Frequency Reference

POLARIS

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Descriptions

The Polaris PFRM series is a frequency reference module that can be used in a variety of applications: frequency reference for oscillators, military electronic systems, SATCOM, external frequency synchronization of instruments, and telecommunication standards.

There are two types of PFRM series we offer: PFRM-1 series and PFRM-4 series.

The PFRM-1 series is a single channel frequency reference module that provides a highly stable sine wave output. This series is categorized into PFRM-1-10 for 10 MHz output, PFRM-1-50 for 50 MHz output, and PFRM-1-100 for 100 MHz output. The OCXO housed inside this series provides a very stable temperature stability and excellent phase noise.

The PFRM-4 series is a 4-channel frequency reference module that provides a highly stable sine wave output. This series is categorized into PFRM-4-10 for 10 MHz output, PFRM-4-50 for 50 MHz output, and PFRM-4-100 for 100 MHz output. The OCXO housed inside this series provides a very stable temperature stability and excellent phase noise.

Features

- Internal OCXO with excellent performance
- Sine wave output
- Electronic frequency adjustment
- Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

PFRM-1-10

Descriptions

The PFRM-1-10 series is a single channel frequency reference module that provides a highly stable 10 MHz sine wave output. The OCXO with excellent performance, housed inside this series provides a temperature stability from ±10 ppb to ±100 ppb over operating temperature range.

Features

- ❖ Single channel output
- ❖ 10 MHz output
- ❖ Sine wave
- ❖ Internal OCXO with excellent performance
- ❖ Electronic frequency adjustment
- ❖ Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

Ordering Information

❖ PFRM-1-10-TS-OP-PN-SV

- TS: Frequency Stability vs. Temperature (ppb)
- OP: Output Power (dBm)
- PN: Phase Noise (dBc/Hz)
- SV: Supply Voltage (Vdc)

❖ Example

- PFRM-1-10-TS1-05-ULN-12
  - . Frequency Stability vs. Temperature: ±100 ppb over -20 °C to 70 °C
  - . Output Power: 5 dBm
  - . Phase Noise: Ultra-Low Noise (See "Note 3")
  - . Supply Voltage: 12 Vdc

Specifications

Parameter		Unit	Min.	Typ.	Max.	Remarks
Frequency Calibration		ppm	-0.1		+0.1	
Frequency Stability vs. Temperature		ppb	Note 1			
Output	Frequency	MHz	10			
	Power	dBm	Note 2			
	Harmonics	dBc			-60	
	Spurious	dBc		-80	-70	
	Load Impedance	Ohm	50			
Phase Noise		dBc/Hz	Note 3			
Supply Voltage		Vdc	12		15	
Current Consumption	Steady State	mA	Consult Factory			
	Warm-up		Consult Factory			
Warm Up Time		min		3	5	
Operating Temperature		℃	Note 1			
Storage Temperature		℃	-40 to 85			
Housing (L x W x H)		mm	65.0 x 40.0 x 23.5			

Note 1

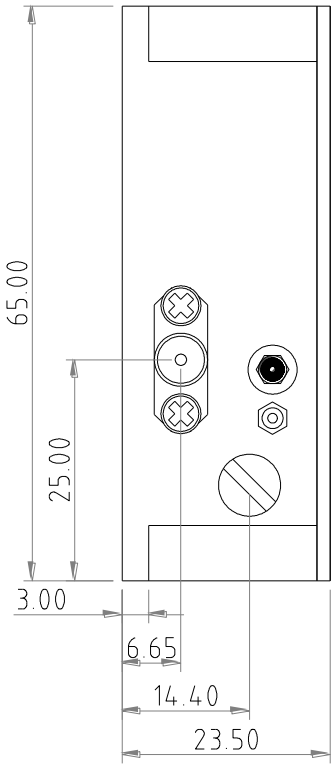
Temp. (°C)	Frequency Stability		Phase Noise		Remarks
-20 to 70	TS1	±100	ULN	LN	Consult factory to order other frequency stability
	TS2	±50	ULN	LN	
	TS3	±30		LN	
	TS4	±10		LN	
-40 to 75	TS5	±100	ULN	LN	
	TS6	±50		LN	
	TS7	±30		LN	
	TS8	±10		LN	

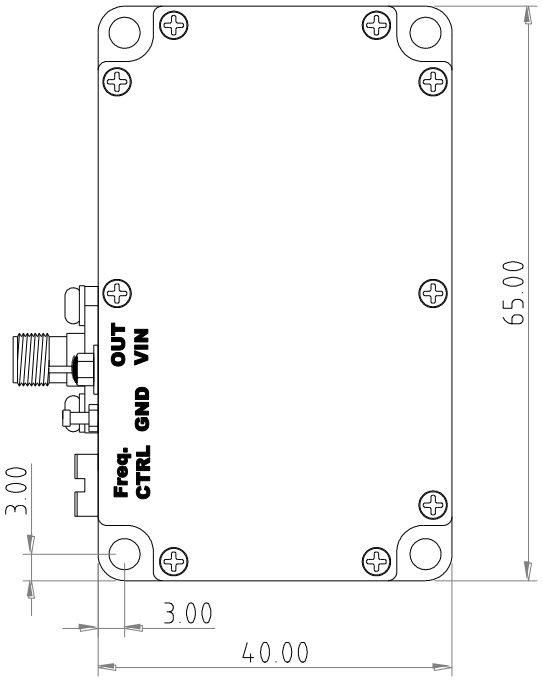
Note 2 Available order from 0 to 7 dBm in 1dB steps.

Note 3

Option	Frequency Offset	Unit	Min.	Typ.	Max.	Remarks
LN (Low Noise)	100Hz offset	dBc/Hz		-140	-135	
	1KHz offset	dBc/Hz		-150	-145	
	10KHz offset	dBc/Hz		-155	-150	
	100KHz offset	dBc/Hz		-155	-150	
	1MHz offset	dBc/Hz		-155	-150	
ULN (Ultra-Low Noise)	100Hz offset	dBc/Hz		-155	-150	
	1KHz offset	dBc/Hz		-165	-160	
	10KHz offset	dBc/Hz		-170	-165	
	100KHz offset	dBc/Hz		-170	-165	
	1MHz offset	dBc/Hz		-170	-165	

Housing Drawings





All dimensions are in millimeters.

Marking	Connector	Description
OUT	SMA-Jack, 50 ohm	Output
VIN	EMI Feed-thru	Supply Voltage
Freq. CTRL	Flat Head Wrench Bolt	Electronic Frequency Control
GND	Turret Thread Terminal	GND

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PFRM-1-50

Descriptions

The PFRM-1-50 series is a single channel frequency reference module that provides a highly stable 50 MHz sine wave output. The OCXO with excellent performance, housed inside this series provides a temperature stability from ±10 ppb to ±100 ppb over operating temperature range.

