conditioned for gain and filtering as required.


Features

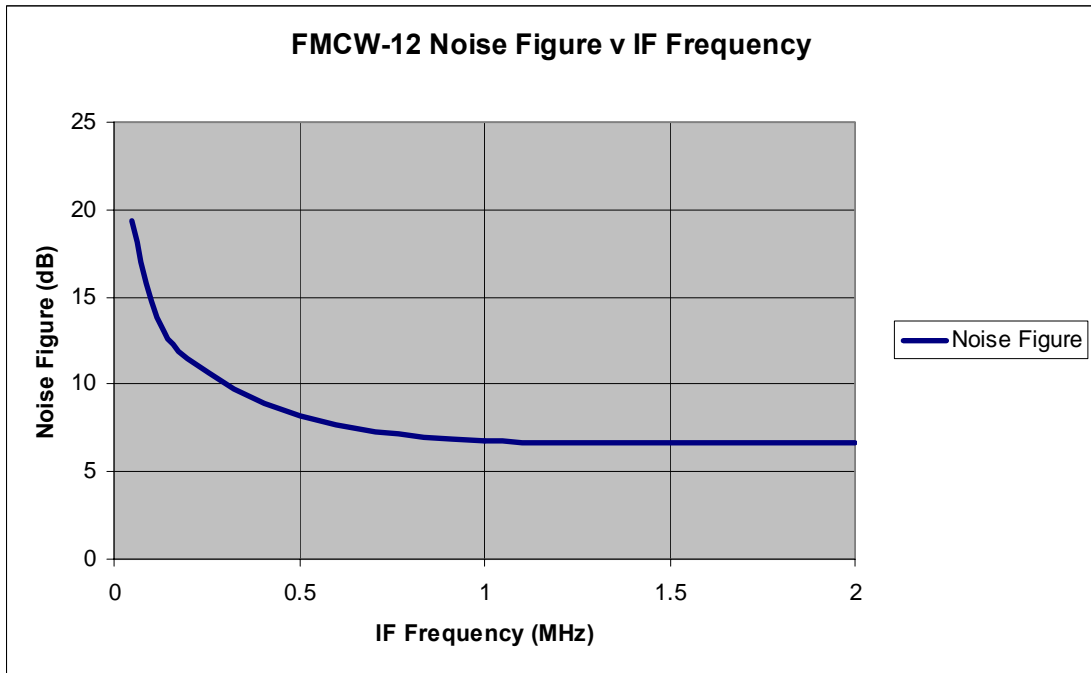
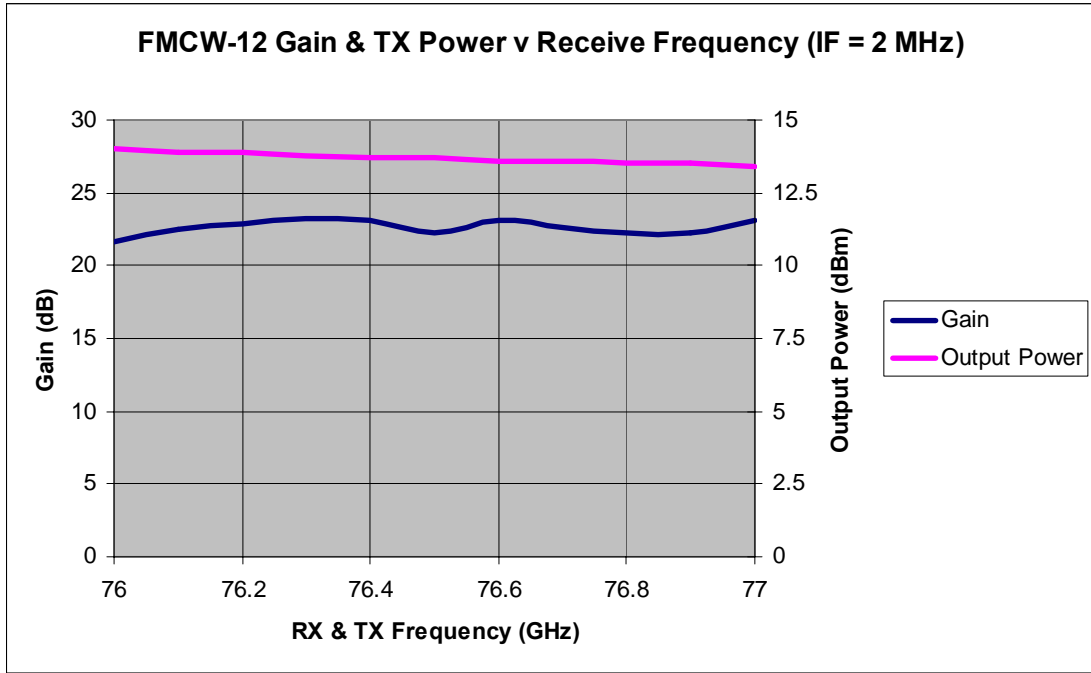
- Very compact, simple design
- Lightweight and low power consumption
- High available bandwidth
- FMCW homodyne architecture
- Customised solutions possible
- Bi-Static antenna configuration

Applications

- Aircraft collision avoidance
- Critical area surveillance
- Vehicular collision avoidance
- Runway incursion detection
- Traffic management
- FOD – Foreign Object Detection

Specification	Unit	Min	Typ	Max
Centre Frequency	GHz		76.5	
Bandwidth	GHz		1	
Receiver Gain	dB		20	
Receiver Noise Figure @ 2MHz IF	dB			10
IF Output Frequency	MHz	0.05		10
LO Input Power	dBm		+10	
RF Connections	-	WR-12 UG-387/U		
LO Connector	-	SMA (F)		
IF Connector	-	SMA (F)		
Power Requirements	-	+5V @ 400mA typical -5V @ 40mA typical		
Dimensions (L x W x H)	-	67 mm x 28 mm x 19 mm		

Datasheet



Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions

Datasheet
Description

The Farran Technology FST-04 frequency source modules consist of a micrometer-tuned free running DRO and a chain of solid state multipliers. The units operate based on a passive, tuner-less planar varactor tripler in the final multiplication stage and are capable of producing high signals in the 165 – 225 GHz frequency range. The final stage triplers can operate with external bias source or alternative self biasing mode.


Features

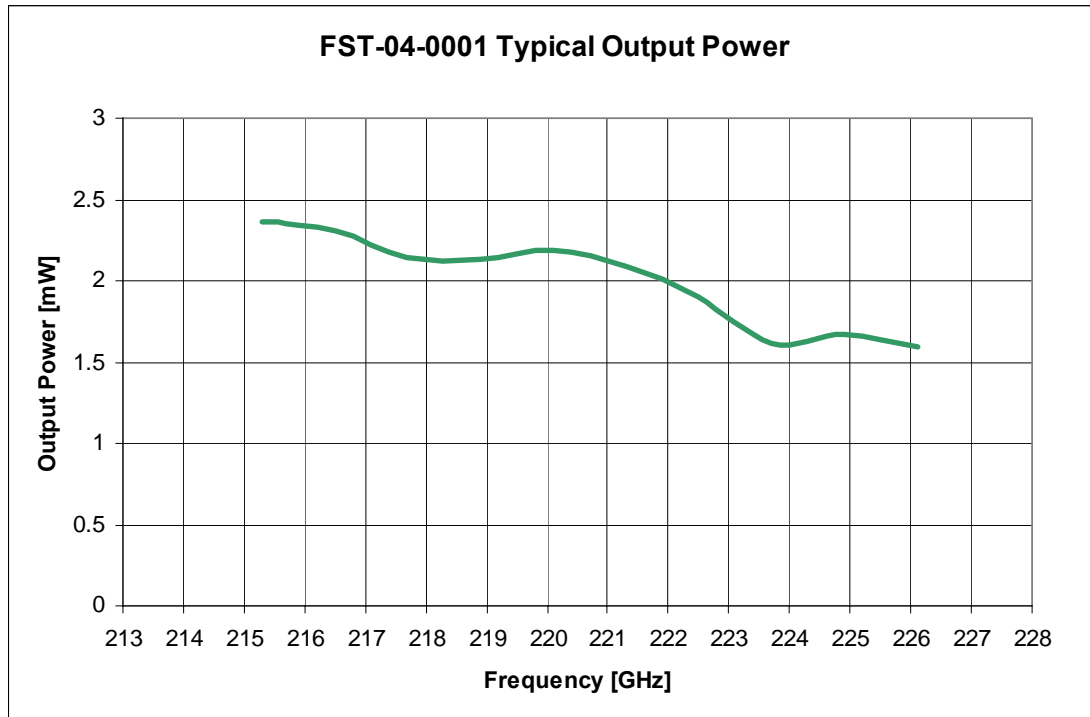
- Planar varactor diodes
- Micrometer driven frequency tuning
- High output power

Applications

- Mm-Wave instrumentation
- Communication systems
- Frequency sources

Specification	Unit	Min	Typ	Max
Output Frequency	GHz	215		225
RF Output Power	GHz	1	2	
Harmonic Level	dBc		-20	
RF Out VSWR			<3:1	
RF Out Port			WR-04 UG-387/UM	
Power Supply			+12 V @ 1A	
Operating Temperature Range			+0°C - 30°C	
Storage Temperature Range			-20°C - 50°C	
Dimensions	mm		100 x 100 x 200	
Weight	kg		1.75	

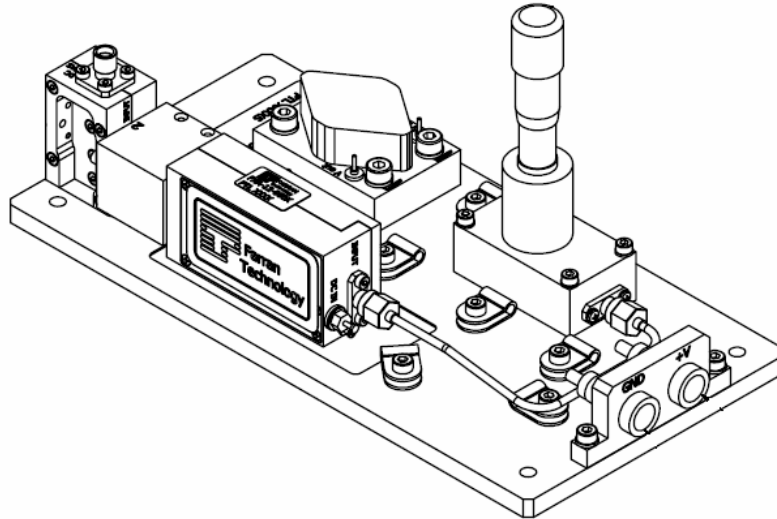
Datasheet



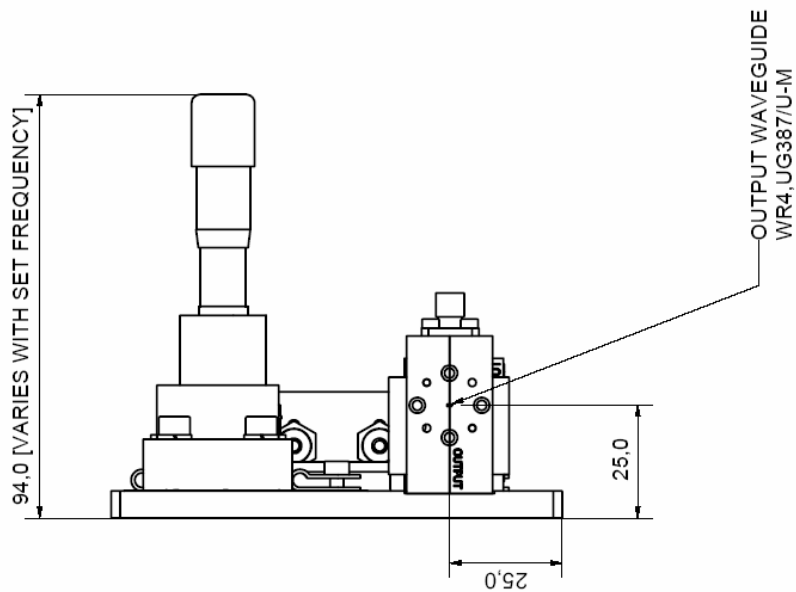
Note: Other frequencies and output powers available.
Contact factory for more information.

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet



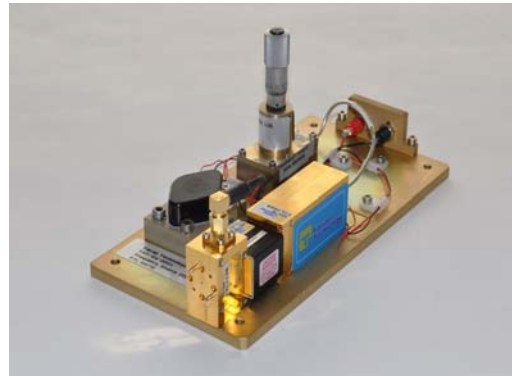
FST-04 angle view.



FST-04 front view.

Datasheet**Description**

The Farran Technology FST-05 frequency source modules consist of a micrometer-tuned free running DRO and a chain of solid state multipliers. The units operate based on a passive, tuner-less planar varactor tripler in the final multiplication stage and are capable of producing high signals in the 165 – 225 GHz frequency range. The final stage triplers can operate with external bias source or alternative self biasing mode.

**Features**

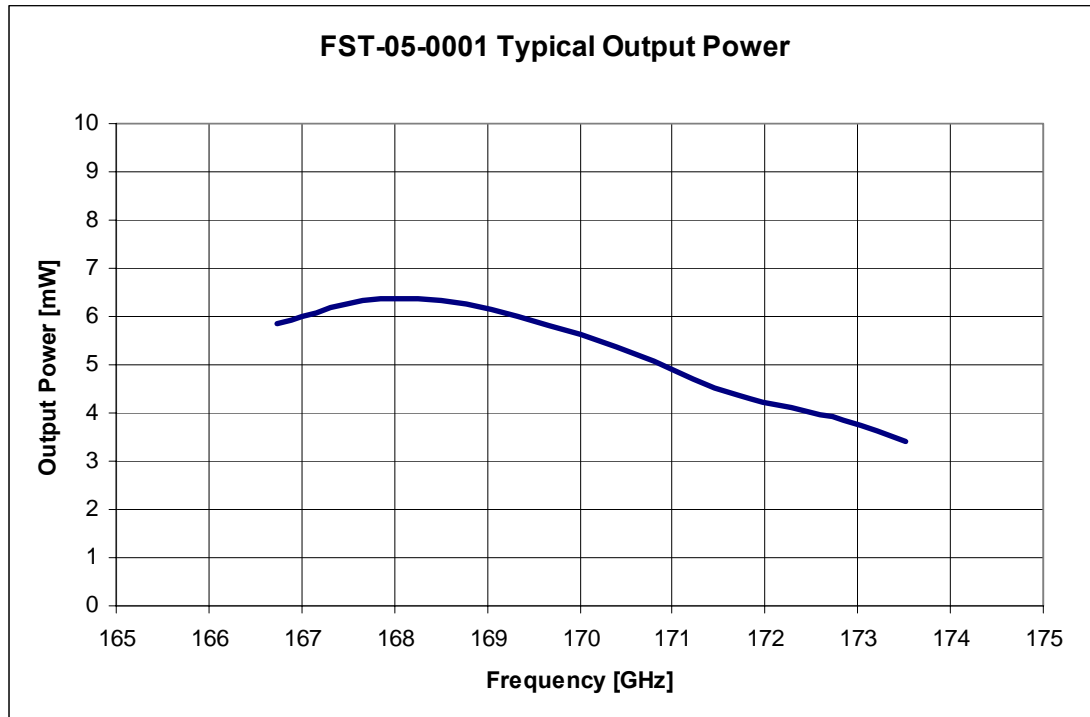
- Planar varactor diodes
- Micrometer driven frequency tuning
- High output power

Applications

- Mm-Wave instrumentation
- Communication systems
- Frequency sources

Specification	Unit	Min	Typ	Max
Output Frequency	GHz	165		175
RF Output Power	GHz	2	5	
Harmonic Level	dBc		-20	
RF Out VSWR			<3:1	
RF Out Port			WR-05 UG-387/UM	
Power Supply			+12 V @ 1A	
Operating Temperature Range			+0°C - 30°C	
Storage Temperature Range			-20°C - 50°C	
Dimensions	mm		100 x 100 x 200	
Weight	kg		1.75	

Datasheet

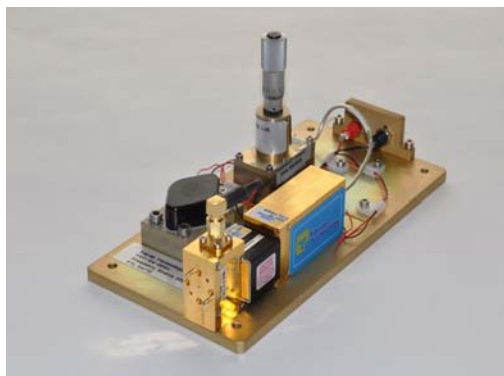


Note: Other frequencies and output powers available.
Contact factory for more information.

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet
Description

The Farran Technology FST-05 frequency source modules consist of a micrometer-tuned free running DRO and a chain of solid state multipliers. The units operate based on a passive, tuner-less planar varactor tripler in the final multiplication stage and are capable of producing high signals in the 165 – 225 GHz frequency range. The final stage triplers can operate with external bias source or alternative self biasing mode.


