Engineering/Process Change Notice

ECN/PCN No.: R0438

For Manufacturer			
Product Description: ULTRA-LOW NOISE AMPLIFIER FOR HIGH-PRECISION GNSS APPLICATIONS	**Abracon Part Number / Part Series:** ALND-WB-0013	☐ Documentation only ☒ ECN ☐ EOL	☐ Series ☐ Part Number
Affected Revision: A	**New Revision:** B	**Application**:	☐ Safety ☒ Non-Safety

Prior to Change:

ALND-WB-0013
Ultra-Low Noise Amplifier for High-Precision GNSS Applications

ABRACON

Electrical Specifications (GNSS High-Band: L1)

Parameters	Condition	Specification			Unit
		Minimum	Typical	Maximum	
Operating Frequency	-	1550	1575	1610	MHz
Operating Voltage	-	1.2	3.3	3.6	V
Quiescent Current	V_{DD}=V_{EN}=3.3V, No RF Input	4	6	10	mA
Shutdown Current	V_{DD}=3.3V, V_{EN}=0	-	0.3	-	uA
Small-Signal Gain	Pin=-30dBm	-	15	-	dB
Noise Figure	-	-	0.5	-	dB
Input Return Loss	-	-	11	-	dBm
Output Return Loss	-	-	15	-	dB
Isolation	-	-	24	-	dB
Input P_{1dB}	@ V_{DD}=V_{EN}=3.3V	-	-5.5	-	dBm
In-Band IIP3 (High-Band)	f1/f2=1575/1576MHz, -30dBm per Tone, 3.3V	-	4	-	dBm

After Change:

ALND-WB-0013

Ultra-Low Noise Amplifier for High-Precision GNSS Applications

ABRACON

Electrical Specifications (GNSS High-Band: L1)(1)

Parameters	Condition	Specification			Unit
		Minimum	Typical	Maximum	
Operating Frequency	-	1550	1575	1610	MHz
Operating Voltage	-	1.2	3.3	3.6	V
Quiescent Current	V_{DD}=V_{EN}=3.3V, No RF Input	4	6	10	mA
Shutdown Current	V_{DD}=3.3V, V_{EN}=0	-	0.3	-	uA
Small-Signal Gain	Pin=-30dBm	-	15	-	dB
Noise Figure	-	-	0.5	-	dB
Input Return Loss	-	-	11	-	dB
Output Return Loss	-	-	15	-	dB
Isolation	-	-	24	-	dB
Input P_{1dB}	@ V_{DD}=V_{EN}=3.3V	-	-5.5	-	dBm
In-Band IIP3 (High-Band)	f1/f2=1575/1576MHz, -30dBm per Tone, 3.3V	-	3	-	dBm
Out-of-Band IIP3	f1/f2=1712.7/1850MHz, -30dBm per Tone, 3.3V	-	4	-	dBm

(1) As measured on ALND-WB-0013-EVB with 9.1nH input inductor (Murata LQW15 Series), VDD=VEN=3.3V.

Electrical Specifications (GNSS Low-Band: L2/L5/L6)(1)

Parameters	Condition	Specification			Unit
		Minimum	Typical	Maximum	
Operating Frequency	-	1164	1176	1300	MHz
Operating Voltage	-	1.2	3.3	3.6	V
Quiescent Current	V_{DD}=V_{EN}=3.3V, No RF Input	4	6	10	mA
Shutdown Current	V_{DD}=3.3V, V_{EN}=0	-	0.3	-	uA
Small-Signal Gain	Pin=-30dBm	-	16	-	dB
Noise Figure	-	-	0.9	-	dB
Input Return Loss	-	-	10	-	dB
Output Return Loss	-	-	12	-	dB
Isolation	-	-	26	-	dB
Input P_{1dB}	@ V_{DD}=V_{EN}=3.3V	-	-7	-	dBm
In-Band IIP3 (High-Band)	f1/f2=1176/1177MHz, -30dBm per Tone, 3.3V	-	1	-	dBm

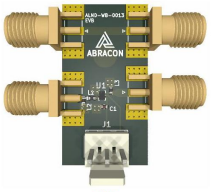
(1) As measured on ALND-WB-0013-EVB with L1=12nH, L2=8.2nH, L3=9.1nH (Murata LQW15 Series inductors), VDD=VEN=3.3V.

ALND-WB-0013

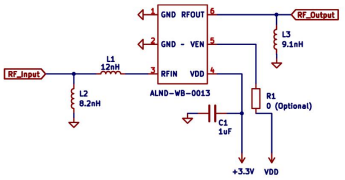
Ultra-Low Noise Amplifier for High-Precision GNSS Applications

ABRACON

Evaluation Board ALND-WB-0013-EVB (GNSS Low-Band: L2/L5/L6)



EVB



Schematic

Bill of Material

Component	Description	Manufacturer	Manufacturer Part	QTY
U1	Ultra-Low Noise Amplifier for High-Precision GNSS Applications	Abracon	ALND-WB-0013	1
C1	1uF	Murata	GRM155R70J105KA12D	1
L1	12nH	Murata	LQW15AN12NH00D	1
L2	8.2nH	Murata	LQW15AN8N2J00D	1
L3	9.1nH	Murata	LQW15AN9N1J00D	1
R1	0 ohm	Yageo	RC0402JR-07360KL	1

Cause/Reason for Change: Added Low-Band specification & test data

ABRACON

Engineering/Process Change Notice

Change Plan		
Effective Date: 02/09/2026	**Additional Remarks:**	
Change Declaration:		
Issued Date: 02/09/2025	**Issued By:** Allan	**Issued Department:** Engineering
Approval: *Saravanan Subramanian* Engineering Manager	**Approval:** *Reuben Quintanilla* Quality Director	**Approval:** *Ying Huang* Purchasing Director

For Abracon EOL only		
Last Time Buy (if applicable):	**Alternate Part Number / Part Series:**	
Additional Approval:	**Additional Approval:**	**Additional Approval:**

Customer Approval (If Applicable)		
Qualification Status: ☐ Approved ☐ Not accepted *Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.*		
Customer Part Number:	**Customer Project:**	
Company Name:	**Company Representative:**	**Representative Signature:**
Customer Remarks:		