



# Antennas

MultiPort

Series

DATA SHEET

WideBand Antenna



Overview

- Five foot (1.5 m), WideBand six port antenna with a 65° azimuth beamwidth covering 1695-2690 MHz frequencies
- Six wide high band ports covering 1695-2690 MHz in a single antenna
- Full Spectrum Compliance 1695-2690 MHz
- LTE Optimized FBR and SPR performance, providing for an efficient use of valuable radio capacity
- LTE Optimized Boresight and Sector XPD and USL performance, essential for LTE Performance
- Exceeds minimum PIM performance requirements
- Ordering options include either Two Field Replaceable, integrated AISG 2.0 compliant External (Type 1) Remote Electrical Tilt (RET) or Two Variable Electrical Control Knobs (VET)
- Ordering options for 7/16 DIN connector or the new 4.3-10 connector, which is 40% smaller than traditional 7/16 DIN connector

The CCI MultiPort is a six port antenna, with Six (6) wide high band ports covering 1695-2690 MHz. The CCI MultiPort antenna provides the capability to deploy 4x4 Multiple-input Multiple-output (MIMO) and 2x2 Multiple-input Multiple-output. The CCI MultiPort antenna allows separate tilt control between the 4 ports high band and 2 ports of high band.

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO and 2x2 MIMO
- Ready for Network Standardization on 4.3-10 connectors
- With CCI's WideBand antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs



WideBand Antenna

HPA65R-E5A

SPECIFICATIONS

Electrical

Ports	6 x High Band Ports for 1695-2690 MHz				
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain	17.9 dBi	18.1 dBi	18.6 dBi	18.1 dBi	18.0 dBi
Azimuth Beamwidth (-3dB)	61°	61°	61°	64°	64°
Elevation Beamwidth (-3dB)	6.5°	5.9°	5.5°	4.6°	4.5°
Electrical Downtilt	0° to 10°	0° to 10°	0° to 10°	0° to 10°	0° to 10°
Elevation Sidelobes (1st Upper)	<-16 dB	<-18 dB	<-18 dB	<-18 dB	<-20 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 21 dB	> 18 dB	> 20 dB	> 20 dB	> 19 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	300 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

BASTA Electrical Specifications*					
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain over all Tilts (dBi)	17.3	17.5	17.8	17.7	17.0
Gain over all Tilts Tolerance (dB)	0.3	0.5	0.5	0.3	0.9
Gain at Low-Tilt (dBi)	17.2	17.3	17.7	17.7	17.3
Gain at Mid-Tilt (dBi)	17.3	17.7	18.0	17.8	17.2
Gain at High-Tilt (dBi)	17.2	17.6	17.7	17.6	16.6
Azimuth Beamwidth Tolerance (°)	2.9	3.0	3.0	3.8	4.5
Elevation Beamwidth Tolerance (°)	0.3	0.3	0.6	0.2	0.2
Electrical Downtilt Deviation (°)	0.9	0.8	0.8	1.0	1.0
First Upper Sidelobes Suppression (dB)	-14.1	-15.7	-15.5	-15.5	-17.7
Upper Sidelobe Suppression Peak to 20° (dB)	-14.1	-15.8	-15.0	-14.3	-15.0
Front-to-Back Ratio over ±20° (dB)	28.9	29.5	29.9	29.8	28.6
Cross-polar Discrimination at ±60° (dB)	10.2	6.9	6.3	6.4	6.0

\* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6. All specifications are subject to change without notice.



