

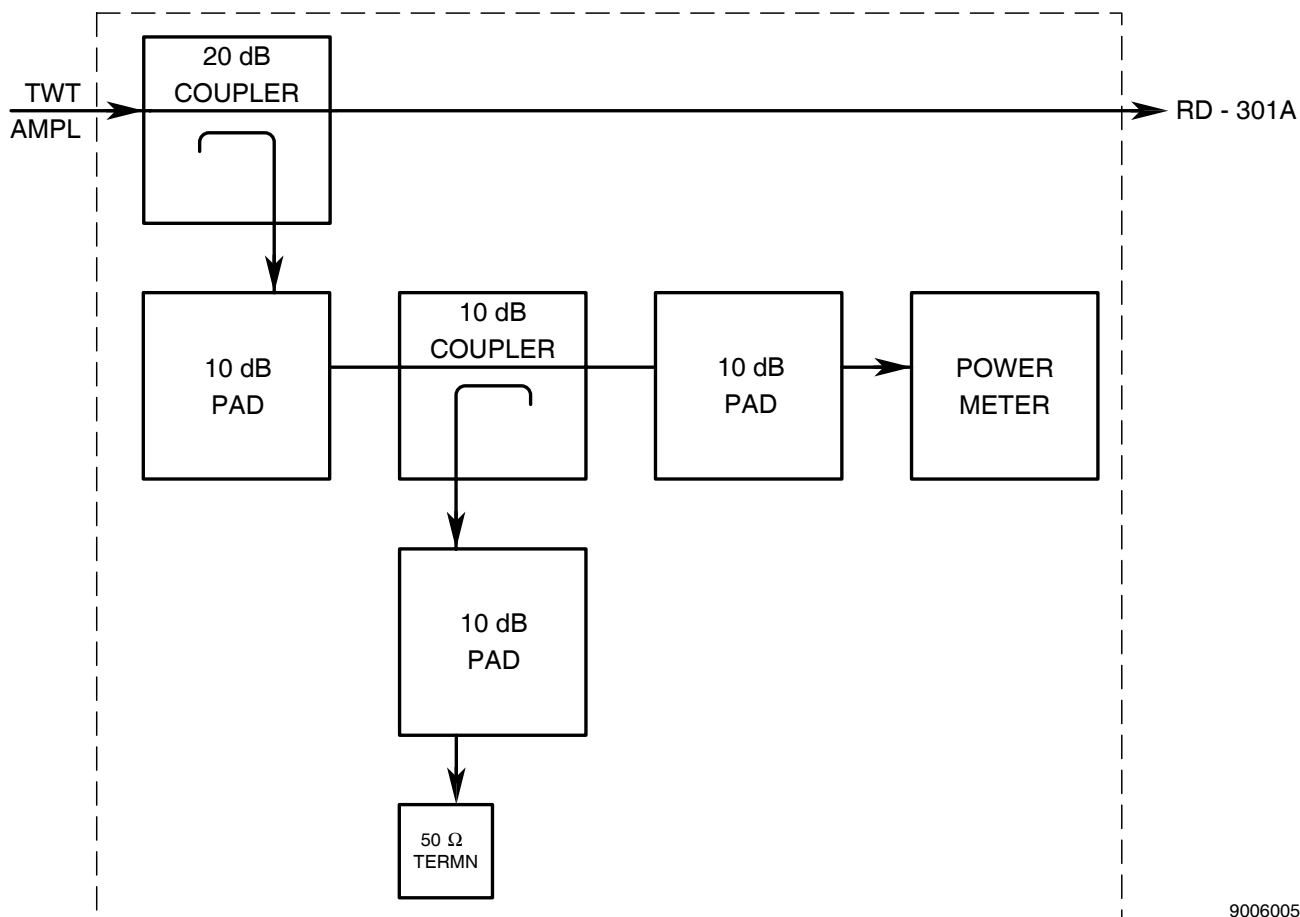
APPENDIX D - TEST EQUIPMENT CONSTRUCTION

1. Power Meter Assembly

A. General

The Power Meter Assembly measures pulse-modulated X-Band input power to the RD-301A. When used in testing, an X-Band Signal Generator output amplified by a TWT Amplifier provides the pulse-modulated X-Band input signal. The Power Meter Assembly is characterized and measurement readings determine the power level within 1 dB of the output signal to the RD-301A. The Power Meter Assembly verifies the accuracy of the RD-301A measuring radar power levels.

