

- Nine foot (2.7 m) internally multiplexed MultiBand, thirty port antenna, with a 65° azimuth beamwidth covering 698-960 MHz and 1427-2690 MHz frequencies
- Supports multiple radios (up to 8) directly in 4T4R configurations without the need for additional combiners or filters
- Six total low band ports covering 698-960MHz allowing for the use of the 700MHz, 800MHz and 900MHz bands each with separate Tx ports
- Eight wide mid band ports allowing for Dual 4T4R and covering 1695-1880 for 1800 LTE
- Four wide mid band ports allowing for 4T4R and covering 1695-2690 MHz
- Eight wide mid band ports allowing for Dual 4T4R and covering 1695-1880 MHz for 1800 LTE
- Eight wide mid band ports allowing for Dual 4T4R and covering 2300-2690 MHz
- Full Spectrum Compliance for 698-960 MHz / 1427-2690 MHz operations
- 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
- Internally Integrated RET Controllers (Type 17)
- Equipped with 4.3-10 connector

Overview

The CCI internally multiplexed MultiBand array is a thirty-port antenna, with six wide low band ports covering within 698-960 MHz and 24 wide mid band ports covering within 1427-2690 MHz.

The antenna provides the capability to deploy 4T4R (4x4 MIMO) or Dual 4T4R (4x4 MIMO) on multiple frequencies within the Mid bands all with separate RET control.

CCI antennas are designed and produced to ISO 9001:2008 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- With CCI's multiband antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs



SPECIFICATIONS

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

Electrical

Ports	2 x Low Band Ports for 698-862 MHz	2 x Low Band Ports for 880-960 MHz	2 x Low Band Ports for 698-960 MHz		
Frequency Range	698-862 MHz	880-960 MHz	698-806 MHz	824-896 MHz	880-960 MHz
Gain	15.7 dBi	16.4 dBi	15.3 dBi	16.4 dBi	16.5 dBi
Azimuth Beamwidth (-3dB)	74°	59°	78°	67°	60°
Elevation Beamwidth (-3dB)	9.7°	7.8°	10.0°	8.3°	7.7°
Electrical Downtilt	2° to 14°	2° to 14°	2° to 14°	2° to 14°	2° to 14°
Elevation Sidelobes (1st Upper)	<-19 dB	<-17 dB	<-17 dB	<-18 dB	<-16 dB
Front-to-Back Ratio @180°	> 30 dB	> 32 dB	> 29 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 23 dB	> 24 dB	> 25 dB	> 21 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)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	500 watts	500 watts	500 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

All specifications are subject to change without notice.

BASTA Electrical Specifications					
Frequency Range	698-862 MHz	758-798 MHz	698-806 MHz	824-896 MHz	880-960 MHz
Gain over all Tilts (dBi)	14.7	15.8	14.4	15.4	15.8
Gain over all Tilts Tolerance (dB)	1.0	0.7	0.8	0.7	0.7
Gain at Low-Tilt (dBi)	14.8	15.8	14.6	15.5	15.9
Gain at Mid-Tilt (dBi)	14.9	16.2	14.7	15.6	16.0
Gain at High-Tilt (dBi)	14.3	15.4	14.1	15.0	15.5
Azimuth Beamwidth Tolerance (°)	14.0	9.6	8.8	13.5	6.3
Elevation Beamwidth Tolerance (°)	1.4	0.6	1.4	0.6	0.6
Electrical Downtilt Deviation (°)	1.1	0.9	1.0	0.8	0.8
First Upper Sidelobe Suppression (dB)	14.1	13.6	13.0	13.2	13.0
Upper Sidelobe Suppression Peak to 20°(dB)	15.5	13.3	14.4	13.3	13.0
Front-to-Back Ratio over ±20° (dB)	23.4	26.4	20.6	22.2	21.3
Cross-polar Discrimination at ±60° (dB)	7.9	9.3	10.1	8.3	5.2

* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.
All specifications are subject to change without notice.



SPECIFICATIONS

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

Electrical

Ports	4 x Mid Band Ports for 1427-2690 MHz and 4 x Mid Band Ports for only 1695-2690 MHz					
Frequency Range	1427-1518 MHz	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain ¹	15.5 dBi	16.4 dBi	17.4 dBi	17.4 dBi	17.5 dBi	17.5 dBi
Azimuth Beamwidth (-3dB)	64°	70°	67°	68°	60°	66°
Elevation Beamwidth (-3dB)	8.8°	7.2°	6.6°	5.9°	5.0°	4.9°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	< -17 dB	< -17 dB	< -17 dB	< -17 dB	< -15 dB	< -14 dB
Front-to-Back Ratio @180°	> 30 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 15 dB	> 16 dB	> 15 dB	> 15 dB	> 20 dB	> 16 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 20 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	300 watts	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°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

¹Peak gain across sub-bands.
All specifications are subject to change without notice.

