typercable

HYC-ENA-MIMO PTP/PTMP Series



HYC-N1051C/T

Features:

- > PTP/ PTMP Ethernet backhaul
- > 4.920~6.075 GHz Operating Frequency
- > MIMO HT-OFDM Modulation
- > Integrated Multi-Radio Interfaces
- > ±2 ppm Frequency Stability for Mobility & NLOS
- > Fast Data Switching Technology
- > 14 Channel BW (2.5 / 3 / 3.5 / 4 / 5 / 6 / 7 / 8 / 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
- > Multi-hops repeating & Built-in NMS
- > Real Aggregate TCP Throughput \geq 320Mbps @ 4x4 Base Station
- High Efficiency in Multi-hops Repeating
 - Low Throughput dropped @ 40MHz Ch BW (≥170 Mbps @ 20 hops)
 - Short Latency increased @ 40MHz Ch BW [≤35 ms @ 20 hops]
- > IP-68 Water & Dust Resistant
- > IEC61000-4-5 Surge Protection
- > Outstanding MTBF





HYC-N2051C/T-27

HYC-N2052C/T-27

HYC-N1000 / 2000 Series Multi-MIMO HT-OFDM Outdoor Radio 4x4 MIMO supports Multi-hops repeat 4x4 MIMO supports TDMA Redundancy

Multi-Hops Repeater in e-Rake MIMO PTP/PTMP Series offers customers a great solution for PTP / PTMP / Hot zone applications by integrated multi-radios interfaces and Fast Data Switching technology from Hypercable.This series shows incredible efficiency on multi-hops repeating – truly throughput \geq 170Mbps and only \leq 35 ms total latency after 20 extended hops. Much different from the traditional Wi-fi that dropped 50% throughput per each extended hop and can't get reply from remote device after 5~6 hops for too long latency.

There are 14 channels bandwidth options can be selected easily by software (2.5/3/3.5/4/5/6/7/8/10/15/20/30/40/52 MHz). This feature provides the flexibility of deployment channel plan in crowded city area or high capacity backhaul -- throughput up to 268Mbps.

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 built-in NMS with internet map database to show the environment and status of the link. Customers can easily figure out the linking situation of the deployed radios.

Product Highlights

- Integrated Multi-radios interfaces on Athena-MIMO platform.
- Multiple radios interfaces were integrated by "Fast Data Switching" technology from HYC inside the Mesh-MIMO series platform. There are 3 type of radios for options: HYC-N1051C / HYC-N2051C (1*radio) / HYC-N2052C (2*radios) / HYC-N2053C (3*radios) and each radio interface can be configured independently to run different wireless connectivity missions.
- > High efficiency transmission in multi-hops repeating (Ex: @ 40MHz Ch BW)

The backbone throughput will remain in a high level even after several hops repeating. (\geq 170 Mbps @ 20 hops), and the total latency is short as well (\leq 35 ms @ 20 hops).

- Effective spectrum utility/variable capacities with 14 channel Bandwidths This radio has 14 channels bandwidth (2.5 / 3 / 3.5 / 4 / 5 / 6 / 7 / 8 / 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 bandwidth provided by the MIMO HT-OFDM technology. Work with the variable channel bandwidth options, these two combination features provides great benefits for both crowded urban area and rural area with less interference.
 - TCP throughput at different channel BW+

Channel BW (MHz)	2.5	3.	3.5.	120	5., 25.,	6.1 30.1	7.1 35.1	8.1 40.1	10.,	100000	1000	30.1	40.1	52., 268.,
Real TCP throughput (Mbps)	Construction of the	14.	spectr		25.1	100084	rowde		1000000	11.5	104.,		215.,	268.1

