

150 CABLE MODEM INTERFACE

RNG-CMI



Varis' Cable Modem Interface Unit (RNG-CMI) provides an interface between the Smart Com 150 Leaky Feeder network and cable modem hardware. The CMTSI and RNG-CMI units work together to compensate for the Varis Smart Com 150 network not having the same upstream band-pass as CATV networks. The interface units perform a frequency translation to insert and extract a 6.4 MHz wide 64 QAM data channel. The RNG-CMI performs an up-conversion from CATV sub-band upstream frequencies to Smart Com 150 upstream frequencies, while the CMTSI does the opposite. In addition to performing upstream frequency conversion, the RNG-CMI also accommodates the downstream channel and performs power level adjustments for both channels.



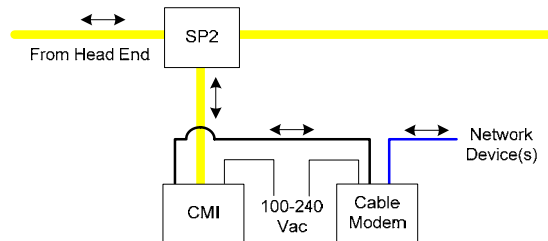
RNG-CMI

Product Specifications

Part Number	RNG-CMI
Physical	
Construction	Single Printed Circuit Board
Enclosure	NEMA 4x (IP66), Polycarbonate
Dimensions (L x H x W)	295 x 90 x 180 mm (11.6 x 3.5 x 7.1 in)
Weight (nominal)	1.42 kg (3.13 lbs)
Leaky Feeder Connector	3 Terminal Lug Connector
Cable modem Connector	F-type jack
Power Connector	2 position Terminal Block
Environmental	
Temperature Range	-30 to +70° C (-22 to +158° F)
Electrical	
Adaptor Input Voltage	100 - 240 VAC, 47 - 63 Hz
Board Input Voltage	12 VDC
Current Consumption	< 600 mA
Power Indicator	LED
DC Blocking	To/From LF Network, To/From Cable Modem
General RF Characteristics	
Maximum Frequency Drift	± 1 ppm (over temperature range)
Input Impedance (To/From LF network)	75 Ω
Output Impedance (To/From Cable Modem)	75 Ω
Downstream RF Characteristics	
Input Frequency Range	145 - 160 MHz
Output Frequency Range	145 - 160 MHz
Modulation Mode	64 QAM

On-board Attenuator				
	<i>Position</i>	<i>Value</i>	<i>Position</i>	<i>Value</i>
	0	- 0 dB	8	- 16 dB
	1	- 2 dB	9	- 18 dB
	2	- 4 dB	A	- 20 dB
	3	- 6 dB	B	- 22 dB
	4	- 8 dB	C	- 24 dB
	5	- 10 dB	D	- 26 dB
	6	- 12 dB	E	- 28 dB
	7	- 14 dB	F	- 30 dB
Insertion Loss	20 - 22 dB @ 153 MHz			
Input Power Level (from LF network)	≤ 50 dBmV			
Output Power Level (to Cable Modem)	5 - 15 dBmV			
MER	≥ 40 dB			
BER	< 1.0E-10 Pre-FEC			
Spurious	< -83 dBm @ LO Freq: 150.25 MHz			
Upstream RF Characteristics				
Output Frequency Range	176-185 MHz			
Input Frequency Range	25.75 - 34.75 MHz			
Modulation Mode	64 QAM, 16 QAM, QPSK			
On-board Attenuator	<i>Position</i>	<i>Value</i>	<i>Position</i>	<i>Value</i>
	0	- 0 dB	8	- 16 dB
	1	- 2 dB	9	- 18 dB
	2	- 4 dB	A	- 20 dB
	3	- 6 dB	B	- 22 dB
	4	- 8 dB	C	- 24 dB
	5	- 10 dB	D	- 26 dB
	6	- 12 dB	E	- 28 dB
	7	- 14 dB	F	- 30 dB
Gain	16 - 19 dB @ 29.75 MHz			
Input Power Level (from Cable Modem)	10 - 55 dBmV			
Output Power Level (to LF Network)	≤ 60 dBmV			
MER	≥ 40 dB			
BER	< 1.0E-10 Pre-FEC			
Approvals				
Intrinsic Safety	No			
CE Certification	No			

Installation



RNG-CMI Installation

Use the following guidelines to ensure proper installation of Cable Modem Interface units:

- Install Cable Modem Interface no further than 400 m (1312 ft) of Leaky Feeder cable from the previous amplifier.
- Install Cable Modem no further than 30 m (100 ft) away from the RNG-CMI. The cable between the cable modem and RNG-CMI must be RG6/U (low loss) cable.
- Ensure that the total loss (including SP2 splitter) is no more than 21 dB between the cable modem and previous amplifier.
- Ensure that Cable Modem Interface is installed close to a 100-240 VAC supply.