High Density 84/63 T1/J1/E1 Framer, Integrated VT/TU & DS3/E3 Mappers & M13 Mux

FEATURES

The PM8320 TEMUX 84E3 is a 155 Mbit/s multi-channel T1/E1/J1 Framer with integrated VT/TU, DS3/E3 Mappers and M13 Multiplexers.

- This monolithic device integrates:
  - 84 T1/J1 framers
  - 63 E1 framers
  - 3 SPEs worth of SONET/SDH VT1.5/VT2/TU11/TU12 bit asynchronous mappers
  - Three full featured M13 multiplexers with DS3/E3 framers
  - Three SONET/SDH DS3/**E3 mappers*** for terminating DS3 multiplexed T1 streams, G.747 multiplexed E1 streams, SONET/SDH mapped T1 streams or SONET/SDH mapped E1 streams

- Each SPE/STS-1 can be independently programmed for various T1, E1, DS3 or E3 modes of operation.
- Supports wide range of T1, E1 and J1 framing formats.
- Supports M23 and C-bit parity DS3 formats.
- Stand-alone unchannelized E3 framer mode (ITU-T Rec. G.751 or G.832) for access to the entire E3 payload.

- SONET/SDH Mappings:
  - Maps T1/J1/VC-11 into VT1.5/TU-11/TU-12/TUG-2/TUG-3
  - Maps E1/VC-12 into VT2/TU-12/TUG-2/TUG-3
  - Maps DS3 to/from AU-3/STS-1 (SONET) or **TUG-3/AU-4 (SDH)***
  - **Maps E3 to/from AU-3/STS-1 (SONET) or TUG-3/AU-4 (SDH)***

- Flexible line side and system side interface support:
  - Provides a 19.44 or 77.76 MHz SONET/SDH Add/Drop Telecom bus interface for seamless connection with PMC's SONET/SDH devices.
  - Supports a byte-serial Scaleable Bandwidth Interconnect (SBI™) bus interface at either 19.44 or 77.76MHz for system side interconnection to PMC's link layer devices.
  - Supports insertion and extraction of arbitrary rate (eg. fractional DS3) data streams to/from the SBI bus interface.
  - Support for transparent virtual tributaries when SBI interface is used with SONET/SDH mapper.

- Supports 8 Mbit/s H-MVIP on the system interface for all T1 or E1 links, a separate 8 Mbit/s H-MVIP system interface for all T1 or E1 CAS channels and a separate 8 Mbit/s H-MVIP system interface for all T1 or E1 CCS and V5.1/V5.2 channels.
- Provides jitter attenuation in the T1/E1 tributary receive and transmit directions.
- Provides three independent T1 or E1 recovered clocks for system timing and redundancy.
- Provides per link diagnostic and line loopbacks.
- Provides PRBS generators and detectors at DS3 and E3 rates and on each tributary for error testing at T1, E1 and NxDS0 rates as recommended in ITU-T O.151, 0.152.
- Feature-rich functional software drivers available with device.
- Provides a generic 8-bit microprocessor bus interface for configuration, control and status monitoring.
- Provides a standard 5 signal P1149.1 JTAG test port for boundary scan board test purposes.

*Bold text indicates differences between PM8320 TEMUX 84E3 and PM8316 TEMUX 84.

BLOCK DIAGRAM
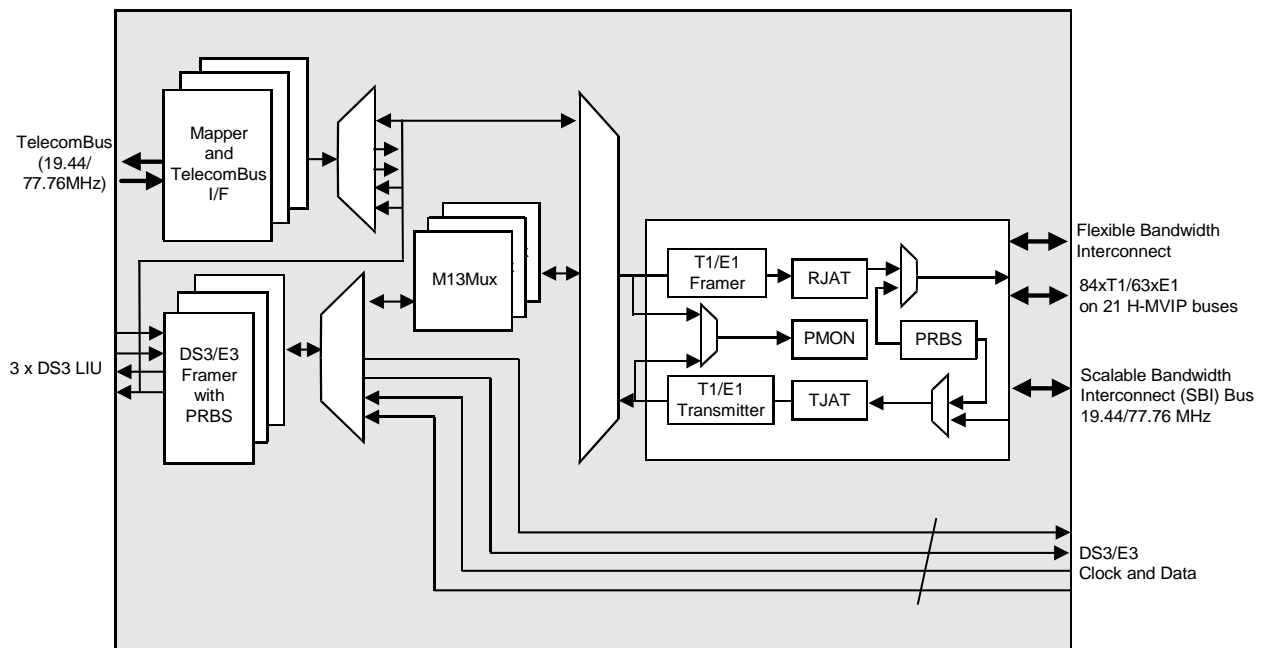
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VOLTAGE