BASTA Electrical Specifications						
Frequency Range	1427-1518 MHz	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain over all Tilts (dBi)	14.5	15.5	15.9	16.2	16.3	16.0
Gain over all Tilts Tolerance (dB)	0.8	0.7	0.9	0.7	0.5	0.8
Gain at Low-Tilt (dBi)	14.5	15.5	15.5	15.8	16.2	16.1
Gain at Mid-Tilt (dBi)	14.5	15.6	16.0	16.3	16.5	16.2
Gain at High-Tilt (dBi)	14.4	15.5	16.1	16.4	16.1	15.9
Azimuth Beamwidth Tolerance (°)	15.7	7.4	8.4	8.2	12.1	12.9
Elevation Beamwidth Tolerance (°)	0.4	0.6	0.5	0.7	0.3	0.3
Electrical Downtilt Deviation (°)	1.0	0.7	0.7	0.7	0.6	0.6
First Upper Sidelobe Suppression (dB)	9.6	11.9	12.1	12.1	10.0	9.1
Upper Sidelobe Suppression Peak to 20°(dB)	9.6	12.3	12.4	11.8	9.1	9.0
Front-to-Back Ratio over ±20° (dB)	19.1	21.8	22.8	24.3	26.4	26.4
Cross-polar Discrimination at ±60° (dB)	4.0	8.5	6.0	5.9	6.2	8.4

* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.
All specifications are subject to change without notice.



SPECIFICATIONS

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

Electrical

Ports	8 × Mid Band Ports for 1695-1880 MHz	8 × Mid Band Ports for 2300-2690 MHz	
Frequency Range	1695-1880 MHz	2300-2400 MHz	2496-2690 MHz
Gain	16.7 dBi	17.3 dBi	17.3 dBi
Azimuth Beamwidth (-3dB)	71°	63°	67°
Elevation Beamwidth (-3dB)	7.2°	5.0°	4.9°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	<-17 dB	<-16 dB	<-14 dB
Front-to-Back Ratio @180°	> 32 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 17 dB	> 24 dB	> 25 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 21 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground

All specifications are subject to change without notice.

BASTA Electrical Specifications			
	1695-1880 MHz	2300-2400 MHz	2496-2690 MHz
Frequency Range	1695-1880 MHz	2300-2400 MHz	2496-2690 MHz
Gain over all Tilts (dBi)	15.7	16.5	16.1
Gain over all Tilts Tolerance (dB)	0.6	0.6	0.8
Gain at Low-Tilt (dBi)	15.8	16.8	16.7
Gain at Mid-Tilt (dBi)	15.8	16.7	16.1
Gain at High-Tilt (dBi)	15.5	16.1	15.7
Azimuth Beamwidth Tolerance (°)	5.5	10.2	11.5
Elevation Beamwidth Tolerance (°)	0.6	0.3	0.3
Electrical Downtilt Deviation (°)	0.5	0.5	0.5
First Upper Sidelobe Suppression (dB)	12.2	8.6	9.2
Upper Sidelobe Suppression Peak to 20°(dB)	13.2	8.2	9.5
Front-to-Back Ratio over ±20° (dB)	19.5	25.8	27.5
Cross-polar Discrimination at ±60° (dB)	3.7	6.0	7.4

* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.
All specifications are subject to change without notice.



SPECIFICATIONS

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

Mechanical

Dimensions (LxWxD)	106.3x19.6x10.2 in (2700x498x260 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load¹	307 lbf @ 100 mph 1366 N @ 161 kph
Side Wind Load¹	122 lbf @ 100 mph 541 N @ 161 kph
Effective Projective Area (EPA), Front¹	12.2 ft ² (1.1 m ²)
Weight*	150.4 lbs (68.2 kg)
Connector	30 x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

