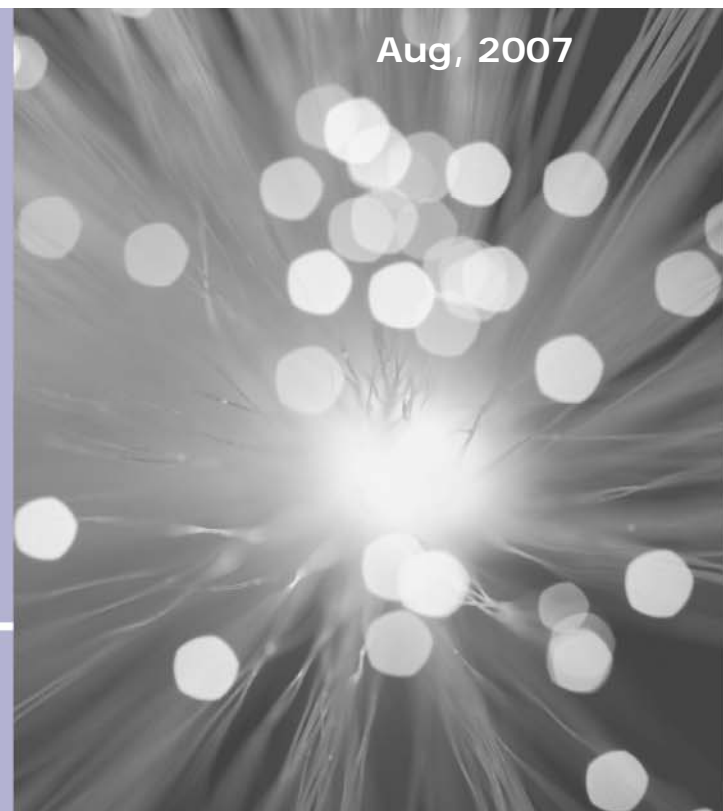


# ***CORECESS***

## ***VDSL2 & ADSL2 Installation***

Aug, 2007

**CORECESS Inc.**  
<http://www.corecess.com>



# About Corecess



# Corecess Success

V.1.0

- **1<sup>st</sup> developer of WDM + GEPON Technology in the World.**
- **A pioneer in Gigabit Ethernet PON base FTTH**
  - Selected as Korea Telecom's solution provider in 2005 for 20k lines
  - Deployed more than 100k lines worldwide
- **A pioneer in IP broadband access**
  - World's 1<sup>st</sup> IP DSLAM supplier
  - Has been serving for more than 5M broadband subscribers in more than 20 countries
    - Customer includes all types of RESIDENTIAL, BuSINESS and HOSPITALITY
- **Has field experiences in wide area of broadband services**
  - FTTx: Korea
  - Metro Ethernet: Korea
  - ADSL(2+): Japan, Korea, Finland, Netherlands, USA, Ecuador, Argentine etc
  - VDSL(4B, 5B): Korea, Japan

# Footprints of Corecess in IP solution



- Shipped more than 2M lines of IP ADSL DSLAM in 2001.
- 1<sup>st</sup> largest deployment of IP in Worldwide.
- outnumbered NTT's broadband subscribers within 6 month.



- Contributed to establish IP based infrastructure.
- Shipped Ethernet SW, IP ADSL, and 4 band VDSL DSLAM.
- Currently, deploy Corecess GEPON



- IPTV with ADSL2 in 2003.
- More than 20K lines of IPTV in Finland.
- Acquired by Tele Denmark.



- Sole Licensing for Broadcasting of Holland Soccer League.
- Using Corecess ADSL2+ DSLAM for its IPTV.
- Have about 200K Subs and acquired by Tele2

