

## الحاقیه شماره ۲

### اصلاحیه پیوست شماره ۵: شرح مشخصات تجهیزات

Item	PTP Link( Type A)	PTP Link( Type B)
Operating Mode	PTP(Suitable for backhaul)	PTP
Frequency Band	5.1-5.9 GHz	5.1-5.9 GHz
Duplexing Technology	TDD	TDD
Channel size	10/20MHz (5/40 MHz Optional)	5/ 10/ 20 (40MHz Optional)
Modulation	OFDM -2x2 MIMO (BPSK / QPSK/ 16QAM/ 64QAM)	OFDM (BPSK / QPSK/ 16QAM/ 64QAM)
Transmit Power	High power with configurable EIRP limit	-
Antenna	Dual Polarized Antenna (Detached )	Single Polarized Antenna (attached /detached(connectroized))
Max Throughput	20 Mbps data rate at distance of over 30 Km ( Extendable to 50 Mbps by license only)	10 Mbps data rate at distance of over 10 Km ( Extendable to 20 Mbps by license only)
IDU to ODU Interface	RJ45 10/100 Mbps Ethernet (Port #1 with PoE in & Data. Port #2 with PoE out & Data); <b>Port#2 is optional but preferred</b>	One RJ45 10/100 Mbps Ethernet (Port #1 with PoE & Data(802.3af(this protocol is optional)). )
Water and Dust Proof	IP67	IP67
Operating Temperature	-35oC to +60oC	-35oC to +60oC
Encryption (Wireless Security)	AES 128	AES 128
QoS Support	Optional	Optional
Error Correction	FEC	FEC
Management	Telnet and SSH, Web GUI and TFTP, SNMP v1-v2c-v3 and local time- <b>Standard MIBs for 3<sup>rd</sup> party Management &amp; Monitoring software like Sloarwinds is needed</b>	
Bandwidth Allocation	Supported	Supported
Adaptive Modulation & Coding	Supported	Supported
DFS	Supported	Supported
Diversity	Optional	-
Spectrum View	Supported	Supported
VLAN Support	802.1Q: Management VLAN. Transparent, Access, Trunk and Mixed mode. VLAN Tagging .(QinQ double tagging is optional)	802.1Q: Management VLAN. Transparent, Access, Trunk and Mixed mode. VLAN Tagging. (QinQ double tagging is optional)
STP, RSTP, MSTP	Optional	Optional
Hot Standby (1+1)	Optional	Optional
ATPC	Supported	Supported
Planning Tools	Complete applicable Datasheet for Mw link planning tools like Aircom Tool (Connect) should be delivered. This data should be delivered and finalized during 1 week after ordering	
NMS Capability	FCAPS (both node and network based)	FCAPS (both node and network based)
Detached Antenna Dish gain	28/32 dBi	Minimum: 21dBi &23 dBi
type of Detached Antenna Dish	Grid antenna is preferred	Maximum Antenna size is 0.4*0.4m/0.4m diameter
Detached Antenna Dish Frequency range	5.1-5.9 GHz	5.1-5.9 GHz
3dB Beam Width for Detached Antenna	3.9-9 Degree	-
F/B for detached Antenna	40-65	-
Guaranty	minimum 3 year	minimum 3 year
Warranty	8 years	8 years

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