¹Windload values calculated using CFD analysis
* Weight excludes mounting kit



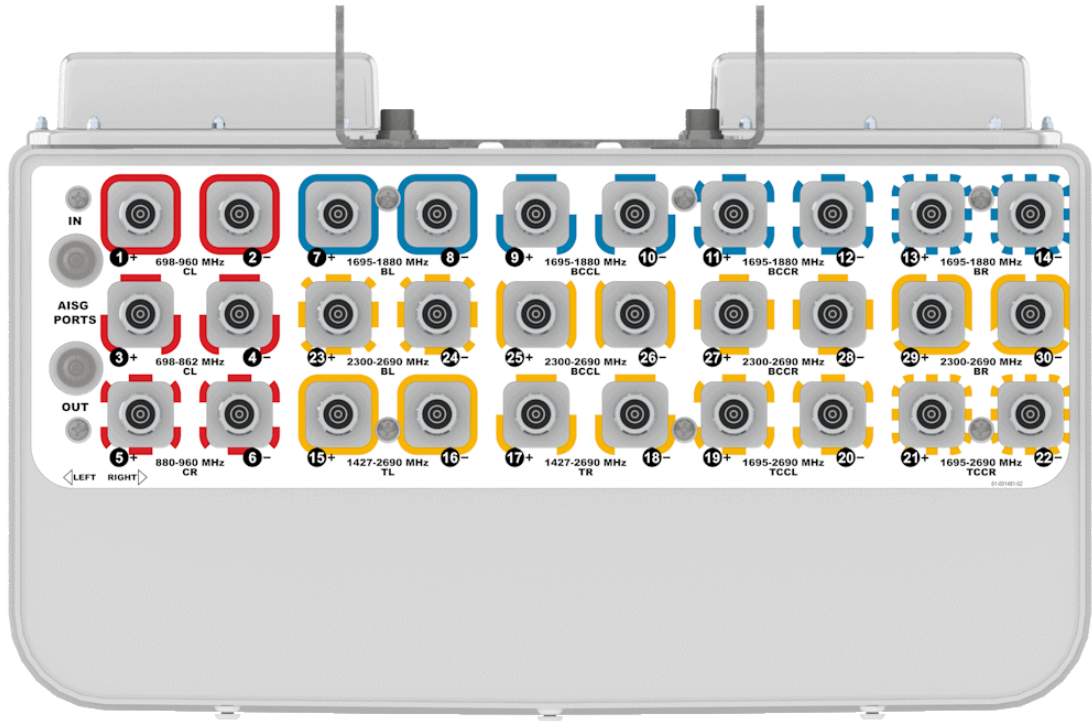
SPECIFICATIONS

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

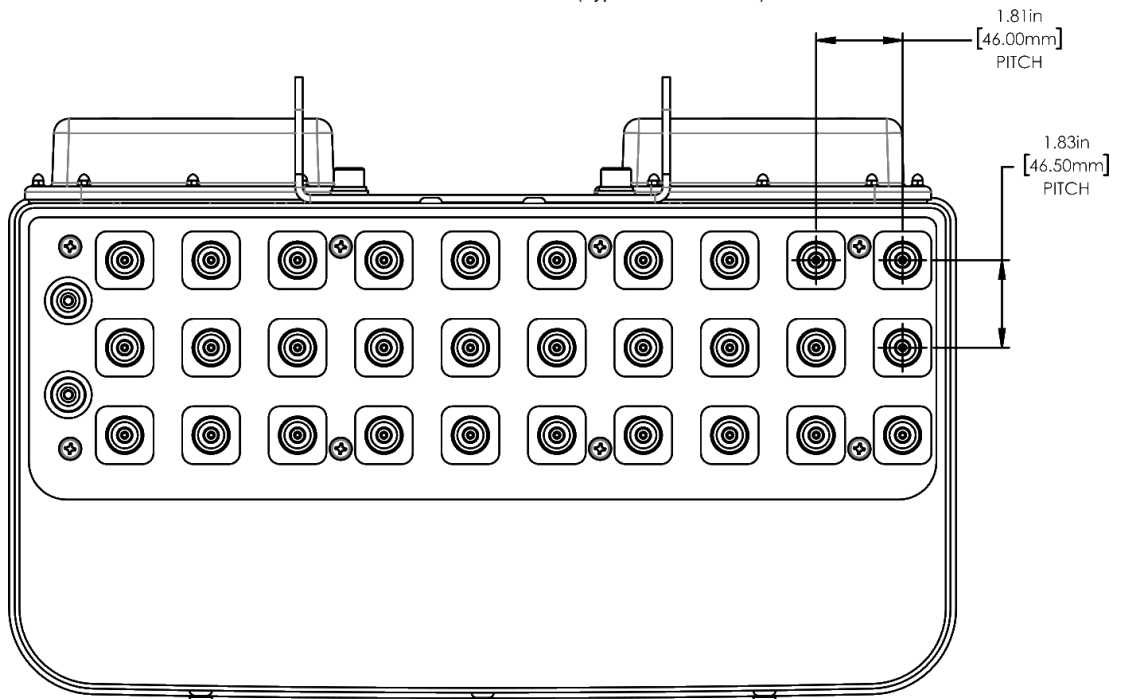
Bottom View

30PA65R-KO9A



Connector Spacing

30PA65R-KO9A (Type 17 Internal RET)





SPECIFICATIONS

Multi-Band Fourteen-Port Antenna

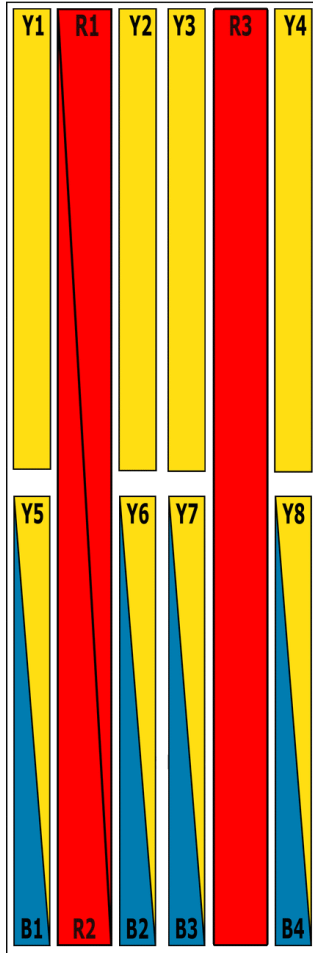
30PA65R-KO9A

Mechanical

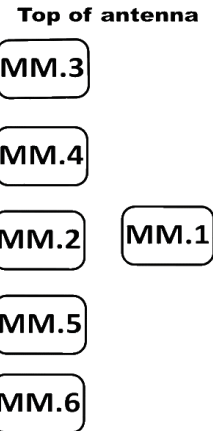
RET to Element Configuration

30PA65R-KO9AA Element and RET configuration (Type 17 Internal RET)

