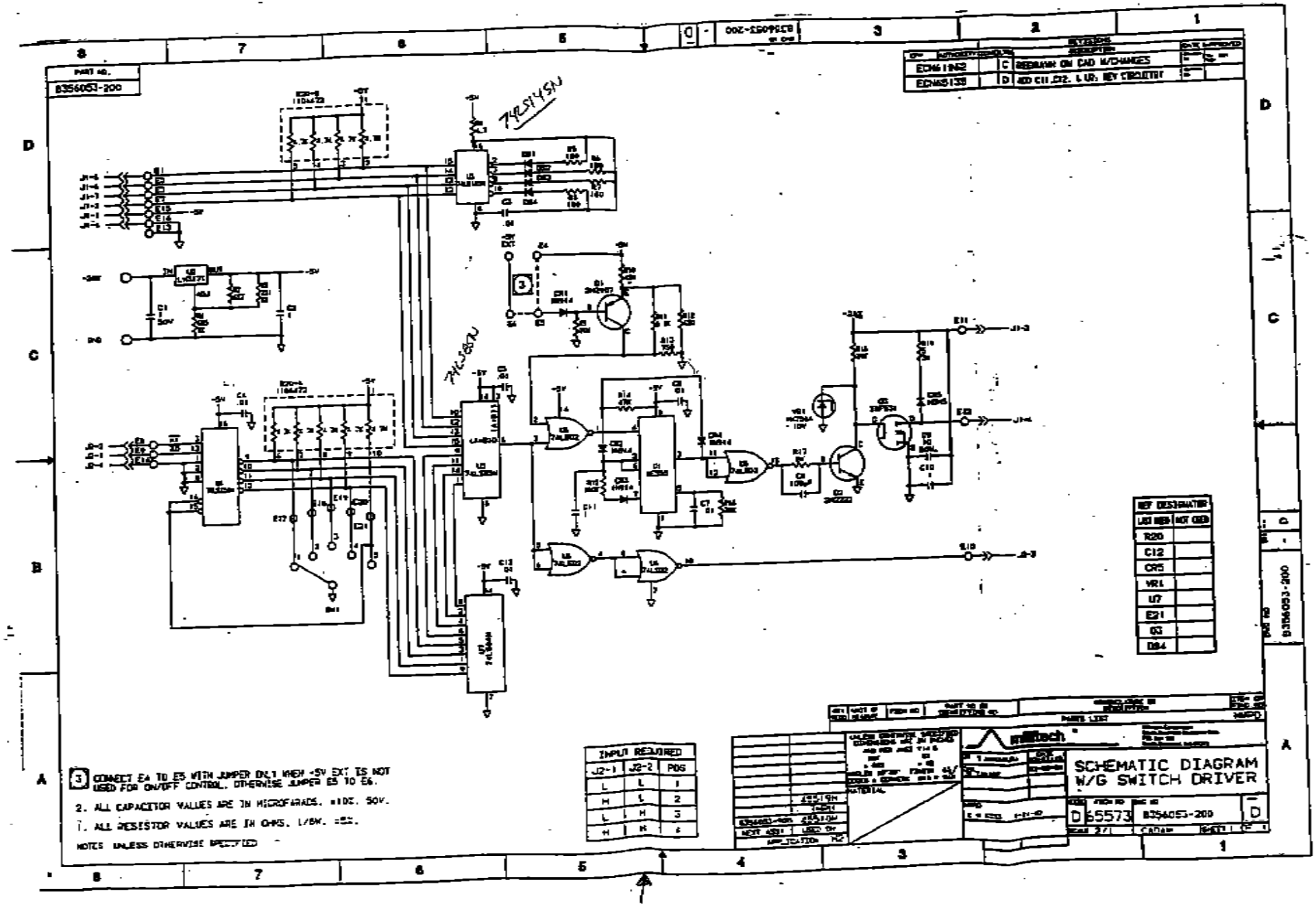
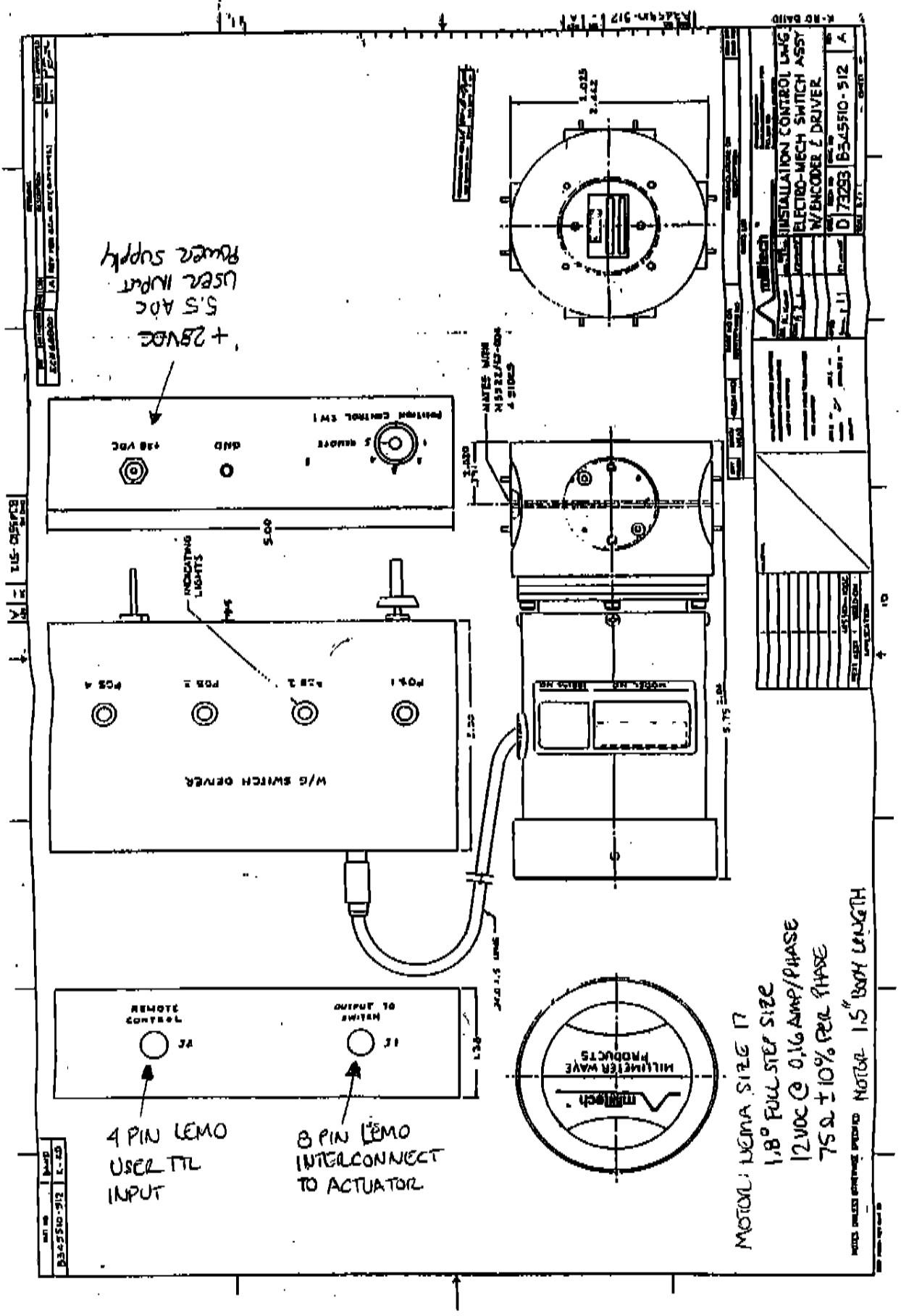