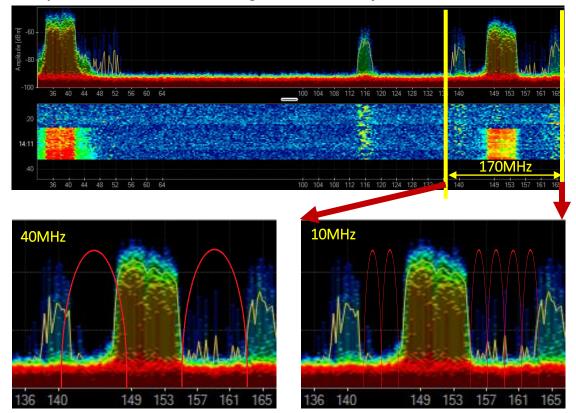
Specifications

Frequency range 4.920 ~ 6.075 GHz Optional Channel Band Widh 2.5 / 3 / 3.5 / 4 / 5 / 7 / 8 / 10 / 15 / 20 / 30 / 40 / 52 MHz Frequency Stability z 2 pom Modulation MIMO HT-OFDM Modulation MIMO HT-OFDM MCS Index Data Rate (Mbps) T x Output OPare (dama) R x Gensitivity (BER 11-04) Data Rate (Mbps) T x Output (BER 11-04) R x Gensitivity (BER 11-04) MCS3 6.6 / 30 NA 226(1.5) -94 / 92 Mill 13.527 15/30 27(1.5) -92 / 90 dBm MCS3 13/26 NA 226(1.5) -92 / 90 dBm 27/54 9000 26(1.5) -93 / 92 / 90 dBm MCS10 19.539 NA 226(1.5) -97 / 94 dBm 102/10 23(1.5) -77 / 75 / 75 dBm MCS11 2052 NA 22(1.5) -77 / 75 / 75 dBm 102/20 23(1.5) -77 / 75 dBm MCS14 68 / 170 NA 23(1.5) -76 / 73 dBm 102/21 139 / 76 / 75 dBm MCS14 68 / 170 NA 23(1.5) -76 / 73 dBm 102/21	RADIO SPEC	IFICATIONS									
Channel Band Width 2, 2/ 3/ 3.5 / 4/ 7/ 6 / 7 / 8 / 10 / 15 / 20 / 30 / 40 / 52 MHz Frequency Stability 2 / 2 pm Modulation MIMO HT-OFDM MOS Index MIMO-OFDM / HT20 MIMO-OFDM /				4 920 ~ 6 075 GH	tz Optional						
Erequency Stability ± 2 ppm Modulation MIMO HF-OFDM MCS Index Data Rate (Mbps) Tx. Output MCS Index Data Rate (Mbps) Tx. Output MCS8 6.5/13 N/A 27 (±1.5) 94/-92 dBm 13.5/27 15/30 27 (±1.5) -92/-90 dBm MCS8 13/26 N/A 28 (±1.5) 49/-92 dBm 13.5/27 15/30 27 (±1.5) -92/-90 dBm MCS10 19/5/38 N/A 28 (±1.5) 49/-92 dBm 43.5/27 15/30 27 (±1.5) -92/-90 dBm MCS11 26/52 N/A 28 (±1.5) 49/-70 dBm 46/-70 dBm 49/-70 dBm 28 (±1.5) -84/-81 dBm MCS11 26/52 N/A 24 (±1.5) -41/-70 dBm 12/1/24 136/270 23 (±1.5) -76/-73 dBm MCS14 68.5/117 N/A 23 (±1.5) -76/-73 dBm 12/1/24 136/270 23 (±1.5) -74/-72 dBm MCS16 66/130 N/A 23 (±1.5) -74/-72 dBm 10/1/24 10/1/24		-				5 / 20 / 30 / 40	/ 52 MHz				
Modulation MIMO +TO-CFDM MCS Index Data Rate (Mbps) Tx Output (RS 11400) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (RS 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Rx Sengitivity (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Data Rate (Mbps) Tx Output (BER 1*10-6) Data Rate (Mbps) Tx Output (SER 1*10-6) Data Rate (Mbps) Data Rate (Mbp						,, 20, 00, 10	/ 02 111 12				
MILL MILL <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>											
Gl=800ns Gl=400ns Power (dBm) (BER 1*10-6) Gl=800ns Gl=400ns Power (dBm) (BER 1*10-6) MCS8 6.513 NA 27(±1.5) -94/-92 dBm 13.527 15/30 27(±1.5) -92/-90 dBm MCS10 19.5/39 NA 28(±1.5) -90/-87 dBm 40.5/81 45/90 26(±1.5) -87/-83 dBm MCS11 26/52 NA 28(±1.5) -87/-84 dBm 54/108 60/120 25(±1.5) -87/-93 dBm MCS13 52/104 NA 23(±1.5) -78/-73 dBm 108/216 120/240 23(±1.5) -78/-73 dBm MCS13 52/104 NA 23(±1.5) -78/-73 dBm 108/216 120/240 23(±1.5) -74/-72 dBm MCS14 65/130 NA 23(±1.5) -78/-73 dBm 135/270 23(±1.5) -74/-72 dBm MCS15 65/130 NA 23(±1.5) -76/-73 dBm 135/270 23(±1.5) -74/-72 dBm MCS16 65/130 NA 23(±1.5) -74/-72 dBm <			MIMO				MIM	O-OFDM / HT40			