Features

- Single channel output
- 50 MHz output
- Sine wave
- Internal OCXO with excellent performance
- Electronic frequency adjustment
- Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

Ordering Information

- PFRM-1-50-TS-OP-PN-SV

  - TS: Frequency Stability vs. Temperature (ppb)
  - OP: Output Power (dBm)
  - PN: Phase Noise (dBc/Hz)
  - SV: Supply Voltage (Vdc)

- Example

  - PFRM-1-50-TS1-05-ULN-12
    - Frequency Stability vs. Temperature: ±100 ppb over -20 °C to 70 °C
    - Output Power: 5 dBm
    - Phase Noise: Ultra-Low Noise (See "Note 3")
    - Supply Voltage: 12 Vdc

Specifications

Parameter		Unit	Min.	Typ.	Max.	Remarks
Frequency Calibration		ppm	-0.1		+0.1	
Frequency Stability vs. Temperature		ppb	Note 1			
Output	Frequency	MHz	50			
	Power	dBm	Note 2			
	Harmonics	dBc			-60	
	Spurious	dBc		-80	-70	
	Load Impedance	Ohm	50			
Phase Noise		dBc/Hz	Note 3			
Supply Voltage		Vdc	12		15	
Current Consumption	Steady State	mA	Consult Factory			
	Warm-up		Consult Factory			
Warm Up Time		min		3	5	
Operating Temperature		℃	Note 1			
Storage Temperature		℃	-40 to 85			
Housing (L x W x H)		mm	65.0 x 40.0 x 23.5			

Note 1

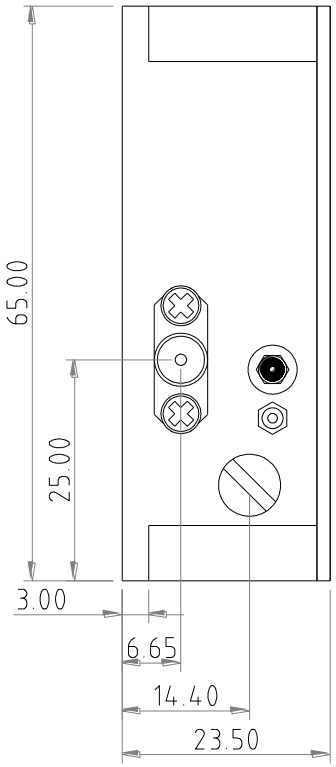
Temp. (°C)	Frequency Stability		Phase Noise		Remarks
-20 to 70	TS1	±100	ULN	LN	Consult factory to order other frequency stability
	TS2	±50	ULN	LN	
	TS3	±30		LN	
	TS4	±10		LN	
-40 to 75	TS5	±100	ULN	LN	
	TS6	±50		LN	
	TS7	±30		LN	
	TS8	±10		LN	

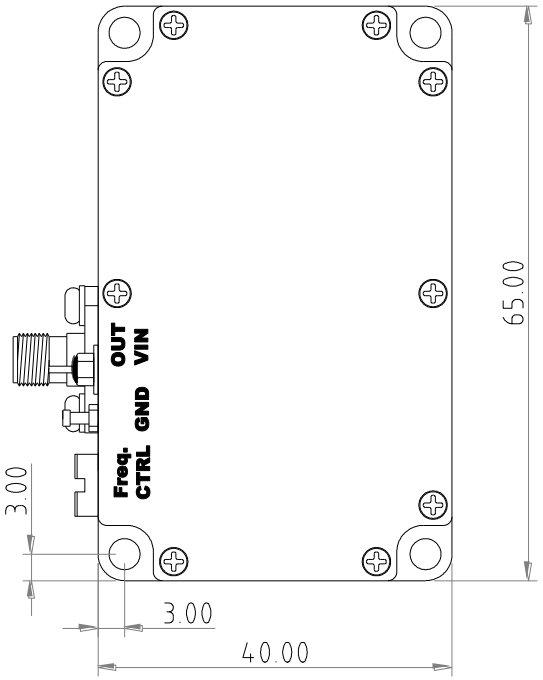
Note 2 Available order from 0 to 7 dBm in 1dB steps.

Note 3

Option	Frequency Offset	Unit	Min.	Typ.	Max.	Remarks
LN (Low Noise)	100Hz offset	dBc/Hz		-115	-110	
	1KHz offset	dBc/Hz		-135	-130	
	10KHz offset	dBc/Hz		-145	-140	
	100KHz offset	dBc/Hz		-155	-150	
	1MHz offset	dBc/Hz		-155	-150	
ULN (Ultra-Low Noise)	100Hz offset	dBc/Hz		-135	-130	
	1KHz offset	dBc/Hz		-155	-150	
	10KHz offset	dBc/Hz		-165	-160	
	100KHz offset	dBc/Hz		-170	-165	
	1MHz offset	dBc/Hz		-170	-165	

Housing Drawings





All dimensions are in millimeters.

Marking	Connector	Description
OUT	SMA-Jack, 50 ohm	Output
VIN	EMI Feed-thru	Supply Voltage
Freq. CTRL	Flat Head Wrench Bolt	Electronic Frequency Control
GND	Turret Thread Terminal	GND

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PFRM-1-100

Descriptions

The PFRM-1-100 series is a single channel frequency reference module that provides a highly stable 100 MHz sine wave output. The OCXO with excellent performance, housed inside this series provides a temperature stability from ±10 ppb to ±100 ppb over operating temperature range.

Features

- Single channel output
- 100 MHz output
- Sine wave
- Internal OCXO with excellent performance
- Electronic frequency adjustment
- Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

Ordering Information

- PFRM-1-100-TS-OP-PN-SV

  - TS: Frequency Stability vs. Temperature (ppb)
  - OP: Output Power (dBm)
  - PN: Phase Noise (dBc/Hz)
  - SV: Supply Voltage (Vdc)

- Example

  - PFRM-1-100-TS1-05-ULN-12
    - Frequency Stability vs. Temperature: ±100 ppb over -20 °C to 70 °C
    - Output Power: 5 dBm
    - Phase Noise: Ultra-Low Noise (See "Note 3")
    - Supply Voltage: 12 Vdc

Specifications

Parameter		Unit	Min.	Typ.	Max.	Remarks
Frequency Calibration		ppm	-0.1		+0.1	
Frequency Stability vs. Temperature		ppb	Note 1			
Output	Frequency	MHz	100			
	Power	dBm	Note 2			
	Harmonics	dBc			-60	
	Spurious	dBc		-80	-70	
	Load Impedance	Ohm	50			
Phase Noise		dBc/Hz	Note 3			
Supply Voltage		Vdc	12		15	
Current Consumption	Steady State	mA	Consult Factory			
	Warm-up		Consult Factory			
Warm Up Time		min		3	5	
Operating Temperature		℃	Note 1			
Storage Temperature		℃	-40 to 85			
Housing (L x W x H)		mm	65.0 x 40.0 x 23.5			