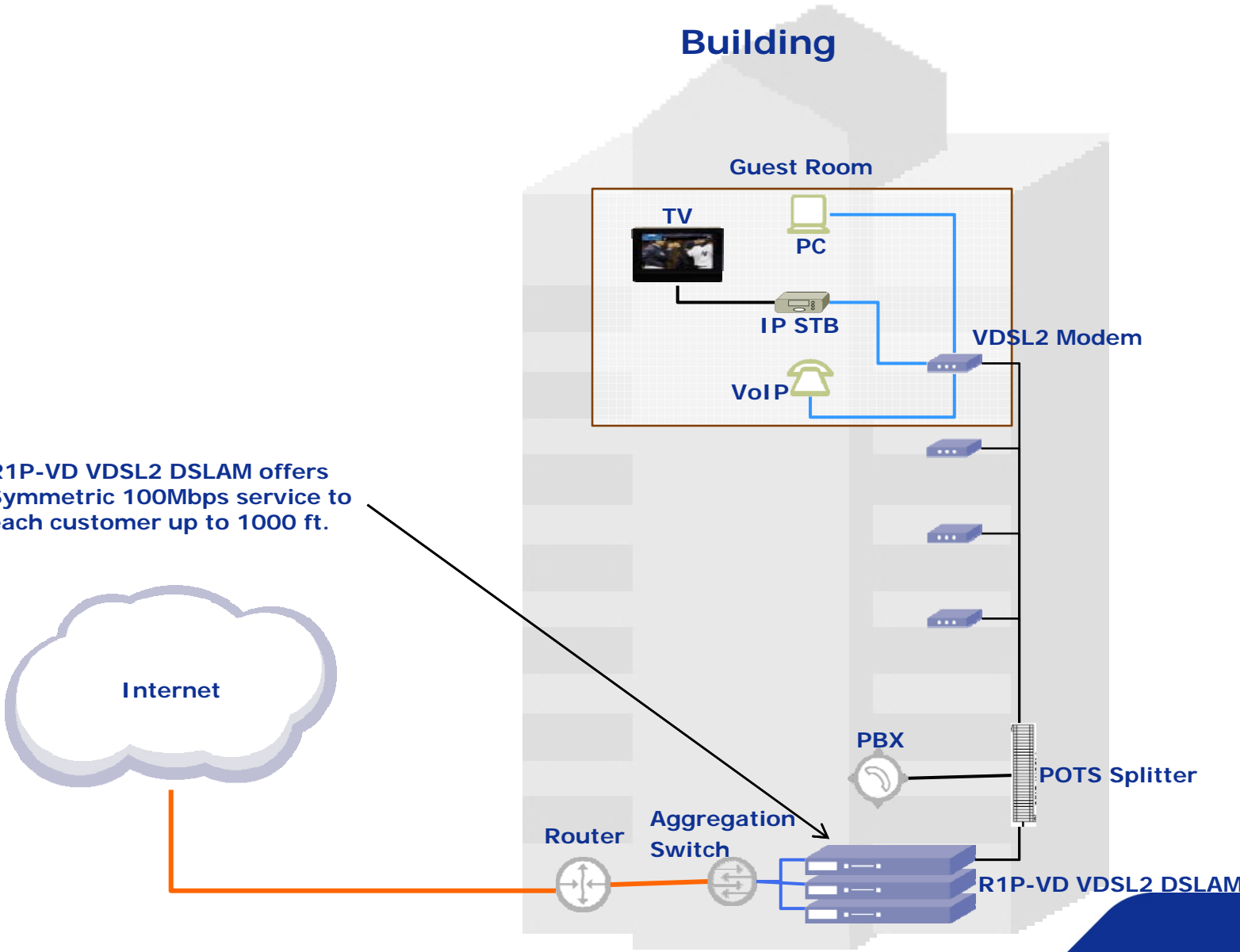
# Hospitality Application



# VDSL2 for MxU

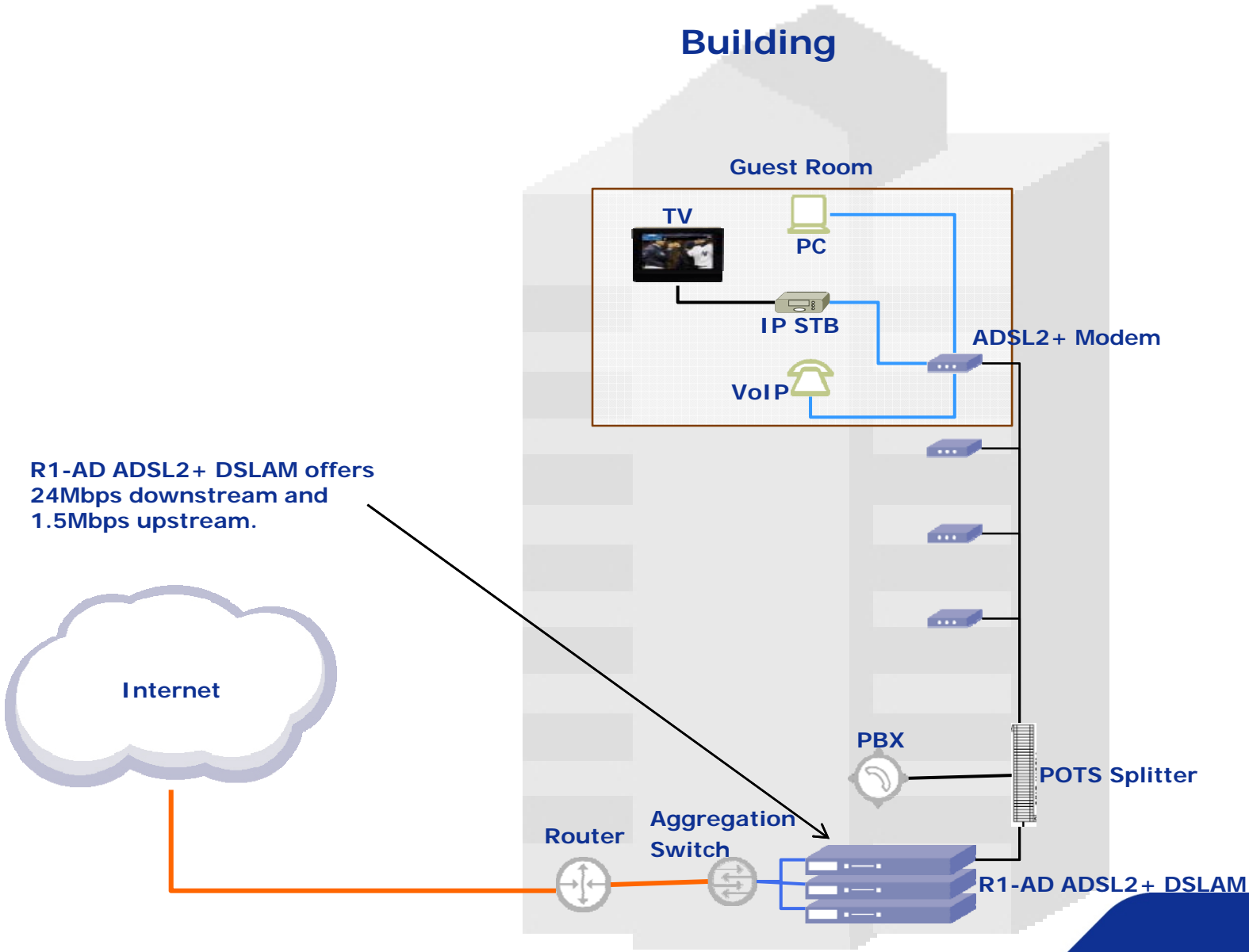
V.1.0

R1P-VD VDSL2 DSLAM offers Symmetric 100Mbps service to each customer up to 1000 ft.



