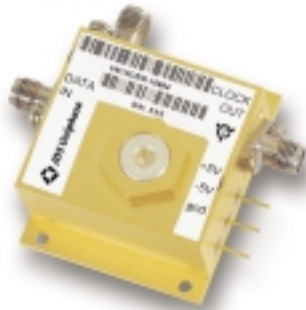


Product Bulletin



VM10CRM Series 10 Gb/s Clock Recovery Module

This product is used to generate a high level synchronous clock signal from 10 Gb/s NRZ data. This module includes a temperature stable high “Q” filter (1000) for excellent jitter transfer characteristic, which unlike phase-locked-loop designs cannot “loose lock”.

The unit can be supplied with an optional data output port and factory settable clock rate in the range of 9.900 Gb/s to 10.700 Gb/s. Please specify the bit rate when ordering (see instructions inside for part numbering).

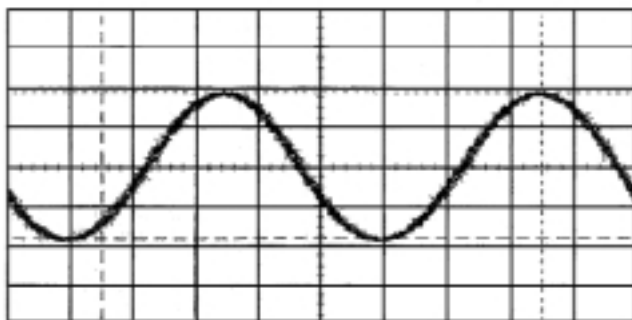
Key features

- Low DC power, 5V @ 160 mA typ
- Provides sinusoidal clock >1.5 Vp-p
- Accepts data input level as low as 300 mVp-p
- Internal DC regulation and reverse voltage protection
- Spectral purity > 30 dBc
- Optional data output port eliminates external splitters, couplers
- Excellent output amplitude and phase stability over input level range and temperature

Applications

- Long haul optical transmission systems
- OC-192 applications with FEC protocols

