

# **Innovative Communication Solutions**

# 2109HUBF

# 2000 Quad-Band Ku-Band PLL LNB

#### (0.9 dB)

Frequency: B: 10.70 - 10.95 GHz | 10.95 - 11.70 GHz | 11.70 - 12.25 GHz | 12.25 - 12.75 GHz L.O. Stability: +/- 10 kHz Output Connector: F: 75 Ohm





# **KEY SPECIFICATIONS**

Band	Ku-Band
Input Frequency Band 1	10.70 - 10.95 GHz
Input Frequency Band 2	10.95 - 11.70 GHz
Input Frequency Band 3	11.70 - 12.25 GHz
Input Frequency Band 4	12.25 - 12.75 GHz
LO Frequency 1	9.75 GHz
LO Frequency 2	10.00 GHz
LO Frequency 3	10.75 GHz
LO Frequency 4	11.30 GHz
LO Stability	±10 kHz
LO Туре	PLL
Noise Figure Max	1.0 dB
Noise Figure Typ	0.9 dB
Number Of Onboard Los	Quad-Band
Output Frequency Band 1	950 - 1200 MHz
Output Frequency Band 2	950 - 1700 MHz
Output Frequency Band 3	950 - 1500 MHz
Output Frequency Band 4	950 - 1450 MHz
Tone Frequency	22 kHz ± 4 kHz

13V / No Tone 13V / 22kHz Tone

# **RF SPECIFICATIONS**

Control Signal 1		
Control Signal 2		





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Control Signal 3		18V / No To	ne			
Control Signal 4		18V / 22kHz	Tone			
Conversion Gain Max		65 dB				
Conversion Gain Min		55 dB				
Conversion Gain Typ		60 dB				
Gain Flatness (over Full	Band)	≤ 6 dB p-p				
Input VSWR		2.3 : 1 max.				
Output P1db		+ 5 dBm mir	۱.			
Output VSWR		2.2 : 1 max.				
Phase Noise 0.1khz Offs	et Max	-125 dBc/Hz	<u>.</u>			
ELECTRICAL S	PECIFICATION	NS				
Current Consumption		350 mA max	(			
Power Requirements		+12 to +24\	/ DC			
INTERFACE SP	ECIFICATION	S				
IF Connector		F-Connecto	r			
RF Input Connector		WR-75 wave	eguide grooved			
ENVIRONMENT		ATIONS				
Humidity		0 - 95%				
IP Rating		IP 66				
Temperature Operational	emperature Operational -40°C to +70°C					
Temperature Storage		-50 to +80°C				
PHYSICAL SPE	CIFICATIONS					
Product Height		1.70 in				
Product Length		4.46 in				
Product Weight		0.255 kg				
Product Width		1.72 in				
LOGISTICS SPI	ECIFICATIONS	6				
HS Code	Country of Origin	Ex Works	ECCN Number	Unit Package		
	Made in Canada	Richmond, BC, Canada	EAR99	135 x 68 x 48 mm   0.335 kg		
	D					

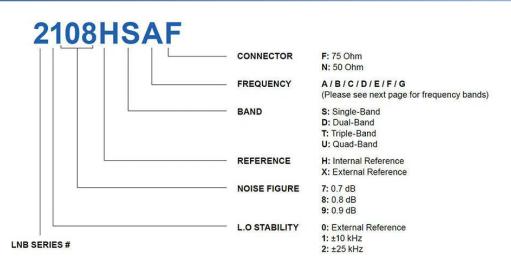
# **HOW TO ORDER**



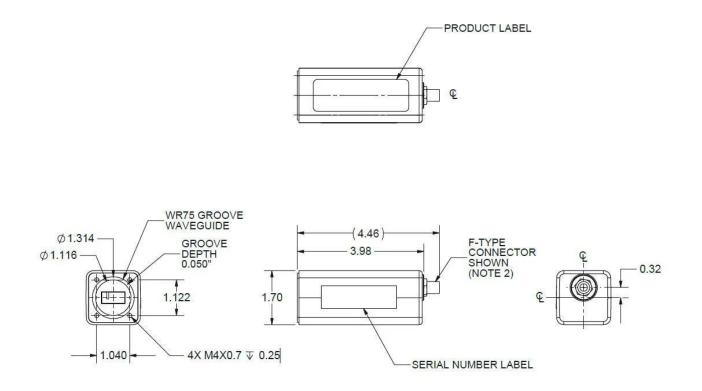
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# **MECHANICAL DIAGRAMS**