# ADSL2+ for MxU

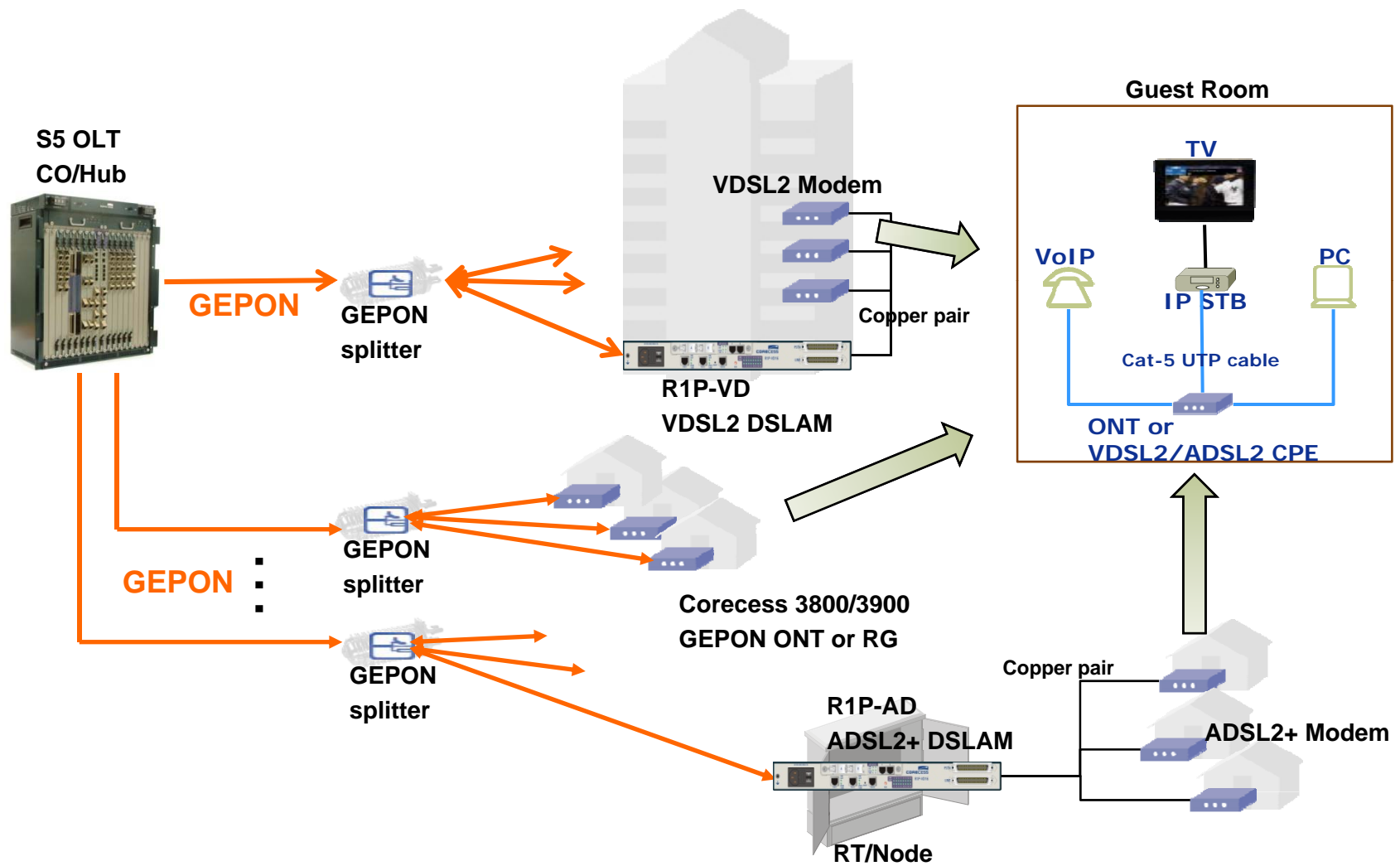
V.1.0



R1-AD ADSL2+ DSLAM offers 24Mbps downstream and 1.5Mbps upstream.

# FTTx for Resort & Residential Area

V.1.0



# MxU & Residential Area Solutions/Products



# Product Overview

V.1.0

- **S5 Platform**
  - L3 gigabit switch, PON OLT
  - 64 ports GbE/GEAPON with 4Gbe/2x10GbE uplink
- **R1 Series**
  - 1 RU box type remote access
  - 24 ports, 100M Tx, Fx, VDSL2, ADSL2+
- **ONT**
  - Indoor or outdoor type customer premise equipment for data or TPS
- **EMS**

# S5 Platform

V.1.0

- Common OLT platform for both residential and business service
  - High performance L3 switch
  - Supports GEAPON & GbE with 10GbE uplink
  - The same OLT for native GEAPON/GbE and SuperPON: Only optical transceivers are different
- Architecture
  - Switch & Control Module (SCM): Connected to each Line Interface Module (LIM) through Star Topology Backplane
  - Dedicated n x GbE backplane to each LIM slots
  - Supports redundancy in SCM, uplink, downlink and power
  - LIMs are common for all chassis
- Scalable SCM
  - SCM-24G/72G: Same architecture but different backplane capacity
  - Default 4 port GbE and a optional slot for 2 ports 10GbE for uplink

