Hyc-ATHNL1051-45
Lite 5 GHz Outdoor MIMO HT-OFDM PTP/PTMP Ethernet Backhaul

- 5.4 ~ 5.9 GHz Operating Frequency
- MIMO HT-OFDM Modulation
- Integrated 5.4~5.9 GHz 18dbi MIMO antenna
- 7 Channel BW (5/10/15/20/30/40/52 MHz)
- Up to 268 Mbps Real TCP Throughput
- GPS Coordinates and Internet map database
- 5.2 bits/s/Hz amazing spectral efficiency

With MIMO HT-OFDM (High Throughput OFDM) technology, this radio is a high capacity PTP / PTMP backhaul for 5GHz ISM band wireless deployment. It utilizes coordinate and internet map database to show the environment and status of the link. Customers can easily figure out the linking situation of the deployed radios.

There are 7 channel BW options can be selected easily by software (5/10/15/20/30/40/52 MHz). This feature provides the flexibility of deployment channel plan in crowded city area or high capacity backhaul -- throughput up to 268Mbps.

This MIMO HT-OFDM PTP/PTMP Ethernet Backhaul has powerful security mechanism such as: WPA-PSK (TKIP) / WPA2-PSK (AES128), access control by allow/deny MAC address list, plus the proprietary protocol. This outdoor radio also supports excellent MTBF performance by IP-68 dust & water resistant ratings, integrated surge protection circuit in both radio and POE unit. All these functions make this outdoor radio much more secure and reliable.

Product Highlights

➤ **Effective spectrum utility / variable capacities with 7 channel Bandwidths**

This radio has **7 channel BWs (5/10/15/20/30/40/52 MHz)** for optional, which is adjustable via software. This function provides flexibilities of channel plan in crowded urban environment and variable capacities for different applications.

➤ **MIMO HT-OFDM technology provides amazing spectral efficiency**

Up to **5.2 bits/s/Hz** amazing spectral efficiency for all channel BW provided by the MIMO HT-OFDM technology. Work with the variable channel BW options, these two combination features provides great benefits for both crowded urban area and rural area with less interference.

■ TCP Throughput Table at different Channel BW

Channel BW (MHz)	5	10	15	20	30	40	52
Real TCP throughput (Mbps)	25	51	77	104	158	215	268
Application area	Crowded urban			Rural			

➤ **GPS Coordinates and Internet map database**

GPS Coordinates marked system and internet map database help the administrator to monitor the connection topology and link status in the PTP / PTMP network.

➤ **Robust design for harsh environment**

For complete outdoor applications, radio can balance the internal

RADIO SPECIFICATIONS	
Frequency range	5.4 ~ 5.9 GHz Optional
Channel Band Width	5 / 10 / 15 / 20 / 30 / 40 / 52 MHz
Frequency Stability	± 10 ppm
Modulation	MIMO HT-OFDM
Integrated antenna	5.4~5.9 GHz 18dbi integrated MIMO panel antenna

MCS Index	MIMO-OFDM / HT20				MIMO-OFDM / HT40			
	Data Rate (Mbps)		Tx Output Power (dBm)	Rx Sensitivity (BER $1^E10\text{-}6$)	Data Rate (Mbps)		Tx Output Power (dBm)	Rx Sensitivity (BER $1^E10\text{-}6$)
	GI=800ns	GI=400ns			GI=800ns	GI=400ns		
MCS8	6.5/13	N/A	27(±1.5)	-94/-92 dBm	13.5/27	15/30	27(±1.5)	-92/-90 dBm
MCS9	13/26	N/A	26(±1.5)	-92/-90 dBm	27/54	30/60	26(±1.5)	-89/-87 dBm
MCS10	19.5/39	N/A	26(±1.5)	-90/-87 dBm	40.5/81	45/90	26(±1.5)	-87/-83 dBm
MCS11	26/52	N/A	25(±1.5)	-87/-84 dBm	54/108	60/120	25(±1.5)	-84/-81 dBm
MCS12	39/78	N/A	24(±1.5)	-84/-81 dBm	81/162	90/180	24(±1.5)	-81/-79 dBm
MCS13	52/104	N/A	23(±1.5)	-80/-77 dBm	108/216	120/240	23(±1.5)	-78/-75 dBm
MCS14	58.5/117	N/A	23(±1.5)	-78/-75 dBm	121/242	135/270	23(±1.5)	-76/-73 dBm
MCS15	65/130	N/A	23(±1.5)	-76/-73 dBm	135/270	150/300	23(±1.5)	-74/-72 dBm

INTERFACES
10/100/1000 Base-T RJ-45 port with M25 Calbe Gland

MANAGEABILITY	
Management and Setup	Web-based (Chrome / IE 9.0 or later)
SNMP agents	MIB II
Protocol	TCP/IP, IPX/SPX, NetBEUI
Network Architecture	PTP / PTMP
Antenna Alignment	WEB GUI Local / Remote Information
Radio Locator	GPS coordinates and internet map database

Security	
Data Encryption	WPA-PSK / WPA2-PSK
Advanced Security	MAC access control / Disable SSID / Proprietary protocol

