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APPLICATION NOTE 338

DS2141A, DS2151 Alarm Set and Clear Criteria

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Abstract: Application note 338 provides the criteria used to set and clear alarms using the Maxim DS2141A T1 Controller and DS2151 Single Chip Transceiver (SCT).

Alarm	Set Criteria	Clear Criteria
Blue Alarm (AIS) (see note 1 below)	when over a 3ms window, 5 or less zeros are received	when over a 3ms window, 6 or more zeros are received
Yellow Alarm		
1. D4 bit 2 mode (RCR2.2 = 0)	when bit 2 of 256 consecutive channels is set to zero for at least 254 occurrences	when bit 2 of 256 consecutive channels is set to zero for less than 254 occurrences
2. D4 12th F-bit mode (RCR2.2 = 1; this mode is also referred to as the "Japanese Yellow Alarm")	when the 12th framing bit is set to one for two consecutive occurrences	when the 12th framing bit is set to zero for two consecutive occurrences
3. ESF mode	when 16 consecutive patterns of 00FF hex appear in the FDL	when 14 or less patterns of 00FF hex out of 16 possible appear in the FDL
Red Alarm (RCL) (this alarm is also referred to as Loss Of Signal)	when 192 consecutive zeros are received	when at least 12.5% one's density is received

Notes:

1. The definition of Blue Alarm (or Alarm Indication Signal) is an unframed all ones signal. Blue alarm detectors should be able to operate properly in the presence of a 10^{-3} error rate and they should not falsely trigger on a framed all ones signal. The blue alarm criteria in the DS2141A and DS2151 has been set to achieve this performance.

Related Parts

[DS2141A](#) T1 Controller

More Information

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