Note 1

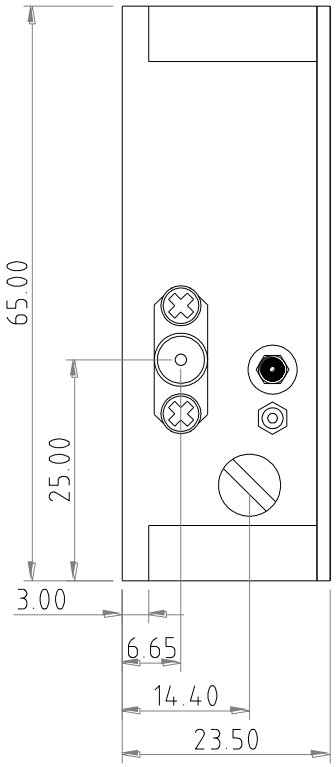
Temp. (°C)	Frequency Stability		Phase Noise		Remarks
-20 to 70	TS1	±100	ULN	LN	Consult factory to order other frequency stability
	TS2	±50	ULN	LN	
	TS3	±30		LN	
	TS4	±10		LN	
-40 to 75	TS5	±100	ULN	LN	
	TS6	±50		LN	
	TS7	±30		LN	
	TS8	±10		LN	

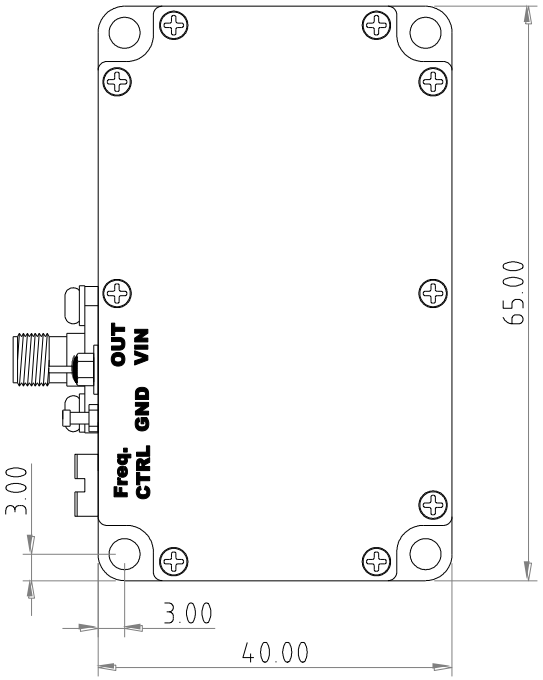
Note 2 Available order from 0 to 7 dBm in 1dB steps.

Note 3

Option	Frequency Offset	Unit	Min.	Typ.	Max.	Remarks
LN (Low Noise)	100Hz offset	dBc/Hz		-110	-105	
	1KHz offset	dBc/Hz		-130	-125	
	10KHz offset	dBc/Hz		-140	-135	
	100KHz offset	dBc/Hz		-155	-150	
	1MHz offset	dBc/Hz		-155	-150	
ULN (Ultra-Low Noise)	100Hz offset	dBc/Hz		-125	-120	
	1KHz offset	dBc/Hz		-150	-145	
	10KHz offset	dBc/Hz		-165	-160	
	100KHz offset	dBc/Hz		-170	-165	
	1MHz offset	dBc/Hz		-170	-165	

Housing Drawings





All dimensions are in millimeters.

Marking	Connector	Description
OUT	SMA-Jack, 50 ohm	Output
VIN	EMI Feed-thru	Supply Voltage
Freq. CTRL	Flat Head Wrench Bolt	Electronic Frequency Control
GND	Turret Thread Terminal	GND

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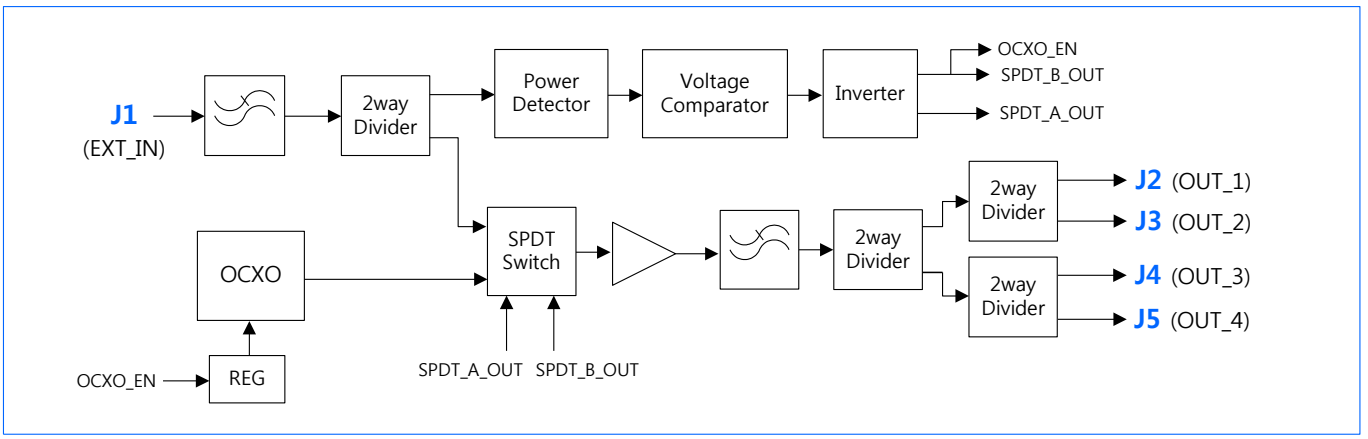
PFRM-4-10

Descriptions

The PFRM-4-10 series is a 4-channel frequency reference module that provides a highly stable 10 MHz sine wave outputs. This series is available in two housing options depending on the type of connectors for external interfaces. The OCXO with excellent performance, housed inside this series provides a temperature stability from ±10 ppb to ±100 ppb over operating temperature range.



Features

- Four identical output channels
- 10 MHz Output
- Sine wave
- Internal OCXO with excellent performance
- Automatic input detection and switching for external reference
- Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

Specifications

Parameter		Unit	Min.	Typ.	Max.	Remarks
Frequency Calibration		ppm	-0.1		+0.1	
Frequency Stability vs. Temperature		ppb	Note 1			
Output	No. of Output Channels	-	4			
	Frequency	MHz	10			
	Power	dBm	Note 2			
	Harmonics	dBc			-50	
	Spurious	dBc		-80	-70	
	Load Impedance	Ohm	50			
Phase Noise		dBc/Hz	Note 3			
Supply Voltage		Vdc	12		15	
Current Consumption	Steady State	mA	Consult Factory			
	Warm-up		Consult Factory			
Warm-up Time		min		3	5	
External Reference Input	Frequency	MHz	10			
	Power into 50 ohm	dBm	-2	0	+2	
External Reference Switching		-	Automatic detection and switching			
Operating Temperature			Note 1			
Storage Temperature			-40 ℃ to 85 ℃			
Housing (L x W x H)		mm	100.0 x 55.0 x 23.5			