# S5 Platform (Continued)

V.1.0

- Supports QoS management and multicast routing
  - Packet classification and marking
  - Class - based packet scheduling
  - SLA using multiple LLID with GEPON
  - PIM-SM, PIM-DM and DVMRP
  - IGMP & IGMP snoop
- High reliability and availability
  - Redundant Power, SCM, Uplink, GEPON/GbE line link
  - Graceful restart
  - S/W & H/W upgradeable without service discontinuity
- Patent pending network protection technology
  - Secured network from bad users' threats
  - Protection from IP/ARP spoofing, packet storming & TCP sync flooding

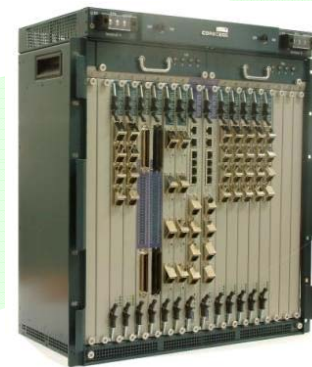
# S5 OLT Product Line

V.1.0

- ❖ Common platform for GEAPON & SuperPON
- ❖ Common SCM/LIM for all chassis
- ❖ High performance L3 Gigabit Ethernet Switch
- ❖ Redundant power & GEAPON/GbE line link
- ❖ Redundant SCM & uplink(S518 only)
- ❖ Scalable & upgradeable



**4RU S506 Platform**  
- 1 SCM & 4 LIM  
- 3 Power slots (AC or DC)  
- Full Front Access

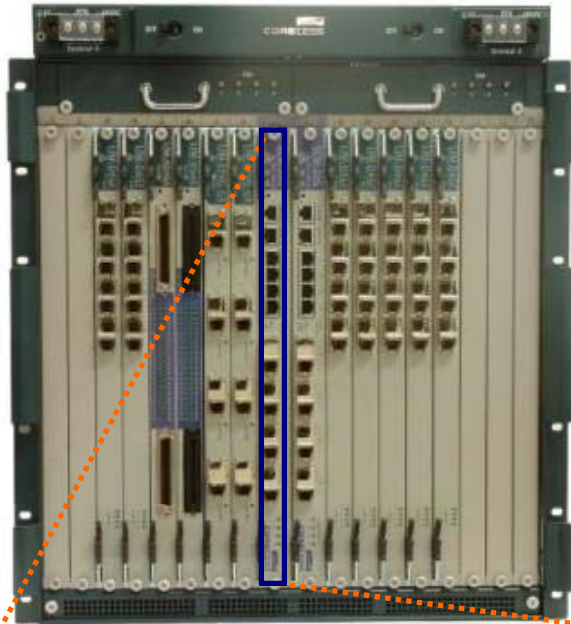


**12RU S518 Platform**  
- 2 SCM & 16 LIM  
- Built-in DC support  
- Full Front Access

- ❖ ETSI Compliant Platform Fit in 600x300(mm) Form Factor
- ❖ Full Front Cabling Support

# S5 SCM OLT with 10GbE uplink

V.1.0



- Scalable capacity: 24G, 72G
- Full Layer 3 Capability
- SCM line-up

	24G	72G
Switching throughput	24G	72G
Per Slot Capacity	4G for S506 1G for S518	8G for S506 4G for S518
Uplink	4 port 1000Base FX/SFP (default) 1 expansion slot: 4 port 10/100/1000Base T, 2 port 10GbE (72G only)	