B. Assembly



9006005

Power Meter Assembly
Figure 1

STEP PROCEDURE

1. Refer to Appendix D, Table 1 for list of recommended components or test equipment. Assemble Power Meter Assembly as shown in Appendix D, Figure 1.

| EQUIPMENT / COMPONENT | MODEL | QUANTITY |
|--------------------------|------------------------------|----------|
| 10 dB Coupler | NARDA 4245B40 or Equivalent | 1 |
| 10 dB Pad | WEINSCHEL 1-10 or Equivalent | 3 |
| 20 dB Coupler | NARDA 3004 or Equivalent | 1 |
| 50 Termination | NARDA 378N or Equivalent | 1 |
| (Peak Pulse) Power Meter | HP8900D or Equivalent | 1 |

Power Meter Assembly Equipment List
Table 1

2. Characterize Power Meter Assembly from 9295 to 9500 MHz, traceable to the National Institute of Standards and Technology.

NOTE: Once equipment is assembled and characterized, equipment cannot be disassembled without recharacterization.

C. Operation

The characterized Power Meter Assembly provides a referenced readout of the power level (Test RF Level) applied to the Serialized Coaxial Cable. For the Power Meter Verification in para 2-2-2F(5) and Power Meter Calibration in para 2-2-2H(13), the Serialized Coaxial Cable and Waveguide Coupler are both considered. Power levels are adjusted by changing the level of the pulse-modulated output from the X-Band Signal Generator. The power levels are determined from the Power Meter Assembly readout referenced to the Power Meter Assembly characterization/correction chart.

2. X-Band To L-Band Down Converter

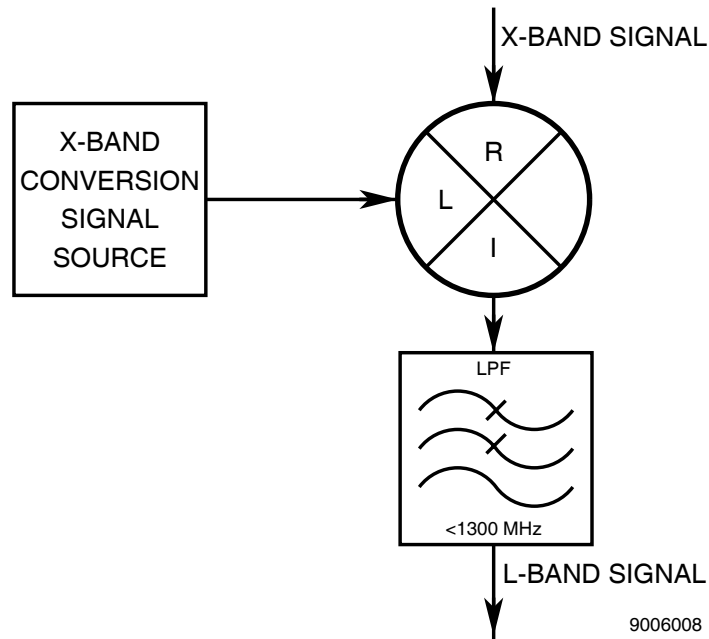
A. General

The X-Band to L-Band Down Converter converts the X-band signal, generated by the RD-301A, down to the L-Band signal, compatible with L-Band test equipment. Additionally, the X-Band to L-Band Down Converter allows further conversion to base band by using a Heterodyne Monitor. The base band signal allows Oscilloscope analysis of the X-Band signal.

B. Assembly

Assemble circuits as shown in Appendix D, Figure 2.

- The Low-Pass Filter passes frequencies <1300 MHz.
- The Mixer is a Watkins-Johnson WJM76C or Equivalent.
- The X-Band Conversion Signal Source is a phase-locked Signal Generator or fixed frequency oscillator. The X-Band Conversion Signal Source drives the mixer LO connector at a saturated level (+7 dBm). For RD-301A procedures, the X-Band conversion signal is 8.25 GHz.



X-Band to L-Band Down Converter
Figure 2