JT 2149/DAF Mixed signal tester module

Measure DIO, analog voltage and frequency in one module

- Compact multi-function module expands analog measurement capabilities in boundary-scan systems
- 16 dual-function digital channels can drive, sense and measure frequency (10Hz -128MHz)
- 12 analog channels for PSU verification and sensor testing
- Includes 1 clock generator channel programmable to 64 MHz
- Reduces need for additional instruments
- Saves time during test system development
- Supported by ProVision GUI and JFT (Python) script routines
- DataBlaster QuadPod compatible

JT 2149/DAF overview

The JT 2149/DAF is part of the expanding range of JT 2149/xxx series QuadPod plug in modules. The unit is intended as a mixed signal verification module that includes digital IO plus analog and frequency measurement capabilities. The conservative specification means that the unit does not require regular calibration and can be used within test systems indefinitely.

Applications

Test system builders specializing in boundary-scan often add additional circuits (ADCs for example) or even dedicated instruments within the tester interface (or fixture) for auxiliary testing.

Such instruments are used to facilitate measurements of power-supply voltages or other analog (sensor) values. These separate instruments can be costly and often require a different software interface, resulting in a more cumbersome and time-consuming integration task.

JTAG Technologies JT 2149/DAF provides 'just enough accuracy' for analog measurements that complement the boundary-scan based structural testing that the main DataBlaster offers. The unit fits neatly into any spare slot of the JT 2148 QuadPod transceiver. Multiple units can also be fitted to expand capabilities as required.

Ordering Information:

JT 2149/DAF Multifunction module.

Prerequisites:

Hardware:

JT 37x7/xxx DataBlaster including QuadPod

Software:

ProVision V2.0 or PSA or

PIP/*** with JFT (CD18 or later release)

Specifications:

VDC:

Range 0-32 Volts, Resolution, 8mV (5 digits), Accuracy ± (0.5% + 24mV) of display value
Input impedance 1MΩ

Frequency counter :

Range 10Hz - 128MHz, Resolution 8 digits, Accuracy 100 ppm

Frequency Generator:

Range 0.0596 Hz – 64 Mhz, Resolution 59.6 mHz
Accuracy 100ppm

DIO:

Range 1.0 - 3.6 Volts, Resolution 0.1 Volts (input is 5V tolerant @ 3.6V) Current -12/12mA @ 3.3V

Figure 1 - ProVision screen for voltage measurement array

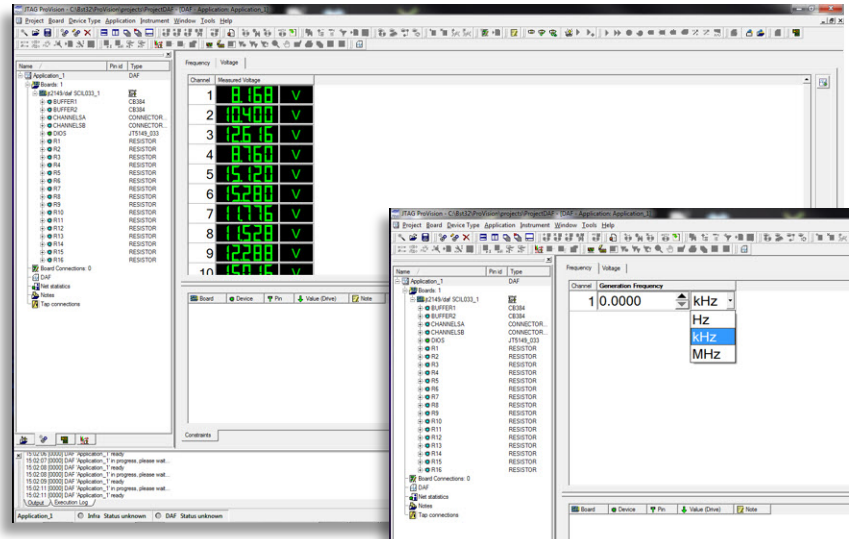
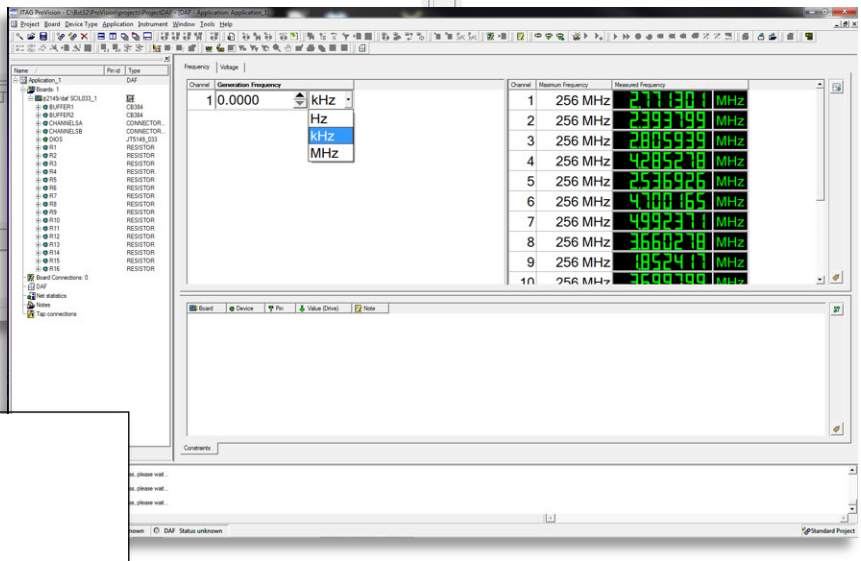


Figure 2 - ProVision screen for frequency measurement array



```
#*****************************************#
# Application: Application_2
# Created: 2012-07-16, 16:06:15
#*****************************************#

#*****************************************#
# Imports
#*****************************************#
# Write your Imports here.

import jftdaf
import jft

jft.SetIAMode(0)

jftdaf.DAF_Initialize("")
jftdaf.DAF_GenerateFrequency(32765534)

for i in range(1,17):
    arr = jftdaf.DAF_MeasureFrequency(i)

    if arr != None:
        frequency = arr[0]
        displayfreq = arr[1]
        overflow = arr[2]
        print("Frequency on Channel " + str(i) + " is " + str(displayfreq))

        if overflow == 0b1:
            print("Overflow occurred on Channel:", i)

for i in range(1,13):
    arr = jftdaf.DAF_MeasureVoltage(i)
    if arr != None:
        voltage = arr[0]
        displayvoltage = arr[1]
        print("Voltage on Channel " + str(i) + " is " + str(displayvoltage))
```

Figure 3 - ProVision JFT (JTAG Functional Test) Screen displaying code sample for JT 2149/DAF Control. Code utilizes special Python library 'jftdaf'. Note simple calls required take frequency and voltage measurements across all channels using for, next loop .

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