Craft & Out-band Management Port

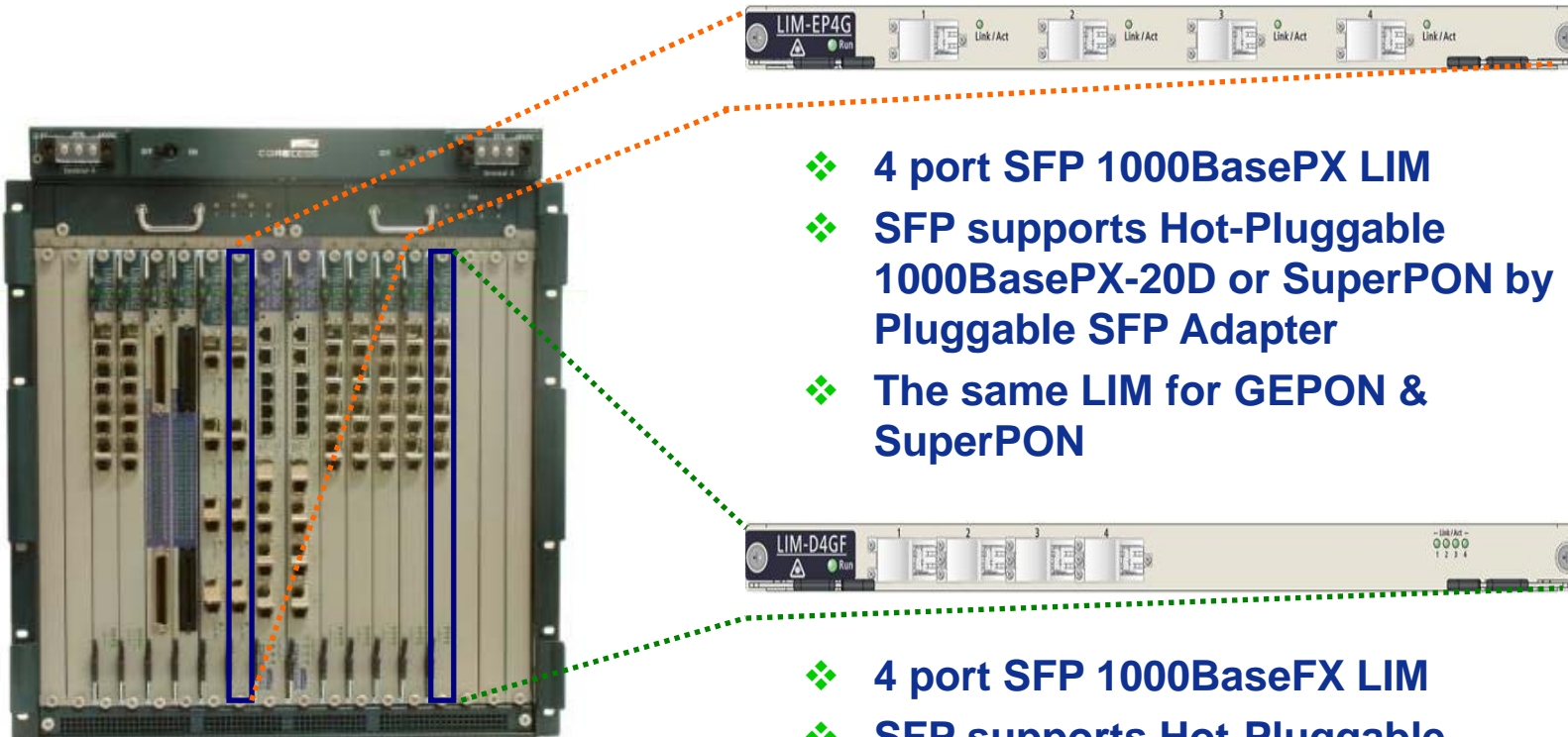
Uplink Expansion slot

- 4 port 10/100/1000Base TX
- 2 port 10GbE(72G only)

4 port 1000Base FX/SFP (Default)

# S5 LIM: GEAPON & GbE

V.1.0



- ❖ 4 port SFP 1000BasePX LIM
- ❖ SFP supports Hot-Pluggable 1000BasePX-20D or SuperPON by Pluggable SFP Adapter
- ❖ The same LIM for GEAPON & SuperPON

- ❖ 4 port SFP 1000BaseFX LIM
- ❖ SFP supports Hot-Pluggable 1000BaseSX/LX or SuperPON by Pluggable SFP Adapter
- ❖ The same LIM for GbE & SuperPON

Single S518 Gives,

- 64 GbE ports or
- 64 GEAPON OLT ports or
- 64 SuperPON OLT ports

With 4GbE + Dual 10GbE uplink

# R1 Series

V.1.0

- ❖ R1 is a series of 1RU fixed configuration type product
- ❖ Separate product for ADSL2+, VDSL2, 100BaseTX, 100BaseFX Ethernet
- ❖ Provides high speed and reliable fiber base transport in an optional slot: GbE, GEAPON and GbE WDM PON
- ❖ Provides flexible role out configurations from 24 ports box to mid-capacity stacking (through 10/100/1000Base-T)
- ❖ Remote management and provisioning capabilities
- ❖ Full front cabling
- ❖ Temperature hardened – operating -40 ~ 65°C

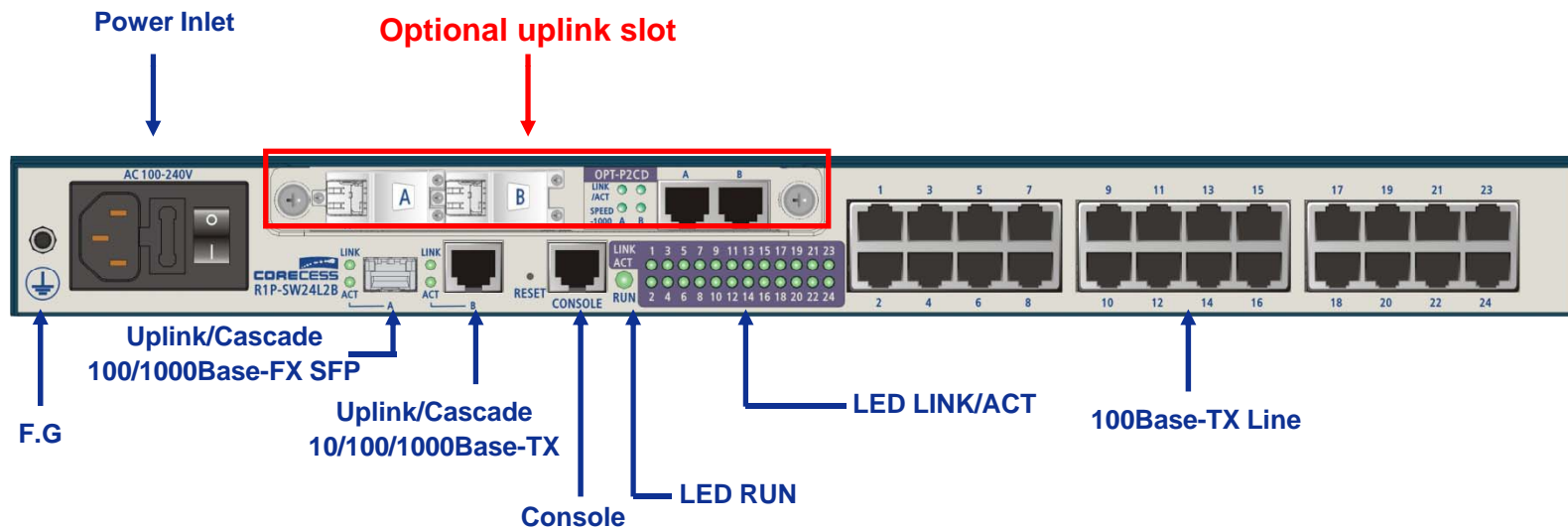


# R1 Port Configuration

V.1.0

## Uplink Ports (Optional)

- ❖ Two port 1000BaseFX/SFP & 10/100/1000BaseTX/RJ45 COMBO
- ❖ One port 1000BasePX-10U GEAPON & One port 1000BaseFX/SFP & 10/100/1000BaseTX/RJ45 COMBO
- ❖ One port Gigabit WDM PON/SC