Gl=800ns Gl=400ns Power (dBm) (BER 1*10-6) Gl=800ns Gl=400ns Power (dBm) (BER 1*10-6) MCS8 6.513 NA 27(±1.5) -94/-92 dBm 13.527 15/30 27(±1.5) -92/-90 dBm MCS10 19.5/39 NA 28(±1.5) -90/-87 dBm 40.5/81 45/90 26(±1.5) -87/-83 dBm MCS11 26/52 NA 28(±1.5) -87/-84 dBm 54/108 60/120 25(±1.5) -87/-93 dBm MCS13 52/104 NA 23(±1.5) -78/-73 dBm 108/216 120/240 23(±1.5) -78/-73 dBm MCS13 52/104 NA 23(±1.5) -78/-73 dBm 108/216 120/240 23(±1.5) -74/-72 dBm MCS14 65/130 NA 23(±1.5) -78/-73 dBm 135/270 23(±1.5) -74/-72 dBm MCS15 65/130 NA 23(±1.5) -76/-73 dBm 135/270 23(±1.5) -74/-72 dBm MCS16 65/130 NA 23(±1.5) -74/-72 dBm <	MCS Index	Data Rat	e (Mbps)	Ty Output	Py Sonsitivity	Data Rat	e (Mbps)	Tx Output	Py Sensitivity		
MCS9 13/26 N/A 26(x1.5) -92/-90 dBm 27/84 30/00 28(x1.5) -89/-87 dBm MCS10 19.5/39 N/A 26(x1.5) -90/-87 dBm 40.5/81 46/90 28(x1.5) -87/-83 dBm MCS11 26/52 N/A 22(x1.5) -87/-84 dBm 64/108 60/120 25(x1.5) -87/-73 dBm MCS13 52/104 N/A 23(x1.5) -80/-77 dBm 108/216 120/240 23(x1.5) -78/-75 dBm MCS15 65/130 N/A 23(x1.5) -78/-75 dBm 135/270 150/300 23(x1.5) -74/-72 dBm MTERFACES Vireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors 10/100/100 23(x1.5) -74/-72 dBm MAAGEABLITY Maagement and Stup Web-based (Chrome / IE 9.0 or later) SNMP agents MB II Protocol TCP/R1 PK/SFX, NutBEUI Network Architecture PTP (1+0 / 2+0) / Multi-hops Repeating / PTMP Antenna Alignment WEB GUI Local / Remote Information Buil-in NMS Live Information Buil-in NMS <					(BER 1 ^E 10-6)						
MCS10 19.5/39 N/A 28(±1.5) -90/87 dBm 40.5/81 45/90 28(±1.5) -487/83 dBm MCS11 26/52 N/A 26(±1.5) -47/84 dBm 54/108 60/120 25(±1.5) -487/83 dBm MCS12 39778 N/A 22(±1.5) -48/47 dBm 81/162 90/180 24(±1.5) -48/47 dBm MCS13 52/104 N/A 23(±1.5) -78/75 dBm 130/270 23(±1.5) -78/75 dBm MCS14 58.5/117 N/A 23(±1.5) -76/73 dBm 135/270 23(±1.5) -74/-72 dBm INTERFACES Wireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors 16 x N-type Female Connectors 10 x 3/20 23(±1.5) -74/-72 dBm INTERFACES Wireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors 16 x N-type Female Connectors 16 x N-type Female Connectors 174/-72 dBm INTERFACES MBI II Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors 16 x N-type Female Connectors 174/-72 dBm INTONO TCPI/II IPX/SKPX, NetBEUI Nasea	MCS8	6.5/13	N/A	27(±1.5)	-94/-92 dBm	13.5/27	15/30	27(±1.5)	-92/-90 dBm		
MCS11 26/52 N/A 25(±1.5) -87/-84 dBm 54/108 60/120 25(±1.5) -84/-81 dBm MCS12 39/76 N/A 24(±1.5) -84/-81 dBm 81/162 90/180 24(±1.5) -84/-81 dBm MCS13 52/104 N/A 23(±1.5) -80/-77 dBm 109/216 120/240 23(±1.5) -76/-73 dBm MCS14 58.5/117 N/A 23(±1.5) -76/-73 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 MTEREFACES Virieless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors 5 x N-type Female Connectors 135/270 23(±1.5) -74/-72 dBm MANAGEABLITY Management and Setup Web-based (Chrome / IE 9.0 or later) SNMP agents MB II - Protocol TCPIP. [PX/SPX, NetBEUI Numation Bate Encryton MAC access control / Diable SSID / Proprietary protocol Bata Encrytoin WPA-PSK / WPA2-PSK Advanced Security	MCS9	13/26	N/A	26(±1.5)	-92/-90 dBm	27/54	30/60	26(±1.5)	-89/-87 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) -76/-73 dBm 108/276 