Centellis™ 2000
AdvancedTCA Platform Core

Flexible configurations and power options make the Centellis 2000 the ideal choice for both central office and data center applications

- 3U, 19" chassis with two horizontal blade slots

- Targeted for central office and data center environments

- Front-to-rear cooling - CP-TA B.4 compliant

- SpiderWare®M³ platform management software included

- Integrated shelf management for inventory data, remote upgrade, electronic keying, thermal management, and network based remote access

- Integrated Base Interface switching infrastructure

- Direct cross-connect circuitry for the Fabric Interface (1G/10G/40G)

- AC and DC power configurations available

- Simplex and duplex configurations available

- Two user slots for OEM customization

- Designed for NEBS/ETSI compliance

The Emerson Network Power Centellis™ 2000 platform core is a high availability platform ideally suited for data intensive central office and enterprise networking applications. The low profile makes the Centellis 2000 the optimal candidate for distributed networking functions, low density subscriber areas, or specialized applications. Target applications include distributed control plane functions, IMS/IPTV subsystems, 4G wireless applications, and edge networking and routing.

This compact platform integrates chassis, cooling, power distribution, and shelf management into an off-the-shelf solution for small and medium size network element deployments. The small form factor AdvancedTCA® chassis enables reuse of existing, larger scale AdvancedTCA (ATCA®) hardware and software elements providing a significant reduction in development cost and reducing time-to-market for deployments.

The Centellis 2000 is available in simplex and duplex configurations with regard to power, shelf management and base interface switching. Further flexibility is achieved by offering both DC or AC power input modules. Future blade bandwidth requirements are addressed with a sophisticated 1G/10G/40G capable fabric cross-connect backplane. This will allow the simple upgrade of 40G ATCA blades when available without a chassis fork-lift upgrade.

Designed to meet NEBS and ETSI environmental requirements, the Centellis 2000 features front-to-rear cooling, and is designed to meet the stringent Communications Platform Trade Association (CP-TA) B.4 thermal profile. This superior cooling performance enables any combination of ATCA blades and rear transition modules (RTMs) within the ATCA specification limits.

RoHS 6/6 COMPLIANT
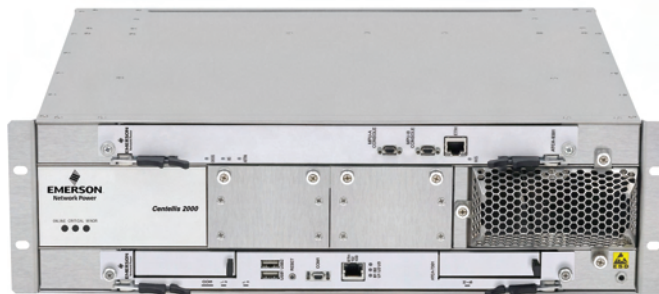
AdvancedTCA®

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Block Diagram with Two ATCA Blades

