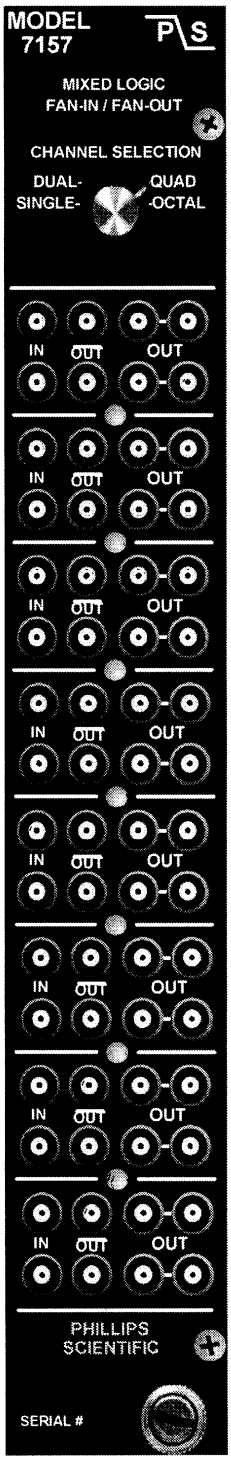
Phillips Scientific

Octal Multifunction Logic Unit

CAMAC MODEL 7157

FEATURES

* *Octal, Quad, Dual or Single Logic Sections*
* *Ideal for NIM Logic Fan-Out*
* *OR/AND Logic From 2 to 16 Inputs*
* *Outputs Timed to Within 500pSec*
* *Converts TTL to NIM Logic Outputs*
* *Available in NIM Packaging Model 757*



DESCRIPTION

The model 7157 is a general purpose fast logic unit used to perform logic OR, AND, Fan-in, Fan-out, TTL to NIM level conversion, and polarity inversion. The 7157 contains eight logic channels. Each logic section consists of two inputs which accept NIM or TTL signal levels. The inputs form a logical "OR" function and generate four NIM level and two complementary NIM level outputs. The AND function can be implemented with negative NIM complement logic levels. All input functions produce output widths equal to the overlap time of the inputs.

Sections are easily configured by means of a four position switch allowing the module to be setup as follows:

Logical Sections	*Number of Inputs*	*Normal NIM Outputs*	*Complement NIM Outputs*
Octal (8)	*2*	*4*	*2*
Quad (4)	*4*	*8*	*4*
Dual (2)	*8*	*16*	*8*
Single (1)	*16*	*32*	*16*

The logical setup is easily determined by front panel LED's indicating which sections are logically linked. The input to output propagation is timed to within 500pSec for any configuration selected, allowing for precise timing without re-adjusting cable lengths for different logic setups.

The outputs are the current source type with two pairs of negative bridged outputs and two complements for each channel. When only one output of a bridged pair is used, a double-amplitude NIM pulse (-32mA) is generated, useful for driving long cables with narrow pulse widths. In addition, current source outputs also allow pulse clipping and inherent protection from damage due to shorted cables.

Phillips Scientific

"A THEORY DEVELOPMENT COMPANY"
*31 Industrial Ave. * Mahwah, NJ 07430 * (201) 934-8015 * Fax (201) 934-8269*

INPUT CHARACTERISTICS

Number of Inputs :

Two per section; LEMO style connectors; accepts both negative NIM or positive TTL pulses and levels. Input is compatible with both logic types. No jumpers or level selection necessary.

Input Impedances :

NIM input level: 50 ohms, ±10%; TTL input level: 500 ohms, ±10% impedance.

Signal Levels :

Standard NIM logical "one" input levels: –12mA to –36mA; (typically –500mV threshold); Inputs protected from damage to ±8VDC.
Standard TTL logical "one" input levels: +2Volt to +5Volts; (typically +1.3Volt threshold); Inputs protected from damage to ±8VDC.

Input Width :

Overlap coincidence width of 4nSec or greater.

OUTPUT CHARACTERISTICS

Number of Outputs :

Six (6) LEMO style connectors per section; Two pairs of negative bridged NIM outputs and one bridged pair of complements per section. This produces four (4) normal NIM levels and two (2) complemented NIM level outputs.

Output Levels :

Each of the bridged outputs deliver -32mA, (-1.6Volts into a single 50 ohm load), and -16mA, (-800mV with both terminated). The complemented outputs are quiescently -32mA (-1.6Volts with a single 50 ohm load and -800mV with both terminated), and go to 0mA, (0Volt) during output.

Rise and Falltimes :

1.5nSec maximum, 10% to 90% levels.

Duration :

Equal to the logical sum of the input durations. Output widths from 4nSec to DC levels.

GENERAL PERFORMANCE

Number of Sections :

Eight sections; may be cascaded by means of a four position front panel switch. A LED located between sections, indicates which sections are logically coupled.

Rate :

Greater than 125 MHz for any logic combination.

Insertion Delay :

Less than 8.0nSec.

Time Variation Between Outputs :

8 channel operation: less than 100 pSec;
4 channel operation: less than 200 pSec;
2 channel operation: less than 300 pSec;
1 channel operation: less than 500 pSec.

Duty Cycle Limitations :

None, direct coupled throughout.

Power Supply Requirements :

+ 6 V @ 300 mA	*+24 V @ 83 mA*
– 6 V @1200 mA	*– 24 V @ 83 mA*

Packaging :

Standard double-width CAMAC module in conformance with ESONE Report EUR 4100.

Quality Control :

Standard 36 hour, cycled burn-in with switched power cycles.

7/96

Phillips Scientific
"A THEORY DEVELOPMENT COMPANY"
*31 Industrial Ave. * Mahwah, NJ 07430 * (201) 934-8015 * Fax (201) 934-8269*