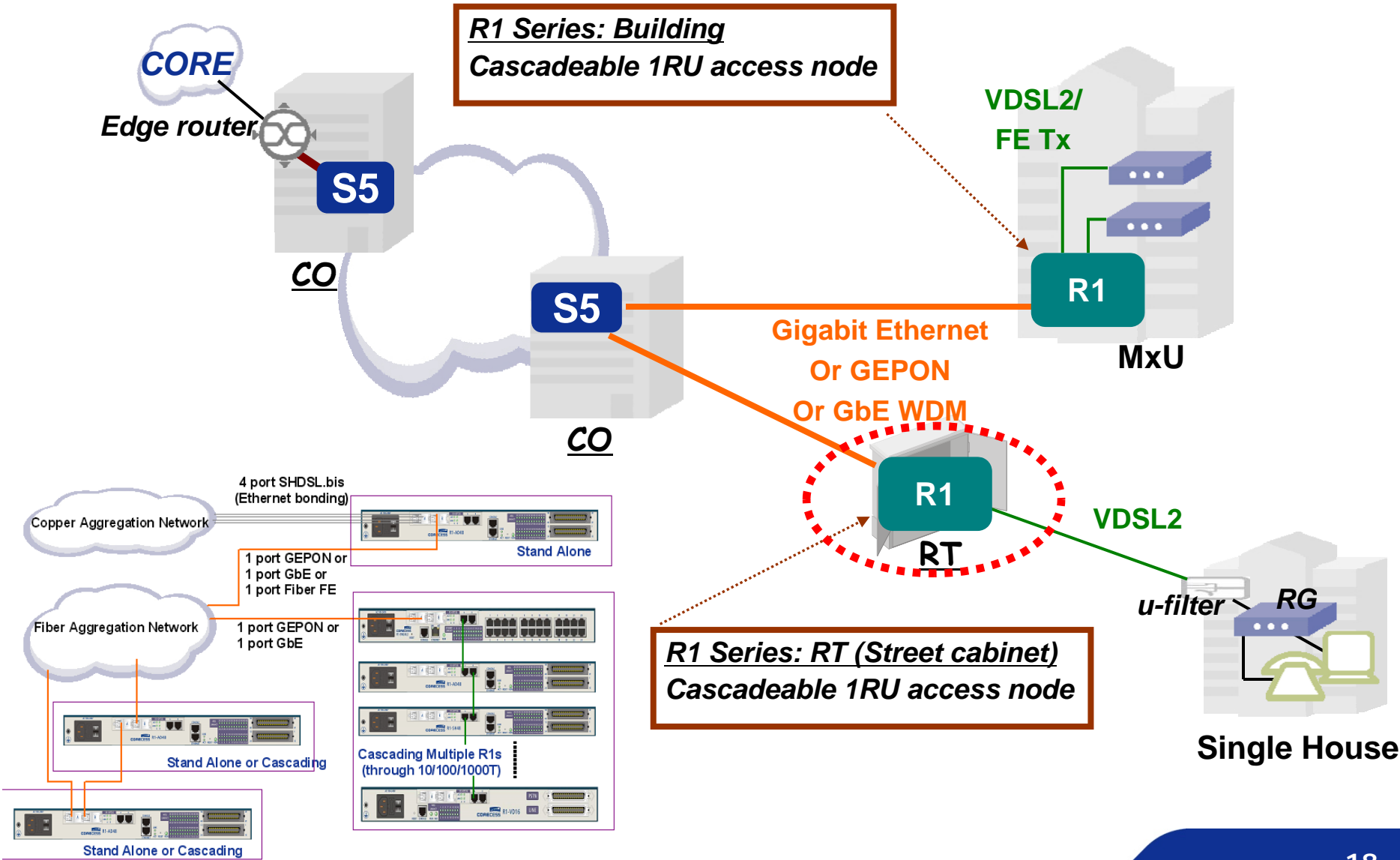


## User Ports

- ❖ Two RJ21 Connector for R1-AD48/24 ADSL2+ DSLAM
- ❖ Two RJ21 Connector for R1-VD16/24 VDSL2 DSLAM
- ❖ 24 RJ45 Connector for R1-SW24 TX Switch
- ❖ 24 SFF Connector for R1-SW24 FX Switch

# R1 Series Deployment

V.1.0



# ONT Products

V.1.0

	Network Interface	User Interface	VoIP	WLAN	Data Features	Deployment	Operating Temperature
3700 series	WDM GbE	1 GbE Tx, SFP combo 2 GbE, 2 SuperPON	No	No	Media converter	Desk-top	0 ~ 50 °C
3800 series	GEPON, WDM GEPON	1 GbE & 1 FE, 4FE	No	No	L2 Features	Desk-top	0 ~ 50 °C
3900 series	GbE, GEPON, WDM GbE WDM GEPON	4 FE	2 CH	Optional	L2 Features/ NAT/ Firewall	Desk-top/ Wall/ Out-door	0 ~ 50 °C (Desk-top) -40 ~ 65 °C (Wall/Out-door)