Features

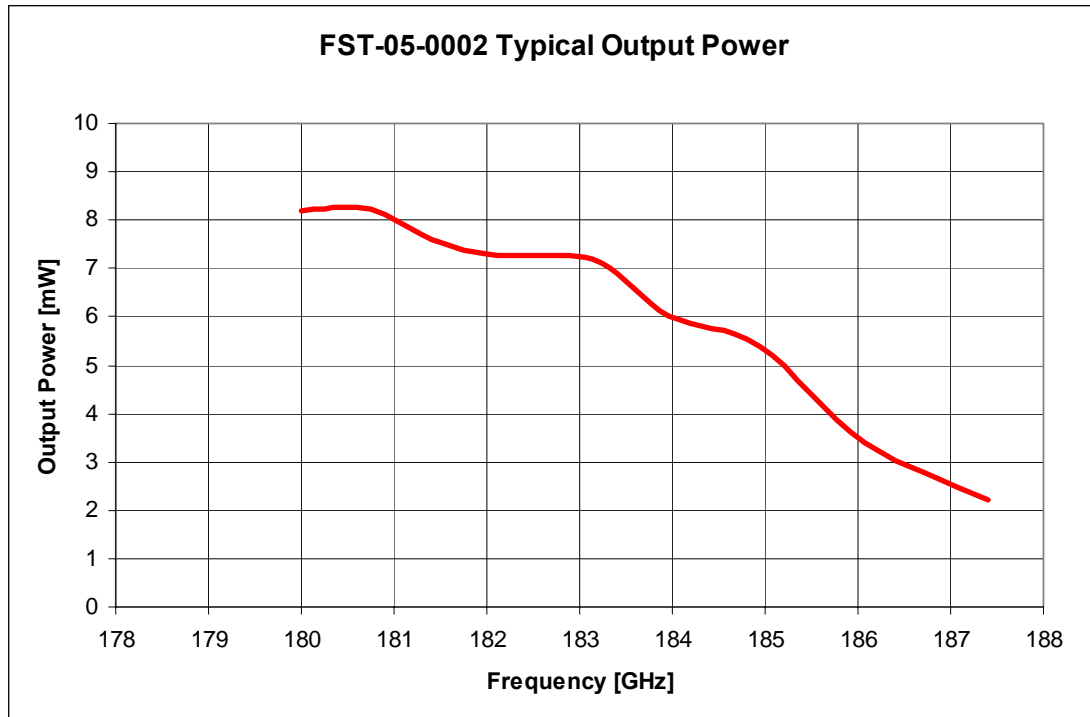
- Planar varactor diodes
- Micrometer driven frequency tuning
- High output power

Applications

- Mm-Wave instrumentation
- Communication systems
- Frequency sources

Specification	Unit	Min	Typ	Max
Output Frequency	GHz	177.5		187.5
RF Output Power	GHz	2	6	
Harmonic Level	dBc		-20	
RF Out VSWR			<3:1	
RF Out Port			WR-05 UG-387/UM	
Power Supply			+12 V @ 1A	
Operating Temperature Range			+0°C - 30°C	
Storage Temperature Range			-20°C - 50°C	
Dimensions	mm		100 x 100 x 200	
Weight	kg		1.75	

Datasheet



Note: Other frequencies and output powers available.
Contact factory for more information.

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

A general purpose MMIC packaged x2 multiplier in the K-band frequency range.



Features

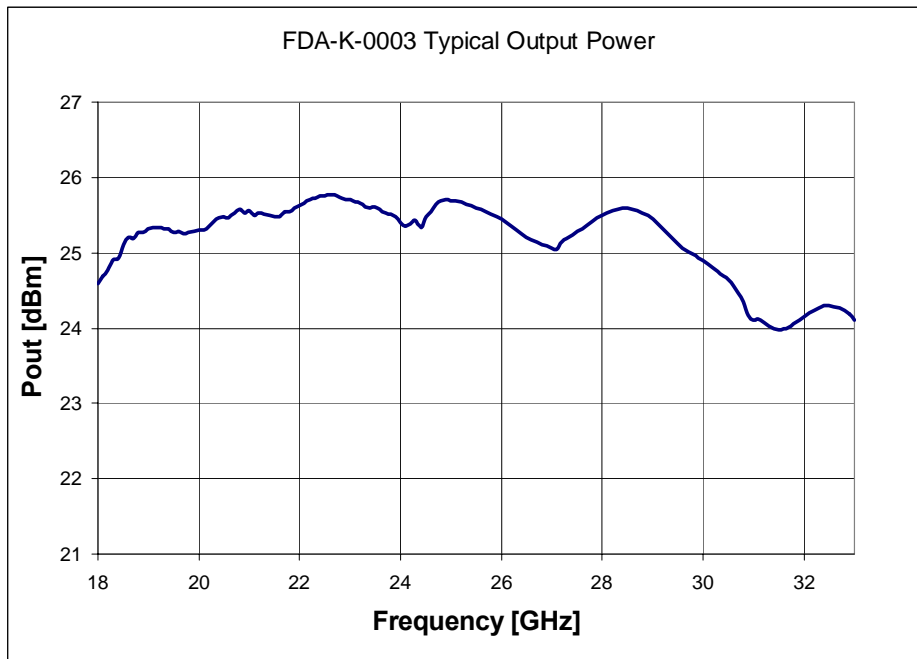
- Wide band coverage
- High output power

Applications

- LO chains
- Radar sources
- Communication sources
- Test equipment

Specification	Unit	Min	Typ	Max
Input Frequency	GHz	9		16.5
Output Frequency	GHz	18		33
Multiplication Factor	-		2	
Pin	dBm		5	10
Pout	dBm		24	26
Harmonic Level	dBc		-30	-20
Supply Voltage	V	6		12
Current	mA		800	1000
Input/Output Connector	-		K (F)	

Datasheet



Notes:

1. Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.
2. Lower output power available. Please contact Farran Technology directly for more information.

Datasheet

Description

A general purpose MMIC packaged x2 multiplier in the Ka-band frequency.



Features

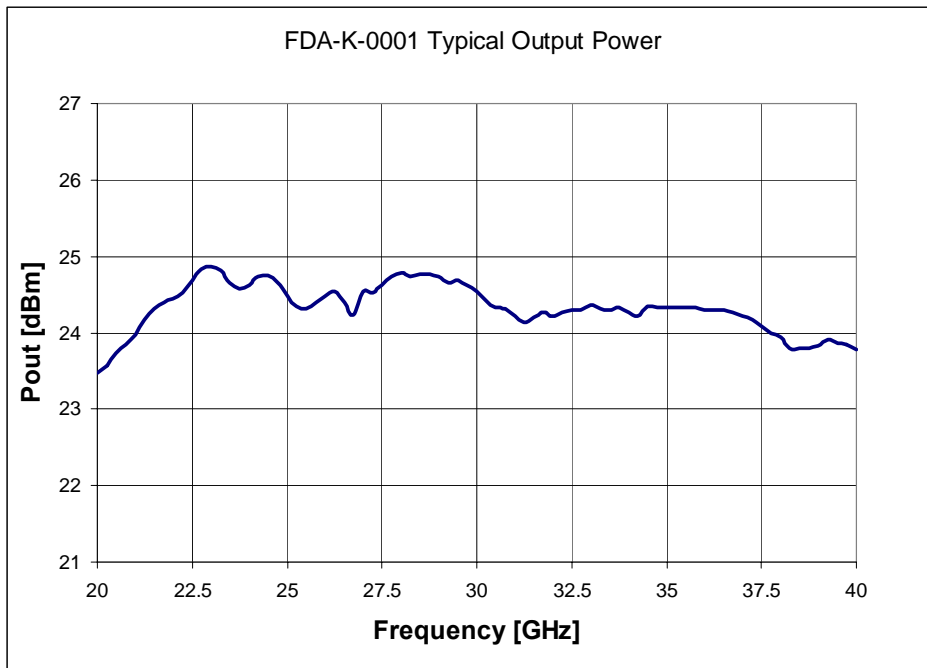
- K type or WR-28 output available
- Wide band coverage
- High output power

Applications

- LO chains
- Radar sources
- Communication sources
- Test equipment

Specification	Unit	Min	Typ	Max
Input Frequency	GHz	10		20
Output Frequency	GHz	20		40
Multiplication Factor	-		2	
Pin	dBm		5	10
Pout	dBm			24
Harmonic Level	dBc		-30	-20
Supply Voltage	V	6		12
Current	mA		900	1100
Input Connector	-	K (F)		
Output Connector	-	K (F) or (optionally WR-28)		

Datasheet



Datasheet

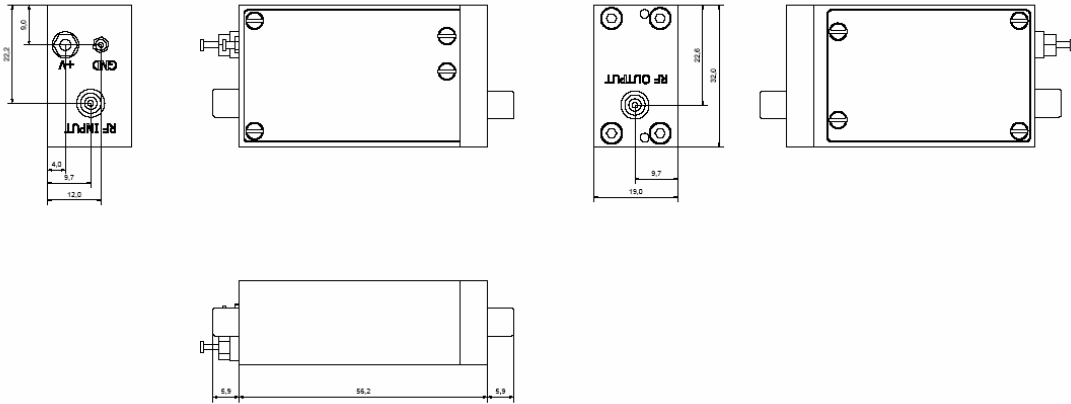


Figure 1. FDA-K outline.

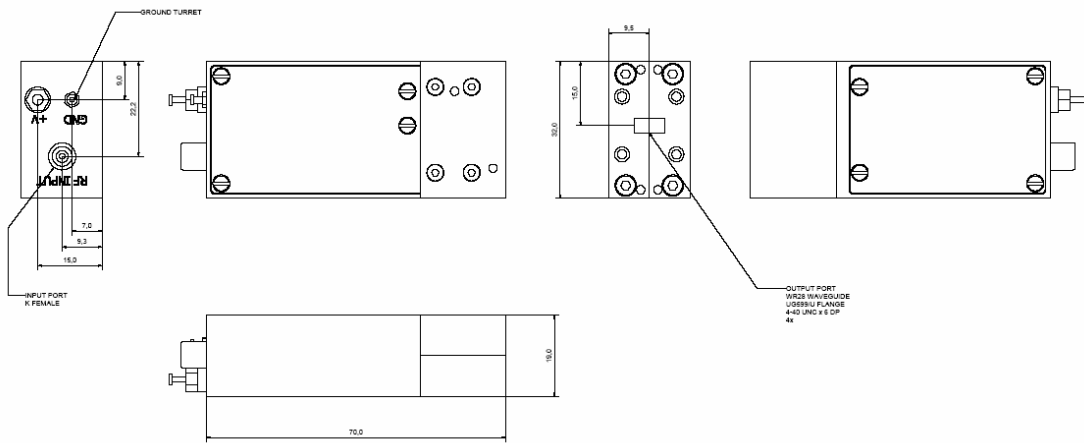


Figure 2. FDA-28 outline.

Notes:

1. Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.
2. * Lower Output power available. Please contact Farran Technology directly for more information.
3. ** FDA-28 output frequency is limited by the waveguide cut-off at 21.1 GHz

Datasheet

Description

A general purpose MMIC packaged x4 multiplier in the E-band frequency range.



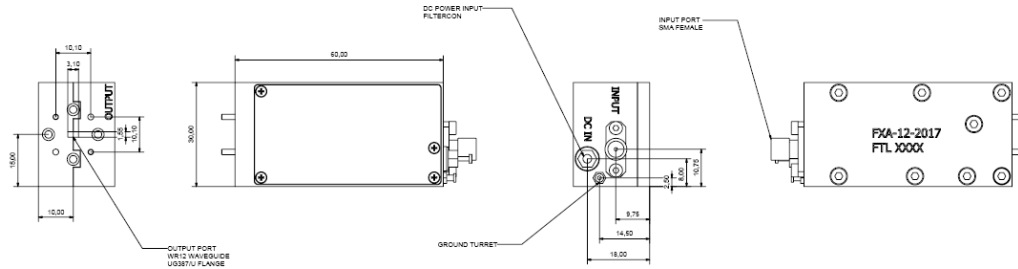
Features

- Wide band coverage
- Compact outline

Applications

- LO chains
- Radar sources
- Communication sources
- Test equipment

Specification	Unit	Min	Typ	Max
Input Frequency	GHz	17.75		19
Output Frequency	GHz	71		76
Multiplication Factor	-		4	
Pin	dBm		+10	+13
Pout	dBm		+13	
Harmonic Level	dBc		TBA	TBA
Supply Voltage	V	6		12
Current	mA		TBA	TBA
Input Connector	-	K(F)		
Output Connector	-	WR-12 UG-387/U		



Notes :

1. Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.
2. * Higher Output power available. Please contact Farran Technology directly for more information

Datasheet**Description**

A general purpose MMIC packaged x4 multiplier covering a very wide 18-50 GHz bandwidth.

**Features**

- ~ Wide band coverage
- ~ High output power
- ~ Low harmonic/spurious content

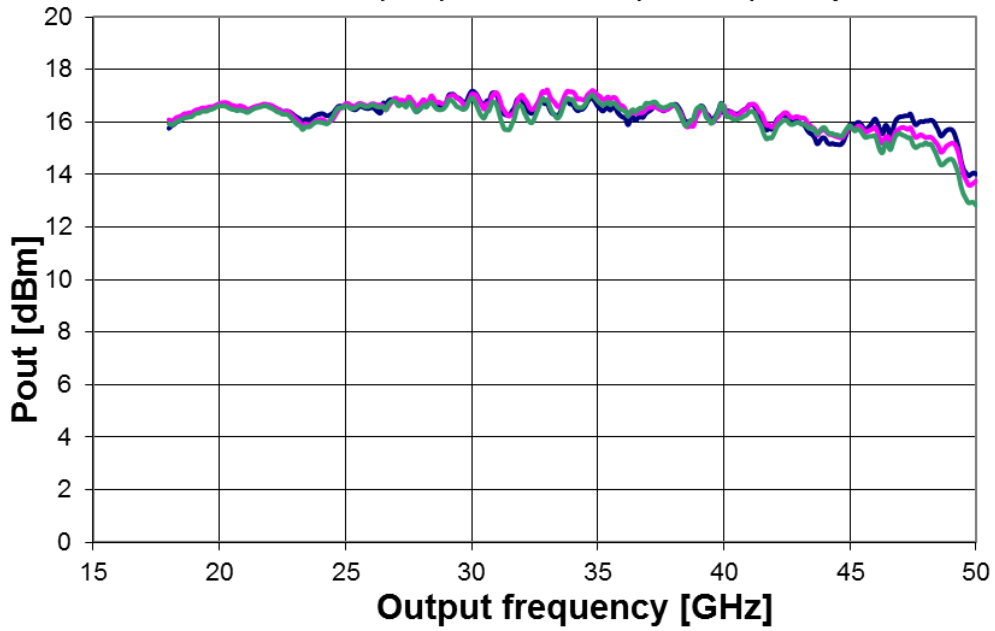
Applications

- ~ LO chains
- ~ Radar sources
- ~ Communication sources
- ~ Test equipment

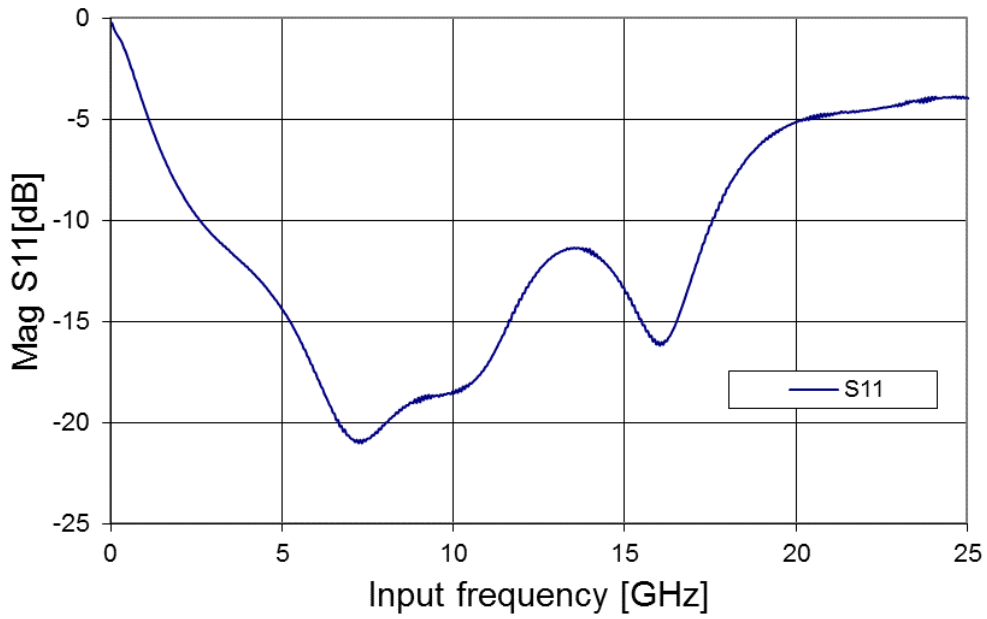
Specification	Unit	Min	Typ	Max
Input Frequency	GHz	4.5		25
Output Frequency	GHz	18		50
Multiplication Factor	-		4	
Pin	dBm		5	10
Pout	dBm	10	15	
Harmonic Level	dBc		-15	
Supply Voltage	V	6		12
Current	mA		500	650
Input Connector	-	SMA (F)		
Output Connector	-	1.85 mm (F)		

Datasheet

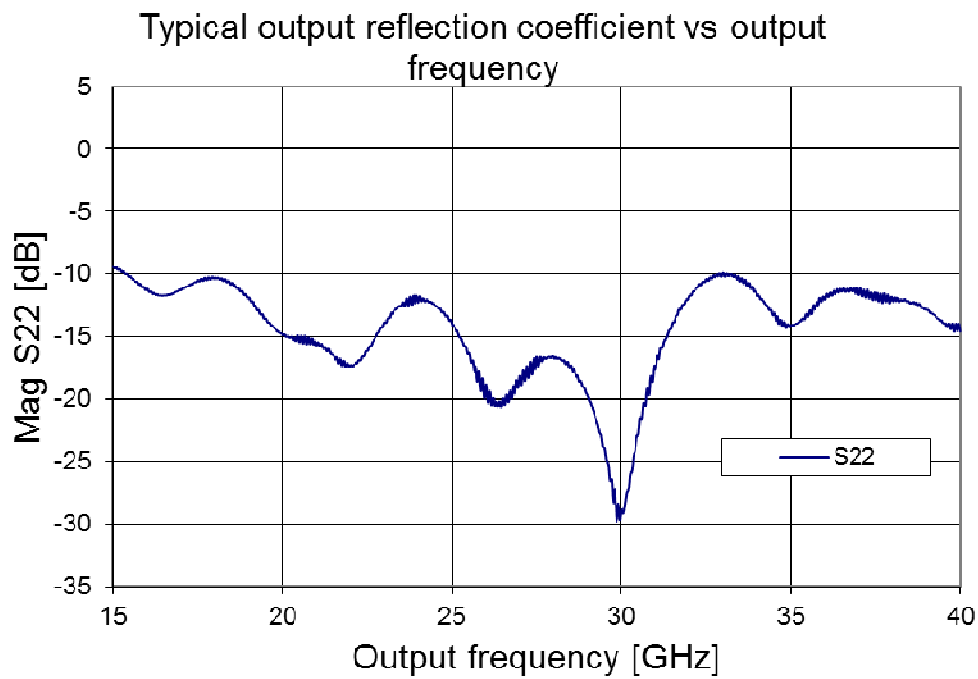
Output power vs output frequency



Typical input reflection coefficient vs input frequency



Datasheet



Notes:

1. Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.
2. Other output powers available. Please contact Farran Technology directly for more information.

