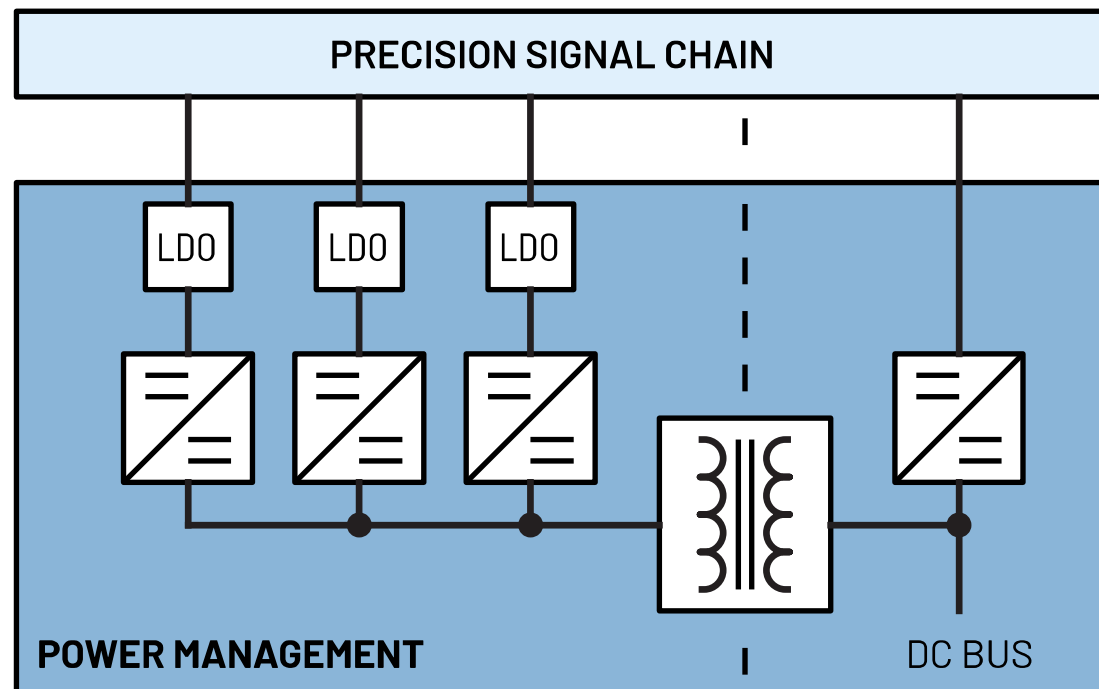


POWER SOLUTIONS FOR PRECISION TECHNOLOGY SIGNAL CHAINS

PRECISION LOW POWER
Multichannel 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	<u>Parts Guide</u>
	<u>Power Requirements</u>

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
<u>LT3471</u>	Dual 1.3A, 1.2MHz Boost/Inverter in 3mm × 3mm DFN
<u>LT8604</u>	High Efficiency 42V/120mA Synchronous Buck
<u>LT8570-1</u>	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.

Non-isolated	POWER RE
<u>1-Channel</u>	
	PARAMETER
	Supply Voltage
	Supply Current
	PSRR

APPENDIX

[Parts Guide](#)