120/240 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/-73 dBm INTERFACES Vireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors / 6 x N-type Female Connectors 10/100/1000 Ease-17 K-14-5 pt Hill P -74/-72 dBm 35/270 150/300 23(±1.5) -74/-72 dBm MindegRABILITY Management and Setup Wab-based (Chrome / IE 9.0 or later) SNIMP agents MIB NIB NIB <td< td=""><td>MCS10</td><td>19.5/39</td><td>N/A</td><td>26(±1.5)</td><td>-90/-87 dBm</td><td>40.5/81</td><td>45/90</td><td>26(±1.5)</td><td>-87/-83 dBm</td></td<>	MCS10	19.5/39	N/A	26(±1.5)	-90/-87 dBm	40.5/81	45/90	26(±1.5)	-87/-83 dBm		
MCS13 52/104 N/A 22(±1.5) -80/-77 dBm 108/216 120/240 23(±1.5) -78/-75 dBm MCS14 58.5/117 N/A 23(±1.5) -76/-73 dBm 135/270 23(±1.5) -76/-73 dBm MCS15 65/130 N/A 23(±1.5) -76/-73 dBm 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 MICS15 65/130 N/A 23(±1.5) -76/-73 dBm 135/270 150/300 23(±1.5) -74/-72 dBm MIRENEXCES Wireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors / 6 x N-type Female Connectors 10/100/1000 Base-T RJ-45 pot with M25 Cable Gland MANAGEABULTY ManageABULTY Wab-based (Chrome / IE 9.0 or later) SNMP agents NIB II Protocol TCP/P, IPX/SPX, NetBEUI Network Architecture PTP (14-0/2+0/ / Muli-hops Repeating / PTMP Anterna Algoment WEB GUI Local / Remote Information Buil-in NMS Luve linking status of the network by GPS coordinates and internet map database Security<	MCS11	26/52	N/A	25(±1.5)	-87/-84 dBm	54/108	60/120	25(±1.5)	-84/-81 dBm		
MCS14 58.5/117 N/A 23(±1.5) -78/-75 dBm 121/242 135/270 23(±1.5) -76/-73 dBm MCS15 65/30 N/A 23(±1.5) -76/-73 dBm 135/270 150/300 23(±1.5) -76/-73 dBm INTERFACES Virieless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors / 6 x N-type Female Connectors 150/300 23(±1.5) -74/-72 dBm MANAGEABILITY Management and Setup Web-based (Chrome / IE 9.0 or later) SMM	MCS12	39/78	N/A	24(±1.5)	-84/-81 dBm	81/162	90/180	24(±1.5)	-81/-79 dBm		
MCS15 65/130 N/A 23(±1.5) -76/-73 dBm 135/270 150/300 23(±1.5) -74/-72 dBm INTERFACES Wireless Interface : 2 x N-type Female Connectors / 4 x N-type Female Connectors / 6 x N-type Female Connectors 150/300 23(±1.5) -74/-72 dBm Monoses-T RJ-45 port with M25 Calbe Gland Management and Setup Web-based (Chrome / IE 9.0 or later) SMMP agement SMMP MANAGEABILITY Management and Setup Web-based (Chrome / IE 9.0 or later) SMMP agement SMMP	MCS13	52/104	N/A	23(±1.5)	-80/-77 dBm	108/216	120/240	23(±1.5)	-78/-75 dBm		
INTERFACES Wireless Interface: 2 x N-type Female Connectors / 6 x N-type Female Connectors 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 (1+0 / 2+0) / Multi-hops Repeating / PTMP Antana Alignment WEB GUI Local / Remote Information Built-in NMS Live linking status of the network by GPS coordinates and internet map database Security Data Encryption Advanced Security MA2 access control / Diable SSID / Proprietary protocol ENVIRONMENT Qperating Temperature Quertaing Temperature -30-60 °C Storage Temperature -30-60 °C Storage Temperature -30-60 °C Storage Temperature -30-70 °C 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 : 14 Software Subay (Max) @ DC 48V HYC-N2052C-27 : 16Watts (typical) / 12 Watts (Max) @ DC 48V	MCS14	58.5/117	N/A	23(±1.5)	-78/-75 dBm	121/242	135/270	23(±1.5)	-76/-73 dBm		