**Top of antenna
Viewed from rear**



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



Array	Ports	Freq (MHz)	Ports controlled by common RET	AISG RET UID
R3	1, 2	698-960	1, 2	C1xxxxxxMM.1
R1	3, 4	698-862	3, 4, 5, 6	C1xxxxxxMM.2
R2	5, 6	880-960		
Y1	15, 16	1427-2690	15, 16, 17, 18	C1xxxxxxMM.3
Y4	17, 18	1427-2690		
Y2	19, 20	1695-2690		
Y3	21, 22	1695-2690	19, 20, 21, 22	C1xxxxxxMM.4
B1	7, 8	1695-1880		
B2	9, 10	1695-1880	7, 8, 9, 10, 23, 24, 25, 26	C1xxxxxxMM.5
Y5	23, 24	2300-2690		
Y6	25, 26	2300-2690	11, 12, 13, 14, 27, 28, 29, 30	C1xxxxxxMM.6
B3	11, 12	1695-1880		
B4	13, 14	1695-1880		
Y7	27, 28	2300-2690		
Y8	29, 30	2300-2690		

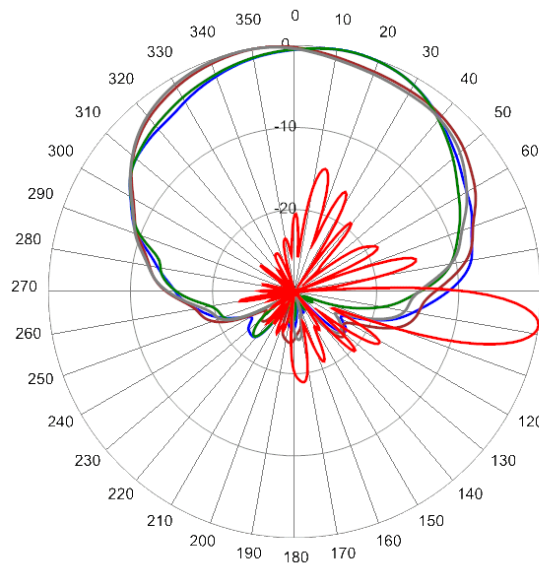


Multi-Band Fourteen-Port Antenna

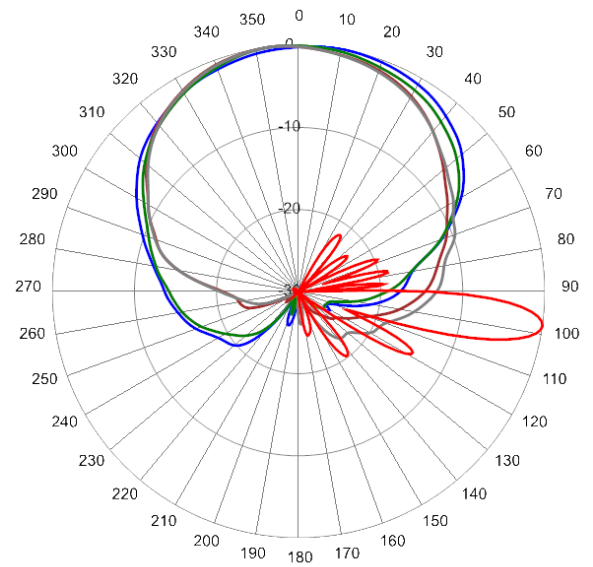
30PA65R-KO9A

Typical Antenna Patterns

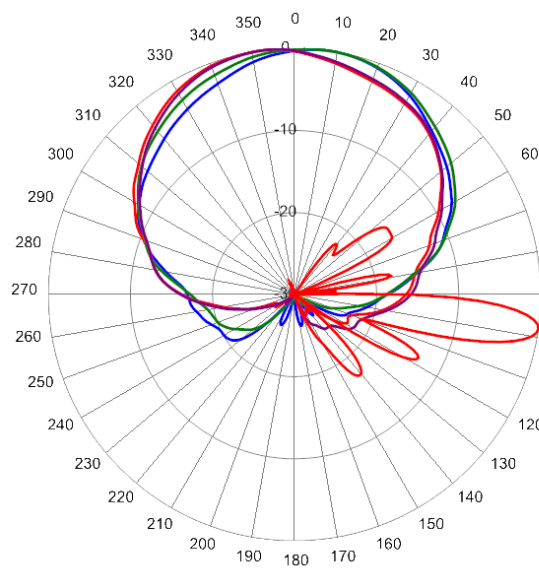
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



