

Reference Clocks for Intel® PSG Solutions (formerly Altera®)

Protocol	Line/ Lane Rate (Gbps)	Intel PSG FPGA Family (Altera)	XO Clock Generation	VCXO Clock Generation	Clock Generation	Jitter Attenuators	Clock Distribution	Network Synchronization
Video								
SDI 3G/HD/SD	0.27, 1.485, 2.970	Intel Stratix®, Intel Arria®, Intel Cyclone®	8N3Qxxx 8N4Qxxx XUxxx XLxxx	8N3QVxxx 8N4QVxxx	5P49V6965 8T49N28x, 8T49N00x	8T49N28x, 813Nxxx	8P34Sxxxx 8SLVPxxxx 8SLVDxxxx 8T39Sxx	82P33810/ 814/831
DisplayPort	1.62, 2.7, 5.4, 8.1							
HDMI/DVI	1.65, 3.4, 6							
Thunderbolt	up to 10	N/A	XFxxx, XPxxx	N/A	9FGV1006 PCIe®Clock		(DBL02 PCIe Buffer)	
Communication								
1 GbE	1.25	Intel Stratix 10, Intel Arria 10, Intel Arria V, Intel Cyclone V	8N3Qxxx, 8N4Qxxx, Xuxxx, XLxxx, XP3250 ??	8N3QVxxx, 8N4QVxxx	5P49V6965, 8T49N00x, 8T49N28x	8T49N28x 813Nxxx 82P33714/731	830x, 8L3010	82P33710/714
1588	1, 10, 25							
10GbE XAUI	3.125		8N3Qxxx, 8N4Qxxx, Xuxxx, XLxxx,			Lower Power: 5P49V6965 Higher Performance: 8T49N28x, 8T49N00x, 8V19N407-XX, 8T49NS010		8P34Sxxxx 8SLVPxxxx 8SLVDxxxx 8T39Sxx
10GbE XFI	10.313	Intel Stratix, Intel Arria			Lower Power: 5P49V6965 Higher Performance: 8T49N28x, 8T49N00x, 8V19N407-XX, 8T49NS010	8T49N28x, 813Nxxx 82P33714/731		
40GbE, 100GbE	10.313		8T49N28x, 8V19N407-XX, 8T49NS010, 8T49N012					
PCIe Gen1/Gen2	2.5, 5.0	Intel Stratix, Intel Arria, Intel Cyclone			5V4123x, 9FGVxxxx, 9FGLxxxx 8T49N00x, 8T49N028, 8T49N012, 841S10x		8510x, 8T39S10	—
PCIe Gen3/Gen4, Gen5-ready	8, 16, 32	Intel Stratix, Intel Arria				9ZXL, 9ZML		—
Serial RapidIO®	1.25, 2.5, 3.125, 5, 6.25	Intel Stratix, Intel Arria, Intel Cyclone			5P49V6965, 8T49N28x, 8T49N00x, 841N254	8T49N28x, 813Nxxx 82P33714/731	8P34Sxxxx 8SLVPxxxx 8SLVDxxxx, 8T39Sxx	—
JESD204B	3.125, 6.375, 12.5				8V19N4xx, 8V79S690		8V79S690, 8V79S680	—
Storage								
Fibre Channel	1.0625, 2.125, 4.25, 8.5, 10.52, 14.025	Intel Stratix, Intel Arria	843004I 8N3Qxxx 8N4Qxxx XUxxx XLxxx	8N3QVxxx 8N4QVxxx	5P49V6965, 8T49N28x 8T49N00x	813Nxxx, 8T49N28x 8V19N474 8V49NS0312	8P34Sxxxx 8SLVPxxxx 8SLVDxxxx, 8T39Sxx	—
SAS 12G	1.5, 3.0, 6.0, 12.0							
SAS / SATA	1.5, 3.0, 6.0	Intel Stratix, Intel Arria, Intel Cyclone						
WAN								
SONET / OC-3 / OC-12 / OC-48	.155, .622, 2.488	Intel Stratix, Intel Arria	8N3Qxxx 8N4Qxxx XUxxx XLxxx	8N3QVxxx 8N4QVxxx	5P49V6965, 8T49N28x 8T49N00x	8T49N28x 8V19N407-XX	8P34Sxxxx 8SLVPxxxx 8SLVDxxxx, 8T39Sxx	82P33710/ 714/731
SONET / OC-192	155.52, 622							82P33710/714/731
OTN / OTU-2	10.709							—
OTN / OTU-3 / OTU-4	43.018, 112							—
CPRI	0.6144, 1.2288, 2.4876, 3.072, 4.9152, 6.144, 9.8304							82P33731