Technical Specifications

JRC Smart EPC

Technical specifications are subject to change without notice.

Highlights

Item	Description
Consolidated core solution	Consolidated Enhanced Packet Core solution supporting standard 3GPP interfaces like S1-MME, S1-U, S2a, S6a, Gx, Gy and etc and with MME, PGW, SGW, HSS and internal basic PCRF functionalities.
Multi APN	Support multi APN per UE or per UE groups
Operating small to medium networks	Quick network and users configuration (plug & play) Simple operation status view Full backup and restore procedures
Advanced IP allocation	Dynamic , Static, Internal, External , From dedicated pools
Advanced TFT support	Support standard and above the standard filter capabilities
Multi users	Support network behind 4G UE that acts as a bridge or router
NAT	Enables NAT for connected UEs
Billing	Already integrated with third party cost effective billing solution

Mechanical & Electrical

Item	5U/6U chassis (DC/AC)
Model	SEPC_HW_ATCA5U
Form factor	ATCA
Dimensions	19'' rack mount 445mm (W) x 222mm (H) x 383mm (D)
Weight	AC configuration (including 4 power supplies) - 20Kg (44lbs) DC configuration (including 2 PEMs) - 15Kg (33lbs)
Input power	AC: 90 – 240 VAC DC: -48 / -60 VDC; two feeds per PEM; up to 50Amp per feed
Number of slots	7 slots 8Ux280mm front blades 7 slots 8Ux70mm RTMs
Power supply	Three/five/six front redundant, self-cooled, hot swappable, integral power supply; 1+1 AC power supplies
Power consumption	Operational 300W MAX 700W
MTBF	> 376,102hours
Compliance	PICMG 3.0 R.2.0
Cooling	Push side-to-side cooling for optimal pressurized cooling Standard (6 fans) – provide 450W per slot at 55°C N+1: any one fan can fail with no service degradation Variable speed under shelf manager control; soft rotation start
Certifications / Standards	UL60950 certified CAN/CSA C22.2 No. 60950-1-07 including A1: 2011, ANSI/UL 60950-1-2011 CE compliant and FCC part 15 certified EMI gaskets and hardware spacing conforms to FCC part B Designed to meet NEBS and ETS
ATCA shelf manager	Two front accessible, redundant, hot-swappable IPMI Shelf Managers based on Pigeon Point ShMM Sentry 700

Item	3U chassis
Model	SEPC_HW_ATCA3U
Form factor	ATCA
Dimensions	19'' rack mount 448mm (W) x 133.35mm (H) x 413.4mm (D)
Weight	14.4 Kg (including 2power supplies)
Input power	Input power 90 – 240 VAC
Number of slots	2 slot 8Ux280mm (11"), front boards 2 slot 70mm (2.73 inches), RTMs
Power supply	Three/five/six front redundant, self-cooled, hot swappable, integral power supply; 1+1 AC power supplies
Power consumption	Operational 300W MAX 700W
MTBF	> 376,102hours
Compliance	PICMG 3.0 R.2.0
Cooling	Front hot-pluggable fan tray with 4, N+1, axial fans for front and RTM slots Variable speed under shelf manager control Front washable field replaceable NEBS GR63 compatible air filter
Certifications / Standards	UL60950 certified CAN/CSA C22.2 No. 60950-1-07 including A1: 2011, ANSI/UL 60950-1-2011 CE compliant and FCC part 15 certified EMI gaskets and hardware spacing conforms to FCC part B Designed to meet NEBS and ETS
ATCA shelf manager	Pigeon point ShMM500 management module

Item	1U chassis
Model	SEPC_HW_ATCA1U
Form factor	ATCA
Dimensions	19'' rack mount 1U (H) x 384 mm (W) x 440 mm (D)
Weight	4.5 Kg
Input power	AC: Input power 90 – 240 VAC (external PS) DC: Input voltage range -40V to -72 VDC
Number of slots	1 front slot ATCA board dimensions 1 RTM slot 70mm (2.76 inches), ATCA RTM dimensions
Power supply	PEM Redundant DC power inlets, each capable of supplying 100% of shelf power
Power consumption	Operational 150W MAX 200W
MTBF	> 59,567 hours
Compliance	PICMG 3.0 R.2.0
Cooling	Four fans attached 47 CFM for the front blade and 8 CFM for the RTM
Certifications / Standards	RoHS EMC: FCC part 15B, EN55022 CISPR Safety: UL 60950-1 - CSA certified CE certified
ATCA shelf manager	-

