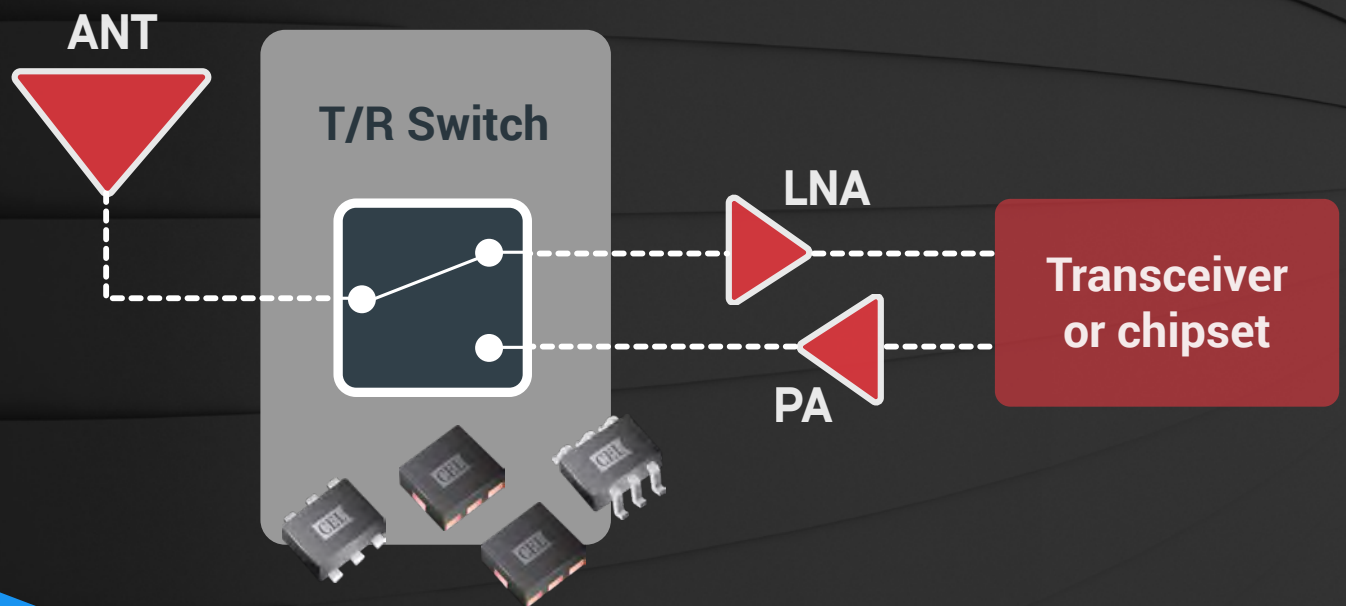



# RF Switch IC

## Selection Guide



**Making your Switch Selection**  
Fast and Easy

# RF Switch Table

 FOCUS FEATURES

LOWEST  
TO HIGHEST

Part Number	Type	Frequency Range (GHz)	Vcontrol (V)	# of Controls	Insertion Loss (dB)	Isolation (dB)	Compression point @ 3V (dBm) 2.5 GHz	Compression point @ 3V (dBm) 6.0 GHz	Control Current (uA)	Switching Speed (ns)	Logic For "ON"	Package Styles	Price Rank
CG2179M2	SPDT	0.05 to 3.0	1.8, 3.0, 5.0	2	0.45 @2.5GHz	26 @2.5GHz	+30 @P0.1dB	—	1	50	Low	M2	1
CG2214M6	SPDT	0.05 to 3.0	1.8, 3.0, 5.0	2	0.35 @2.5GHz	25 @2.5GHz	+30 @P0.1dB	—	1	50	Low	M6	2
CG2185X2	SPDT	2.0 to 6.0	1.8, 3.0, 5.0	2	0.35 @2.5GHz 0.40 @6.0GHz	28 @2.5GHz 26 @6.0GHz	+29 @P0.1dB	+29 @P0.1dB	2	50	Low	X2	3
CG2415M6	SPDT	0.5 to 6.0	1.8, 3.0, 5.3	2	0.35 @2.5GHz 0.45 @6.0GHz	32 @2.5GHz 26 @6.0GHz	+31 @P0.1dB	+31 @P0.1dB	5	100	High	M6	4
CG2415X3	SPDT	6.0	1.8, 3.0, 5.3	2	0.35 @2.5GHz	32 @2.5GHz	+31@ P0.1dB	+31@ P0.1dB	2	100	High	X3	5
CG2163X3	SPDT	2.4 to 2.5 4.9 to 6.0	1.8, 3.0, 5.0	2	0.40 @2.5GHz 0.50 @6.0GHz	40 @2.5GHz 31 @6.0GHz	+33 @P1.0dB	+32 @P1.0dB	2	80	High	X3	5
CG2164X3	DPDT	0.05 to 6.0	1.8, 3.0, 5.0	2	0.50 @2.5GHz 0.60 @6.0GHz	23 @2.5GHz 15 @6.0GHz	+32 @P0.5dB	+30 @P0.5dB	2	30	Low	X3	6
CG2430X1	SP3T	0.1 to 6.0	1.8, 3.0, 5.0	3	0.50 @2.5GHz 0.60 @6.0GHz	28 @2.5GHz 25 @6.0GHz	+28 @P0.1dB	+28 @ P0.1dB	2	80	High	X1	7
CG2409M2	SPDT	0.05 to 3.8	1.8, 3.0, 5.0	2	0.42 @2.5GHz	30 @2.5GHz	+36.5 @P0.1dB	—	7	100	High	M2	7
CG2409X3	SPDT	0.05 to 6.0	1.8, 3.0, 5.0	2	0.40 @2.5GHz 0.55 @6.0GHz	32 @2.5GHz 34 @6.0GHz	+37.5 @P0.1dB	+37.5 @P0.1dB	7	100	High	X3	7
CG2176X3	Absorptive SPDT	2.3 to 2.7 3.3 to 3.8 4.9 to 5.85	1.8, 3.0, 5.0	2	0.45 @2.5GHz 0.55 @5.8GHz	30 @2.5GHz 22 @5.8GHz	+37.5 @P0.5dB	+37.5 @P0.5dB	16	100	High	X3	8

## Package Styles and Dimensions (mm)

M2 Package  
2.0 x 1.25 x 0.9



Top

M6 Package  
1.5 x 1.1 x 0.55



Top

X1 Package  
1.5 x 1.5 x 0.37



