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1.3 Specifications

1.3.1 Specifications for MU182040A

Table 1.3.1-1 Specifications for MU182040A

Item		Specifications	Remarks
Operating Bit Rate		8.0 to 25.0 Gbit/s 8.0 to 28.0 Gbit/s(When MU182040A-x01 is installed) 8.0 to 28.1 Gbit/s (When MU182040A-x01+x03 is installed)	
External Clock Input	Number of Input	1	
	Frequency	4.0 to 12.5 GHz	Without MU182040A-x01,x02
		4.0 to 14.0 GHz	With MU182040A-x01, without x02
		4.0 to 14.05 GHz	With MU182040A-x01, x03 ,without x02
		4.0 to 12.5 GHz(when Half Rate Clock selected) 8.0 to 25.0 GHz(when Full Rate Clock selected)	Without MU182040A-x01 , with x02
		4.0 to 14.0 GHz(when Half Rate Clock selected) 8.0 to 28.0 GHz(when Full Rate Clock selected)	With MU182040A-x01,x02
		4.0 to 14.05 GHz(when Half Rate Clock selected) 8.0 to 28.1 GHz(when Full Rate Clock selected)	With MU182040A-x01,x02,x03
		Amplitude	0.3 to 1.0 Vp-p
	Termination	AC/50 Ω	
	Connector	SMA(When MU182040A-x02 is not installed) K(When MU182040A-x02 is installed)	
1/2 Data Output	Number of Input	2 (1/2 Data Output A, 1/2 Data Output B)	To MU181040A/B Data Input
	Level	0/-0.4 V H:-0.1 to +0.1 V L:-0.5 to -0.3V	
	Termination	50 Ω/GND	
	Connector	SMA	

Table 1.3.1-1 Specifications for MU182040A (continued)

Item		Specifications	Remarks
1/2 Clock Output	Number of Input	2	To MU181040A/B Clock Input
	Amplitude	Min. 0.4 Vp-p, Max. 1.2 Vp-p	
	Termination	AC/50 Ω	
	Connector	SMA	
Data Input	Number of Input	2 (Data Input, XData Input (Differential))	
	Input Amplifier	Single-ended 50 Ω, Differential 50 Ω, Switchable to differential 100 Ω	
	Input Format	NRZ	
	Amplitude	0.25 to 2.0 Vp-p (different input amplitude)	
	Threshold	-3.5 V to +3.3 V/1 mV Step (Absolute value of difference of Data, XData Threshold = 1.5 V max.) Switchable by setting Tracking, Independent, Alternate When setting Alternate: Switchable by setting Data-XData, XData-Data (Absolute value of difference of Data, XData Threshold = 1.5 V max.)	
	Input Sensitivity	Typ. 50 mVp-p (@25 Gbit/s, 20 Gbit/s, PRBS2 ³¹ - 1, Single-ended, Mark ratio 1/2, 20 to 30°C)	
	Phase Margin	Typ. 28 ps (@25 Gbit/s, PRBS2 ³¹ - 1, Single-ended, Mark ratio 1/2, 0.5 Vp-p Input)	
	Termination Voltage	-2.5 to +3.5 V/10 mV Step (at Termination Variable setting, Sink/Source current 60 mA max.)	
	Defined Interface	GND, Variable	
	Connector	K	

Table 1.3.1-1 Specifications for MU182040A (continued)

Item		Specifications	Remarks
Auto Adjust/ Auto Search	Auto Adjust Input Format	NRZ pseudo random pattern (Mark Ratio 1/2)	
	Auto Search Input Format	NRZ (with min. 1 bit transition in 128 bits, rising/falling edge count ratio at least 20% of pattern length, and Mark Ratio of 1/8 to 7/8)	
	Input Sensitivity	Typ. 250 mVp-p(20 to 30°C)	
Variable Clock Delay	Operation Frequency	8 GHz to 25 GHz	When MU182040A- x30 is installed
		8 GHz to 28 GHz	When MU182040A- x31 is installed
		8 GHz to 28.1 GHz	When MU182040A-x03 ,x31 is installed
	Phase Setting Range	-2000 to +2000 mUI	
	Phase Setting Resolution	2 mUI	
	Phase Setting Error	Typ. 50 mUIpp	
	mUI-psConver sion	Provided	
	Measurement		
Measurement types	Error Rate	0.0001E-18 to 1.0000E-00	When this equipment and MU181040A/B installed in same main frame and 2 ch Combination selected
	Error Count	0 to 9999999, 1.0000E07 to 9.9999E17	
	Error Interval	0 to 9999999, 1.0000E07 to 9.9999E17	
	%Error Free Interval	0.0000 to 100.0000	
	Frequency	8,000.000 MHz to 28,000.000 MHz	
	Frequency measurement accuracy	1 ppm 1 kHz (standard when 10 MHz main frame reference clock calibrated)	
	Clock Count	0 to 9999999, 1.0000E07 to 9.9999E17	
	Sync Loss Interval	0 to 9999999, 1.0000E07 to 9.9999E17	
	Clock Alarm Interval	0 to 9999999, 1.0000E07 to 9.9999E17	

Table 1.3.1-1 Specifications for MU182040A (continued)

Item		Specifications	Remarks
Automatic measurement function	ISI analysis	Supported	
	Eye Margin	When MU182040A-x30 or x31 installed (when not installed, Threshold direction only)	
	Eye Diagram	When MU182040A-x30 or x31 installed	
	Q-factor	When MU182040A-x30 or x31 installed	
	Bathtub	When MU182040A-x30 or x31 installed	
Dimension		234 mm(W) × 21 mm(H) × 175 mm(D) (with Compact-PCI 1 slot but excluding protrusions)	
Mass		2.5 kg max. (including options)	
Environmental Performance	Operation Temperature	+15 to +35°C (ambient temperature around equipment when installed in the mainframe)	
	Storage Temperature	-20 to +60°C	