



# Application Note 115

## Fault LED Specification for Media Converter Applications

### KS8993F

#### General Description

The KS8993F is the industry's first single-chip media converter (MC) switch. It incorporates a special PHY OAM robust transport sub-layer for communication between the center-side MC and terminal-side MC. The KS8993F also offers layer 2 switch management features in a low cost, compact solution. In typical applications, Ethernet traffic is converted and transferred between the 100BASE-FX port and the 10/100 Ethernet copper port.

As part of its media converter solution, the KS8993F provides an output signal, P1FST (pin 17) to indicate a fault condition and an input signal, ML\_EN (pin 34), to enable missing link detection. Alternatively, missing link detection can be enabled/disabled via Register 67, bit 2.

For further support, contact your local Micrel Field Application Engineer or salesperson.

#### Fault LED Specification

The P1FST signal is used for the fault LED. The KS8993F drives this signal low to indicate a fault condition. An LED is typically connected to the P1FST signal. When a fault condition occurs, the LED is turned "ON."

When the KS8993F is in media converter loopback mode, the fault LED will also be turned "ON" to indicate the loopback state.

Table 1 summarizes the conditions when the Fault LED is turned "ON."

Conditions	Fault LED is Turned "ON"	
	ML_EN = '0' (missing link disabled)	ML_EN = '1' (missing link enabled)
Optical transceiver detects no signal Far End Fault threshold <sup>(1)</sup> (if enabled)	FXSD1 (pin 44) is '0' or below	FXSD1 (pin 44) is '0' or below. Far End Fault threshold <sup>(1)</sup> (if enabled).
Link partner's optical side is down		S1 = '1' (Reg. 80, bit 1 = '1').
Link partner's copper side is down		S2 = '1' (Reg. 80, bit 2 = '1') and S11 = '0' (Reg. 81, bit 3 = '0').
Terminal-side media converter	MC in loopback mode	MC in loopback mode

**Table 1. Conditions when Fault LED is turned "ON"**

**Note:**

1. Refer to the KS8993F data sheet for additional information.

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