ePMP[™] Force 180 Integrated Radio

The ePMP Force 180 is the second generation of ePMP Integrated Radio Modules. It has the exceptional reliability and quality that users have come to expect from the ePMP product line and adds some significant performance enhancements.

This radio comes in a small, sleek form factor but delivers high performance. The antenna gain is increased by 3 dB to 16 dBi which will provide a 40% increase in range. It comes equipped with a Gigabit Ethernet port so that nothing will limit this product in delivering the maximum throughput. The radio module is powered by PoE and the Ethernet port has the unique capability of being powered from a PoE injector that conforms to standard pinouts or from a PoE injector that conforms to Cambium pinouts. This makes it possible to upgrade existing radio locations to the Force 180 without changing the PoE injector. It also includes an adjustable mounting bracket that eases the task of installing and properly aligning the radio.

All the unique advantages of ePMP software such as eFortify[™] and eCommand[™] are available with the Force 180. eFortify enhances the performance of the ePMP 1000 in high noise environments. eCommand provides a suite of management features and tools to assist network operators in planning, provisioning and monitoring of their network. The ePMP Force 180 Integrated Radio is a compact and powerful platform that can operate as an Access Point, Subscriber Module or PTP radio.

MAIN DIFFERENTIATORS

GROWTH AND SCALABILITY The ePMP 1000 delivers high capacity and reliable connectivity right from the start. As a provider's business grows, it can expand its network while ensuring resiliency and increasing profitability.

QUALITY OF SERVICE (QOS) allows you to confidently offer triple play services – VoIP (Voice over IP), video and data. Providing your customers with excellent service quality ensures their continued loyalty and transforms them into advocates, helping WISPs and enterprises expand their business.

PROVEN RELIABILITY has created an unsurpassed connectivity standard in many industries that depend on fixed wireless broadband. Our products undergo rigorous testing and are made from high-quality components.

POWERFUL FEATURES

The Cambium Networks ePMP Force 180 delivers more than 200 Mbps of real user throughput. Using 2x2 MIMO- OFDM technologies, ePMP deployments achieve industry leading data rates.

The ePMP Force 180 Integrated Radio can be configured as a Subscriber Module, an unsynchronized Access Point or a Backhaul radio. This radio will function as a client to an ePMP GPS Synchronized Radio in either a Point-to- Multipoint (PMP) or Point-to-Point (PTP) deployment forming a GPS Synchronized solution.

