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DSPect Systems - Hardware Related Dashboard Parameters

Dashboard Parameter	Allowed Values	Description
Receiver Gain	0 - 10,000	Controls the gain of the RF receiver section. Non-linear.
Dec Attn.	0 - 63 (low power mode) 100 - 163 (high power mode)	Sets the decoupler attenutaion. Values from 0 to 63 correspond to 0 to 63 dB of attenuation in low power ('L') mode. Values from 100 to 163 correspond to 0 to 63 dB of attenuation in high ('H') power mode.
Set Temp.	Value in K	Sets a temperature in K on the VT unit.
Acq. Points	2 - 64k	Sets the actual number of complex points to be acquired for each acquisition event in the sequence.
Points 1D	--	Calculated by NTNMR to be the total number of complex points acquired in the experiment.
SW +/-	300 - 12500000 Hz	Sets the acquisition window half-width in Hz.
Dwell Time	1 / SW	
Filter		
F1 Freq. (F2, F3, F4)	System dependent values in MHz.	The actual frequency of the specified transmitter channel. F1 Freq. = F1 Base Freq. + F1 Offset Freq.
F1 Base (F2, F3, F4)	System dependent values in MHz.	Sets the base frequency for the specified channel.
F1 Offset Freq. (F2, F3, F4)	Values in (+/-) kHz.	Sets the O1 frequency (F1 Offset).
Sequence Parameters	variable	Sequence parameters are user definable variables that vary depending on the sequence. See below for the standard variables used by Tecmag in the provided sequences. Also see the chapter on pulse programming in the NTNMR manual for details on using variables.

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DSPect Systems - Pulse Sequence Line Descriptions*

**Not all lines present on all systems*

OBS_RF

Allowed Values:
On/Off gate
1 = on, 0 = off

Sequence Usage:
TX style on/off gate
1D - 4D tables
User defined sequence variables

Description:
Gates on and off the RF transmitter pulse for the observe channel.

OBS_PH

Allowed Values:
x, y, -x, y
0, 1, 2, 3
0, 90, 180, 270

Sequence Usage:
Hard coded icons x, y, -x, y
Tables with 0, 1, 2, 3
Tables with 0, 90, 180, 270
User defined dashboard variables, values of 0, 1, 2, 3

Description:
Observe transmitter phase cycling of 0, 90, 180, 270.

DEC_RF

Allowed Values:
On/Off gate
1 = on, 0 = off

Sequence Usage:

TX style on/off gate
1D - 4D tables
User defined sequence variables

Description:

Gates on and off the RF transmitter pulse for the decoupler channel.

DEC_PH

Allowed Values:

x, y, -x, y
0, 1, 2, 3
0, 90, 180, 270

Sequence Usage:

Hard coded icons x, y, -x, y
Tables with 0, 1, 2, 3
Tables with 0, 90, 180, 270
User defined dashboard variables, values of 0, 1, 2, 3

Description:

Decoupler channel phase cycling of 0, 90, 180, 270.

DEC_ATT

Allowed Values:

0 to 63 (in steps of 1) for low power mode
100 to 163 (in steps of 1) for high power mode

Sequence Usage:

Hard coded values
Shape tables
1D - 4D tables
User defined dashboard variables

Description:

Controls both H or L mode and the attenuation value for the decoupler.

BB_MOD

Allowed Values:
On/Off gate
1 = on, 0 = off

Sequence Usage:
TX style on/off gate
1D - 4D tables
User defined sequence variables

Description:
Turns on and off the Bruker decoupler modulation.

Acq

Allowed Values:
Acq. Points in Dashboard
Sequence Usage:
Acquisition icon

Description:
Instructs hardware to begin acquiring data

Acq_phase

Allowed Values:
x, y, -x, y
0, 1, 2, 3
Sequence Usage:
Acquisition phase
Description:
Acquisition phase

Rec_Gate

Allowed Values:
On/Off gate
1 = on, 0 = off
Sequence Usage:
Receiver gate
Description:
Receiver gate

RCP4

Allowed Values:

On/Off gate
1 = on, 0 = off

Sequence Usage:

TX style on/off gate
1D - 4D tables
User defined sequence variables

Description:

IF gating

PULSE2

Allowed Values:

On/Off gate
1 = on, 0 = off

Sequence Usage:

TX style on/off gate
1D - 4D tables
User defined sequence variables

Description:

IF gating

Ext_Trig (Ext_Gate)

Allowed Values:

On/Off gate
1 = wait

Sequence Usage:

External trigger

Description:

This line in the pulse sequence can be used to synchronize the spectrometer on an external source. The pulse programmer will be held in a wait state while the Ext_Trig line is high until an appropriate signal is detected on the External Trigger input on the back of the DSPect. *See the External Trigger section below.*

O1

Allowed Values:

Positive and negative values in Hz (units are implied and should not be used)

Sequence Usage:

1D - 4D Tables
User defined sequence variables

Description:

Real time control of O1 offset frequency (in Hz). Frequency hops are 'latched', meaning that to return to the current Dashboard frequency, a value of '0' must be programmed on the O1 line.

