

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	8P34Sxxx 8SLVPxxx 8SLVDxxx 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								8A3400x, 8A3401x
10GbE XAUI	3.125								8N3Qxxx, 8N4Qxxx, Xuxxx, XLxxx,
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, 9FGVxxx, 9FGLxxx 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	8P34Sxxx 8SLVPxxx 8SLVDxxx, 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	8P34Sxxx 8SLVPxxx 8SLVDxxx, 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	8P34Sxxx 8SLVPxxx 8SLVDxxx, 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