SPECIFICATIONS

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Channel Sosching Configurable on SMHz Internents Frequency range 5 GHz 400 - 5970 MHz (cract frequencies as allowed by local regulations) Channel Width 5 J 10 120 J 40 MHz INTERFACE MCL Media Access Control Layer MCL Media Access Control Layer Cambium Proprietary Postcol Lyser Candibum Proprietary MCL Media Access Control Layer Candibum Proprietary Protocols Used IP/40/PFC Usel Stack/, UDD RTCP, ICMP. SMMP/42, NTP. STP. IGMP, SSH Protocols Used IP/41/PFG, UBL Stack, UDD RTCP, ICMP. SMMP/42, NTP. STP. IGMP, SSH Network Management IP/41/PFG, UBL Stack, UDD RTCP, ICMP. SMMP/42, NTP. STP. IGMP, SSH Network Management IP/41/PFG, UBL Stack, UDD RTCP, ICMP. SMMP/42, NTP. STP. IGMP, SSH Normal Becarge Statistity KrSD = -93 dBm In MCSIS = -72 dBm (per branch) VILAN 02.10 with 80216 priority MCSD = -93 dBm In MCSIS = -72 dBm (per branch) KrSD = -93 dBm In MCSIS = -72 dBm (per branch) Mortial Becarge Statistity MCSD = -93 dBm In MCSIS = -72 dBm (per branch) Mortial Statisco Priority MCSD = 90 dBm (per branch) Mortial Becarge Statistity MCSD = -90 dBm (per branch) Mortial Becarge Statistity MCSD = 00	Model Number	C058900P072A (US/FCC), C050900P071A (EU/ROW), (See below for a complete list of part numbers for ordering)	
Prequency range 5 GH2 4010 - 5970 MH2 (exact. frequencies as allowed by local regulations) Channel Width 5 10 120 140 MH2 INTERFACE Cambium Proprietary Physical Layer 2 24 MM0/0FDM Blement Interface Cimbium Proprietary Polocods Used IPv4/Pv6 (Dual Stock), UDP, TCP, ICMP, SMMP-2c, NTP, STP, ICMP, SSH Network Management IPv4/Pv6 (Dual Stock), UDP, TCP, ICMP, SMMP-2c, NTP, STP, ICMP, SSH Network Management IPv4/Pv6 (Dual Stock), UDP, TCP, ICMP, SMMP-2c, NTP, STP, ICMP, SSH Network Management IPv4/Pv6, LTTPS, SMMP-2c, SSH, Cambium Networks CnMaestro ^m VLN 0820 Used PEFFORMANCE Stock Unite 8022 priority Norminel Reserver Schellshifty MCS0 = 93 dBm to MCSIS = -92 dBm (per branch) Norminel Reserver Schellshifty MCS0 = 93 dBm to MCSIS = -92 dBm (per branch) Norminel Reserver Schellshifty MCS0 = 93 dBm to MCSIS = -92 dBm (per branch) Norminel Reserver Schellshifty MCS0 = 93 dBm to MCSIS = -92 dBm (per branch) Norminel Reserver Schellshifty MCS0 (BPSK) In MCSIS (640AM 5/6) Qualation Levels Oblighty MCS0 (BPSK) In MCSIS (640AM 5/6) Qualation Levels Oblighty (Volec, High, Lowy with padet dassfination by DSCP, COS, V	SPECTRUM		
Chemed Width \$10120140 MHz INTERFACE Cambium Proprietary Physical Layer 2.2 MMN/07D M Ethermet Interface 0/100/000808.cr,Compatible with Cambium Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 7.8.8, Return = 4.8.5) and Standard Pic pinouts (V = 4.8.5, Return = 7.8.8) Protocols Used IPv4/Pic (Dual Stack), UDP TCP, ICMP, SNMP-Vzc, NTP, STP, IGMP, SSH Network Management IPv4/Pic (Dual Stack), UDP TCP, ICMP, SNMP-Vzc, NTP, STP, IGMP, SSH Notional Receive System Vity McS0 9.00 Bmt to MCS15 = 7.20 dBm (por branch) Normial Receive System Vity McS0 = 9.00 Bmt to MCS15 = 7.90 dBm (por branch) McS0 = 9.00 Bmt to MCS15 = 7.90 dBm (por branch) Normial Receive System Vity McS0 = 9.00 Bmt to MCS15 = 6.90 dBm (por branch) McS0 = 9.00 Bmt to MCS15 (64.00.49 S/6) Normial Receive System Vity McS0 = 9.00 Bmt to MCS15 (64.00.49 S/6) McS0 = 9.00 Bmt to MCS15 (64.00.49 S/6) Normial Receive System Vity McS0 (S (PSIS) to MCS15 (64.00.49 S/6) McS0 = 9.00	Channel Spacing	Configurable on 5 MHz increments	
INTERFACE MAC (Media Access Control) Layer Cambium Proprietary Physical Layer 2.2 MIMQ/OFDM Ethernel Interface (10/00/00088-ET, Compatible With Cambium PoE pinou's (V+ = 7.8 8, Return = 4.8.5) and Standard PoE pinou's (V+ = 7.8.8, Return = 4.8.5) and Standard PoE pinou's (V+ = 5.8.5) and Standard PoE pinou's (V+ = 5.8.5) and Standard PoE pinou's (V, NoV = V= 9.8.5) and Standard PoE pinou's (V, NoV = V= 9.8.5) and Standard PoE pinou's (V, NoV = V= 9.8.5) and Standard PoE pinou's (V, NoV = V= 9.8.5) and Standar	Frequency range	5 GHz: 4910 – 5970 MHz (exact frequencies as allowed by local regulations)	