Typical Performance

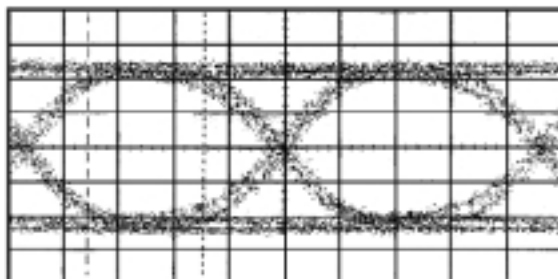


Clock Output @ 10.0 Gb/s

PRBS = $2^{31} - 1$

500.0 mV/div

20.0 ps/div



Data Output @ 10 Gb/s

1.0 Vpp input

200.0 mV/div

20.0 ps/div

10 Gb/s Clock Recovery Module Performance Specifications

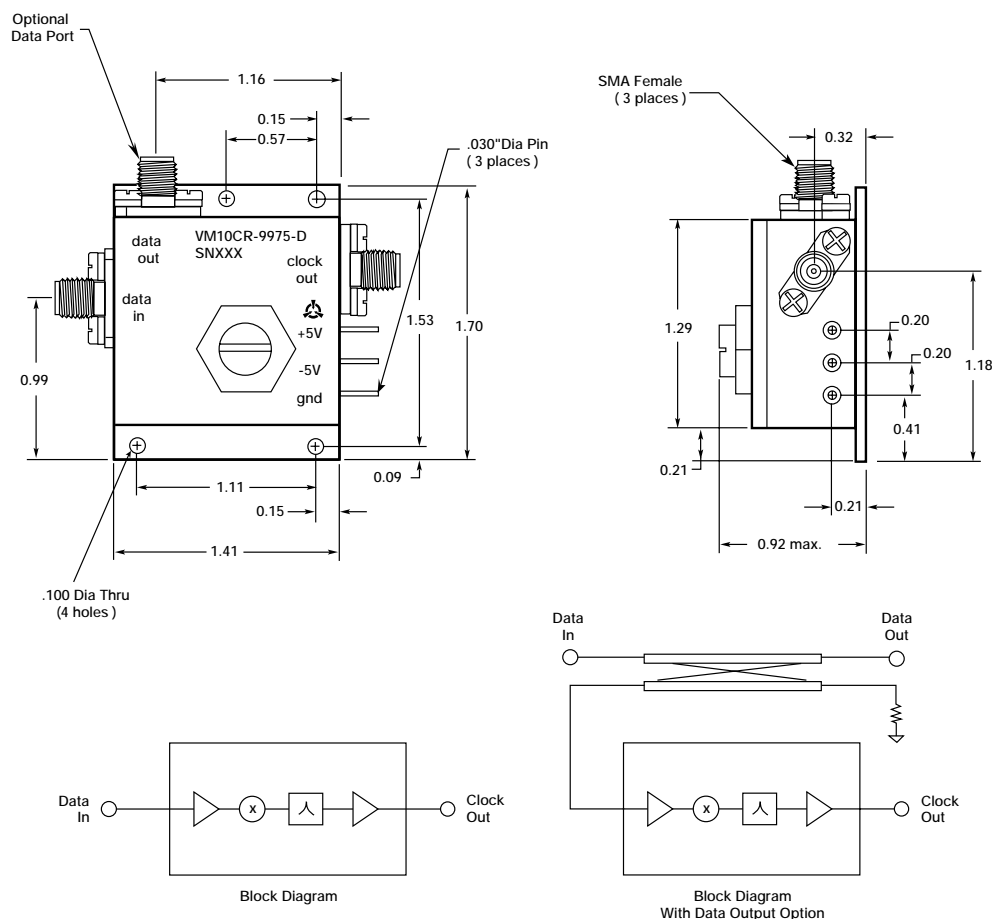
Parameter	Specification
Data Input Level	0.3 V _{p-p} to 0.8 V _{pp} 0.5 V _{p-p} to 1.0 V _{p-p} (for units with Data Output Option)
Input Reflection	-10 dB max. 100 KHz to 8 GHz, -15 dB typical to 5 GHz,
Clock Output Level	1.5 V _{p-p} min
Clock Output Variation with Input Amplitude	3 dB output change max. for 6 dB input change
Clock Output Variation with Temperature	10% max., 0 - 80°C
Internal Resonator "Q"	750 min.,
Clock Output Reflection	-10 dB max., @ FO ± 100 MHz
Operating Temperature	0°C to 80°C
Clock Phase Stability Over Temperature	±20° , (±5 ps) max.
Clock Phase Stability Over Input Level	±3 ps over any 3 dB change
Spurious Output	-30 dBc max.
Output Jitter	7% RMS noise max. on output sinusoid (10 second average)
Positive Supply	+4.8 to 5.5 VDC @ 200 mA max., internally regulated Reverse polarity protected to 10 V.
Negative Supply	-4 to -6 VDC @ 10 mA max., internally regulated Reverse polarity protected to 20 V

Data Output Port (optional)

Thru Path Insertion Loss	2 dB max. to 5 GHz
Thru Path 3 dB Bandwidth	DC to 10 GHz min.
Rise/Fall Time	30 ps max.
Frequency Flatness	± 1 dB, from DC to 5 GHz (excluding loss slope)
Input/Output Reflection	-10 dB max., 100 KHz to 8 GHz

Package Dimensions

Dimensions in inches except where indicated



Ordering information

- Please specify bit rate in MHz as the last five digits of the part number.
- To add the Data Output Port option add a "-D" after the bit rate.

Example: VM10CRM-99750-D (is tuned to operate at 9.9750 Gb/s and includes the Data Output Port)

For more information on this or other products and their availability, please contact your local JDS Uniphase sales representative or JDS Uniphase directly at 732 465-2800, or by fax 732 465-2801, or via email at sales.nj@us.jdsuniphase.com. Visit our Web site at www.jdsuniphase.com.



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