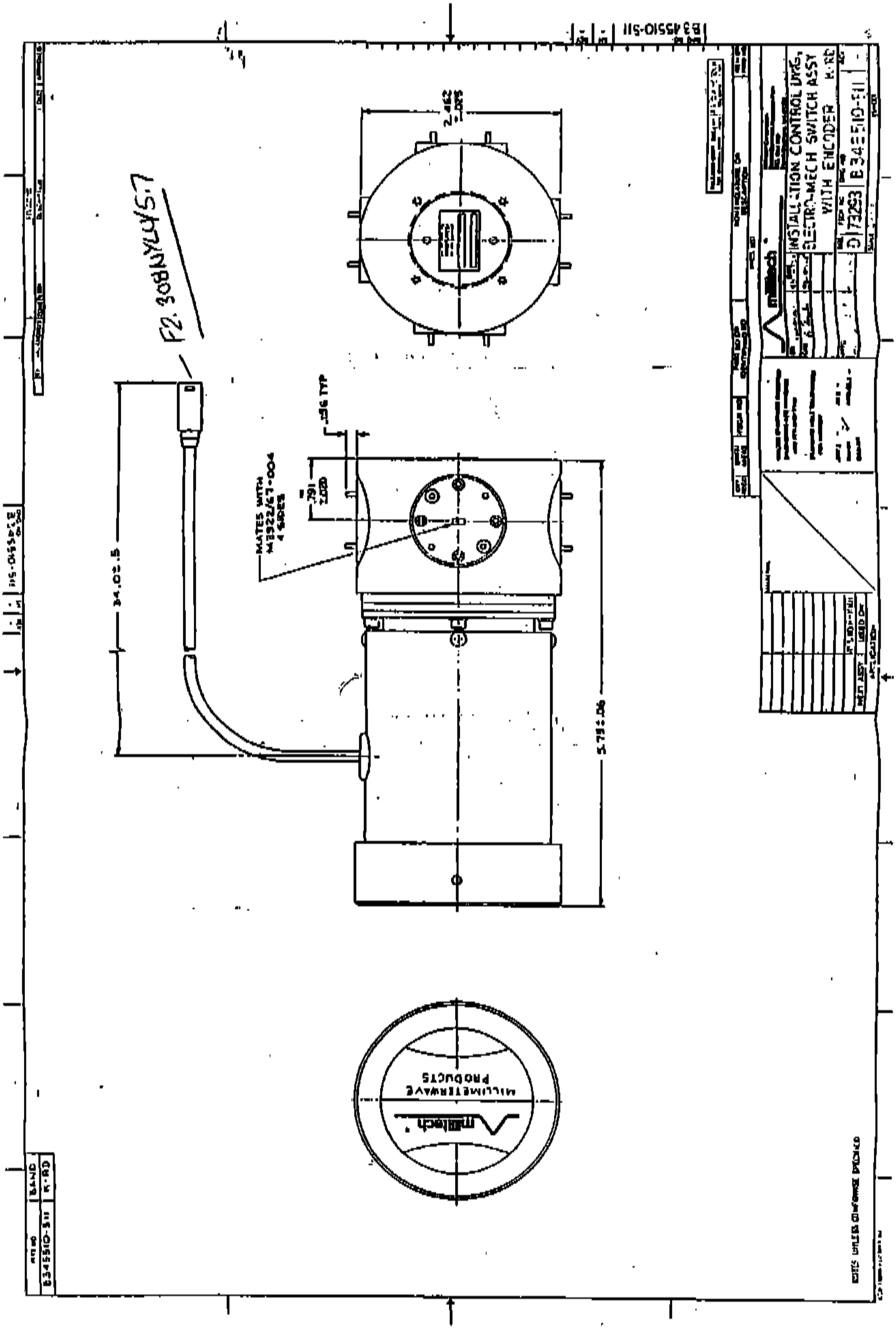