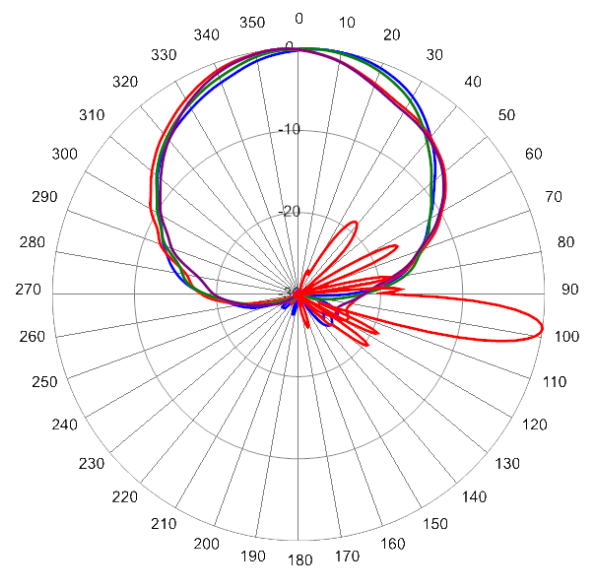
710 MHz Azimuth with Elevation 8° (Ports 1, 2, 3 & 4)



824 MHz Azimuth with Elevation 8° (Ports 1, 2, 3 & 4)



880 MHz Azimuth with Elevation 8° (Ports 1, 2, 5 & 6)



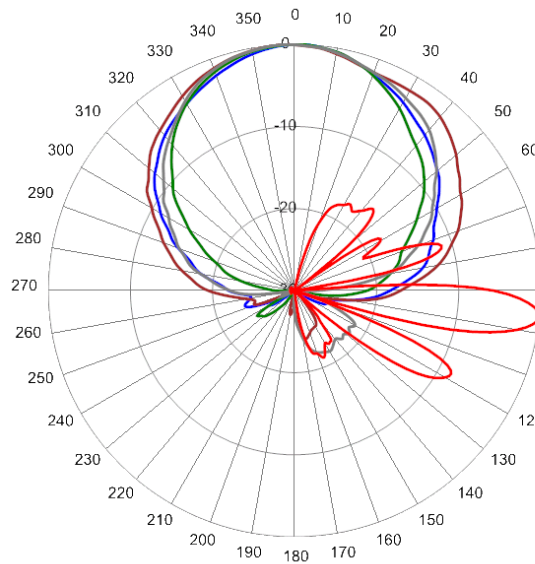
945 MHz Azimuth with Elevation 8° (Ports 1, 2, 5 & 6)



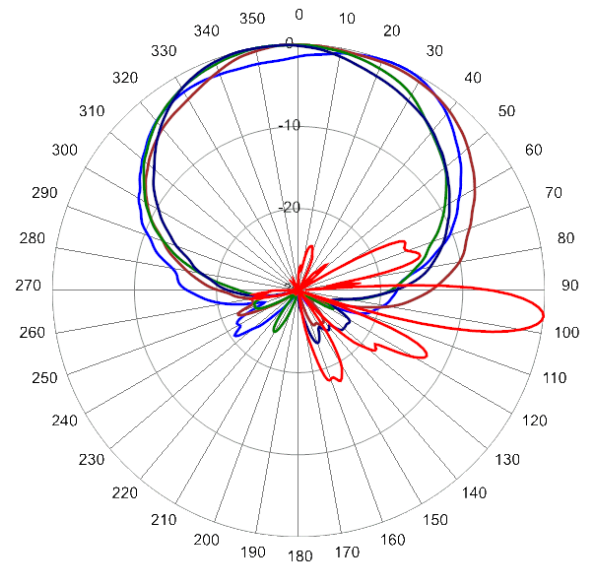
Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

