

AMC-8001

Telecom Clocking AMC Module

■ Embedded Computing for Business-Critical Continuity™

The AMC-8001 is a complete telecom clocking solution in a compact, standard AMC form factor


- Flexible AMC form factor
- Stratum 3 performance (3E future)
- Multiple modes of operation
- Redundant BITS/SSU inputs
- Redundant CLK distribution and synchronization
- Multi-shelf support
- IEEE 1588 support (future software upgrade)
- G.812/G.825 compatible

The Emerson Network Power AMC-8001 is a complete telecom clocking solution in a modular, Advanced Mezzanine Card (AdvancedMC™ or AMC) form factor. The AMC form factor was selected to obtain the largest blade and platform applicability with a single product. The AMC-8001 supports telecom clock generation, distribution and synchronization features required for legacy and next generation wireless infrastructure solutions.

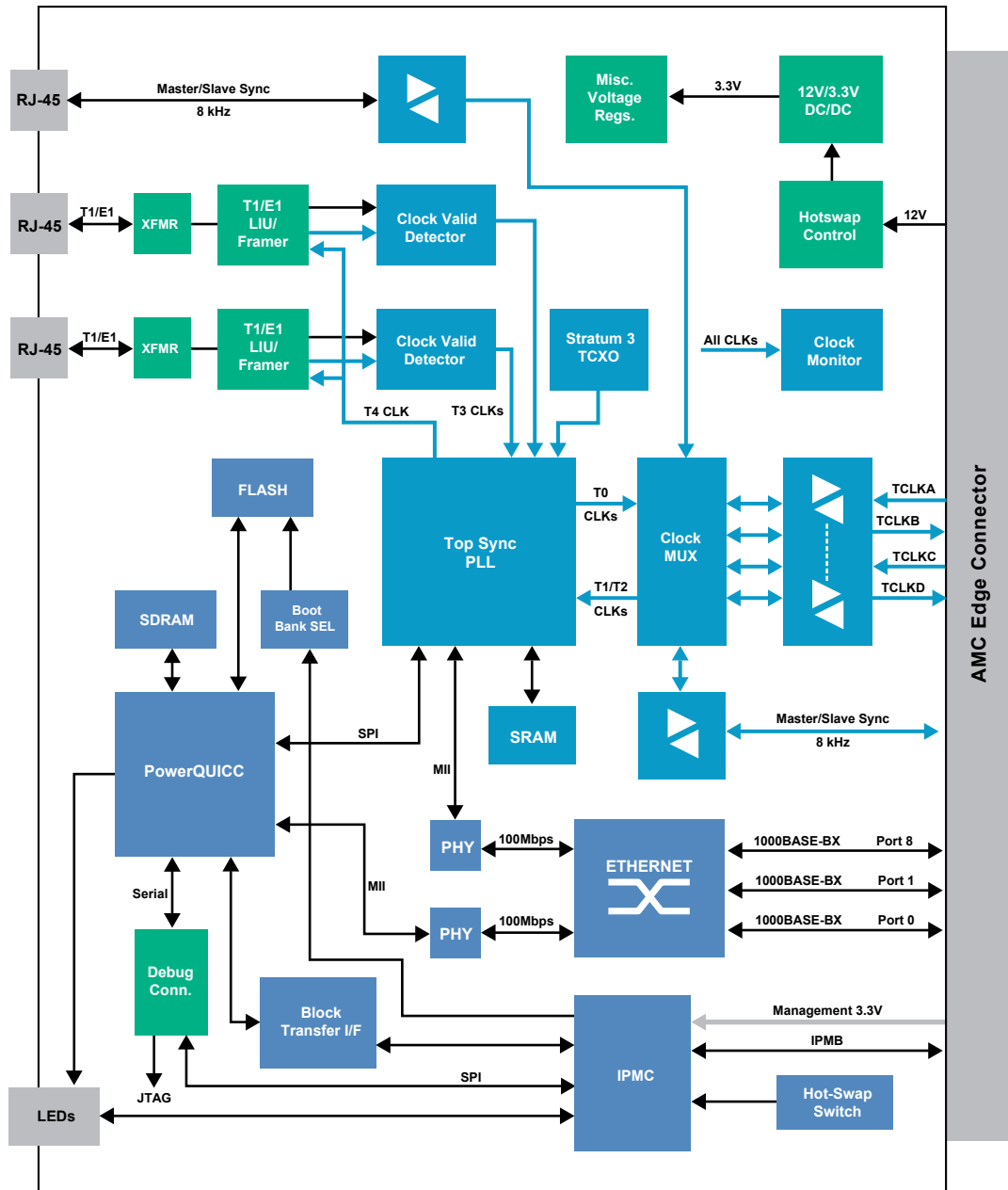
It is envisioned that the AMC-8001 will be utilized as the basis for a completely redundant, multi-shelf telecom clocking solution. Redundancy is achieved by deploying two AMC-8001 products in the same shelf. Due to multiple deployment methodologies and customer specific applications, some software and management control functionality may be required in addition to what is provided with the base product.



