
eKM6711

**Optical RF Mouse
Tx Controller**

**Product
Specification**

DOC. VERSION 1.0

ELAN MICROELECTRONICS CORP.


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Specification Revision History

Doc. Version	Revision Description	Date
1.0		2003/12/03



1 General Descriptor

The eKM6711 is a transmitter (Tx) controller of optical RF mouse. The eKM6711 is reading movement data of X axis and Y axis from optical mouse sensor using the serial data interface. Then, encode the mouse status and 3-D, 4 buttons data to RF data packets. It 's requires the external RF Tx module to transmit the RF data packets. The eKM6711 is to match with RF Mouse Rx controller for eKM6211 series (PS/2) or eKM6251 (USB+PS2).

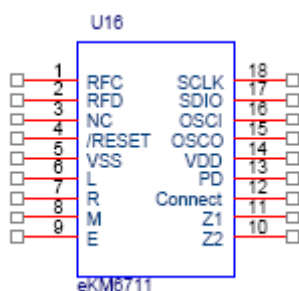
2 Feature

- Operating voltage range: 2.2V~5.5V
- Available in temperature range: 0 ~70
- Operating frequency: 4.00Mhz
- Support the 3D, 4 buttons and mechanical scrolling of z axis.
- Support the serial data interface of optical mouse sensor. (Agilent ADNS-2030, ADNS-2051)
- Efficient encoding algorithm for RF data packets.
- Device ID
 - Power-on is default ID.
 - Using the push button to random generate the 255 sets ID.
- Support 3 Operation Mode to saving power.
 - Operating mode
 - Standby mode : after 2 sec
 - Sleep mode : after 7 sec.
- To match with RF Mouse Rx controller
 - eKM6211: PS/2 only
 - eKM6251: USB and PS/2
- Package type: 18 pins DIP and SOP(300mil)

3 Application

- 3D, 4 buttons optical RF mouse

4 Pin Assignment



5 Pin Descriptor

Pin No.	Symbol	I/O	Function
1	RFC	O	Power control for RF Tx module, It's high active.
2	RFD	O	data output for RF Tx module.
3	NC	-	NC
4	/RESET	I	Input pin with Schmitt trigger. If this pin is logic low, the controller will keep in reset condition
5	VSS	-	Ground
6	L	I	Left button input pin (internal pull-high resistor)
7	R	I	Right button input pin (internal pull-high resistor)
8	M	I	Middle button input pin (internal pull-high resistor)
9	E	I	External button input pin (internal pull-high resistor)
10	Z2	I	Mechanical scrolling inputs for Z2 (internal pull-high resistor)
11	Z1	I	Mechanical scrolling inputs for Z1 (internal pull-high resistor)
12	Connect	I	When connect button is low, it's random generate the new Device ID (0x01~0xFF). (internal pull-high resistor)
13	PD	O	Power down control pin with optical mouse sensor.
14	VDD	-	Power supply
15	OSCO	I/O	Output terminal for crystal oscillator
16	OSCI	I	4.00Mhz Crystal or Resonator input
17	SDIO	I/O	Data I/O of serial data interface with optical mouse sensor.
18	SCLK	O	CLK control of serial data interface with optical mouse sensor.

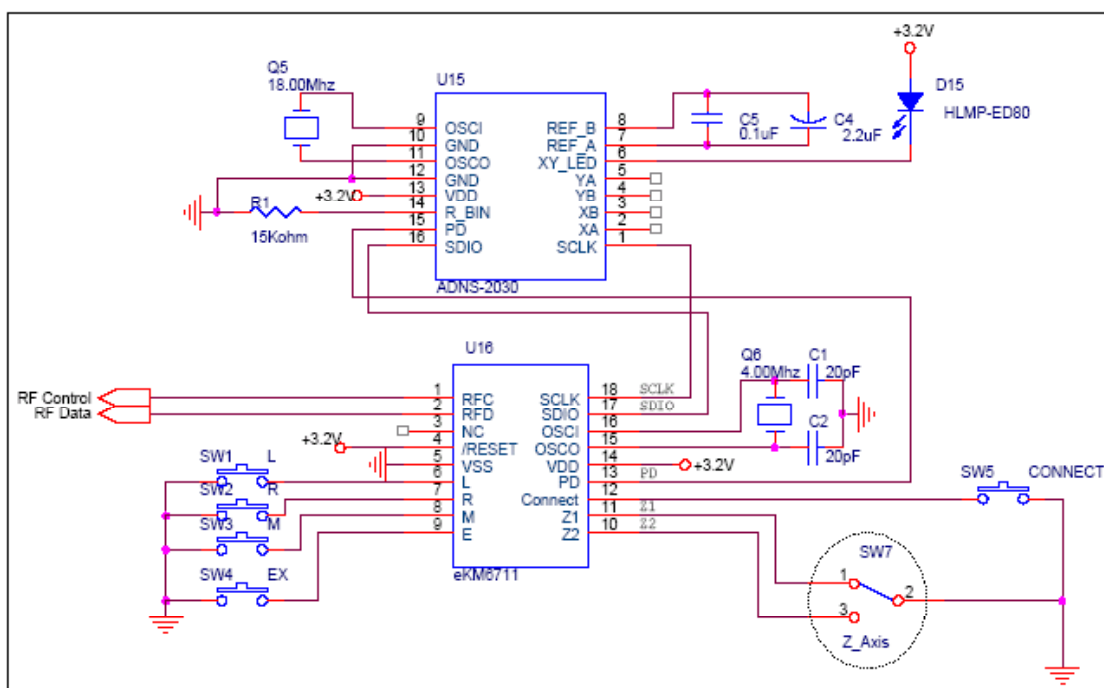
6 Absolute Maximum Ratings

Items	Sym.	Condition	Rating
Temperature under bias	TOPR		0 ~-70
Storage temperature	TSTR		-65 ~-150
Input voltage	VIN		-0.3V~+6.0V
Output voltage	VO		-0.3V~+6.0V

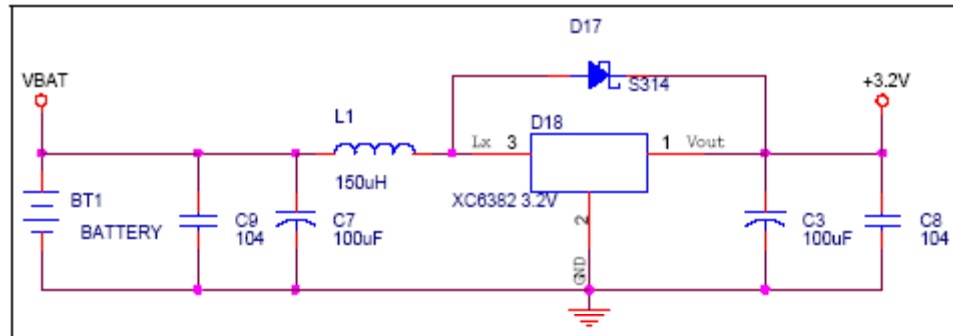
7 Dc Electrical Characteristic

Parameter	Sym.	Condition	Min.	Typ.	Max.	Unit
Power-down current	IPD	All input and I/O pins at VDD, output pin floating, WDT enable			10	μA
Standby mode	Icc3	/RESET='high', FOSC=4Mhz, output pin floating, WDT enable			1.6	mA
Operating supply current (VDD=5V)	ICC3	/RESET='high', FOSC=4Mhz, output pin floating, WDT enable			1.6	mA

8 Application Circuit



9 The Circuits of DC-to-DC converter (VDD=3.2V)



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