



Signal detect, lock detect and loopback

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Two uses for these indications

1. For PCS to generate RF or LF Test patterns
 - PCS effectively has 1-bit status output
 - 4 bits of status info generate this 1 bit
 - Needs a very few “gates” somewhere
 2. For station management to monitor link
 - Both human (via LEDs) and electronic (STA)
 - Wants raw signal detect and lock detect information
- Draft standard allows for use 1 only

PMD/PMA Signal health indicator

			(optical) Signal Detect				
			good		bad		
			good	bad	good	bad	PMA lock detect
PMD loopback	off	off	good	bad	bad	bad	state of signal from PMA
			normal	wrong bit rate	no light and Xtalk?	no light	information about link
		on	good				state of signal from PMA
			don't know input state any more				information about link
	on	off	good	bad loopback	good	bad loopback	state of signal from PMA
			don't know input state any more				information about link
		on	good				state of signal from PMA
			don't know input state any more				information about link
		PMA loopback					

Proposed fixes

1. Read raw info out on MDIO, combined info on real-time (“pin”) indicator
 - Needs MDIO
2. Read raw SD info out of PMD, inform PMA of PMD loopback status
 - PMA prepares “data quality” indicator for PCS
3. Let PCS use raw info, generate “data quality” indicator for itself
 - PCS needs to be aware of loopback status of lower sublayers
4. Pass all raw signals to STA (like 1GE?)