Top



Bottom

X2 Package  
1.0 x 1.0 x 0.37



Top



Bottom

X3 Package  
1.5 x 1.5 x 0.37



Top



Bottom

# RF Switch Basics

## RF Switch Description

An RF switch is a microwave device that routes high frequency signals through transmission paths. CEL Switches are used for diverse applications such as WLAN, Mobile Communications, Wireless Security, Wireless Home Automation, Digital TV and many other RF applications.

CEL offers a broad selection of RF Switches with many configurations, package styles and performance attributes.

## Inside an RF Switch IC



Typical SPDT with Series-Shunt Configuration.

## Power Considerations for your RF Switches

Output Power vs. Input Power



It is not recommended to operate a switch at its P1.0dB compression point due to the higher relative insertion loss associated with this power level.

## Bidirectional RF Switch Operation



Switch Application Examples



Bluetooth



Zigbee/ 802.15.4



General Purpose/  
Short Range Wireless



WLAN/ Wi-Fi



MobileComm



AMR/AMI



## HIGH QUALITY AND RELIABILITY SINCE 1959

### ABOUT CEL

CEL (California Eastern Laboratories) is an engineering, sales and marketing company focused on RF Semiconductors, Optical Semiconductors and Wireless connectivity Solutions.

CEL Serves designers, OEMs and contract manufacturers in Various RF, Wireless and Optical markets. With over 55 years experience in high frequency design, customer support and fulfilment, CEL is ideally positioned to provide its customers with a stable supply of products to meet their specific needs.

CEL maintains extensive inventories and provides engineering and applications assistance at its technical centers in Santa Clara, CA., Buffalo Grove, IL and Lafayette, CO. The company supports customers through sales offices, sales representatives and distributors in a numerous locations.

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