AC (Media Access Control) LayerCambium ProprietaryPhysical Layar2x2 MMQ/DFDMEthemet Interface10/00/100038exFL Compatible with Cambium PoE pinouts (V+ 7 & 8, Return = 4 & 5) and Standard PoE pinouts (V+ = 4 & 5, Return = 7 & 8, 0)Potocols UsedIPv4/IPv6 (Cual Stack), UDP, CPJ (CMP, SNMPv2c, XTP, STP, IGMP, SSHNetwork ManagementIPv4/IPv6 (Dual Stack), UDP, CPJ (CMP, SNMPv2c, XTP, STP, IGMP, SSHVLAN02.10 with 8021p priorityPERFORMANCEVAR0YesNorrief Receive ScissibilityMSO = -93 dBm to MCSIS = -52 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Norrief Receive ScissibilityMSO = -90 dBm to MCSIS = -69 dBm (per branch)Interstore Range1-16 to -30 dBm combined, to regional EIRP Imit) (1 dB Interval)Interstore Range1-16 to -30 dBm combined, to regional EIRP Imit) (1 dB Interval)Interstore Range1-16 to -20 dBm combined, to regional EIRP Imit) (1 dB Interval)Interstore Range1-16 to -20 Cle (CCC FE	Channel Width	5 10 20 40 MHz	
Physical Laver 2x2 MIMO/OFDM Ethernet Interface 10/100/1000BaseT, Compatible with Cambium PoE pinouts (V+ = 7 & 8, Returm = 4 & 5) and Standard PoE pinouts (V+ = 4 & 8, Returm = 7 & 8) Protocois Used IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, SMM-Vzc, NTP, STP, IGMP, SSH Network Management IPv4/IPv6, HTTPS, SMM-Vzc, SSH, Cambium Networks Cn9asestro ^m VLN IDV2 (Dual with 8021c) priority PERFORMANCE Yes ARQ Yes Nominal Receive Schriftivity MCSO = -90 dBm to MCSIS = -52 dBm (per branch) Nominal Receive Schriftivity MCSO = -90 dBm to MCSIS = -69 dBm (per branch) Nominal Receive Schriftivity MCSO = -90 dBm to MCSIS = -69 dBm (per branch) Nominal Receive Schriftivity MCSO = -90 dBm to MCSIS = -69 dBm (per branch) Nominal Receive Schriftivity MCSO = -90 dBm to MCSIS = -69 dBm (per branch) Nodulation Levels (Adaptive) MCSO = -90 dBm to MCSIS = -69 dBm (per branch) Intere Vere Receive Schriftivity MCSO = -90 dBm to MCSIS = -69 dBm (per branch) Intere Vere Receive Schriftivity (Vore, High, Lowy with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Braadcast, Multicast and Station Priority Intere Vere Priority 17 to -50 dBm combined, to regional ERP limit) (1 dB interval)	INTERFACE		
Ethemet Interface ID/100/000BaseT, Compatible with Cambium PoE pinouts (V* = 7 & 8, Return = 4 & 5) and Standard PoE pinouts (V* = 4 & 5, Return = 7 & 8) Protocol Used IPv4/IPv6 (Oual Stack), UDP, TCP, ICMP, SNMPv2c, VITP, STP, IGMP, SSH Network Management IPv4/IPv6 (Oual Stack), UDP, TCP, ICMP, SNMPv2c, VITP, STP, IGMP, SSH Network Management IPv4/IPv6, HTTPs, SNMPv2c, SSH, Cambium Networks CnMaestro" VLAN 802.00 with 802.01 priority PERFORMANCE X AR0 Yes Nominal Receive Sensitivity (WFEC) ig 200MHz Channel MCS0 = -93 dBm to MCSI5 = -72 dBm (per branch) Nominal Receive Sensitivity (WFEC) ig 200HHz Channel MCS0 = -90 dBm to MCSI5 = -69 dBm (per branch) Nominal Receive Sensitivity (WFEC) ig 200HHz Channel MCS0 = -90 dBm to MCSI5 = -69 dBm (per branch) Nordial tevels (Adaptive) MCS0 = -90 dBm to MCSI5 = -69 dBm (per branch) Modulation Levels (Adaptive) MCS0 = -90 dBm to MCSI5 = -69 dBm (per branch) Nordinal Receive Sensitivity (WFEC) ig 200HHz Channel Three level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Singe Sappression LINK BUDGET Integrated Antenna Integrated Antenna Surge Sappression 2 Joule Integrated Antenna Integrated Antenna </td <td>MAC (Media Access Control) Layer</td> <td>Cambium Proprietary</td>	MAC (Media Access Control) Layer	Cambium Proprietary	
(V+ a & S, Retur = 7.8 s) Protocols Used (Px4/Px6 C Qual Stack), UDP, TCP, ICMP, SNMP/zC, STP, IGMP, SSH Network Management (Px4/Px6, HTPs, SNMP/zC, SSH, Cambium Networks CnMaestro [®] VLAN 000000000000000000000000000000000000	Physical Layer	2x2 MIMO/OFDM	
Network ManagementIPv4/IPv6, HTPs, SNMPv2c, SSH, Cambium Networks CnMaestro"VLAN80210 with 8021b priorityPERFORMANCEARQYesNominal Receive Sinsitivity (WFEC) 60 200MHz Channel)MCS0 = -93 dBm to MCS15 = -72 dBm (per branch)Nominal Receive Sinsitivity (WFEC) 60 200MHz Channel)MCS0 = -93 dBm to MCS15 = -69 dBm (per branch)Nominal Receive Sinsitivity (WFEC) 60 40MHz Channel)MCS0 (BPSK) to MCS15 (64QAM 5/6)Quality of ServiceThree level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Staten PriorityIntegrated Antenna Peak Gain16 dBiMaximum Transmit Power30 dBm combined, to regional EIRP limit) (1 dB interval)Integrated Antenna Peak GainIntegrated AntennaSurge Suppression2 Joule integratedStroge Suppression2 Joule integratedFerviormentalIP55Imperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (11 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)124 x 251 x 113 cm (49 x 9.9 x 4.7 in) - with mounting bracket attachedPer Cosumption10 Waximum, 5 W Typical	Ethernet Interface		