FRU Entity

Processing Unit
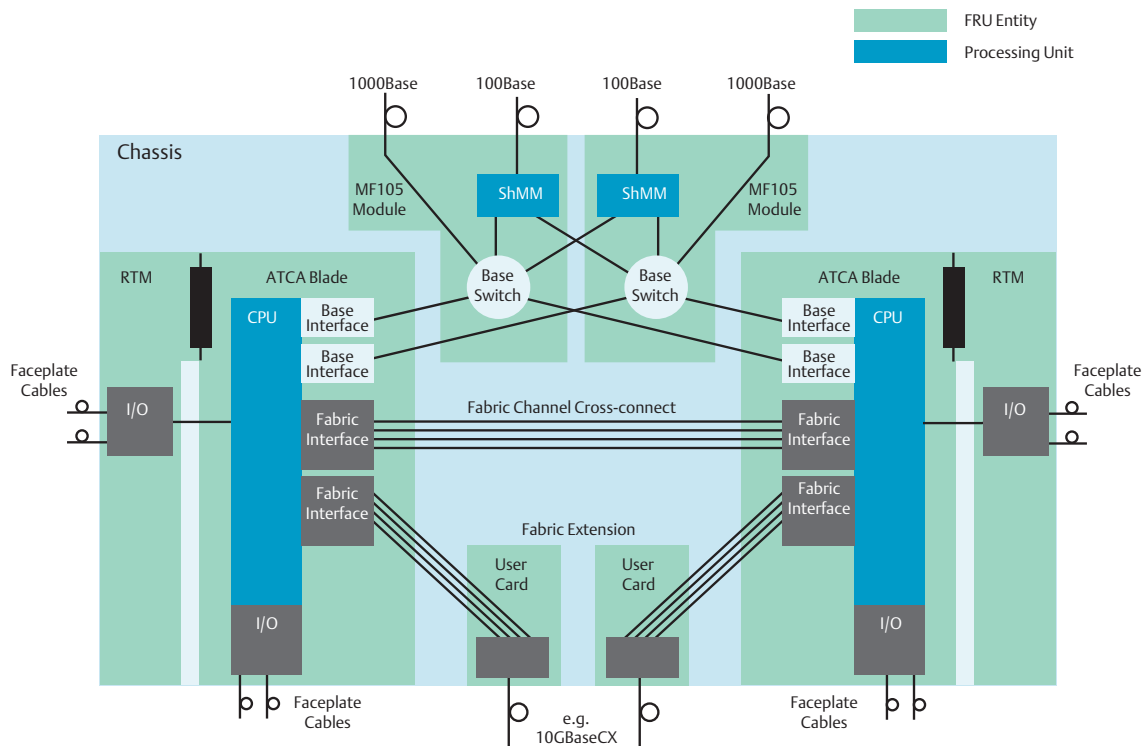
Enclosure

GENERAL CHARACTERISTICS

- 3U chassis
- Two (2) slots for 8U AdvancedTCA blades
- Two (2) slots for 8U RTMs
- Two (2) user card slots for custom modules
- Front-to-rear air flow
- Rear connection for power cables
- Dimensions (overall): 132 mm high; 445 mm wide; 420 mm deep

FRONT

- Two (2) horizontal 8U slots for front blades
- Air inlet, fan tray, air filter
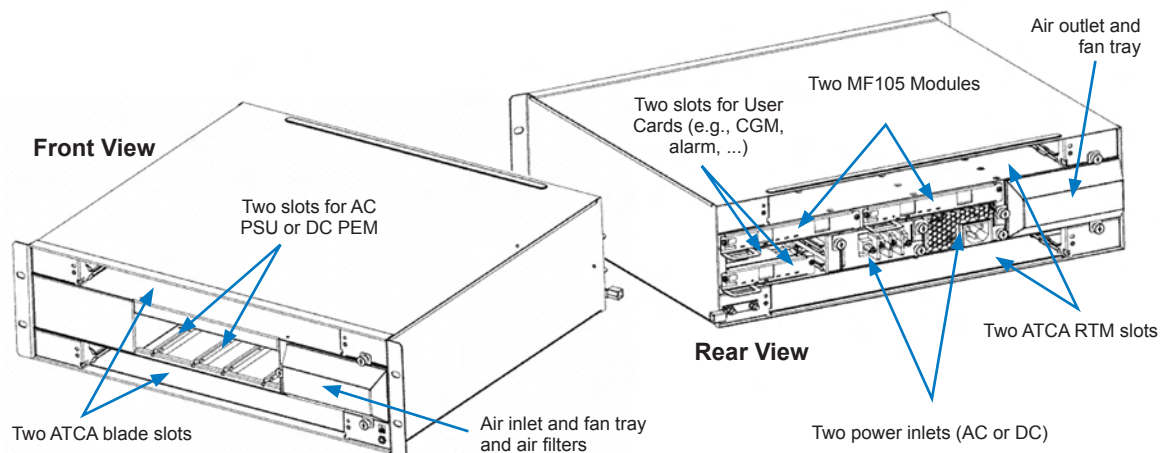- One (1) or two (2) power modules

REAR

- Air inlet, fan tray
- Two (2) horizontal 8U slots for RTMs
- Two (2) power entry modules (PEMs)
- Two (2) shelf management modules with integrated hub switch
- Two (2) user card slots

BACKPLANE

Besides power distribution and intelligent platform management interface (IPMI) busses for shelf management, the backplane provides the following connectivity for communication and synchronization between blades:

- Dual star, Base Channel routing
- Update channels (10 x 3.125Gbps)
- Direct cross-connect routing between blades for Fabric Channel connectivity (up to 40G)
- Fabric Channel 2 of AdvancedTCA Slot 1 is routed to User Card 1
- Fabric Channel 2 of AdvancedTCA Slot 2 is routed to User Card 2
- Telecom clock synchronization connectivity

Enclosure Layout

Front View

Two slots for AC PSU or DC PEM

Two ATCA blade slots

Air inlet and fan tray and air filters

Rear View

Air outlet and fan tray

Two MF105 Modules

Two slots for User Cards (e.g., CGM, alarm, ...)

