

Tracking Antenna Description:

The tracking antenna shown above will be pointed towards an airborne helicopter. This means it will be moving during most operations (disregard the values specified in the "ORIENTATION IN HORIZONTAL/VERTICAL PLANE" fields). The parabolic antenna datasheet is provided that shows the beam width information.

In addition, there will be an omnidirectional antenna (WR-ANT-015) mounted to the base of the tracking antenna to provide communication when the helicopter is too close to the tracking antenna for it to pan and tilt towards the aircraft. This antenna has a gain of 7.4 dBi. This antenna is highlighted in the included documents.

See the documents included below for more information.

TRACKING ANTENNA SYSTEM

THE WAVE RELAY® TRACKING ANTENNA SYSTEM ENABLES COMMUNICATION BETWEEN STATIONARY AND MOBILE ASSETS. PLANES, SHIPS AND BOATS.

Together with the Quad Radio Router, the Tracking Antenna System provides an encrypted digital data link to UAVs, helicopters, planes, ships and boats.

The Tracking System transmits real time command and control digital video and VoIP over 100mi. Being a component of the MANET, the Tracking System acts as an extension to the existing network and allows for greater distances.

THE TRACKING SYSTEM CONSISTS OF THREE PARTS:

1. Parabolic grid antenna - Provides 26.5 dB gain for long-range, highly directional applications. The grid is open-frame die cast aluminum, making it durable, lightweight, and steady in the wind. This design enables the System to easily track an orbiting platform without ever dropping communication.
2. Pan/tilt motor - designed to allow continuous 360° horizontal rotation. Constructed with RF pass-through slip ring, only short RF cables are used and never tangle.
3. Tripod - Extremely sturdy and rugged. Capable of elevating to six feet for operation and collapses to less than three feet for easy transport.

The Tracking System is intelligently designed with deployment in mind. Components are transported directly into the field where the unit is easily and quickly assembled. The operator can then configure through a user friendly web management interface.



GSA Schedule
Contract # GS-35F-0168Y
Small Business



ISO 9001:
2008

MADE IN USA



TRACKING ANTENNA SYSTEM

PERSISTENT SYSTEMS

SPECIFICATIONS

Total Weight	60.8 lbs
Material	Die Cast Aluminum
Dimensions (Operational)	73 in base diameter x 104 in max height
Operating Temperature	-15° to 55° C 5° to 131° F
Input Power	Junciton box