Remote TTL
TRUTH Table


+28VDC
5.5 ADC
USER INPUT
POWER SUPPLY
W/G SWITCH DRIVER
INDICATING LIGHTS
REMOTE CONTROL
OUTPUT TO SWITCH
4 PIN LEMO
USER TTL
INPUT
8 PIN LEMO
INTERCONNECT
TO ACTUATOR
MOTOR: LEMA SIZE 17
1.8° FULLSTEP SIZE
12 VDC @ 0.16 AMP/PHASE
75Ω ± 10% PER PHASE
NOTE: 1.5" BODY LENGTH
INSTALLATION CONTROL UNIT
ELECTRO-MECH SWITCH ASSY
W/ENCODER & DRIVER
D 73293
B345510-512


F2: 308NYL4/5.7
INSTALLATION CONTROL DWG, ELECTRO-MECH SWITCH ASSY WITH ENCODER K-RD
B345510-511
MATES WITH M3922/67-004 4 SIDES
34.0±.5
5.79±.06
2.462
millitech
MILLIMETERWAVE PRODUCTS
BAND
K-RD

1.6. INSTRUMENT IDENTIFICATION

The model number structure of the Motorized Waveguide Switch series is identified in Table 1-3. For example, an MWS-28-1B06G is a Ka band or 26.5-40 GHz, 110 VAC lab bench model with 6 six foot cable and the IEEE-488 interface option.

