PTP 820 Product Hot sheet:

Breakthrough capacity and cost effectiveness in licensed microwave, a single platform serving all radio transport requirements

Initial Pitch (Hook)

- Licensed frequency bands 6 - 42GHz
- 1 gigabits radio capacity with high spectral efficiency
- Up to 2048 QAM, with 11-step hitless and errorless Adaptive Coding & Modulation (ACM) for high reliability
- Dual core PTP820C, enabled the secondary core with remote access with software key activation.
- Up to 80 MHz bandwidth supported
- Industry leading system Gain
- Integrated Ethernet Switch, MEF Carrier Ethernet 2.0 compliant, MPLS-TP-ready
- Header De-duplication for additional capacity boost
- Intelligent service-centric management utilizing Hierarchical QoS and advanced OA&M capabilities
- Carrier-grade service resiliency (G.8032, MSTP)
- ITU-T Y.1731 Performance Management – MEF 35
- Integrated synchronization solution: Native/SyncE/IEEE 1588v2
- Low Latency with unique frame cut-through for latency sensitive services
- TDM and/or packet supporting legacy services and evolution to all-packet

Market Segments

- Service Providers (Wireless and wireline Service Providers)
- Industrial Communications (Oil and Gas, Manufacturing, Transportation, Utilities)
- State and Local Government (Public Safety, Rural Connection)
- Enterprise Private Networks (Healthcare, Education, Hospitality)
- Federal Defense (Military/NATO, Border Protection)

Questions (Probing)

- **Service Providers**
  - What is the link throughput and availability required to support your network?
  - What is the frequencies do you use? License or unlicensed?
  - How do you serve high- revenue enterprise customers currently unreachable by fiber?
  - How long does it take from order to revenue for a new enterprise customer not currently served by fiber?
- **Industrial Communications**
  - How reliable is required to support data or video surveillance for your production site?
  - Do you see more throughput required in future? Is there a plan to expand the use of video beyond high production sites?
  - Do you prefer to have a privately owned network vs. carrier network?
  - Do you have a disaster preparedness plan?
- **State and Local Government**
  - How much are you spending on leased lines?
  - What is your timeline for migrating from traditional TDM to an IP network?
  - Do you see an increase in demand for capacity in your network because of high quality video used for evidentiary purposes?
  - Do you prefer to have a privately owned network?
- **Enterprise Private Networks**

- How much are you spending on leased lines?
- Do you prefer to have a privately owned network vs. carrier network?
- Do you need a reliable high throughput link between your branch office and headquarter?
- **Federal Defense**
  - How much are you spending on leased lines (T1/E1, analog, frame relay, etc.…)?
  - What is your backhaul plan for your video surveillance (asset protection and personnel safety) of remote areas of operation?
  - What frequency you are using? NTIA dedicated 7/8 GHz or FCC 6 – 38 GHz?
  - What is your concern on security, do you need data encryption on microwave backhaul, such as FIPS-140-2?

Key Selling Point: PTP820 offers the best

RADIO

- 6 – 42 GHz
- 1 Gbps with single unit
- High spectral utilization: QPSK to 2048 QAM w/ACM
- 1+0 to 4+0, 1+1/2+2 HSB, E/W
- 2x2 / 4x4 LoS MIMO
- XPIC

ETHERNET

- MTU – 9600 Bytes
- Quality of Service with Multiple Classification criteria (VLAN ID, p-bits, IPv4 DSCP, IPv6 TC, MPLS EXP)
- Hierarchical QoS – high service granularity*
- Frame Cut Through – controlled latency and PDV for delay sensitive applications layers (L2,MPLS, L3,L4, Tunneling – GTP for LTE, GRE)

- Network Resiliency - G.8032 and Multiple Spanning Tree Protocol (MSTP)*
- Ethernet OAM – EFM (IEEE 802.3ah), CFM (IEEE 802.1ag), ITU-T Y.1731*

SYNCHRONIZATION

- SyncE (ITU-T G.8261, G.8262)
- SSM/ESMC Support for ring/mesh applications (ITU-T G.8264)
- SyncE Regenerator mode, providing PRC grade (ITU-T G.811) performance for smart pipe applications.
- IEEE-1588

STANDARDS

- MEF with Carrier Ethernet 2.0
- Supported Ethernet Standards
- 10/100/1000base-T/X (IEEE 802.3)
- Ethernet VLANs (IEEE 802.3ac)
- Virtual LAN (VLAN, IEEE 802.1Q)

- Class of service (IEEE 802.1p)
- Provider bridges (QinQ – IEEE 802.1ad)
- Link aggregation (IEEE 802.3ad)
- Auto MDI/MDIX for 1000baseT
- RFC 1349: IPv4 TOS
- RFC 2474: IPv4 DSCP
- RFC 2460: IPv6 Traffic Classes

TECHNICAL SPECIFICAITON

- Environmental Specifications:
- -33°C to +55°C (-45°C to +60°C extended)
- Power Input Specifications Standard Input: -48 VDC DC Input range: -40 to -60 VDC

*-future release

Benefits

Service Providers	State and Local Government	Industrial Communications	Enterprise Private Networks	Federal Defense
high link availability with licensed frequency, no worry about interference	Reduce operating budgets by eliminating leased lines	high reliable, high capacity licensed backhaul, meet the need for high resolution video surveillance need	Reduce operating budgets by eliminating leased lines	Encrypted link, FIPS-140 validation
provide highest capacity need	All indoor configuration with full redundancy, provide easy access and high system resilience.	Enable higher-capacity, reliable communications from one facility to another facility	Increase intra- and inter-department collaboration	Increase personnel safety with real-time video and voice communications to remote areas
Generate new revenue sources by share the backhaul with third party via H-QoS	Hybrid radio support both TDM and IP, provide smooth migration from E1/T1 to all IP	provide uninterrupted communications for mission-critical operations	Cost-effective delivery of on-demand and HD video	hybrid link, provide smooth migration path from TDM to IP
full outdoor, most cost-effectively solution with future prove	Encryption on both user traffic and network management data, with security management.	Cost effective solution, upgrade to higher capacity when needed.	Increase personnel safety with real-time video and voice communications to remote areas	Reduce operating budgets by eliminating leased lines