Datasheet

Description

A general purpose MMIC packaged x8 multiplier in the E-band frequency range.



Features

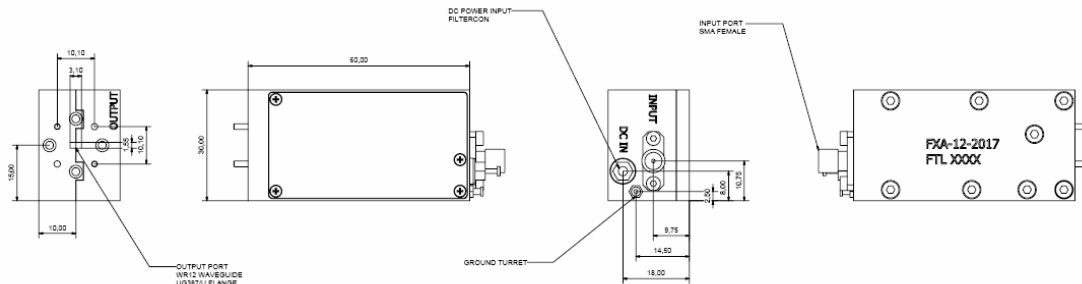
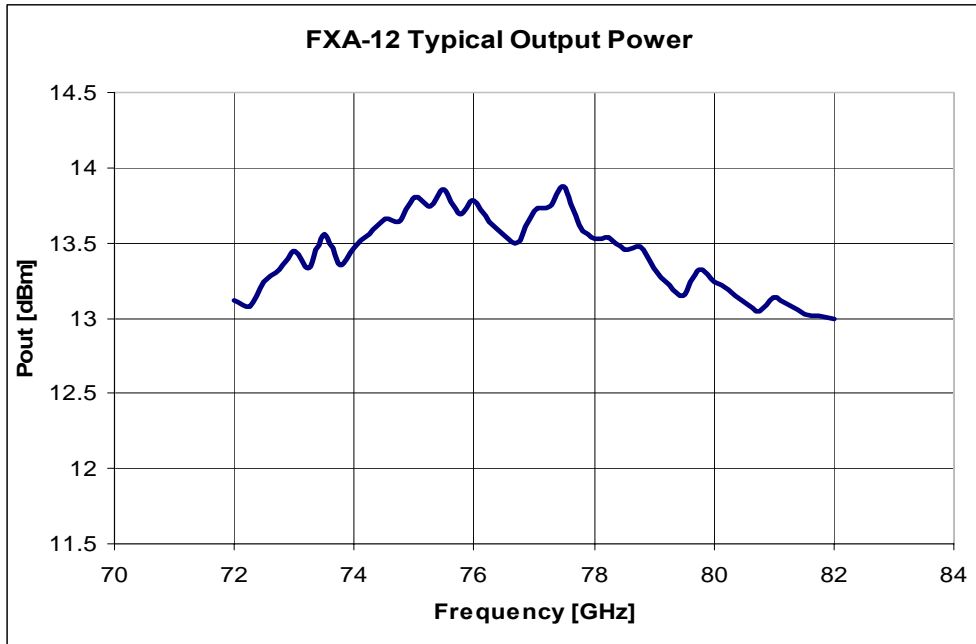
- Wide band coverage
- Compact outline

Applications

- LO chains
- Radar sources
- Communication sources
- Test equipment

Specification	Unit	Min	Typ	Max
Input Frequency	GHz	9		10.25
Output Frequency	GHz	72		82
Multiplication Factor	-		8	
Pin	dBm		10	13
Pout	dBm		13	*
Harmonic Level	dBc		-40	-20
Supply Voltage	V	6		12
Current	mA		720	850
Input Connector	-	K(F)		
Output Connector	-	WR-12 UG-387/U		

Datasheet



Notes :

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2. * Higher Output power available. Please contact Farran Technology directly for more information

Datasheet

Description

A high efficiency x3 passive multiplier series covering full WR-03 band (220-325 GHz).



Features

- High efficiency
- Full band frequency coverage
- Fixed tuned
- Unbiased planar diodes

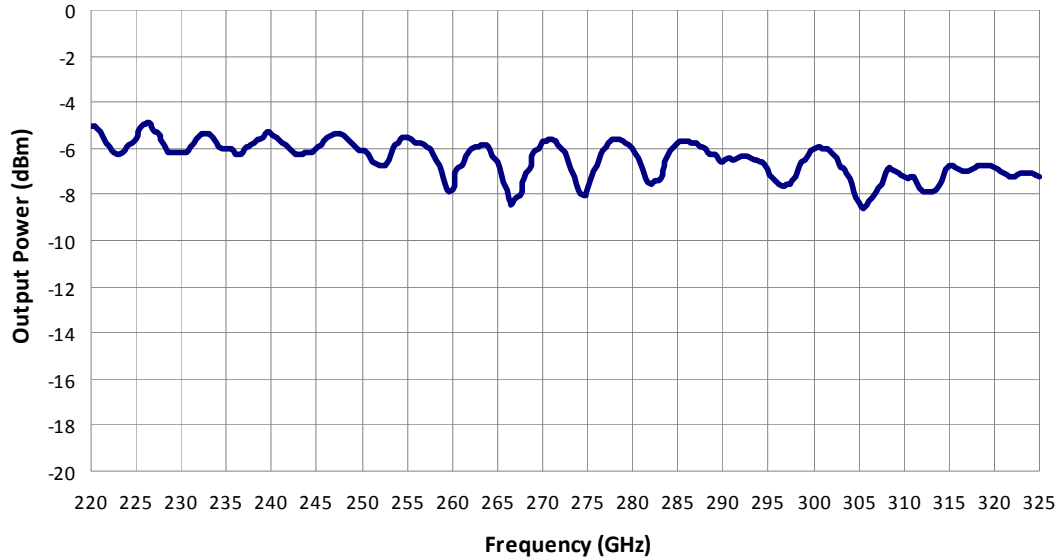
Applications

- Frequency multiplication
- Mm-Wave instrumentation
- Signal source frequency extension
- Test and measurement

Specification	Unit	Min	Typ	Max
Output Frequency Range	GHz	220		325
Frequency Band		-		
Waveguide Designation		WR-03		
Multiplication Factor		3		
Input Power Range	dBm	+5		+13
Output Power Range	dBm		-7	
Efficiency	%	2.5 typ.		
Input Flange		WR-10 UG387/U-M		
Output Flange		WR-03 UG387/U-M		
Bias Required		None		

Datasheet

Typical FT-03 Output Power



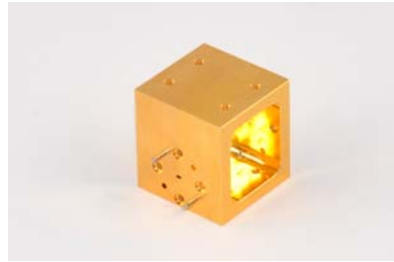
Notes:

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Datasheet

Description

A high efficiency x3 passive multiplier series covering full WR-05 band (140-220 GHz).



Features

- High efficiency
- Full band frequency coverage
- Fixed tuned
- Unbiased planar diodes

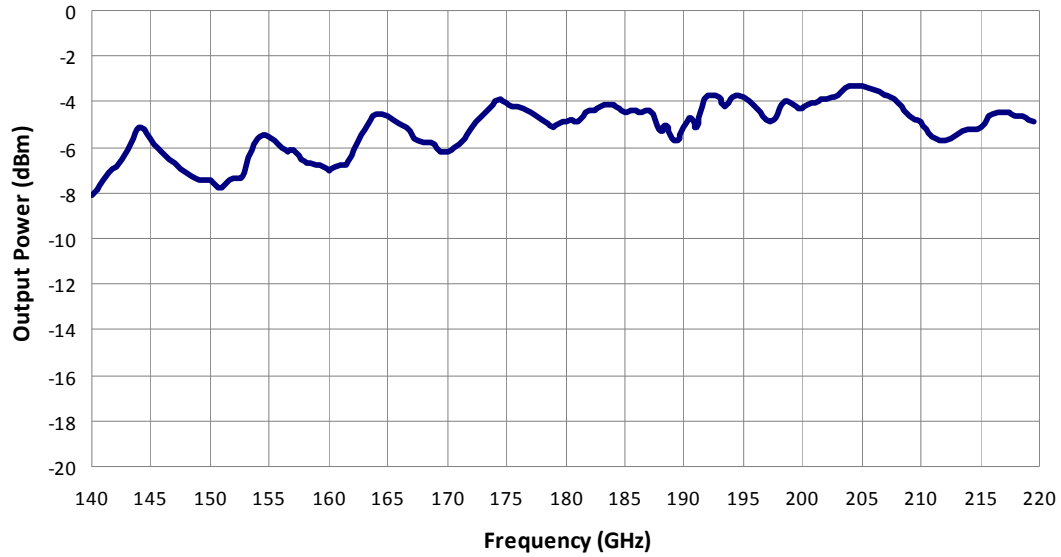
Applications

- Frequency multiplication
- Mm-Wave instrumentation
- Signal source frequency extension
- Test and measurement

Specification	Unit	Min	Typ	Max
Output Frequency Range	GHz	140		220
Frequency Band		G		
Waveguide Designation		WR-05		
Multiplication Factor		3		
Input Power Range	dBm	+5		+13
Output Power Range	dBm		-6	
Efficiency	%	3 typ.		
Input Flange		WR-15 UG385/U		
Output Flange		WR-05 UG387/U-M		
Bias Required		None		

Datasheet

Typical FT-05 Output Power



Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

A high efficiency x3 passive multiplier series covering full WR-06 band (110-170 GHz).



Features

- High efficiency
- Full band frequency coverage
- Fixed tuned
- Unbiased planar diodes

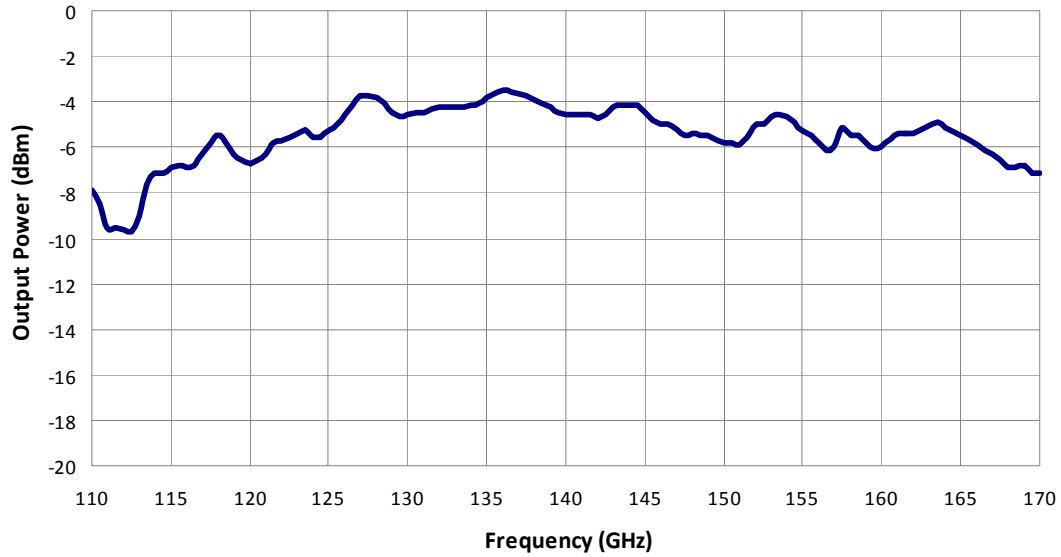
Applications

- Frequency multiplication
- Mm-Wave instrumentation
- Signal source frequency extension
- Test and measurement

Specification	Unit	Min	Typ	Max
Output Frequency Range	GHz	110		170
Frequency Band		D		
Waveguide Designation		WR-06		
Multiplication Factor		3		
Input Power Range	dBm	+5		+13
Output Power Range	dBm		-6	
Efficiency	%	3 typ.		
Input Flange		WR-19 UG383/U-M		
Output Flange		WR-06 UG387/U-M		
Bias Required		None		

Datasheet

Typical FT-06 Output Power



Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

A high efficiency x3 passive multiplier series covering full WR-10 band (75-110 GHz).



Features

- High efficiency
- Full band frequency coverage
- Fixed tuned
- Unbiased planar diodes

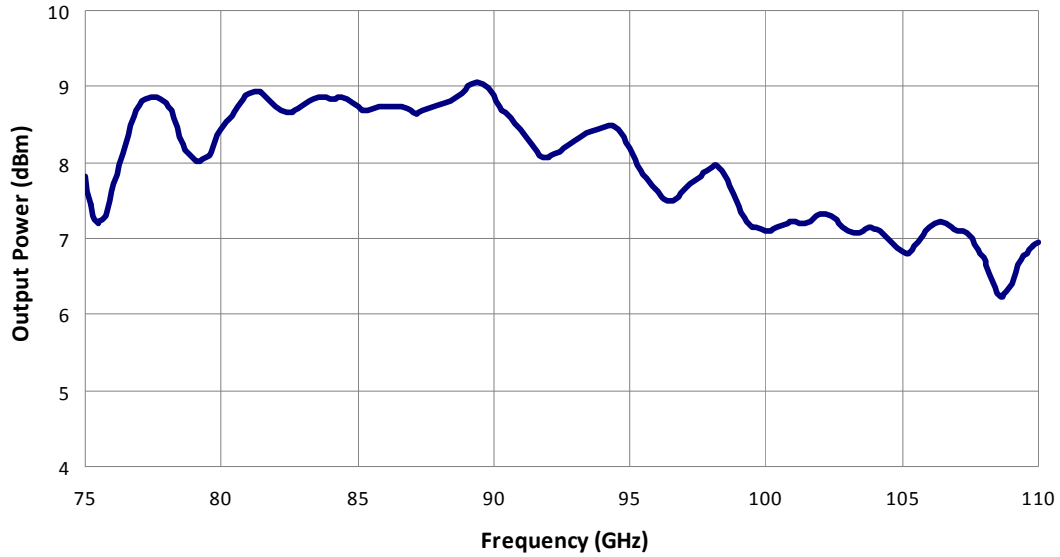
Applications

- Frequency multiplication
- Mm-Wave instrumentation
- Signal source frequency extension
- Test and measurement

Specification	Unit	Min	Typ	Max
Output Frequency Range	GHz	75		110
Frequency Band		W		
Waveguide Designation		WR-10		
Multiplication Factor		3		
Input Power Range	dBm			+23
Output Power Range	dBm		+7	
Efficiency	%	3 typ.		
Input Flange		WR-28 UG599/U		
Output Flange		WR-10 UG387/U-M		
Bias Required		None		

Datasheet

Typical FT-10 Output Power



Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

A high efficiency x3 passive multiplier series covering full WR-12 band (60-90 GHz).



Features

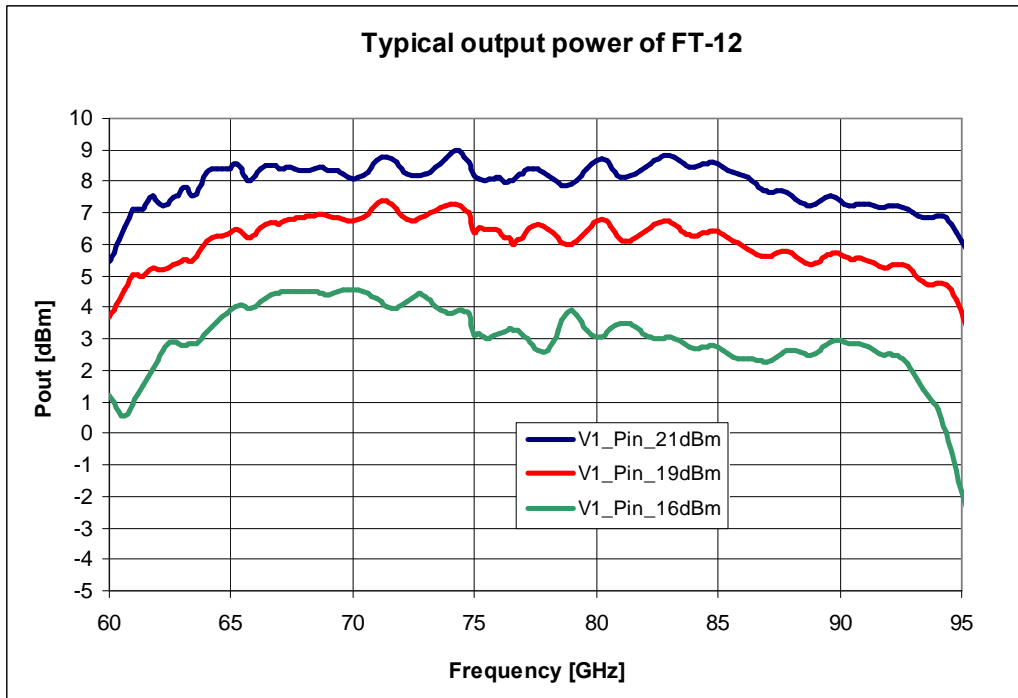
- ~ High efficiency
- ~ Full band frequency coverage
- ~ Fixed tuned
- ~ Unbiased planar diodes

Applications

- ~ Frequency multiplication
- ~ Mm-Wave instrumentation
- ~ Signal source frequency extension
- ~ Test and measurement

Specification	Unit	Min	Typ	Max
Output Frequency Range	GHz	60		90
Frequency Band		W		
Waveguide Designation		WR-12		
Multiplication Factor		3		
Input Power Range	dBm			+23
Output Power Range	dBm		+7	
Efficiency	%	3 typ.		
Input Connector		K-type Female		
Output Flange		WR-12 UG387/U-M		
Bias Required		None		

Datasheet



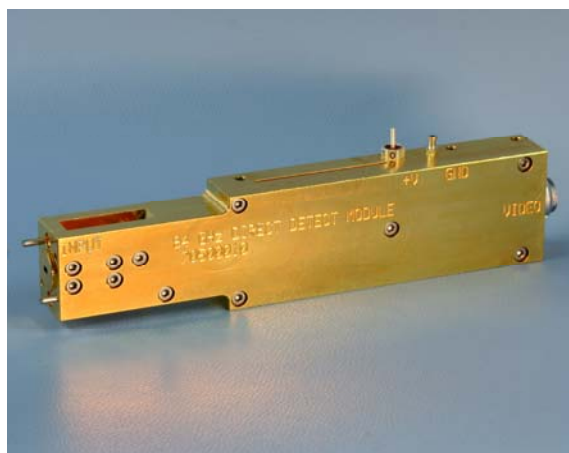
Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions.

