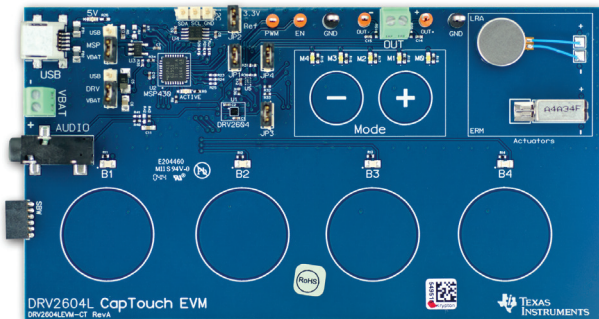


DRV2604LEVM-CT

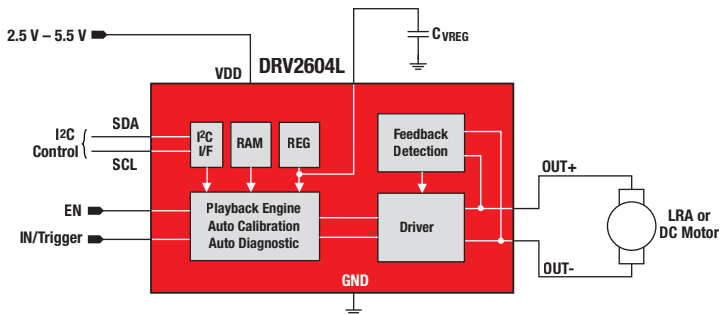
Quick-Start Guide

➔ Start Here



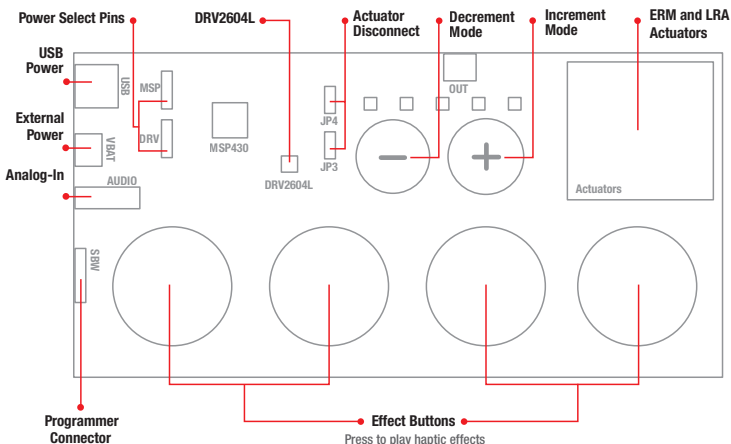
Evaluation Kit Contents

- DRV2604L LRA / ERM haptics driver with automatic overdrive and braking for ERM and LRAs
- Eccentric rotating mass motor (ERM)
- Linear resonant actuator (LRA)
- Programmable MSP430™ with haptic effects
- Capacitive touch buttons
- Mini-USB cable



Getting Started

1. Verify jumpers MSP and DRV, next to the USB connector, are connected to the USB pin.
2. Plug the board into an available USB power source (computer or wall charger) using the included USB cable.
3. Board will enter a power up sequence and the 5 V indicator will light up.
4. Use the large buttons to play effects and the “+” and “-” buttons to switch between modes. Each mode has a different set of effects.



Mode and Effects

Mode	Button	Description	Actuator	Waveform Location	Interface
Mode Off LEDs Off	B1	Click + Bounce	ERM	RAM	Internal Trigger (I ² C)
	B2	Ramp Up + Click	LRA		
	B3	Gallop Alert	ERM		
	B4	Pulsing Alert	LRA		
Mode 4 LED M4 On	B1	StrongClick	ERM	RAM	Ext. Level Trig.
	B2	Bump + Release			Internal Trigger
	B3	Double Strong Click			Ext. Edge Trig.
	B4	Click (Open Loop)		μController	PWM
Mode 3 LED M3 On	B1	StrongClick	LRA	RAM	Ext. Level Trig.
	B2	Single-Cycle Click			Internal Trigger
	B3	Single-Cycle Click with braking			Ext. Edge Trig.
	B4	Click (Open Loop)		μController	PWM
Mode 2 LED M2 On	B1	Buzz Auto-Resonance ON	LRA	μController	RTP (I ² C)
	B2	Buzz Auto-Resonance OFF	LRA		PWM
	B3	Buzz Alert	ERM		PWM
	B4	Scroll Wheel	LRA		RTP (I ² C)
Mode 1 LED M1 On	B1	Click with braking	ERM & LRA	RAM	Internal Trigger (I ² C)
	B2	Click without braking			
	B3	Click with braking (open loop)			
	B4	Selects ERM or LRA			
Mode 0 LED M0 On	B1	Auto-Calibration	ERM	Internal Routine	Internal Trigger (I ² C)
	B2	Auto-Calibration	LRA		
	B3	Click	ERM/LRA	RAM	Internal Trigger (I ² C)
	B4	Buzz			

Features and Benefits



Embedded RAM

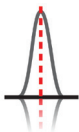
Integrated RAM can store over 100 customized waveforms that can be triggered via I²C or a GPIO



Immersion-Compatible

Works seamlessly with Immersion TouchSense® 3000

Smart Loop Architecture



Auto-Resonance Detection

Automatically track the resonant frequency of an LRA; maximize vibration strength and improve consistency across devices



Automatic Diagnostics

Automatically detect the status of the actuator



Automatic Calibration

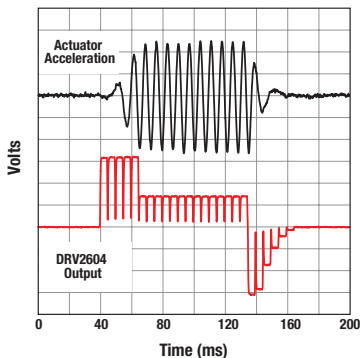
Automatically detect and configure the closed-loop feedback coefficients for every actuator



Closed Loop Feedback

Improve the response time of ERM and LRA actuators with automatic overdrive and braking

ERM Closed Loop Buzz



Design Resources and References



E2E Haptic Forum

ti.com/hapticforum

Available on ti.com/drv2604L

- DRV2604L datasheet
- Complete DRV2604LEVM-CT User's Guide
- Schematics and layout
- EVM source code and binaries

Get more information on TI's solutions for touch feedback-enabled applications at ti.com/haptics

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