

5. Digitally Sampling a Sine Wave (Lab Activity, Week 1)

Setups

F_Data: Nyquist Criterion	
Cabling	3X Mini Circuits 15542 50 Ohm Resistors
Sample Rate	2.2MHz
VPP	100mV=0.1V
Nyquist Criterion condition	2.2MHz >= 2 Observed Freq

Handwritten notes on a tablet screen:

- data 3n: 300 kHz
- data 4n: 500 kHz
- data 5: 700 kHz, 100 mV
- data 6: 900 kHz, 100 mV
- data 7: 1100 kHz, 100 mV
- data 8: 1300 kHz, 100 mV
- data 9: 1500 kHz, 100 mV

A bracket groups data 8 and 9 with the note "should be aligned". There is also a small note "1.1MHz" near data 7.

G_Data: Convolution of 2 Sin Waves	
Function Generators	A:FG____ B:FG____ C: Oscilloscope____
Cabling	3X Mini Circuits 15542 50 Ohm Resistors
Sample Rate	2.2MHz
VPP	100mV=0.1V
Sine Wave 1	700KHz
Sine Wave 2	704KHz to 710KHz
VPP	100mV

N_Data: No Noise	
VPP	100mV

NN Data: Noise	
50 Ohm Machine	
5 Sets of Noise data points	10,000 Points
VPP	100mV