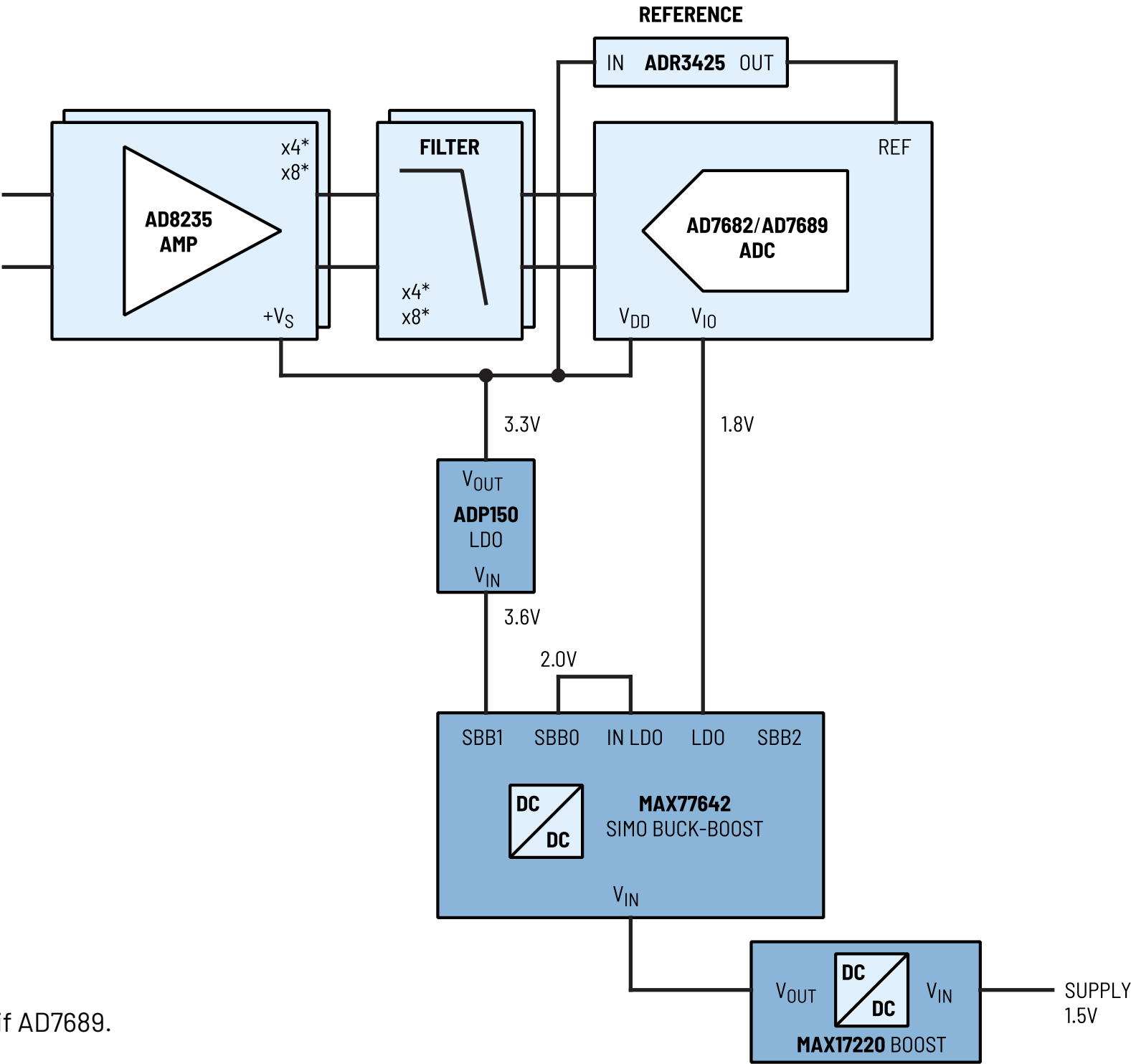
[USER GUIDE](#)

[Power Requirements](#)

Voltage, Current & Biosignal Measurement

Power & Size Optimized - Multichannel

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



*x4 if AD7682 ADC is used; x8 if AD7689.

APPENDIX

[Parts Guide](#)

