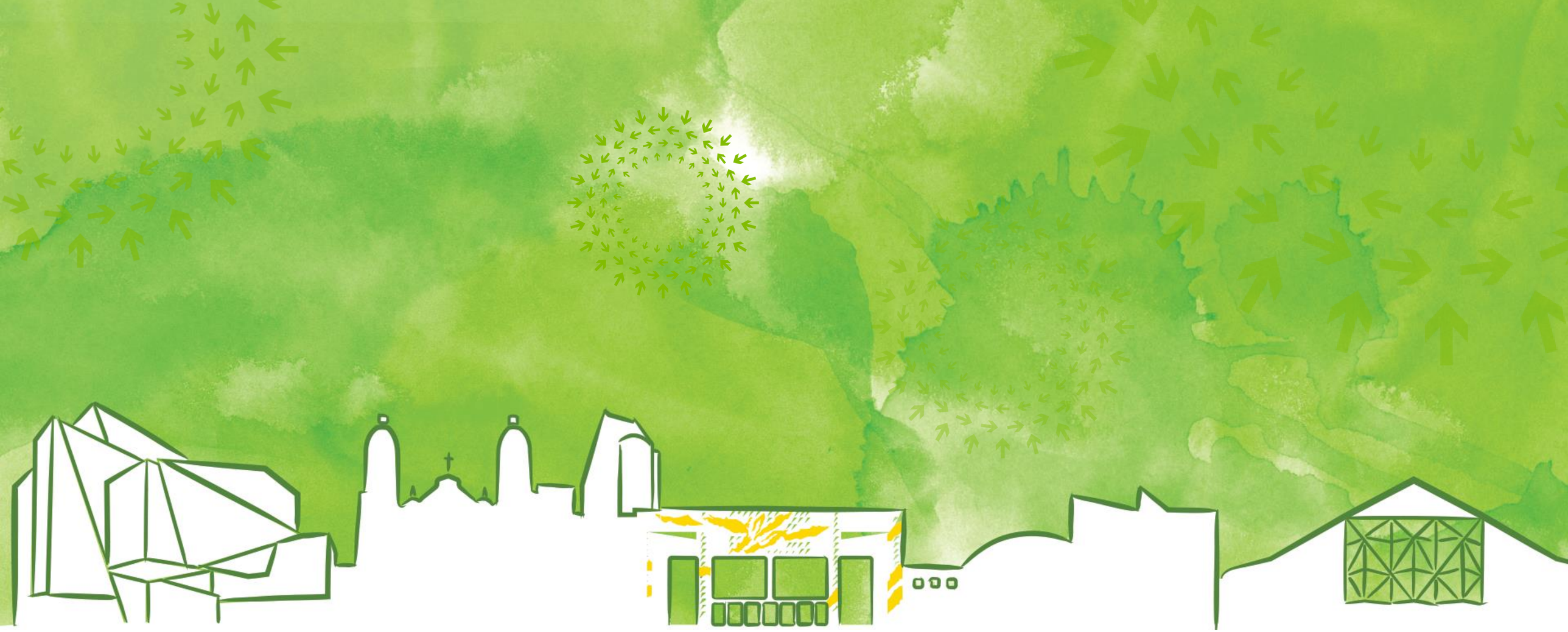

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AT&T XGS-PON 1RU vOLT

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1RU vOLT

- General Info
  - Dimensions
  - Environmental compliance
  - Power Supply & Fans redundancy
- Main blocks
  - PON
  - QAX - Switching & TM device
  - CPU Device
  - Control FPGA
  - Timing Block
  - PCIe Switch
- vOLT Box PON links options
  - High Density 1RU Option 1 - 16x XGS-PON/NGPON2 links with uplink in the front
- Traffic and BW modes
- Estimated Power budget

1RU vOLT General Information

The system is a physical 1RU vOLT that is self-contained, and not part of a physical chassis system. However, this box can also be considered a line card in a virtual, scale-out system where such line cards are attached to a switch fabric

