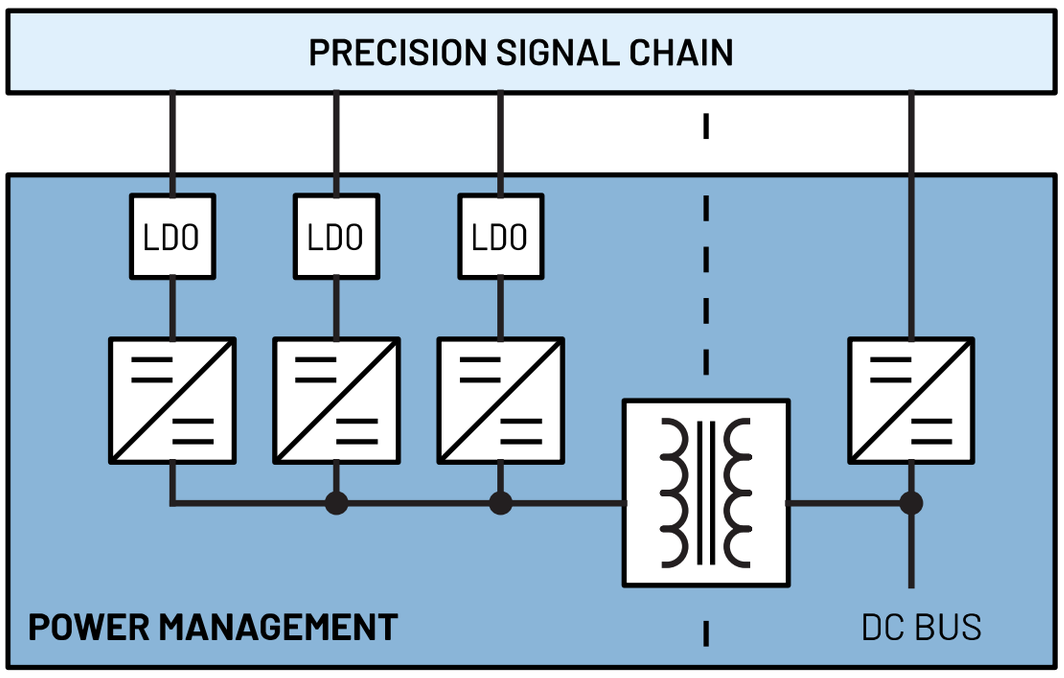
POWER SOLUTIONS FOR PRECISION TECHNOLOGY SIGNAL CHAINS

PRECISION LOW POWER
Single Channel Voltage, Current and Biosignal Measurement
Power and Size Optimized

Rev. 0 | Apr. 2022



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This document is interactive. You can click on any underlined text to navigate through the document.

For the resources:

APPENDIX	Parts Guide
	Power Requirements

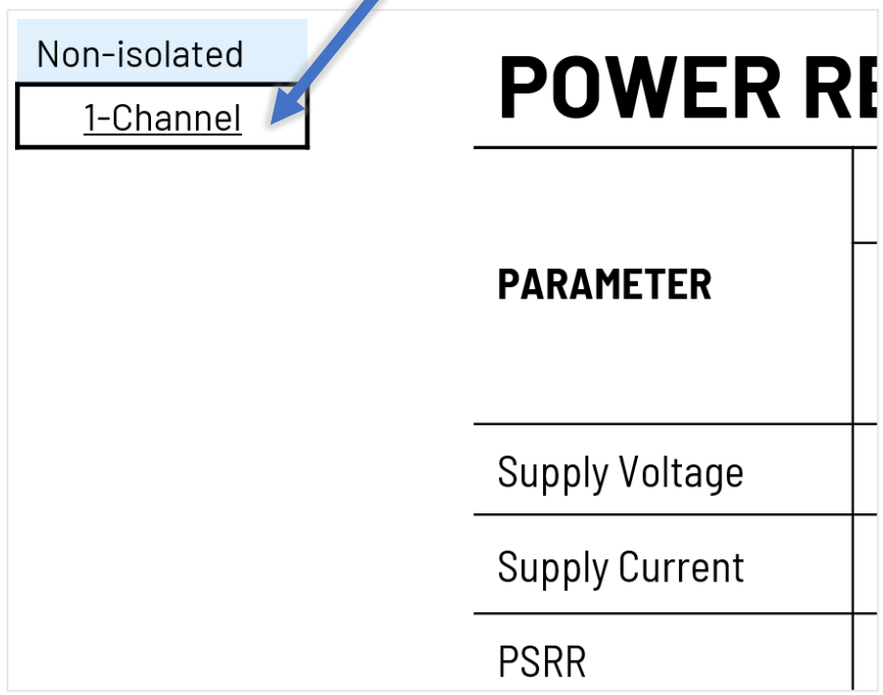
Left-click the Parts Guide and Power Requirements to go through the list of power devices and other references.

