

▪ Frequency - **25MHz**

Jumpers		Name of clock skew	Skew as function of jumpers Set								
			L L	L M	L H	M L	M M	M H	H L	H M	H H
J2	J3	GL1CLK1 to BASE CLOCK	-4t	-3t	-2t	-1t	0t	+1t	+2t	+3t	+4t
J4	J5	GL2CLK1 to BASE CLOCK	-4t	-3t	-2t	-1t	0t	+1t	+2t	+3t	+4t
J6	J7	ALL to BASE CLOCK	X <sup>1</sup>	-6t	-4t	-2t	0t	+2t	+4t	+6t	X <sup>1</sup>
J8	J9	GL0CLK0 to BASE CLOCK	X <sup>1</sup>	-6t	-4t	-2t	0t	+2t	+4t	+6t	X <sup>1</sup>

Table 1. Jumper **J2÷J9**. Clock skew with respect to the input Base Clock as function of jumpers Set. L - indicates a connection to GND (jumper set to left position); H- indicates a connection to Vcc=+5V (jumper set to right position); M - indicates an open connection. *Upper string of jumper set in Table is corresponding to J3,J5,J7,J9 and bottom is corresponding to J2,J4,J6,J8.*

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Jumpers		Name of clock skew	Skew as function of jumpers Set, ns								
			L L	L M	L H	M L	M M	M H	H L	H M	H H
J11	J12	Falling edge of CLKA	- 3.5	- 2.5	- 1.8	- 0.9	0t	+ 0.8	+ 1.6	+ 2.2	+ 3.0
J13	J14	CLK1	- 3.0	- 2.2	- 1.6	- 0.8	0t	+ 0.8	+ 1.6	+ 2.2	+ 3.0
J15	J16	ALL	X <sup>1</sup>	+ 5.5	+ 4	+ 1.5	0t	- 1	- 3	- 5	X <sup>1</sup>
J17	J18	Rising edge of CLKA	X <sup>1</sup>	X <sup>2</sup>	X <sup>2</sup>	- 0.8	0t	+ 1	+ 3	+ 4	X <sup>1</sup>

Table 2. The **J11÷J26** jumpers are common for all Amplug : *Upper string of jumper set in Table is corresponding to J12, J14, J16, J18 and bottom is corresponding to J11, J13, J15, J17.*

▪ Frequency - **25MHz**

Jumpers		Name of clock skew	Skew as function of jumpers Set								
			L L	L M	L H	M L	M M	M H	H L	H M	H H
J19	J20	Rising edge of CLKB	X <sup>4</sup>	- 3.0	- 2.2	- 1.0	0t	+ 0.8	+ 1.5	+ 2.0	+ 3.0
J21	J22	CLK3	- 3.0	- 2.2	- 1.6	- 0.8	0t	+ 0.8	+ 1.6	+ 2.2	+ 3.0
J23	J24	ALL	X <sup>1</sup>	+ 5.0	+ 3.5	+ 1.5	0t	- 1.2	- X <sup>3</sup>	- X <sup>3</sup>	X <sup>1</sup>
J25	J26	Falling edge of CLKB	X <sup>1</sup>	- 6.0	- 4.0	- 2.0	0t	+ 1.2	+ 3.2	+ 4	X <sup>1</sup>

Table 3. Jumper **J19÷J26**. *Upper string of jumper set in Table is corresponding to J20, J22, J24, J26 and bottom is corresponding to J19, J21, J23, J25.*

X<sup>1</sup>- unused cofiguration: Output functions of "Roboclock" set to "Divide-by-two" or "Divide-by-four" mode.

X<sup>2</sup>- unused cofiguration: CLKA disappeared.

X<sup>3</sup>- unused cofiguration: CLKB disappeared.

X<sup>4</sup>- unused cofiguration: CLKB disappeared.

