



## ACA Series

C-Band Outdoor Low Noise Amplifier/Block  
Ku-Band Low Noise Block

Agilis ACA Series C-Band Outdoor Low Noise Amplifier (LNA) and C-Band/Ku-Band Low Noise Block (LNB) offers premium performance and reliability in the most versatile package available for a LNA/LNB. The latest technology used produces the lowest possible noise temperature in an uncooled LNA/LNB. System performance is enhanced by outstanding gain stability and gain flatness.

Agilis LNA/LNB is housed in a weatherproof enclosure with a small profile to better accommodate redundancy configuration.

They are specially designed for satellite earth station receiver front ends and other applications. Utilizing state-of-the-art technology, Agilis LNAs/LNBs have been designed for both fixed and transportable applications. High performance models are available in several standard frequency ranges.

### Features

- Available for all C-Band & Ku-Band frequencies
- Excellent gain flatness and gain stability
- Low current consumption
- High/Small Signal gain
- Wide gain control range
- Low noise figure

### Reliability

Field proven under harsh environment conditions, Agilis LNAs/LNBs can withstand temperature ranging from  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  with up to 100% humidity.

### Quality Assurance

All Agilis ODUs go through intensive active electrical stress screening with performance being monitored. In addition, all units undergo 100% waterproof test equivalent to IP65 to ensure normal operation during tropical, cold and harsh environment.

# ACA Series

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Ku-Band Low Noise Block



## Technical Specifications

### C-BAND LOW NOISE AMPLIFIER Input

<b>INPUT FREQUENCY (GHz)</b>	
Intelsat	3.625 to 4.200
Gorizont	3.400 to 3.950
Insat	4.500 to 4.800
ST-1/Palapa C	3.400 to 3.700
Full-C	3.400 to 4.200
<b>NOISE TEMPERATURE @ 25°C</b>	35°K typ
<b>INPUT VSWR</b>	2.5:1 typ
<b>INPUT RF LEVEL</b>	-135 to -65dBm
<b>MAXIMUM INPUT POWER</b>	0dBm

### Output

<b>OUTPUT FREQUENCY (GHz)</b>	
Intelsat	3.625 to 4.200
Gorizont	3.400 to 3.950
Insat	4.500 to 4.800
ST-1/Palapa C	3.400 to 3.700
Full-C	3.400 to 4.200
<b>VSWR</b>	1.7:1
<b>OUTPUT IMPEDANCE</b>	50Ω
<b>GAIN @ 25°C</b>	50dB min 55 typ
<b>GAIN FLATNESS</b>	
Full Band	4dB max
Full C-Band	5dB max
<b>GAIN STABILITY</b>	
Per 40MHz	± 0.5dB max
Per Day Constant Temp.	± 0.2dB max
Per °C	0.05dB typ
<b>OUTPUT POWER @ P1db</b>	0dBm min
<b>THIRD ORDER INTERCEPT POINT</b>	+16dBm min
<b>AM/PM CONVERSION</b>	0.1 / dB max
(@ -10dBm out)	
<b>GROUP DELAY (over 40MHz)</b>	0.02ns/MHz
Linear	0.002ns/MHz
Parabolic	0.2ns/p-p
Ripple	

### Environmental

<b>OPERATING TEMPERATURE</b>	40°C to +60°C
<b>RELATIVE HUMIDITY</b>	100%

### Power Supply

<b>DC Voltage</b>	+12 to +18VDC
<b>DC Current</b>	200mA max

### Mechanical

<b>INPUT INTERFACE</b>	CPR-229 G
<b>OUTPUT INTERFACE</b>	N-type Female
<b>DIMENSIONS</b>	98.5L x 69.8W x 133.4H mm
<b>WEIGHT</b>	520g
<b>COLOUR</b>	White Powder Coat

### C-BAND LOW NOISE BLOCK Input

<b>INPUT FREQUENCY (GHz)</b>	
Intelsat	3.625 to 4.200
Gorizont	3.400 to 3.950
Insat	4.500 to 4.800
ST-1/Palapa C	3.400 to 3.700
Full-C	3.400 to 4.200
<b>NOISE TEMPERATURE @ 25°C</b>	45°K
<b>INPUT VSWR</b>	2.5:1 typ

### Local Oscillator

<b>LOCAL OSCILLATOR FREQUENCY (GHz)</b>	
Intelsat	5.150
Gorizont	4.900
Insat	5.760
ST-1/Palapa C	4.650
Full-C	5.150
<b>PHASE NOISE (SSB)</b>	
@100Hz	-70dBc/Hz
@1KHz	-80dBc/Hz
@10KHz	-85dBc/Hz
@100KHz	-90dBc/Hz
@1MHz	-105dBc/Hz
<b>EXTERNAL REFERENCE</b>	
Input Frequency	10MHz typ
Input Power	-10 to 0dBm
Phase Noise	
@100Hz	-135dBc/Hz
@1KHz	-145dBc/Hz
@10KHz	-150dBc/Hz

