MC3100

Professional Multiplexer –
A turn key head-end solution.

Features:

- GB IP (electrical or optical), ASI, QPSK, COFDM and QAM inputs
- Any combination of inputs in the same chassis. Maximum:
  - 18 ASI
  - 12 QPSK, COFDM, QAM
- GB IP (electrical or optical) and ASI output. Supports multiple of output modules.
- Multiplexing
- PSI/SI regeneration
- Up to 14 DVB common interface slots for DVB descrambling
- Support for AES SW descrambling
- Support DVB and AES scrambling, simulcrypt interface based
- Intuitive web-based user control
- SNMP Alarm MIB
- SOAP/XML Interface

Product Brief

The MC3100 multiplexer is a carrier class solution for Professional Operators. Built around a modular platform hosting a wide selection of Modules, the MC3100 enables solutions tailored to specific customer applications.

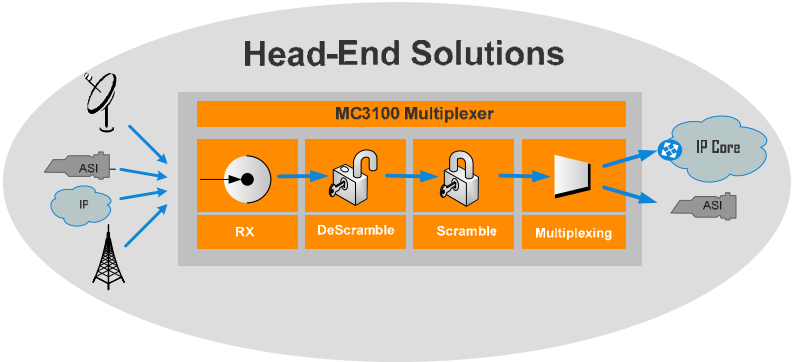
The MC3100 can receive transport streams from a variety of input sources including ASI, QPSK, IP, COFDM and QAM (DVB-S2 in later release), descramble and re-scramble selected services, before multiplexing them into MPTS. The MPTS can be streamed out on IP or ASI. Multiple of MPTS can be streamed out on the same IP output interface while the ASI output module supports 4 different MPTS outputs. For monitoring of services, the MC3100 can be equipped with decoder cards. The MC3100 supports full analysis of PSI/SI (PSIP in later release) and regenerates all tables as required.

Compared to traditional multiplexing solutions, the MC3100 provides a higher density, lower cost and better reliability due to its integrated architecture. The MC3100 provides the operator with a web-based Management Interface, which enables remote configuration of all modules, monitoring of their performance, and presentation of service related information. Should a problem be encountered, operators are able to swiftly determine the cause, and faults are easily rectified as all Modules can be replaced.

Application

The combination of a wide range of input interfaces, descrambling, re-scrambling and advanced re-multiplexing functionality makes the MC3100 ideal for new and existing cable, terrestrial and satellite operators. The MC3100 can be seamlessly integrated with existing head-end solutions or used as a regional multiplexer. Via the SNMP Alarm MIB and SOAP/XML interface the multiplexer can be integrated into existing management systems.

The MC3100 is also suitable for contribution links were multiplexing of services is required.



Appear TV AS
PO Box 8 Lilleaker
NO-0216 Oslo
Norway

Tel: +47 24 11 90 20
Fax: +47 24 11 90 21
Email: info@appeartv.com
Web: www.appeartv.com

Ver.2.5

Chassis

Chassis

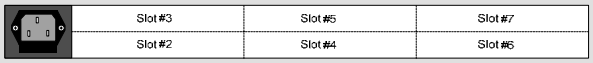
- Modular configuration with up to 9+1 board positions
- WEB based configuration, SNMP Alarms, SOAP/XML interface
- Forced air-cooling
- Hot-swappable modules in back
- Optional IP IO and descramblers in front

Switch Module

- Gbit/s routing between modules in a chassis
- Integrated from the front

Front View

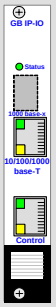
Rear View



Input Modules

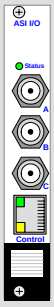
Ethernet Input

- 10/100/1000BaseT input card (RJ45)
- Mini-GBIC interface (SFP) for optical input
- Supports UDP/RTP Multicast/Unicast reception
- Supports reception of MPTS and SPTS
- Service filtering
- PCR regeneration
- 10/100/1000BaseT management port (RJ45)
- Enables WEB management
- 1 slot wide.