Two ATCA RTM slots

Two power inlets (AC or DC)

Power Distribution

The Centellis 2000 front panel allows for a one or two power entry module (PEM) installation. The actual power connection is located in the rear of the chassis and for safety reasons is a fixed, non-field replaceable unit.

GENERAL CHARACTERISTICS

- DC PEM
  - ▲ Input voltage range (-40 VDC to -72 VDC)
  - ▲ 30 amp, single-feed
  - ▲ Power infrastructure capable of supporting up to 350 Watts/slot
  - ▲ EMI filtering
  - ▲ Transient voltage suppression
- AC Power Supply Unit (PSU)
  - ▲ Input voltage range (100 - 208 VAC @ 8.5 amp)
  - ▲ Power infrastructure capable of supporting up to 350 Watts/slot
  - ▲ EMI filtering
  - ▲ Transient voltage suppression

LED STATUS INDICATORS

- In service/out of service: Green/Red
- Hot swap: Blue

Fan Tray Modules

The Centellis 2000 utilizes a fault-tolerant, push-pull cooling architecture and is implemented using front and rear fan tray modules. The cooling system is designed to provide CP-TA B.4 cooling performance for the most demanding, next generation packet processing based ATCA blades. An integrated shelf manager function monitors and controls the speed of each individual fan for optimal performance. Fan control decisions are made based on air intake temperature, air exhaust temperature and thermal data provided by the blades. In the event of communication failure between the shelf management entity and the fan tray modules, all fans automatically run at full speed to ensure maximum cooling until the failure is eliminated.

GENERAL CHARACTERISTICS

- Front blade cooling capacity: 40 cubic feet per minute (CFM) at 55 °C
- RTM cooling capacity: 5 cubic feet per minute (CFM) at 55 °C
- Automatic fan speed control
- Operating range: -5 °C to 55 °C

LED STATUS INDICATORS

- In service/out of service: Green/Red
- Hot swap: Blue

Shelf Management Modules

The purpose of shelf management, as defined by the PICMG® 3.0 standard, is to ensure proper operation of AdvancedTCA blades and other shelf components within the shelf. The shelf management entity continually monitors all low-level, hardware functionality (inventory, sensor, status data, etc.) and reports status to the system manager. It also provides control access to these attributes. Management access to this information is provided via local console and Ethernet interfaces as well as the Service Availability Forum™ (SA Forum) defined HPI interface. Each blade and major shelf accessory has an intelligent platform management controller (IPMC) that is responsible for providing this information to the shelf management entity.

The Centellis 2000 platform core provides redundant shelf management functionality utilizing an active/standby architecture and is based on an internally developed, hardened and proven shelf management design.

GENERAL CHARACTERISTICS

- Remote access to shelf and field replaceable units (FRUs) for inventory management, alarming, and control
- HPI-B based remote access via C-library
- SA Forum compliant protocol: SAI-HPI-B.01.01
- SA Forum compliant ATCA mapping: SAIM-HPI-B.01.01-ATCA

PANEL ACCESS & INTERFACE

- One (1) RS-232 console; RJ-45
- One (1) 10/100BaseT Ethernet; RJ-45

LED STATUS INDICATORS

- Hot swap: Blue

The Base Interface switch functionality is integrated into the Shelf Management Modules. The switch infrastructure supports IEEE 802.3xxx 1000BASE-T, 100BASE-TX, 10BASE-T connectivity to both AdvancedTCA slots as required by PICMG 3.0. One external 1000BASE-T Ethernet interface is available on the face plate for external connectivity.

User Cards

Two User Card slots are provided to allow customers the ability to integrate custom functions into the platform. Examples include Telecom clock generators, 10GB fabric uplinks, or telecom alarms. Each User Card is 110 mm deep x 70 mm wide x 20 mm high and accesses redundant power, IPMC, and clock connections and fabric channel connectivity.