PARBOLIC GRID

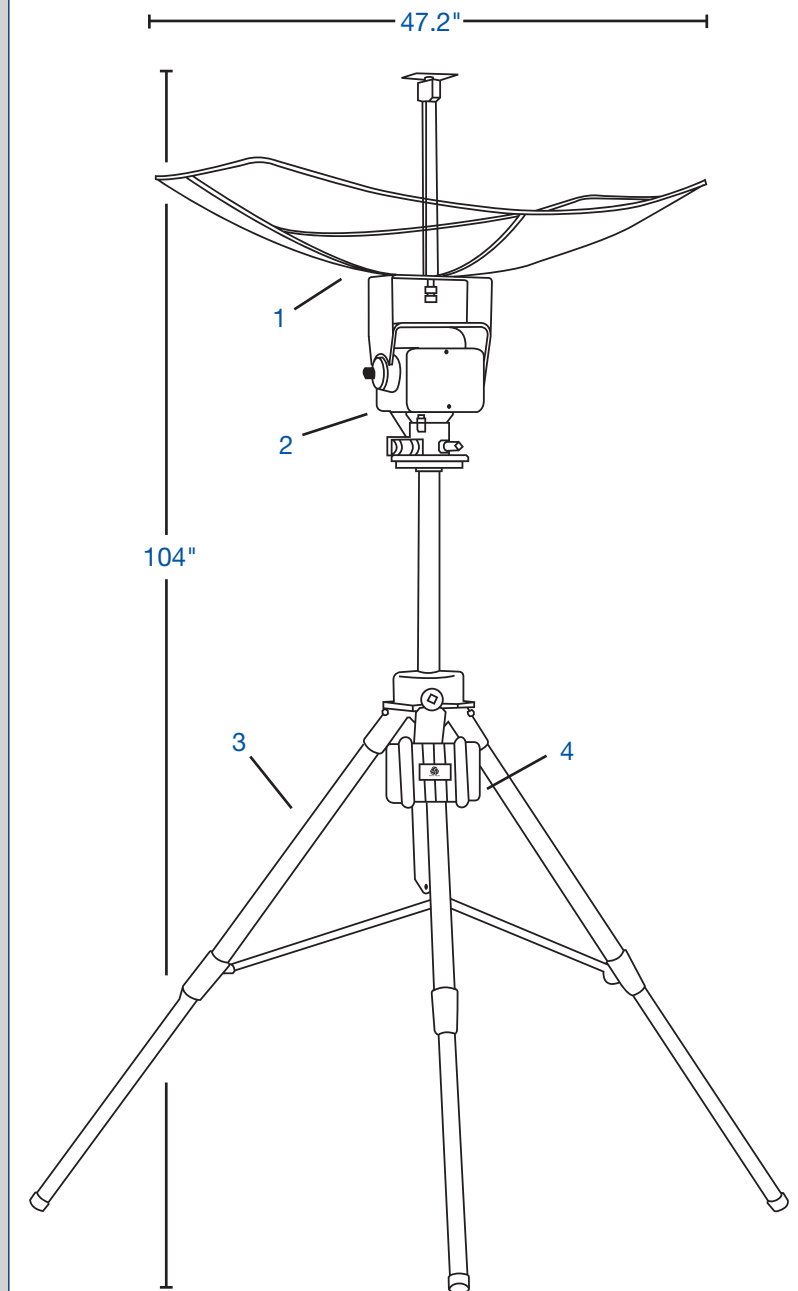
Range	Over 100 miles
Throughput	Up to 37 Mbps
Grid Dimensions	47.2 in x 35.6 in
Weight	15.8 lbs, 7.2 kg
Mounting	Custom Mounting Bracket; Vertical and Horizontal Polarity
Rated Wind Velocity	134 mph
Frequency Range	2312 - 2507 MHz
Frequency Gain	26.5 dB
Polarization	Vertical
Horizontal Beam Width	6.5°
Vertical Beam Width	8°
Tracking	Via Quad Radio Router
GPS Based	Direct from platform, location fed over network
Government Formats	ESD, COT, CDF
Additional Capabilities	Remote hands off Real time fine tuning 27Mbps Multicast

PAN/TILT

Pan Range	360°
Pan Speed Range	1.7° - 25° per second
Tilt Range	180° +/- 90°
Tilt Speed Range	0.3° - 7° per second
Voltage	24 VDC
Current	5.5A
Weight	22 lbs, 10 kg
Dimensions	10.44 H x 9.63 W x 7.88 D in
Cables	Power Supply, Ethernet, Continuous Flex Mil-Spec Connectors

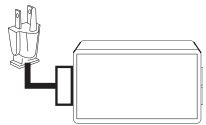
TRIPOD

Height Range	33.5 - 70 in
Maximum Spread	73 in
Transport Dimensions	40.5 x 12.5 in
Weight	23 lbs / 10.4 kg



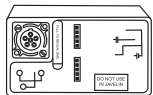
- 1 Parabolic Grid
- 2 Pan/Tilt
- 3 Tripod
- 4 Quad Radio Router

TRACKER KIT

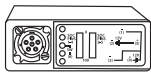


Outdoor PoE Injector
WR-PWR-48V - 60W
(US, EU, UK)

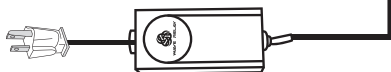
BA-2590
BAT-02



BA-2557
BAT-08

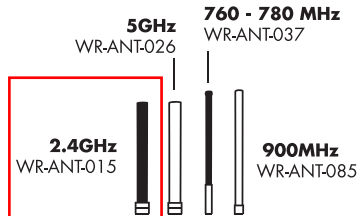


**Power / Communications
Junction Box**
TRK-07 (Included)



To 110V - 220V AC Power

POWER OPTIONS



ANTENNA OPTIONS

WR-RTR2-XXXXXXX
with Pole Bracket
(Sold Separately)

Tracking Antenna System
TRK-KIT-06

- Includes:
- 2.3 Parabolic Grid and Antenna Element
 - Tripod
 - Pan/Tilt Motor
 - Outdoor POE Injector
 - Junction Box
 - RF Cables

