

# TWR-ADCDAC-LTC

Analog module





# Get to Know the TWR-ADCDAC-LTC

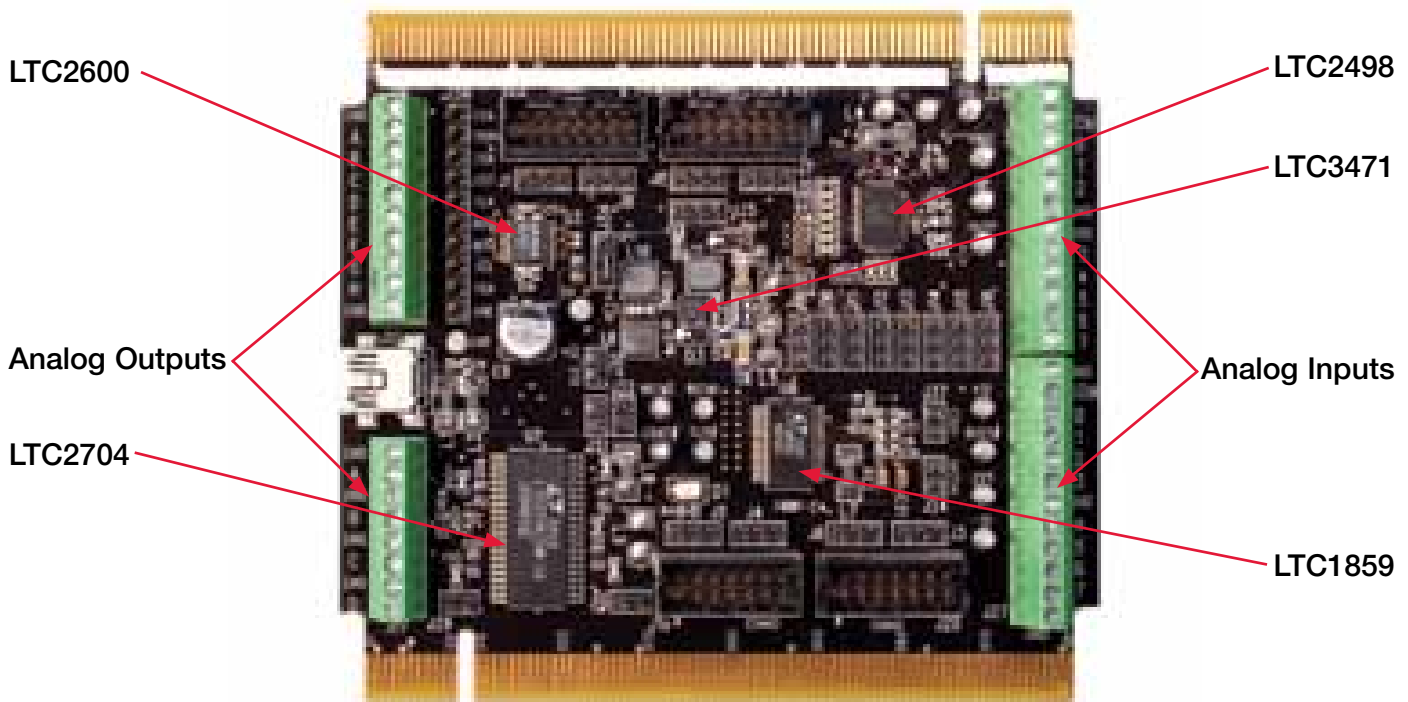


Figure 1: Front Side of TWR-ADCDAC-LTC Module.



## TWR-ADCDAC-LTC

The TWR-ADCDAC-LTC precision data converter module is part of the Freescale Tower System, a modular development platform that enables rapid prototyping and tool re-use through reconfigurable hardware. Take your design to the next level and begin constructing your Tower System today by visiting [freescale.com/Tower](http://freescale.com/Tower) for additional Tower System microcontroller modules and compatible peripherals.