SPECIFICATIONS

WideBand Antenna

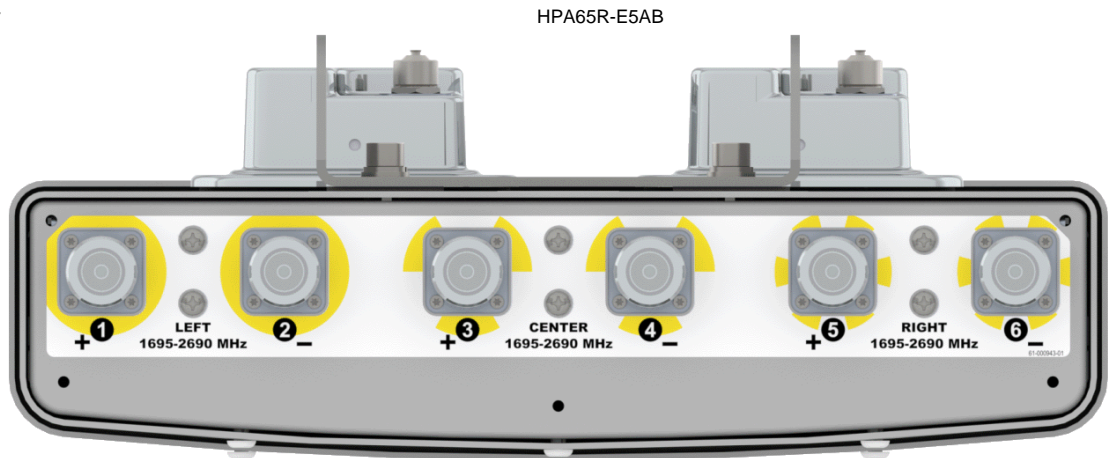
HPA65R-E5A

Mechanical

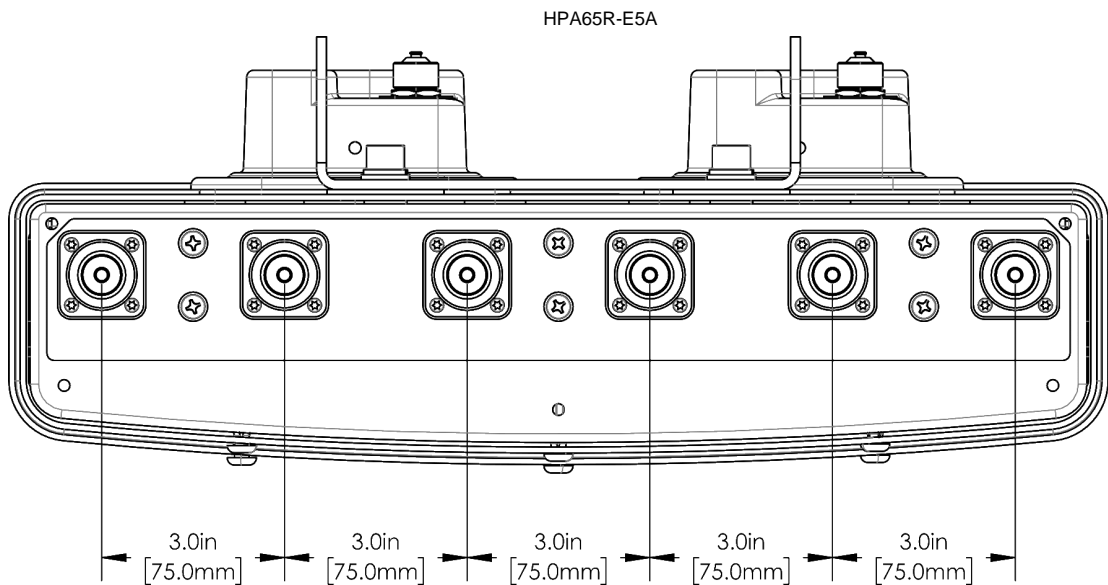
<b>Dimensions (LxWxD)</b>	60.0x17.4x4.2 in (1523x442x106 mm)
<b>Survival Wind Speed</b>	> 150 mph (> 241 kph)
<b>Front Wind Load</b>	230 lbs (1025 N) @ 100 mph (161 kph)
<b>Side Wind Load</b>	73 lbs (326 N) @ 100 mph (161 kph)
<b>Equivalent Flat Plate Area</b>	9.0 ft <sup>2</sup> (0.8 m <sup>2</sup> )
<b>Weight VET model</b>	40.8 lbs (18.5 kg)
<b>Weight RET model</b>	43.2 lbs (19.6 kg)
<b>Packaging Dimensions (LxWxD)</b>	67.6x21.6x10.0 in (1716x548x253 mm)
<b>Packaged Weight VET~</b>	70.5 lbs (32.0 kg)
<b>Packaged Weight RET~</b>	73.0 lbs (33.1 kg)
<b>Connector</b>	6 x 4.3-10 female or 6 x 7-16 DIN female long neck
<b>Mounting Pole</b>	2 to 5 in (5 to 12 cm)

