

TR 3412 FOUR CHANNEL 12 BIT TRANSIENT RECORDER



TR 3412 FEATURES

- ◆ NON VOLATILE PARAMETER / DATA MEMORY
- ◆ PROGRAMMABLE OFFSET AND RANGE
- ◆ REAL TIME WATCH MODE
- ◆ 25 MHz SAMPLE RATE
- ◆ 1 MWORD SAMPLES EACH CHANNEL
- ◆ PLASMA PHYSICS
- ◆ NUCLEAR EXPERIMENTS

GENERAL DESCRIPTION

The TR 3412 is the fastest member of our transient recorder family and can digitize four analog signals at rates to 25Msamples/sec with 12 bit accuracy. The TR 3412 also has programmable input range and offset correction. The module contains 1 M word samples for each channel, and a real time view mode. Storage modes include pretrigger and post trigger with both pre and post trigger rates selectable through the dataway. The memory may be configured in up to 256 segments of blocks from 4K words to the full 1 Mword. The segmentation permits operating with high trigger rates. The trigger time for each segment trigger is stored and may be read out with the data.

TR 3412 GENERAL SPECIFICATIONS

Analog Inputs -

Four high Z (1 Meg) or 50 Ω inputs

Analog Range Selections -

+/- 1.0V, +/- 5.0V, +/-10.0V & +/- 50.0V bipolar

Analog Offset Control -

65536 steps covering entire range

Conversion Errors -

Differential Linearity: +/- 0.5 LSB typ

Integral Linearity: +/- 0.8 LSB typ

Dynamic Characteristics -

Input bandwidth 25 MHz small signal bandwidth

Pipeline delay 6 samples

Transient Response (full scale change):

Less than 1 sampling interval

Digital Status Inputs -

Four TTL level inputs

Control Inputs / Outputs -

Trigger Input: TTL level

Ext Record Rate: TTL level

Record Clock Output: TTL level

Sampling Modes -

Post-trigger: Selectable trigger position in memory

Pre-trigger: Trigger position at beginning of memory

Sampling Rates -

40 nsec to 10 μ sec, selectable in 1 -2-5 sequence for pre-trigger and post-trigger ,

external input capable from 10 KHz to 10 MHz

Sampling Boundaries Pretrigger and Posttrigger-

4K to 1024K segment size in nine steps

4K, 8K, 16K, 32K, 64K, 128K, 256K, 512K, 1024K

after a segment store is complete, next segment is automatically indexed

Segment Delay time -

1 sample time from end of current segment storage

Post Trigger Sample Delay -

Trigger point selection may be made in increments of 1 sample

Segment Trigger record -

the time of each trigger is recorded with selectable precision of 40 nsec to 10 usec in a 1-2 5 sequence

Memory Size -

1 Mword samples, each channel
minimum segment size of 4K samples
configurable memory segmenting

Operating Modes -

Pre-trigger Record

Post-trigger Record

Watch (permits real time output)

Readout

(LED indicators display mode)

CAMAC Interface -

Set parameters W1...W8

Data readout R1...R16

Channel selection, parameter selection A1...A3

CAMAC Command Set -

F<0> Read data

F<1> read trigger timer

F<2> Read ID code (3412)

F<8> Read status

F<9> Reset module

F<10> Reset LAM

F<11> Software trigger

F<12> Set readout mode

F<13> Set pre-trigger record mode

F<14> Set post-trigger record mode

F<15> Set watch mode

F<16> Set operating parameters

A<0> blocks per segment

A<1> post trigger samples (low)

A<2> post trigger samples (high)

A<3> pre trigger sample rate

A<4> post trigger sample rate

A<5> address preset

A<6> address clear

A<7> timer resolution

F<17> Select input range

F<18> Set input offset

F<19> Select trigger parameters

F<23> Clear trigger timer

F<24> Disable LAM

F<26> Enable LAM

Package Size -

Single width CAMAC (IEEE 583) Module

Power -

+6v @ 2A, -6v @ 200mA