

RD890 SYSTEM CLOCK FOR AMD-BASED SERVERS

932S890C

General Description

The 932S890C is a main clock synthesizer chip for SR5690/SR5670 AMD Servers. An SMBus interface allows full control of the device.

Recommended Application

SR5690/SR5670 AMD-based Servers

Output Features

- Low power differential outputs with integrated series resistors for Zo=50ohm systems
- 4 -Differential 200MHz CPU pairs
- 2 Differential 100MHz HT3 pairs
- 14 Differential PCIe Gen2 SRC pairs
- 1 Differential non-spread SATA clock
- 2 48MHz USB clocks (180 degrees out of phase for EMI reduction)
- 2 SIO clocks (selectable 48MHz or 24MHz). 180 degrees out of phase for EMI reduction
- 2 14.318MHz REF clock outputs

Features/Benefits

- Spread Spectrum; EMI reduction
- Outputs may be disabled via SMBus; saves power
- External crystal load capacitors; maximum frequency accuracy

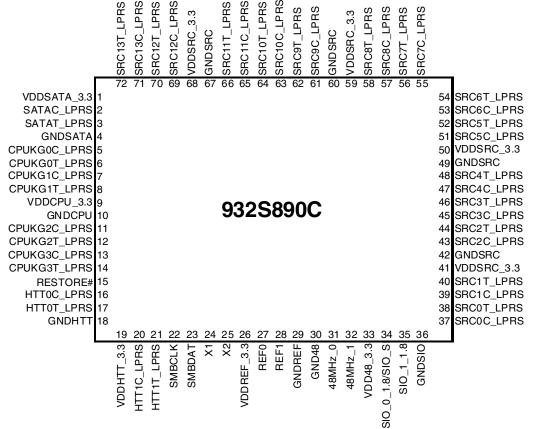
Key Specifications

- CPU output cycle-to-cycle jitter <100ps
- SRC output cycle-to-cycle jitter <125ps
- 48MHz output cycle-to-cycle jitter <130ps
- SIO output cycle-to-cycle jitter <150ps
- SRC output phase jitter <3.1ps rms (PCle Gen2)
- +/- 50ppm frequency accuracy on all clocks, assuming REF is trimmed to 0 ppm)

Table 1: 932S890 Functionality

CPU	HTT	SRC	SATA	REF	SIO	USB	DOT
MHz	MHz	MHz	SAIA	MHz	310	MHz	MHz
200.00	100.00	100.00	100.00	14.318	24/48	48.00	96.00

Pin Configuration



^{*} Indicates that pin has 120Kohm internal pullup resistor.

Pin Descriptions

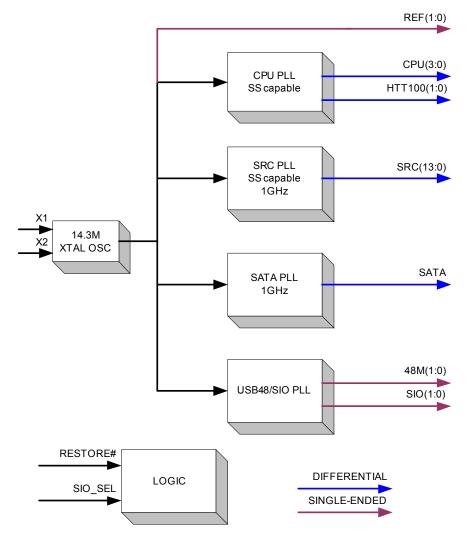
PIN #	PIN NAME	PIN TYPE					
1	VDDSATA_3.3	PWR	Power supply for SATA core logic, nominal 3.3V				
2	SATAC_LPRS	OUT	Complement clock of low power differential SATA clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
3	SATAT_LPRS	OUT	True clock of low power differential SATA clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
4	GNDSATA	GND	Ground pin for the SATA output				
5	CPUKG0C_LPRS	OUT	Complementary signal of low-power differential push-pull AMD "Greyhound" clock with integrated series resistor. (no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
6	CPUKG0T_LPRS	OUT	True signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor(no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
7	CPUKG1C_LPRS	OUT	Complementary signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor. (no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
8	CPUKG1T_LPRS	OUT	True signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor(no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
9	VDDCPU_3.3	PWR	Supply for CPU core and outputs, 3.3V nominal				
10	GNDCPU	GND	Ground pin for the CPU outputs				
11	CPUKG2C_LPRS	OUT	Complementary signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor. (no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
12	CPUKG2T_LPRS	OUT	True signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor(no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
13	CPUKG3C_LPRS	OUT	Complementary signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor. (no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
14	CPUKG3T_LPRS	OUT	True signal of low-power differential push-pull AMD "Greyhound" CPU clock with integrated series resistor(no 33 ohm series resistor needed and no 50 ohm pull down resistor needed)				
15	RESTORE#	I/O	Open Drain I/O. As an input it restores the PLL's to power up default state. As an output, this signal is driven low when the internal watchdog hardware timer expires. It is cleared when the internal watchdog hardware timer is reset or disabled. The input is falling edge triggered. 0 = Restore Settings, 1 = normal operation.				
16	HTT0C_LPRS	OUT	Complementary signal of low-power differential push-pull Hypertransport 3 clock with integrated series resistor. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
17	HTT0T_LPRS	OUT	True signal of low-power differential push-pull Hypertransport 3 clock with integrated series resistor. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
18	GNDHTT	PWR	Ground pin for the HTT outputs				
19	VDDHTT_3.3	PWR	Supply for HTT clocks, nominal 3.3V.				
20	HTT1C_LPRS	OUT	Complementary signal of low-power differential push-pull Hypertransport 3 clock with integrated series resistor. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
21	HTT1T_LPRS	OUT	True signal of low-power differential push-pull Hypertransport 3 clock with integrated series resistor. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
22	SMBCLK	IN	Clock pin of SMBus circuitry, 5V tolerant.				
23	SMBDAT	I/O	Data pin for SMBus circuitry, 5V tolerant.				
24	X1	IN	Crystal input, nominally 14.318MHz				
25	X2	OUT	Crystal output, nominally 14.318MHz				
26	VDDREF_3.3	PWR	Ref, XTAL power supply, nominal 3.3V				
	REF0	OUT	14.318 MHz reference clock, 3.3V				
28	REF1	OUT	14.318 MHz reference clock, 3.3V				
29	GNDREF	GND	Ground pin for the REF outputs.				
	GND48	GND	Ground pin for the 48MHz outputs				
31	48MHz_0	OUT	48MHz clock output.				
32	48MHz_1	OUT	48MHz clock output. (180 degrees out of phase with 48MHz_0)				
33	VDD48_3.3	PWR	Power pin for the 48MHz and SIO outputs and core. 3.3V				
34	SIO_0_1.8/SIO_SEL	I/O	Selectable 48MHz or 24MHz output/SIO Select Latched Input 0 = 24MHz, 1 = 48MHz.				
	SIO_1_1.8	OUT	Selectable 48MHz or 24MHz output. (180 out of phase with SIO 0. Selected by SIO latched input. 0 = 24MHz, 1 = 48MHz.				
36	GNDSIO	GND	Ground pin for the SIO outputs				

Pin Descriptions (cont.)

