OPERATING AND SERVICE NOTE

15508B
75Ω UNBALANCED/ 110Ω BALANCED CONVERTER

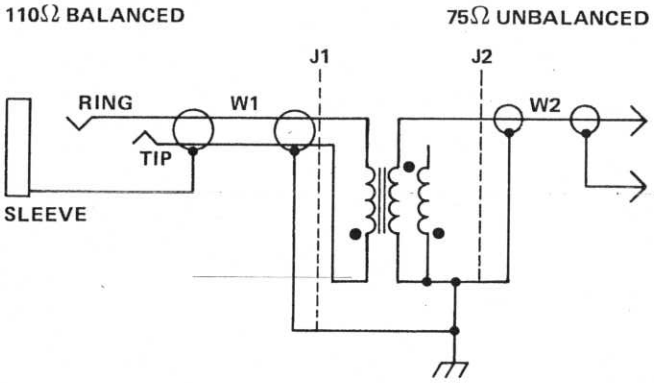
1. DESCRIPTION

The HP Model 1550B is a 75Ω unbalanced/110Ω balanced passive impedance converter. It has been designed as a suitable interface between the Model 3780A Pattern Generator — Error Detector and Bell standard interface points in PCM transmission systems. The model 15508B is a passive converter and does not provide pulse shaping.

2. SPECIFICATIONS

Rate	: 1Mb/s to 20Mb/s (bipolar format)
Frequency Response (–3dB)	: Typically 6kHz to 100MHz
Turns Ratio (75Ω/110Ω)	: 1/1.2 nominal
Connectors	
75Ω unbalanced	: BNC
110Ω balanced	: Accepts WECO 310 jack plug
Dimensions	
Length including cables	: 317mm (12.5 ins)
Diameter (maximum)	: 20mm (0.8 ins)
Weight net	: 110gm (4 oz)
Environment	: Operating temperature range 0^{o} to 55^{o}C Storage temperature range -40^{o} to $+75^{o}$C

3. SCHEMATIC



4. REPLACEABLE PARTS

Description	Stock Number
A1 PC BOARD WITH TRANSFORMER	15508-60002
TRANSFORMER ONLY	15508-60001
J1 PROBE ENTRY (110Ω BALANCED)	15580-20003
J2 PROBE ENTRY (THREADED, 75Ω UNBALANCED)	15580-20005
MP1 PROBE BODY TUBE	15508-20001
MP2 THREADED RING BODY RETAINER	15580-20006
W1 CABLE ASSEMBLY WITH 110Ω SOCKET	15508-60003
W2 CABLE ASSEMBLY, COAX, 75Ω WITH BNC CONNECTOR	15580-60005

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HEWLETT PACKARD

5. PERFORMANCE TEST

RECOMMENDED TEST EQUIPMENT

Instrument	Critical Specification	Rec. Model
Pulse Generator	1MHz and 20MHz	HP 8012B
Matching Pad 50/75Ω		Greenpar 507 4718-707
Resistor 110Ω 1/8W		HP 0757-0713
Oscilloscope	100MHz bandwidth	HP 180C/1805A/ 1825A
Resistive Divider Kit	50:1 probe	HP 10020A
WECO 310 Jack Plug		HP 1251-0695

NOTE: An HP Model 3780A Pattern Generator/Error Detector with an external oscillator may be used as an alternative to the Pulse Generator and Matching Pad.

PROCEDURE

1. Connect the equipment as shown in Figure 5-1.
2. Set the Pulse Generator to provide a 1MHz signal, 1:1 mark:space, with an amplitude of approximately 3V pk-pk at the input of the Balanced/Unbalanced Converter.
3. Check that the output is a pulse train at the same frequency as the input. A typical example is shown in Figure 5-2.
4. Set the Pulse Generator to provide a 20MHz signal, 1:1 mark:space, with an amplitude of approximately 3V pk-pk at the input of the Balanced/Unbalanced converter.
5. Check that the output is a pulse train at the same frequency as the input. A typical example is shown in Figure 5-3.