- **Environmental compliance**
  - See OCP Submittal Document Appendix A
- **Dimensions**
  - 1RU design that supports standard 19” rack deployments as well as standard 21” Open Rack and also 23” telco rack deployments.
- **Power Supply & Fans redundancy**
  - Redundant field replaceable (hotswappable) power supply and fan units
    - Power supply optional PN: Delta DPS460KBD/BE
    - Fan optional PN: Delta, GFCB0412EHS-D

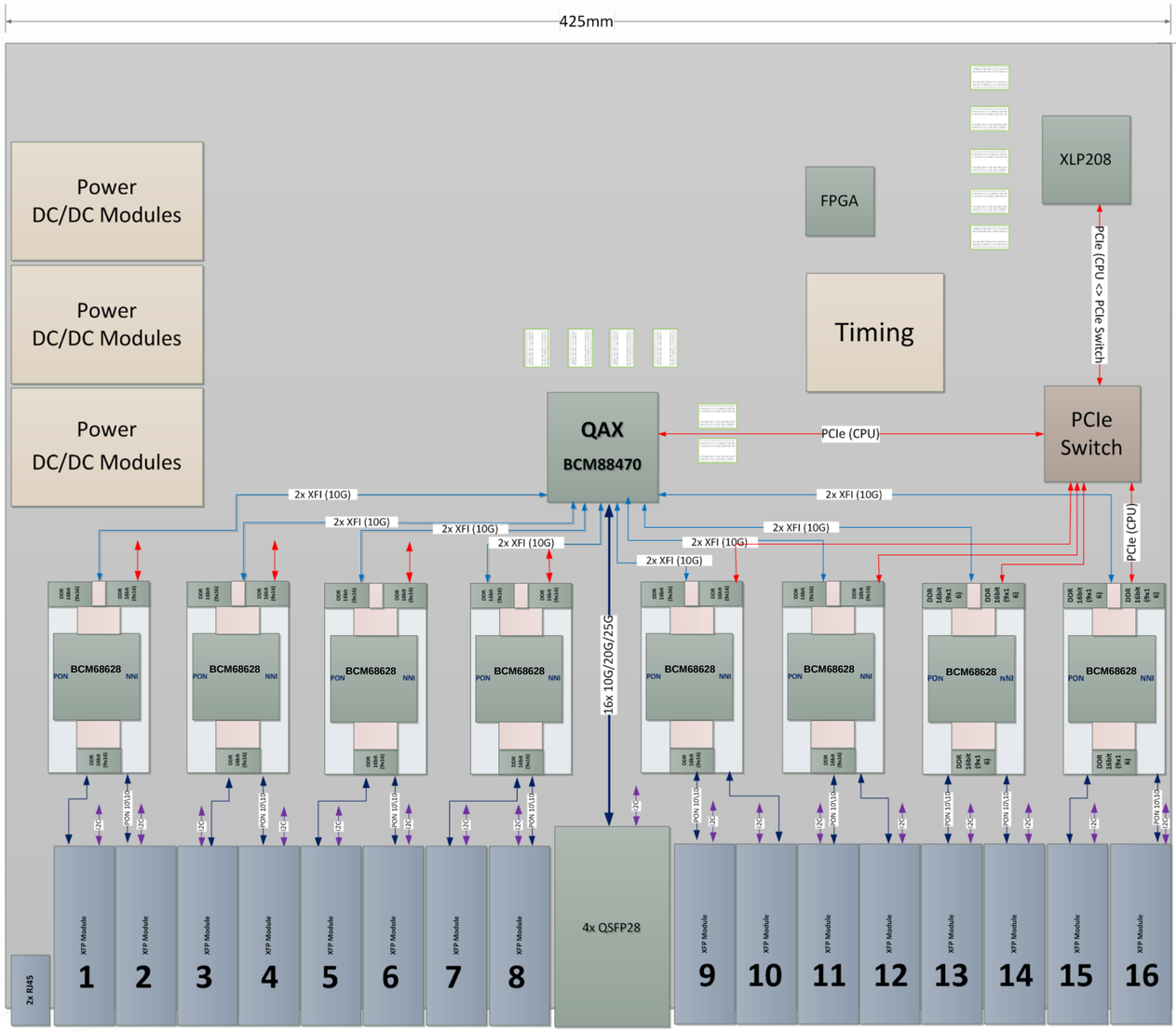
	Inches	Millimeters
Length	20.47	520
Width	17.08	433.8
Height	1.73	44
Note: Width does not include mounting ears. Depth does not include PSU handles.		