SPRICE_LPRS OUT Complement dock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm shurit resistor to GND and no 33 ohm series resistor. Price clock of low power differential SRC clock pair. (no 50 ohm	PIN # PIN TYPE		PIN TYPE	DESCRIPTION
38 RRC0T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Presistor needed) 39 RRC1C_LPRS OUT A SRC1T_LPRS OUT A SRC1T_LPRS OUT A SRC2T_LPRS OUT A SRC2C_LPRS OUT A SRC				
SRCIT_LPRS	37	SRC0C_LPRS	OUT	<u> </u>
set SPLCUT_LPRS OUT Complement acok of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series to SPLCUT_LPRS OUT Set				
SPECIC_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series. Proeded) SRC2C_LPRS OUT SINCER_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proeded) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock	38	SRC0T_LPRS	OUT	
SPICIT_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SUPPLY for SRC one and outputs, 3.3V nominal for SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SUPPLY for SRC one and outputs, 3.3V nominal for series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock of Inv. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC				
40 SRC1T_LPRS OUT Procedure And Development dock of low power differential SRC cock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC2C_LPRS OUT Omplement dock of low power differential SRC cock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series resistor. PMR SRC3C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC3C_LPRS OUT SRC3C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC3C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PMR SRC4C_LPRS OUT Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed). Thus clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and n	39	SRC1C_LPRS	OUT	<u> </u>
41 VIDDSRC 3.3 PWR Supply for SRC core and outputs, 3.3V nominal 42 (SNDSRC GND GND GROUND FOR SRC core and outputs, 3.3V nominal 43 SRC2C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 45 SRC3C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 46 SRC3T_LPRS OUT Series resistor needed) 47 SRC4C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 48 SRC4T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 49 GNDSRC GND Ground pin for the SRC outputs 50 VDDSRC 3.3 PWR Supply for SRC core and outputs 3.3V nominal 51 SRC5C_LPRS OUT Ground pin for the SRC outputs 52 SRC5T_LPRS OUT Ground pin for the SRC outputs 53 SRC6C_LPRS OUT Ground pin for the SRC outputs 54 SRC6C_LPRS OUT Ground pin for the SRC outputs 55 SRC6C_LPRS OUT Ground pin for the SRC outputs 56 SRC6C_LPRS OUT Ground pin for the SRC outputs 57 SRC6C_LPRS OUT Ground pin for the SRC outputs 58 SRC6C_LPRS OUT Ground pin for the SRC outputs 59 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 50 SRC6C_LPRS OUT Ground pin for the SRC outputs 51 SRC6C_LPRS OUT Ground pin for the SRC outputs 52 SRC6C_LPRS OUT Ground pin for the SRC outputs 53 SRC6C_LPRS OUT Ground pin for the SRC outputs 54 SRC6C_LPRS OUT Ground pin for the SRC outputs 55 SRC6C_LPRS OUT Ground pin for the SRC outputs 66 SRC7L_PRS OUT Ground pin for the SRC outputs 67 SRC6C_LPRS OUT Ground pin for the SRC outputs				
41 VDDSRC 3.3 PWR Supply for SRC one and outputs, 3.3V nominal	40	SRC1T_LPRS	OUT	
43 SRC2C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 44 SRC2T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 45 SRC3C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 46 SRC3T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 47 SRC4C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 48 SRC4T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 49 GNDSRC OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 50 NDSRC OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 51 SRC5C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 52 SRC5T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 53 SRC6C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 54 SRC7T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 55 SRC7C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC7T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 SRC8	//1	VDDSRC 33	PWR	
43 SRC2C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series to create the resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series to create the resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series to create the resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series to cell the series of the company of the resistor needed) SRC5C_LPRS OUT SRC5C_LPRS OUT SRC5C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC5C_LPRS OUT SRC5C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC5C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and n				
series resistor needed) SRC2T_LPRS OUT Tue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC3C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Tue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Proceeded) White series resistor needed on the series resis				
44 SRC2T_LPRS OUT resistor needed) 45 SRC3C_LPRS OUT resistor needed) 46 SRC3C_LPRS OUT resistor needed) 47 SRC4C_LPRS OUT resistor needed) 48 SRC4T_LPRS OUT resistor needed) 49 SRC4T_LPRS OUT resistor needed) 49 SRC5T_LPRS OUT resistor needed) 50 SRC5T_LPRS OUT resistor needed) 51 SRC5C_LPRS OUT resistor needed) 52 SRC5T_LPRS OUT resistor needed) 53 SRC5T_LPRS OUT resistor needed) 54 SRC5T_LPRS OUT resistor needed) 55 SRC5C_LPRS OUT resistor needed) 56 SRC5T_LPRS OUT resistor needed) 57 SRC5C_LPRS OUT resistor needed) 58 SRC5T_LPRS OUT resistor needed) 59 SRC5T_LPRS OUT resistor needed) 50 SRC5T_LPRS OUT resistor needed) 58 SRC5T_LPRS OUT resistor needed) 59 SRC5T_LPRS OUT resistor needed) 50 SRC5T_LPRS OUT resistor needed) 51 SRC5C_LPRS OUT resistor needed) 52 SRC5T_LPRS OUT resistor needed) 53 SRC5T_LPRS OUT resistor needed) 54 SRC5T_LPRS OUT resistor needed) 55 SRC5T_LPRS OUT resistor needed) 56 SRC5T_LPRS OUT resistor needed) 57 SRC5C_LPRS OUT resistor needed) 58 SRC5T_LPRS OUT resistor needed) 59 SRC5T_LPRS OUT resistor needed) 50 SRC5T_LPRS OUT resistor needed) 50 SRC5T_LPRS OUT resistor needed) 56 SRC5T_LPRS OUT resistor needed) 57 SRC5C_LPRS OUT resistor needed) 58 SRC5T_LPRS OUT resistor needed) 59 SRC5T_LPRS OUT resistor needed) 50 SRC5T_LPRS OUT resistor needed) 51 SRC5T_LPRS OUT resistor needed) 52 SRC5T_LPRS OUT resistor needed) 53 SRC5T_LPRS OUT resistor nee	43	SRC2C_LPRS	OUT	
Provided				
45 SRC3C_LPRS OUT Scries resistor in ceded of the power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 47 SRC4C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 48 SRC4T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 49 GNDSRC GND GNDSRC GND GNDSRC GND GNDSRC GND	44	SRC2T_LPRS	OUT	
SRC3C_LPRS OUT Series resistor needed) ARC3C_LPRS OUT celock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) ARC4C_LPRS OUT celock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. (no 50 ohm shu			_	
The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) AS RC4C_LPRS OUT The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) AS RC4T_LPRS OUT The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) AS RC4T_LPRS OUT SRC5C_LPRS OUT SRC5C_LPRS OUT The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC5C_LPRS OUT The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC5C_LPRS OUT The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC5C_LPRS OUT The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) The clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC7C_LPRS OUT SRC5C_LPRS OUT	45	SRC3C_LPRS	OUT	
SRC4C_LPRS OUT resistor needed) OUT complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC4T_LPRS OUT resistor needed.) SRC5T_LPRS OUT series resistor needed.) SRC5C_LPRS OUT series resistor needed.) Complement clock of low power differenti			_	
SRC4C_LPRS	46	SRC3T_LPRS	OUT	
Series resistor needed) WDDSRC GND GNDSRC GND Growle pin for the SRC outputs SRCSC_LPRS OUT Tree clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. LPRS SRCSC_LPRS OUT Tree clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. LPRS SRCSC_LPRS OUT Tree clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Lock pair. (no 50 ohm shunt resistor to GND and no 33				
48 SRC4T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series no series provided to the SRC cutouts SPACSC_LPRS OUT Series resistor needed). 50 VDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal. 51 SRC5C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 52 SRC5T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 53 SRC6C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 54 SRC6T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 55 SRC7C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 56 SRC7T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 57 SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 58 SRC8T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. Needed). 58 SRC8T_LPRS OUT SRC come and outputs, 3.3V nominal. 60 GNDSRC GND	47	SRC4C_LPRS	001	series resistor needed)
49 ANDSRC 50 VDDSRC 3.3 FWR 50 VDDSRC 3.3 FWR 50 VDDSRC 3.3 FWR 51 SRC5C_LPRS 52 SRC5C_LPRS 53 SRC6C_LPRS 54 SRC6C_LPRS 55 SRC6C_LPRS 56 SRC7C_LPRS 57 SRC6C_LPRS 58 SRC7C_LPRS 59 VDDSRC 3.3 FWR 50 VDDSRC 3.3 FW	40	0004T D00	6117	
Supply for SRC core and outputs, 3.3 / nominal	48	SRC41_LPRS	001	resistor needed)
SRCSC_LPRS OUT Complement dock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC6C_LPRS OUT SINCE PROVIDED THE Clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC6C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC6C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC7L_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11_LPRS OUT Series resistor needed) GOUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) GOUT Complement clock of low	49	GNDSRC	GND	Ground pin for the SRC outputs
SHCSC_LPRS OUT Series resistor needed) SRCST_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT Series resistor needed) SRCSC_LPRS OUT SERCE Clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT SERCE Clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT SRC core and outputs, 3.3V nominal GNDSRC GND Ground pin for the SRC outputs SRCSC_LPRS OUT SCRC core and outputs, 3.3V nominal GNDSRC GND True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT SCRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRCSC_LPRS OUT SCRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resis	50	VDDSRC_3.3	PWR	
Secretary Session research Secretary Session research True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC6C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no	F-1	CDCEC LDDC	OUT	Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm
SRC6_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 55 SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PRS 56 SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor. PRS 57 SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_33 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND Ground pin for the SRC outputs Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 61 SRC9C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 76 GNDSRC GNDSRC GND GNDGRC GND	51	SHC5C_LPH5	001	
SRC6C_LPRS OUT complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 54 SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 55 SRC7C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 56 SRC7T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 57 SRC8C_LPRS OUT SRC6C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND Ground pin for the SRC outputs 61 SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_33 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no	50	CDCET I DDC	OUT	True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series
SRC8C_LPRS OUT Series resistor needed) 54 SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 55 SRC7C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 56 SRC7T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 57 SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND Ground pin for the SRC outputs Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC9T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT True clock of low power different	52	ShC31_LFh3	001	
SRC6T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 55 SRC7C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 56 SRC7T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 57 SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND GROND GND GND GND GND GND GND GND GND GND G	E2	SDCSC LDDS	OUT	Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm
SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 56 SRC7C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 57 SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND GND Ground pin for the SRC outputs 61 SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm sh	55	ShCoc_LFh3	001	series resistor needed)
Fresistor needed) SRC7C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low pow	54	SBC6T LPBS	OUT	True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series
series resistor needed) 56 SRC7T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 57 SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 58 SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND Ground pin for the SRC outputs Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs SRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series res		011001_21110	001	
SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Ground pin for the SRC outputs GND Ground pin for the SRC outputs SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND	55	SRC7C LPRS	OUT	
resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) PWR Supply for SRC core and outputs, 3.3V nominal GO GNDSRC GND Ground pin for the SRC outputs Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pai				
Fesistor needed) SRC8C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	56	SRC7T LPRS	OUT	
SPICES_LERS OUT Series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC9C_LPRS OUT OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RC10C_LPRS OUT OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLEMENT CLOCK of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) COMPLE				
SRC8T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 59 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 60 GNDSRC GND Ground pin for the SRC outputs 61 SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 72 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 73 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	57	SRC8C_LPRS	OUT	
resistor needed) PWR Supply for SRC ore and outputs, 3.3V nominal GNDSRC GND Ground pin for the SRC outputs Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC10T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC11T_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC12C_LPRS OUT Supply for SRC core and outputs, 3.3V nominal Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC12C_LPRS OUT Supply for SRC core and outputs, 3.3V nominal Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) RRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)		_		
Fesistor needed) OUT Supply for SRC ore and outputs, 3.3V nominal OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Firue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	58	SRC8T_LPRS	OUT	
60 GNDSRC GND Ground pin for the SRC outputs 61 SRC9C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 62 SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 63 SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 72 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 75 True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 76 True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 77 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)		VDDCDC 0.0	DWD	
Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC12C_LPRS OUT SRC12C_LPRS OUT SRC13C_LPRS OUT SRC13C_LPRS OUT SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)				
SRC9T_LPRS OUT Series resistor needed) SRC9T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC12C_LPRS OUT SRC12C_LPRS OUT SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	60	GNDSHC	GND	
True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series SRC10C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) SRC11C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series SRC11T_LPRS OUT SRC12C_LPRS OUT SRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series SRC13C_LPRS OUT SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series	61	SRC9C_LPRS	OUT	
resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series PVDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) To SRC12C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	H		1	
Gomplement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) GRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) GSRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) GRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) GRDSRC GND Ground pin for the SRC outputs Supply for SRC core and outputs, 3.3V nominal Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	62	SRC9T_LPRS	OUT	l · · · · · · · · · · · · · · · · · · ·
series resistor needed) 64 SRC10T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 65 SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12C_LPRS OUT SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	-		+	, , , , , , , , , , , , , , , , , , ,
Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Frue clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	63	SRC10C_LPRS	OUT	
resistor needed) 65 SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12T_LPRS OUT SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)			1	
65 SRC11C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 72 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series)	64	SRC10T_LPRS	OUT	
series resistor needed) 66 SRC11T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12T_LPRS OUT SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)	<u> </u>		1 -	
True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series Fresistor needed) GNDSRC GND Ground pin for the SRC outputs SRC12C_LPRS OUT SRC12T_LPRS OUT SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series	65	SRC11C_LPRS	OUT	
resistor needed) 67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT 70 SRC12T_LPRS OUT SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed)			1	
67 GNDSRC GND Ground pin for the SRC outputs 68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT 70 SRC12T_LPRS OUT SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series	66	SHC11 [_LPRS	OUT	· · · · · · · · · · · · · · · · · · ·
68 VDDSRC_3.3 PWR Supply for SRC core and outputs, 3.3V nominal 69 SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series 70 SRC12T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series 71 SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series 72 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series 73 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series	67	GNDSRC	GND	
69 SRC12C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 70 SRC12T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 71 SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 72 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series				Supply for SRC core and outputs, 3.3V nominal
SRC12T_LPRS OUT Series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) To src13C_LPRS OUT SRC13C_LPRS OUT SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series)				Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm
True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series SRC13C_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series	69	SHU12U_LPRS	001	series resistor needed)
71 SRC13C_LPRS OUT Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series resistor needed) 72 SRC13T_LPRS OUT 73 SRC13T_LPRS OUT	70	CDC10T LDDC	CUIT	
71 SRC13C_LPRS OUT series resistor needed) 72 SRC13T_LPRS OUT True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series		SHUIZI_LPHS	001	
Series resistor needed) True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm series	71	CDC12C LDDC	OUT	Complement clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no 33 ohm
1 72 ISBC131 IPBS - 1 OIII - 1		SHUISU_LPRS	001	
resistor needed)	72	SBC13T LDDS	OUT	True clock of low power differential SRC clock pair. (no 50 ohm shunt resistor to GND and no $\overline{33}$ ohm series
	12	SHOISI_LPRS	1 001	resistor needed)

