

Loop-back test

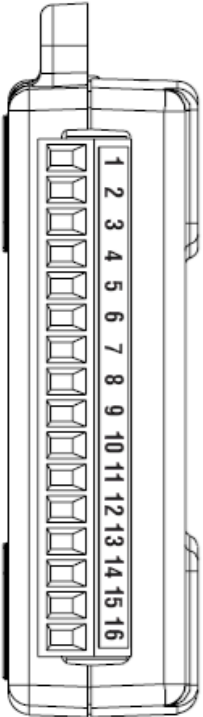
DAQ Board

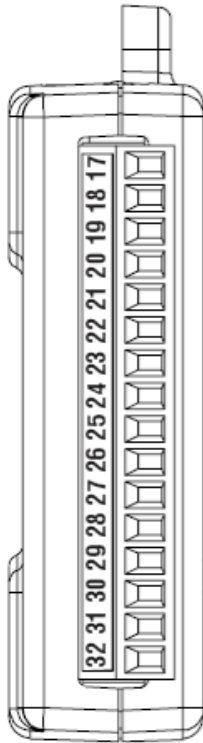
- USB 6008: analog and digital I/O operations.
- Analog operations: ADC: analog to digital conversions
 - DAC: digital to analog conversions
- Digital operations: accept or put out digital (binary) information
- I/O port: channel.
- All operations: DAQ data acquisition
- Operating the device outside of specified limits will result in meaningless results and device failure.

Why do we do a loop-back test?

- To check for transmission errors and delays
- Outputs can only process one data point at a time
 - Can only supply a single value to output port
 - Numeric control
- Input port
- A waveform chart: visual record of input to output
- Needs to be iterative (while loop)

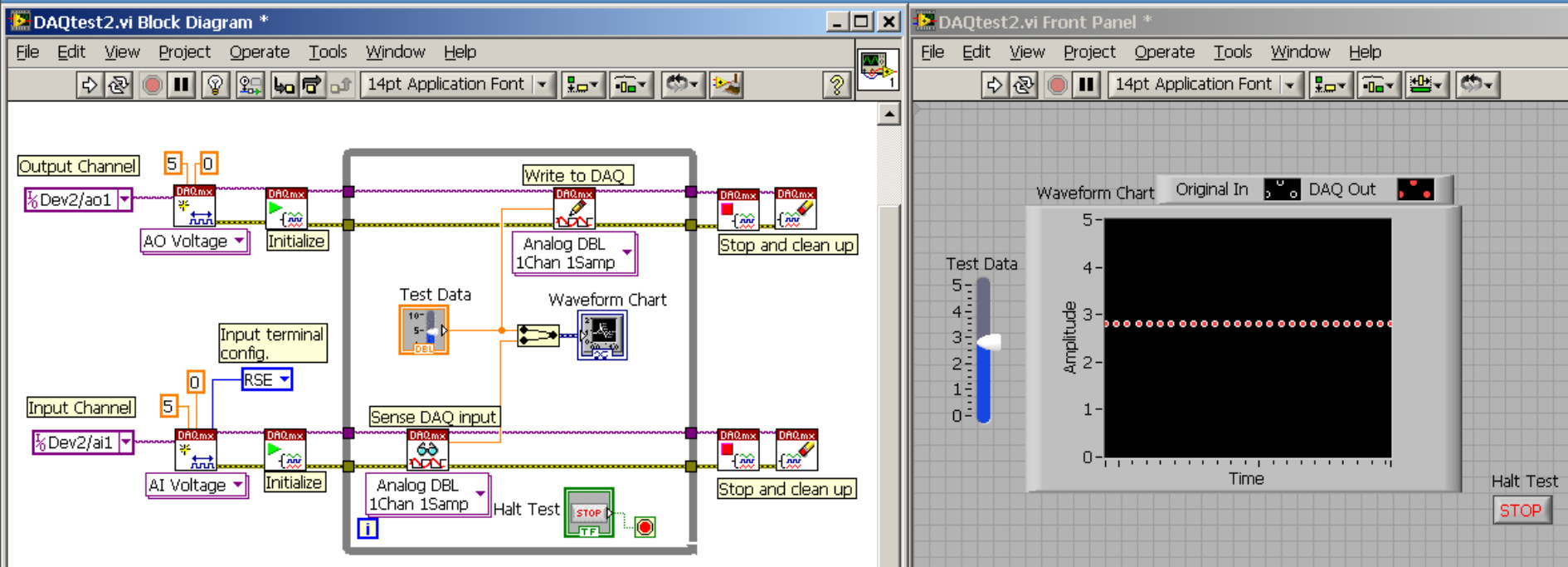
I/O terminals

Module	Terminal	Signal, Single-Ended Mode	Signal, Differential Mode
	1	GND	GND
	2	AI 0	AI 0+
	3	AI 4	AI 0-
	4	GND	GND
	5	AI 1	AI 1+
	6	AI 5	AI 1-
	7	GND	GND
	8	AI 2	AI 2+
	9	AI 6	AI 2-
	10	GND	GND
	11	AI 3	AI 3+
	12	AI 7	AI 3-
	13	GND	GND
	14	AO 0	AO 0
	15	AO 1	AO 1
	16	GND	GND

