

# Niagara (S19208)

## OC-192/48/12/3 DW/FEC/PM and ASYNC Mapper Device

### General Description

The AMCC Niagara device is a wide-area and metropolitan transport device aimed at next generation applications required transparent multiplexing and enhanced error correction capability. The device utilizes the ITU G.709 frame and overhead structures to enable deployment of full OTN compliant network elements. Niagara will support two gain rates, the standard G.975 based rate of 6.2dB (raw optical coding gain), and AMCC's proprietary EFEC code rated at greater than 8dB (raw optical coding gain). The Niagara device is capable of running both these gains simultaneously, providing a superb single chip transponder solution for standard gain to enhanced gain networks.

### Features

#### G.709 ODU - 2 Synchronous and Asynchronous Mapping

- 1 x OC - 192/STM-64 mapping (239,237)
- Direct map (239,238) into ODU - 2

#### G.709 ODU - 1 Synchronous and Asynchronous Mapping

- 1 x OC - 48/STM-16 mapping (239,237)
- Direct map (239,238) into ODU - 1

#### G.709 Overhead Processing

- Bi-directional add-drop ODU - 1, ODU - 2
- Bi-direction G.709 Overhead Processing
- Dedicated GCC ports

#### Ingress and Egress SONET/SDH Performance Monitoring/ Injection

- 1 x OC-192/48/12/3 TOH add-drop and processing
- 8B/10B Monitoring
- 10GE Monitoring
- SONET/SDH section and line termination
- TOH add-drop port
- LOS, OOF, LOF detection
- B1, B2 monitoring with programmable Signal Degrade and Signal Fail thresholds
- J0 Monitoring, SDH and SONET modes
- Support for Protection Switching

### Documents & Related Products

#### Documents\*

There are no related documents at this time.

\* Additional related documentation is available to approved registered users. You may apply for a [Login Account](#) to request access.

#### Products

PHY/PMD  
[DispersionXX](#)

Framer/Mapper  
[S19204](#)  
[S19203](#)  
[S19223](#)

- K1, K2 monitoring for APS changes, line AIS and line RDI
- Automatic, interrupt-driven, or manual AIS insertion
- Frame boundary output

### **Industry Standard RS(255,239) Forward Error Correction with 6.2 dB Coding Gain (at 10-15 CER)**

- G.709 Compliant Frame Structure
- Compatible with AMCC S19203 (Hudson)

### **Enhanced Gain Forward Error Correction with G.709 ODU**

- 10.71, 10.66, and 11.1 Gbps enhanced FEC with >8dB coding gain
- G.709 overhead processing and nominal rate expansion
- Comprehensive channel statistics gathering
- Corrected bits, bytes
- Corrected zeros, ones (with outputs)
- Uncorrectable sub-frame count

### **Broad Interface Compatibility**

- 16 bit, 622 Mbps LVDS interface (OIF MSA compliant) 10 Gbps interface
- Compatible with AMCC Hudson, Ganges, S3091/92, S3097/98, S19211, S3193/S3094, and S3474

### **Client and Line side loop-back**

- Client-side loopback on single 10 Gbps interface
- Line loopback on 10 Gbps interface

### **Support For System Test and Diagnostics**

- Can synthesize SONET frame
- Error injection capability for verification of remote error reporting
- Test set compliant pseudo-random sequence generation/analysis

### **General Purpose Processor Interface**

- Glueless interface to MPC860, 25 MHz to 52 MHz
- Dual Mode Interface also supports Intel processors
- Interrupt Driven or Polled mode operation

### **Additional Protocol Support**

- FEC Frame Synchronous scrambling
- Programmable sequence detection

### **Low Power .18 u CMOS Technology**

- 1.8 Volt core operation
- 2.5 Volt I/O

## Applications

- SONET/SDH OC-48/STM-16 OC-192/STM-64 DWDM transport systems and DWDM metro networks
- Transparent Add-Drop Multiplexing Transponder applications
- Protocol Transparent Transport
- IaDI to IrDI FEC transponder chip (6.2dB gain network to >8dB gain network)



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