Note 1

Temp. (°C)	Frequency Stability		Phase Noise		Remarks
-20 to 70	TS1	±100	ULN	LN	Consult factory to order other frequency stability
	TS2	±50	ULN	LN	
	TS3	±30		LN	
	TS4	±10		LN	
-40 to 75	TS5	±100	ULN	LN	
	TS6	±50		LN	
	TS7	±30		LN	
	TS8	±10		LN	

Note 2 Available order from 0 to 10 dBm in 1dB steps

Note 3

Option	Frequency Offset	Unit	Min.	Typ.	Max.	Remarks
LN (Low Noise)	100Hz offset	dBc/Hz		-140	-135	
	1KHz offset	dBc/Hz		-150	-145	
	10KHz offset	dBc/Hz		-155	-150	
	100KHz offset	dBc/Hz		-155	-150	
	1MHz offset	dBc/Hz		-155	-150	
ULN (Ultra-Low Noise)	100Hz offset	dBc/Hz		-155	-150	
	1KHz offset	dBc/Hz		-165	-160	
	10KHz offset	dBc/Hz		-170	-165	
	100KHz offset	dBc/Hz		-170	-165	
	1MHz offset	dBc/Hz		-170	-165	

Ordering Information

❖ PFRM-4-10-TS-OP-PN-SV-HT

- TS: Frequency Stability vs. Temperature (ppb)
- OP: Output Power (dBm)
- PN: Phase Noise (dBc/Hz)
- SV: Supply Voltage (Vdc)
- HT: Housing Type
  . DS: Housing with 9 way D_Sub_Plug Connector
  . FT: Housing with EMI Feed-thru Connectors

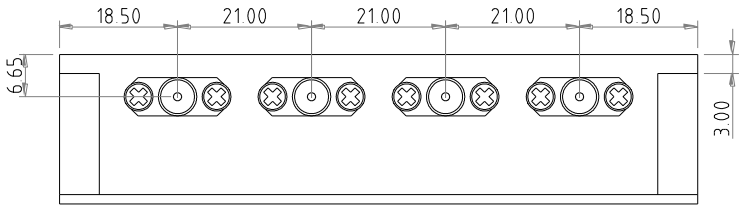
❖ Examples

- PFRM-4-10-TS1-05-ULN-12-FT
  . Frequency Stability vs. Temperature: ±100 ppb over -20 °C to 70 °C
  . Output Power: 5 dBm
  . Phase Noise: Ultra-Low Noise (See "Note 3")
  . Supply Voltage: 12 Vdc
  . Housing Type: Housing with EMI Feed-thru Connectors

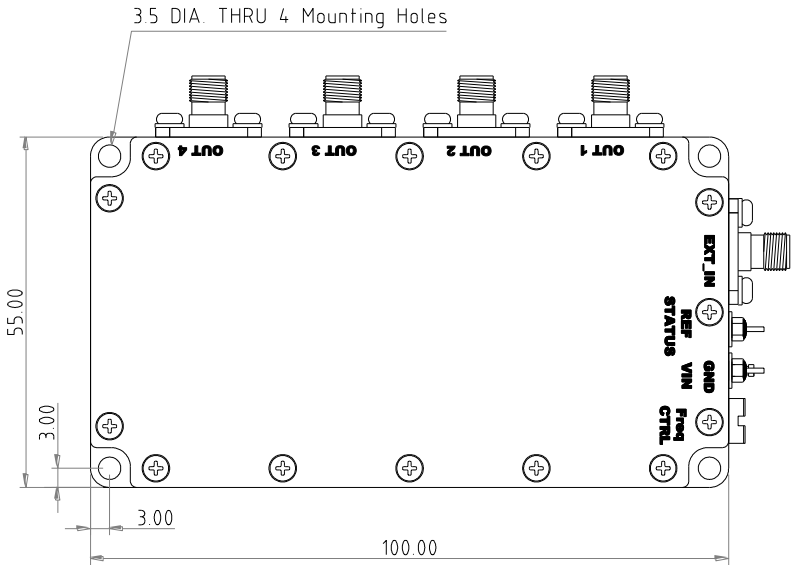
- PFRM-4-10-TS5-10-LN-13-DS
  . Frequency Stability vs. Temperature: ±100 ppb over -40 °C to 75 °C
  . Output Power: 10 dBm
  . Phase Noise: Low Noise (See "Note 3")
  . Supply Voltage: 13 Vdc
  . Housing Type: Housing with 9 way D_Sub_Plug Connector

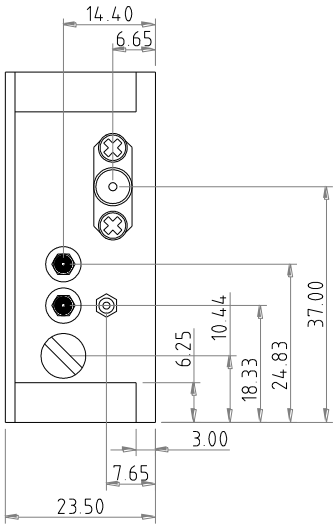
Housing Drawings

Housing with EMI Feed-thru connectors



All dimensions are in millimeters.

