



Media Converter for CATV



The Media Converter for CATV, MCC, is an optional module for the 42Networks' Fiber Termination Unit, FTU. The MCC module enables the distribution of analog TV signal over fiber networks without the need for set-top boxes.

MCC module

The 42Networks' Fiber Termination Unit, FTU, can optionally be equipped with a Media Converter for CATV module, MCC, that converts TV signal from fiber to RF signal for distribution over standard 75 Ohm coax cabling. Thus the MCC enables distribution of broadcast TV service over fiber network and allows re-use of existing coax cabling in homes.

High quality TV signal

The high output signal of the MCC module enables the use of multiple TV sets simultaneously. At the same time the high amplification between optical and electrical signals reduces the cost of the head-end equipment.

The wide frequency range supported by the module guarantees that it is suitable for all typically used TV frequencies around the world.

The MCC module is 'HD ready' meaning that the 42Networks' CATV receiver is completely transparent for HDTV signals and compliant with the transport of High Definition Video.

A supervision LED indicator shows if the input signal is too weak for optimal operation, which simplifies the installation and support of the TV service.

Triple Play support

The MCC module, Fiber Termination Unit and the DRG Customer Premises Equipment form together a highly integrated solution. For instance the same

power adapter is used to feed both the CPE and the CATV module.

The CATV module is especially suitable together with 42Networks' single fiber CPE units. With this product combination a fiber pair can be used for all Triple Play services, i.e. analog and digital TV, Broadband Telephony (VoIP) and Internet.

Installation flexibility

The FTU and MCC combination can be used both in FTTB or FTTH installation.

In FTTB installations the FTU and MCC are typically installed in the basement. The coax outlet of the MCC is connected to an amplifier providing adequate signal level depending on the number of connected households and the distribution network structure.

A FTTH installation can be started with the FTU to terminate the fiber. The MCC module and/or CPE can be installed simultaneously or at any time later. This allows maximum flexibility and minimizes the CAPEX by optimizing the equipment installed for each end-user.

Product Specification for Media Converter for CATV

Connectors Supported

Fiber in	SC/APC mounted on the PCB
Coax out	F-Type female

Optical Parameters

Optical input power range	-10 dBm to +0 dBm
Optical Wavelength	1100nm to 1650nm
Optical return loss	>40dB

RF Parameters

Operating Frequency Range	40 MHz to 862 MHz
RF output impedance	Unbalanced 75 Ohm
Output return loss	>14dB @ 862MHz
RF output level	>10dBmV, 4.0% OMI, -6dBm optical
Flatness	+/- 1.5dB
Equivalent noise current density	8 pA/√Hz
C/N (carrier-to-noise)	>46 dB ⁽¹⁾
CTB (composite triple beat)	>58 dB with Cenelec 42 channels RF load ⁽²⁾ >62 dB with NTSC 78 channels RF load ⁽³⁾
CSO (composite second order)	>58 dB with Cenelec 42 channels RF load ⁽²⁾ >62 dB with NTSC 78 channels RF load ⁽³⁾
Output RF-signal	The MCC unit provides an output RF-signal strong enough to "drive" up to 4 TV sets connected in cascade over 50 m CoAX cable

Physical & Environmental

Input voltage range	11 to 15 VDC
Input current	125 mA typical
Power consumption	1.5 Watt
Dimensions	30mm (H) x 35mm (D) x 50mm (W)
Weight	100 gr
Operating temperature	-5 to +60 C
Storage temperature	-40 to +85 C
Optical power indication	< -10 dBm : Red color
Optical power indication	> -10 dBm : Green color

Regulatory Compliance

EN 60950-1 first edition	EN 60825-1
EC 60950-1 first edition	IEC 60825-1
CB 60950-1 first edition	CB 60825-1
WEEE & ROHS	

- (1) Calculated at -6dBm optical received power and 4% OMI minimum per channel, considering an equivalent RIN (relative intensity noise) of the link $\leq -150\text{dB/Hz}$ (including transmitter RIN, optical fiber RIN, etc) in 5MHz noise bandwidth
(2) 4% OMI on each RF channel, assuming angled optical connectors (APC) only on the optical link, average values
(3) 3% OMI on each RF channel, assuming angled optical connectors (APC) only on the optical link, average values