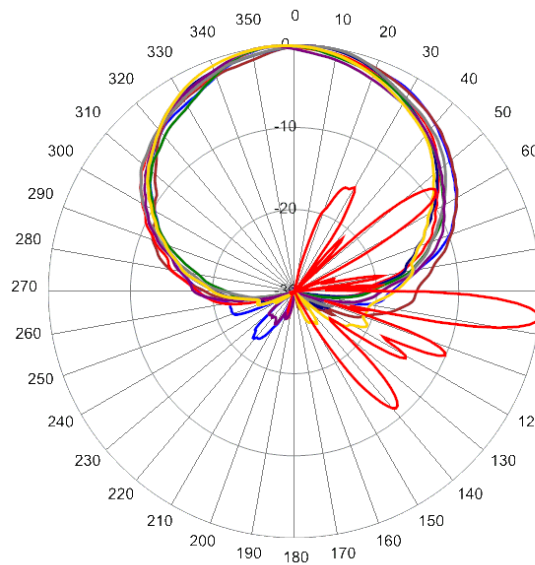
Typical Antenna Patterns



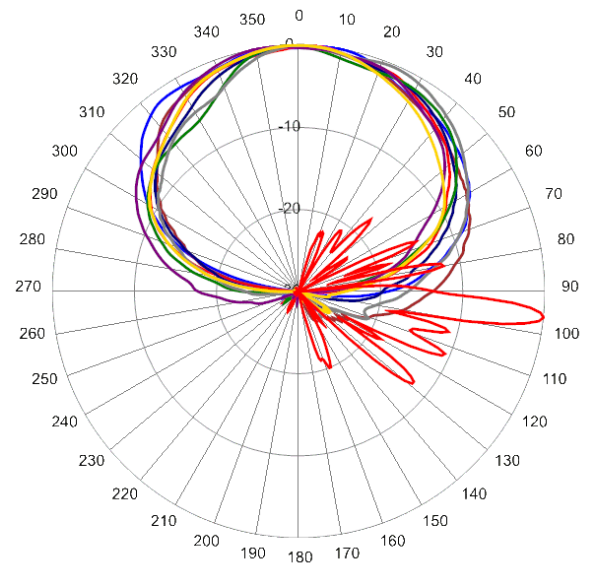
1455 MHz Azimuth with Elevation 6° (Ports 15 to 18)