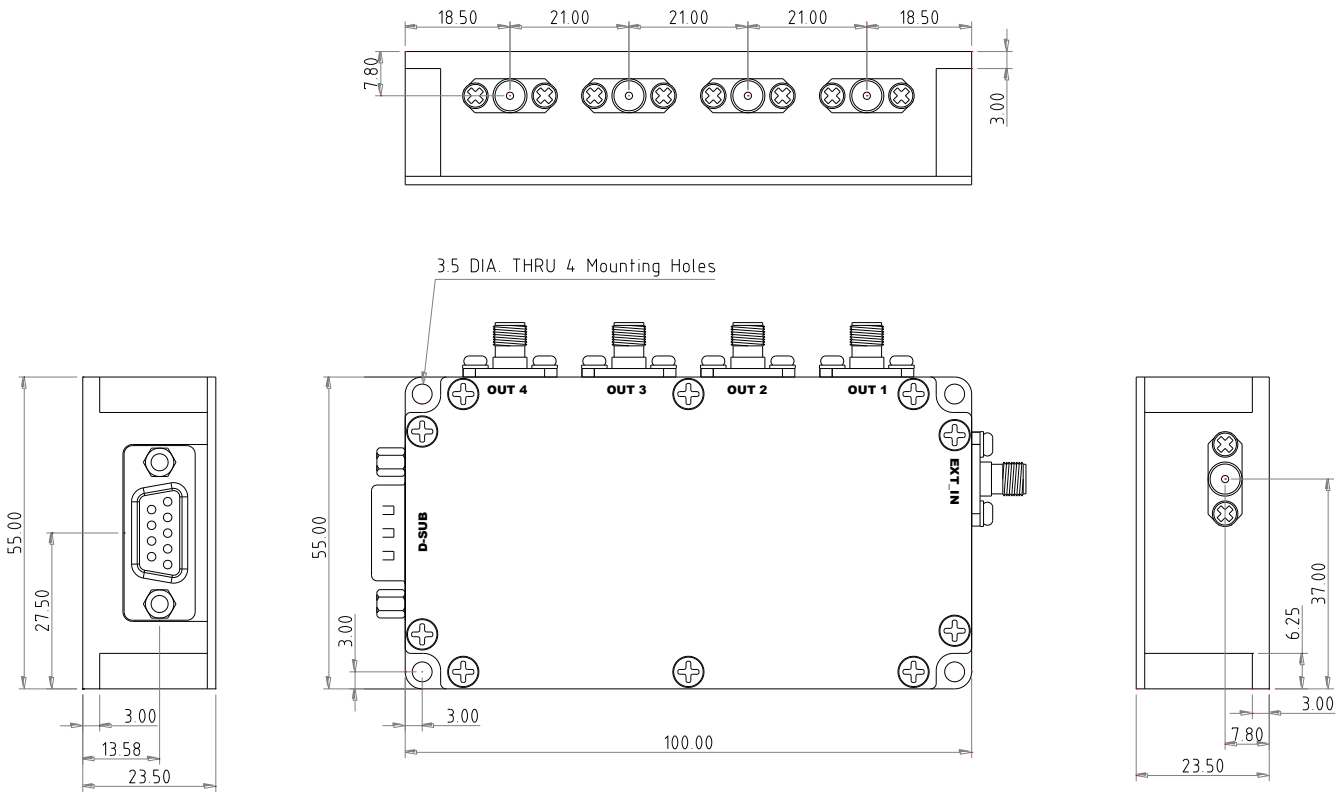




Marking	Connector	Description
EXT_IN	SMA-Jack, 50 ohm	External Reference Input
OUT 1 to OUT 4	SMA-Jack, 50 ohm	Four identical output channels
VIN	EMI Feed-thru	Supply Voltage
REF STATUS	EMI Feed-thru	TTL "High" when operating with internal OCXO and TTL "Low" when operating with external reference
Freq. CTRL	Flat Head Wrench Bolt	Electronic Frequency Control
GND	Turret Thread Terminal	Ground

Housing Drawings

Housing with 9 way D_Sub_plug connector



All dimensions are in millimeters.

Marking	Connector	Description
EXT_IN	SMA-Jack, 50 ohm	External Reference Input
OUT 1 to OUT 4	SMA-Jack, 50 ohm	Four identical output channels
D_SUB	9 way D_Sub Plug	GND: P1 EXT_REF_ACTIVE (Note 5): P2 FREQ_CTRL: P3 VIN: P5, P9 INT_OCXO_ACTIVE (Note 4): P6 Not Used: P4, P7, P8

(Note 4) INT_OCXO_ACTIVE: TTL "High" when operating with internal OCXO and TTL "Low" when operating with external reference.

(Note 5) EXT_REF_ACTIVE: TTL "High" when operating with external reference and TTL "Low" when operating with internal OCXO.

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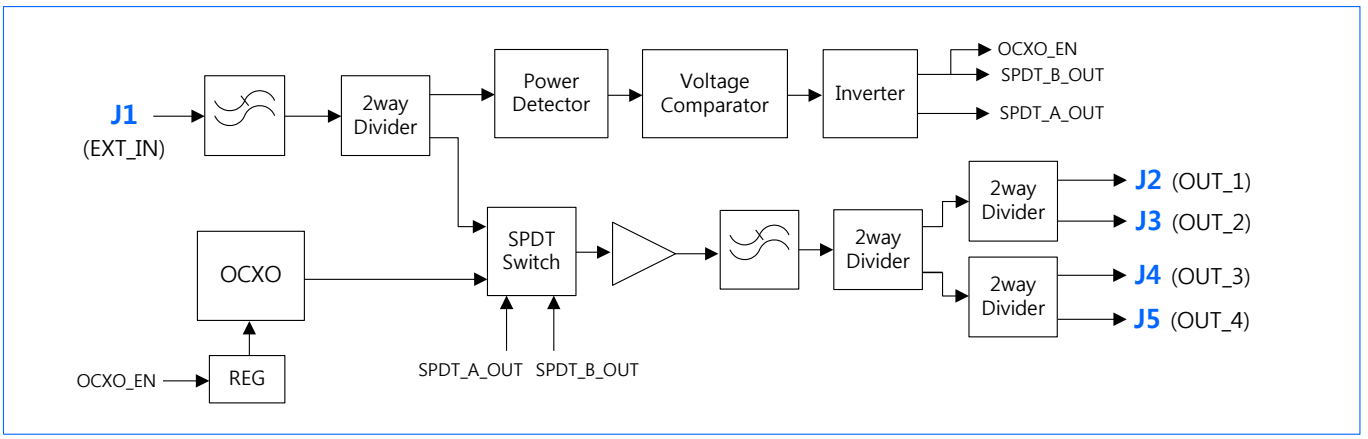
PFRM-4-50

Descriptions

The PFRM-4-50 series is a 4-channel frequency reference module that provides a highly stable 50 MHz sine wave outputs. This series is available in two housing options depending on the type of connectors for external interfaces. The OCXO with excellent performance, housed inside this series provides a temperature stability from ±10 ppb to ±100 ppb over operating temperature range.



Features

- Four identical output channels
- 50 MHz Output
- Sine wave
- Internal OCXO with excellent performance
- Automatic input detection and switching for external reference
- Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

Specifications

Parameter		Unit	Min.	Typ.	Max.	Remarks
Frequency Calibration		ppm	-0.1		+0.1	
Frequency Stability vs. Temperature		ppb	Note 1			
Output	No. of Output Channels	-	4			
	Frequency	MHz	50			
	Power	dBm	Note 2			
	Harmonics	dBc			-50	
	Spurious	dBc		-80	-70	
	Load Impedance	Ohm	50			
Phase Noise		dBc/Hz	Note 3			
Supply Voltage		Vdc	12		15	
Current Consumption	Steady State	mA	Consult Factory			
	Warm-up		Consult Factory			
Warm-up Time		min		3	5	
External Reference Input	Frequency	MHz	50			
	Power into 50 ohm	dBm	-2	0	+2	
External Reference Switching		-	Automatic detection and switching			
Operating Temperature			Note 1			
Storage Temperature			-40 ℃ to 85 ℃			
Housing (L x W x H)		mm	100.0 x 55.0 x 23.5			

Note 1

Temp. (°C)	Frequency Stability		Phase Noise		Remarks
-20 to 70	TS1	±100	ULN	LN	Consult factory to order other frequency stability
	TS2	±50	ULN	LN	
	TS3	±30		LN	
	TS4	±10		LN	
-40 to 75	TS5	±100	ULN	LN	
	TS6	±50		LN	
	TS7	±30		LN	
	TS8	±10		LN	