VLNN80210 with 8021p priorityPERFORMANCEARQYesNominal Receive Sinstituty (WFEC) 60200Hz Channel)MCS0 = -93 dBm to MCS15 = -72 dBm (per branch)Nominal Receive Sensitivity (WFEC) 6020Hz Channel)MCS0 = -90 dBm to MCS15 = -69 dBm (per branch)Modulation Levels (Adaptive)MCS0 (BPSK) to MCS15 (64QAM 5/6)Quality of ServiceThree level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and SintervityIntegrated AntennaFor 30 dBm combined, to regional EIRP limit) (1 dB interval)Integrated Antenna Peak Gain16 dBIMatinum Tansmit Power30 dBm combined (subject to regional regulatory restrictions)PHYSICALIntegrated AntennaSurge Suppression10 clu letegratedSinge Suppression-90 clu + 60°C (-22°F to +140°F)Weight0.50 kg (11 lb.) (Includes mounting bracket)Weight0.50 kg (11 lb.) (Includes mounting bracket)Wind Survival14 km/hour (90 mi/hour) with anternaDirensions (h x w x d)14 km/hour (90 mi/hour) with induded clamp ; up to 22.51 n (5.7 cm) with larger clamp.Power Consumption10 W Maximum, 5 W Typical	Protocols Used	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, SNMPv2c, NTP, STP, IGMP, SSH	
PERFORMANCE AR0 Yes Nominal Receive SINSIVITY (WFEO)@ 200HHz Channel MCS0 = -93 dBm to MCS15 = -72 dBm (per branch) Nominal Receive SINSIVITY (WFEO)@ 200HHz Channel MCS0 = -90 dBm to MCS15 = -69 dBm (per branch) Modulation Levels (Adaptive) MCS0 (BPSK) to MCS15 (640AM 5/6) Quality of Service Three level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority LINK BUDGET Tarsmit Power Range -17 to +30 dBm (combined, to regional EIRP limit) (1 dB interval) Integrated Antenna Peak Gain 16 dBi Maximum Transmit Power 90 dBm combined (subject to regional regulatory restrictions) PHYSICAL Antenna Connection Integrated Antenna Surge Suppression 2 Joule Integrated Antenna Surge Suppression 2 Joule Integrated Proy -0°C to +0°C (-22°E to +140°F) Weight 0.50 kg (11b.) (includes mounting bracket) Wind SurvVal 145 km/hour (90 mi/hour) with antenna Dimension; (h x w xd) 124 x 51 x 19 cm (49 x 9 y x4.7 in) - with mounting bracket atached Pie Diameter Range 1-16 in (c5 - 41 cm) with included clamp; up to 225 in (5.7 cm) with linger clamp <td>Network Management</td> <td>IPv4/IPv6, HTTPs, SNMPv2c, SSH, Cambium Networks CnMaestro™</td>	Network Management	IPv4/IPv6, HTTPs, SNMPv2c, SSH, Cambium Networks CnMaestro™	
AR0YesNominal Receive sSnsitivity (WFEG) 2000Hz ChannelGCS0 -93 dBm to MCS15 -72 dBm (per branch)Nominal Receive Sensitivity (WFEG) 40MHz ChannelMCSO -90 dBm to MCS15 -69 dBm (per branch)Modulaton Levels (Adaptive)MCS0 (BPSK) to MCS15 (640AM 5/6)Quality of ServiceThree level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station PriorityLINK BUDGETTo +30 dBm (combined, to regional EIRP limit) (1 dB interval)Integrated Antenna Peak Gain16 dBiMarimum Transmit Power30 dBm combined (subject to regional regulatory restrictions)PHYSICALAntenaConnectionIntegrated AntennaSurge Suppression2 Joule Integrated AntennaStarfor Cyc2/F to 1400°F)Yeight-90 (Sta (11b) (Includes mounting bracket)Yeight05 (Sta (11b) (Includes mounting bracket)Yeight12 Kar/Jan (24 X S13 X 119 m (44 X 95 X 47 X 1n) - with mounting pracket atachedPhensens (nx w x d)12 Kar/Jan (24 X 191 - with mounting bracket atached)Phensens (nx w x d)12 Kar/Jan (34 X 95 X 47 X 1n) - with mounting pracket atachedPhensens (nx w x d)12 Kar/Jan (34 X 95 X 47 X 1n) - with mounting pracket atachedPhensens (nx w x d)12 Kar/Jan (34 X 95 X 47 X 1n) - with mounting pracket atachedPhensens (nx w x d)12 Kar/Jan (34 X 95 X 47 X 1n) - with mounting pracket atachedPhensens (nx w x d)12 Kar/Jan (34 X 95 X 47 X 1n) - with mounting pracket atachedPhensens (nx w x d)12 Kar/Jan (34 X 95 X 47 X 1n) - with mounting pracket atached <td>VLAN</td> <td>802.1Q with 802.1p priority</td>	VLAN	802.1Q with 802.1p priority	
Nominal Receive sSnsitivity (W/FEC)@ 200MHz ChannelMCSD = -93 dBm to MCSI5 = -72 dBm (per branch)Nominal Receive Sensitivity (W/FEC)@ 40MHz ChannelMCSD = -90 dBm to MCSI5 = -69 dBm (per branch)Modulation Levels (Adaptive)MCSD (BPSK) to MCSI5 (640AM 5/6)Quality of ServiceThree level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority (Voice, High, Low) with antenna <tr< td=""><td>PERFORMANCE</td><td></td></tr<>	PERFORMANCE		