The Power Components are listed on the Appendix, and you may click on the part to go through its product page online.

PART #	DESCRIPTION
LT3471	Dual 1.3A, 1.2MHz Boost/Inverter in 3mm × 3mm DFN
LT8604	High Efficiency 42V/120mA Synchronous Buck
LT8570-1	Boost/SEPIC/Inverting DC/DC Converter with 65V Switch, Soft-Start and Sync.

For the individual pages:

Left-click the specific signal chain to go through its respective block diagram or power tree.



APPENDIX

Parts Guide

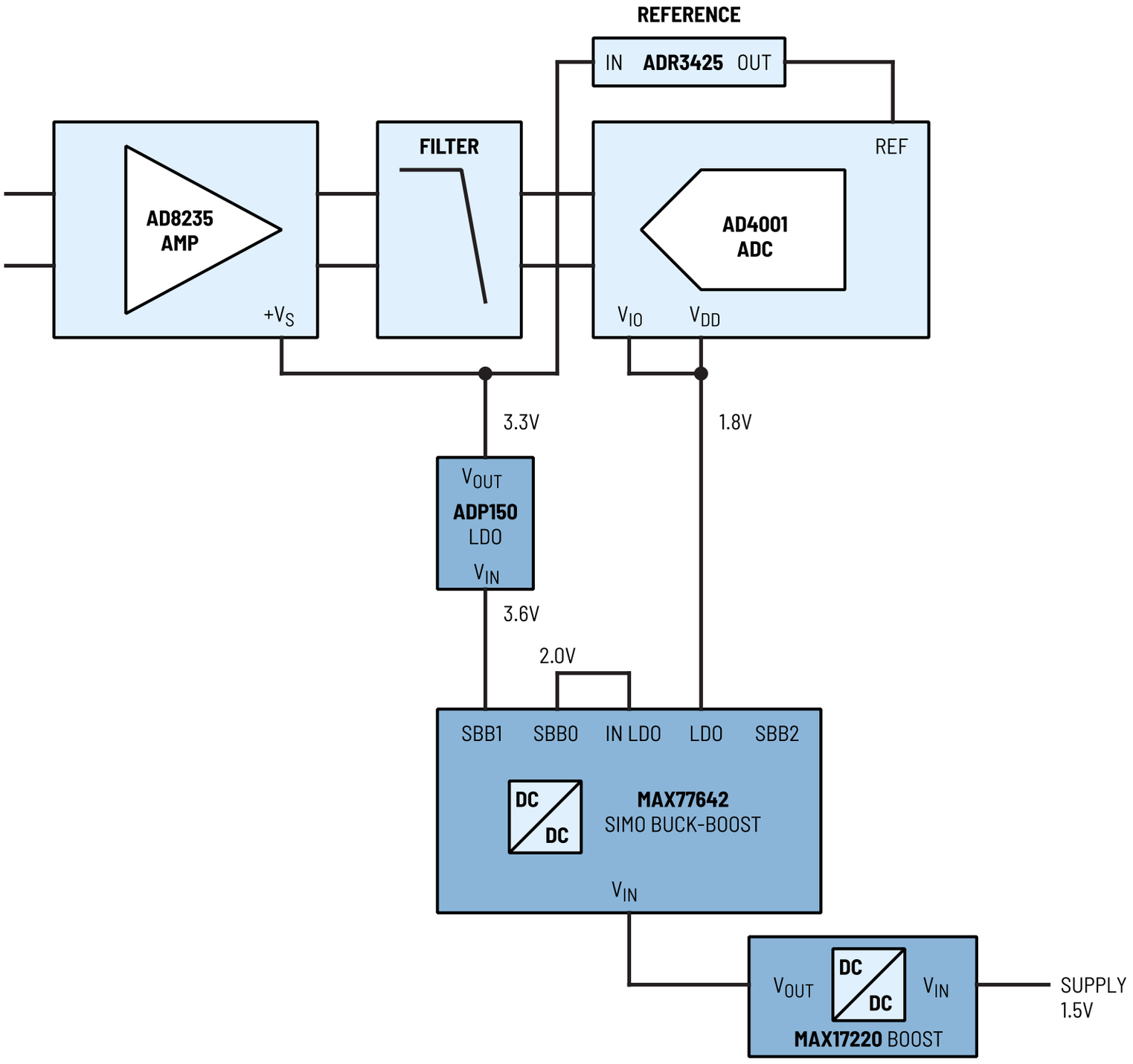
Power Requirements

USER GUIDE

Voltage, Current & Biosignal Measurement

Power & Size Optimized – Single Channel

Non-isolated	Isolated
1.5V Supply	5V Supply
3.7V Supply	
> 5.5V Supply	



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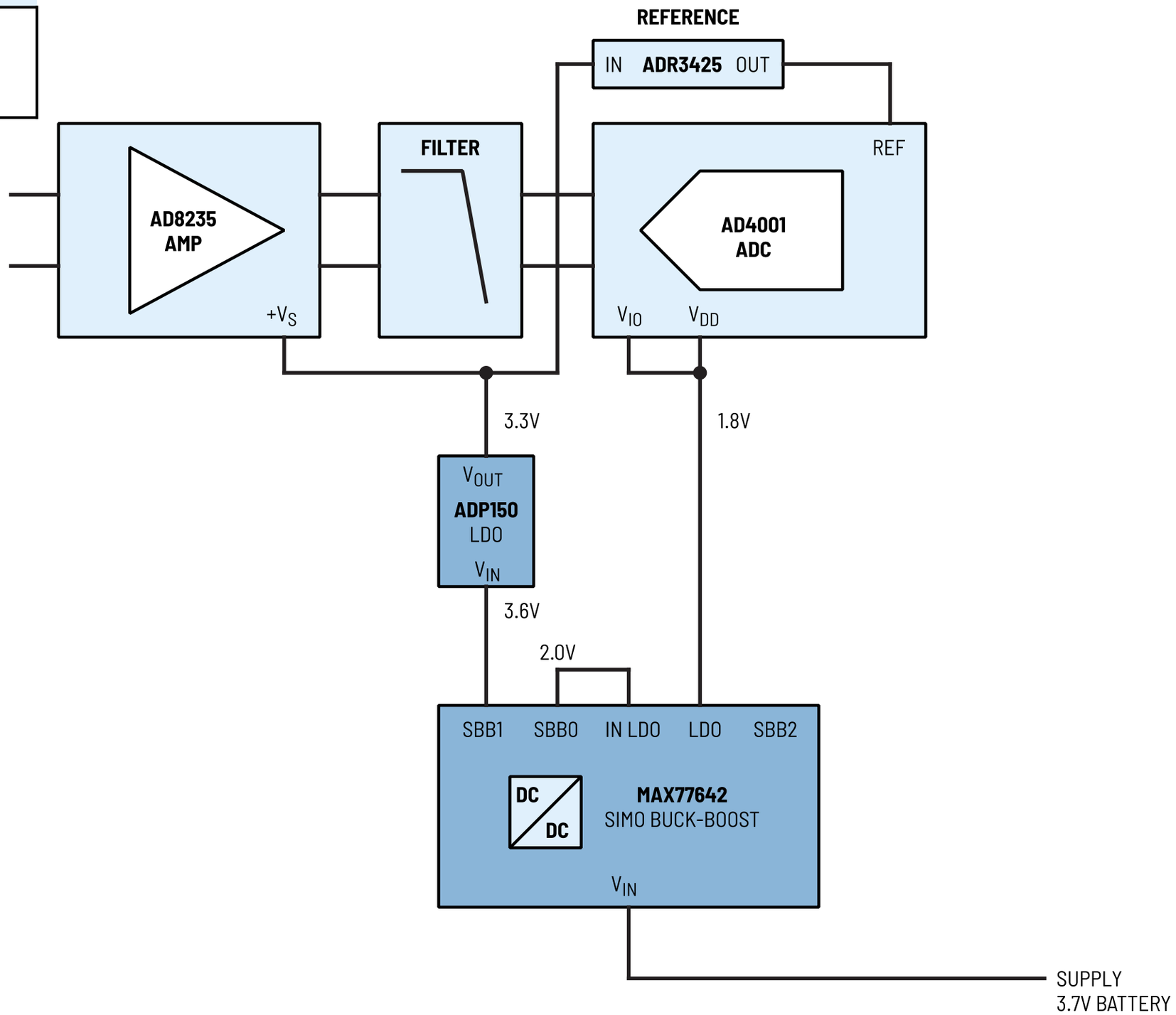