Note 2 Available order from 0 to 10 dBm in 1dB steps

Note 3

Option	Frequency Offset	Unit	Min.	Typ.	Max.	Remarks
LN (Low Noise)	100Hz offset	dBc/Hz		-115	-110	
	1KHz offset	dBc/Hz		-135	-130	
	10KHz offset	dBc/Hz		-145	-140	
	100KHz offset	dBc/Hz		-155	-150	
	1MHz offset	dBc/Hz		-155	-150	
ULN (Ultra-Low Noise)	100Hz offset	dBc/Hz		-135	-130	
	1KHz offset	dBc/Hz		-155	-150	
	10KHz offset	dBc/Hz		-165	-160	
	100KHz offset	dBc/Hz		-170	-165	
	1MHz offset	dBc/Hz		-170	-165	

Ordering Information

❖ PFRM-4-50-TS-OP-PN-SV-HT

- TS: Frequency Stability vs. Temperature (ppb)
- OP: Output Power (dBm)
- PN: Phase Noise (dBc/Hz)
- SV: Supply Voltage (Vdc)
- HT: Housing Type
  . DS: Housing with 9 way D_Sub_Plug Connector
  . FT: Housing with EMI Feed-thru Connectors

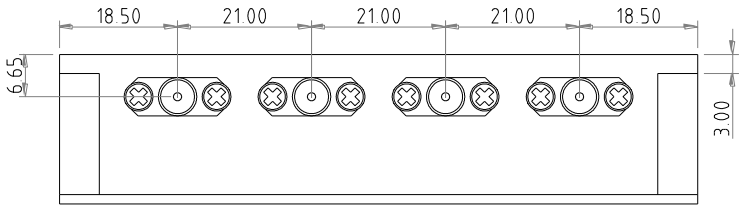
❖ Examples

- PFRM-4-50-TS1-05-ULN-12-FT
  . Frequency Stability vs. Temperature: ±100 ppb over -20 °C to 70 °C
  . Output Power: 5 dBm
  . Phase Noise: Ultra-Low Noise (See "Note 3")
  . Supply Voltage: 12 Vdc
  . Housing Type: Housing with EMI Feed-thru Connectors

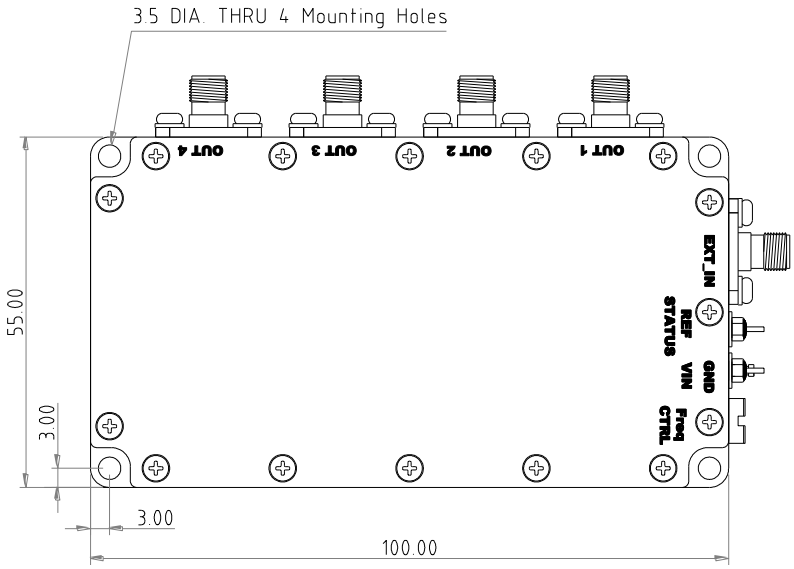
- PFRM-4-50-TS5-10-LN-13-DS
  . Frequency Stability vs. Temperature: ±100 ppb over -40 °C to 75 °C
  . Output Power: 10 dBm
  . Phase Noise: Low Noise (See "Note 3")
  . Supply Voltage: 13 Vdc
  . Housing Type: Housing with 9 way D_Sub_Plug Connector

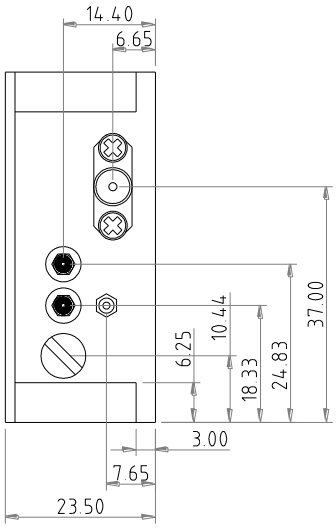
Housing Drawings

Housing with EMI Feed-thru connectors



All dimensions are in millimeters.