\* Weight excludes mounting

Bottom View



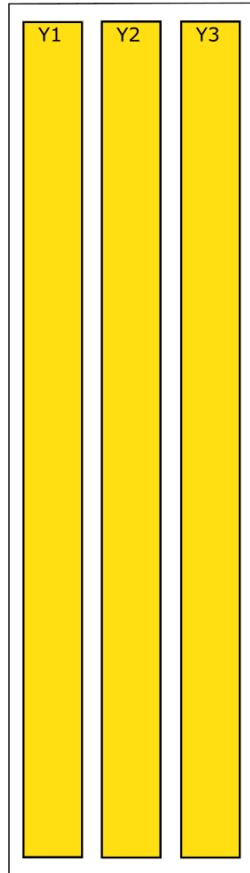
Connector Spacing



Mechanical

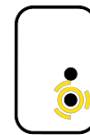
HPA65R-E5A Element and RET configuration

**Top of antenna  
Viewed from rear**

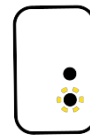


**RET placement  
as view from rear  
of antenna**

Top of antenna



**LEFT & CENTER**  
1695-2690 (E)  
Ports 1, 2, 3, 4  
(Y1 & Y2)



**RIGHT**  
1695-2690 (E)  
Ports 5, 6  
(Y3)

Array	Ports	Freq (MHz)	Ports controlled by common RET
Y1	1, 2	1695-2690	1, 2, 3 & 4
Y2	3, 4	1695-2690	
Y3	5, 6	1695-2690	5, 6

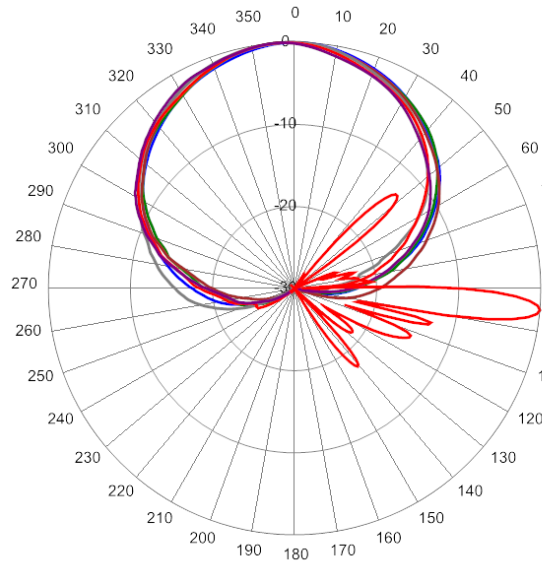
Typical Antenna Patterns

For detailed information on additional antenna patterns, contact customer support at [support@cciproducts.com](mailto:support@cciproducts.com)