# TWR-ADCDAC-LTC Features

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- Freescale Tower compatible high-precision analog peripheral module
- Controllable by any Freescale Tower controller module with an SPI interface
- Two Linear Technology digital-to-analog converters (DACs)
  - LTC2704-16: Quad 16-bit voltage output SoftSpan™ DAC with readback
  - LTC2600: Octal 16-bit rail-to-rail DACs
- Two Linear Technology analog-to-digital converters (ADCs)
  - LTC1859: 8-channel, 16-bit, 100 ksps SoftSpan ADC with shutdown
  - LTC2498: 24-bit 8-/16-channel delta sigma ADC with Easy Drive™ input current cancellation
- Linear Technology voltage regulator
  - LTC3471: Dual 1.3A, 1.2 MHz boost/inverter
- Linear Technology voltage reference
  - LTC6655-5: 0.25 ppm noise, low drift precision buffered 5V reference
- Four 14-pin headers for connecting to any Linear Technology QuikEval™ demonstration board

## TWR-ADCDAC-LTC Jumper Options

The following is a list of all the options selectable by jumpers. The **default** installed jumper shunt settings are shown in **bold**.

Jumper	Option	Setting	Description
J1–J8	QuikEval I <sup>2</sup> C/SPI Selection	1-2	Connect I <sup>2</sup> C signals to QuikEval header
		<b>2-3</b>	Connect SPI signals to QuikEval header
J9	SPI Port Selection -- SPI_CLK	<b>1-2</b>	Use SPI_CLK signal from SPI0
		2-3	Use SPI_CLK signal from SPI1
J10	SPI Port Selection -- SPI0_CSx	<b>1-2</b>	Select SPI0_CS0
		2-3	Select SPI0_CS1
J11	SPI Port Selection -- SPI1_CSx	<b>1-2</b>	Select SPI1_CS0
		2-3	Select SPI1_CS1
J12	SPI Port Selection -- SPI_MOSI	<b>1-2</b>	Use SPI_MOSI signal from SPI0
		2-3	Use SPI_MOSI signal from SPI1
J13	SPI Port Selection -- SPI_MISO	<b>1-2</b>	Use SPI_MISO signal from SPI0
		2-3	Use SPI_MISO signal from SPI1
J25	SPI Port Selection -- SPI_CS	<b>1-2</b>	Use SPI0_CSx (see J10)
		2-3	Use SPI1_CSx (see J11)

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Jumper	Option	Setting	Description
J14	SPI Chip-Select Encoding Bit 0 Setting	1-2	Connected to 3.3V
		2-3	Connected to GND
		<b>OFF</b>	Driven by GPIO9
J15	SPI Chip-Select Encoding Bit 1 Setting	1-2	Connected to 3.3V
		2-3	Connected to GND
		<b>OFF</b>	Driven by GPIO8
J16	SPI Chip-Select Encoding Bit 2 Setting	1-2	Connected to 3.3V
		2-3	Connected to GND
		<b>OFF</b>	Driven by GPIO7
J28, J29 J31, J32	LTC2704 VOSx GND Connection	<b>ON</b>	Connect VOSA, VOSB, VOSC, VOSD to GND
		<b>OFF</b>	Disconnect VOSx from GND
J30	Tower Power Connection	<b>ON</b>	Connect on-board 5V rail to Tower System
		<b>OFF</b>	Isolate on-board 5V rail from Tower System
J34	LT3471 Shutdown	<b>1-2</b>	LT3471 voltage regulator enabled
		2-3	LT3471 voltage regulator disabled
J37	LTC1859 Reference Voltage Selection	<b>ON</b>	Use output of LTC6655-5 as reference
		<b>OFF</b>	Use GND as reference



## TOWER SYSTEM



**Analog and Mixed  
Signal Integrated Circuit**

To learn more about the TWR-ADCDAC-LTC and other modules within the Tower System, go to [freescale.com/Tower](http://freescale.com/Tower). To become a member of the online Tower Geeks community, go to [towergeeks.org](http://towergeeks.org).

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