### Jumpers Layout:

(L)	(H)	- Jumper 8: GL0F0	- Clock skew for AMplugs
(L)	(H)	- Jumper 9: GL0F1	- Clock skew for AMplugs
(L)	(H)	- Jumper 2: GL1F0	- Clock skew for GLUE2 chip
(L)	(H)	- Jumper 3: GL1F0	- Clock skew for GLUE2 chip
(L)	(H)	- Jumper 6: BRDFBF0	- Clock skew for AMBOARD
(L)	(H)	- Jumper 7: BRDFBF1	- Clock skew for AMBOARD
(L)	(H)	- Jumper 4: GL2F0	- Clock skew for GLUE2 chip
(L)	(H)	- Jumper 5: GL2F1	- Clock skew for GLUE2 chip
(L)	(H)	- Jumper 1: FS	Amboard frequency range select
(L)	(H)	- Jumper 10: FS	Amplug frequency range select
(L)	(H)	- Jumper 13: CLOCK1 F0	- Skew for CLK1
(L)	(H)	- Jumper 14: CLOCK1 F1	- Skew for CLK1
(L)	—(H)	- Jumper 21: CLOCK3 F0	- Skew for CLK3
(L)	—(H)	- Jumper 22: CLOCK3 F1	- Skew for CLK3
(L) —	(H)	- Jumper 15: FBA F0	- ALL : Skew for ALL - CLKA&CLK1
(L)	(H)	- Jumper 16: FBA F1	- ALL : Skew for ALL - CLKA&CLK1
(L)	(H)	- Jumper 25: FBB F0	- ALL : Skew for ALL - CLKB&CLK3
(L)	(H)	- Jumper 26: FBB F1	- ALL : Skew for ALL - CLKB&CLK3
(L) —	(H)	- Jumper 17: CLK(0 )F0	- Skew for Rising edge of CLKA
(L)	(H)	- Jumper 18: CLK(0 )F1	- Skew for Rising edge of CLKA
(L)	—(H)	- Jumper 11: CLK(1)F0	- Skew for Falling edge of CLKA
(L)	—(H)	- Jumper 12: CLK(1)F1	- Skew for Falling edge of CLKA
(L)	(H)	- Jumper 19: CLK(2)F0	- Skew for Rising edge of CLKB
(L)	(H)	- Jumper 20: CLK(2)F1	- Skew for Rising edge of CLKB
(L)	(H)	- Jumper 23: CLK(3)F0	- Skew for Falling edge of CLKB
(L)	—(H)	- Jumper 24: CLK(3)F1	- Skew for Falling edge of CLKB

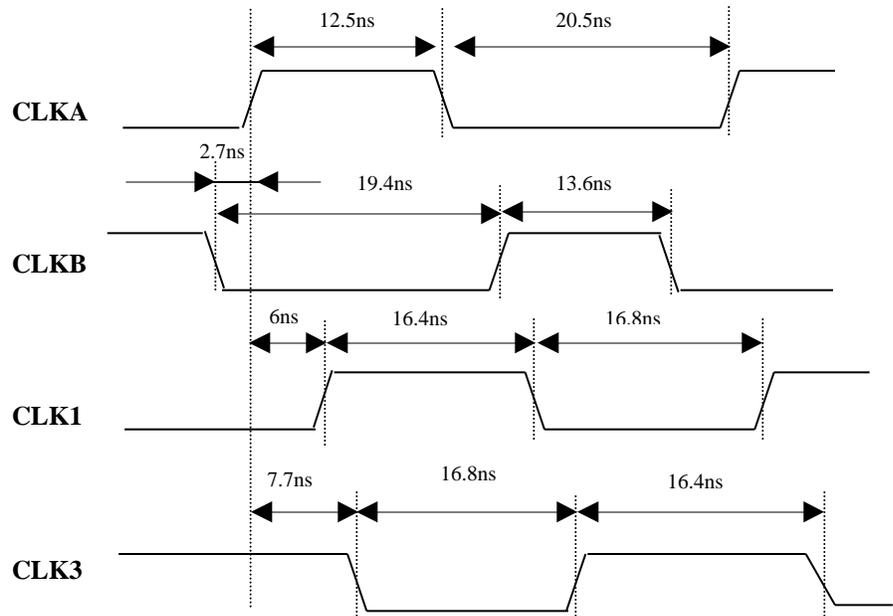
← Amboard front panel

## Timing of AMPLUG at frequency $f=30\text{MHz}$ :

(It was measured by HP 54111D oscilloscope)

### Jumpers Set\_Up:

J11 => 'H',
J12 => 'H',
J15 => 'L',
J17 => 'L',
J21 => 'H',
J22 => 'H',
J24 => 'H',



### Note:

1. The signals CLK\_A and CLK\_B were measured directly at the corresponding pads of Amchip. The location of Amchip is near GLUE0 chip.
2. The signals CLK1 and CLK3 were measured directly at the corresponding pads of GLUE0 chip on the another AM plug.
3. This Set\_Up was used at temperature tests of Amplug with v.3.2 AM chips.