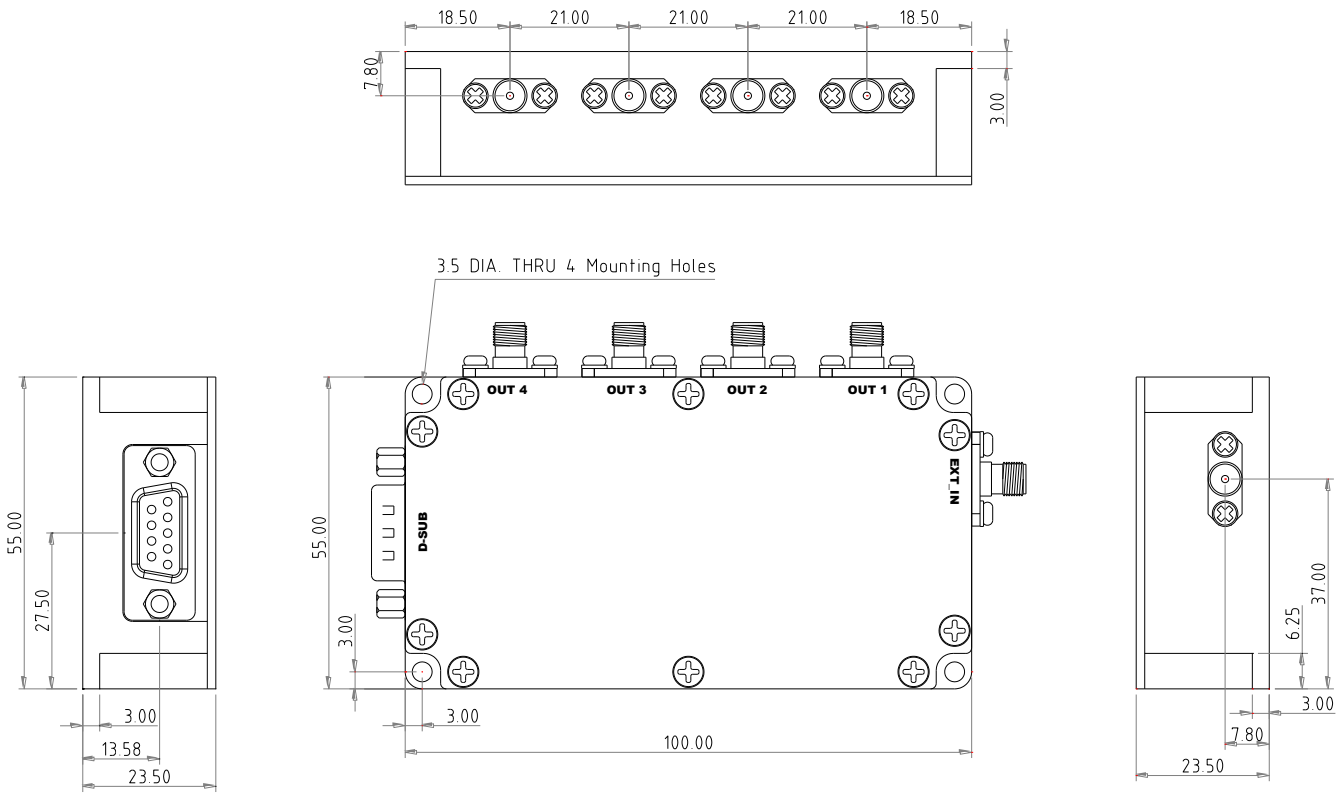




Marking	Connector	Description
EXT_IN	SMA-Jack, 50 ohm	External Reference Input
OUT 1 to OUT 4	SMA-Jack, 50 ohm	Four identical output channels
VIN	EMI Feed-thru	Supply Voltage
REF STATUS	EMI Feed-thru	TTL "High" when operating with internal OCXO and TTL "Low" when operating with external reference
Freq. CTRL	Flat Head Wrench Bolt	Electronic Frequency Control
GND	Turret Thread Terminal	Ground

Housing Drawings

Housing with 9 way D_Sub_plug connector



All dimensions are in millimeters.

Marking	Connector	Description
EXT_IN	SMA-Jack, 50 ohm	External Reference Input
OUT 1 to OUT 4	SMA-Jack, 50 ohm	Four identical output channels
D_SUB	9 way D_Sub Plug	GND: P1 EXT_REF_ACTIVE (Note 5): P2 FREQ_CTRL: P3 VIN: P5, P9 INT_OCXO_ACTIVE (Note 4): P6 Not Used: P4, P7, P8

(Note 4) INT_OCXO_ACTIVE: TTL "High" when operating with internal OCXO and TTL "Low" when operating with external reference.

(Note 5) EXT_REF_ACTIVE: TTL "High" when operating with external reference and TTL "Low" when operating with internal OCXO.

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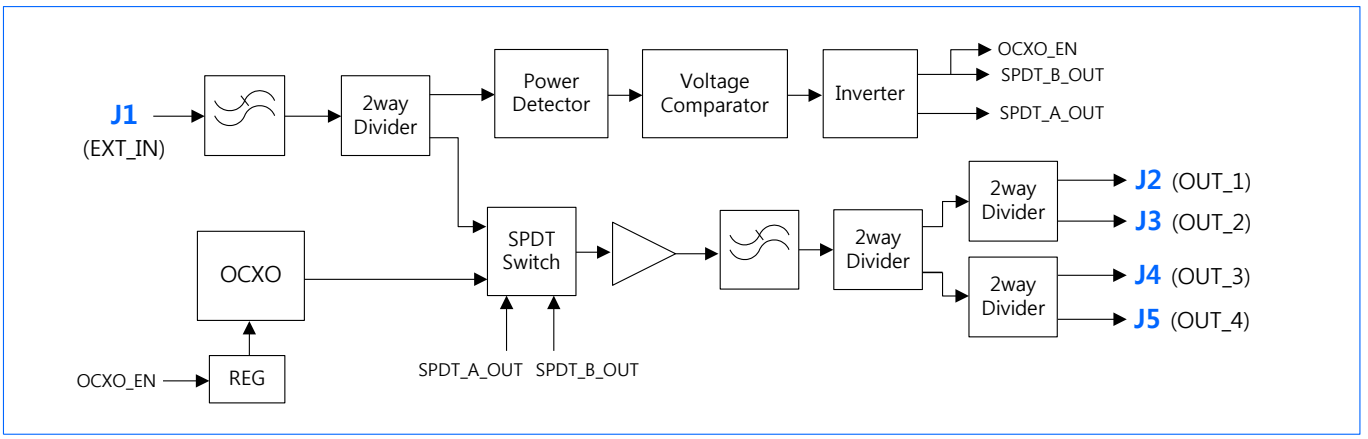
PFRM-4-100

Descriptions

The PFRM-4-100 series is a 4-channel frequency reference module that provides a highly stable 100 MHz sine wave outputs. This series is available in two housing options depending on the type of connectors for external interfaces. The OCXO with excellent performance, housed inside this series provides a temperature stability from ±10 ppb to ±100 ppb over operating temperature range.



Features

- Four identical output channels
- 100 MHz Output
- Sine wave
- Internal OCXO with excellent performance
- Automatic input detection and switching for external reference
- Various options available

Applications

- Frequency reference for oscillators
- Military electronic systems
- SATCOM
- External frequency synchronization of instruments
- Telecommunication standards

Specifications

Parameter		Unit	Min.	Typ.	Max.	Remarks
Frequency Calibration		ppm	-0.1		+0.1	
Frequency Stability vs. Temperature		ppb	Note 1			
Output	No. of Output Channels	-	4			
	Frequency	MHz	100			
	Power	dBm	Note 2			
	Harmonics	dBc			-50	
	Spurious	dBc		-80	-70	
	Load Impedance	Ohm	50			
Phase Noise		dBc/Hz	Note 3			
Supply Voltage		Vdc	12		15	
Current Consumption	Steady State	mA	Consult Factory			
	Warm-up		Consult Factory			
Warm-up Time		min		3	5	
External Reference Input	Frequency	MHz	100			
	Power into 50 ohm	dBm	-2	0	+2	
External Reference Switching		-	Automatic detection and switching			
Operating Temperature			Note 1			
Storage Temperature			-40 ℃ to 85 ℃			
Housing (L x W x H)		mm	100.0 x 55.0 x 23.5			

Note 1

Temp. (°C)	Frequency Stability		Phase Noise		Remarks
-20 to 70	TS1	±100	ULN	LN	Consult factory to order other frequency stability
	TS2	±50	ULN	LN	
	TS3	±30		LN	
	TS4	±10		LN	
-40 to 75	TS5	±100	ULN	LN	
	TS6	±50		LN	
	TS7	±30		LN	
	TS8	±10		LN	

Note 2 Available order from 0 to 10 dBm in 1dB steps

Note 3

Option	Frequency Offset	Unit	Min.	Typ.	Max.	Remarks
LN (Low Noise)	100Hz offset	dBc/Hz		-110	-105	
	1KHz offset	dBc/Hz		-130	-125	
	10KHz offset	dBc/Hz		-140	-135	
	100KHz offset	dBc/Hz		-155	-150	
	1MHz offset	dBc/Hz		-155	-150	
ULN (Ultra-Low Noise)	100Hz offset	dBc/Hz		-125	-120	
	1KHz offset	dBc/Hz		-150	-145	
	10KHz offset	dBc/Hz		-165	-160	
	100KHz offset	dBc/Hz		-170	-165	
	1MHz offset	dBc/Hz		-170	-165	