3

Block Diagram



932S890 Power Hookup

Pin N	umber	Description		
VDD	GND	Description		
1	4	SATA PLL and output		
9	10	CPU PLL and outputs		
19	18	HTT outputs		
26	29	XTAL Osc and REF outputs		
33	30	48MHz PLL and Outputs		
33	36	SIO Outputs		
41, 50, 59,	42, 49, 60,	SRC PLL and Outputs		
68	67	Sho PLL and Outputs		

Table 2: IO_Vout select table

B5b2	B5b1	B5b0	IO_Vout
0	0	0	0.3V
0	0	1	0.4V
0	1	0	0.5V
0	1	1	0.6V
1	0	0	0.7V
1	0	1	0.8V
1	1	0	0.9V
1	1	1	1.0V

CPU Frequency Selection Table

	CPU FS4	CPU FS3						
	Byte 3,	Byte 3,	CPU FS2	CPU FS1	CPU FS0	CPU	HTT	Consord
Line	bit 4	bit 3	Byte3,	Byte3,	Byte3,	Speed	Speed	Spread %
	(Spread	(DN/CTR	bit2	bit1	bit0	(MHz)	(MHz)	%
	Enable)	Spread)				,	,	
0	0	0	0	0	0	184.47	92.24	
1	0	0	0	0	1	188.24	94.12	
2	0	0	0	1	0	192.08	96.04	
3	0	0	0	1	1	196.00	98.00	SSOFF
4	0	0	1	0	0	200.00	100.00	0%
5	0	0	1	0	1	204.00	102.00	
6	0	0	1	1	0	208.08	104.04	
7	0	0	1	1	1	212.24	106.12	
8	0	1	0	0	0	184.47	92.24	
9	0	1	0	0	1	188.24	94.12	
10	0	1	0	1	0	192.08	96.04	
11	0	1	0	1	1	196.00	98.00	SS OFF
12	0	1	1	0	0	200.00	100.00	0%
13	0	1	1	0	1	204.00	102.00	
14	0	1	1	1	0	208.08	104.04	
15	0	1	1	1	1	212.24	106.12	
16	1	0	0	0	0	184.47	92.24	
17	1	0	0	0	1	188.24	94.12	
18	1	0	0	1	0	192.08	96.04	DOWN
19	1	0	0	1	1	196.00	98.00	SPREAD'-
20	1	0	1	0	0	200.00	100.00	0.5%
21	1	0	1	0	1	204.00	102.00	0.5%
22	1	0	1	1	0	208.08	104.04	
23	1	0	1	1	1	212.24	106.12	
24	1	1	0	0	0	184.47	92.24	
25	1	1	0	0	1	188.24	94.12	
26	1	1	0	1	0	192.08	96.04	CENTER
27	1	1	0	1	1	196.00	98.00	SPREAD
28	1	1	1	0	0	200.00	100.00	
29	1	1	1	0	1	204.00	102.00	'+/-0.25%
30	1	1	1	1	0	208.08	104.04	
31	1	1	1	1	1	212.24	106.12	