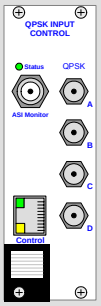
ASI Input w/Management

- 3xASI input
- BNC connectors
- 213 Mbit/s per input
- Supports reception of MPTS and SPTS
- Service filtering
- PCR regeneration
- 10/100/1000BaseT management port (RJ45)
- Enables WEB management
- 1 slot wide



QPSK Input w/Management

- 4xQPSK inputs
- F connectors
- 1-45 Ms/s
- 1/2, 2/3, 3/4, 5/6, 7/8 FEC
- Supports reception of MPTS and SPTS
- Service filtering
- PCR regeneration
- ASI Monitoring port
- 10/100/1000BaseT management port (RJ45)
- Enables WEB management
- 2 slots wide



COFDM Input w/Management

- 4xCOFDM inputs
- F connector
- 1/2, 2/3, 3/4, 5/6, 7/8 FEC
- 2k and 8k carrier mode
- QPSK, 16QAM, 64QAM modulation
- Supports reception of MPTS and SPTS
- Service filtering
- PCR regeneration
- ASI Monitoring port
- 10/100/1000BaseT management port (RJ45)
- Enables WEB management
- 2 slots wide

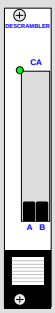
QAM Input w/Management

- 4xQAM inputs
- F connector
- 0.87-6.9 Ms/s
- Supports reception of MPTS and SPTS
- Service filtering
- PCR regeneration
- ASI Monitoring port
- 10/100/1000BaseT management port (RJ45)
- Enables WEB management
- 2 slots wide

Processing Modules

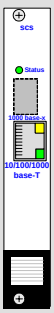
Descrambler

- 2xDVB Common interface
- Descrambling of 2-8 services (depends on common interface)
- Support for all major CA systems and CAMS
- 1 slot wide



DVB Simulcrypt Interface

- 10/100/1000BaseT IP interface towards CA system (RJ45)
- DVB Simulcrypt compliant
- Handles up to 250 ECM's
- Supports up to 4 scrambling cards (AES or DVB)
- 1 slots wide



DVB Scrambler card

- DVB CA compliant scrambling (CSA)
- Scrambles up to 64 services, maximum 400 Mbit/s per scrambler card
- Up to 4 scrambler cards per simulcrypt interface scrambling maximum 250 services and/or maximum 850 Mbit/s
- Support for advanced PVR functionality
- Support scrambling of MPEG-2 and H264 in SD &HD
- 1 slots wide

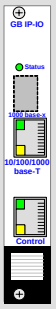
AES Scrambler card

- AES compliant scrambling
- Scrambles up to 64 services, maximum 400 Mbit/s per scrambler card
- Up to 4 scrambler cards per simulcrypt interface scrambling maximum 250 services and/or maximum 850 Mbit/s
- Support for advanced PVR functionality
- Support scrambling of MPEG-2 and H264 in SD &HD
- 1 slots wide

Output Modules

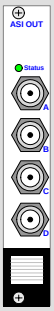
Ethernet Output

- 10/100/1000BaseT input card (RJ45)
- Mini-GBIC interface (SFP) for optical input
- Supports UDP/RTP Multicast/Unicast transmission
- Supports multiple of output cards
- Streaming of up to 850 Mbit/s
- Maximum 250 service per output card
- Supports streaming of SPTS
- Support streaming of MPTS with Multiplexing (optional)
- PSI/SI regeneration
- PCR regeneration
- 1 slot wide.



ASI output

- 4xASI outputs
- BNC connectors
- 213 Mbit/s per output
- 4 Different multiplexed outputs
- Maximum 250 services per card
- PSI/SI regeneration
- PCR regeneration
- 1 slot wide

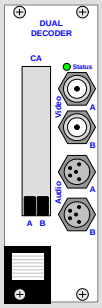


Decoder w/ Composite video and analogue audio

- 2 decoders per module
- MPEG-2 DVB 4:2:0 MP@ML decoding
- VBI re-insertion (WSS, WST/EBU, VPS, Teletext Subtitling, VITS)
- DVB and teletext subtitling
- AES descrambling (option)
- Composite PAL Video output – BNC connectors
- Balanced Stereo Audio output – D-sub connector
- 1 slot wide

Decoder w/ Composite video, analogue audio and Common Interface

- 2 decoders per module
- MPEG-2 DVB 4:2:0 MP@ML decoding
- VBI re-insertion (WSS, WST/EBU Teletext, VPS, VITS)
- DVB and EBU subtitling
- AES descrambling (option)
- 2 DVB Common Interfaces. One per channel
- Composite PAL Video output – BNC connectors
- Balanced Stereo Audio output – Five poles XLR connectors
- 2 slots wide