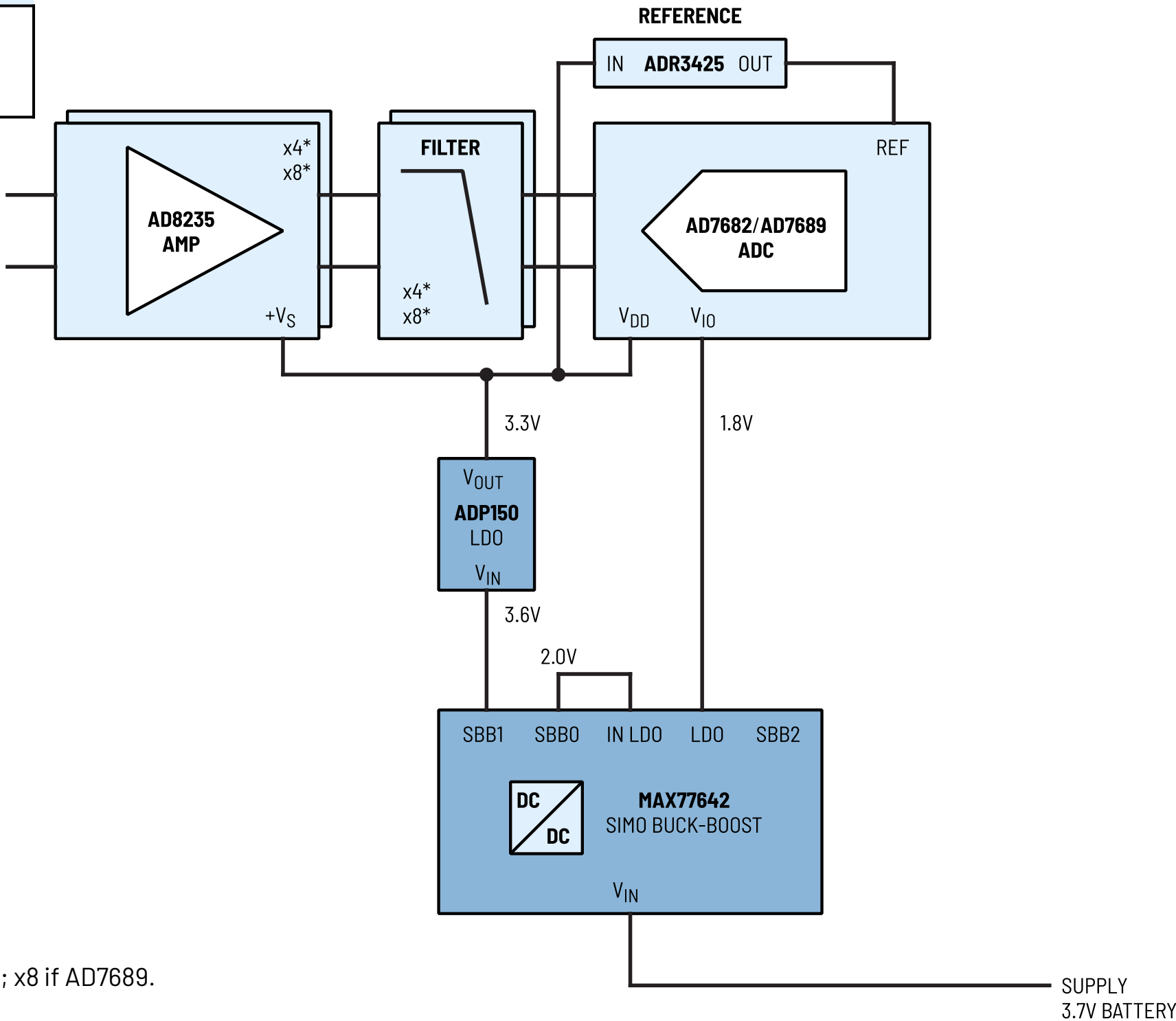
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[Power Requirements](#)