SRC Frequency Selection Table

	SRC FS4	SRC FS3						
	Byte 4,	Byte 4,	SRC FS2	SRC FS1	SRC FS0			
	bit 4	bit 3	Byte 4,	Byte 4,	Byte 4,	SRC	Sprd	
	(Spread	(DWN/CTR	bit2	bit1	bit0	(MHz)	%	
Line	Enable)	Spread)						
0	0	0	0	0	0	92.24		
1	0	0	0	0	1	94.12		
2	0	0	0	1	0	96.04		
3	0	0	0	1	1	98.00	SS OFF	
4	0	0	1	0	0	100.00	0%	
5	0	0	1	0	1	102.00		
6	0	0	1	1	0	104.04		
7	0	0	1	1	1	106.12		
8	0	1	0	0	0	92.24		
9	0	1	0	0	1	94.12	1	
10	0	1	0	1	0	96.04	1	
11	0	1	0	1	1	98.00	SSOFF	
12	0	1	1	0	0	100.00	0%	
13	0	1	1	0	1	102.00		
14	0	1	1	1	0	104.04		
15	0	1	1	1	1	106.12		
16	1	0	0	0	0	92.24		
17	1	0	0	0	1	94.12	1	
18	1	0	0	1	0	96.04	DOWN	
19	1	0	0	1	1	98.00	SPREAD'-	
20	1	0	1	0	0	100.00	0.5%	
21	1	0	1	0	1	102.00	0.5%	
22	1	0	1	1	0	104.04		
23	1	0	1	1	1	106.12		
24	1	1	0	0	0	92.24		
25	1	1	0	0	1	94.12		
26	1	1	0	1	0	96.04	CENTER	
27	1	1	0	1	1	98.00	SPREAD	
28	1	1	1	0	0	100.00	SPREAD '+/-0.25%	
29	1	1	1	0	1	102.00	T/-U.2J/0	
30	1	1	1	1	0	104.04		
31	1	1	1	1	1	106.12		

Absolute Maximum Ratings

Stresses above the ratings listed below can cause permanent damage to the 932S890C. These ratings, which are standard values for IDT commercially rated parts, are stress ratings only. Functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods can affect product reliability. Electrical parameters are guaranteed only over the recommended operating temperature range.

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS	Notes
3.3V Core Supply Voltage	VDDxxx	-		3.3	GND + 3.9V	٧	1
Storage Temperature	Ts	-	-65		150	°C	1
Ambient Operating Temp	Tambient	-	0		70	°C	1
Case Temperature	Tcase	-			115	°C	1
Input ESD protection HBM	ESD prot	-	2000			V	1

¹Guaranteed by design and characterization, not 100% tested in production.

Electrical Characteristics-Input/Supply/Common Output Parameters

PARAMETER	SYMBOL	CONDITIONS*	MIN	TYP	MAX	UNITS	Notes
3.3V Core Supply Voltage	VDDxxx	•	3.135	3.3	3.465	V	1
Input High Voltage	V_{IH}	VDD = 3.3 V +/-5%	2		$V_{DD} + 0.3$	V	1
Input Low Voltage	V _{IL}	VDD = 3.3 V +/-5%	V _{SS} - 0.3		0.8	٧	1
Input High Current	I _H	$V_{IN} = V_{DD}$	-5		5	uA	1
Input Low Current	I _{IL1}	V _{IN} = 0 V; Inputs with no pull-up resistors	-5			uA	1
input Low Guitent	l _{IL2}	$V_{IN} = 0 V$; Inputs with pull-up resistors	-200			uA	1
Operating Current	I _{DD3.3OP}	all outputs driven			250	mA	1
Input Frequency	Fi	VDD = 3.3 V +/-5%		14.31818		MHz	2
Pin Inductance	L _{pin}				7	nΗ	1
	C _{IN}	Logic Inputs			5	pF	1
Input Capacitance	C _{OUT}	Output pin capacitance			6	pF	1
	C _{INX}	X1 & X2 pins			5	pF	1
Clk Stabilization	T _{STAB}	From VDD Power-Up to 1st clock			1.8	ms	1
Modulation Frequency		Triangular Modulation	30		33	kHz	1
SMBus Voltage	V_{DDSMB}		2.7		5.5	V	1
Low-level Output Voltage	V_{OLSMB}	@ I _{PULLUP}			0.4	V	1
Current sinking at V _{OL} = 0.4 V	I _{PULLUPSMB}		4	6		mA	1
SMBCLK/SMBDAT Clock/Data Rise Time	T _{RSMB}	(Max V IL - 0.15) to (Min VIH + 0.15)			1000	ns	1
SMBCLK/SMBDAT Clock/Data Fall Time	T _{FSMB}	(Min VIH + 0.15) to (Max VIL - 0.15)			300	ns	1

^{*}TA = 0 - 70°C; Supply Voltage VDD = 3.3 V + /-5%

¹Guaranteed by design and characterization, not 100% tested in production.

² Input frequency should be measured at the REF pin and tuned to ideal 14.31818MHz to meet ppm frequency accuracy on PLL outputs.

AC Electrical Characteristics-Low-Power DIF Outputs: CPUKG and HTT

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS	NOTES
Crossing Point Variation	ΔV_{CROSS}	Single-ended Measurement			140	mV	1,2,5
CPU Frequency (HTT = 1/2 of CPU Frequency)	f _{CPU}	Spread Specturm On	198.8		200	MHz	1,3
Long Term Accuracy	ppm	Spread Specturm Off	-50		+50	ppm	1,11
Rising Edge Slew Rate	S _{RISE}	Differential Measurement	0.5		10	V/ns	1,4
Falling Edge Slew Rate	S _{FALL}	Differential Measurement	0.5		10	V/ns	1,4
Slew Rate Variation	t _{SLVAR}	Single-ended Measurement			20	%	1
CPU, DIF HTT Jitter - Cycle to Cycle	CPUJ _{C2C}	Differential Measurement			150	ps	1,6
Accumulated Jitter	t _{JACC}	See Notes			1	ns	1,7
Peak to Peak Differential Voltage	$V_{D(PK-PK)}$	Differential Measurement	400		2400	mV	1,8
Differential Voltage	V_D	Differential Measurement	200		1200	mV	1,9
Duty Cycle	D _{CYC}	Differential Measurement	45		55	%	1
Amplitude Variation	ΔV _D	Change in V_D DC cycle to cycle	-75		75	mV	1,10
CPU[3:0] Skew	CPU _{SKEW30}	Differential Measurement			200	ps	1
HTT[1:0] Skew	HTT _{SKEW10}	Differential Measurement			100	ps	1

¹Guaranteed by design and characterization, not 100% tested in production.

² Single-ended measurement at crossing point. Value is maximum – minimum over all time. DC value of common mode is not important due to the blocking cap.

³ Minimum Frequency is a result of 0.5% down spread spectrum

⁴ Differential measurement through the range of ±100 mV, differential signal must remain monotonic and within slew rate spec when crossing through this region.

⁵ Defined as the total variation of all crossing voltages of CLK rising and CLK# falling. Matching applies to rising edge rate of CLK and falling edge of CLK#. It is measured using a +/-75mV window centered on the average cross point where CLK meets CLK#.

 $^{^{\}widehat{\text{6}}}\text{Max}$ difference of t_{CYCLE} between any two adjacent cycles.

⁷ Accumulated tjc over a 10 µs time period, measured with JIT2 TIE at 50ps interval.

⁸ VD(PK-PK) is the overall magnitude of the differential signal.

⁹ VD(min) is the amplitude of the ring-back differential measurement, guaranteed by design, that ring-back will not cross 0V VD. VD(max) is the largest amplitude allowed.

¹⁰ The difference in magnitude of two adjacent VD_DC measurements. VD_DC is the stable post overshoot and ring-back part of the signal.