Audio Options

GPS Antenna
WR-ANT-040
WR-ANT040L

TRK-01



Part Number	Description	Page
CBL-167 Rev 2	14 Inch LMR240UF RP-TNC Male to N-Male RA	
CBL-168 Rev 2	14 Inch LMR240UF SMA Male Straight to SMA Male RA Cable (MPU GPS Cable)	
CBL-170	Outdoor Extension Cord, 14 Gauge Wire, Orange, 100' Long	
CBL-171-D	6 Foot ReplayXD Dismount Power/HDMI Cable	
CBL-171-V	15 Foot ReplayXD Vehicle Power/HDMI Cable	
CBL-172	15 Foot 6-pin Receptacle to 3-pin Plug Cable (ReplayXD Vehicle Power Cable)	
CBL-173	8 Inch Teradek Cube-205 BB Battery Power Cable	
CBL-175	Galaxy Tablet Tether Cable	
CBL-176-AUD	15 Foot MRC67A-24-180 6 Pin Audio Cable	
CBL-176-PWR	15 Foot MRC67A-23-180 DC Power Cable	
CBL-177	3 Foot 19-pin (MPU3) to Serial DB9 Male RS-232 Cable w/ 6" RJ45 Female Adapter	
CBL-178	Galaxy Tablet USB to 6-pin Cable	
CBL-179	TRAY 12-2-S 12 2C SHIELDED TRAY CABLE E2	
CBL-180	TRAY 18-2-S 18 2C SHLD ROUND E2	
CBL-181	Amplified/Helicopter Node Wall Power Supply	
CBL-182	19-pin to Audio/Male RJ45 Cable	
CBL-183	Amplified Node Vehicle Power Cable (Flying Leads)	
CONN-098	USB Select Charging Adapter	24, 26
MOLLE-BA2557	BA2557 MOLLE Pouch	23
MOLLE-BB2590	BB-2590 MOLLE Pouch	12, 18, 23
MOLLE-IP67-N3	Wave Relay® EUD IP67 enclosure (includes chest mount)	20, 22, 25, 26
MOLLE-MPU4-2	MPU4 MOLLE Pouch with battery opening	18, 20, 23
MOLLE-MPU4-BLK	MPU4 MOLLE Pouch with battery opening, Black	18
SDCARD-64GB	64GB Micro SD Card	20, 25, 26
TRK-01	Heavy Duty Tripod for Wave Relay® Tracking Antenna System	
TRK-02	Pan/Tilt Motor for Wave Relay® Tracking Antenna System	
TRK-07	Power/Communications Junction Box for Wave Relay® Tracking Antenna System	42, 44
TRK-KIT-06	Wave Relay® Tracking Antenna System. System includes: 2.3-2.5GHz 26dBi Parabolic Grid Antenna, Pan/Tilt Motor, Heavy Duty Tripod, Power Supply, Power/Communications Junction Box and Cables, Screw Kit, Compass, RF Cables (x2), Stakes (x3)	32, 40, 45
TRN-NYC-OADV	Advanced Training Course per (1) operator at NYC Training Facility	57
TRN-NYC-OPR	3-Day Training Course per (1) Operator at NYC Training Facility	56
WARRANTY-01	MPU3 - 1-Year Extended Warranty	55