Ordering Information

❖ PFRM-4-100-TS-OP-PN-SV-HT

- TS: Frequency Stability vs. Temperature (ppb)
- OP: Output Power (dBm)
- PN: Phase Noise (dBc/Hz)
- SV: Supply Voltage (Vdc)
- HT: Housing Type
  . DS: Housing with 9 way D_Sub_Plug Connector
  . FT: Housing with EMI Feed-thru Connectors

❖ Examples

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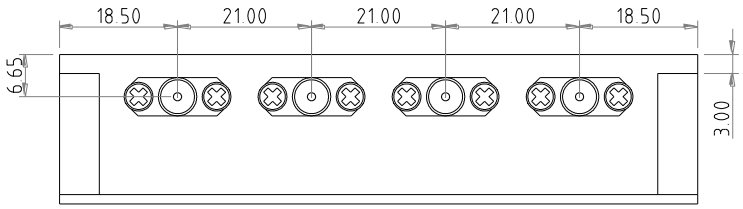
Housing Drawings

Housing with EMI Feed-thru connectors



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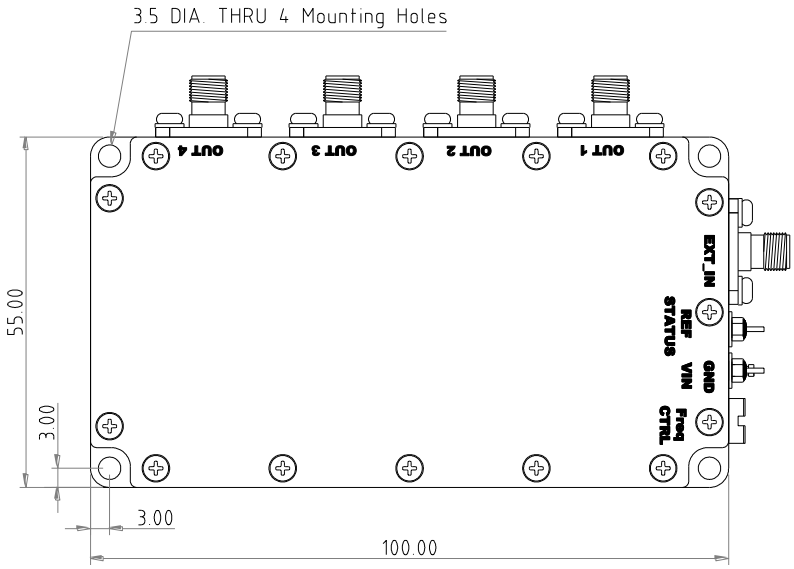

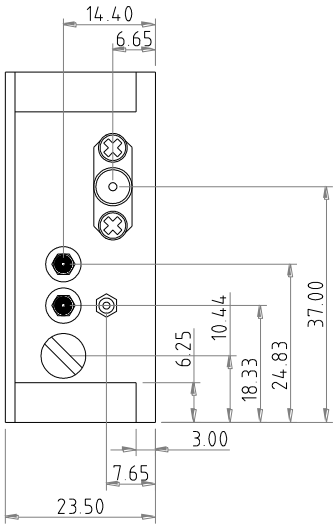

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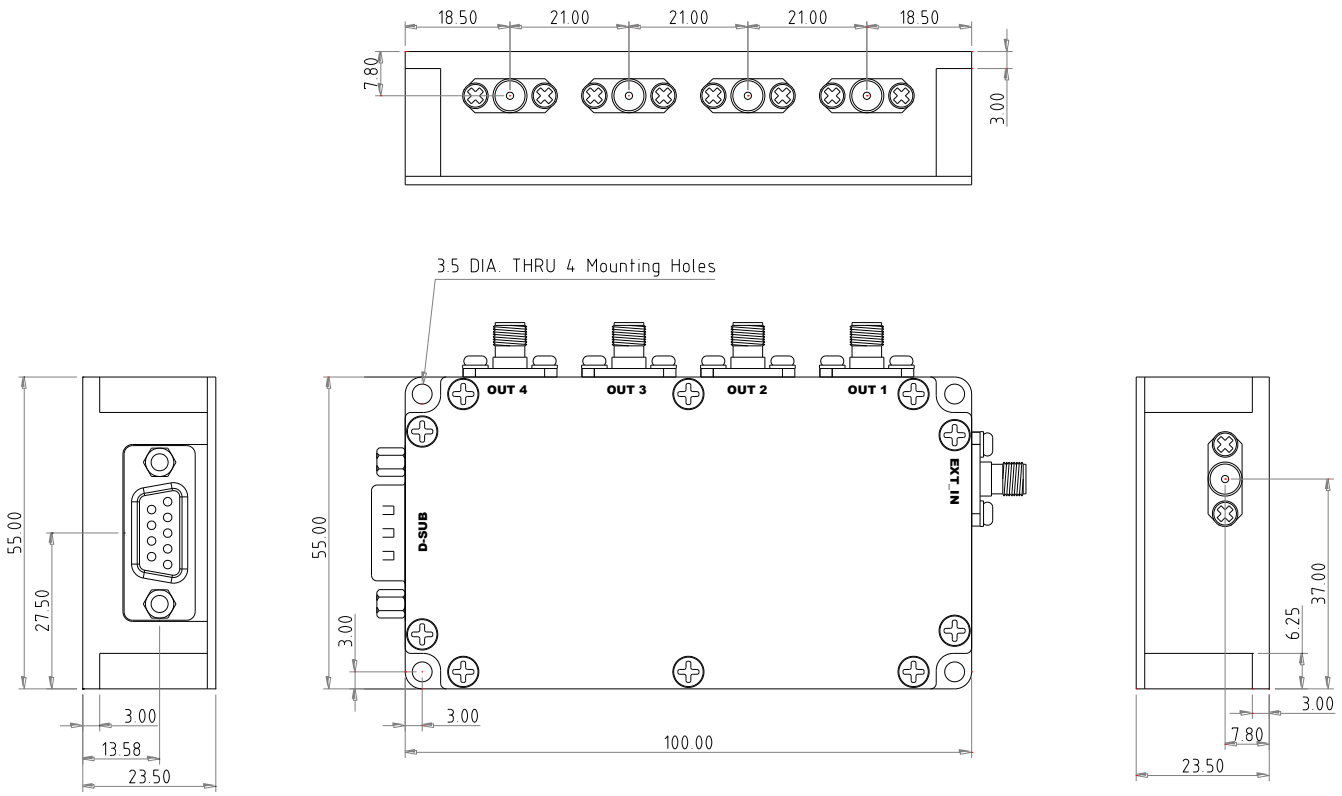

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