

FORWARD ERROR CORRECTION (FEC) FW FOR THE 4 x OC-3/STM-1 TRUNK

FEC155 Firmware Module

is a value added firmware module for the 4 x OC-3/STM-1 Trunk Modules for the Nimbra One/340 platforms.

It provides comprehensive forward error correction capabilities to the trunk module. Typically it should be used when running traffic over unreliable media such as microwave links that are prone to bit and burst errors. All services are protected since the FEC works on the link level.

The module performs

- ◆ Reed-Solomon encoding/decoding
Performs a (255,237) encoding/decoding of the data and can detect and correct up to 9 errored bytes of a STS-3c SPE/VC-4 row.
- ◆ Row/Column interleaving
In order to spread a burst into smaller bursts that can be corrected by the RS code.

The module is easy installable by a remote firmware upgrade procedure.



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TECHNICAL SPECIFICATIONS:

Packaging: NPS0009-XS31 NPS0009-DS31	Firmware module for: 4 x OC-3/STM-1 Trunk Module - Nimbra One 4 x OC-3/STM-1 Trunk Module - Nimbra 340
Framing: OC-3 STM-1	STS-3c, ANSI T1.105 STM-1, ITU-T Rec G.707
Mapping: DTM	STS-3c SPE / VC-4 Synchronous; ETSI ES 201 803-4 adapted for FEC
Capacity: Payload	261 slots per frame/133.632 Mbps
Ports supported	Physical ports 1 and 2. Ports 3 and 4 of the board cannot be used at all together with the FEC155 FW and are thus disabled.

Forward Error Correction (FEC):	
Code	Reed-Solomon (255,237,t=9) correcting up to 9 bytes per code block
Interleaving	260 x 9 matrix (equals STS-3c SPE/VC-4 frame), interleaving depth of 9
Error burst tolerance	Up to 648 errored bits (81 bytes) in a burst.
Added delay	~150µs

Performance monitoring:	Counter of corrected and un-correctable codewords (Web GUI, CLI)
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Maintenance:	Firmware module, remote download, in service installation
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Ordering information:

NPM0006-0155	FEC155 Firmware Module
Requires:	
NPS0009-XS31	4 x OC-3/STM-1 Trunk Module - Nimbra One
or	
NPS0009-3S31	4 x OC-3/STM-1 Trunk Module - Nimbra 340