¹¹ All Long Term Accuracy and Clock Period specifications are guaranteed assuming that REFOUT is at 14.31818MHz

AC Electrical Characteristics-Low-Power DIF Outputs: SRC, SATA

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS	NOTES
SRC/SATA Frequency	f _{SRC_SATA}	Spread Specturm Off		100		MHz	1,6
Long Term Accuracy	ppm	Spread Specturm Off	-50		+50	ppm	1,6
Rising Edge Slew Rate	t _{SLR}	Differential Measurement	2.5		8	V/ns	1,2
Falling Edge Slew Rate	t _{FLR}	Differential Measurement	2.5		8	V/ns	1,2
Slew Rate Variation	t _{SLVAR}	Single-ended Measurement			20	%	1
Maximum Output Voltage	V_{HIGH}	Includes overshoot			1150	mV	1
Minimum Output Voltage	V_{LOW}	Includes undershoot	-300			mV	1
Differential Voltage Swing	V_{SWING}	Differential Measurement	300			mV	1
Crossing Point Voltage	V_{XABS}	Single-ended Measurement	300		550	mV	1,3,4
Crossing Point Variation	$V_{XABSVAR}$	Single-ended Measurement			140	mV	1,3,5
Duty Cycle	D _{CYC}	Differential Measurement	45		55	%	1
Jitter - Cycle to Cycle	SRCJ _{C2C}	Differential Measurement			125	ps	1
SRC[13:0] Skew Even Outputs	SRC _{SKEW_E}	Differential Measurement			200	ps	1,8
SRC[13:0] Skew Odd Outputs	SRC _{SKEW_O}	Differential Measurement			200	ps	1,8
SRC[13:0] Even to Odd Skew	SRC _{SKEW}	Differential Measurement	1275	1375	1475	ps	1,8
		PCle Gen 1 specs (1.5 - 22 MHz)		40	86	ps	1, 7
Jitter, Phase	^t jphaseSRC	PCIe Gen 2 (8-16 MHz, 5-16 MHz) Lo-band content (10kHz to 1.5MHz)		1.6	3	ps rms	1, 7
		PCIe Gen 2 (8-16 MHz, 5-16 MHz) Hi-band content (1.5MHz to Nyquist)		2.6	3.1	ps rms	1, 7

¹Guaranteed by design and characterization, not 100% tested in production.

² Slew rate measured through V swing centered around differential zero

³Vxabs is defined as the voltage where CLK = CLK#

⁴ Only applies to the differential rising edge (CLK rising and CLK# falling)

⁵ Defined as the total variation of all crossing voltages of CLK rising and CLK# falling. Matching applies to rising edge rate of CLK and falling edge of CLK#. It is measured using a +/-75mV window centered on the average cross point where CLK meets CLK#.

⁶ All Long Term Accuracy and Clock Period specifications are guaranteed assuming that REFOUT is at 14.31818MHz

⁷ Applicable to all SRC outputs. See http://www.pcisig.com for complete specs. Guaranteed by design and characterization, not tested in production.

⁸ SRC outputs are divided into two banks, odd and even. The odd bank skew window is 200 ps. The even bank skew window is 200ps. The skew between the even and odd banks is intentionally set at 1375ps.

Electrical Characteristics-USB - 48MHz, SIO 48/24MHz

PARAMETER	SYMBOL	CONDITIONS*	MIN	TYP	MAX	UNITS	NOTES
Long Accuracy	ppm	see Tperiod min-max values	-50		+50	ppm	1,2
Clock period	T _{P ERIOD}	USB output nominal	20.702	20.833	20.964	ns	3,5
Clock Low Time	T_{LOW}	Measure from < 0.6V	9.375		11.458	ns	3
Clock High Time	T _{HIGH}	Measure from > 2.0V	9.375		11.458	ns	3
Rise Time	t _{r_USB}	V_{OL} = 20% of Voh, V_{OH} = 80%of Voh	0.5		3	ns	1
Fall Time	t_{f_USB}	V_{OL} = 20% of Voh, V_{OH} = 80%of Voh	0.5		3	ns	1
Output High Voltage	V _{OHUSB}	I _{OH} = -1 mA	2.4			V	1,3
Output Low Voltage	V _{OLUSB}	I _{OL} = 1 mA			0.4	V	1,3
Output High Voltage	V _{OHSIO}	I _{OH} = -0.2 mA	1.8	2	2.2	V	1,4
Output Low Voltage	V _{OLSIO}	$I_{OL} = 0.2 \text{ mA}$			0.4	V	1,4
Duty Cycle	d _{CYCUSB}	V _T = 1.5 V	45		55	%	1,3
Skew	t _{SKEW}	V _T = 1.5 V			250	ps	1
Jitter, Cycle to cycle	tjcyc-cyc	V _T = 1.5 V			130	ps	1,3

^{*}TA = 0 - 70°C; Supply Voltage VDD = 3.3 V + /-5%

Electrical Characteristics—REF-14.318MHz

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS	Notes
Long Accuracy	ppm	see Tperiod min-max values	-50		+50	ppm	1,2
Long Term Jitter	t _{jLT}	@ 1us			500	ps	1,2
Clock period	T _{PERIOD}	14.318MHz output nominal	69.6378	69.8413	70.0448	ns	2,3
Clock Low Time	T_{LOW}	Measure from $V_T = 50\%$	2			ns	2
Clock High Time	T _{HIGH}	Measure from $V_T = 50\%$	2			ns	2
Output High Voltage	V _{OH}	I _{OH} = -1 mA	2.4	2.8	3.3	V	1
Output Low Voltage	V_{OL}	I _{OL} = 1 mA	0		0.4	V	1
Rise Time	t _R	$V_{OL} = 20\%$ of V_{OH} , $V_{OH} = 80\%$ of V_{OH}			1.5	ns	1
Fall Time	t _F	$V_{OL} = 20\%$ of V_{OH} , $V_{OH} = 80\%$ of V_{OH}			1.5	ns	1
Skew	t _{SKEW}	Measure from $V_T = 50\%$			250	ps	1
Duty Cycle	d _{t1}	$V_T = V_{OH}/2$	45		55	%	1
Jitter, Cycle to Cycle	t _{jcyc-cyc}	Measure from $V_T = 50\%$			200	ps	1
Jitter, Peak to Peak	t _{jPK-PK}	$\begin{aligned} &\text{Measure from V}_{\text{T}} = 50\% \text{ (0.9V)} \\ &t_{jpk-pk} = [lt_{jcyc-cyc}maxl + lt_{jcyc-cyc}minl]/2 \end{aligned}$			200	ps	1

^{*}TA = 0 - 70°C; Supply Voltage VDD = 3.3 V + /-5%

¹Guaranteed by design and characterization, not 100% tested in production.

²IDT recommended and/or chipset vendor layout guidelines must be followed to meet this specification

³Applies to USB outputs only

⁴Applies to SIO outputs only

⁵SIO 24MHz outputs are 1/2 of USB48MHz frequency (twice the period). Includes cycle to cycle jitter.

¹Guaranteed by design and characterization, not 100% tested in production.

² All Long Term Accuracy and Clock Period specifications are guaranteed assuming that REFOUT is at 14.31818MHz

³ Includes cycle to cycle jitter.

Clock Periods-Differential Outputs with Spread Spectrum Enabled

Measuren	nent Window	1 Clock	1us	0.1s	0.1s	0.1s	1us	1 Clock		
Symbol		Lg-	-SSC	-ppm error	0ppm	+ ppm error	+SSC	Lg+		
Definition		Absolute Period	Short-term Average	Long-Term Average	Period	Long-Term Average	Short-term Average	Period		
Der	Definition		Minimum Absolute Period	Minimum Absolute Period	Nominal	Maxim um	Maximum	Maximum	Units	Notes
Signal Name	HTT/SRC 100	9.87456	9.99956	10.02456	10.02506	10.02556	10.05056	10.17556	ns	1,2
Signal Name	CPU 200	4.84978	4.99978	5.01228	5.01253	5.01278	5.02528	5.17528	ns	1,2

Clock Periods-Differential Outputs with Spread Spectrum Disabled

Measuren	Measurement Window		1us	0.1s	0.1s	0.1s	1us	1 Clock		
Sy	rmbol	Lg-	-SSC	-ppm error	0ppm	+ ppm error	+SSC	Lg+		
Definition		Absolute Short-term Long-Term Period Average Average Period Long-Term Average Average		Period						
Dei	Definition		Minimum Absolute Period	Minimum Absolute Period	Nominal	Maxim um	Maximum	Maximum	Units	Notes
	SRC 100	9.87450		9.99950	10.00000	10.00050		10.12550	ns	1,2
Signal Name	SATA 100	9.87450		9.99950	10.00000	10.00050		10.12550	ns	1,2
	CPU 200	4.84975		4.99975	5.00000	5.00025		5.15025	ns	1,2

¹Guaranteed by design and characterization, not 100% tested in production.