Datasheet

Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. A low attenuation atmospheric window from 80-110GHz (W Band) makes this band an ideal candidate for PMMW systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object.



Features

- Direct detection – no LO signals present
- Low noise figure for high sensitivity
- Integrated video amplification

Applications

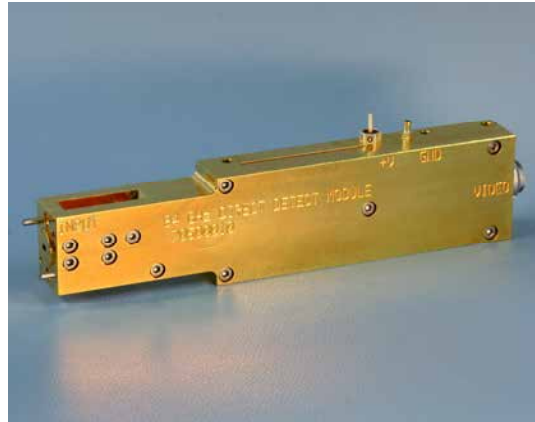
- Airport security screening
- Material composition
- Remote sensing
- Medical
- Metrology
- Metal detection in food

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Gain	dB		50	
Noise Figure	dB		5	
Sensitivity	mV			1200
Physical Size		125 x 28 x 13mm		
Mass		85g		
Power Consumption	W	0.25		

Datasheet

Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. A low attenuation atmospheric window at 140 GHz makes this frequency an ideal candidate for PMMW systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object.



Features

- Direct detection – no LO signals present
- Low noise figure for high sensitivity
- Integrated video amplification

Applications

- Airport security screening
- Material composition
- Remote sensing
- Medical
- Metrology
- Metal detection in food

Specification	Unit	Min	Typ	Max
Frequency	GHz	140		140
Gain	dB		50	
Noise Figure	dB		8	
Sensitivity	mV			1200
Physical Size		125 x 28 x 13mm (TBD)		
Mass		85g (TBD)		
Power Consumption	W	0.25 (TBD)		

Datasheet
Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object. Products available up to 325GHz


Features

- High performance receiver front end
- Low noise figure
- Integrated LO
- Broad IF bandwidth

Applications

- Airport security screening
- Imaging
- Standoff screening

Specification	Unit	Min	Typ	Max
Frequency	GHz		183	
RF Bandwidth	GHz		10 (+/-5)	
LO Source	GHz		91.5*	
LO Frequency Tuning Range	MHz			200
Pre Detection Bandwidth	GHz	0.02 - 5 ($\pm 10\%$)		
System Noise Figure	dB		5.5	6.5
LO Tuning Voltage	V	4.5	5	
RF Waveguide		WR-05		
Flange		UG-387/U-M		
IF Output Connector		SMA(f)		
Tuning Voltage Connector		SMA(f)		
DC Supply		+5V @ 0.8A typ		
Weight	kg	0.2		
Dimensions	mm	105 x 35x 45mm		

Note 1:* Different centre frequency available. Contact factory for information.

Datasheet

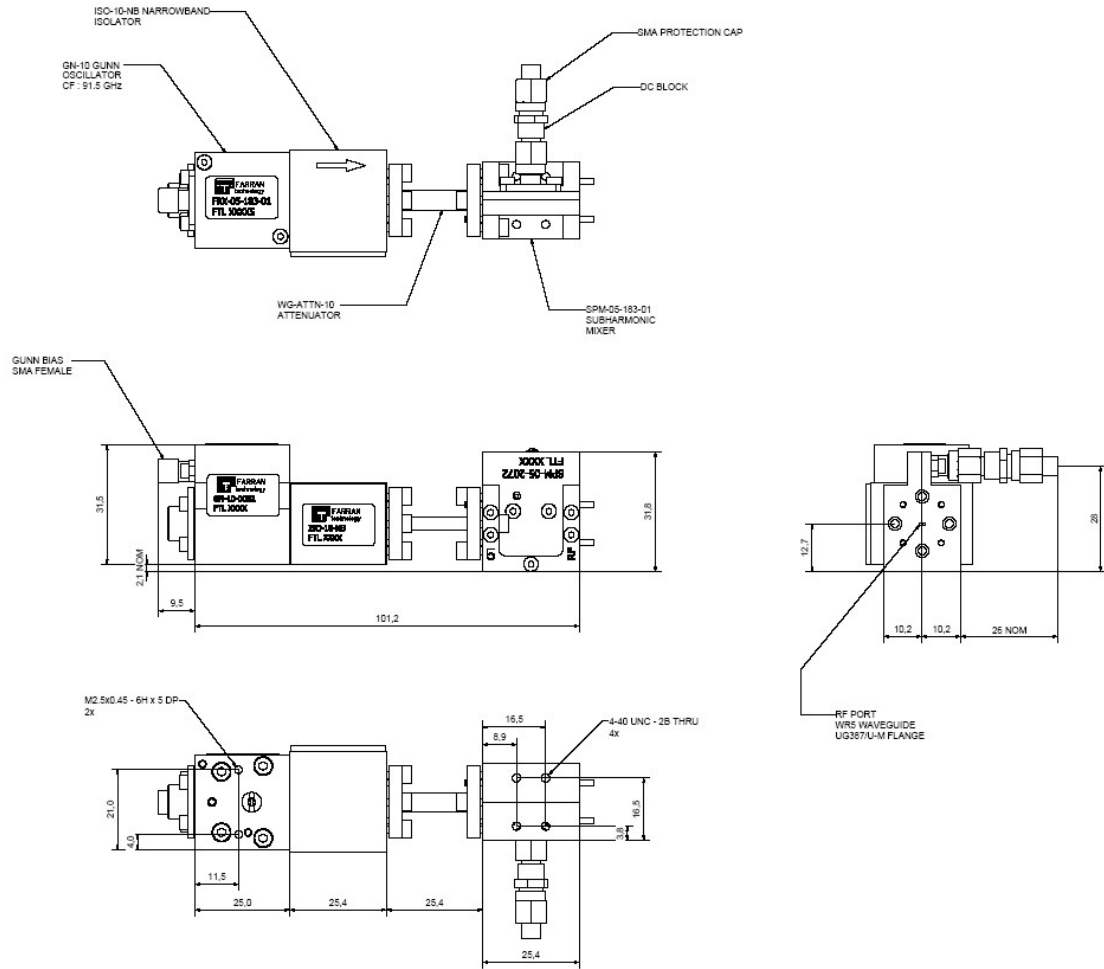


Figure 1. FRX-05-183-01 top and side view.

Note 2:

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Datasheet
Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object. Products available up to 325GHz.


Features

- High performance radiometric sensor at 220GHz

Applications

- Atmospheric research
- Meteorology
- Radio propagation studies
- Instrumentation
- Imaging

Specification	Unit	Min	Typ	Max
Operating Frequency	GHz		220	
RF Bandwidth	GHz		10 (± 5)	
LO Source Frequency	GHz		110	
Pre Detection Bandwidth	GHz		0.02 - 5 ($\pm 10\%$)	
Centre Frequency Accuracy	MHz		<1	
Radiometric Dynamic Range	K	3		350
Radiometric Sensitivity	K		<1.7	
Integration	ms		5	
System Noise Figure (DSB)	dB		10	
Conical Antenna Gain (dBi)	dB		2.5	
Voltage Output	V		0.1-10	
Detector Type			Square law	
Conical Antenna Flange			UG-387/UM	
Waveguide Flange			UG-387/UM	
Video Output Connector			SMA(f)	
Power Requirements			+15 V @ 1500 mA	
Weight	kg		3.5	
Dimensions	mm		300 x 200 x 70	

Note 1: Different centre frequency and IF bandwidth available.
Contact factory for information.

Datasheet

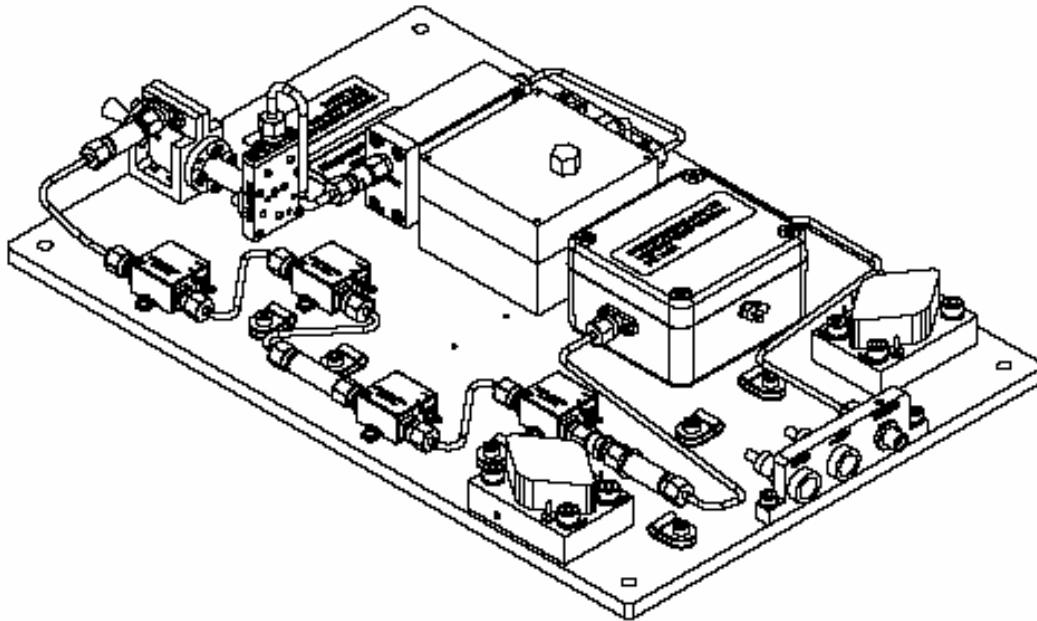


Figure 1. 220 GHz – RAD - 0001 angle view.

Datasheet

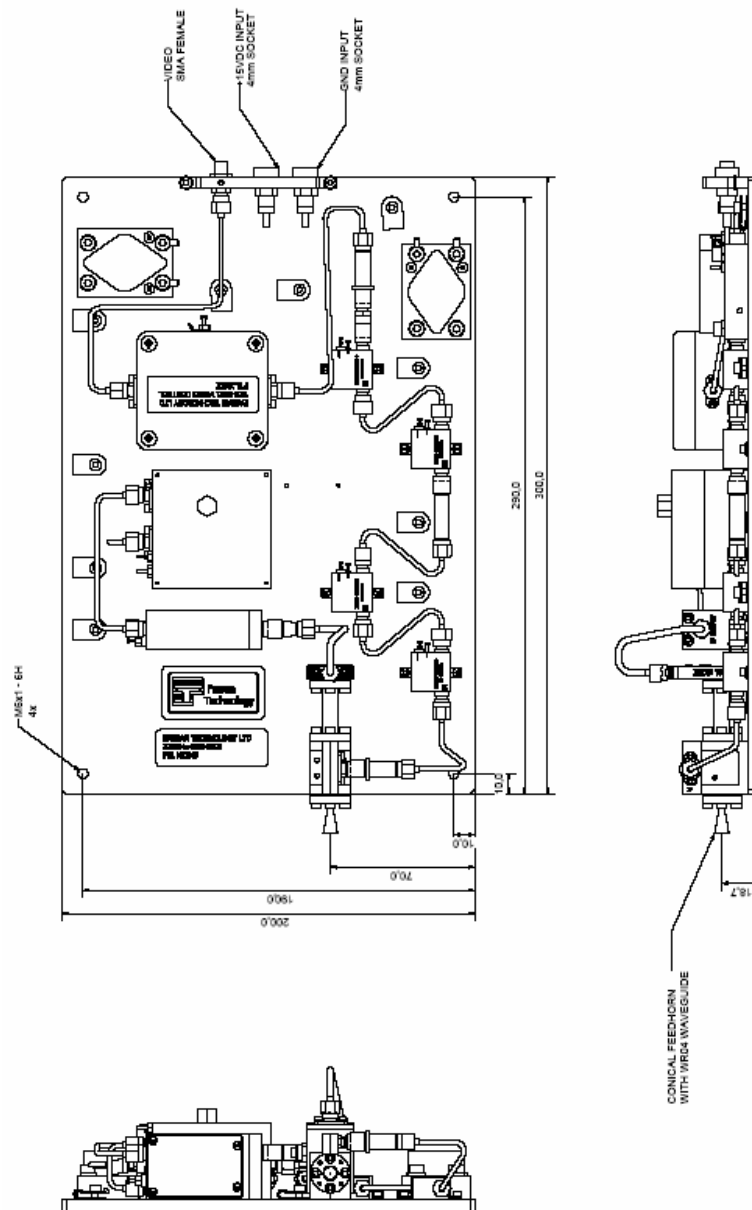


Figure 2. 220 GHz - RAD - 0001 top and side view.

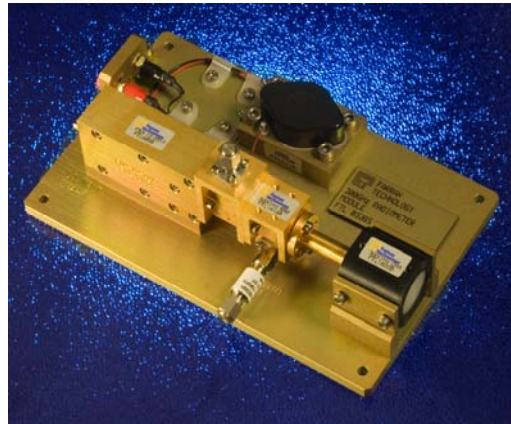
Note 2:

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Datasheet

Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. A low attenuation atmospheric window from 80-110GHz (W Band) makes this band an ideal candidate for PMMW systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object. Products available up to 325GHz



Features

-

Applications

- Airport security screening
- Material composition
- Remote sensing
- Medical
- Metrology
- Metal detection in food

Specification	Unit	Min	Typ	Max
Centre Frequency	GHz		300	
Bandwidth	GHz		8	
Conversion Loss	dB		<7	
IF Bandwidth	GHz	10		18
RX Conversion Gain	dB		11	
Power Consumption	W		<10	

Datasheet
Description

Passive mm-wave imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. A low attenuation atmospheric window from 80-110GHz (W Band) makes this band an ideal candidate for imaging systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object.


Features

- ~ Direct detection . no LO signals present
- ~ Low noise figure for high sensitivity
- ~ Integrated video amplification

Applications

- ~ Airport security screening
- ~ Material composition
- ~ Remote sensing
- ~ Medical
- ~ Metrology
- ~ Metal detection in food

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Noise Figure	dB		5	6
RF Gain	dB		50	
Sensitivity @ +25°C ^{NOTE 1}	K		5	6.2
Video output @ +25°C Load ^{NOTE 2}	mV	1,000		1,200
Physical Size		TBC		
Mass		85g		
Power Consumption	W	0.4 (5V @ 80mA)		

Notes:

1. Sensitivity calculated from on $\Delta T = \frac{T_A + T_N}{\sqrt{\beta\tau}}$. Where $T_A=295K$, $\nu=35GHz$, $\tau=1$ s
2. Differential output . can be customer defined as FTL can adjust the video gain to give required output voltage

Datasheet

Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and is therefore suitable for such applications as concealed weapon detection and aircraft landing. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object. Products available up to 325GHz.



Features

- High performance radiometric sensor at 183GHz

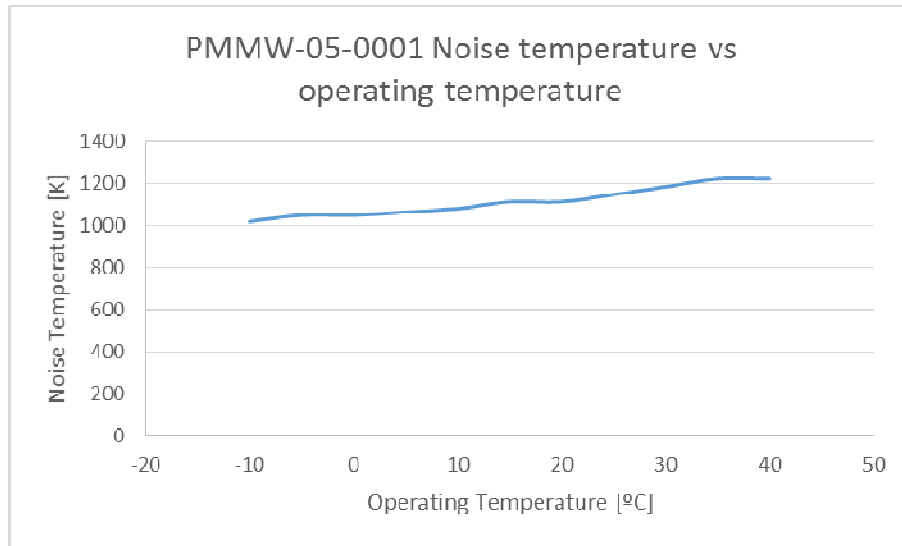
Applications

- Atmospheric research
- Meteorology
- Radio propagation studies
- Instrumentation
- Imaging

Specification	Unit	Value
Operating Frequency	GHz	183.3
RF Bandwidth	GHz	16 (± 8)
LO Source Frequency	GHz	91.65
Noise Temperature	K	< 1200 @ +25°C
System Gain	dB	30
Gain Flatness	dB/GHz	1.5
LO Leakage	dBc	< - 50
DRO Frequency Accuracy @ 25°C	MHz	± 0.5
DRO Frequency Stability	$\pm \text{ppm}/^\circ\text{C}$	2
RF Port	-	WR-05, UG-387/UM
IF Port	-	SMA Female
Power Requirements	-	+12 V @ 170 mA, +5 V @ 700 mA
Weight	kg	<0.6
Dimensions	mm	110 x 90 x 35
Coating Emissivity	-	0.9
Coating Solar Absorption	-	>95

Datasheet

Note 1: Different centre frequency and IF bandwidth available.
Contact factory for information.