ENVIRONMENT	
Operating Temperature	-30~60 ℃
Storage Temperature	-30~70 ℃
Humidity	95% non-condensing

POWER SUPPLY & CONSUMPTION
Power Supply : AC 100-264V, 50-60Hz convert to DC 48V Adapter (Max. 45Watts) with 48VDC POE Power Consumption : 10Watts (typical) / 12 Watts (Max.) @ DC 48V

| PHYSICAL	
Dimension	230 (L) * 230 (W) *75 (H) ; mm
Weight	2.5 Kg

WARRANTY
1 YEAR

ORDERING INFORMATION	
ATHN1051-45	5.4~5.875 GHz 0.5 W Outdoor 2x2 MIMO HT-OFDM CPE with 18dbi integrated antenna, 7 software selectable channel BW.
ATHN2051-27	4.920~6.075 GHz 0.5 W Outdoor MIMO HT-OFDM PTP/PTMP Ethernet Backhaul, 7 software selectable channel BW.
ATHN2051C-27	4.920~6.075 GHz 0.5 W Outdoor MIMO HT-OFDM PTP/PTMP Ethernet Backhaul, 14 software selectable channel BW.
ATHN2051C-35	4.920~6.075 GHz 3 W Outdoor MIMO HT-OFDM PTP/PTMP Ethernet Backhaul, 14 software selectable channel BW.

■ True Value of narrow bandwidth with high spectral efficiency

1. More effective non-overlapping channels for flexible channel Plan
2. More total assumption capacity due to more effective narrow band channels in limited clear band without interferences.

Example: In a 170MHz available range with other interference source
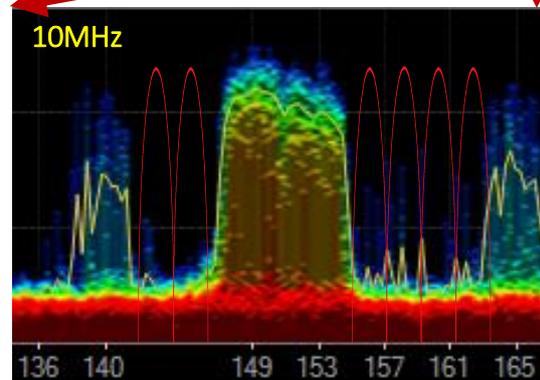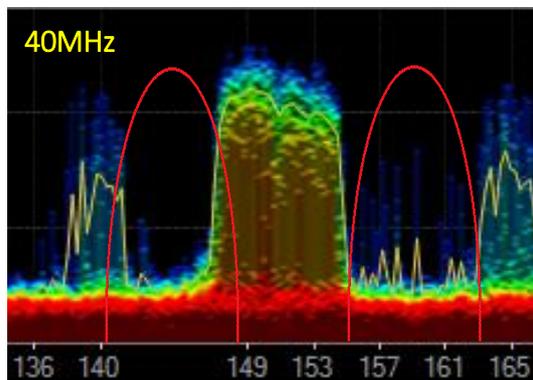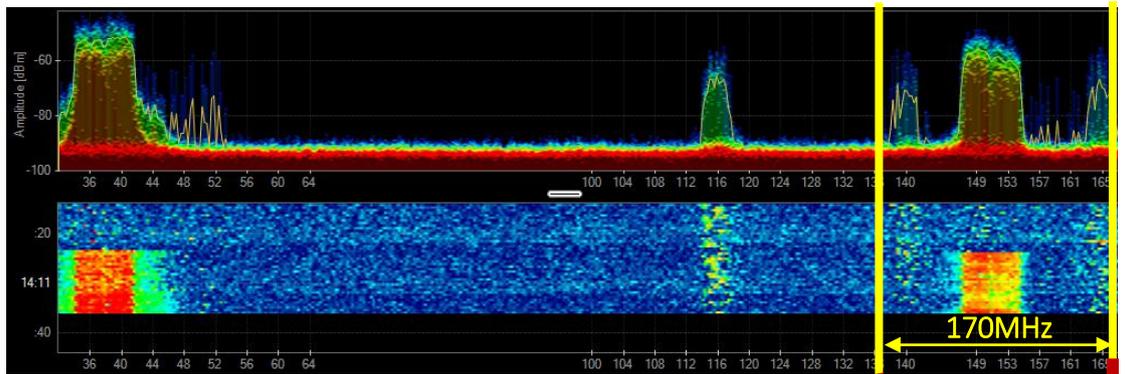
40MHz channel BW: **1 x effective channel** without interference only, total throughput < 300Mbps.

10MHz channel BW: **6 x effective channels** without interferences, each channel offers 50Mbps TCP throughput. Total throughput about 300Mbps

5MHz channel BW: **12 x effective channels** without interferences, each channel offers 25Mbps TCP throughput. Total throughput about 300Mbps.

Channel BW (MHz)	5	6	7	8	10	15	20	30	40	52
Real TCP throughput (Mbps)	25	30	35	40	51	77	104	158	215	268
Application area	Crowded urban						Rural			

Channel BW & TCP throughput list table

Built-in NMS function --- GPS Coordinates Input setting page

Local Site info -- Device name / MAC address

Remote Site info – IP address / MAC / Operation Mode / RSSI / Data Rate / Distance