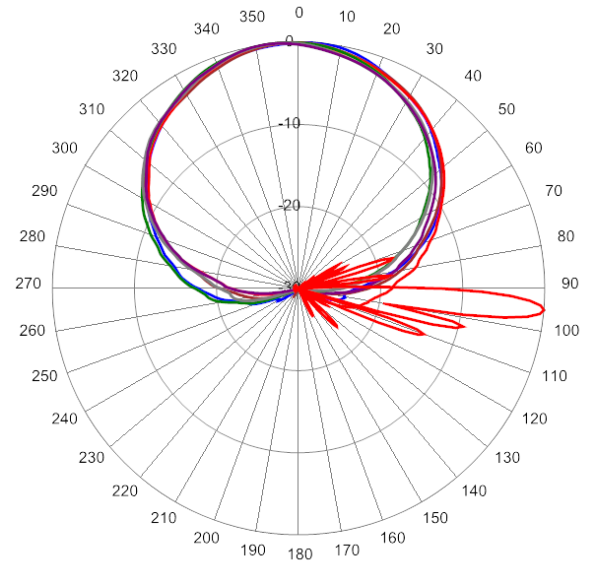


WideBand Antenna

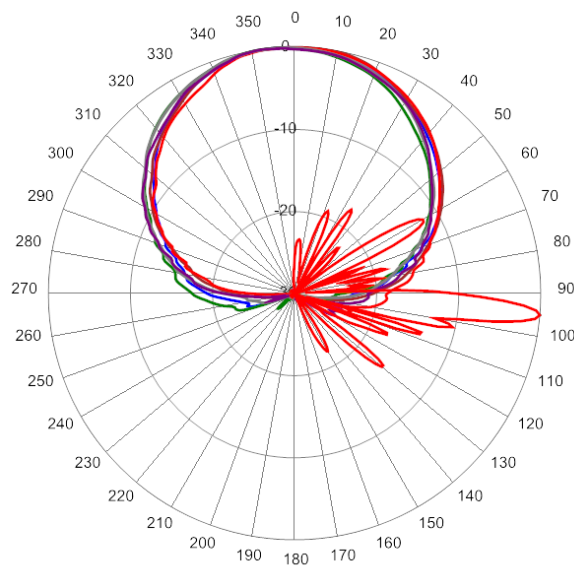
HPA65R-E5A



1920 MHz Azimuth with Elevation 5°



2155 MHz Azimuth with Elevation 5°



2500 MHz Azimuth with Elevation 5°



Parts & Accessories

<b>HPA65R-E5AA-K</b>	Five foot (1.5 m) WideBand antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 2 factory installed BSA-RET200 RET actuators and MBK-02 mounting bracket
<b>HPA65R-E5AB-K</b>	Five foot (1.5 m) WideBand antenna with 65° azimuth beamwidth, 7/16 DIN long neck female connectors, 2 factory installed BSA-RET200 RET actuators and MBK-02 mounting bracket
<b>HPA65V-E5AA-K</b>	Five foot (1.5 m) WideBand antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 2 factory installed manual (VET) knobs and MBK-02 mounting bracket
<b>HPA65V-E5AB-K</b>	Five foot (1.5 m) WideBand antenna with 65° azimuth beamwidth, 7/16 DIN long neck female connectors, 2 factory installed manual (VET) knobs and MBK-02 mounting bracket
<b>MBK-02</b>	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
<b>BSA-RET200</b>	Remote electrical tilt actuator
<b>QPA-CBK-AG-RRU</b>	WideBand antenna with 2 RET to RRU AISG cable kit
<b>QPA-CBK-RA-AG-RRU</b>	WideBand antenna with 2 RET to RRU AISG right angle cable kit

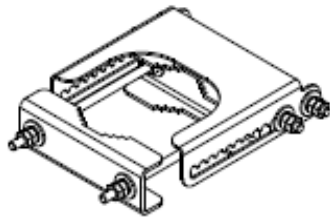


Mounting Bracket Kit

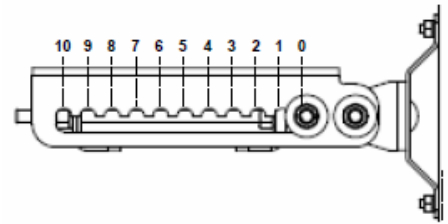
MBK-02

Mechanical

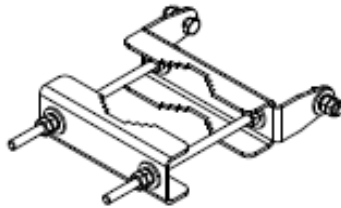
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	31.5 in (800 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-02 Top Adjustable Bracket