NOTES
1. THE RECEIVER ENCLOSURE IS MANUFACTURED FROM ALUMINIUM ALLOY.
2. THE ENCLOSURE FINISH IS ALOCHROME 1200 / AEROGLAZE MATT BLACK.
3. RADIOMETER MASS < 0.6KG.

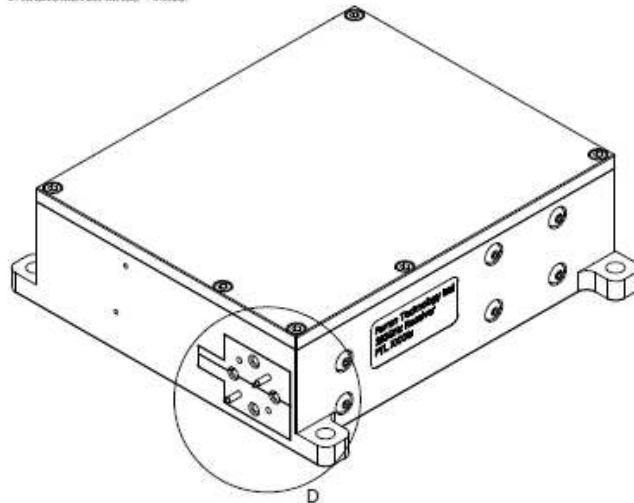


Figure 1. PMMW-05-0001 angle view.

Datasheet

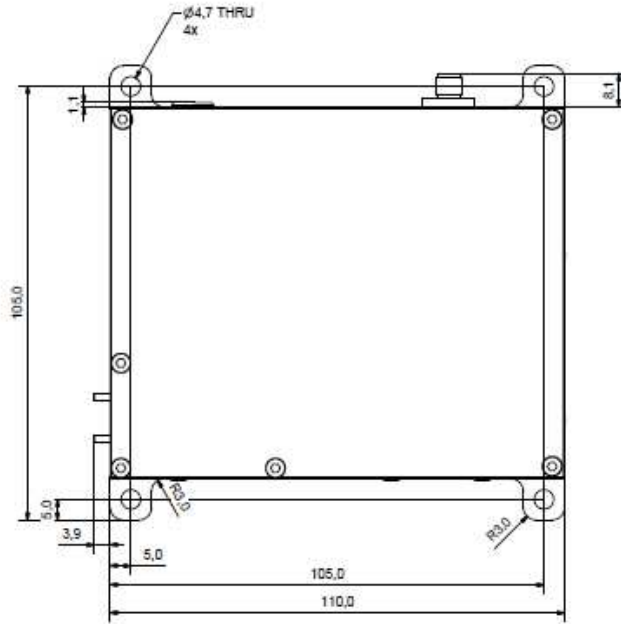


Figure 2. PMMW-05-0001 top view.

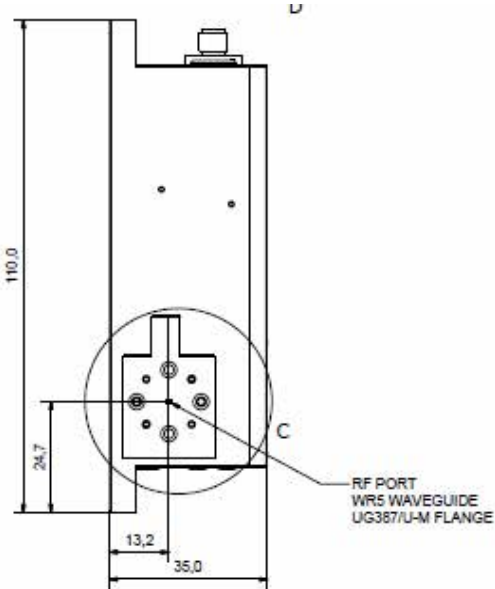


Figure 3. PMMW-05-0001 front view.

Note 2:

Datasheet

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Datasheet

Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. A low attenuation atmospheric window from 80-110GHz (W Band) makes this band an ideal candidate for PMMW systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object.



Features

- ~ Direct detection . no LO signals present
- ~ Low noise figure for high sensitivity
- ~ Integrated video amplification

Applications

- ~ Airport security screening
- ~ Material composition
- ~ Remote sensing
- ~ Medical
- ~ Metrology
- ~ Metal detection in food

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Noise Figure	dB		4	4.5
Gain	dB		25	
Sensitivity @ +25°C ^{NOTE 1}	K		4.0	4.4
Video output @ +25°C Load ^{NOTE 2}	mV		1,000	1,200
Physical Size		90 x 28 x 13mm		
Mass		85g		
Power Consumption	W	0.25 (5V @ 50mA)		

Notes:

1. Sensitivity calculated from on $\Delta T = \frac{T_A + T_N}{\sqrt{\beta\tau}}$. Where $T_A=295K$, $\beta=35GHz$, $\tau=1 s$
2. Differential output . can be customer defined as FTL can adjust the video gain to give required output voltage

Datasheet
Description

Passive mm-wave (PMMW) imaging provides the unique capability to create high resolution images in low visibility conditions (e.g. through clothing, clouds or fog) and therefore useful for such an applications as concealed weapon detection and airplane landing. A low attenuation atmospheric window from 80-110GHz (W Band) makes this band an ideal candidate for PMMW systems. Passive imagers operate by detecting naturally emitted thermal (black body) radiation from an object.


Features

- ~ Direct detection . no LO signals present
- ~ Low noise figure for high sensitivity
- ~ Integrated video amplification

Applications

- ~ Airport security screening
- ~ Material composition
- ~ Remote sensing
- ~ Medical
- ~ Metrology
- ~ Metal detection in food

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Noise Figure	dB		4	4.5
Gain	dB		25	
Sensitivity @ +25°C ^{NOTE 1}	K		4.0	4.4
Video output @ +25°C Load ^{NOTE 2}	mV	1,000		1,200
Physical Size		90 x 28 x 13mm		
Mass		85g		
Power Consumption	W	0.25 (5V @ 50mA)		

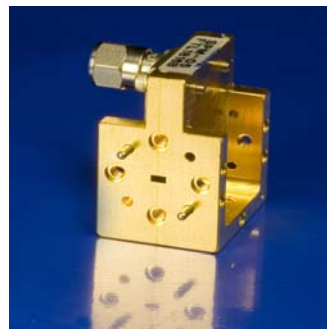
Notes:

1. Sensitivity calculated from on $\Delta T = \frac{T_A + T_N}{\sqrt{\beta\tau}}$. Where $T_A=295K$, $\beta=35GHz$, $\tau=1 s$
2. Differential output . can be customer defined as FTL can adjust the video gain to give required output voltage

Datasheet

Description

A high performance subharmonically pumped mixer in the WR-04 band.



Features

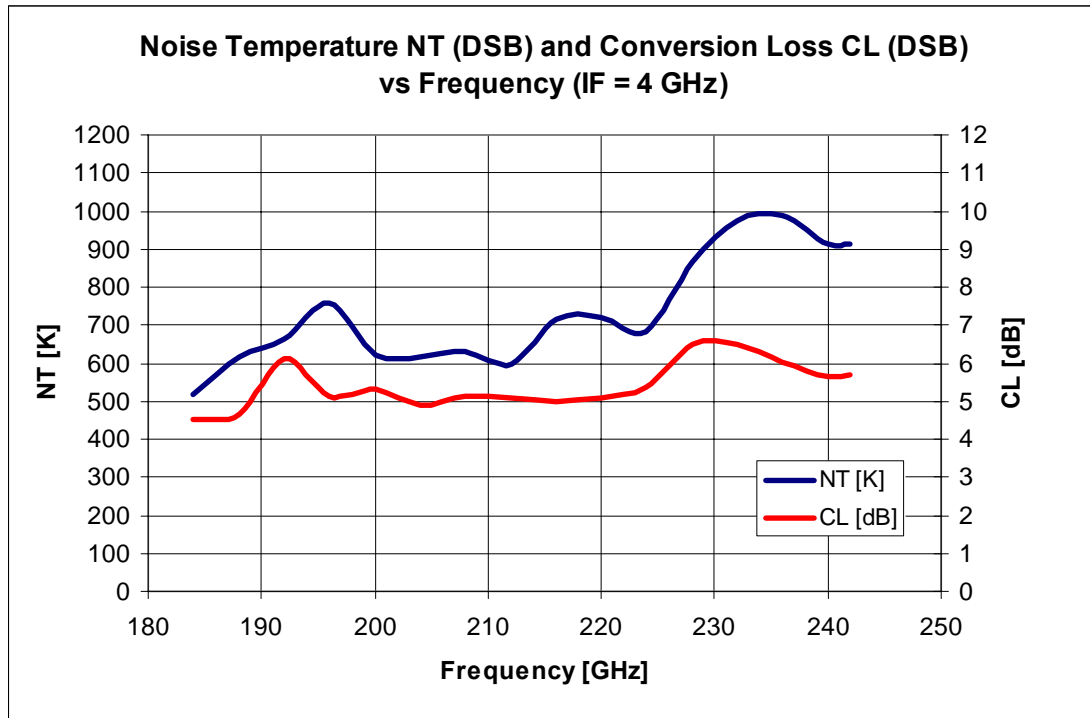
- High performance
- Sub-harmonically pumped
- Low noise figure
- Low LO power level
- Low conversion loss

Applications

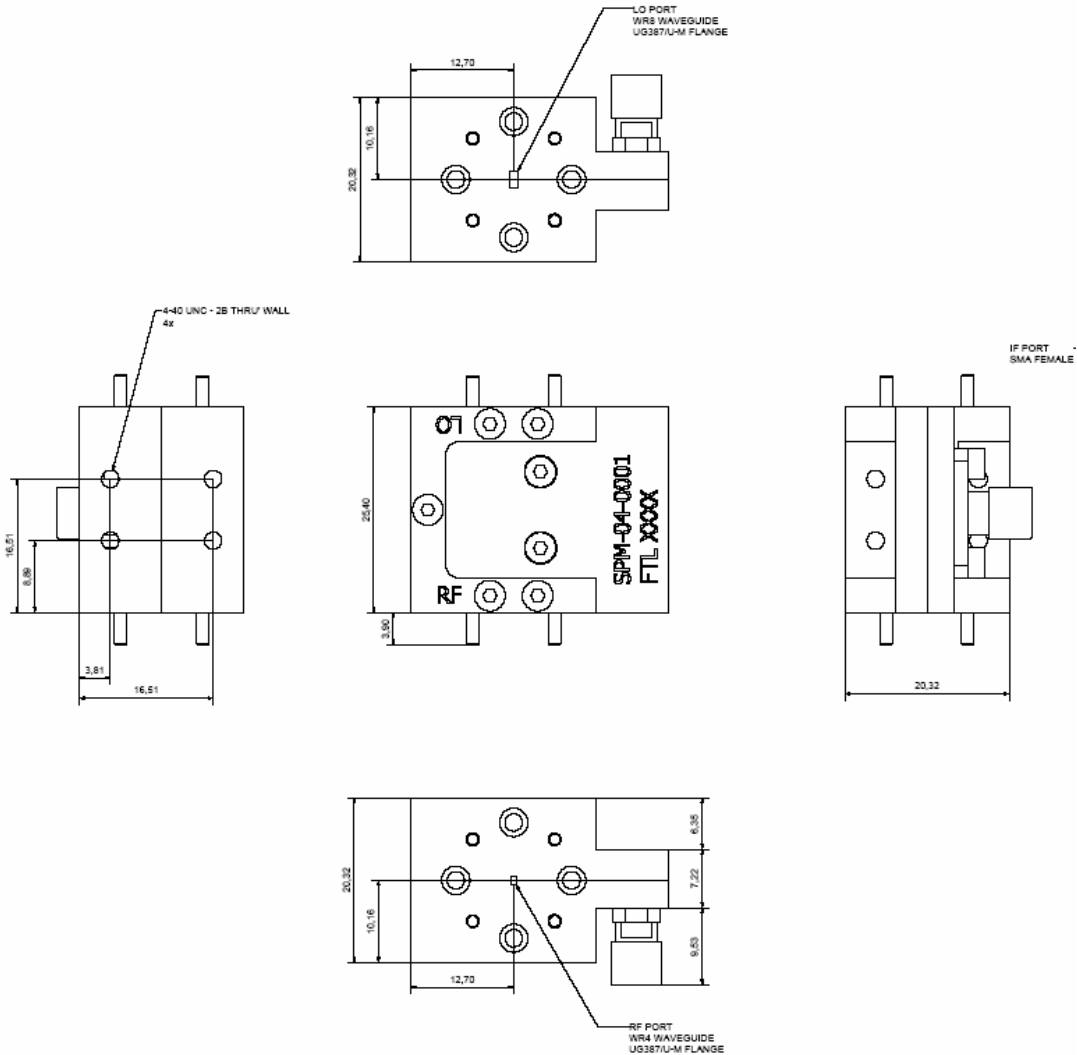
- Heterodyne receivers
- Instrumentation
- Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	180		250
LO Frequency	GHz	90		120
IF Frequency	GHz	0.2		4
Noise Figure DSB	dB		5	8.5
Tmix DSB	K		600	1550
Conversion Loss	dB		5	8.5
LO Drive Level	mW		4	6
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-04 UG-387/U-M		
LO Waveguide	-	WR-08 UG-387/U-M		
LO Connector	-	SMA (F)		

Datasheet



Datasheet



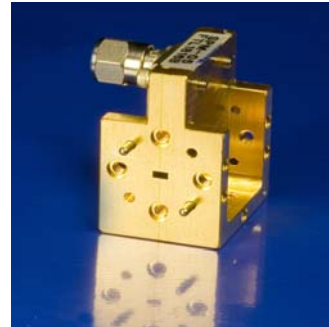
Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions

Datasheet

Description

A high performance subharmonically pumped mixer in WR-05 band.



Features

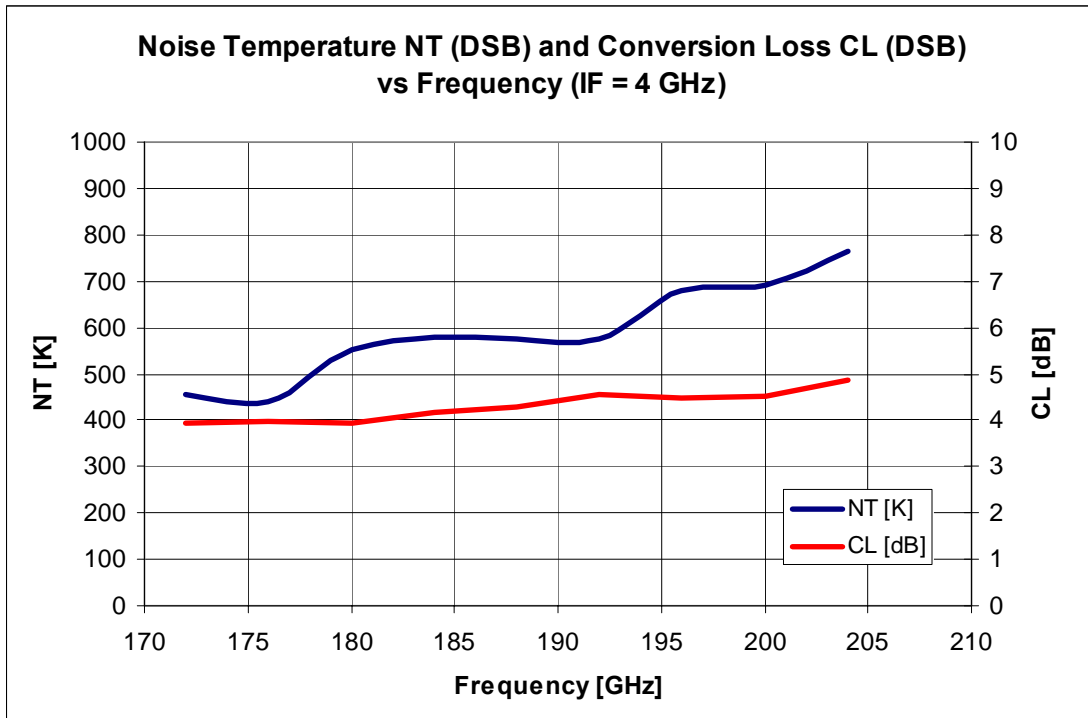
- High performance
- Sub-harmonically pumped
- Low noise figure
- Low LO power level
- Low conversion loss