Main blocks

- PON
  - 16 ports x 10/10 XGS-PON (XFP) using the Mable (BCM68258) Chip
- QAX - Switching & TM device
  - Supports up to 300GB traffic (meets all flexible vOLT various link requirements)
  - Requires total of only 6x DDR4 devices
  - Uplink NNI – using 2x2 QSFP28 – already taking in considerations the uplink redundancy needs
- CPU
  - Using BRCM XLP208 chip
    - Memory: DRAM - 2GByte DDR3 72bit, NAND Flash + SDIO
    - Management: PCIe gen 2.0 + SPI
- Control FPGA
  - Serves for general ‘glue logic’ applications
    - For example: I2C control, LEDs, Interrupts + I/O expender, Fan and PS control, Power sequencing,
  - FPGA device (example PN): XC3S700AN-4FGG484C
- Timing Block
  - System clock driver (provides all reference clocks to all blocks) - Supporting 8KHz, Sync-E, 1588, Amd.2 and 1PPS options
  - Using Microsemi ZL30143
- PCIe Switch
  - To allow PCIe management of all main devices on-board (Maple devices + QAX)

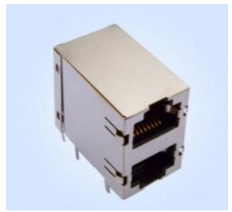
1RU vOLT 16x XGS-PON links

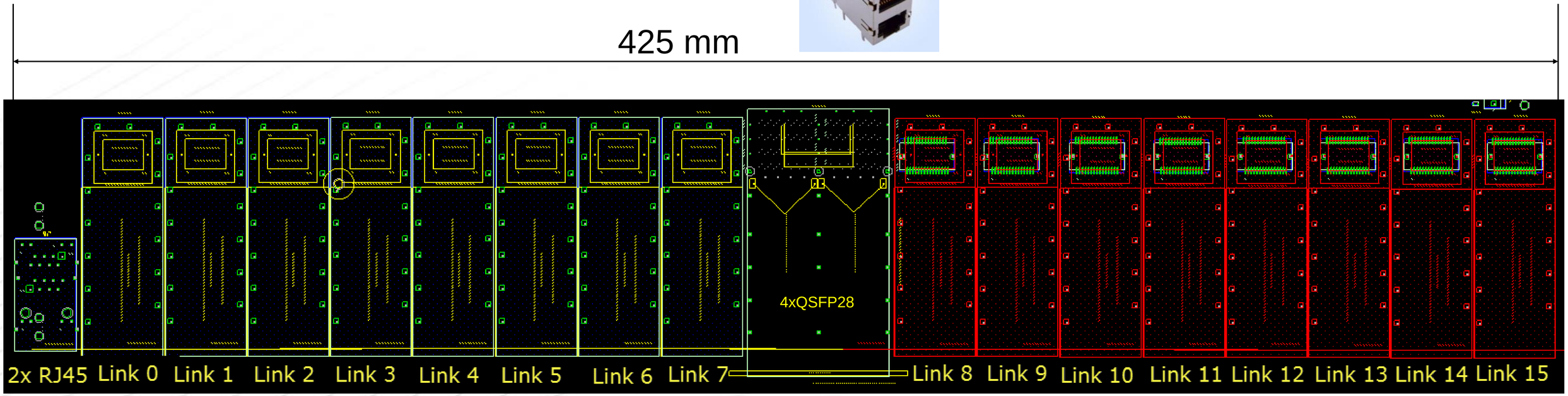
- PON Links
  - Using 8x Maple (BCM68628) blocks
  - 16x XGS-PON links
  - Optics form factor – XFP
- NNI Links
  - NNI – using 2x2 QSFP28
  - Located on the front panel



1 RU vOLT 16x XFP links

- Front Panel Includes
  - 16x XFP form factor xPON links
    - XGS-PON or NGPON2 or XGPON1
  - NNI Uplink – using 4x QSFP28 (supporting redundancy)
  - User ports – 2x RJ45 stacked





3D simulation - 16x XFP links

- 1RU vOLT