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(w/FEC)@ 40MHz ChannelPICSO = -90 dBint or PICSI S = -69 dBint (VEC Brack)Modulation Levels (Adaptive)MCS0 (BPSK) to MCSIS (64QAM S/6)Quality of ServiceThree level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station PriorityLINK BUDGETTransmit Power Range-17 to +30 dBm (combined, to regional EIRP limit) (1 dB interval)Integrated Antenna Peak Gain16 dBiMaximum Transmit Power30 dBm combined (subject to regional regulatory restrictions)PHYSICALStation PriorityAntenna ConnectionIntegrated AntennaSurge Suppression2 Joule IntegratedEnvironmentalIPS5Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (11 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) – with mounting bracket attachedPole Diameter Range1-1.6 in (2.5 - 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	Nominal Receive sSnsitivity (w/FEC) @ 200MHz Channel	MCS0 = -93 dBm to MCS15 = -72 dBm (per branch)	
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Integrated Antenna Peak Gain16 dBiMaximum Transmit Power30 dBm combined (subject to regional regulatory restrictions)PHYSICALAntenna ConnectionIntegrated AntennaSurge Suppression2 Joule IntegratedEnvironmentalIP55Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)1.2.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) - with mounting bracket attachedPower Consumption10 W Maximum, 5 W Typical	LINK BUDGET		
Maximum Transmit Power30 dBm combined (subject to regional regulatory restrictions)PHYSICALAntenna ConnectionIntegrated AntennaSurge Suppression2 Joule IntegratedEnvironmentalIP55Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) – with mounting bracket attachedPower Consumption10 W Maximum, 5 W Typical	Transmit Power Range	-17 to +30 dBm (combined, to regional EIRP limit) (1 dB interval)	
PHYSICALAntenna ConnectionIntegrated AntennaSurge Suppression2 Joule IntegratedEnvironmentalIP55Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) – with mounting bracket attachedPole Diameter Range1 – 1.6 in (2.5 – 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	Integrated Antenna Peak Gain	16 dBi	
Antenna ConnectionIntegrated AntennaSurge Suppression2 Joule IntegratedEnvironmentalIP55Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)1.2.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) – with mounting bracket attachedPole Diameter Range1 – 1.6 in (2.5 – 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower ConsumptionUW Maximum, 5 W Typical	Maximum Transmit Power	30 dBm combined (subject to regional regulatory restrictions)	
Surge Suppression2 Joule IntegratedEnvironmentalIP55Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) – with mounting bracket attachedPole Diameter Range1 – 1.6 in (2.5 – 4.1 cm) with included clamp; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	PHYSICAL		
EnvironmentalIP55Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) - with mounting bracket attachedPole Diameter Range1 - 1.6 in (2.5 - 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	Antenna Connection	Integrated Antenna	
Temperature-30°C to +60°C (-22°F to +140°F)Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) - with mounting bracket attachedPole Diameter Range1 - 1.6 in (2.5 - 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	Surge Suppression	2 Joule Integrated	
Weight0.50 kg (1.1 lb.) (includes mounting bracket)Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) - with mounting bracket attachedPole Diameter Range1 - 1.6 in (2.5 - 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	Environmental	IP55	
Wind Survival145 km/hour (90 mi/hour) with antennaDimensions (h x w x d)12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) - with mounting bracket attachedPole Diameter Range1 - 1.6 in (2.5 - 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clampPower Consumption10 W Maximum, 5 W Typical	Temperature	-30°C to +60°C (-22°F to +140°F)	
Dimensions (h x w x d) 12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) - with mounting bracket attached Pole Diameter Range 1 - 1.6 in (2.5 - 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clamp Power Consumption 10 W Maximum, 5 W Typical	Weight	0.50 kg (1.1 lb.) (includes mounting bracket)	
Pole Diameter Range 1 – 1.6 in (2.5 – 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clamp Power Consumption 10 W Maximum, 5 W Typical	Wind Survival	145 km/hour (90 mi/hour) with antenna	
Power Consumption 10 W Maximum, 5 W Typical	Dimensions (h x w x d)	12.4 x 25.1 x 11.9 cm (4.9 x 9.9 x 4.7 in) – with mounting bracket attached	
	Pole Diameter Range	1 – 1.6 in (2.5 – 4.1 cm) with included clamp ; up to 2.25 in (5.7 cm) with larger clamp	
Input Voltage 10 to 30 V	Power Consumption	10 W Maximum, 5 W Typical	
	Input Voltage	10 to 30 V	