AdvancedMC®


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Block Diagram



Specifications

PROCESSOR/MEMORY

- PowerQUICC I processor
- VxWorks 5.5.2 RTOS
- 32MB SDRAM
- 64MB user memory flash (dual flash memory blocks)

TELECOM CLOCK CHIP

- Semtech Topsynt

TELECOM CLOCK MODES OF OPERATION

- T0 normal operation: During normal (locked) operation, the T0 clocks shall be locked to the selected T1, T2 or T3 reference source.
- T0 free-run operation: During free-running mode, the T0 clocks shall be derived from the local oscillator.
- T0 hold-over operation: During holdover mode, the T0 clocks shall be locked to the most recent valid reference available.
- T4 normal operation: During normal (locked) operation, the T4 clock shall be locked to the selected T1 or T2 reference source.
- T4 hold-over and free-run operation: During free-running and holdover mode, the T4 clock shall be suppressed.

TIMING REFERENCE

The AMC-8001 can accept as reference:

- Traditional signal-based reference as defined by ITU-T G812 & G813 [3 & 4]
- Telcordia GR-1244-CORE [5]
- IEEE 1588-v2

Reference IN	Reference OUT
Traditional reference (T1/T2/T3)	Traditional clock (T0) out
Traditional reference (T1/T2/T3) in	Packet-based timing (IEEE1588)
Packet-based timing (IEEE1588) in	Traditional clock (T0) out
Packet-based timing (IEEE1588) in	Packet-based timing (IEEE1588) out

PERFORMANCE

- Stratum 3 as defined by Telcordia GR-1244-CORE [5] and ANSI T1.101 [9]
- Stratum 3E performance is planned for a future release of the AMC-8001

AMC CONNECTIVITY (TO HOST)

- AMC.2 Gigabit Ethernet: AMC fabric port 0, 1 and 8
- TCLKA, TCLKB, TCLKC, TCLKD
- Master/Slave Sync (8 KHz)

EXTERNAL INTERFACES (FRONT PANEL)

- Single RJ-45 – Master/Slave sync. (8KHz)
- Single RJ-45 – E1/T1 for T4 CLK (internally generated)
- Single RJ-45 – E1/T1 for T3 CLK (BITS/SSU inputs)

RELEVANT STANDARDS

- AMC.0 base specification
- AMC.2 Ethernet
- Telcordia GR-1244-CORE [5]
- ANSI T1.101 [9]

OPERATING ENVIRONMENTS

- Power Consumption:
 - ▲ 20 Watts maximum
 - ▲ 10 Watts typical
- Thermals:
 - ▲ Operating Temperature: 0° C to 55° C (32° F to 144.5° F)
 - ▲ Storage Temperature: –40° C to 80° C (–40° F to 176° F)
 - ▲ Relative Humidity: 5% to 95% non-condensing
 - ▲ Altitude: 0 to 2000 m (0 to 6500 ft)

MECHANICAL

- Form Factor: AMC.0 R2.0 single wide, mid-size
- Length: 180.6 mm (7.11 in.)
- Width: 73.5 mm (2.89 in.)

Software & Management

MODULE MANAGEMENT CONTROL

The AMC.0 base specification defines a low-level, hardware management solution referred to as Module Management Control. The AMC-8001 implements this functionality and monitors all local, AMC environmental information. Management access to this information is provided through the Service Availability Forum™ defined HPI interface.

SOFTWARE SUPPORT

The AMC-8001 includes host based, software to support basic telecom clocking functionality referred to as Line Card Clock Block (LCCB) software. As there are several telecom clocking methodologies and customer requirements vary greatly in this area, much of the software required for full functionality will be developed by the customer.

Ordering Information	
Marketing Number	Description
AMC-8001	Telecom clocking AMC module
CABLE-8001-CLK-1	Cable for AMC-8001 clock synchronization, 1.2 meters
CABLE-8001-CLK-3	Cable for AMC-8001 clock distribution, 3 meters
CABLE-8001-CLK-10	Cable for AMC-8001 clock distribution, 10 meters

Regulatory Compliance	
Item	Description
Designed to comply with NEBS	GR-63-CORE, NEBS Physical Protection, Level 3
	GR-1089-CORE, Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment. Level 3, Equipment Type 2
Designed to comply with ETSI	ETSI Storage, ETS 300 019-2-1, Class 1.2 equipment, Not Temperature Controlled Storage Locations
	ETSI Transportation, ETS 300 019-2-2, Class 2.3 equipment, Public Transportation
	ETSI Operation, ETS 300 019-2-3, Class T3.1 equipment, Partly Temperature Controlled Locations
EMC	EN-300-386 Electromagnetic compatibility and Radio spectrum Matters (ERM); telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements.
	FCC 47 CFR Part 15 Subpart B (US), Class A
	EMC Directive 89/336/EEC (EU)
	AS/NZS CISPR 22 (Australia/New Zealand), Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment
	VCCI Class A (Japan), Voluntary Control Council for Interference by Information Technology Equipment
Safety	Compliance to UL/CSA 60950-1, EN 60950-1 and IEC 60950-1 CB Scheme. Marked with U.S. NRTL, Canadian Safety and CE Mark. Safety of information technology equipment, including electrical business equipment
RoHS/WEEE compliance	DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
	DIRECTIVE 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on waste electrical and electronic equipment (WEEE)

SOLUTION SERVICES

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