MBK-02 Top Adjustable Bracket Side View



MBK-02 Bottom Fixed Bracket



### Remote Electrical Tilt Actuator (RET)

BSA-RET200

#### General Specifications

Part Number	BSA-RET200
Protocols	AISG 2.0
RET Type	Type 1
Adjustment Cycles	>10,000 cycles
Tilt Accuracy	±0.1°
Temperature Range	-40° C to 70° C

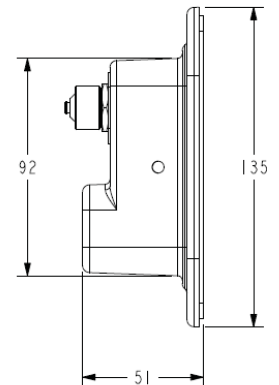
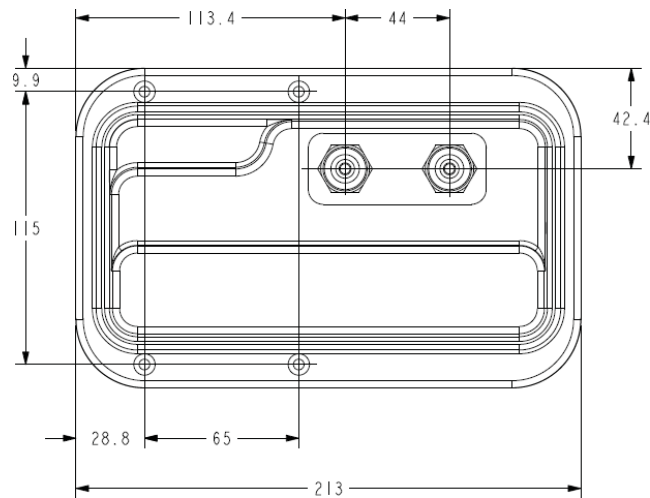
#### Electrical

Data Interface Signal	DC
Input Voltage	10-30 Vdc
Current Consumption Tilt	120 mA at $V_{in}=24$
Current Consumption Idle	55 mA at $V_{in}=24$
Hardware Interface	AISG-RS 485 A/B
Input Connector	Male 1 × 8 pin Daisy Chain
Output Connector	Female 1 × 8 pin Daisy Chain

#### Mechanical

Dimensions (LxWxD)	8.0x5.0x2.0 in. (213x135x51 mm)
Housing	ASA/ABS/Aluminum
Weight	1.7 lbs (0.75 kg)