Due to a sequence compiler limitation, a table must be used to enter a value of '0' in the O1 line; a variable cannot be used.

O2

Allowed Values:

Positive and negative values in Hz (units are implied and should not be used)

Sequence Usage:

1D - 4D Tables

User defined sequence variables

Description:

Real time control of O2 offset frequency (in Hz). Frequency hops are 'latched', meaning that to return to the current Dashboard frequency, a value of '0' must be programmed on the O2line.

Due to a sequence compiler limitation, a table must be used to enter a value of '0' in the O2 line; a variable cannot be used.

Gx_Shape

Allowed Values:

-100 to 100, floating point

Sequence Usage:

Shape tables

User defined sequence variables

Description:

Read gradient shape

Gx_Amp

Allowed Values:

-100 to 100, floating point

Sequence Usage:

TX style on/off gate

Shape tables

1D - 4D tables

User defined sequence variables

Description:

Read gradient amplitude

Gy_Shape

Allowed Values:

-100 to 100, floating point

Sequence Usage:

Shape tables

User defined sequence variables

Description:

Phase gradient shape

Gy_Amp

Allowed Values:

-100 to 100, floating point

Sequence Usage:

TX style on/off gate
Shape tables
1D - 4D tables
User defined sequence variables

Description:

Phase gradient amplitude

Gz_Shape

Allowed Values:

-100 to 100, floating point

Sequence Usage:

Shape tables
User defined sequence variables

Description:

Slice gradient shape

Gz_Amp

Allowed Values:

-100 to 100, floating point

Sequence Usage:

TX style on/off gate
Shape tables
1D - 4D tables
User defined sequence variables

Description:

Slice gradient amplitude

SH_RF_A

Allowed Values:

-100 to 100, floating point

Sequence Usage:

Shape tables
User defined sequence variables

Description:
Phase gradient shape

RFA_Amp

Allowed Values:
-100 to 100, floating point

Sequence Usage:
TX style on/off gate
Shape tables
1D - 4D tables
User defined sequence variables

Description:
Phase gradient amplitude

SH_RF_B

Allowed Values:
-100 to 100, floating point

Sequence Usage:
Shape tables
User defined sequence variables

Description:
Slice gradient shape

RFB_Amp

Allowed Values:
-100 to 100, floating point

Sequence Usage:
TX style on/off gate
Shape tables
1D - 4D tables
User defined sequence variables

Description:
Slice gradient amplitude

Loop

Description:

See the NTNMR Reference manual for a description of the loop line

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Orion Systems - Hardware Related Dashboard Parameters

Dashboard Parameter	Allowed Values	Description
Acq. Points	2 - 64k	Sets the actual number of complex points to be acquired for each acquisition event in the sequence.
Points 1D	--	Calculated by NTNMR to be the total number of complex points acquired in the experiment.
SW +/-	300 - 500000 Hz	Sets the acquisition window half-width in Hz.
Dwell Time	1 / SW	
Filter		
F1 Freq. (F2, F3, F4)	System dependent values in MHz.	The actual frequency of the specified transmitter channel. F1 Freq. = F1 Base Freq. + F1 Offset Freq. Valid only if a PTS interface is being used.
F1 Base (F2, F3, F4)	System dependent values in MHz.	A software only parameter that can be used to define a standard 'base' frequency. Valid only if a PTS interface is being used.
F1 Offset Freq. (F2, F3, F4)	Values in (+/-) kHz.	A software only parameter that can be used to set an offset in kHz from the current frequency. Valid only if a PTS interface is being used.
Sequence Parameters	variable	Sequence parameters are user definable variables that vary depending on the sequence. See below for the standard variables used by Tecmag in the provided sequences. Also see the chapter on pulse programming in the NTNMR manual for details on using variables.

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Orion Systems - Pulse Sequence Line Descriptions

The pulse sequence lines on Orion data acquisition systems are completely user customizable. The following lines are standard:

Acq

Allowed Values:
Acq. Points in Dashboard
Sequence Usage:
Acquisition icon
Description:
Instructs hardware to begin acquiring data

Acq_phase

Allowed Values:
x, y, -x, y
0, 1, 2, 3
Sequence Usage:
Acquisition phase

Description:
Acquisition phase

Loop

Description:
See the NTNMR Reference manual for a description of the loop line