**Corecess 3802TN**  
 - 1 port 1000BasePX-10U or -20U GEPON  
 - 1 port 10/100Base-TX & 1 port 10/100/1000Base-T

**GEPON ONU**



**Corecess 3942 with Outdoor enclosure**  
**Gateway ONT (optional uplink)**



**Corecess 3802TW**  
 - 1 port SuperPON, 20Km  
 - 1 port 10/100Base-TX & 1 port 10/100/1000Base-T

**SuperPON ONU**

# Corecess ViewLinX EMS

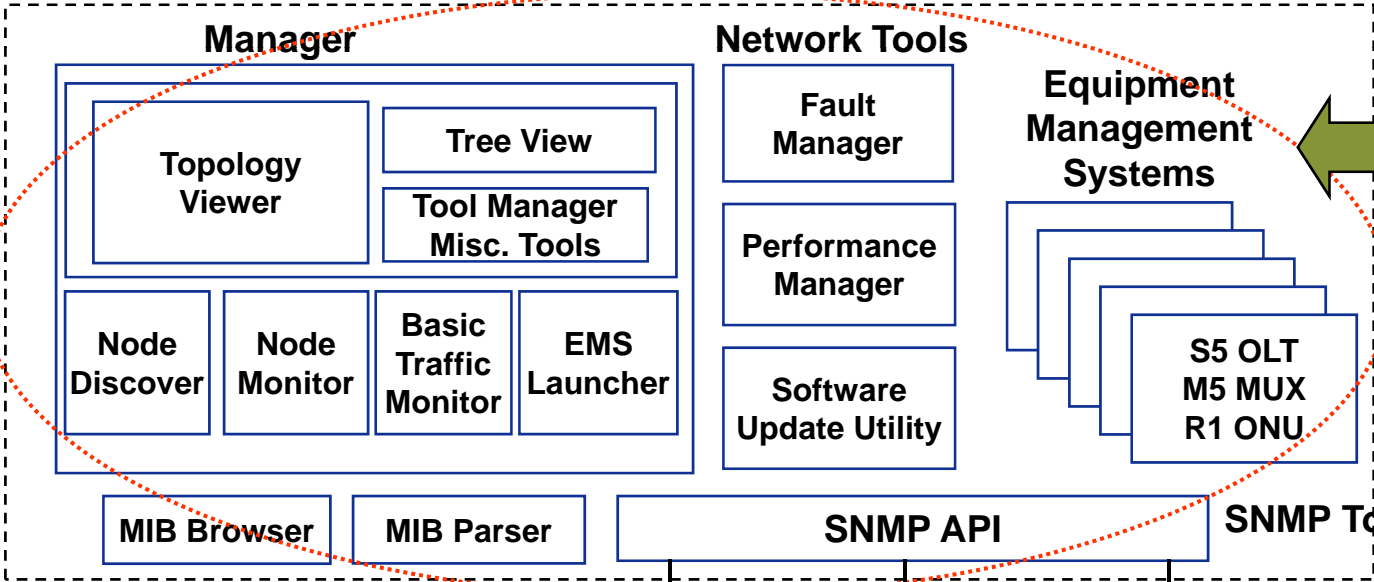
V.1.0

Service/Business Level

Upper NMS

OSS

Corecess NBI Corecess North Bound Interface (JAVA API, XML Server)



