



Programmable 4 or 6 Stage FET LNA and Active Mixer Bias Controller

The ZABG4003, ZABG6003 and ZABG6004 are low-power, programmable depletion mode FET bias controllers intended primarily for satellite Low Noise Blocks (LNBs). Designed to provide system flexibility, the devices can be programmed to bias up to four (ZABG4003) or six (ZABG6003/ZABG6004) low noise amplifier (LNA) stages.

The bias controllers operate with a minimal current of only 1mA and can operate over a supply voltage of 2.1V to 5.5V making them ideal for low-power designs. The small package and reduced component count minimizes the PCB area while enhancing overall LNB reliability.



The Diodes Advantage

A flexible solution allowing LNB designers to choose solutions for several system designs while taking advantage of its advanced FET protection, higher performance and low current operation.

▪ Programmable GaAs FET LNA

- Provide either up to four or six independent bias stages for GaAs and HEMT FET LNAs
- Independent user programmable drain current for the LNAs and active mixers

▪ Low Current Operation, Wide Supply and Temperature Range

- Operate from 2.1V to 5.5V rails over -40C to +105°C
- Designed for 3V/3.3V/5V low power LNAs
- Allows pairs of FETs to be switched off for intelligent LNB systems

▪ Small and Flexible Solution

- Minimal applications circuit while allowing system flexibility
- Packaged in the small 3x3mm QFN package for minimal PCB space the standard QSOP20

Application Areas

- Twin LNAs
- Quad LNAs
- US Market LNAs
- PMR
- Microwave Links
- General High-Frequency Communications

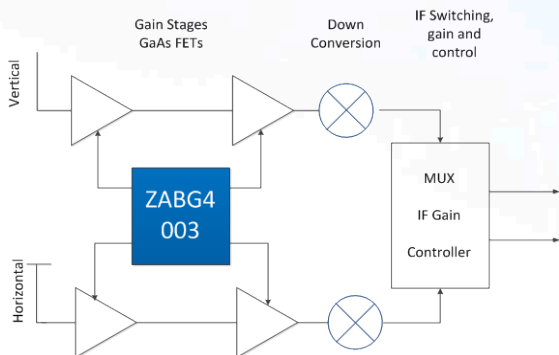


New Product Announcement

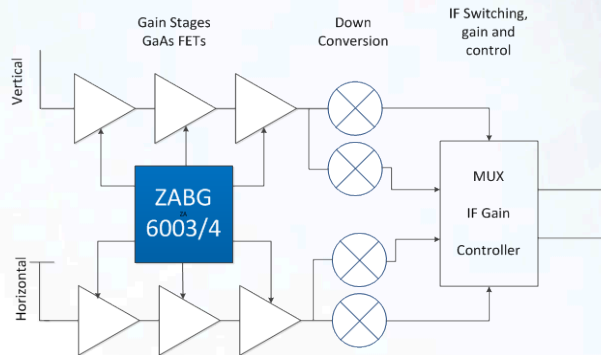
ZABG4003
ZABG6003
ZABG6004

System Examples

US Dual LNB



Standard Twin LNB



Key Parameters

Part Number	Bias Stages					Power and Protection					Package Outline
	LNA Fixed (Qty.)	Active Mixer (Qty.)	LNA Vdrain (V)	LNA Idrain (mA)	Mixer Vdrain (V)	Mixer Idrain (mA)	VCC (V)	Iq (mA)	Vneg (V)	FET Protection	
ZABG4003	4	0	2	4 to 15	2	-	2.1 to 5.5	0.95	-2	Yes	QFN3030-16
ZABG6003	6	0	2	2: 4 to 15 4: 10 fixed	2	-	2.1 to 5.5	1.1	-2	Yes	QFN3030-16
ZABG6004	6	0	2	4 to 15	2	-	2.1 to 5.5	1.1	-2	Yes	QFN3030-16 QSOP20

To find out more information:

Datasheet:

ZABG4003: <https://www.diodes.com/assets/Datasheets/ZABG4003.pdf>

ZABG6003: <https://www.diodes.com/assets/Datasheets/ZABG6003.pdf>

ZABG6004: <https://www.diodes.com/assets/Datasheets/ZABG6004.pdf>

DBS page: <https://www.diodes.com/products/analog/digital-broadcast-by-satellite/>

Ordering Information

Part Number	Packaging	Reel size	Tape width	Quantity
ZABG4003JA16TC	QFN3030-16 (Type B)	13" (330mm)	12mm	3,000
ZABG6003JA16TC	QFN3030-16 (Type B)	13" (330mm)	12mm	3,000
ZABG6004JA16TC	QFN3030-16 (Type B)	13" (330mm)	12mm	3,000
ZABG6004Q20TC	QSOP-20	13" (330mm)	16mm	2,500