

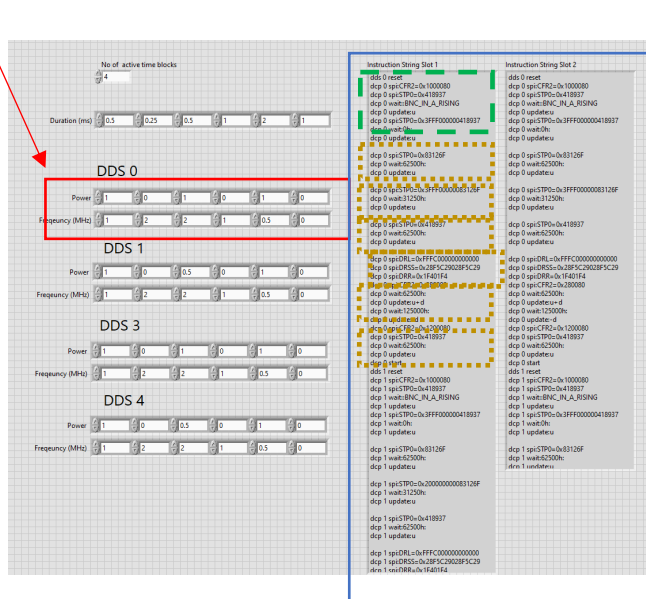
From *.sm2 file, I can extract this

	Seq.Name	Seq.Enabled	Seq.Duration[ms]	AO-1	AO-2	AO-0	digit-0	digit-1	digit-2
0	Initialization 1	True	1.0	0.034	0.026	0.42	False	True	False
1	2/3DMOT	True	400.0	0.034	0.026	0.42	False	False	False
2	BFieldOff	True	3.0	0.034	0.026	0.42	False	False	False
3	FreqRamp	True	1.0	0.000	0.026	6.68	False	False	False
4	DelayA	True	0.1	0.118	0.026	6.68	False	False	False

Assuming we use:

- AO-1 to encode the frequency for DDS channel 1
- AO-2 to encode the amplitude for DDS channel 1
- digit-1 for if frequency needs to be ramped
 - the direction of the ramping is determined from the subsequent values in the sequence for AO-1
- digit-2 for if amplitude needs to be ramped
 - the direction of the ramping is determined from the subsequent values in the sequence for AO-2

The table above will be transferred into a table in Labview (red).



The DDS company provides different labview Vis (as shown in block diagramme below). These Vis take decimal numbers (frequency, amplitude, duration,...) as inputs and transforms that into DDS code with hexadecimal representation (blue square) and ready for DDS to read.

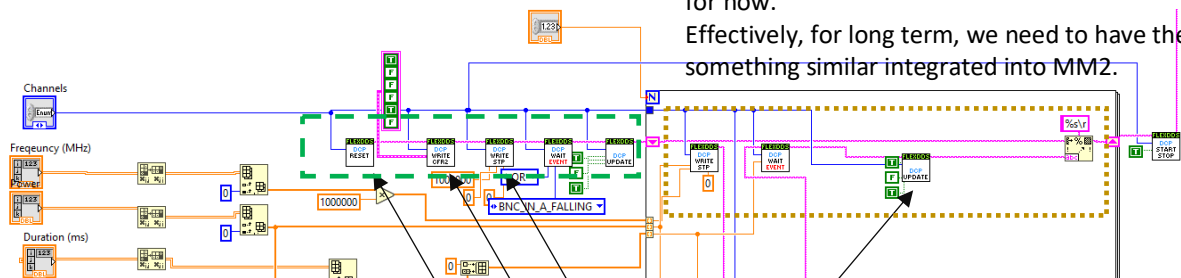
The VIs circled with green dashed lines write the initialization codes.

The VIs with orange dashed lines in the “for” loop iterates through the values in the labview table and writes the codes accordingly. One can include a line of code saying that the execution happens when a TTL signal is on HIGH. That can be sent from a physical channel to the DDS unit for precision timing.

I am thinking to build some conditional clauses to use the digit-1 and digit-2 to incorporate the frequency/amplitude ramps.

This is not very clean way to do it and will reduce the repetition rate of running MM2. But I think it will work for now.

Effectively, for long term, we need to have these or something similar integrated into MM2.



DDS company provide these