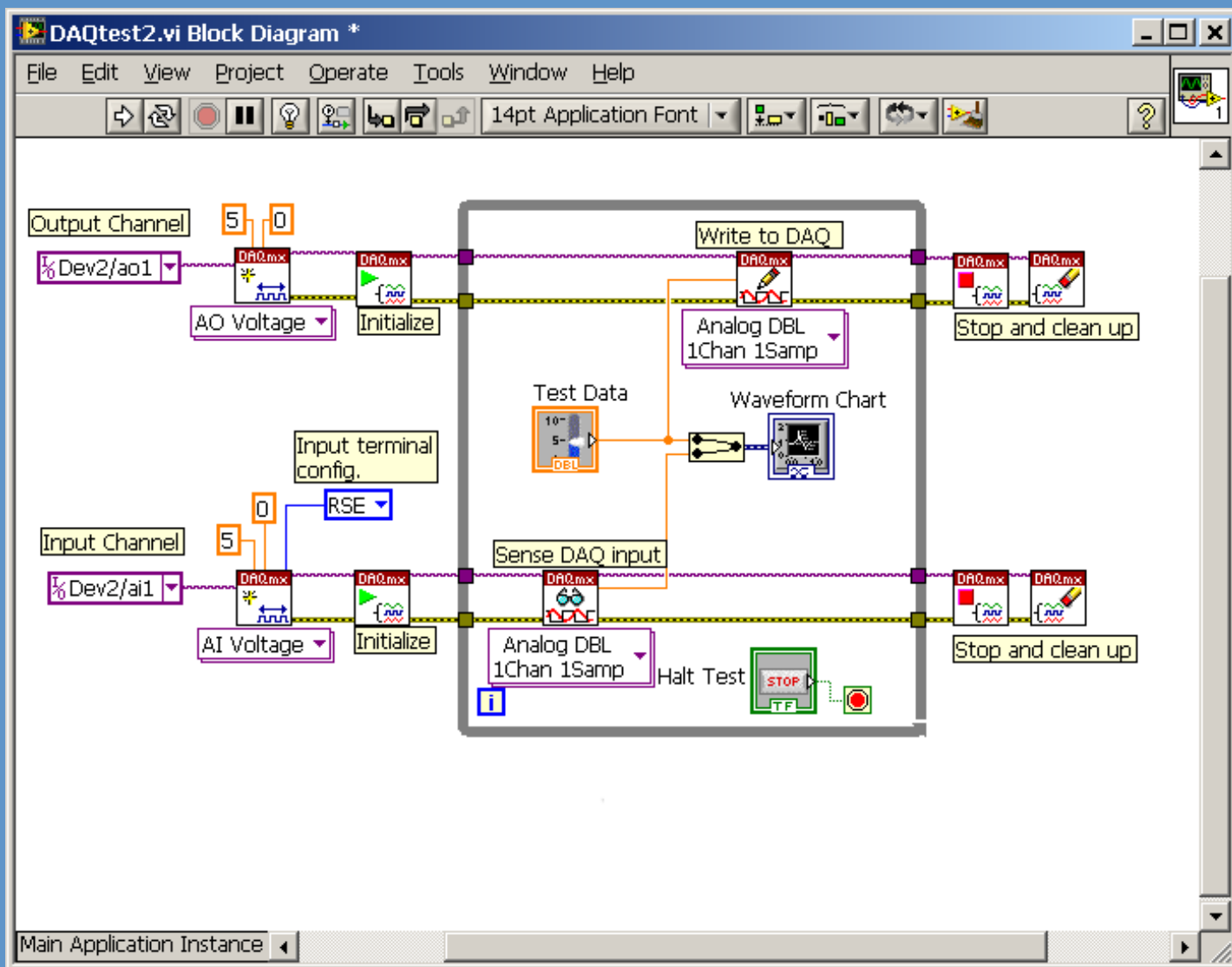
Module	Terminal	Signal
	17	P0.0
	18	P0.1
	19	P0.2
	20	P0.3
	21	P0.4
	22	P0.5
	23	P0.6
	24	P0.7
	25	P1.0
	26	P1.1
	27	P1.2
	28	P1.3
	29	PFI 0
	30	+2.5 V
	31	+5 V
	32	GND

8 Single ended input or Voltage input: -10 V to 10 V
 4 Differential input Voltage Output: 0 to 5 V
 2 Single ended outputs

Recreate the following VI



- Make sure that:
 - Input range = 0 to 5 V
 - Chart history to at least 100 data points
 - Show plot legends, 2 digits of precision for X, Original IN: open white circles and DAQ OUT: closed red circles
- Note: the DAQ assistant is inefficient..why?



- Install jumper wire from AO0 to AI0
- Run it and play with it and note the processing delay
- Try it with AI2 and AO1