Applications

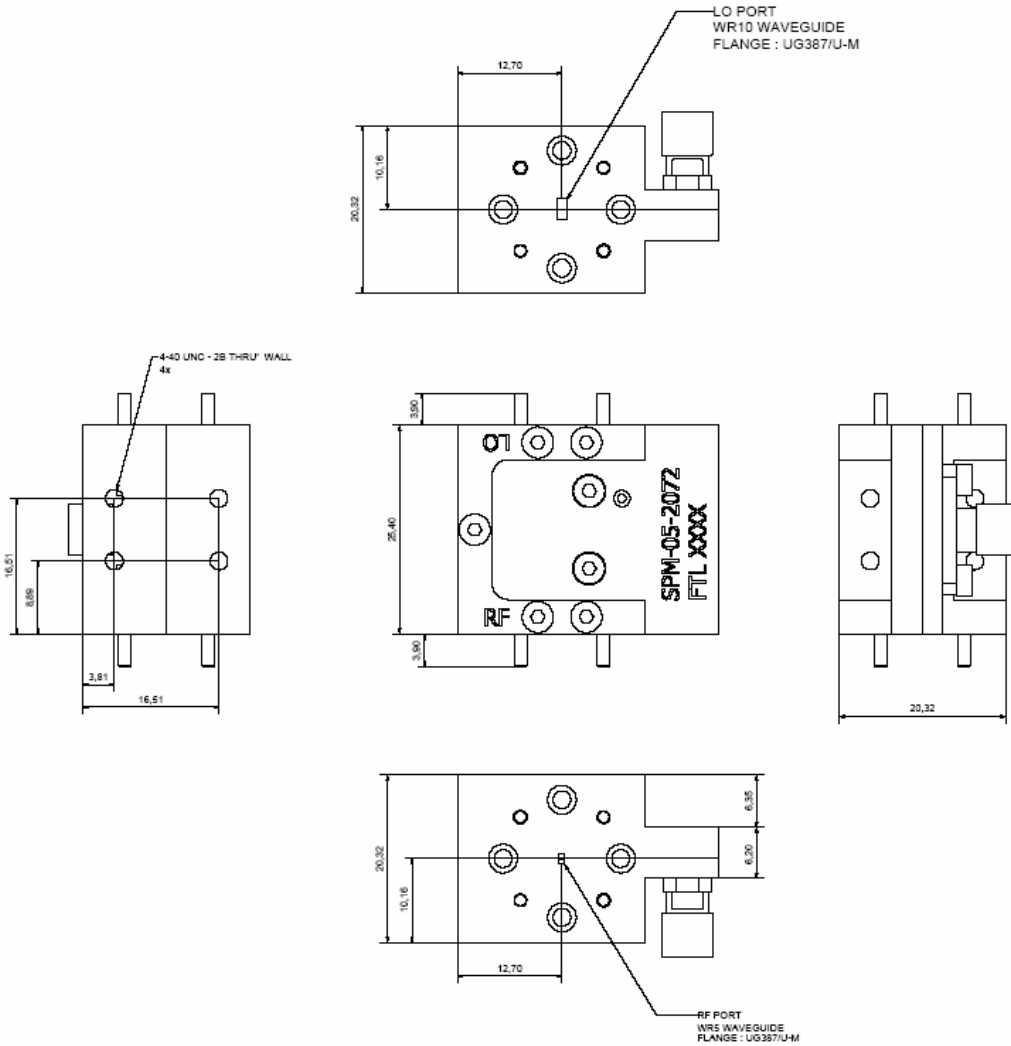
- Heterodyne receivers
- Instrumentation
- Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	172		204
LO Frequency	GHz	84		100
IF Frequency	GHz	0.2		4
Noise Figure DSB	dB		4.4	6.5
Tmix DSB	K		500	1000
Conversion Loss	dB		4.5	6.5
LO Drive Level	mW		4	6
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-05 UG-387/U-M		
LO Waveguide	-	WR-10 UG-387/U-M		
LO Connector	-	SMA (F)		

Datasheet



Datasheet



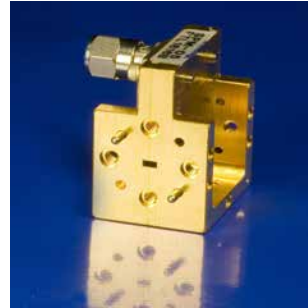
Notes:

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Datasheet

Description

A high performance subharmonically pumped mixer in WR-06 band.



Features

- ~ High performance
- ~ Full WR-06 band coverage
- ~ Sub-harmonically pumped
- ~ Low noise figure
- ~ Low LO power level
- ~ Low conversion loss

Applications

- ~ Heterodyne receivers
- ~ Instrumentation
- ~ Imaging front ends

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	110		170
LO Frequency	GHz	55		85
IF Frequency	GHz	0.1	4	20
Noise Figure DSB	dB	4	6	10
Tmix DSB	K		865	2610
Conversion Loss	dB		6	10
LO Drive Level	mW	2	3.25	6
RF Waveguide	-	WR-06 UG-387/U-M		
LO Waveguide	-	WR-12 UG-387/U-M		
LO Connector	-	SMA (F)		

Notes:

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Datasheet

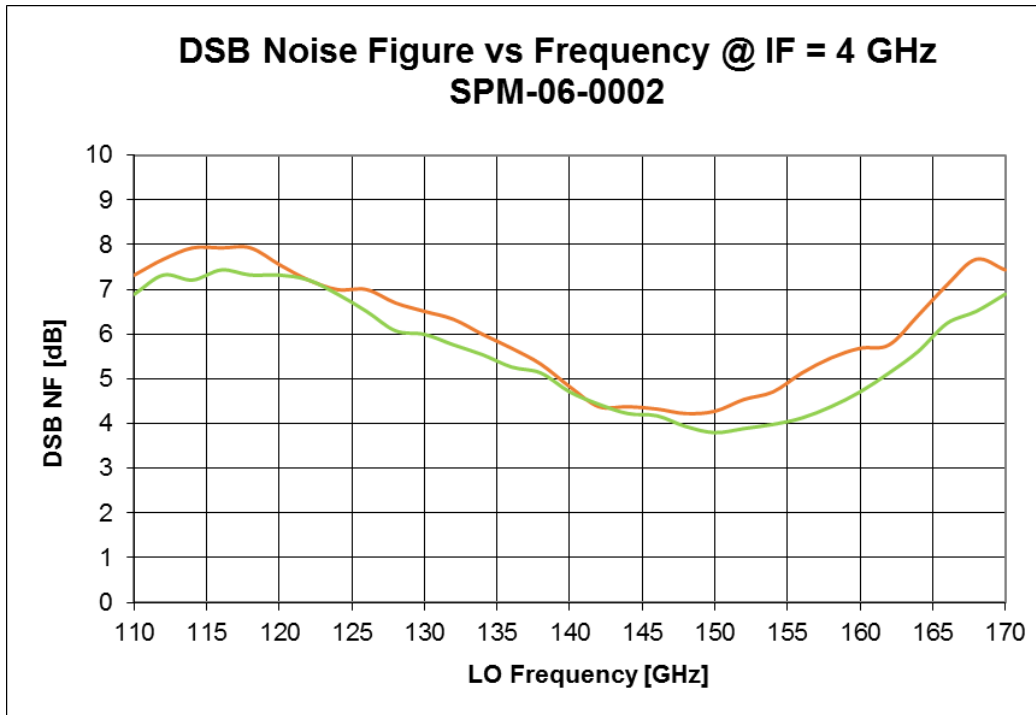
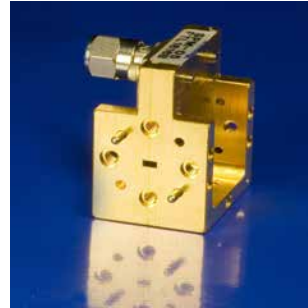


Figure 1. Typical full band performance of SPM-06-0002 with LO power = 3 mW.

Datasheet**Description**

A high performance subharmonically pumped mixer in WR-08 band.

**Features**

- ~ High performance
- ~ Sub-harmonically pumped
- ~ Low noise figure
- ~ Low LO power level
- ~ Low conversion loss

Applications

- ~ Heterodyne receivers
- ~ Instrumentation
- ~ Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	110		130
LO Frequency	GHz	52.5		62.5
IF Frequency	GHz	0.2		4
Noise Figure DSB	dB		6	8
Tmix DSB	K		870	1500
Conversion Loss	dB		6	8
LO Drive Level	mW		4	7
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-08 UG-387/U-M		
LO Waveguide	-	WR-15 UG-387/U-M		
LO Connector	-	SMA (F)		

Notes:

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Datasheet

Description

A high performance full band subharmonically pumped mixer in the WR-10 band.



Features

- ~ High performance
- ~ Sub-harmonically pumped
- ~ Low noise figure
- ~ Low LO power level
- ~ Low conversion loss

Applications

- ~ Heterodyne receivers
- ~ Instrumentation
- ~ Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	75		110
LO Frequency	GHz	37.5		55
IF Frequency *	GHz	0.01		2
Conversion Loss	dB		8	11
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-10 UG-387/UM		
LO Waveguide	-	WR-19 UG-383/UM		
LO Connector	-	SMA (F)		

* Wider IF bandwidth available at the expense of conversion loss.

Notes:

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Datasheet

Description

A high performance full band subharmonically pumped mixer in the WR-12 band.



Features

- ~ High performance
- ~ Sub-harmonically pumped
- ~ Low noise figure
- ~ Low LO power level
- ~ Low conversion loss

Applications

- ~ Heterodyne receivers
- ~ Instrumentation
- ~ Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	60		90
LO Frequency	GHz	30		45
IF Frequency *	GHz	0.01		2
Conversion Loss	dB		7.5	10
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-12 UG-387/U		
LO Waveguide	-	WR-22 UG-383/U		
LO Connector	-	SMA (F)		

* Wider IF bandwidth available at the expense of conversion loss.

Notes:

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Datasheet

Description

A high performance full band subharmonically pumped mixer in the WR-15 band.



Features

- High performance
- Sub-harmonically pumped
- Low noise figure
- Low LO power level
- Low conversion loss

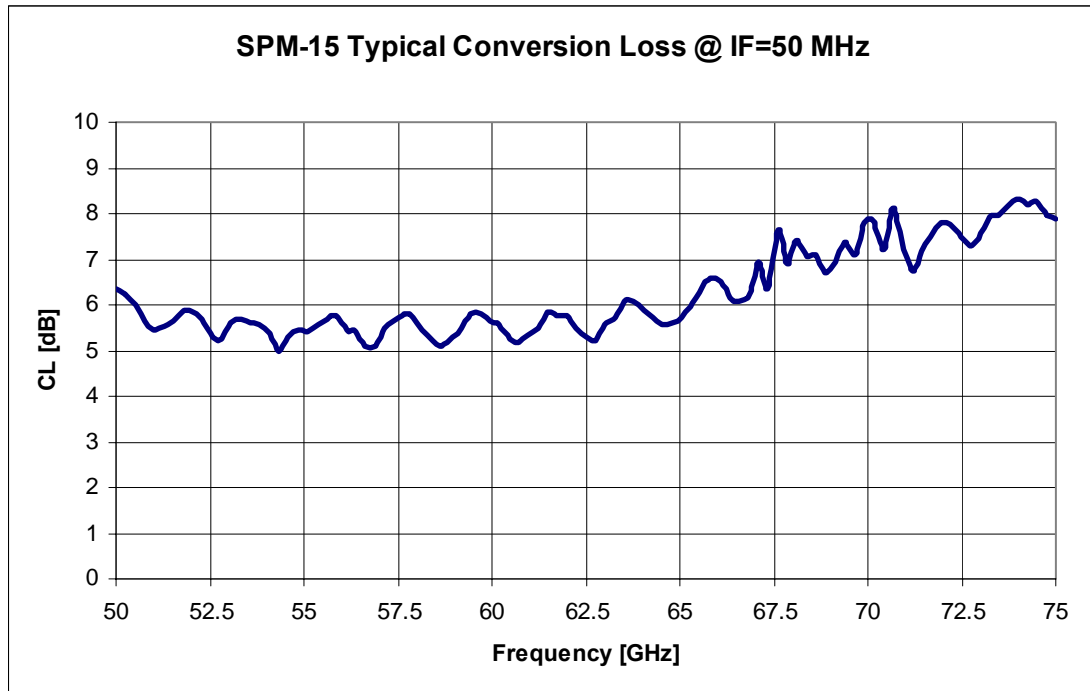
Applications

- Heterodyne receivers
- Instrumentation
- Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	50		75
LO Frequency	GHz	25		37.5
IF Frequency *	GHz	0.01		2
Conversion Loss	dB		6.5	10
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-15 UG-385/U		
LO Waveguide	-	WR-28 UG-599/U		
LO Connector	-	SMA (F)		

* Wider IF bandwidth available at the expense of conversion loss.

Datasheet



Notes:

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Datasheet

Description

The Farran Technology WDP-Series of detectors employs finline technology and zero biased beamlead Schottky barrier diodes. Full waveguide band operation is achieved with good sensitivity in a compact unit. WDP units are offered between 18-170 GHz. The units are fixed tuned and operate without bias making them particularly convenient to use. Either output voltage polarity is available. Applications are as sensors for network analysers and as low cost replacements for power heads.



Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	110		170
Waveguide Designation			WR-06	
Flange Compatability			UG387/U-M	
Sensitivity	mV/mW		>220	
Flatness	dB			±2.5

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	90		140
Waveguide Designation			WR-08	
Flange Compatability			UG387/U-M	
Sensitivity	mV/mW		>220	
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	75		110
Waveguide Designation			WR-10	
Flange Compatability			UG387/U-M	
Sensitivity	mV/mW		>550	
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	60		90
Waveguide Designation			WR-12	
Flange Compatability			UG-387/U	
Sensitivity	mV/mW		>550	
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	50		75
Waveguide Designation			WR-15	
Flange Compatability			UG385/U	
Sensitivity	mV/mW	550		
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	40		60
Waveguide Designation			WR-19	
Flange Compatability			UG383/U	
Sensitivity	mV/mW	750		
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	33		50
Waveguide Designation			WR-22	
Flange Compatability			UG383/U-M	
Sensitivity	mV/mW	750		
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	26.5		40
Waveguide Designation			WR-28	
Flange Compatability			UG599/U	
Sensitivity	mV/mW	1000		
Flatness	dB			±2

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Features

- Full waveguide bandwidth
- Zero bias operation
- Economical
- Rugged
- Light weight

Applications

- Test systems
- Instrumentations
- Relative power measurements

Specification	Unit	Min	Typ	Max
Frequency	GHz	18		26
Waveguide Designation			WR-42	
Flange Compatability			UG595/U	
Sensitivity	mV/mW	2000		
Flatness	dB			±1

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Datasheet

Description

Farran Technology offers the WGNS series of noise sources to be used in conjunction with the FBC down converters for use as frequency extenders for noise figure measurement test system. The WGNS-XX is a fullband noise source. The WGNS-06 covers the full W band 110 . 170 GHz.



Features

- ~ Full waveguide band
- ~ High ENR
- ~ Uniform level of noise power spectral density
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	110		170
ENR	dB		11.5	
Trigger Voltage	V		+28	
Pause between triggering pulses	ms	0.5		
VSWR				1.4:1
Test Port Interface	-	WR-06 UG-387/U-M		
Trigger connector	-	BNC (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	200 x 120 x 90		

Datasheet

Description

Farran Technology offers the WGNS series of noise sources to be used in conjunction with the FBC down converters for use as frequency extenders for noise figure measurement test system. The WGNS-XX is a fullband noise source. The WGNS-10 covers the full W band 75 . 110 GHz.



Features

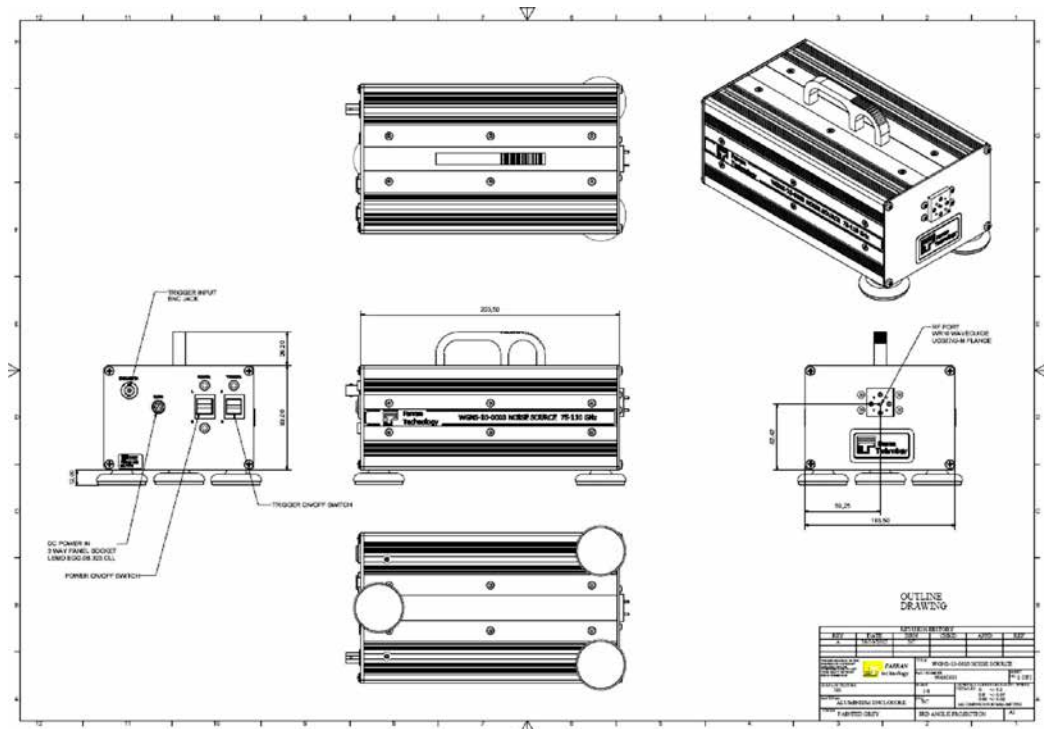
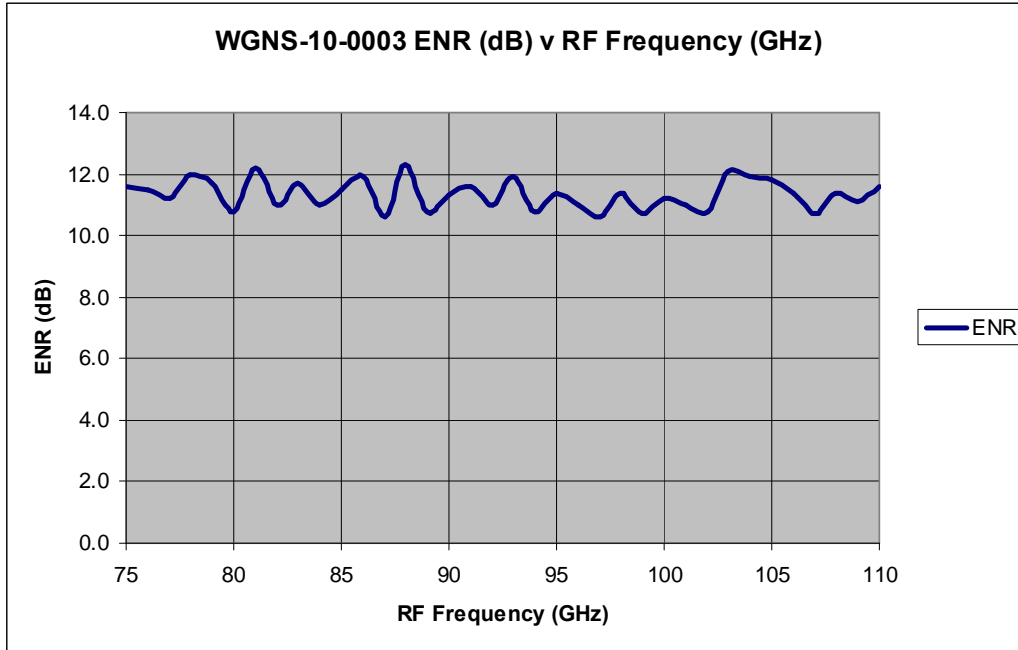
- ~ Full waveguide band
- ~ High ENR
- ~ Uniform level of noise power spectral density
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	75		110
ENR	dB		11.5	
Trigger Voltage	V		+28	
Pause between triggering pulses	ms	0.5		
VSWR				1.4:1
Test Port Interface	-	WR-10 UG-387/U-M		
Trigger connector	-	BNC (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	200 x 120 x 90		

Datasheet



Datasheet

Description

Farran Technology offers the WGNS series of noise sources to be used in conjunction with the FBC down converters for use as frequency extenders for noise figure measurement test system. The WGNS-XX is a fullband noise source. The WGNS-10 covers the full W band 70 – 110 GHz.



