

VF-4220A

Ultra High Performance Rubidium Standard Frequency Reference



Features

- 10MHz rubidium frequency reference
- 100kHz capability (with multiple RF output options)
- 1 PPS disciplining input (standard)
- Ultra low phase noise (-128 dBc at 10Hz)
- RS-232-C monitor/control
- Convenient 2U bench or 19" rack mount

Applications

- Laboratory
- Systems Frequency Reference



Description

The VF-4220A is an ultra low noise disciplined Frequency Reference with rubidium source and OCXO clean-up oscillator.

The instrument contains a high performance rubidium module, with an extended life design, and very low aging rate to deliver excellent stability. The module is the reference for a high quality OCXO output for low phase noise and jitter.

For even better long term stability the unit will accept a 1 PPS input that can be derived from a reference source such as cesium clock or GPS module.

The VF-4220A is an ideal laboratory or system frequency reference with a range of options to enhance the functionality of the unit.

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Electrical Specifications

| Parameter | Condition | Value | Note |
|--------------------------|--|---|------------|
| Output Level | Standard 10MHz 1 PPS | +7 dBm (RF sine wave) TTL Level | |
| | Multiple Outputs Option 1MHz, 5MHz, 10MHz | 1.0V RMS into 50 Ohms +13 dBm ±1 dBm | |
| Accuracy | | 5E-11 (at shipment) | |
| Spurious | | -75 dBc (100kHz BW) | |
| Aging | | <5 E-11/month (after 30 days) <5 E-10/year | |
| Stability | 1s | 2E-11 | Short-term |
| | 10s | 1E-11 | |
| | 100s | 2E-12 | |
| SSB Phase Noise (dBc/Hz) | 1Hz | -108 | @10MHz |
| | 10Hz | -128 | |
| | 100Hz | -150 | |
| | 1kHz | -170 | |
| | 10kHz | -170 | |
| Front Panel Display | Indicators | | |
| | Power | Green LED | |
| | Lock | Green LED | |
| | Fault | Amber LED | |

Environmental and Physical

| Parameter | Specification |
|-----------------------|--|
| Operating Temperature | 0°C to +50°C |
| Storage Temperature | -20°C to +70°C |
| Relative Humidity | 0-95%, non-condensing |
| Power Requirements | AC Input Voltage: 90-264V, <10W DC Input (optional): 18-72V |
| Weight | Unit: <15 lbs. |

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Rear View

VF-4220A w/MOPS option



2U (3.504 inches) x 19 inches x 12 inches

How to order:

VF-4220A

Available Options

| Option | Description |
|---------|---|
| VF-MOPS | Multiple RF outputs (1MHz, 5MHz, 10MHz) |
| VF-EXP4 | 4 channel expansion module |
| VF-RF01 | 1MHz sine wave out (x4) |
| VF-RF05 | 5MHz sine wave out (x4) |
| VF-RF10 | 10MHz sine wave out (x4) |
| VF-PULS | Pulse distribution (x4) |
| VF-OCXO | High performance OCXO |
| VF-ULNO | Ultra low noise output |
| VF-DCPS | DC power supply |
| VF-RSLD | Mounted rack slides |