Wireless Interface : 2 x N-type Female Connectors / 6 x N-type Female Connectors 10/10/1000 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 (1+0 / 2+0) / Multi-hops Repeating / PTMP Antenna Alignment WEB GUI Local / Remote Information Built-in NMS Live linking status of the network by GPS coordinates and internet map database Security Data Encryption MAC access control / Disable SSID / Proprietary protocol ENVIRONMENT Operating Temperature -30-60 °C Storage Temperature -30-70 °C Humidity 95% non-condensing POWER SUPPLY & CONSUMPTION Power Consumption : PYC-N1051C-53 : 100Watts (typical) / 12 Watts (Max.) @ DC 48V PHYSICAL 259 (L) * 250 (W) * 75 (H) ; mm (External Model) Dimension 259 (L) * 250 (W) * 75 (H) ; mm (Integrated Model) 3254 (J) * 335 (W) * 88 (H) ; mm (Integrated Model) 3254 (J) * 335 (W) * 88 (H); mm (Integrated Model) Weight 1.84 (250-6.075 GHz 0.5 W Outdoor 222 MIMO HT-OFDM PTP/PTMP Ethernet Backhau	MCS15	65/130	N/A	23(±1.5)	-76/-73 dBm	135/270	150/300	23(±1.5)	-74/-72 dBm		
10/100/1000 Base-T RJ-45 port with M25 Calbe Gland MANAGEABILITY Management and Setup Web-based (Chrome / IE 9.0 or later) SMMP agents MB II Protocol TCP/R/ IPX/SPX, NetBEUI Network Architecture PTP (1+0 / 2+0) / Multi-hops Repeating / PTMP Anterna Alignment WEB GUI Local / Remote Information Built-In NMS Live linking status of the network by GPS coordinates and internet map database Security Data Encryption Data Encryption WPA-PSK / WPA2-PSK Advanced Security MAC access control / Disable SSID / Proprietary protocol ENVIRONMENT Operating Temperature Operating Temperature -30-60 °C Storage Temperature -30-70 °C Humidity 95% non-condensing Power Supply: AC 100-264V, 50-60Hz convert to DC 48V Adapter (Max. 45Watts) with 48VDC POE Power Consumption : HYC-M1051C-53: 10Watts (typical) / 12 Watts (Max.) @ DC 48V HYC-M2051C-27: 10Watts (typical) / 12 Watts (Max.) @ DC 48V HYC-M2051C-27: 10Watts (typical) / 19 Watts (Max.) @ DC 48V HYC-M2051C-27: 10Watts (typical) / 19 Watts (Max.) @ DC 48V PHYSICAL Dimension 259 (1) * 250 (W) * 75 (H); mm (External Model) <td>INTERFACES</td> <td>)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	INTERFACES)									
MANAGEABILITY Management and Setup Web-based (Chrome / IE 9.0 or later) SMMP agents MIB II Protocol TCP/IP, IPX/SPX, NetBEUI Network Architecture PTP (1+0 / 2+0) / Multi-hops Repeating / PTMP Anterna Alignment WEB GUI Local / Remote Information Built-In NNS Live linking status of the network by GPS coordinates and internet map database Security Data Encryption Advanced Security MAC access control / Disable SSID / Proprietary protocol ENVIRONMENT -30-60 °C Glorage Temperature -30-70 °C Humidity 95% non-condensing POWER SUPPLY & CONSUMPTION 95% non-condensing Power Consumption : Yeats (Max.) @ DC 48V HYC-N205C-27: 