Features

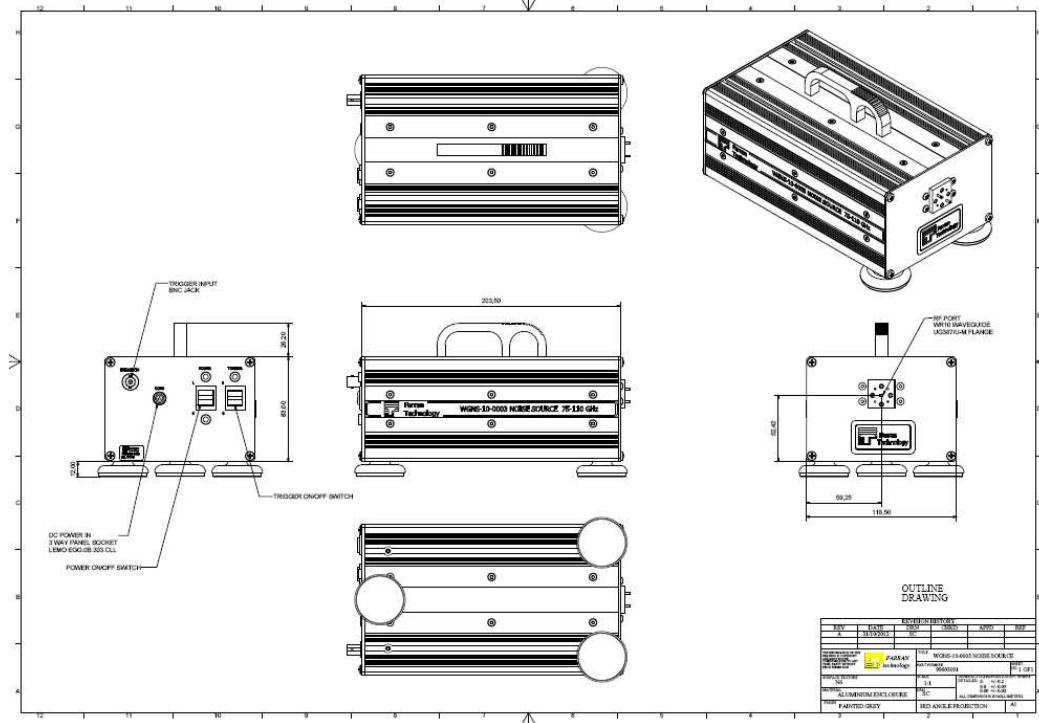
- Full waveguide band
- High ENR
- Uniform level of noise power spectral density
- Compatible with Agilent NFA
- Compatible with Agilent PXA with noise figure personality
- Convenient packing to match the VNA frequency extension

Applications

- Frequency extenders for noise figure measurement systems
- Communications
- OEM test instrumentation
- EW and ECM systems
- Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	70		110
ENR	dB		11.5	
Trigger Voltage	V		+28	
Pause between triggering pulses	ms	0.5		
VSWR				1.4:1
Test Port Interface	-	WR-10 UG-387/U-M		
Trigger connector	-	BNC (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	200 x 120 x 90		

Datasheet



Datasheet

Description

Farran Technology offers the WGNS series of noise sources to be used in conjunction with the FBC down converters for use as frequency extenders for noise figure measurement test system. The WGNS-XX is a fullband noise source. The WGNS-15 covers the full W band 50 . 75 GHz.



Features

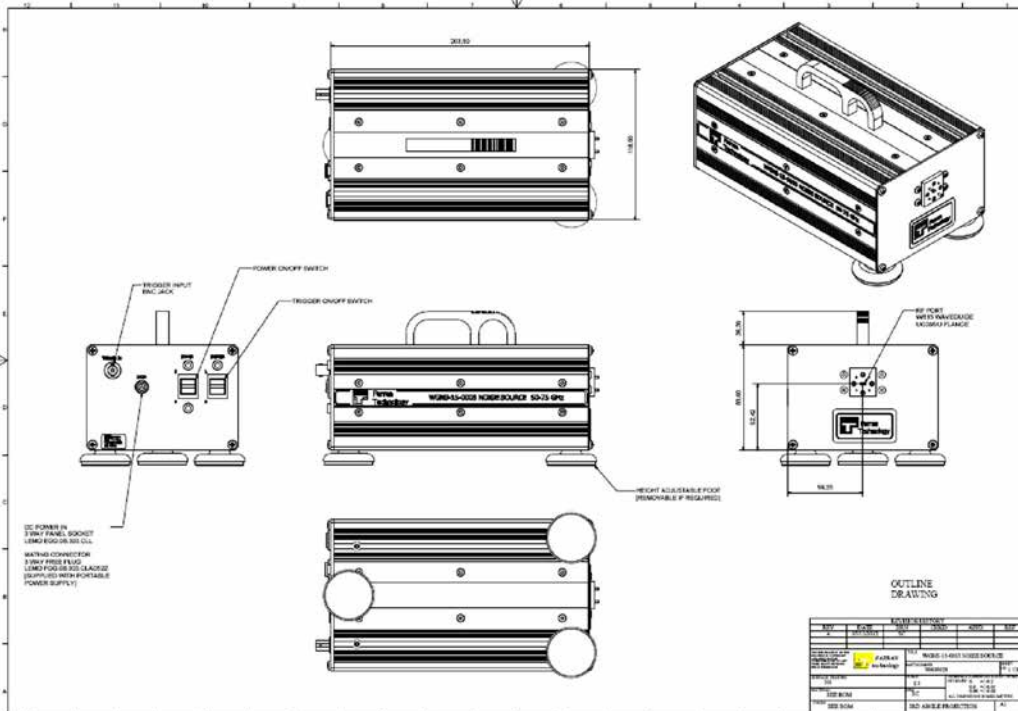
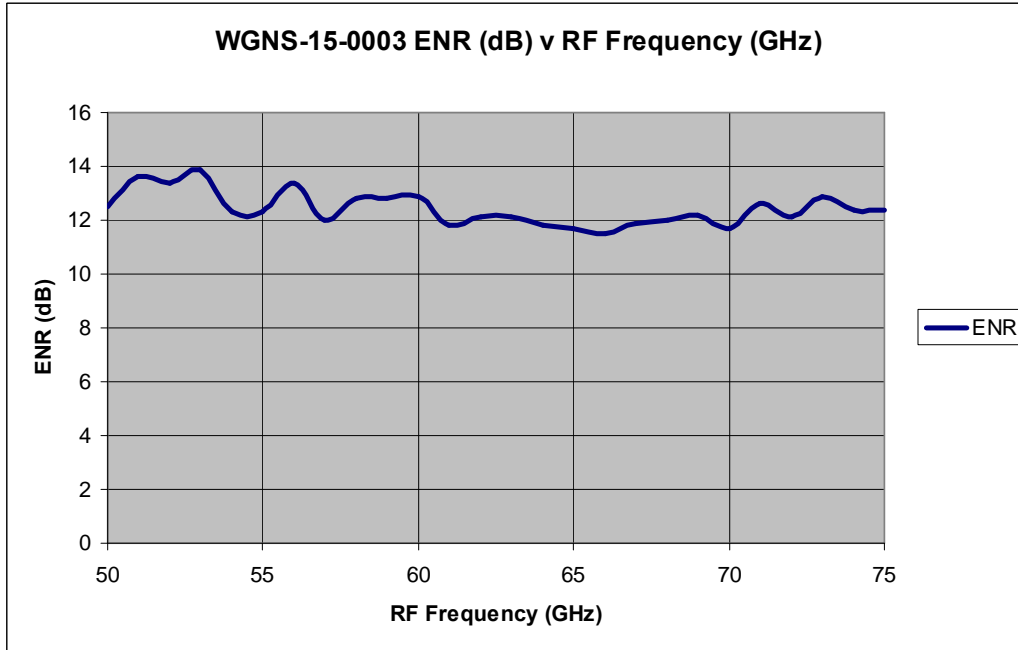
- ~ Full waveguide band
- ~ High ENR
- ~ Uniform level of noise power spectral density
- ~ Compatible with Agilent NFA
- ~ Compatible with Agilent PXA with noise figure personality
- ~ Convenient packing to match the VNA frequency extension

Applications

- ~ Frequency extenders for noise figure measurement systems
- ~ Communications
- ~ OEM test instrumentation
- ~ EW and ECM systems
- ~ Radar front ends

Specification	Unit	Min	Typ	Max
System Operating Frequency	GHz	50		75
ENR	dB		12.5	
Trigger Voltage	V		+28	
Pause between triggering pulses	ms	0.5		
VSWR				1.4:1
Test Port Interface	-	WR-15 UG-385/U		
Trigger connector	-	BNC (F)		
Power Requirements	-	240/110 V AC		
Weight	kg		3.5	
Dimensions (L x W x H)	-	200 x 120 x 90		

Datasheet



Datasheet

Description

A high performance harmonic mixer series offering low conversion loss with no bias required. Suitable for use with Agilent and Rohde & Schwarz spectrum analysers for frequency extension applications.



Features

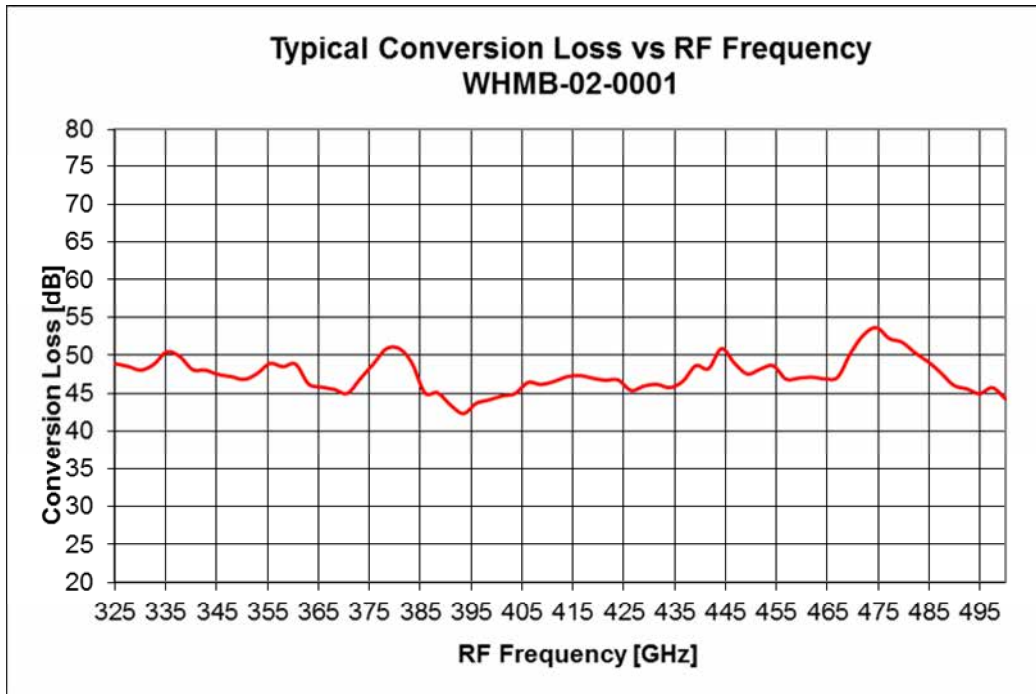
- ~ Low conversion loss
- ~ Flat frequency response
- ~ Frequency coverage up to 500 GHz
- ~ Unbiased anti-parallel diode pair

Applications

- ~ Spectrum analysis
- ~ mm-Wave instrumentation
- ~ Signal processing
- ~ Phased locked loops

Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	325		500
Waveguide Designation		WR-2.2		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		36		
LO Frequency Range	GHz	9.03 . 13.89		
Conversion Loss (typ.)	dB	50		
LO Level	dBm	14	15	+16.5
Flange		UG387/U-M		
Output Connector		K-female		
Bias Required		None		
CW RF Input Level				0
RF Input VSWR		<3.6:1		

Datasheet



Notes:

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Datasheet

Description

A high performance harmonic mixer series offering low conversion loss with no bias required. Suitable for use with Keysight Technologies and Rohde & Schwarz spectrum analysers for frequency extension applications.



Features

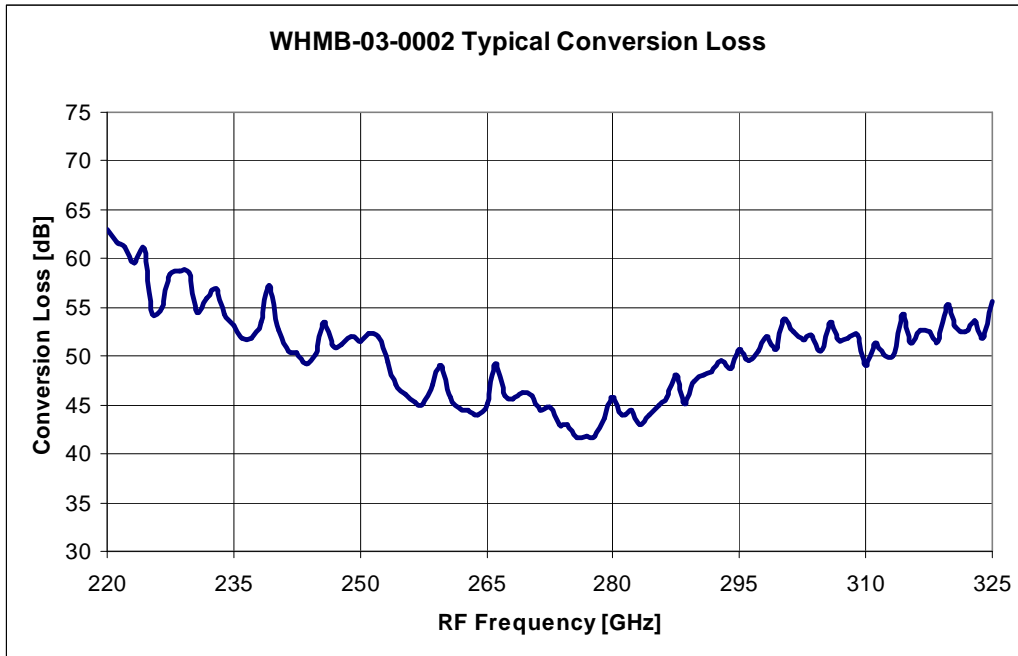
- Low conversion loss
- Flat frequency response
- Frequency coverage up to 500 GHz
- Unbiased anti-parallel diode pair

Applications

- Spectrum analysis
- mm-Wave instrumentation
- Signal processing
- Phased locked loops

Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	220		325
Frequency Band		J		
Waveguide Designation		WR-3		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		24		
LO Frequency Range	GHz	9.16		13.54
Conversion Loss	dB	45		
LO Level	dBm			+18
Flange		UG387/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				0
RF Input VSWR		<3.6:1		

Datasheet



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Datasheet

Description

A high performance harmonic mixer series offering low conversion loss with no bias required. Suitable for use with Agilent and Rohde & Schwarz spectrum analysers for frequency extension applications.