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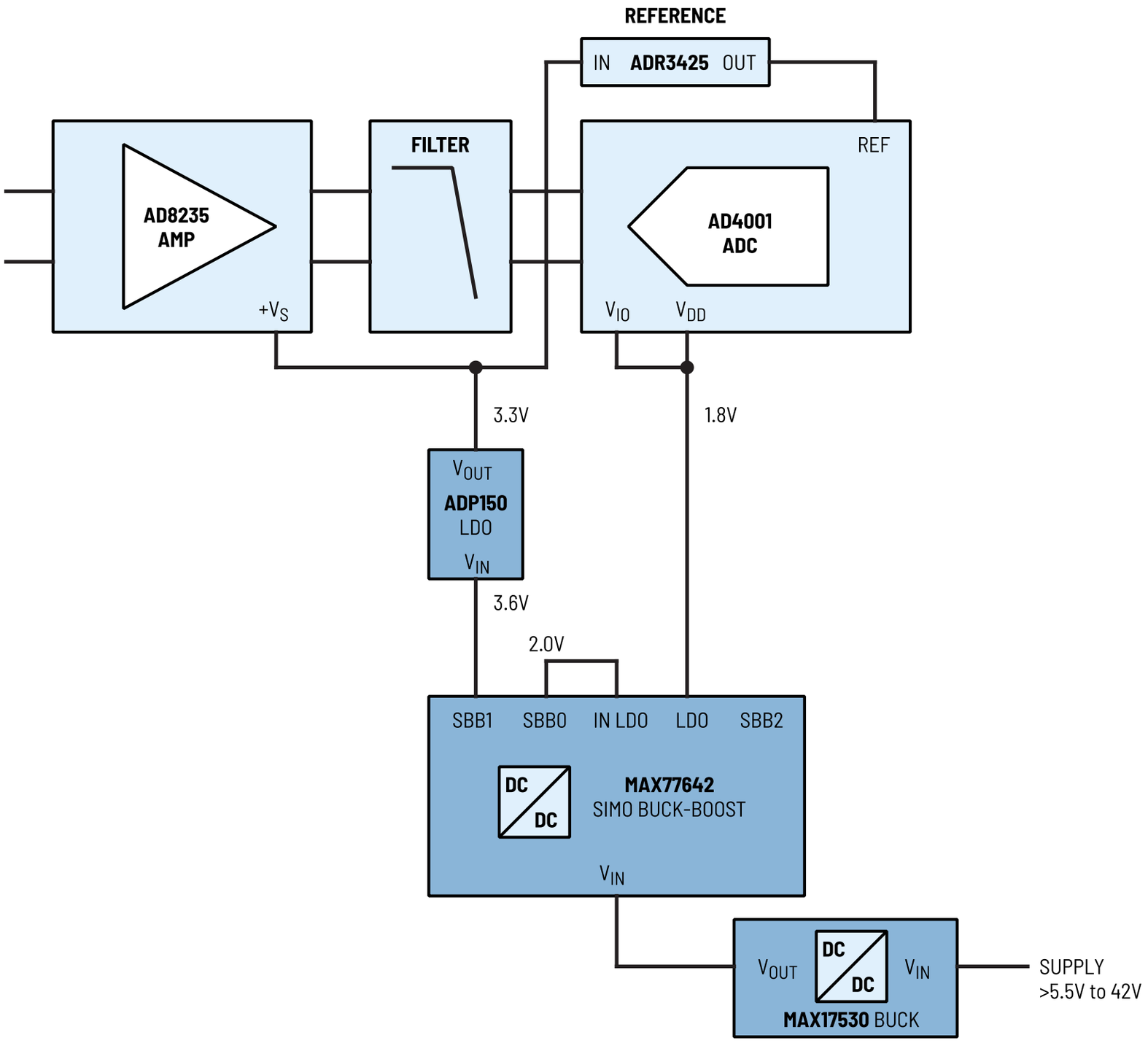