SPECIFICATIONS

SECURITY	
Encryption	128-bit AES (CCMP mode)
CERTIFICATIONS	
FCCID	Z8H89FT0015
Industry Canada Cert	109W-0015
CE	5.4 GHz: EN 301 893 V2.1.1 5.8 GHz: EN 302 502 V2.1.1
PARAMETER	
Frequency Range	4910 – 5970 MHz
Antenna Type	Integrated
Typical Gain	16 dBi
3db Beamwidth-Azimuth	15°
3db Beamwidth-Elevation	30°
Polarization(s)	Dual Linear, H/ V
Front-to-Back Isolation	>20 dB
Cross Polarization	15 dB

EPMP 5 GHZ FORCE 180 PART NUMBERS:

ORDERING PART NUMBER	DESCRIPTION	MODEL NUMBER FOR REGULATORY PURPOSES
C050900C071A	ePMP 5GHz Force 180 Integrated Radio (ROW) (no cord)	C050900P071A
C050900C171A	ePMP 5GHz Force 180 Integrated Radio (ROW) (US cord)	C050900P071A
C050900C271A	ePMP 5GHz Force 180 Integrated Radio (ROW) (EU cord)	C050900P071A
C050900C471A	ePMP 5GHz Force 180 Integrated Radio (ROW) (India cord)	C050900P071A
C050900C571A	ePMP 5GHz Force 180 Integrated Radio (ROW) (China/ANZ cord)	C050900P071A
C050900C671A	ePMP 5GHz Force 180 Integrated Radio (ROW) (Brazil cord)	C050900P071A
C050900C073A	ePMP 5GHz Force 180 Integrated Radio (EU) (EU cord)	C050900P071A
C058900C072A	ePMP 5GHz Force 180 Integrated Radio (FCC) (US cord)	C058900P072A

SPECIFICATIONS

5 GHz ePMP Force 180 Integrated Antenna Azimuth Patterns

H-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH



5 GHz ePMP Force 180 Integrated Antenna Elevation Patterns

H-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



V-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH



V-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



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