Features

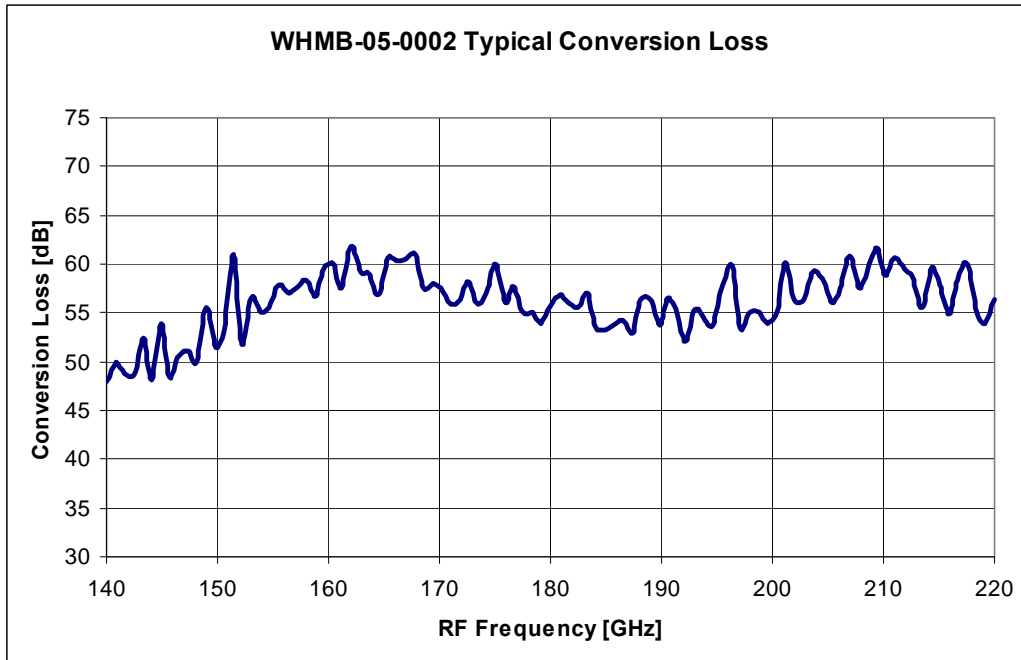
- Low conversion loss
- Flat frequency response
- Frequency coverage up to 500 GHz
- Unbiased anti-parallel diode pair

Applications

- Spectrum analysis
- mm-Wave instrumentation
- Signal processing
- Phased locked loops

Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	140		220
Frequency Band		G		
Waveguide Designation		WR-5		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		30 [12]		
LO Frequency Range	GHz	4.6 [11.67]		7.3 [18.33]
Conversion Loss	dB	50 [45]		
LO Level	dBm			+13
Flange		UG387/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				0
RF Input VSWR		<3.6:1		
Rohde & Schwarz Specifications in Brackets				

Datasheet



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Description

A high performance harmonic mixer series offering low conversion loss with no bias required. Suitable for use with Agilent and Rohde & Schwarz spectrum analysers for frequency extension applications.



Features

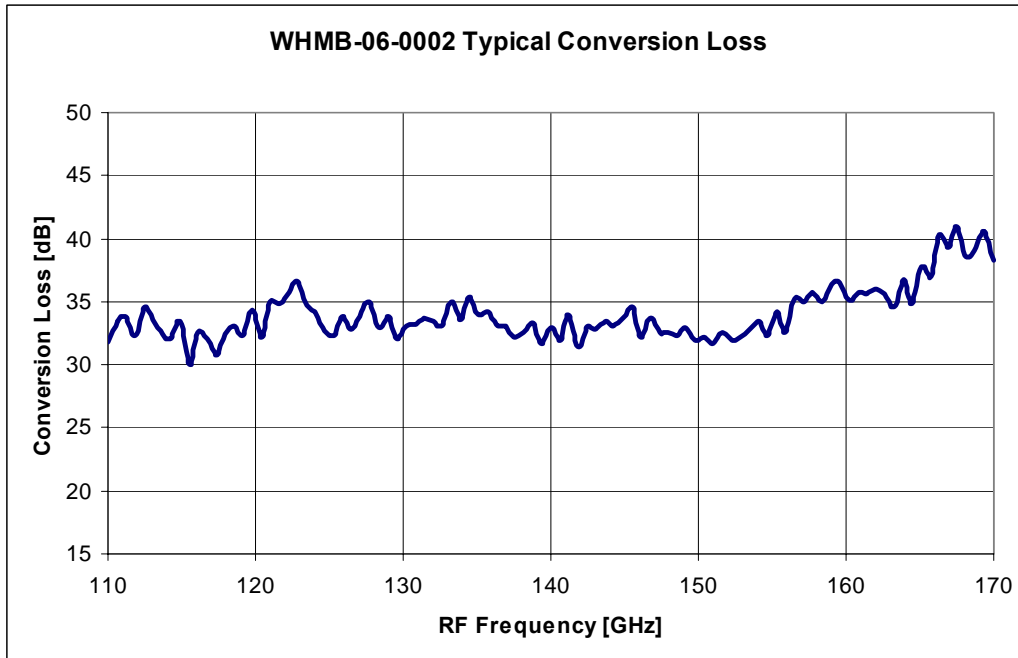
- Low conversion loss
- Flat frequency response
- Frequency coverage up to 500 GHz
- Unbiased anti-parallel diode pair

Applications

- Spectrum analysis
- mm-Wave instrumentation
- Signal processing
- Phased locked loops

Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	110		170
Frequency Band		D		
Waveguide Designation		WR-6		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		22 [10]		
LO Frequency Range	GHz	5 [11]		7.7 [17]
Conversion Loss	dB	50 [42]		
LO Level	dBm			+13
Flange		UG387/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				0
RF Input VSWR		<3.6:1		
Rohde & Schwarz Specifications in Brackets				

Datasheet



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Datasheet

Description

A high performance harmonic mixer series offering low conversion loss with no bias required. Suitable for use with Agilent and Rohde & Schwarz spectrum analysers for frequency extension applications.



Features

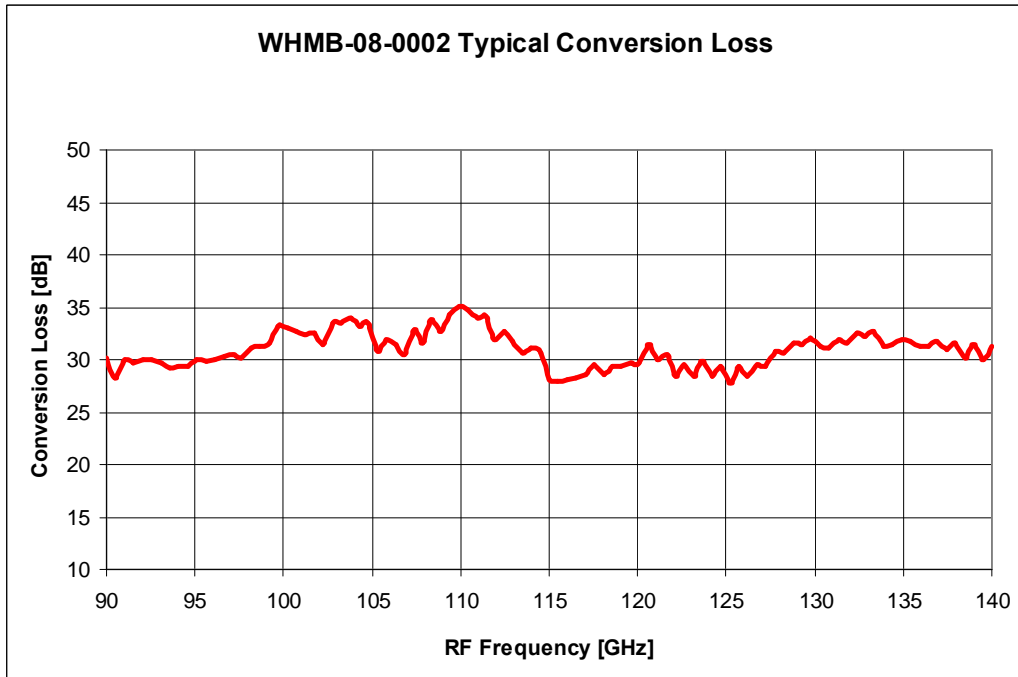
- ~ Low conversion loss
- ~ Flat frequency response
- ~ Frequency coverage up to 500 GHz
- ~ Unbiased anti-parallel diode pair

Applications

- ~ Spectrum analysis
- ~ mm-Wave instrumentation
- ~ Signal processing
- ~ Phased locked loops

Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	90		140
Frequency Band		F		
Waveguide Designation		WR-8		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		18 [10]		
LO Frequency Range	GHz	4.95 [9]		7.82 [14]
Conversion Loss	dB	40 [30]		
LO Level	dBm	+12		+15
Flange		UG387/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				0
RF Input VSWR		<3.6:1		
Rohde & Schwarz Specifications in Brackets				

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Notes:

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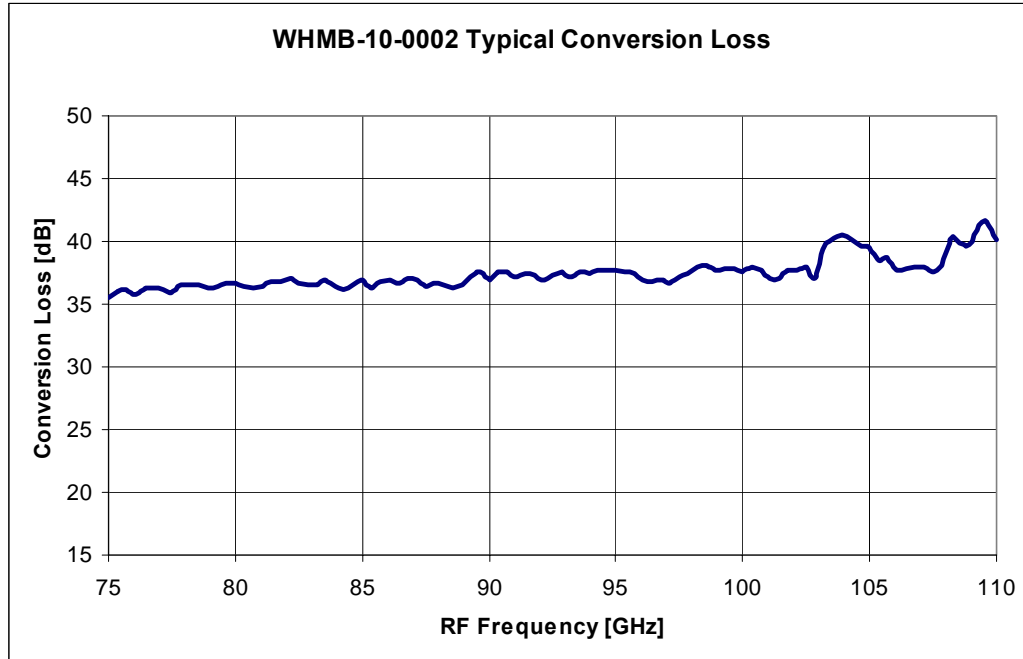
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Applications

- Spectrum analysis
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Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	75		110
Frequency Band		W		
Waveguide Designation		WR-10		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		18 [8]		
LO Frequency Range	GHz	4.1 [9.38]		6.1 [13.75]
Conversion Loss	dB	45 [30]		
LO Level	dBm			+15
Flange		UG387/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				0
RF Input VSWR		<3.6:1		
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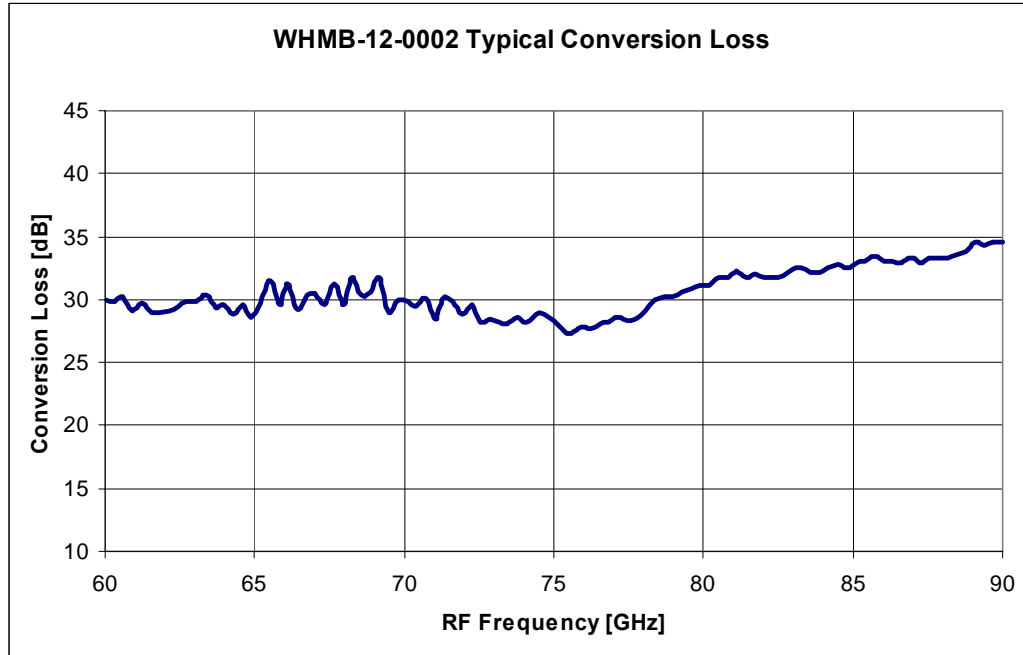
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Applications

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Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	60		90
Frequency Band		E		
Waveguide Designation		WR-12		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		16 [6]		
LO Frequency Range	GHz	3.75 [10]		5.6 [15]
Conversion Loss	dB	45 [32]		
LO Level	dBm			+18
Flange		UG387/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				+16
RF Input VSWR		<3.6:1		
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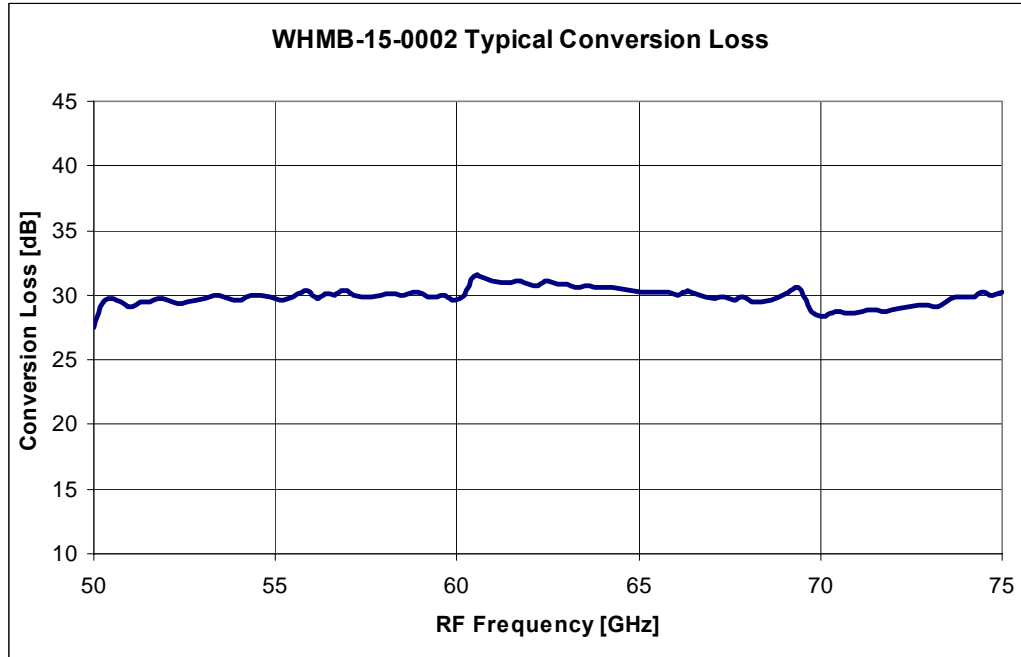
- Low conversion loss
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Applications

- Spectrum analysis
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Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	50		75
Frequency Band		V		
Waveguide Designation		WR-15		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		14 [6]		
LO Frequency Range	GHz	3.5 [8.33]		5.3 [12.5]
Conversion Loss	dB	40 [25]		
LO Level	dBm			+18
Flange		UG385/U		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				+16
RF Input VSWR		<3.5:1		
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Features

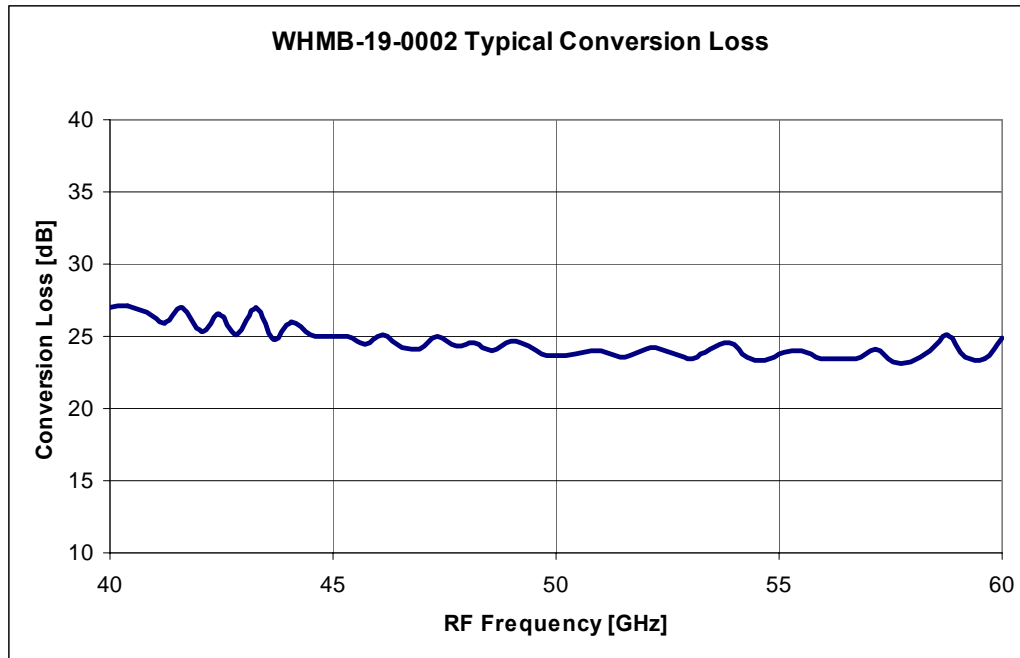
- Low conversion loss
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Applications

- Spectrum analysis
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Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	40		60
Frequency Band		U		
Waveguide Designation		WR-19		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		10 [4]		
LO Frequency Range	GHz	4 [10]		6 [15]
Conversion Loss	dB	35 [20]		
LO Level	dBm			+18
Flange		UG383/U-M		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				+16
RF Input VSWR		<3.5:1		
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Applications

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- ~ Phased locked loops

Specification (Agilent)	Unit	Min	Typ	Max
Frequency Range	GHz	26.5		40
Frequency Band		Ka		
Waveguide Designation		WR-28		
IF Frequency Range	MHz	DC-1000		
LO Harmonic Number		8 [4]		
LO Frequency Range	GHz	3.3 [6.6]		5 [10]
Conversion Loss	dB		30 [25]	
LO Level	dBm			+18
Flange		UG599/U		
Output Connector		SMA-F		
Bias Required		None		
CW RF Input Level				+16
RF Input VSWR		<3.5:1		
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