10Watts (typical) / 12 Watts (Max.) @ DC 48V HYC-N205C-27: 10Watts (typical) / 12 Watts (Max.) @ DC 48V HYC-N205C2-27: 16Watts (typical) / 19 Watts (Max.) @ DC 48V HYC-N205C2-27: 16Watts (typical) / 19 Watts (Max.) @ DC 48V HYC-N205C2-27: 16Watts (typical) / 19 Watts (Max.) @ DC 48V HYC-N205C2-27: 16Watts (typical) / 19 Watts (Max.) @ DC 48V HYC-N205C2-27: 16Watts (typical) / 19 Watts (Max.) @ DC 48V HYC-N205C2-27: 16Watts (typical) / 19 Watts (Max.) @ DC 48V <tr< td=""><td>Wireless Inter</td><td>face : 2 x N-ty</td><td>pe Female Co</td><td>nnectors / 4 x N-ty</td><td>pe Female Conne</td><td>ctors / 6 x N-t</td><td>ype Female C</td><td>onnectors</td><td></td></tr<>	Wireless Inter	face : 2 x N-ty	pe Female Co	nnectors / 4 x N-ty	pe Female Conne	ctors / 6 x N-t	ype Female C	onnectors			
Management and Setup Web-based (Chrome / IE 9.0 or later) SNMP agents MIB II Protocol TCP/IP, IPX/SPX, NetBEUI Network Architecture PTP (1+0/2+0) / Multi-hops Repeating / PTMP Antenna Alignment WEB GUI Local / Remote Information Built-in NMS Live linking status of the network by GPS coordinates and internet map database Security Data Encryption Data Encryption WPA-PSK / WPA2-PSK Advanced Security MAC access control / Disable SSID / Proprietary protocol ENVIRONMENT Operating Temperature Operating Temperature -30-60 °C Storage Temperature -30-70 °C 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 : HYC-N1051C-53 : 10Watts (typical) / 12 Watts (Max.) @ DC 48V HYC-N2051C-27 : 10Watts (typical) / 12 Watts (Max.) @ DC 48V PHYSICAL 259 (L) * 250 (W) * 75 (H) ; mm (External Model) 385 (L) * 385 (W) * 98 (H) ; mm (Integrated Model) 385 (L) * 385 (W) * 98 (H) ; mm (Integrated Model) Weight 1.8Kg (External Model) 325 (L) * 250 (W) * 75 (H) ; mm (Integrated Model) W	10/100/1000 E	Base-T RJ-45	port with M25	Calbe Gland							
SNMP agents MIB II Protocol TCP/IP, IPX/SPX, NetBEUI Network Architecture PTP (1+0 / 2+0) / Multi-hops Repeating / PTMP Anterna Alignment WEB GUI Local / Remote Information Built-in NMS Live linking status of the network by GPS coordinates and internet map database Security Data Encryption Advanced Security MAC access control / Disable SSID / Proprietary protocol ENVIRONMENT Operating Temperature -30-60 °C Storage Temperature -30-70 °C 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 Supply : AC 100-264V, 50-60Hz convert to DC 48V Adapter (Max. 45Watts) with 48VDC POE Power Supply : AC 100-264V, 50-60Hz convert to DC 48V Adapter (Max. 45Watts) with 48VDC POE Power Consumption : PYC-N1051C-53 : 10Watts (typical) / 12 Watts (Max.) @ DC 48V HYC-N2052C-27 : 16Watts (typical) / 12 Watts (Max.) @ DC 48V PHYSICAL Dimension 259 (L) * 250 (W) * 75 (H) ; mm (External Model) 354 (L) * 385 (W) * 98 (H) ; mm (Integrated Model) WaRRANTY 1 YEAR ORDERING INFORMATION As20-6.075 GHz 0.5 W Outdoor 2x2 MIMO HT-	MANAGEABIL	LITY									
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	HYC-N2051C					P/PTMP Ether	net Backhaul,				
	HYC-N2052C					P/PTMP Ether	net Backhaul,				