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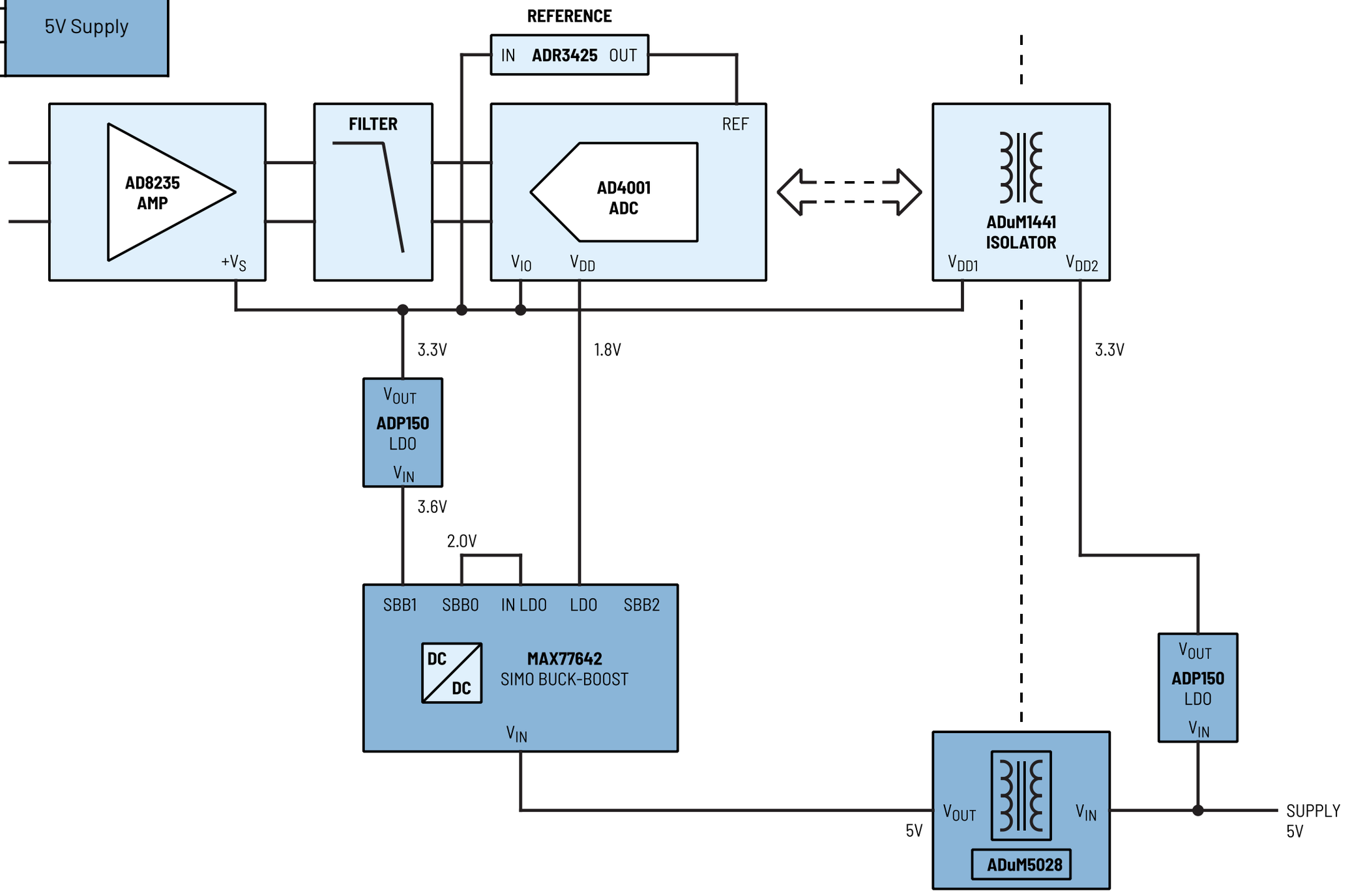