Item	Micro
Model	SEPC_HW_M02
Form factor	Small form factor Industrial PC
Dimensions	40mm(H) x 190mm (W) x 160mm (D)
Weight	1.01 Kg
Input power	AC: Input power 100 – 240 VAC (external PS) DC: 60W 12VDC 5A
CPU	Intel 5th Gen Core i7-5600U Processor
Storage	mSATA 256 GB (SSD)
RAM	2 x 8GB Non-ECC DDR3L-1600 (1.35V)
Network / Connectivity	- 4 x USB 3.0 - 2 x USB 2.0 - 2 x GbE KAN ports - 3 x Serial communication ports, RS232 (mini serial) - 2 x HDMI - 1 x Display Port 1.2
Power consumption	6-24 W
Advanced Technologies	- CPU Virtualization support - AES
MTBF	> 100,000 hours
Cooling	Passive Cooling Fan-less Design
Environment	Operating Temp (SSD models): - Commercial: 0º C - 70º C - Extended: - 20º C - 70º C - Industrial: -40º C - 70º C Relative Humidity: - Operation: 10% to 90% - Storage: 5% to 95%
Certifications / Standards	FCC 47CFR part 15: 2012, subpart B, Class B, ICES-003: 2012 Issue 5, Class B, AS/NZS CISPR 22: 2009 + A1(10), Class B standards EN-301 489-17: V2.2.1 :2012, other than telecom center equipment Standard harmonized under article 3.1(b) of R&TTE Directive 1999/5/EC EN-301 489-1 V1.9.2: 2011, other than telecom center equipment Standard harmonized under article 3.1(b) of R&TTE Directive 1999/5/EC and article 6(2) of EMC Directive 2004/108/EC EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + IEC 60950-1:2005 + A1:2009 standards

SEPC Blade

Item	Description
Capacity	Up to (3,000 or 10,000) concurrent subscribers Up to 200 eNBs
Ethernet	Dual Base interface channels 6 x 10/100/1000Base-T [RJ-45 connector] Dual 10GBASE-KX4/1000BASE-BX Fabric interface channels Full duplex Auto-Sensing Optional: 2 x 10GigE (AMC module)
Serial	1 x Serial RS-232 COM port RJ-45 Front-IO
USB	2 x USB 2.0 ports Front-IO
ATCA	PICMG® 3.0 R3.0 PICMG® Ethernet Over PICMG 3.0 R1.0, Option 1/9
Certifications	FCC, CE, UL, NEBS Level 3 (design)

Environmental

Item	Description
Operating temperature	0°C to 50°C
Storage temperature	-20°C to 70°C
Humidity	5% to 95%, non-condensing

Functionality set

Item	Description
3gPP interfaces support	• Gx, Gz, Gy, DHCPv4, SNMPv2/v3, GTP-v1u, SGi (transparent), S1-MME, S6a, S2a S10, S13, SBc
PDN	• IPv4/IPv6 PDN Types
IP Allocation	• Dynamic, Static, Internal, External , From dedicated pools
Default and Dedicated bearers	• Multiple bearers support for each session • Multiple sessions for each IMSI • UE and Network initiated dedicated bearers • Delete bearer capability
Advanced functionalities	• Advanced TFT support: Support standard and above the standard filter capabilities • Multi users: Support network behind 4G UE that acts as a bridge or router
Policy	• Internal and external (PCRF) dynamic policy setting • Dynamic quota allocation from external PCRF
Charging	• Offline Charging • Online Charging
Admission control	• Supports admission control for connected users
Handover	• X2, S1, inter-SGW, inter-MME • Tracking area Update support • Idle mode support (exit and enter)
UE disconnect control	• By UE • By SmartEPC management • By external PCRF
Security	• Ciphering and Integrity Protection of NAS messages
Redundancy	• 1+1 redundancy support
Maintenance	• Full EPC backup and restore procedures • Upload and download backup files • Backup and restore procedures for UE database
Network	• NAT (suitable for small operations) • Simplified IP setting for RAN, Core and Management
Configuration	• Quick network and users configuration (plug & play) • Simple operation status view
Management	• Web based GUI • SNMP v2/3 • SSH rescue interface • Multiple levels of trace types and debugging facilities • Error Levels, reporting, filtering error based on levels
UE configuration	• White list of roaming partners (PLMN-ID) • AKA based authentication (key generation and distribution) • Multiple operator support (using unique group-ID)
Billing	• Already integrated with third party cost effective billing solution