² All Long Term Accuracy and Clock Period specifications are guaranteed assuming that REFOUT is at 14.31818MHz

General SMBus Serial Interface Information

How to Write

- · Controller (host) sends a start bit
- · Controller (host) sends the write address
- IDT clock will acknowledge
- Controller (host) sends the beginning byte location = N
- IDT clock will acknowledge
- Controller (host) sends the byte count = X
- IDT clock will acknowledge
- Controller (host) starts sending Byte N through Byte N+X-1
- IDT clock will acknowledge each byte one at a time
- Controller (host) sends a Stop bit

	Index Blo	ock '	Write Operation
Controll	er (Host)		IDT (Slave/Receiver)
Т	starT bit		
Slave A	Address		
WR	WRite		
			ACK
Beginning	Byte = N		
			ACK
Data Byte	Count = X		
			ACK
Beginnin	g Byte N		
			ACK
0		×	
0		X Byte	0
0		ė	0
			0
Byte N	Byte N + X - 1		
			ACK
Р	stoP bit		

Read Address	Write Address
D3 _(H)	D2 _(H)

How to Read

- · Controller (host) will send a start bit
- Controller (host) sends the write address
- IDT clock will acknowledge
- Controller (host) sends the beginning byte location = N
- IDT clock will acknowledge
- Controller (host) will send a separate start bit
- · Controller (host) sends the read address
- IDT clock will acknowledge
- IDT clock will send the data byte count = X
- IDT clock sends Byte N+X-1
- IDT clock sends Byte 0 through Byte X (if X_(H) was written to Byte 8)
- Controller (host) will need to acknowledge each byte
- Controller (host) will send a not acknowledge bit
- · Controller (host) will send a stop bit

	Index Block F	Read O	peration
Cor	ntroller (Host)		IDT (Slave/Receiver)
Т	starT bit		
SI	ave Address		
WR	WRite		
			ACK
Begi	Beginning Byte = N		
			ACK
RT	Repeat starT		
SI	ave Address		
RD	ReaD		
			ACK
			Data Byte Count=X
	ACK		
			Beginning Byte N
	ACK		
		ę	0
	0	X Byte	0
	0	×	0
	0		
			Byte N + X - 1
N	Not acknowledge		
Р	stoP bit		

SMBus Table: Output Enable Control Register

Byte	0	Name	Description	Туре	0	1	Default
	Bit 7	HTT1_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 6	HTT0_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 5	REF0_OE	Output Enable	RW	Low	Enabled	1
	Bit 4	REF1_OE	Output Enable	RW	Low	Enabled	1
	Bit 3	SIO_0_OE	Output Enable	RW	Hi-Z	Enabled	1
	Bit 2	SIO_1_OE	Output Enable	RW	Low	Enabled	1
	Bit 1	48MHz_1_OE	Output Enable	RW	Low	Enabled	1
	Bit 0	48MHz_0_OE	Output Enable	RW	Low	Enabled	1

SMBus Table:Output Enable Control Register

Byte	1	Name	Control Function	Type	0	1	Default
	Bit 7	SRC13_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 6	SRC12_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 5	SRC11_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 4	SRC10_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 3	SRC9_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 2	SRC8_OE	Output Enable	RW	Low/Low	Enabled	1
	Bit 1	SRC7_OE	Output Enable	RW	Low/Low	Enabled	1
ſ	Bit 0	SRC6_OE	Output Enable	RW	Low/Low	Enabled	1

SMBus Table: Output Enable Control Register

	ometo rabio. Output enable contact regions.								
Byte	2	Name	Control Function	Туре	0	1	Default		
	Bit 7	SRC5_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 6	SRC4_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 5	SRC3_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 4	SRC2_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 3	SRC1_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 2	SRC0_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 1	SATA_OE	Output Enable	RW	Low/Low	Enabled	1		
	Bit 0	CPU0_OE	Output Enable	RW	Low/Low	Enabled	1		

SMBus Table: CPU/HTT Frequency and Output Enable Control Register

Byte	3	Name	Control Function	Туре	0	1	Default
	Bit 7	CPU3_OE	Output enable	RW	Low/Low	Enabled	1
	Bit 6	CPU2_OE	Output enable	RW	Low/Low	Enabled	1
	Bit 5	CPU1_OE	Output enable	RW	Low/Low	Enabled	1
	Bit 4	CPU SS Enable	Spread Enable	RW	SS Off	SS On	0
	Bit 3	CPU Spread Type	Down or Center Spread	RW	0.5% Down Spread	0.5% Center Spread (+/-0.25%)	0
	Bit 2	CPU_FS2	CPU Frequency Select	RW	•	ency Select Table	1
	Bit 1	CPU_FS1	CPU Frequency Select	RW	Default value corresponds to 200MHz. Note that HTT frequency tracks the CPU frequency		0
	Bit 0	CPU_FS0	CPU Frequency Select LSB	RW	and is equal t	o 1/2 for CPU.	0

SMBus Table: SRC Frequency Control Register

Byte	4	Name	Control Function	Type	0	1	Default			
	Bit 7		R	eservec			0			
	Bit 6		R	eserve			0			
	Bit 5		Reserved							
	Bit 4	SRC SS Enable	Spread Enable	RW	SS Off	SS On	0			
	Bit 3	SRC Spread Type	Down or Center Spread	RW	0.5% Down Spread	0.5% Center Spread	0			
	Bit 2	SRC_FS2	SRC Frequency Select	RW	Soo SDC Frogue	anov Sologt Table	1			
	Bit 1	SRC_FS1	SRC Frequency Select	RW	See SRC Frequency Select Table		0			
	Bit 0	SRC_FS0	SRC Frequency Select LSB	RW	Default Corresponds to 100MHz					

SMBus Table: N-Step Select and SIO Readback Register

Byte	5	Name	Control Function	Туре	0	1	Default		
	Bit 7	SIO_SEL	Selects 24MHz or 48MHz	R	24MHz	48MHz	Latch		
	Bit 6	CPU M/N En	CPU PLL M/N Prog. Enable	RW	M/N Prog. Disabled	M/N Prog. Enabled	0		
	Bit 5	SRC M/N En	SRC M/N Prog.Enable	RW	M/N Prog. Disabled	M/N Prog. Enabled	0		
	Bit 4	Test_Sel	Selects Test Mode	RW	Normal mode	All ouputs are REF/N	0		
	Bit 3		R	Reserved					
	Bit 2	IO_VOUT2	IO Output Voltage Select (Most Significant Bit)	RW	See Table 9:	/ IO Salaation	1		
	Bit 1	IO_VOUT1	IO Output Voltage Select	IO Output Voltage Select RW (Default is 0.8V)			0		
	Bit 0	IO_VOUT0	IO Output Voltage Select		(Delault IS 0.0V)		1		

SMBus Table: Byte Count Register

Byte	6	Name	Control Function	Type	0	1	Default
	Bit 7		F	Reserve	ı		0
	Bit 6		F	Reserve	i		0
	Bit 5	5 BC5 Byte Count bit 5 (MSB) RW				0	
	Bit 4	BC4	Byte Count bit 4	RW	W		0
	Bit 3	BC3	Byte Count bit 3	RW	Determines the number of	of bytes that are read back	1
	Bit 2	BC2	Byte Count bit 2	RW	from the device.	Default is 08 hex.	0
	Bit 1	BC1	BC1 Byte Count bit 1 RW		0		
	Bit 0	BC0	Byte Count bit 0 (LSB)	RW			0

SMBus Table: Device ID register

Byte	7	Name	Control Function	Туре	0	1	Default
	Bit 7	Device ID7		R			Х
	Bit 6	Device ID6		R			х
	Bit 5	Device ID5]	R			Х
	Bit 4	Device ID4	Device ID	R	90 hay fa	r 932S820	Х
	Bit 3	Device ID3	Device ib	R	OB HEX IO	1 9323020	Х
	Bit 2	Device ID2		R			Х
	Bit 1	Device ID1		R			х
	Bit 0	Device ID0	7	R			Х

SMBus Table: Vendor & Revision ID Register

Byte	8	Name	Control Function	Туре	0	1	Default
	Bit 7	RID3		R	Boy A	= 0000	Х
	Bit 6	RID2	REVISION ID	R	-		Х
	Bit 5	RID1	NEVISION ID	R	Rev B = 0001 Rev C = 0010	Х	
	Bit 4	RID0		R		= 0010	Х
	Bit 3	VID3		R	-	-	0
	Bit 2	VID2	VENDOR ID	R		-	0
	Bit 1	VID1	VENDOR ID	R		0	
	Bit 0	VID0		R	-	-	1

SMBus Table: WatchDog Timer Control Register

			Control Function	Type	U	I	Default
E	Bit 7	HWD_EN	Watchdog Hard Alarm Enable	RW	Disable and Reload Hartd Alarm Timer, Clear WD Hard status bit.	Enable Timer	0
	Bit 6	SWD_EN	Watchdog Soft Alarm Enable	RW	Disable	Enable	0
	Bit 5	WD Hard Status	WD Hard Alarm Status	R	Normal	Alarm	Χ
	Bit 4	WD Soft Status	WD Soft Alarm Status	R	Normal	Alarm	Χ
E	Bit 3	WDTCtrl	Watch Dog Alarm Time base Control	RW	290ms Base	1160ms Base	0
	Bit 2	HWD2	WD Hard Alarm Timer Bit 2	RW	These bits represent the n	umber of Watch Dog Time	1
E	Bit 1	HWD1	WD Hard Alarm Timer Bit 1	RW	Base Units that pass before	e the Watch Alarm expires.	1
E	Bit 0	HWD0	WD Hard Alarm Timer Bit 0	RW	Default is 7 X	(290ms = 2s.	1