Voltage, Current & Biosignal Measurement

Power & Size Optimized - Multichannel

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

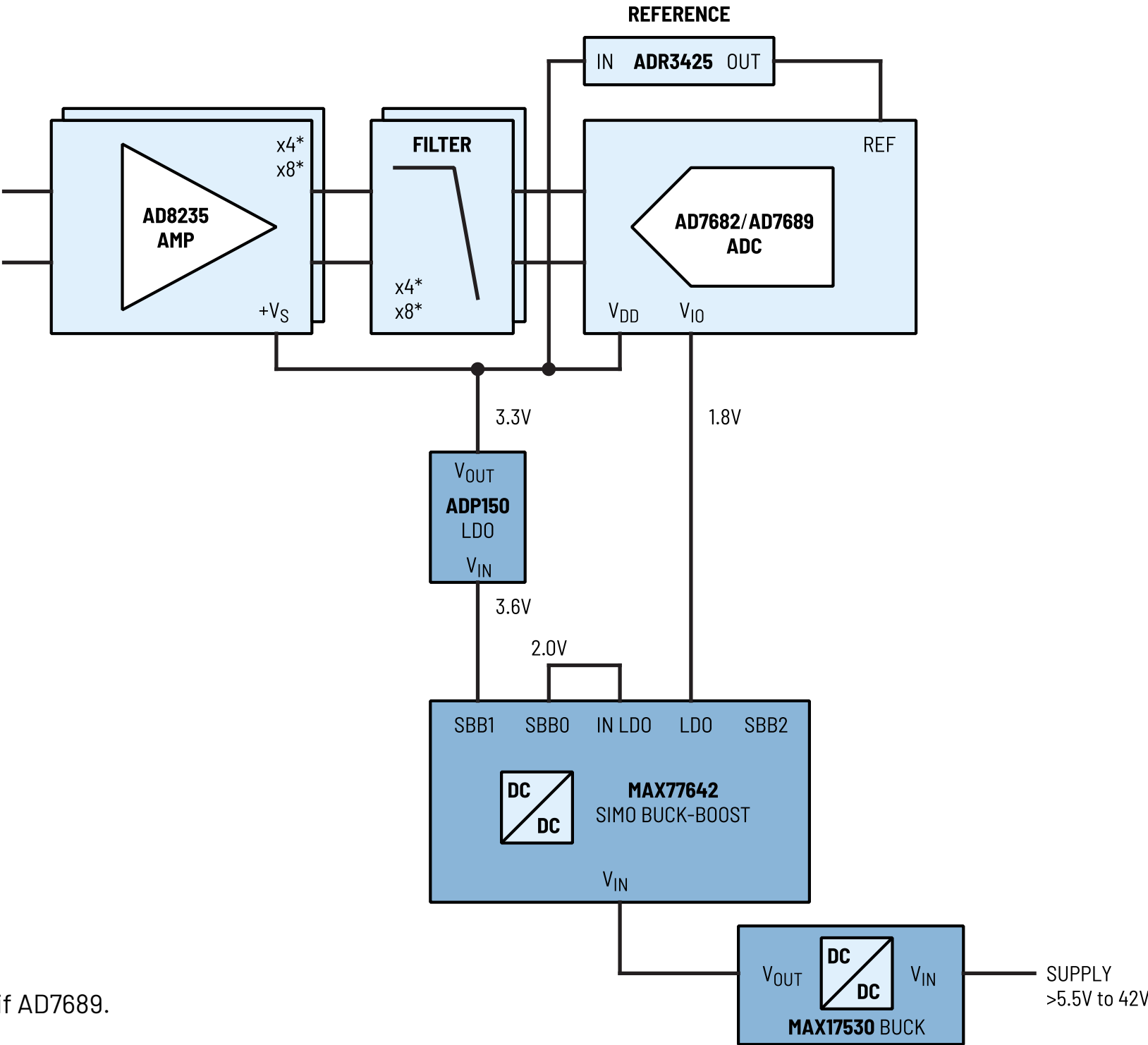


*x4 if AD7682 ADC is used; x8 if AD7689.

APPENDIX

[Parts Guide](#)
[USER GUIDE](#)
[Power Requirements](#)
[Voltage, Current & Biosignal Measurement](#)
[Power & Size Optimized - Multichannel](#)