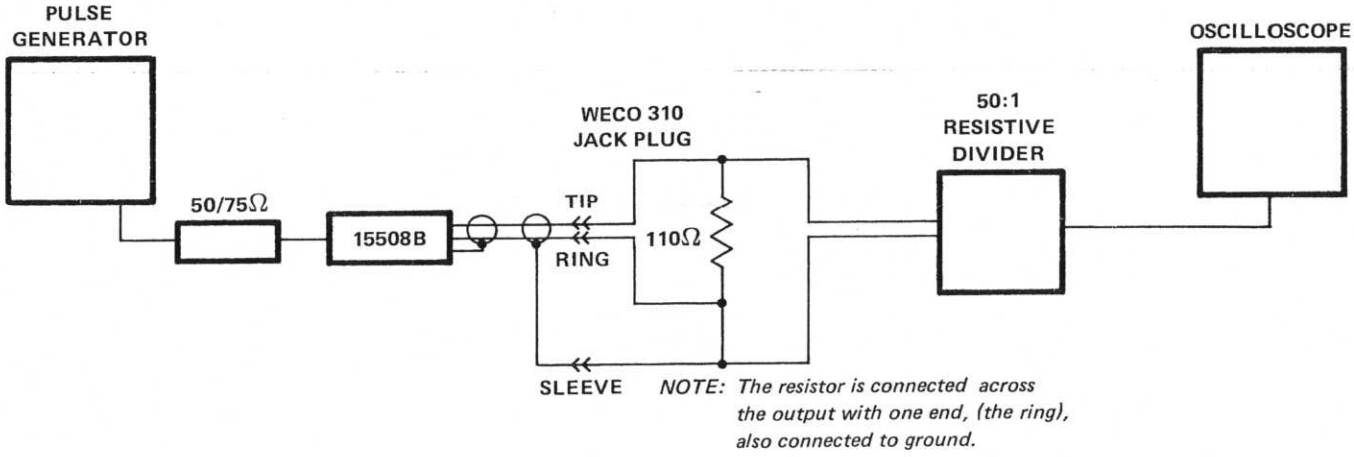

Figure 5-1 Equipment Connection

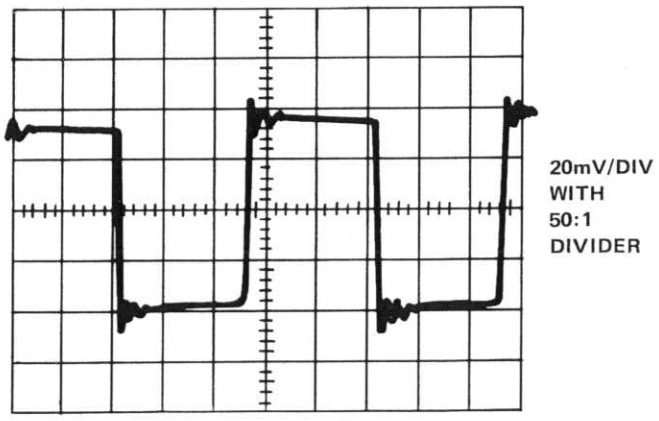

Figure 5-2 Typical 1MHz output

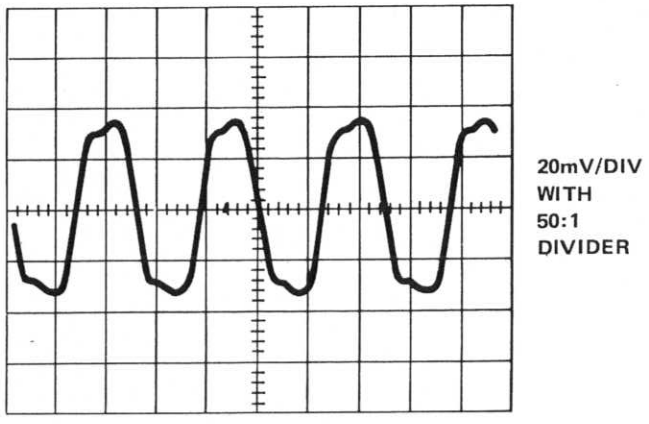

Figure 5-3 Typical 20MHz Output