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APPLICATION NOTE 4667

Tested and Approved Oscillators for Maxim's TDMoP Devices

Jun 14, 2010

Abstract: This application note lists the oscillators (OCXO, oven-controlled crystal oscillator, and TCXO, temperature-compensated crystal oscillator) that have been tested and proven to work with Maxim's TDMoP (time division multiplexing over packets) devices to meet G.8261 compliance tests. Data show that the frequency accuracy of the TDMoP devices varied depending on whether an OCXO or TCXO was used.

Introduction

This application note lists approved oscillators that have been tested with TDMoP devices to meet G.8261 compliance tests. The article focuses on Maxim's TDMoP product line: the DS34T101, DS34T102, DS34T104, and DS34T108; the DS34S101, DS34S102, DS34S104, and DS34S108; or the DS34S132.

For typical operation the output from the oscillator goes to the CLK_HIGH pin of the DS34T10x and DS34S10x devices, or to the REFCLK pin of the DS34S132 for the internal clock-recovery synthesizer. From this CLK_HIGH or REFCLK signal, an on-chip frequency converter block produces the reference clock required by the clock recovery engines in the TDMoP block. This reference clock for the clock recovery engine is 38.88MHz for DS34T10x and DS34S10x devices, and 155.52MHz for the DS34S132 device.

List of the Oscillators

Manufacturer	Part Number	Frequency (MHz)	Type of Oscillator
Vectron	C4600	38.88	OCXO
Valpay Fisher	VFTCEC59L3T	38.88	OCXO
	MACE-C59L3T	38.88	OCXO
Rakon	E4496LF	38.88	TCXO
	E4890LF	19.44	TCXO
	E4889LF	10	TCXO
	P4816LF	10	TCXO

Conclusion

The frequency stability characteristics of the CLK_HIGH or REFCLK signal affect the wander performance of the recovered TDM clock. For applications where the recovered TDM clock must comply with G.823/G.824 requirements for traffic interfaces, typically a TCXO can be used as the source for the CLK_HIGH or REFCLK signal. For applications where the recovered clock must comply with G.823/G.824 requirements for synchronization interfaces, the CLK_HIGH or REFCLK signal typically must come from an OCXO. Maxim's TDMoP devices achieved a short-term frequency accuracy at 1s of 16ppb or better when an OCXO was used as a reference, and 100ppb or better when a TCXO was used as a reference.

If you have further questions on TDMoP products or any other aspects of using Maxim® telecom products, please contact the Telecom Products applications support team.

Related Parts		
DS34S101	Single/Dual/Quad/Octal TDM-Over-Packet Transport Devices	Free Samples
DS34S102	Single/Dual/Quad/Octal TDM-Over-Packet Transport Devices	Free Samples
DS34S104	Single/Dual/Quad/Octal TDM-Over-Packet Transport Devices	Free Samples
DS34S108	Single/Dual/Quad/Octal TDM-Over-Packet Transport Devices	Free Samples
DS34S132	32-Port TDM-over-Packet IC	Free Samples
DS34T101	Single/Dual/Quad/Octal TDM-Over-Packet Chip	Free Samples
DS34T102	Single/Dual/Quad/Octal TDM-Over-Packet Chip	Free Samples
DS34T104	Single/Dual/Quad/Octal TDM-Over-Packet Chip	Free Samples
DS34T108	Single/Dual/Quad/Octal TDM-Over-Packet Chip	Free Samples

More Information
For Technical Support: http://www.maximintegrated.com/support
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