

# 450 CABLE MODEM INTERFACE

## UHF-CMI



The Smart Com 450 Cable Modem Interface (UHF-CMI) provides an interface between the Smart Com 450/450IS Leaky Feeder network and Smart Com Ethernet cable modem hardware. This unit performs impedance matching, dc blocking and acts as an N-type to F-type adaptor.



UHF-CMI

### Product Specifications

Part Number	UHF-CMI
<b>Physical</b>	
Construction	N-Type to F-Type Barrel
Enclosure	Trimetal (tin/zinc/copper) Plated Brass and Nickel Plated Brass
Dimensions (L x W)	94 x 22 mm (3.70 x 0.87 in)
Weight (nominal)	110 g (0.24 lbs)
Leaky Feeder Connector	N-Type Jack
Cable Modem Connector	F-Type Jack
<b>Environmental</b>	
Temperature Range	-55 to +100° C (-67 to +212° F)
<b>Electrical</b>	
DC Blocking	50 Vdc max
<b>RF Characteristics</b>	
Frequency Range	10 MHz – 2 GHz
Impedance To/From LF Network	50 Ω
Impedance To/From Cable Modem	75 Ω
Insertion Loss	7 dB typical
Input Power	1W average
MER	≥ 40 dB
BER	< 1.0E-10 Pre-FEC
Downstream Modulation Mode	64 QAM, 256 QAM
Upstream Modulation Mode	QPSK, 16 QAM, 64 QAM
<b>Approvals</b>	
Intrinsic Safety	No
CE Certification	No

### Installation

Use the following guidelines to ensure proper installation of 450 Cable Modem Interface units:

- Install no more than 350 m (1148 ft) of LF cable between the UHF-CMI and previous amplifier in a Smart Com 450 system (See Figure 1).
- Install no more than 280 m (919 ft) of LF cable between the UHF-CMI and previous amplifier in a Smart Com 450IS system (See Figure 2).
- Reduce cable length by 120 m (394 ft) for each additional 2-way splitter installed between the UHF-CMI and previous amplifier (the two-way splitter shown in Figures 1 and 2 is already accounted for).

- Reduce cable length by 210 m (689 ft) for each 3-way splitter installed between the UHF-CMI and previous amplifier.
- Install no more than 30 m (98 ft) of RG6/U coaxial cable (F-plug to F-plug cable ends) between the UHF-CMI and cable modem (see Figures 1 and 2).
- Ensure that the total downstream CMTS loss (including splitters) is no more than 16 dB between the UHF-CMI and previous amplifier.

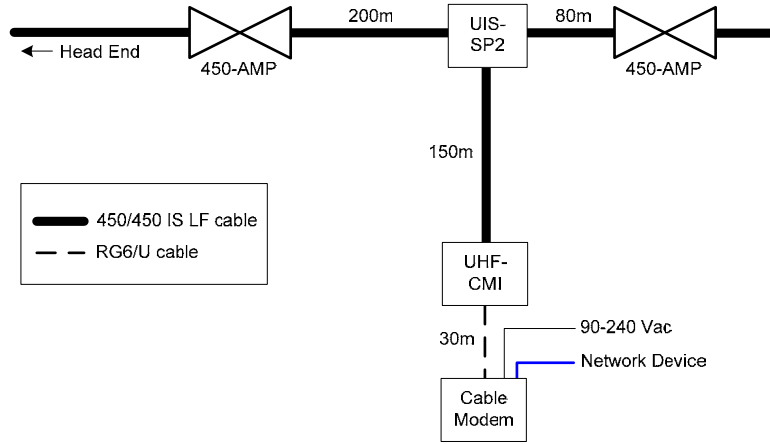
Cable Length m	ft	CMTS Downstream Loss (dB)	Voice Downstream Loss (dB)
10	33	0.5	0.5
20	66	0.5	1.0
30	98	1.0	2.0
40	131	1.5	2.5
50	164	1.5	3.0
60	197	2.0	3.5
70	230	2.5	4.0
80	262	2.5	5.0
90	295	3.0	5.5
100	328	3.5	6.0
110	361	4.0	6.5
120	394	4.0	7.0
130	427	4.5	8.0
140	459	5.0	8.5
150	492	5.0	9.0
160	525	5.5	9.5
170	558	6.0	10.0
180	591	6.0	11.0
190	623	6.5	11.5
200	656	7.0	12.0
210	689	7.0	12.5
220	722	7.5	13.0
230	755	8.0	14.0
240	787	8.0	14.5
250	820	8.5	15.0
260	853	9.0	15.5
270	886	9.5	16.0
280	919	9.5	17.0
290	951	10.0	17.5
300	984	10.5	18.0
310	1017	10.5	18.5
320	1050	11.0	19.0
330	1083	11.5	20.0
340	1115	11.5	20.5
350	1148	12.0	21.0

**Table 1: Cable Loss**

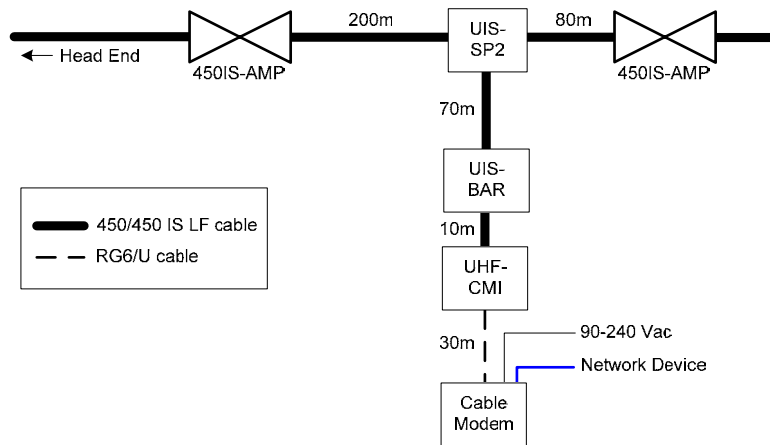
Component	CMTS Downstream Loss (dB)	Voice Downstream Loss (dB)
UIS-BAR	2.5	4
UIS-SP2	4	4
UIS-SP3	7	7
UHF-CMI	7	7

**Table 2: Component Loss**

- Use a UIS-SP2 two-way splitter to install the UHF-CMI as shown in Figures 1 and 2.
- Install a UIS-BAR Barrier Unit as outlined in system layout drawing MSHA-UIS-10 for 450IS systems.



**Figure 1: UHF-CMI Smart Com 450 Installation**



**Figure 2: UHF-CMI Smart Com 450IS Installation**