ViewlinX

S5 OLT M5 MUX R1 ONU

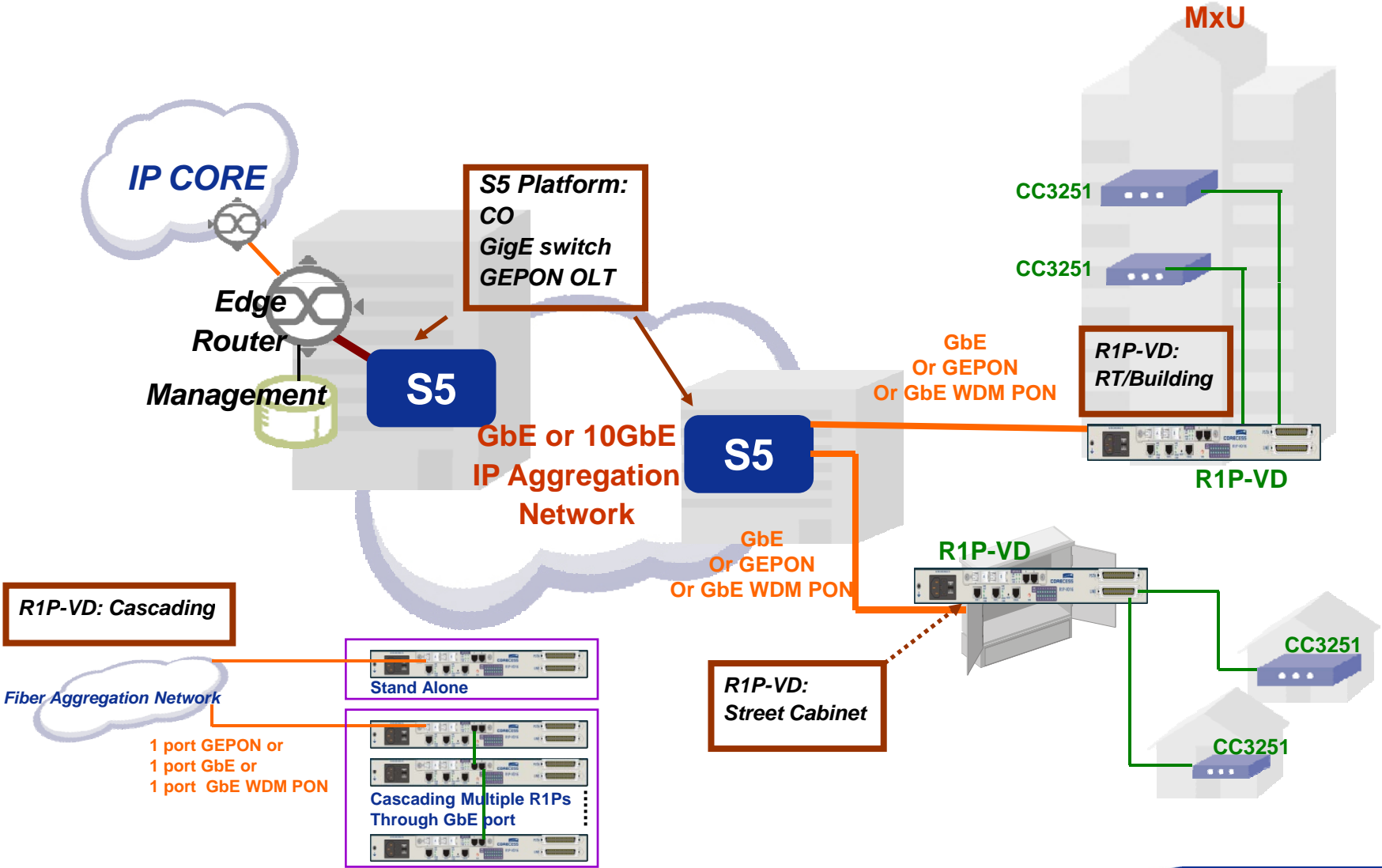
NEs

## ***VDSL2 Solution & Products***



# R1P-VD: Solution Picture

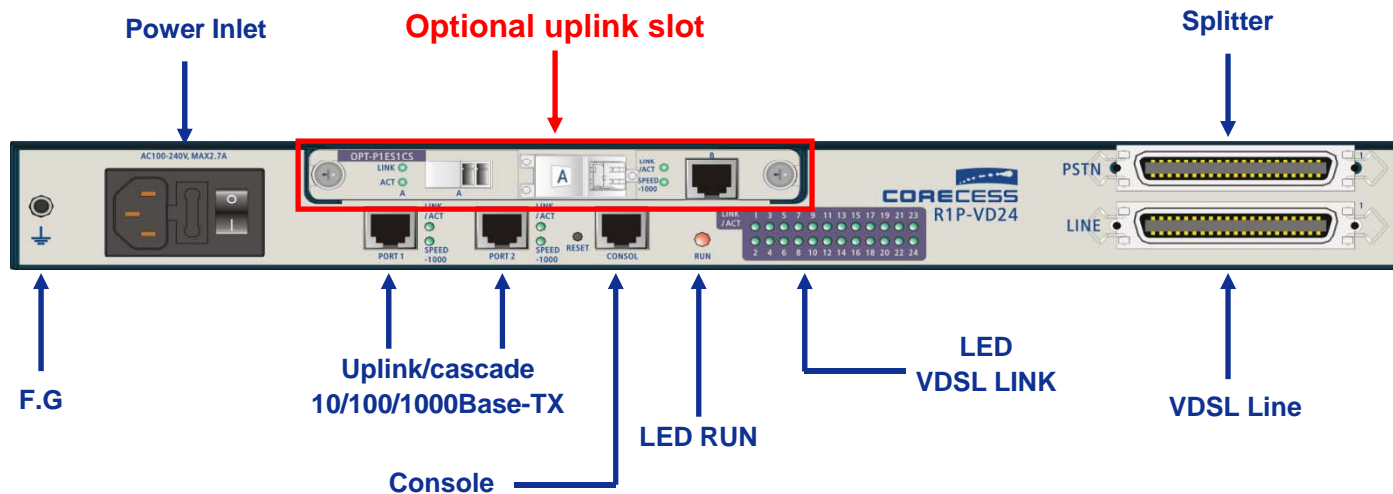
V.1.0



# R1P-VD16/24

V.1.0

- 24/16 ports VDSL2, built-in POTS splitter
- 2 ports 10/100/1000Base Tx for cascade
- Optional uplink slot: Giga Ethernet & GEAPON & Giga WDM PON
- 1 RU, full front cabling
- Temperature hardened – operating  $-40 \sim 65^{\circ}\text{C}$



# R1P-VD: Features

V.1.0

- **L2 Functions**
  - 802.1W RSTP, 802.1p CoS, 802.3ad Link Aggregation, MAC aging, 802.3x flow control, Ingress/egress port mirroring.
  
- **QoS**
  - MFC support (classification based on L2/L3/L4 header information)
  - Marking & remarking (CoS, DSCP, ToS marking/remarking)
  - Policing, Shaping, Rate Control (shaping per port)
  - Congestion Control (RED, WRED)
  - Scheduling (SP, WRR)
  
- **Network protection**
  - MAC filtering, IGMP/DHCP/APR Snoop filtering, HOL blocking prevention, DHCP filtering, NetBEUI/NetBIOS/NBT filtering, ACL (access control list)
  
- **Multicast**
  - IGMP Snooping (IGMP message control mode, IGMP Group limitation, Fast leave support)

# R1P-VD: Management

V.1.0

- **Subscriber management**
  - DHCP option 82 support
  - NTP support
  - Authentication: 802.1x & Web based authentication support
  - Radius client support
  
- **Management**
  - Local CLI: RS232
  - Remote CLI: Telnet
  - Remote S/W upgrade: TFTP, FTP, ViewlinX EMS
  - SNMP, RMON support
  - Link Status monitoring, BW control



# Thank You!

*Far and Broad*

[www.corecess.com](http://www.corecess.com)

