

# DI-2108 Sample Rate Calculation

03 Dec 2024 01:30 PM

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I am not sure how to interpret "Sample rate per scan list element" in equation at the bottom of page 7 in the protocol manual. How does the sample rate change with the number of elements in the scan list? If I want to acquire data for all 8 analog channels at the highest resolution at a sample rate of 20Hz, (samples/sec), which do I use to yield 20Hz rate at 1000 points CIC filtered per sample:

1.  $\text{srate} = 375$ ,  $\text{dec} = 500$  and  $\text{deca} = 2$ ; (has factor of 8 in divisor for all 8 channels)
2.  $\text{srate} = 3000$ ,  $\text{dec} = 500$  and  $\text{deca} = 2$ ; (no channel factor)

In both cases the resulting Sample Rate is 20Hz would yield 16-bit resolution according to resolution equation and chart on page 16 of the DI-2108 manual, correct?

If I use a channel factor as in #1 then if I sampled 8 analog and 4 digital channels, would the channel factor now be 12?

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