1518 MHz Azimuth with Elevation 6° (Ports 15 to 18)



1990 MHz Azimuth with Elevation 6° (Ports 15 to 18)

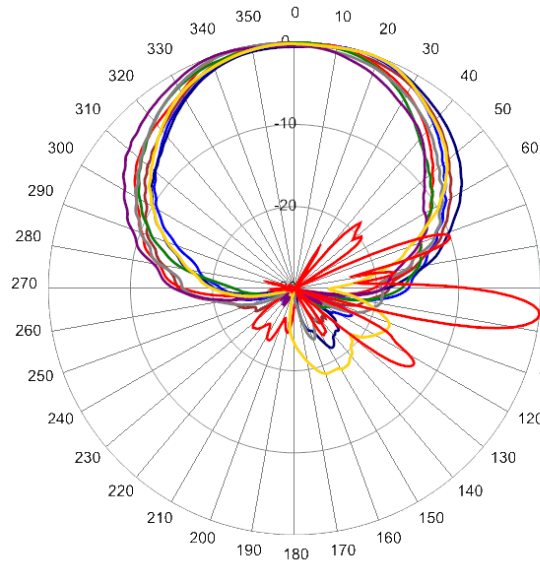


2500 MHz Azimuth with Elevation 6° (Ports 15 to 18)

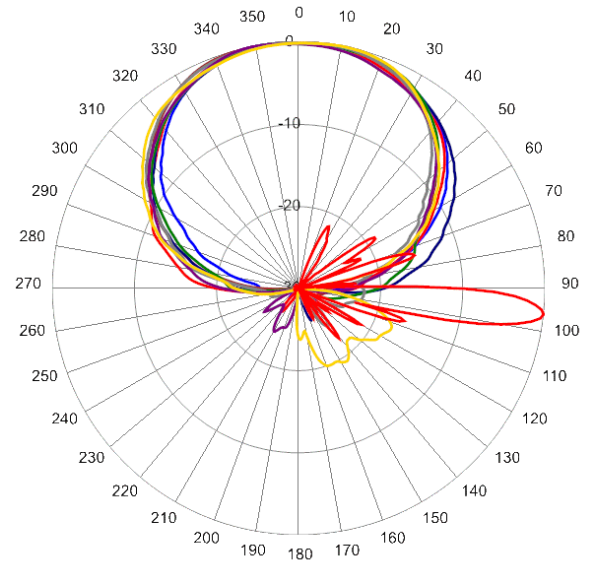


Multi-Band Fourteen-Port Antenna

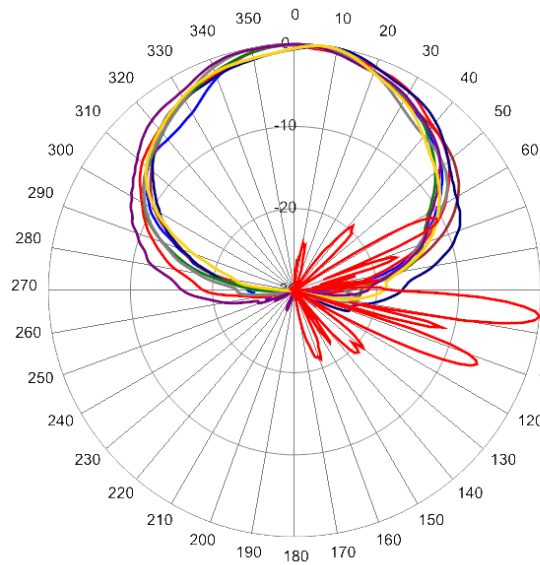
30PA65R-KO9A



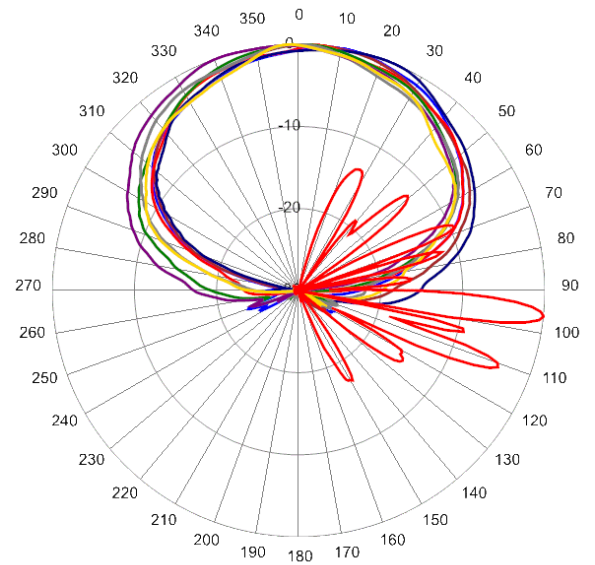
1695 MHz Azimuth with Elevation 6° (Ports 7 to 14)



1850 MHz Azimuth with Elevation 6° (Ports 7 to 14)



2340 MHz Azimuth with Elevation 4° (Ports 23 to 30)



2630 MHz Azimuth with Elevation 4° (Ports 23 to 30)



ORDERING

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

Parts & Accessories

30PA65R-KO9AA-K	Nine foot (2.7 m) antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 5 factory installed BSA-RET400 RET actuators (Type 17 internal) and MBK-01 mounting bracket
MBK-01	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
MBK-16	Mounting Kit with fixed 0° mechanical tilt
BSA-RET400	Type 17 Internal Remote Electrical Tilt System (RET)
AISGC-M-F-10FT	10 Ft (3 m) Male/Female RRU to Antenna AISG cable

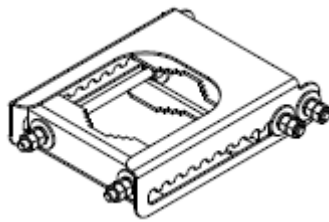


Mounting Bracket Kit

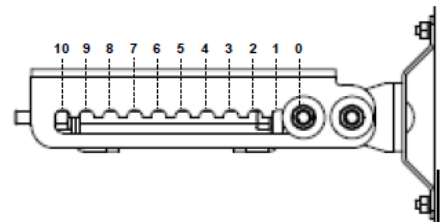
MBK-01

Mechanical

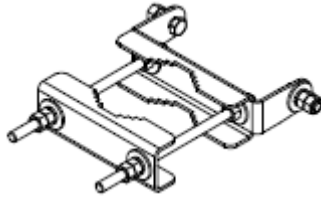
Weight	12.6 lbs (5.7 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lb (54 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

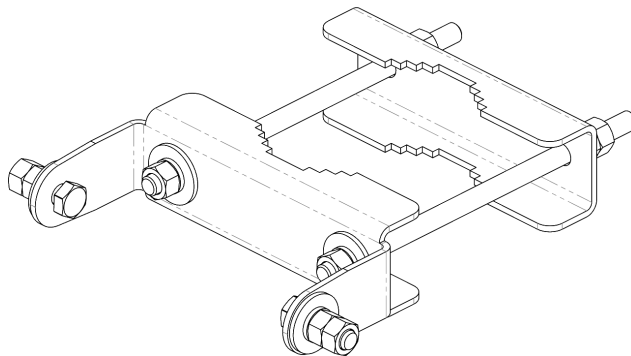
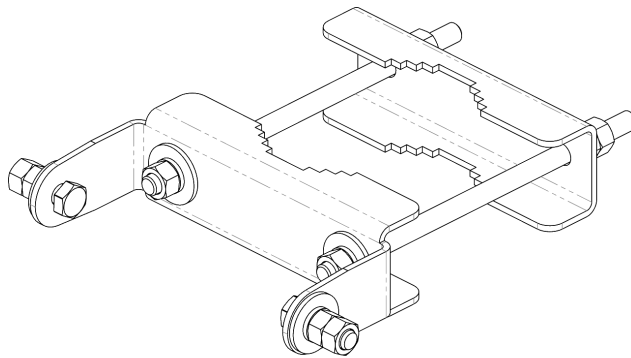


Mounting Bracket Kit

MBK-16

Mechanical

Weight	9.9 lbs (4.5 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lbs (54 N·m)
Mechanical Tilt	0°



MBK-16 Top and Bottom Bracket



Internal Remote Electrical Tilt (iRET)

BSA-RET400

General Specifications

Part Number	BSA-RET400
Protocols	AISG 2.0
RET Type	Type 17
Adjustment Cycles	>10,000 cycles
Tilt Accuracy	±0.1°
Temperature Range	-40° C to 70° C