14

SMBus Table: WD Timer Safe Frequency Control Register

Byte	10	Name	Control Function	Type	0	1	Default
	Bit 7	SWD2	WD Soft Alarm Timer Bit 2	RW	•	umber of Watch Dog Time	1
	Bit 6	SWD1	WD Soft Alarm Timer Bit 1	RW	Base Units that pass before the Watch Alarm expires		1
	Bit 5	SWD0	WD Soft Alarm Timer Bit 0	RW		ault is 7 X 290ms = 2s.	
	Bit 4	WD SF4		RW	1	e the safe frequency that the device	
	Bit 3	WD SF3	Watch Dog Hard Alarm Safe	RW	returns to if the Watchdog	Hardware Timer expires.	0
	Bit 2	WD SF2	Freq Programming bits	RW	The value show here cor	responds to the power up	1
	Bit 1	WD SF1	r req r rogramming bits	RW	default of the device. See th	efault of the device. See the various Frequency Selec	
	Bit 0	WD SF0		RW	Tables for the ex	cact frequencies.	0

SMBus Table: CPU PLL Frequency Control Register

Byte	11	Name	Control Function	Туре	0	1	Default
	Bit 7	N Div2	N Divider Prog bit 2	RW			Х
	Bit 6	N Div1	N Divider Prog bit 1	RW			Χ
	Bit 5	M Div5		RW	The decimal representation	n of M and N Divider in Byte	Χ
	Bit 4	M Div4		RW	16 and 17 will configure the	VCO frequency. Default at	Χ
	Bit 3	M Div3	M Divider Programming bits	RW	power up = Byte 3 Rom t	able. See M/N Caculation	Χ
	Bit 2	M Div2	Wi Divider i Togramming bits	RW	Tables for VCO fr	equency formulas.	Χ
	Bit 1	M Div1		RW			Χ
	Bit 0	M Div0		RW			Х

SMBus Table: CPU PLL Frequency Control Register

Byte	12	Name	Control Function	Туре	0	1	Default
	Bit 7	N Div10		RW			X
	Bit 6	N Div9		RW			Х
	Bit 5	N Div8		RW	The decimal representation	n of M and N Divider in Byte	Х
	Bit 4	N Div7	N Divider Programming	RW	16 and 17 will configure the	VCO frequency. Default at	Х
	Bit 3	N Div6	b(10:3)	RW	power up = Byte 3 Rom t	able. See M/N Caculation	Х
	Bit 2	N Div5		RW	Tables for VCO fr	equency formulas.	Х
	Bit 1	N Div4		RW			Х
ſ	Bit 0	N Div3		RW			Х

SMBus Table: CPU PLL Spread Spectrum Control Register

Byte	13	Name	Control Function	Туре	0	1	Default
	Bit 7	SSP7		RW			Х
	Bit 6	SSP6		RW			Х
	Bit 5	SSP5		RW			Х
	Bit 4	SSP4	Spread Spectrum	RW	These bits set the CPU	spread pecentage.Please	Х
	Bit 3	SSP3	Programming b(7:0)	RW	contact IDT for the	appropriate values.	Х
	Bit 2	SSP2	7	RW			Х
	Bit 1	SSP1		RW			X
	Bit 0	SSP0		RW			Х

SMBus Table: CPU PLL Spread Spectrum Control Register

Byte	14	Name	Control Function	Type	0	1	Default
	Bit 7	SSP15		RW			Х
	Bit 6	SSP14		RW			Χ
	Bit 5	SSP13		RW			Χ
	Bit 4	SSP12	Spread Spectrum	RW	These bits set the CPU	spread pecentage.Please	Χ
	Bit 3	SSP11	Programming b(15:8)	RW	contact IDT for the	appropriate values.	Х
	Bit 2	SSP10		RW			Х
	Bit 1	SSP9		RW			Х
	Bit 0	SSP8		RW			Х

Note: If CLKREQA and CLKREQB are both selected to control an output, the control condition is an OR function. CLKREQA# = 0 OR CLKREQB = 0 results in the controlled output running.

SMBUS Table: SRC Frequency Control Register

Byte	15	Name	Control Function	Type	0	1	Default
	Bit 7	N Div2	N Divider Prog bit 2	RW			X
	Bit 6	N Div1	N Divider Prog bit 1	RW			Χ
	Bit 5	M Div5		RW	The decimal representation of M and N Divider in Byte	Χ	
	Bit 4	M Div4		RW	•	SRC VCO frequency. See	Χ
	Bit 3	M Div3	M Divider Programming	RW	J	r VCO frequency formulas.	Χ
	Bit 2	M Div2	bit (5:0)	RW	W/N Caculation Tables to	r vco irequency formulas.	Χ
	Bit 1	M Div1		RW			Χ
	Bit 0	M Div0		RW			Χ

SMBUS Table: SRC Frequency Control Register

Byte	16	Name	Control Function	Туре	0	1	Default
	Bit 7	N Div10		RW			Χ
	Bit 6	N Div9		RW			Χ
	Bit 5	N Div8	N Divider Programming	RW	The decimal representation	n of M and N Divider in Byte	Χ
	Bit 4	N Div7	Byte16 bit(7:0) and Byte15	RW	•	SRC VCO frequency. See	Χ
	Bit 3	N Div6	bit(7:6)	RW	_	r VCO frequency formulas.	Χ
	Bit 2	N Div5	Dit(7.0)	RW	W/N Caculation Tables 10	vco frequency formulas.	Χ
	Bit 1	N Div4		RW			Χ
	Bit 0	N Div3		RW			X

SMBUS Table: SRC Spread Spectrum Control Register

Byte	17	Name	Control Function	Type	0	1	Default
	Bit 7	SSP7		RW			X
	Bit 6	SSP6		RW			Х
	Bit 5	SSP5		RW			Х
	Bit 4	SSP4	Spread Spectrum	RW	These bits set the SRC s	pread pecentages.Please	Х
	Bit 3	SSP3	Programming bit(7:0)	RW	contact IDT for the	appropriate values.	Х
	Bit 2	SSP2	. , ,	RW			Х
	Bit 1	SSP1		RW			Х
	Bit 0	SSP0		RW			Х

SMBUS Table: SRC Spread Spectrum Control Register

Byte	18	Name	Control Function	Туре	0	1	Default
	Bit 7	SSP15		RW			Χ
	Bit 6	SSP14		RW			Χ
	Bit 5	SSP13		RW			Χ
	Bit 4	SSP12	Spread Spectrum	RW	These bits set the SRC s	pread pecentages.Please	Χ
	Bit 3	SSP11	Programming bit(15:8)	RW	contact IDT for the	appropriate values.	Χ
	Bit 2	SSP10		RW			Χ
	Bit 1	SSP9		RW			Χ
	Bit 0	SSP8		RW			Χ

SMBus Table: SRC N Divider Control Register

Byte	19	Name	Control Function	Туре	0	1	Default
	Bit 7	SRC NDiv0	LSB N Divider Programming	RW	N Divider LSB (bit 0) for	SRC M/N programming.	Χ
	Bit 6		R	eserved			0
	Bit 5		R	eserved			0
	Bit 4		R	eserved			0
	Bit 3		R	eserved			0
	Bit 2		R	eserved			0
	Bit 1		R	eserved			0
ſ	Bit 0		R	eserved			0

SMBUS Table: CPU Output Divider Register

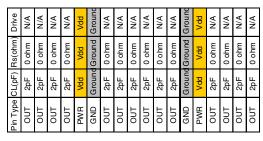
Byte	20	Name	Control Function	Type	0	1	Default
	Bit 7	CPU NDiv0	LSB N Divider Programming	RW	Byte 20 has the N Divide	r LSB (bit 0) for CPU M/N	Х
	Bit 6		R	eserved			0
	Bit 5		R	eserved			0
	Bit 4		R	eserved			0
	Bit 3	CPUDiv3		RW	0000:/2 ; 0100:/4	1000:/8 ; 1100:/16	Χ
	Bit 2	CPUDiv2	CPU Divider Ratio	RW	0001:/3 ; 0101:/6	1001:/12 ; 1101:/24	Χ
	Bit 1	CPUDiv1	Programming Bits	RW	0010:/5; 0110:/10	1010:/20 ; 1110:/40	Χ
	Bit 0	CPUDiv0		RW	0011:/9 ; 0111:/18	1011:/36 ; 1111:/72	Х