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### **FREQUENCY BANDS**

Single Band				Dual Band							
Band	_	freq (GHz)	L.O freq (GHz)		utput freq	Band	RF	freq (GHz)	L.O freq (GHz)	Output freq	Voltage/Tone
A		1.7 - 12.20	10.75		- 1450 MHz	A	Band 1	10.95 - 11.70	10	950 - 1700 MHz	13 V
B		2.25 - 12.75 0.95 - 11.70	11.3 10		- 1450 MHz - 1700 MHz		Dand I	10.35 - 11.10	10	000 1100 1112	
D		0.70-11.80	9.75		- 1700 MHz - 2050 MHz		Band 2	11.70 - 12.75	10.75	950 - 2000 MHz	18 V
			Triple Band	330 - 2030 Militz			Band 1 10.70 - 11.70		9.75	950 - 1950 MHz	13 V
Band	RF	freq (GHz)	L.O freq (GHz)	Output freq	Voltage/Tone	в	Danu I	10.70 - 11.70	5.15	330 - 1330 Militz	13 Y
	Band 1	10.95 - 11.70	10	950 - 1700 MHz	13 V		Band 2	11.70 - 12.75	10.75	950 - 2000 MHz	18 V
A	Band 2	11.70 - 12.20	10.75	950 - 1450 MHz	13 V / 22 kHz		Band 1	10.95 - 11.70	10	950 - 1700 MHz	13 V
	Band 3	12.20 - 12.75	11.25	950 - 1500 MHz	18 V		Band 2	12.25 - 12.75	11.3	950 - 1450 MHz	18 V
	Band 1	10.95 - 11.70	10	950 - 1700 MHz	13 V	D	Band 1	10.70 - 11.70	9.75	950 - 1950 MHz	13 V
в	Band 2	11.70 - 12.25	10.75	950 - 1500 MHz	13 V / 22 kHz		Dana 1	10.10 11.10	0.70	000 1000 1112	
	Daniel 2	40.05 40.75	44.2	050 4450 141-	40.1/		Band 2	11.70 - 12.75	10.6	1100 - 2150 MHz	18 V
	Band 3	12.25 - 12.75	11.3	950 - 1450 MHz	18 V				Quad Band		
	Band 1	10.70 - 11.70	9.75	950 - 1950 MHz	13 V	Band	RF	freq (GHz)	L.O freq (GHz)	Output freq	Voltage/Tone
с	Band 2	11.70 - 12.20	10.75	950 - 1450 MHz	13 V / 22 kHz	A	Band 1	10.70 - 11.20	9.75	950 - 1450 MHz	13 V
	Band 3	12.20 - 12.75	11.25	950 - 1500 MHz	18 V		Band 2	11.20 - 11.70	10.25	950 - 1450 MHz	13 V / 22 kHz
	Band 1	10.70 - 11.70	9.75	950 - 1950 MHz	13 V		Band 3	11.70 - 12.25	10.75	950 - 1500 MHz	18 V
D	Band 2	11.70 - 12.25	10.75	950-1500 MHz	13 V / 22 kHz		Band 4	12.25 - 12.75	11.3	950 - 1450 MHz	18 V / 22kHz
5							Band 1	10.70 - 10.95	9.75	950 - 1200 MHz	13 V
	Band 3	12.25 - 12.75	11.3	950-1450 MHz	18 V	в	Band 2	10.95 - 11.70	10	950 - 1700 MHz	13 V / 22 kHz
	Band 1	10.95 - 11.70	10	950 - 1700 MHz	13 V	_	Band 3	11.70 - 12.25	10.75	950 - 1500 MHz	18 V
E	Band 2	11.55 - 12.25	10.6	950 - 1650 MHz	13 V / 22 kHz		Band 4	12.25 - 12.75	11.3	950 - 1450 MHz	18 V / 22kHz
	Band 3	12.20 - 12.70	11.25	950 - 1450 MHz	18 V	c	Band 1	10.70 - 11.20	9.75	950 - 1450 MHz	13 V
	Band 1	10.70 - 11.80	9.75	950 - 2050 MHz	13 V		Band 2	11.20 - 11.70	10.25	950 - 1450 MHz	13 V / 22 kHz
F	Band 2	10.95 - 12.10	10	950 - 2100 MHz	13 V / 22 kHz		Band 3	11.70 - 12.20	10.75	950 - 1450 MHz	18 V
	Band 3	11.70 - 12.75	10.75	950 - 2000 MHz	18 V		Band 4	12.20 - 12.75	11.25	950 - 1500 MHz	18 V / 22kHz
	Band 1	10.70 - 11.70	9.75	950 - 1950 MHz	13 V	D	Band 1	10.95 - 11.45	10	950 - 1450 MHz	13 V
G	Band 2	11.70 - 12.70	10.75	950 - 1950 MHz	13 V / 22 kHz		Band 2	11.45 - 11.95	10.5	950 - 1450 MHz	13 V / 22 kHz
G	band 2	11.70 - 12.70	10.75	900 - 1950 MHZ	13 V / 22 KHZ		Band 3	11.70 - 12.20	10.75	950 - 1450 MHz	18 V
	Band 3	and 3 12.25 - 12.75 11.3 950 - 1450 MHz	18 V		Band 4	12.20 - 12.75	11.25	950 - 1500 MHz	18 V / 22kHz		



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