ASA= Acrylic Styrene Acrylonitrile  
ABS=Acrylonitrile Butadiene Styrene







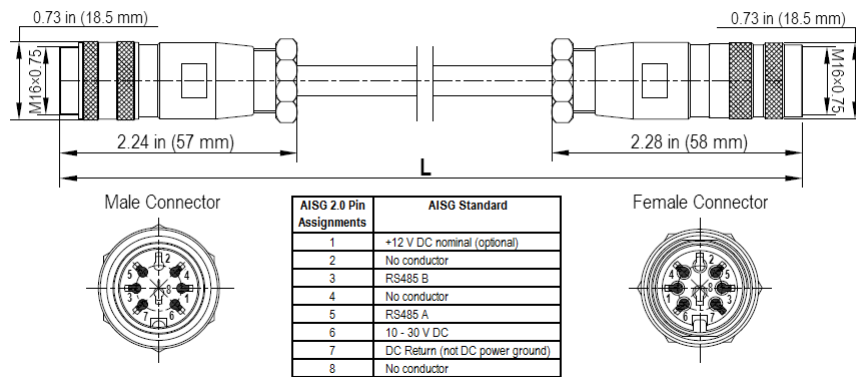
Quad Port AISG Cable Kit

QPA-CBK-AG-RRU

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-M-F-18	AISGC-M-F-10FT
Cable style	UL2464	
Protocol	AISG 1.1 and AISG 2.0	
Maximum voltage	300 V	
Rated current	5 A at 104° F (40° C)	
Temperature Range	-40° to 80° C	
Flammability	UL 1581 VW-1	
Ingress Protection	IEC 60529:2001, IP67	
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 N·m)	
Construction	Shielded (Tinned Copper Braid)	
Braid coverage	85%	
Jacket Material	Matte Polyurethane (Black)	
Conductors	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464	
Cable Diameter	0.307 in (7.8 mm)	
Minimum bend radius	3.9 in (100 mm)	
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female	
Length	18-20 in (457-508)	120 in (3048 mm)
Weight	0.27 lbs (0.12 kg)	0.69 lbs (0.31 kg)
Cables per kit	1	2

Mechanical Specifications



AISG-Male to AISG-Female Jumper Cable



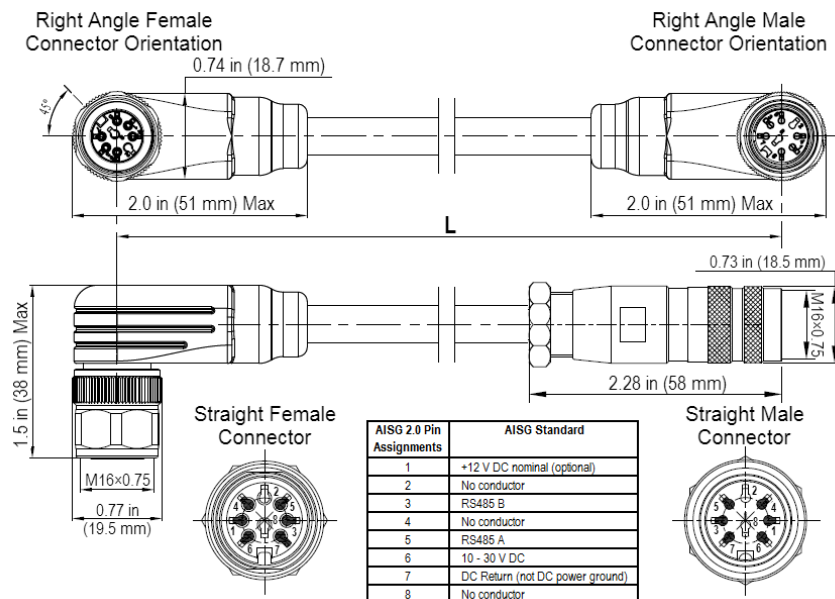
Quad Port AISG Cable Kit

QPA-CBK-RA-AG-RRU

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-MRA-FRA-20	AISGC-M-FRA-10FT
Cable style	UL2464	
Protocol	AISG 1.1 and AISG 2.0	
Maximum voltage	300 V	
Rated current	5 A at 104° F (40° C)	
Temperature Range	-40° to 80° C	
Flammability	UL 1581 VW-1	
Ingress Protection	IEC 60529:2001, IP67	
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 N·m)	
Construction	Shielded (Tinned Copper Braid)	
Braid coverage	85%	
Jacket Material	Matte Polyurethane (Black)	
Conductors	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464	
Cable Diameter	0.307 in (7.8 mm)	
Minimum bend radius	3.9 in (100 mm)	
Connectors	2 x 8 pin IEC 60130-9 Right angle male/right angle female	2 x 8 pin IEC 60130-9 Straight male/right angle female
Length	20 in (508 mm)	120 in (3048 mm)
Weight	0.23 lbs (0.10 kg)	0.77 lbs (0.35 kg)
Cables per kit	1	2

Mechanical Specifications



Right Angle to Right Angle and Right Angle to Straight Jumper Cable



STANDARDS & CERTIFICATIONS

WideBand Antenna

HPA65R-E5A

Standards & Compliance

<b>Safety</b>	EN 60950-1, UL 60950-1
<b>Emission</b>	EN 55022
<b>Immunity</b>	EN 55024
<b>Environmental</b>	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN 60529, IP 24

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