- Low power 1.8 V/3.3 V CMOS technology. All pins are 5 V tolerant.
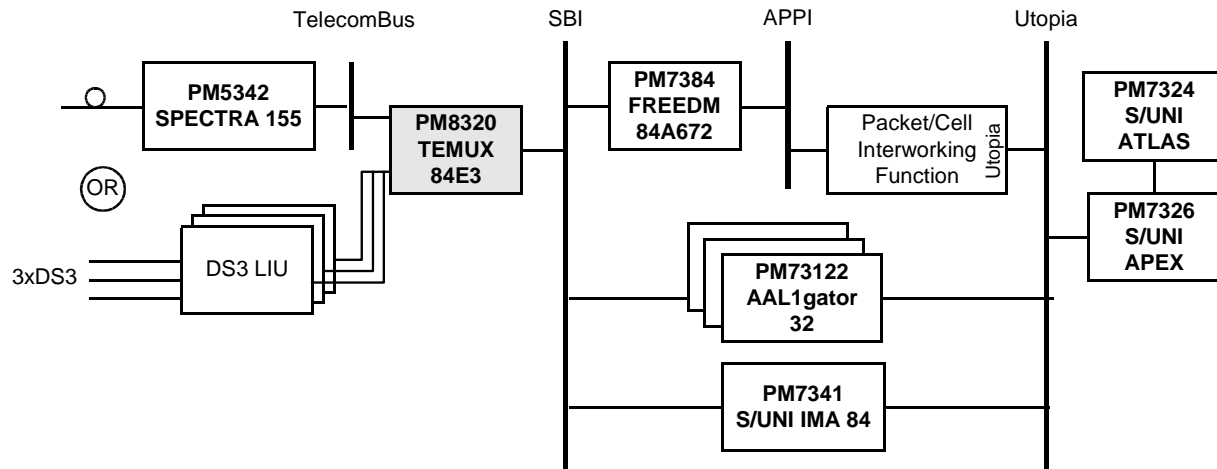- Low power (~1.1W).

PACKAGE

- 324-pin fine pitch PBGA package (23 mm x 23 mm).
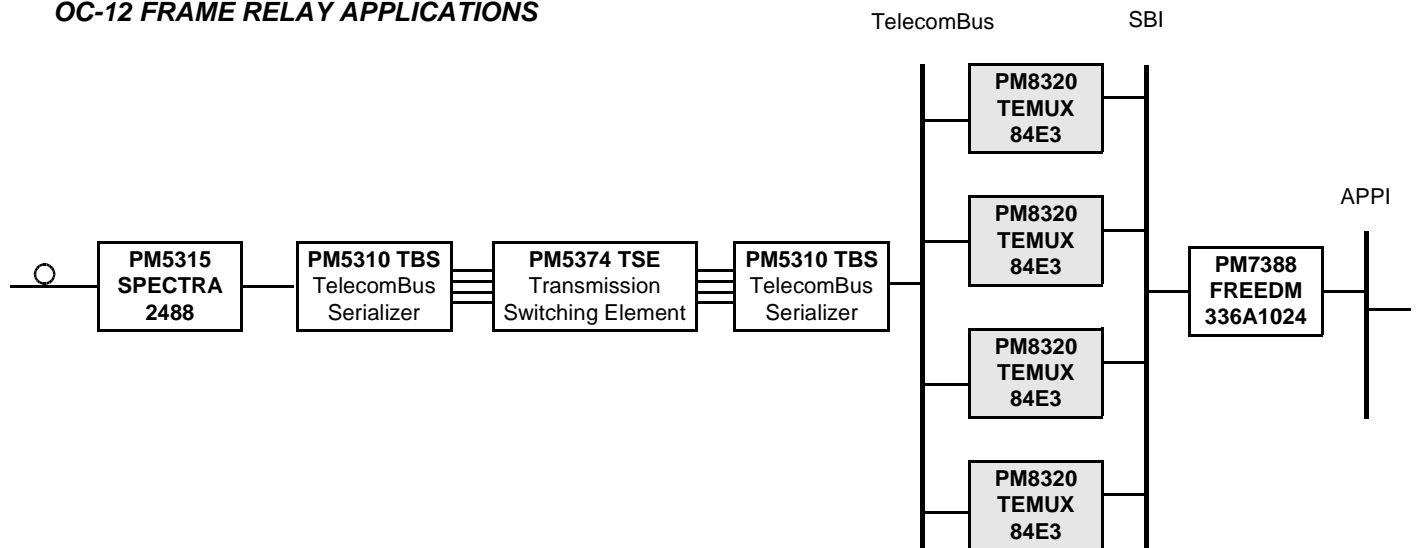- Supports industrial temperature range (-40 $^{\circ}$C to 85 $^{\circ}$C) operation.

APPLICATIONS

- High density T1/E1 interfaces for multiplexers, multi-service switches, routers and digital modems.
- Channelized and Unchannelized DS3 Frame Relay Interfaces.
- Optical Access Equipment.
- SONET/SDH Add Drop and Terminal Multiplexers.
- M13 Multiplexer/Demultiplexer Equipment.
- Digital Access Cross-Connect Systems.

TYPICAL APPLICATIONS

ANY-SERVICE-ANY-PORT APPLICATION

OC-12 FRAME RELAY APPLICATIONS