Bytes 21 to 63 Are Reserved

CPU, SRC and PCI Divider Ratios

Div(3:0)	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
Divider	2	3	5	15	4	6	10	30	8	12	20	60	16	24	40	120

Drive Strength and Terminations



	SRC13T_LPRS	SRC13C_LPRS	SRC12T_LPRS	SRC12C_LPRS	VDDSRC_3.3	GNDSRC	SRC11T_LPRS	SRC11C_LPRS	SRC10T_LPRS	SRC10C_LPRS	SRC9T_LPRS	SRC9C_LPRS	GNDSRC	VDDSRC_3.3	SRC8T_LPRS	SRC8C_LPRS	SRC7T_LPRS	SRC7C_LPRS	
	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	
TA_3.3 1																			

Drive	Rs(ohm)	CL(pF)	Pin Type
Vdd	Vdd	Vdd	PWR
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
Ground	Ground	Ground	GND
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
Vdd	Vdd	Vdd	PWR
Ground	Ground	Ground	GND
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
I/O	I/O	I/O	I/O
N/A	0 ohm	2pF	OUT
N/A	0 ohm	2pF	OUT
Ground	Ground	Ground	PWR

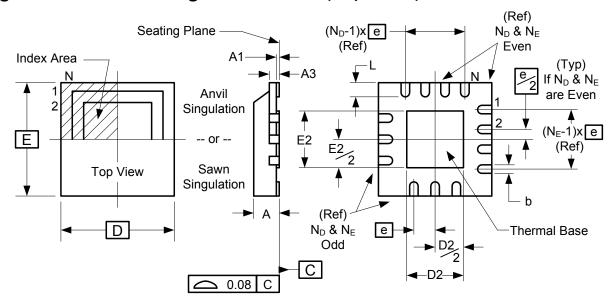
	SRC1	SRC1	SRC1	SRC1	VDDS	GND	SRC1	SRC1	SRC1	SRC1	SRCS	SRC9	GND:	VDDS	SRCE	SRC8	SRC7	SRC7	
	72				68			65			62	61	60	59			56		<u> </u>
VDDSATA_3.3 1																			54 SRC6T_LPRS
SATAC_LPRS 2																			53 SRC6C_LPRS
SATAT_LPRS 3																			52 SRC5T_LPRS
GNDSATA 4																			51 SRC5C_LPRS
CPUKG0C_LPRS 5																			50 VDDSRC_3.3
CPUKG0T_LPRS 6																			49 GNDSRC
CPUKG1C_LPRS 7																			48 SRC4T_LPRS
CPUKG1T_LPRS 8																			47 SRC4C_LPRS
VDDCPU_3.3 9							9	32	2	80	90	C							46 SRC3T_LPRS
GNDCPU 10 CPUKG2C LPRS 11							J.	<u></u>		0.	,,	•							45 SRC3C_LPRS
CPUKG2C_LPRS 11 CPUKG2T LPRS 12																			44 SRC2T_LPRS 43 SRC2C LPRS
CPUKG3C_LPRS 13																			42 GNDSRC
CPUKG3T LPRS 14																			41 VDDSRC 3.3
RESTORE# 15																			40 SRC1T LPRS
HTT0C_LPRS 16																			39 SRC1C_LPRS
HTTOT LPRS 17																			38 SRC0T_LPRS
GNDHTT 18																			37 SRC0C_LPRS
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
	3.3	38	3S	¥	۲	X	X2	3.3	0=	F1	Ш	48	0	_	6.3	S	ω	0	
		ä	4	SMBCLK	SMBDAT	^	•	- 1	REFO	REF1	GNDREF	GND48	48MHz_0	48MHz_1	VDD48_3.3	1.8/SIO_S	SIO_1_1	GNDSIO	
	÷	2	긭	Ĭ	Ĭ			띭	_	_	ž	ਯ	8	8≥	4	8/S	o	Z.	
	VDDHTT	HTT1C_LPRS	HTT1T_LPRS	0)	0)			VDDREF			9		4	4	9		S	_	
	7	Ξ	도					7								0			

Pin Type	CL(pF)	Rs(ohm)
OUT	2pF	0 ohm
PWR	Vdd	Vdd
GND	Ground	Ground
OUT	2pF	0 ohm
GND	Ground	Ground
PWR	Vdd	Vdd
OUT	2pF	0 ohm

Pin Type	PWR	OUT	TUO	Z	O/I	Z	TUO	PWR	TUO	TUO	GND	GND	TUO	TUO	PWR	0/1	TUO	GND
CL(pF)	ρpΛ	2pF	2pF	SCLK	SDATA	30pF	30pF	ρpΛ	3.9pF	3.9pF	Ground	Ground	3.9pf	3.9pf	ρpΛ	3.9pf	3.9pf	Ground
Rs(ohm) CL(pF)	ρρΛ	0 ohm	0 ohm	SCLK	SDATA	N/A	N/A	ρpΛ	39 ohm	39 ohm	Ground	Ground	39 ohm	39 ohm	ρpΛ	29 ohm	29 ohm	Ground
Drive	Ndd	A/N	N/A	SCLK	SDATA	N/A	N/A	ρpΛ	2X	2X	Ground	Ground	2X	2X	Ndd	1X	1X	Ground

Resistor values are for default drive strength driving a single transmission line with Zo = 50 ohms!

Package Outline and Package Dimensions (72-pin MLF)



	Millim	eters
Symbol	Min	Max
Α	0.8	1.0
A1	0	0.05
A3	0.25 Re	ference
b	0.18	0.3
е	0.50 E	BASIC
D x E BASIC	10.00 >	(10.00
D2 MIN./MAX.	5.75	6.15
E2 MIN./MAX.	5.75	6.15
L MIN./MAX.	0.3	0.5
N_D	1	8
N _E	1	8

Ordering Information

Part / Order Number	Marking	Shipping Packaging	Package	Temperature
932S890CKLF	see page 13	Trays	72-pin MLF	0 to +70° C
932S890CKLFT		Tape and Reel	72-pin MLF	0 to +70° C

[&]quot;LF" suffix to the part number are the Pb-Free configuration and are RoHS compliant.

While the information presented herein has been checked for both accuracy and reliability, Integrated Device Technology (IDT) assumes no responsibility for either its use or for the infringement of any patents or other rights of third parties, which would result from its use. No other circuits, patents, or licenses are implied. This product is intended for use in normal commercial applications. Any other applications such as those requiring extended temperature range, high reliability, or other extraordinary environmental requirements are not recommended without additional processing by IDT. IDT reserves the right to change any circuitry or specifications without notice. IDT does not authorize or warrant any IDT product for use in life support devices or critical medical instruments.

[&]quot;C" is the device revision designator (will not correlate with the datasheet revision).

Revision History

Rev.	Issue Date	Who	Description	Page #
Α	1/15/2009	RDW	Updates to pin descriptions, electrical tables, power tables, release to final	Various
В	2/26/2009	RDW	Updates to pin 71 & 72 descriptions.	3
			1. Updated PPM tolerances to +/-50ppm from +/-100ppm	
			2. Updated clock periods to reflect this.	
			3. Added footnote 3 to 14.318M Electrical Table	
			4. Updated ppm reference on page 1 to reflect this.	
С	2/10/2011	RDW	5. Added clock periods table after page 10.	1,8,9,10,19
D	5/20/2011	RDW	Updated to new datasheet template.	Various

932S890C RD890 SYSTEM CLOCK FOR AMD-BASED SERVERS

SYNTHESIZERS

IMPORTANT NOTICE AND DISCLAIMER

RENESAS ELECTRONICS CORPORATION AND ITS SUBSIDIARIES ("RENESAS") PROVIDES TECHNICAL SPECIFICATIONS AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD-PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for developers who are designing with Renesas products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. Renesas grants you permission to use these resources only to develop an application that uses Renesas products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Renesas intellectual property or to any third-party intellectual property. Renesas disclaims responsibility for, and you will fully indemnify Renesas and its representatives against, any claims, damages, costs, losses, or liabilities arising from your use of these resources. Renesas' products are provided only subject to Renesas' Terms and Conditions of Sale or other applicable terms agreed to in writing. No use of any Renesas resources expands or otherwise alters any applicable warranties or warranty disclaimers for these products.

(Disclaimer Rev.1.01)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061, Japan www.renesas.com

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit www.renesas.com/contact-us/.