GENERAL CHARACTERISTICS

- Two (2) slots for User Cards in the rear of chassis
- Direct connection to backplane:
  - ▲ Redundant -48 V power
  - ▲ Redundant intelligent peripheral management controllers (IPMC)
  - ▲ Redundant CLK1, CLK2 and CLK3
  - ▲ One fabric channel to one ATCA blade (Four LVDS ports)

Software

SpiderWare®M^3 platform management software is included with the Centellis 2000 platform core. SpiderWareM^3 runs on Linux and can be hosted locally (on a payload blade) or externally. See the SpiderWareM^3 data sheet for more details.

Ordering Information

Product	Description
Platform Core Products	
CENT-2000-DC	Two-slot ATCA chassis, 1X DC PEM, 1X MF105 SHMM (Silver)
CENT-2000-DC2	Two-slot ATCA chassis, 2X DC PEM, 2X MF105 SHMM (Silver)
CENT-2000-DC2B	Two-slot ATCA black chassis, 2X DC PEM, 2X MF105 SHMM (Black)
CENT-2000-AC	Two-slot ATCA chassis, 1X AC PSU, 1X MF105 SHMM (Black)
CENT-2000-AC2	Two-slot ATCA chassis, 2X AC PSU, 2X MF105 SHMM (Black)
Optional Platform Core Products	
CENT-2000-UC-10GE	C2000 10GE User Card w/o SFP+ Module
CENT-2000-UFP	C2000 User Card filler panel
CENT-2000-PFP	C2000 PEM filler panel
C2000-SWM3-CD	SpiderWare®M^3 Management Software CD for C2000
C2000-RKMT-M	CENT2000 19/23" Frame mid-mounting bracket kit (Set of four)
C2000-RKMT-E	CENT2000 ETSI 600 mm Frame mounting bracket kit
C2000-RKMT-A	CENT2000 ANSI 24" Frame mounting bracket kit
C2000-RKMT-23	CENT2000 23" Frame mounting bracket kit
C2000-ACDC-ADPTR	CENT2000 AC-DC 1U Converter
C2000-CBLTR	CENT2000 Cable tray bracket (one unit)
AXP-F-FILL-PANEL	Blank filler panel, AXP1620, AXP1440, AXP1410, C2000 - Front
AXP-R-FILL-PANEL	Blank filler panel, AXP1620, AXP1440, AXP1410, C2000 - Rear
FRUs	
CENT-2000-PEM	C2000 DC Power electronics module
CENT-2000-MF105	C2000 Base switch and M100 SHM module
CENT-2000-FFTM	C2000 Front fan tray module with fans
CENT-2000-SFM	C2000 Replacement air filter (one unit)
CENT-2000-RFTM	C2000 Rear fan tray module with fans
CENT-2000-PSU	C2000 AC Power supply module

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
	ETS 300-132-2 Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)
	ETSI Operation, ETS 300 019-2-3, Class 3.1 equipment, Partly Temperature Controlled Locations
Designed to comply with Acoustic	ETS-300-753, Equipment Engineering (EE); Acoustic noise emitted by telecommunication equipment
EMC	EN-300-386 Electromagnetic compatibility and Radio spectrum Matters (ERM); telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements, Telecommunication equipment room (attended)
	FCC 47 CFR Part 15 Subpart B (US), Class A
	EMC Directive 89/336/EEC (EU)
	AS/NZS 3548 (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
	Industry Canada ICES-003 Class A
Safety	Compliance to UL/CSA 60950-1, EN 60950-1 and IEC 60950-1 CB Scheme. Marked with U.S. NRTL, Canadaian Safety and CE Mark.
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 electical and electronic equipment (WEEE)

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Offices: Tempe, AZ U.S.A. 1 800 759 1107 or +1 602 438 5720
Paris, France +33 1 60 92 31 20 • Munich, Germany +49 89 9608 2333 • Tel Aviv, Israel +972 9 9560361
Hong Kong +852 2176 3540 • Shanghai, China +86 21 3395 0289 • Tokyo, Japan +81 3 5403 2730 • Seoul, Korea +82 2 3483 1500

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