Precision Low Power

Voltage, Current & Biosignal Measurement

Power & Size Optimized – Single Channel

Non-isolated	Isolated
1.5V Supply	5V Supply
3.7V Supply	
> 5.5V Supply	

PART #	DESCRIPTION
MAX77642	Ultra Configurable PMIC Featuring 93% Peak Efficiency Single-Inductor, 3-Output Buck-Boost, 1-LDO for Long Battery Life
MAX17220	400mV to 5.5V Input, nanoPower Synchronous Boost Converter with True Shutdown
MAX17530	4V to 42V, 25mA, Ultra-Small, High-Efficiency, Synchronous Step-Down DC-DC Converter with 22µA No-Load Supply Current
ADP150	Ultralow Noise, 150 mA CMOS Linear Regulator
ADuM5028	Low Emission Isolated DC to DC Converter

Non-isolated	Isolated
1.5V Supply	5V Supply
3.7V Supply	
> 5.5V Supply	

POWER REQUIREMENTS

PARAMETER	STAGES	Amplifier		ADC		Reference	Isolation	
	Part #	AD8235		AD4001		ADR3425	ADuM1441	
	Pin	$+V_S$	$-V_S$	V_{DD}	V_{IO}	IN	V_{DD1}	V_{DD2}
Supply Voltage	V	3.3	-	1.8	1.8 (or 3.3)	3.3	3.3	3.3
Supply Current	mA	0.05	-	5.3	0.555	0.1	0.9	0.9
PSRR	dB	100 (400Hz)		55 (750kHz)		54 (100kHz)	-	

Note 1: The supply currents indicated are the maximum quiescent current of the supply rails. For overall full load or short circuit current specifications, refer to the datasheets of the signal chain components.

Note 2: The supply voltages indicated are the values for typical applications.

Note 3: Consult the corresponding datasheets for details on power dissipation if needed.

Note 4: The actual supply current requirement shall be multiplied depending on the number of channels on the signal chain.