

Ethernet to the Home

*Telete*



**EoC-C100**

## ETHERNET TO THE HOME

Ethernet to the Home is a product platform which consists of sub-product families that are independent yet compatible. The common denominator for all these product families is their capability to simultaneously bring high speed data services over HFC networks and keep existing TV services running.

# EoC-C100

Ethernet over Coax – Cascaded 100Mbps is an independent part of the ETTH solution. It enables a symmetrical 100Mbps data connection for each end user through existing TV wall outlets. The EoC-C can be fed with any standard Ethernet data source such as Virtual Fibre or Baseband fibre, just to mention a few. To get an idea of what EoC-C is all about a rough comparison between Docsis may help. The EoC-C master modem can be compared to a CMTS and the EoC-C customer modem to a cable modem. However, the EoC-C throughput of 100Mbps is higher and its robust OFDM modulation is allowing to connect to homes which have been impossible to enter with Docsis.

## FEATURES AND BENEFITS

- Symmetrical 100Mbps per home
- No infrastructure changes, supports existing wall outlets
- Ingress tolerant OFDM modulation
- Simple “one time” installation, no further visits to the street cabinet
- Uses existing coaxial wiring, even if in bad condition
- Supports multiple services: Data, Voice (VOIP), Video, games etc.
- Extensive dynamic range
- High reliability
- Advanced security features
- Fits to FTTC/FTTB/FTTH roadmaps

BK housing can be installed to standard BK racks or used as a stand alone.

Powering from mains if BK backplane is not used.

Data port (100BaseT) for connecting to the VF or any other data source.

RF port feeding 100 Mb to network



The EMM Ethernet Master Modem integrated & rugged



Simple powering from mains, no additional adapters needed.



10 / 100 BaseT RJ-45

F female for RF connection

The **EMM Ethernet Master Modem** is available in two different cases. The field hardened version is intended for street cabinet or basement installations where high temperatures and dust are every day enemies. In addition, it supports a wide range of powering options such as remote and DC powering. The non-field-hardened case is a cost-effective alternative if the master modem is installed inside and normal mains is available for powering.

The **ECM Ethernet Customer Modem** is a compact and streamlined consumer device which can be used to bring data in several rooms of a single household or connecting multiple houses to a shared access point. The ECM has only one Ethernet port and no integrated VOIP phone. This is a deliberate strategy and results in an extremely cost effective 100Mbps home device, which performs only evident functions required now and in the future. In multiplay environment operators can choose their own Ethernet based CPE whether it is an MTA or IP STB. Often end users need different products and integrating them into a single device would outdate the device before repayment period.

## SIMPLE SOLUTION, ADVANCED FEATURES

**100Mbps capacity** can be used to DSL type of asymmetrical connections or LAN type of symmetrical connections. 100Mbps is shared between up and downstream, and this provides the option to sell connections such as 80Mbps/20Mbps or 50Mbps/50Mbps. Note that even in these cases the peak rate of 100Mbps can be offered and it is fully up to operator how much he wants to give guaranteed bandwidth.

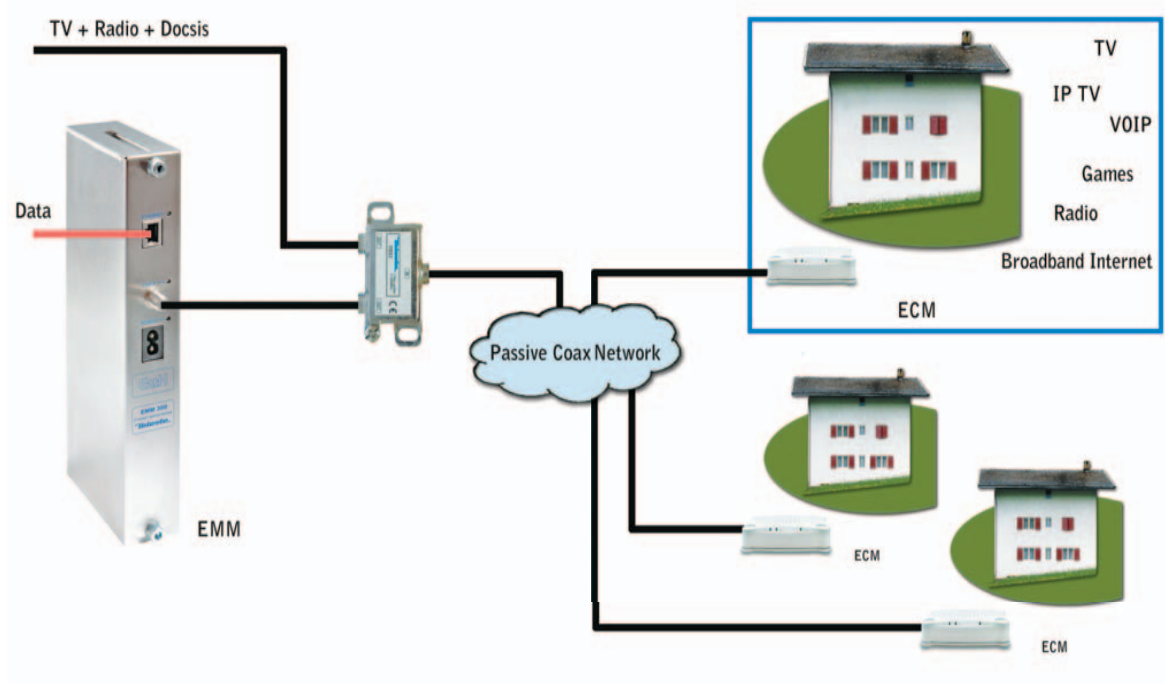
**Extensive dynamic range** up to 80dB makes it possible to use networks that one may think to be old fashioned. For instance you can bypass amplifiers passively and dramatically reduce existing upstream problems. Network loss is of course effecting to the throughput, but less than one would expect. Full throughput of 100Mbps is achieved even with 40dB network loss, and with 60dB loss the operator is still capable of offering 40Mbps connections. In

