

### KKa-FPA-1730-A

A Ka-band Beam Steering Antenna operating with a transmit frequency of 27.5-30 GHz and receive frequency of 17.7-20.2 GHz.

### **Overview**

The KKa-FPA-1730-A is an active transmitting Beam Steering Antenna developed by ReliaSat.

A high-performance solution for modern communication systems. The antenna can be used for satellite, aviation and ground communications in remote areas as well as 5G systems. Offering a small profile and flat geometry, this technology enables wide operational bandwidth, good polarization and high EIRP in accordance with customer needs.





#### Dimensions: (L) 520 mm x (W) 320 mm x (H) 65 mm



- Transmit 27.5-30 GHz
- Receive 17.7-20.2 GHz
- -60 to 60 degree steering in both azimuth and elevation direction
- Circular polarization



- Satellite communications
- Aviation communications
- Ground communications in remote areas
- 5G

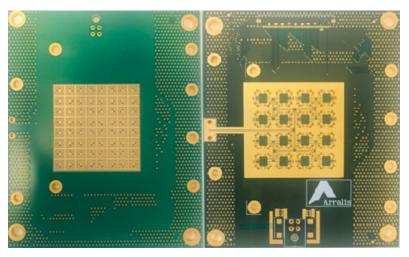
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## **Transmit Specification**

Parameter	Value	Unit
Frequency Band	27.5 - 30	GHz
Bandwidth	2.5	GHz
EIRP	48 @ 0 <sup>o</sup> scan 44.6 @ 60 <sup>o</sup> scan	dBm
HPBW	13.6 @ 0º scan 22.4 @ 60º scan	Degree
Gain	22 @ 0º scan 18.6 @ 60º scan	dBi
Axial Ratio Over Bandwidth	<3	dB
Steering Angle	±60°	Degree
SLL	-13 to -20 (controllable)	dB
Polarization	LHCP, RHCP	
RF Port VSWR	<2	
Rf Input Power (Maximum)	0	dBm
DC Power Consumption	9.6	Watts
Board Size	110.5 x 90.5	mm
Connector	2.92 (K)	mm

## **Antenna Boards**



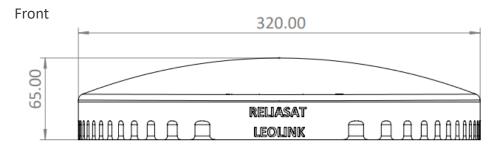
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## **Receive Specification**

Parameter	Value	Unit
Frequency Band	17.7 - 20.2	GHz
Bandwidth	2.5	GHz
HPBW	14.2 @ 0º scan 23.2 @ 60º scan	Degree
Gain	21.9 @ 0º scan 18.4 @ 60º scan	dBi
Axial Ratio Over Bandwidth	<3	dB
Steering Angle	±60°	Degree
SLL	-13 to -20 (controllable)	dB
Polarization	LHCP, RHCP	
RF Port VSWR	<2	
Rf Input Power (Maximum)	0	dBm
DC Power Consumption	6.4	Watts
Board Size	120 x 90.5	mm
Connector	2.92 (K)	mm

## **Technical Drawings**



Side View 520.00

#### Dimensions are in millimetres

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## **Graphical User Interface**

The below images showcase the graphical user interface for the beam steering antenna. Below we have shown examples for the phase, amplitude and telemetry.

### Phase

Users are able to view the phase, amplitude and telemetry of each element in the array.

performed.

The sidebar contains controls to connect to the FPA, initialise the hardware, reset the hardware and save the data displayed in the log.

#### Celebrar - data - Alter ATTENATION 5 4 2015 165.13 -1.13 (in the - 44 Severe lowery lo UW/WRITE SUCCESS Sep 14 12 18 11 2022 WRITE SUCCESS E SUCCE 2022 ATT2 SUCCESS TEL POET WINRITE SUCCESS WIWRITE SUCCESSI TISSUE WRITING TO THE DEVICE! **WRITING TO THE DEVICE** 2022TPROD VID! UE WRITING TO THE DEVICE! Sep 14 12:18:16 2022TV Sep 14 12:18:49 2022TR Sep 14 12:18:49 2022TR Sep 14 12:10:05 2022TR VERSION/DUTI WRITING TO THE DEVICE] INI TWITS 14 12:19:06 2022TATT Wed Sep 14 12:19:07 2022 ATT1 [W][122UE WRITI TO THE DEVICE The GUI log displays the commands The control window allows the sent to the hardware and the user to beam steer the array and status of each action the GUI has change the settings of individual

IC's.

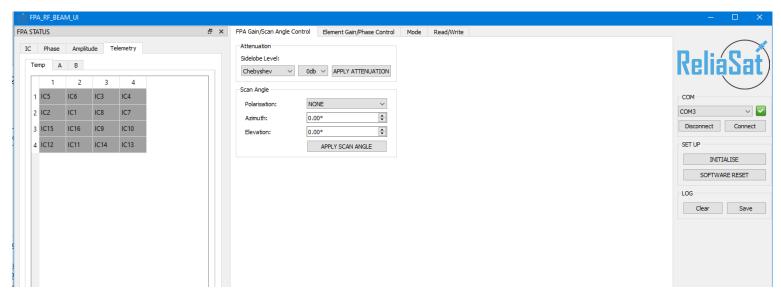
|--|



## Amplitude

PA STATUS				X FPA Gain/Scan Angle Control Element Gain/Phase Control	trol Mode Read/Write		
IC Phase Amplitude Tele	lenstry			IC: 1 V BW Register		Re	iaSat
1         2         3           1         -9.5         -8.5         -6.0           2         -8.5         -7.0         -5.0           3         -6.0         -5.0         -2.5           4         -4.5         -3.5         -1.0           5         -4.5         -3.5         -1.0           6         -6.0         -5.0         -2.5           7         -8.5         -7.0         -5.0	-3.5 -3.5 - -1.0 -1.0 - 0.0 0.0 - 0.0 0.0 - -1.0 -1.0 -	6         7           6.0         -8.5           5.0         -7.0           2.5         -5.0           1.0         -3.5           2.5         -5.0           5.0         -7.0           5.0         -5.0           5.0         -7.0	8 -93 -85 -60 -45 -60 -85	DISABLE         ENABLE           NF31         RF21           Pieses         150.000°           A Attenti         0.00           O IS FP1a         O IS SF2a           Pieses         150.000°           Pieses         0.00           D IS FP1a         O IS SF2a           Pieses         150.000°           D IS FP1a         O IS SF2a           D IS SF2b         D IS SF2b           COMA ATT         COMA ATT	R/3:         R/4:           ♥         Piece:         0.000*         ♥         Piece:         118.10*           ●         Atten:         0.00         ●         Atten:         0.00           ●         Piece:         0.000*         ●         Piece:         118.10*           ●         Piece:         0.000*         ●         Piece:         118.10*           ●         Piece:         0.000*         ●         Piece:         118.10*           ●         Piece:         0.000*         ●         Piece:         0.00           ●         Atten:         0.00         Atten:         0.00           ●         Dis #72b         ●         Dis #74b	COMS Decom SRT UP 20 <sup>4</sup>	INITIALISE
8 9.5 -8.5 -6.0		6.0 -8.5	45	ATTD spi_cound_te spi_cound_te spi_cound_te ATTL spi_cound_te spi_cound te spi_	0 0 0	0 0 0	
zimuth: 40.11	1	Elevation:	-19.82		WRITE		

## Telemetry



## **Contact Information**

ReliaSat

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www.reliasat.com

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