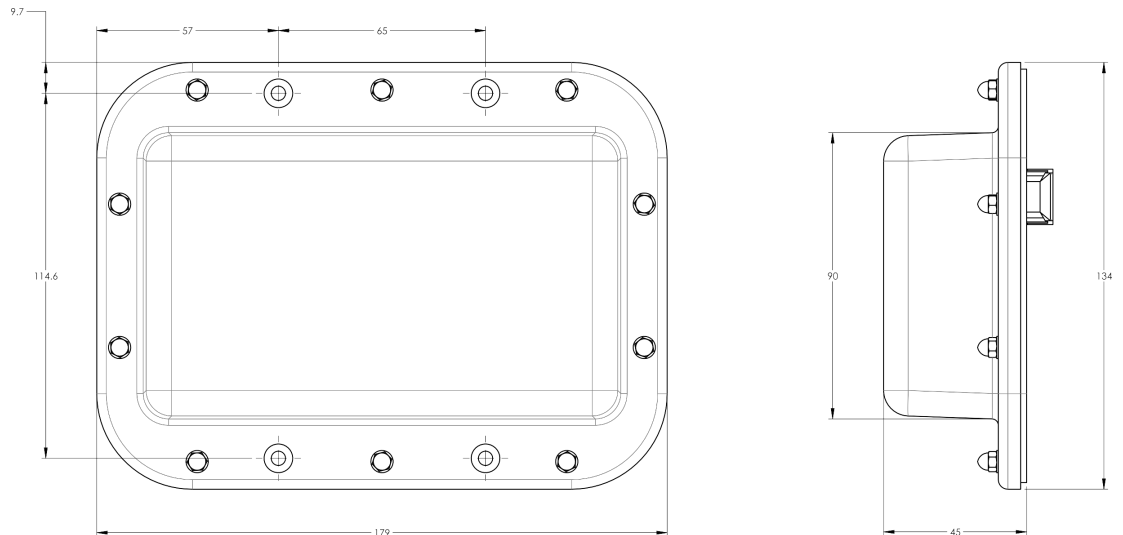
Electrical

Data Interface Signal	DC
Input Voltage	10-30 Vdc
Current Consumption Tilt	100 mA at $V_{in}=24$ (500 mA MAX)
Current Consumption Idle	10 mA at $V_{in}=24$

Mechanical

Dimensions (LxWxD)	7.0x5.3x1.8 in. (179x134x45 mm)
Housing	ASA/ABS/Aluminum
Weight	1.3 lbs (0.6 kg)

ASA= Acrylic Styrene Acrylonitrile
ABS=Acrylonitrile Butadiene Styrene





AISG Cable

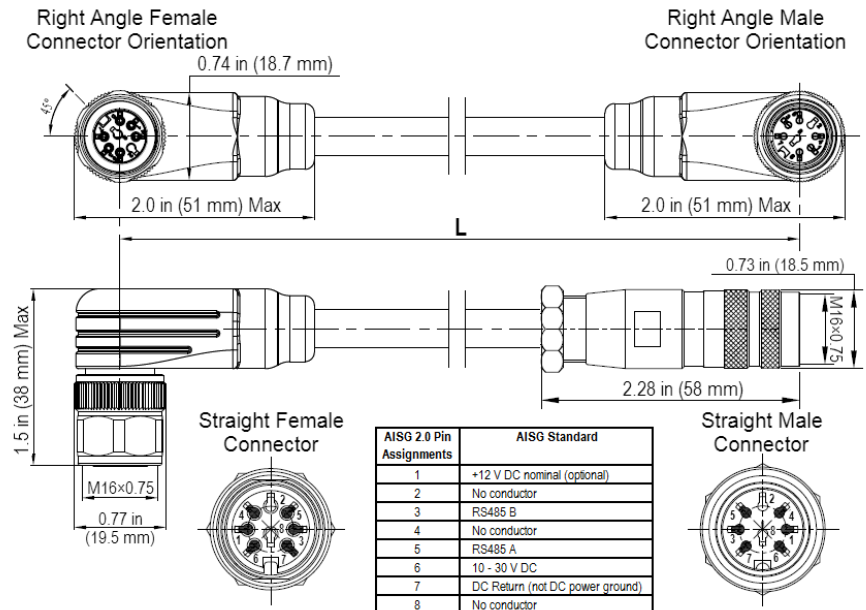
AISGC-M-F-xFT

Electrical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cable style	UL2464
Protocol	AISG 1.1 and AISG 2.0
Maximum voltage	300 V
Rated current	5 A at 104° F (40° C)

Mechanical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cables per kit	1
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female
Tightening torque	Hand tighten only \approx 1.84 ft-lbs (2.5 Nm)
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)
Length	See order details
Minimum bend radius	3.15 in (80 mm)



AISG-Male to AISG-Female Jumper Cable



Environmental Specifications

Individual Cable Part Number	AISGC-M-F-xFT
Temperature Range	-40° to 80° C
Flammability	UL 1581 VW-1
Ingress Protection	IEC 60529:2001, IP67



STANDARDS & CERTIFICATIONS

Multi-Band Fourteen-Port Antenna

30PA65R-KO9A

Standards & Compliance

Safety	EN 60950-1, UL 60950-1
Emission	EN 55022
Immunity	EN 55024
Environmental	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