### Output

<b>OUTPUT FREQUENCY (MHz)</b>	
Intelsat	950 to 1525
Gorizont	950 to 1500
Insat	960 to 1260
ST-1/Palapa C	950 to 1250
Full-C	950 to 1750
<b>VSWR</b>	1.7:1
<b>OUTPUT IMPEDANCE</b>	50Ω
<b>GAIN @ 25°C</b>	63dB typ
<b>GAIN FLATNESS @ 25°C</b>	
(Over full Bandwidth)	
Intelsat/Gorizont/ST-1/Palapa-C	4.0dB
Full-C	5.0dB
<b>GAIN Flatness @ 25°C (50MHz)</b>	2.0dB max
<b>GAIN STABILITY</b>	
Per 40MHz	±0.05dB max
Per Day Constant Temp.	±0.2dB max
Per °C	0.5dB typ
<b>OUTPUT POWER @ P1db</b>	+10dBm min
<b>OUTPUT INTERCEPT POINT</b>	20dBm min
<b>SPURIOUS</b>	
Input fixed spur unrelated to CW signal	-140dBm max
With test CW signal -10dBm IF output	-55dB max
<b>IMAGE REJECTION</b>	60dB min
<b>AM/PM CONVERSION</b>	0.1°/dB max
(@-10dBm out)	
<b>GROUP DELAY (over 40MHz)</b>	
Linear	0.02ns/MHz
Parabolic	0.002ns/MHz
Ripple	0.2ns/MHz typ

### Environmental

<b>OPERATING TEMPERATURE</b>	-40°C to +60°C
<b>RELATIVE HUMIDITY</b>	100%

### Power Supply

<b>DC Voltage</b>	+13 to 28VDC
<b>DC Current</b>	300mA max

### Mechanical

<b>INPUT INTERFACE</b>	CPR-229 G
<b>OUTPUT INTERFACE</b>	N-type Female
<b>DIMENSIONS</b>	98.5L x 69.8W x 133.4H mm
<b>WEIGHT</b>	520g
<b>COLOUR</b>	White Powder Coat

### Ku-BAND LOW NOISE BLOCK Input

<b>INPUT FREQUENCY (GHz)</b>	10.95 to 11.70
	11.70 to 12.20
	12.25 to 12.75
<b>NOISE TEMPERATURE @ 25°C</b>	75°K
<b>INPUT VSWR</b>	2.5:1 typ

### Local Oscillator

<b>LOCAL OSCILLATOR FREQUENCY (GHz)</b>	10.00
	10.75
	11.30
<b>PHASE NOISE (SSB)</b>	
@100Hz	-63dBc/Hz
@1KHz	-73dBc/Hz
@10KHz	-83dBc/Hz
@100KHz	-93dBc/Hz
<b>EXTERNAL REFERENCE</b>	
Input Frequency	10MHz typ
Input Power	-10 to 0dBm
Phase Noise	
@100Hz	-135dBc/Hz
@1KHz	-143dBc/Hz
@10KHz	-154dBc/Hz

### Output

<b>OUTPUT FREQUENCY (MHz)</b>	950 to 1700
	950 to 1450
	950 to 1450
<b>VSWR</b>	2.3:1 max
<b>OUTPUT IMPEDANCE</b>	50Ω
<b>GAIN FLATNESS @ 25°C</b>	55dB min
<b>GAIN Flatness @ 25°C (50MHz)</b>	2.0dB max
<b>GAIN STABILITY</b>	
Per 40MHz	±0.05dB
Per Day Constant Temp.	±0.2dB
Per °C	0.5dB
<b>OUTPUT POWER @ P1db</b>	0dBm
<b>OUTPUT INTERCEPT POINT</b>	20dBm min
<b>INTERMODULATION PRODUCTS</b>	
(3rd order inter modulation rejection with two input carriers separated by 10MHz)	-75dBm
	+45dB min
<b>SPURIOUS</b>	
Input fixed spur unrelated to CW signal	-140dBm max
With test CW signal -10dBm IF output	-50dBm max
<b>IMAGE REJECTION</b>	45dB min

### Environmental

<b>OPERATING TEMPERATURE</b>	-40°C to +60°C
<b>RELATIVE HUMIDITY</b>	100%

### Power Supply

<b>DC Voltage</b>	+12 to +18VDC
<b>DC Current</b>	300mA max

### Mechanical

<b>INPUT INTERFACE</b>	WR75/G
<b>OUTPUT INTERFACE</b>	N-type Female
<b>DIMENSIONS</b>	98.5L x 69.8W x 133.4H mm
<b>WEIGHT</b>	520g
<b>COLOUR</b>	White Powder Coat

\*All Specifications are subject to changes without notice.  
Rev. 300112

[www.agilissatcom.com](http://www.agilissatcom.com)

For more information, please send enquiry to:

**Singapore (Headquarters)**

[mktg\\_satcoms@stee.stengg.com](mailto:mktg_satcoms@stee.stengg.com)

**USA**

[usa\\_satcoms@stee.stengg.com](mailto:usa_satcoms@stee.stengg.com)

**Europe**

[europe\\_satcoms@stee.stengg.com](mailto:europe_satcoms@stee.stengg.com)