Part Number	Description	Page
WARRANTY-02	RTR2 - 1-Year Extended Warranty	55
WARRANTY-03	MPU4 - 1-Year Extended Warranty	55
WARRANTY-04	MPU3 Dual - 1-Year Extended Warranty	55
WR-ACC-010	Magnetic Mount for Quad Radio Router	31, 32, 55
WR-ACC-013	Magnetic Antenna Mount with N-Female connectors	31, 32, 54
WR-ACC-028	7 Meter Aluminum Tripod with Level & Base Plates, Primary Guying Kit, Stake Kit	38, 55
WR-ACC-034	15 Meter Aluminum Tripod with Compass and Level, Primary and Secondary Guying Kit, Stake and Wheel Bag	38, 55
WR-ACC-067	Peltor Single Radio Headset (includes PTT Adapter)	13, 20, 22, 55
WR-ACC-072	Silynx C4OPS Control Box with Dual Leads	
WR-ACC-073	Silynx C4OPS 5-pin Cable Adapter	
WR-ACC-074	Silynx C4OPS Peltor/Sordin Headset Cable Adapter	
WR-ACC-078	Peltor Push-to-Talk Adapter	
WR-AID-01	Wave Relay® Auxiliary Input Device (AID) for MPU3/MPU4	8, 11, 13, 17
WR-AMP-0900	900MHz, 10W amplifier with SMA Female connectors	
WR-AMP-0900-N	900MHz, 10W amplifier with N-type Female connectors and DC Injector	
WR-AMP-1370	1.35-1.39GHz L-Band 20W Amplifier	51
WR-AMP-2400	2.3-2.5GHz S-Band 20W Amplifier	51
WR-AMPO-2400	2.3 to 2.5 GHz Outdoor Amplifier 20W	51
WR-ANT-015	2.3-2.5GHz 7.4dBi N-Type Male Omni Directional Antenna	27, 31, 33, 36, 44
WR-ANT-026	5.1-5.9GHz 9.1 dBi N-Type Male Omni Directional Antenna	27, 31, 33, 44
WR-ANT-031	4.9-5.9 GHz 23 dBi N-Type Female Panel Antenna	28
WR-ANT-034	3.5 GHz Sector Antenna	
WR-ANT-037	694-960MHz 6dBi N-Female Omni Directional Antenna	27, 33, 44
WR-ANT-038	694-960MHz 4dBi N-Female Omni Directional Antenna	27
WR-ANT-040	GPS Antenna 25 Inch SMA-Male with dual SAW filters	5, 11, 13, 28, 33, 39, 45
WR-ANT-040L	GPS Antenna 3 Meter SMA-Male with dual SAW filters	5, 13, 28, 31, 36, 39, 45
WR-ANT-041	Parabolic Grid and Antenna Element for Wave Relay® Tracking Antenna System	
WR-ANT-042	1.7-2.7GHz 4.5 dBi N-Female RHCP Conical Spiral, "Discone" Antenna	46
WR-ANT-043	2.0-2.5GHz 6dBi N-Type Female Omni Antenna - Aviation Antenna	47
WR-ANT-044	2.3 - 2.5GHz 7dBi SMA-Female RHCP Patch Antenna	47
WR-ANT-047	2.3-2.5GHz 3dBi SMA-Female Blade Antenna	47, 50

HyperLink Wireless 2.4 GHz 27 dBi Die Cast Grid Antenna Model: HG2427G

Applications

- 2.4 GHz ISM band
- IEEE 802.11b/g/n Wireless LAN, WiFi systems
- Long range direction, Point to Point and Point to Multi-point systems
- Wireless bridges and backhaul applications
- Wireless video systems

Features

- Die cast aluminum construction with UV stable white ivory finish
- All weather operation
- 6° beam-width
- 4 piece grid, easy to assemble
- Mounting bracket included



Description

The HyperLink HG2427G High-Performance Reflector Grid Wi-Fi Antenna provides 26.5 dBi gain for long-range highly directional applications. Applications include point to point systems, point to multi-point and wireless bridges in the 2.4GHz ISM band as well as IEEE 802.11b/g/n applications. It can be installed for vertical or horizontal polarization.

This antenna's construction features a die cast aluminum reflector grid for superior strength and light weight. The 4-piece reflector grid design is simple to assemble and significantly reduces shipping costs. The grid surface is UV powder coated for durability and aesthetics. The open-frame grid design minimizes wind loading.

The HG2427G antenna is supplied with a 60 degree tilt and swivel mast mount kit. This allows installation at various degrees of incline for easy alignment.



Specifications

Electrical Specifications

Frequency	2400-2500 MHz
Gain	26.5 dBi
Polarization	Vertical or Horizontal
Horizontal Beam Width	6.5°
Vertical Beam Width	8°
Front to Back Ratio	30 dB
Impedance	50
Max. Input Power	100 Watts
VSWR	< 1.4:1 avg.
RoHS Compliant	Yes
Lightning Protection	DC Ground

Mechanical Specifications

Weight with mounting bracket	15.8 lbs. (7.1 kg)
Grid Dimensions	47.2 x 35.43 in. (1200 x 900 mm)
Mechanical Tilt	H: 360° V: ±45°
Operating Temperature	-40° F to 140° F (-40° C to 60° C)
Connector	N-Female
Mounting Hardware Diameter	1.96 – 4.5 in. (50 – 115 mm)
Rated wind velocity (mile/h)	134

RF Antenna Gain Patterns

