Programmable Baud Rate for VXC Series Cards

This document is available for **VXC-112A, VXC-142, VXC-142i** and **VXC-182i** cards.

Baud Rates Divisor with Using a 1.8432-MHz Crystal

(Low-Speed Mode in VXC Cards)

DESIRED BAUD RATE	DIVISOR USED TO GENERATE 16× CLOCK	PERCENT (%) ERROR
50	2304	
75	1536	
110	1047	0.026
150	768	
300	384	
600	192	
1200	**96**	
1280	90	
1440	80	
1920	60	
2304	50	
2400	**48**	
2560	45	
2880	40	
3200	36	
3600	32	
3840	30	
4608	25	
4800	**24**	
5760	20	
6400	18	
7200	16	
7680	15	
9600	**12**	
11520	10	
12800	9	
14400	8	
16457	7	0.0009
19200	**6**	
23040	5	
28800	4	
38400	**3**	
56000	2	2.86
57600	**2**	
115200	**1**	

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Warning: The baud rates higher than 115,200 bps are not guaranteed to work.

Baud Rates Divisor with Using a 14.7456-MHz Crystal

(High-Speed Mode in VXC Cards)

DESIRED BAUD RATE	DIVISOR USED TO GENERATE 16× CLOCK	PERCENT (%) ERROR
115200	**8**	
131660	7	0.002
131657	7	0.0001
153600	6	
184320	5	
230400	**4**	
307200	3	
460800	2	

When setting baud rate, the VXC card driver selects a proper divisor for the UART to use a 16x clock of baud rate.

Divisor = Crystal Clock / 16 / Baud Rate

Crystal Clock = Baud Rate * 16 * Divisor

To generate baud rate 125,000 bps:

Select a proper baud rate which is closer to your requirement. In this example: select 115,200bps, divisor is 1 (low-speed) or divisor is 8 (high-speed). Then compute the Crystal Clock depending on the desired baud rate.

125,000 * 16 * 1 (low-speed-mode divisor) = 2,000,000 = 2MHz crystal

125,000 * 16 * 8 (high-speed-mode divisor) = 16,000,000 = 16MHz crystal

So, when you use a 2MHz or 16MHz crystal and selecting the baud rate 115,200 bps in your software setting, driver will select the proper divisor 1 (for 2MHz Crystal) or 8 (for 16MHz Crystal), and the UART will get the clock 16x of 125kbps. The hardware will then generate baud rate 125kbps actually. (Software setting is 115.2kbps, but the hardware is working on 125kbps)

Warning: The baud rates higher than 115,200 bps are not guaranteed to work.

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To generate baud rate 250,000 bps:

Select a proper baud rate which is closer to your requirement. In this example: select 230,400bps, divisor is 4 (high-speed). Then compute the Crystal Clock depending on the desired baud rate.

250,000 * 16 * 4 (high-speed-mode divisor) = 16,000,000 = 16MHz crystal

So, when you using a 16MHz crystal and selecting the baud rate 230,400 bps in your software setting, driver will select the proper divisor 4 (for 16MHz Crystal), and the UART will get the clock 16x of 250kbps. The hardware will then generate baud rate 250kbps actually. (Software setting is 230.4kbps, but the hardware is working on 250kbps)

Note: The multi-port serial cards can have a special baud rate in OEM version. Please contact us for more information regarding the OEM products.

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