

1. General Description

The EMS3900 is a bidirectional low-power dual port, high-speed, USB 2.0 analog switch. The device is configured as a dual 2:1 or 1:2 switch. It is optimized for use with the USB 2.0 DP/DM data lines.

The device has low bit-to-bit skew and high channel-to-channel noise isolation, and is compatible with various standards, such as high-speed USB 2.0 (480Mbps). Each switch is bidirectional and offers little or no attenuation of the high-speed signals at the outputs. Its bandwidth is wide enough to pass high-speed USB 2.0 differential signals (480 Mb/s) with good signal integrity.

The GPIO control of SEL is 1.8V logic compatible. EMS3900 is available in QFN 1.4x1.8-10L with Pb-free and Halogen-free making it a perfect candidate for mobile and space constrained applications.

2. Features and Benefits

- On-resistance, $R_{ON} = 1.5 \Omega$ when $COMx = 5.5 V$
- 12 pF typical ON capacitance
- High Bandwidth (-3 dB @ 800 MHz) Suitable For USB2.0 High-Speed Routing
- Low Quiescent Current (< 1 uA) when $V_{CC} = 3.3 V$
- 1.8 V Logic Compatible Control Pin
- High Off-Isolation: -80 dB @ 10 kHz
- Low Channel-to-Channel Crosstalk: -82 dB @ 10 kHz
- ESD protection: HBM ESDA/JEDEC JS-001 Class 3A exceeds 4000 V

3. Applications

- Mobile Phones, Tablets and Notebooks
- USB port devices

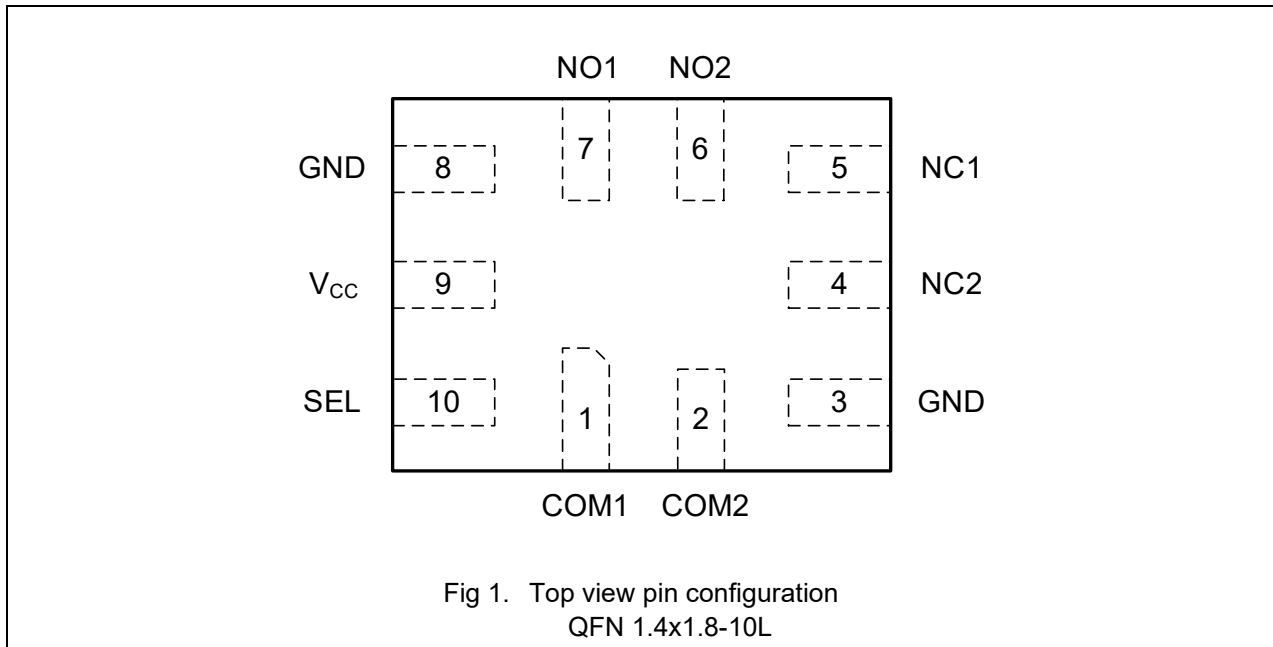
4. Ordering Information

Table 1. Ordering information

Type number	Topside marking	Package		Quantity
		Name	Description	
EMS3900RSW	A26GYW	QFN1.4×1.8-10L	QFN package, 10 pins 1.4 mm × 1.8 mm; 0.55 mm (Max) height	3000

5. Pinning Information

5.1. Pin map



5.2. Pin description

Table 2. Pin description

Symbol	Pin	Description
V _{CC}	9	Single Power Supply
NO _x	6,7	Analog/Digital Signal Ports
COM _x	1, 2	Common Signal Ports
NC _x	4, 5	Analog/Digital Signal Ports
GND	3, 8	Ground
SEL	10	Selection Logic Control

6. Functional Description

Table 3. Function table

H = HIGH voltage level; L = LOW voltage level.

Input SEL	Switch
L	NC1 to COM1, NC2 to COM2
H	NO1 to COM1, NO2 to COM2

7. Typical Application

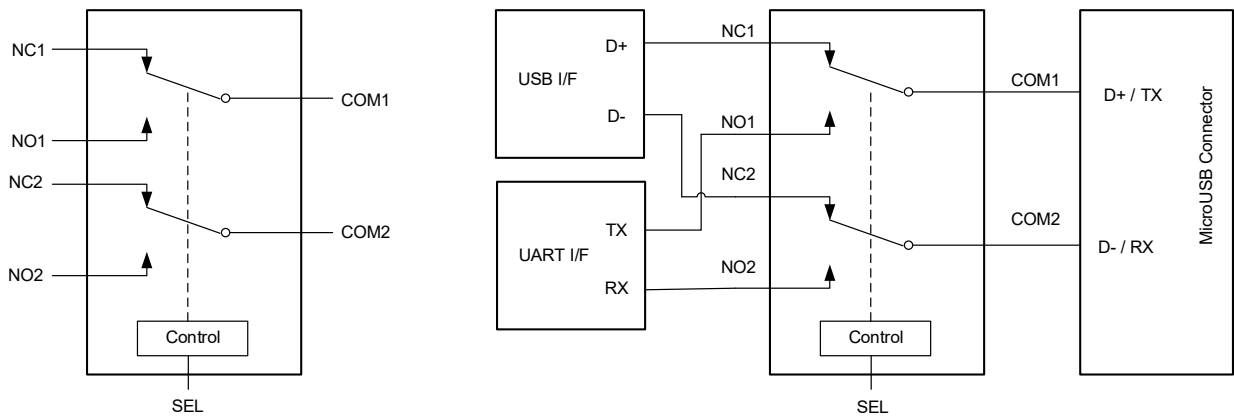


Fig 2. USB2.0 Switch