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



40 MHz channel BW: **1 x effective channel** without interference only, total throughput < 300Mbps.

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

2.5 MHz channel BW: **24 x effective channels** without interferences, each channel offers 12Mbps TCP throughput. Total throughput about 300Mbps.

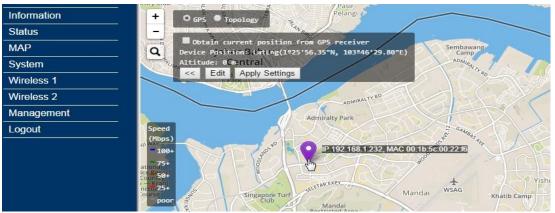
Channel BW (MHz)	2.5	3	3.5	4	5	6	7	8	10	15	20	30	40	52
Real TCP throughput (Mbps)	12	14	17	20	25	30	35	40	51	77	104	158	215	268
Application area	Va	luable	spectr	um		C	Crowde	ed urba	n			Ru	ıral	

Channel Bandwidth & TCP Throughput list table

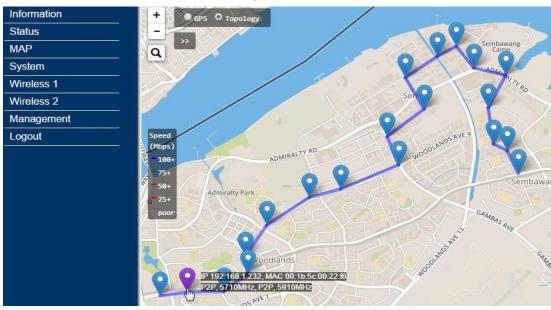
Built-in NMS function --- GPS Coordinates Input setting page

Information	System > Basic Setti	ng						
Status	Device Settings							
MAP	Device Name	DEVICE030000						
System	Ethernet 1							
Basic Settings	Data Rate	10/100/1000M Auto Negotiation 🔻						
IP St Ings	VLAN(802.1Q)	C Enable Disable						
STP Settings	Management VLAN ID	0						
Time Settings	Ethernet 2							
Wireless 1	Data Rate	10/100/1000M Auto Negotiation 🔻						
Wireless 2	VLAN(802.1Q)	Enable Disable						
Management	Management VLAN ID	0						
Logout	GPS Coordinates							
		Obtain current position from GPS receiver						
	Latitude:	N ▼ 1 °25 '56.35 "						
	Longitude:	E • 103 ° 46 29.80						
	Altitude:	0.00 m						
		Apply Cancel						

Local Site info -- Device name / MAC address



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



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