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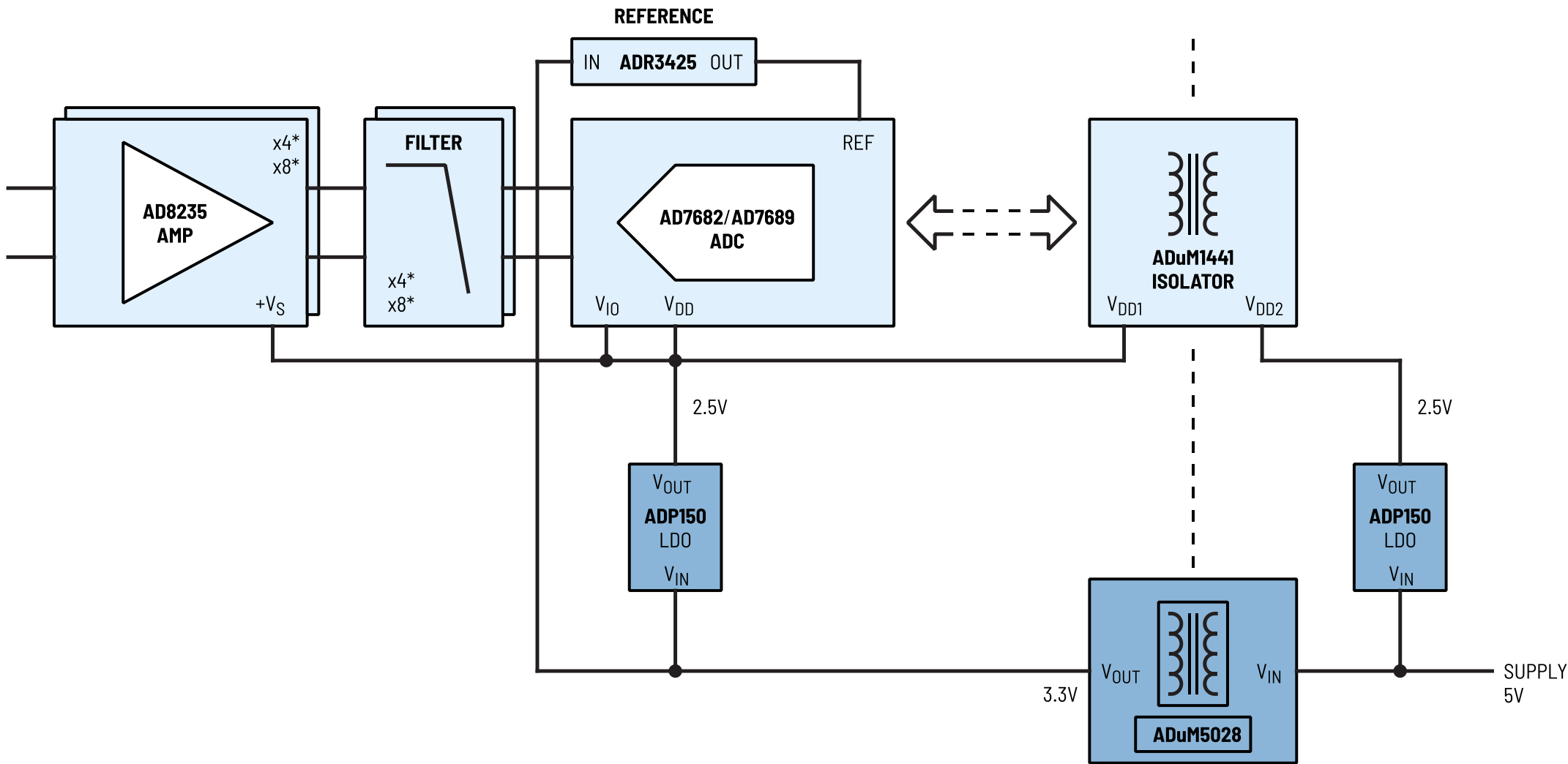


*x4 if AD7682 ADC is used; x8 if AD7689.

APPENDIX

[Parts Guide](#)
[USER GUIDE](#)
[Power Requirements](#)
[Voltage, Current & Biosignal Measurement](#)
[Power & Size Optimized - Multichannel](#)

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



*x4 if AD7682 ADC is used; x8 if AD7689.

Precision Low Power

Voltage, Current & Biosignal Measurement

Power & Size Optimized - Multichannel

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

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

Voltage, Current & Biosignal Measurement

Power & Size Optimized - Multichannel

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

POWER REQUIREMENTS

PARAMETER	STAGES	Amplifier		ADC		Reference	Isolation	
	Part #	AD8235		AD7682/AD7689		ADR3425	ADuM1441	
	Pin	+V _S	-V _S	V _{DD}	V _{IO}	IN	V _{DD1}	V _{DD2}
Supply Voltage	V	3.3 (or 2.5)	-	3.3 (or 2.5)	1.8 (or 2.5)	3.3	2.5	2.5
Supply Current	mA	0.05	-	1.5	1.38	0.1	0.9	0.9
PSRR	dB	100 (400Hz)		55 (1kHz)		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.