Input Interface Specifications

IP input	Interface	: 10/100/1000 Base-T Ethernet and SFP interface
	Maximum data rate	: Up to 850 MBit/s
	Data format	: UDP Multicast/Unicast, RTP
	Transport stream	: SPTS and MPTS
ASI input (EN 50083-9)	Connector	: BNC female, 75Ω
	Number of inputs per module	: 3
	Maximum bit-rate per port	: up to 213.7Mbit/s
	Management	: 10/100/1000 Base-T Ethernet
DVB-S/QPSK input (EN 50083-9)	Connector	: F female, 75Ω
	Number of inputs per module	: 4
	Symbol rate	: 1-45 Ms/s
	FEC	: 1/2, 2/3, 3/4, 5/6, 7/8
	Input level	: -25 to -80 dBm
	Frequency range	: 950-2150 MHz
	LNB voltage	: 0/13/18 Volt
	Maximum LNB supply current	: 500 mA
	LNB signaling	: LNB voltage + 22kHz continuous tone
	Management	: 10/100/1000 Base-T Ethernet
DVB-T/COFDM input	Connector	: F female, 75Ω
	Number of inputs per module	: 4 demodulators (one connector)
	Input level	: -20 to -65 dBm
	Frequency range	: 49 – 861 MHz (center frequency)
	Channel bandwidth	: 7 and 8 MHz (6 MHz optional)
	Guard interval	: 1/4, 1/8, 1/16, 1/32
	Carrier mode	: 2k, 8k
	Hierarchy stream	: High and low priority
	Hierarchy mode	: All
	Carrier modulation	: QPSK, 16QAM, 64QAM
	FEC rate	: 1/2. 2/3, 3/4, 5/6, 7/8
	FEC	: Reed Solomon & Viterbi Fully compliand with ETS 300 744 and NorDig 2 specifications
	Spectrum	: Non-inverted and inverted
	Management	: 10/100/1000 Base-T Ethernet
DVB-C/QAM input	Connector	: F female, 75Ω
	Number of inputs per module	: 4 demodulators (one connector)
	Frequency range	: 51 – 858 MHz (center frequency)
	Channel bandwidth	: 7 and 8 MHz (6 MHz optional)
	QAM Mode	: 4, 16, 32, 64, 128, 256 QAM
	Symbol rate	: 0.87-6.9 Mbaud
	FEC	: ITU-T J83 annex A, B and C And ETS 300 429
	Spectrum	: Non-inverted and inverted
	Management	: 10/100/1000 Base-T Ethernet

Descrambling Specifications

DVB Descrambling	Interface	: DVB Common Interface
	CA System Support*	: BetaCrypt, Conax, Cryptoworks, Irdeto, Mediaguard, Viaccess (Nagra in progress)
	Number of services per CAM	: 4 (requires multi service CAM)
AES Descrambling	Interface	: Virtual smartcard
	CA System Support*	: Latens

* Appear TV aim to integrate with all major CA providers. Please contact Appear TV for an updated list over integrated CA systems.

Scrambling Specifications

DVB Scrambling	Scrambling algorithm	: DVB-CA (up to 450Mbits per scrambler)
	Number of services per scrambler card	: 64
	Video format	: Transport stream, MPEG-2 SD/HD and MPEG-4 SD/HD.
	Interface towards CA System	: Simulcrypt interface
	Redundancy	: Support redundancy on ECM generators
AES Scrambling	Scrambling algorithm	: DVB-CA (up to 450Mbits per scrambler)
	Number of services per scrambler card	: 64
	Video format	: Transport stream, MPEG-2 SD/HD and MPEG-4 SD/HD.
	Interface towards CA System	: Simulcrypt interface
	Redundancy	: Support redundancy on ECM generators

Processing Specifications

PSI/SI	Function	: Full regeneration based on input and operations performed on the signal. Supports pass-through of scrambled Services (on TS level).
Multiplexing	Supported on	: ASI output (standard) and IP output (option)
	Video format	: Transport stream, MPEG-2 SD/HD and MPEG-4 SD/HD.

Output Specifications

IP Output	Interface	: 10/100/1000 Base-T Ethernet output and SFP interface
	Maximum data rate	: Up to 850 MBit/s *
	Maximum number of services	: 250
	Data format	: UDP Multicast/Unicast, RTP
	Video format	: Transport stream, MPEG-2 SD/HD and MPEG-4 SD/HD
ASI Output	Connectors	: 4 BNC female, 75Ω
	Number of outputs per module	: 4 Different Transport Streams
	Maximum bit-rate per port	: up to 213.7Mbit/s
	Transport stream output	: SPTS and MPTS
	Number of services per card	: 250 (sum of all 4 ports)
	Multiplexing	: Yes, per port
	Output format	: Constant bit-rate
	PCR Regeneration	: Yes, According to EN50083_9
	PSI/SI handling	: Automatically regenerated.
	Tables Supported	: PAT, PMT, CAT, SDT, NIT

Video and audio Monitoring

Video Output	Connector	: BNC female, 75Ohm
	Output format	: PAL and SECAM
	Decoding	: MPEG-2 MP@ML (max. bit rate 15Mbits/s)
	VBI Insertion	: Teletext (WST/EBU), WSS, VPS, VITS
	Subtitling	: DVB and EBU
Audio Output	Number of stereo outputs per video	: 1
	Connector	: Mini-XLR or D-SUB (depends on module)
	Decoding of the following formats is supported	: MPEG-1 layers 1 and 2 (Musicam) MPEG-2 layer 2

Environmental Specifications

Conditions	Operational Temperature Operational Humidity Storage Temperature Storage Humidity	: 0ºC to +40 ºC : 0% to 95% (non-condensing) : -20ºC to +70 ºC : 5% to 95% (non-condensing)
Power	Power Power supply rating Fuse Number of power supplies	: Input voltage 110V/240V, 47-63 Hz : 200W : T250V 4A : 1
Fans	Cooling Number of fans	: Integrated fans (airflow right to left side) : 6
Physical	Dimensions Mounting options	: 19” x 1RU : Broadcast style – cable in back and front

Specifications and product availability are subject to change without notice.