addition to all this, the above mentioned losses are network losses of low frequencies, the frequencies known to be runways of coaxial cables.

**Ingress tolerant OFDM modulation** was originally used for military applications where trouble-free connections in every case are essential. Current development of computing power is now bringing this sophisticated modulation method available for operators, and formerly "polluted" networks are now highways for internet. The OFDM uses thousands of carriers next to each other instead of just one carrier. These carriers are independent, and even high level ingress peaks only disturb one or two carriers. One lost carrier means only a 1% reduction in throughput and it will be invisible for the end user even when watching HDTV over EoC-C.

**EoC-C fits into your FTTX roadmap.** It is a generally accepted idea that fibre will penetrate deeper into the network and that the fibre in HFC will become more prominent over time, eventually leading to FTTH and FTTC type networks. The coax cabling that enters the subscriber premises, however, is one of the biggest assets of a cable operator, and also the most expensive to replace with fibre. EoC-C allows FTTH performance to be brought over by using existing coax cabling, and thus protects the competitive strength of the cable operator. The investment into EoC-C100 is the most future-proof option with regards to a deep-fibre roadmap because it can work today with the use of an HFC feeder, but also tomorrow when standard GbE over fibre is available to create FTTH/FTTC networks.

## SYSTEM BLOCK DIAGRAM



## TECHNICAL SPECIFICATIONS

EMM, Ethernet Master Modem			ECM, Ethernet Customer Modem		
<b>Fast Ethernet Interface</b>			<b>Fast Ethernet Interface</b>		
Number of ports	1	RJ-45	Number of ports	1	RJ-45
Standard	10/100BaseT	IEEE802.3	Standard	10/100BaseT	IEEE802.3
<b>Cable Interface</b>			<b>Cable Interface</b>		
Number of ports	1	F female	Number of ports	1	F female
Protocol	PowerLine		Protocol	PowerLine	
RF frequency	3...34 MHz	channel edge frequency	RF frequency	3...34 MHz	channel edge frequency
Nominal RF level	53 dBµV / Hz		Nominal RF level	53 dBµV / Hz	
Line rate	200 Mbs	data payload speed up to 100 Mbs	Line rate	200 Mbs	data payload speed up to 100 Mbs
Supported ECM's	32 pcs	16 pcs if VLAN tagging is used	MAC addresses	64	
<b>General</b>			<b>General</b>		
Power consumption	6 W		Power consumption	6 W	
Supply voltage	85 VAC to 265 VAC or 24 VDC via backplane		Supply voltage	85 VAC to 230 VAC	
Dimensions (h x w x d)	250 x 40 x 85 mm		Dimensions (h x w x d)	40 x 145 x 105 mm	
Environment	IP40	-20...+55 °C	<b>Ordering information:</b>		
<b>Ordering information:</b>			ECM100	Package contents: EoC-C modem, 1 CAT5 Ethernet cable, 1 coax cable (F-male to IEC), 1 AC power cable (EU model, UK model not included), 1 coax splitter, User Manual	
EMM300	Field hardened	only EU power cable included	EPC700	UK power cable	
EMM301	Indoor	only EU power cable included			
EPC700	UK power cable				
Note !	Docusis / EoC-C diplexer not included to EMM				

### TELESTE BROADBAND CABLE NETWORKS

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