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#### APPLICATION NOTE 3953

# Side-by-Side Comparison of Fiber-Monitoring and Control ICs

Dec 04, 2006

*Abstract: This application note presents parts designed for fiber monitoring and optical control. Although the products have a broad range of capabilities, some of those features are most important for the optical control and monitoring markets. This note charts those features for easy comparison.*

## Introduction

Maxim offers a variety of products for fiber optical control and monitoring. These devices are suitable for applications using fiber-optic standards such as SFP, XFP, SFF, GBIC, and PON, and are compatible with various drivers. The products have a broad range of features optimized to best suit the customer's application requirements.

## Side-by-Side Comparison

**Tables 1** and **2** list the important features of each fiber-monitoring and control product. These tables allow the engineer to easily view which options are important to an application, and to choose the best device for his project. To learn more about these devices and to download their data sheets, visit the [Fiber Monitoring and Control Products](#) page.

The products in Table 1 can be used in fiber-optic applications that meet the SFF-8472 MSA, XFP (DS1862), and PON (DS1863) standards.

Table 1. Comparison of Products for SFF, XFP, and PON Standards

Features		DS1856	DS1859	DS1862	DS1863	DS1864	DS1865
Fault Management and Eye-Safety Features	SFF-8472 Compliant	●	●	-	-	●	-
	Burst Mode	-	-	-	●	-	●
	Fast Trip Comparators	-	-	●	●	●	●
	Alarm Flags	●	●	●	●	●	●
	Warning Flags	●	●	●	●	●	●
	FETG Driver	-	-	●	●	●	●
	Rx Power Monitor	●	●	●	●	●	●
	Rx Power Monitor with Extended Range	-	-	-	-	●	-
	Analog Monitoring Inputs	●	●	●	●	●	●
	Laser Bias Automatic Power Control (APC)	-	-	●	-	-	-
Extinction Ratio Control	-	-	●	-	-	-	
Internal Calibration	●	●	●	●	●	●	
Internal Temperature Sensor	●	●	●	●	●	●	
VCC A/D Converter (ADC)	●	●	●	●	●	●	
User EEPROM	●	●	●	●	●	●	
A0h EEPROM	-	-	-	●	-	-	
Pin-Controlled Write Protection	-	●	-	-	-	-	
Password-Controlled Write Protection	●	-	●	●	●	●	
Software-Selectable I <sup>2</sup> C Address	●	●	-	●	●	●	
Temperature-Controlled Resistors	●	●	N/A	N/A	N/A	N/A	
Manual Resistor Control	●	●	N/A	N/A	N/A	N/A	
Temperature-Controlled DACs	N/A	N/A	●	●	●	●	
Manual DAC Control	N/A	N/A	●	●	●	●	
High-Impedance Control	●	●	-	-	●	-	

The products in Table 2 can be used to control bias and modulation current.

Table 2. Comparison of Products for Bias Control and Modulation Current

Features	DS1847	DS1848	DS1855	DS3901	DS3902
Internal Temperature Sensor	●	●	-	-	-
User EEPROM	-	●	●	●	●
Pin-Controlled Write Protection	-	●	●	-	-
Password-Controlled Write Protection	-	-	●	●	●
I <sup>2</sup> C Address Pins	●	●	●	-	-
Hardware-Selectable I <sup>2</sup> C Address	-	-	-	●	●
Software-Selectable I <sup>2</sup> C Address	●	●	-	●	●
Temperature-Controlled Resistors	●	●	-	-	-
Manual Resistor Control	●	●	●	●	●
High-Impedance Control	-	-	-	●	●

Questions/comments/suggestions concerning this application note can be sent to: [MixedSignal.Apps@maximintegrated.com](mailto:MixedSignal.Apps@maximintegrated.com).

Related Parts		
DS1847	Dual Temperature-Controlled NV Variable Resistor	<a href="#">Free Samples</a>
DS1848	Dual Temperature-Controlled NV Variable Resistor & Memory	<a href="#">Free Samples</a>
DS1855	Dual Nonvolatile Digital Potentiometer and Secure Memory	<a href="#">Free Samples</a>
DS1856	Dual, Temperature-Controlled Resistors with Internally	<a href="#">Free Samples</a>

## Calibrated Monitors and Password Protection

<a href="#">DS1859</a>	Dual, Temperature-Controlled Resistors with Internally Calibrated Monitors	<a href="#">Free Samples</a>
<a href="#">DS1862</a>	XFP Laser Control and Digital Diagnostic IC	<a href="#">Free Samples</a>
<a href="#">DS1863</a>	Burst-Mode PON Controller With Integrated Monitoring	<a href="#">Free Samples</a>
<a href="#">DS1864</a>	SFP Laser Controller and Diagnostic IC	<a href="#">Free Samples</a>
<a href="#">DS1865</a>	PON Triplexer Control and Monitoring Circuit	<a href="#">Free Samples</a>
<a href="#">DS3901</a>	Triple, 8-Bit NV Variable Resistor with Dual Settings and User EEPROM	<a href="#">Free Samples</a>
<a href="#">DS3902</a>	Dual, NV, Variable Resistors with User EEPROM	<a href="#">Free Samples</a>

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### More Information

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