1.7. SAFETY CONSIDERATIONS

The waveguide switch is a DC powered piece of equipment. The power supply which delivers DC voltages to the driver should be properly set to prevent possible damage to the driver. Also make sure that the power supply ground and the driver ground are connected to each other.

1.8. Table 1-1 Waveguide Band Designations

Frequency Band (GHz)	K (18-26.5)	Ka (26.5-40)	Q (33-50)	U (40-60)	V (50-75)
Waveguide size	WR-42	WR-28	WR-22	WR-19	WR-15
Waveguide Flange	UG 595/U*	UG-599/U* UG-381/U†	UG-383/U	UG-383/U (mod)	UG-385/U
Frequency Band (GHz)	E (60-90)	W (75-110)	F (90-140)	D (110-170)	G (140-220)
Waveguide size	WR-12	WR-10	WR-8	WR-6	WR-5
Waveguide Flange	UG-387/U	UG-387/U (mod)	UG-387/U (mod)	UG-387/U (mod)	UG-387/U (mod)
* Square flange † Round flange					

1.9. Table 1-2 Electrical Specifications

Band (Frequency GHz)	K (18-26.5)	Ka (26.5-40)	Q (33-50)	U (40-60)	V (50-75)	E (60-90)	W (75-110)	F (90-140)	D (110-170)	G (140-220)
Isolation (dB Min)	60	60	60	60	60	50	50	50	50	50
Insertion Loss (dB Max)	0.4	0.4	0.4	0.5	0.6	0.8	1.0	1.5	1.5	2.0
Repeatability (dB typical)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.1
VSWR (Max)	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1	1.15:1
Stepper Motor Pulse Pwr Reqt. (without driver) V/A Peak (typical) Occasional Switching (Continuous Switching)	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5	28/5.5 24/3.5
Power Reqts. With TTL Drivers (V/A Max)	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2	28/5.5 5/0.2

1.10. Table 1-3 Instrument Identification

MWS-	XX-	A	B	C	D	E
Series model	**Waveguide band** See table 1-1 Standard values: **00**=Controller only **42**=18-26.5GHz **28**=26.5-40GHz **22**=33-50GHz **19**=40-60GHz **15**=50-75GHz **12**=60-90GHz **10**=75-110GHz **08**=90-140GHz **06**=110-170GHz	**Line voltage** **0**=cust. Furnished pwr supply **1**=100-120 VAC **2**=200-220 VAC	**Model Configuration Options** **B**=Basic model **I**=Instrumentation model (benchtop) **R**=Single Rack mounted version **D**=19" Dual rack mounted version V=VME card format (external power supply required)	**Interface Options** **G**=GPIB **P**=Parallel **S**=Series	**Length of cable in feet** **3**=3feet **6**=6 feet **A**=12 feet **N**=Non-standard length Up to 500 feet may be ordered	**Other Options** **M**=with switch stand **W**=without switch stand

2.0 INSTALLATION

2.1. INTRODUCTION

This section provides instructions for installing the Millitech model MWS-XX-OBXXX Motorized Waveguide Switch, as well as information about initial inspection, damage claims, preparation for use, and guidance for storing, shipping, and repacking.

2.2. UNPACKING AND INITIAL INSPECTION

The equipment is inspected and packed to meet normal shipping environments. If damage to the shipping container is evident, request that a representative of the freight carrier be present when the container is opened. Unpack and verify that the contents of the container against the packing sheet. Retain the container and the packing material until acceptance is completed.

2.2.1. MECHANICAL CHECK

Check the equipment and all the accessories for mechanical damage such as broken or bent connectors and knobs, loose external or internal parts, and for scratches or dents on the panel surfaces. If damage of any kind is found, retain the shipping container and packing material for inspection.

2.2.2. ELECTRICAL CHECK

Prepare the equipment for Electrical Check in the following sequence:

1. Section 2.3: Interconnection
2. Section 3.3: Operating Instructions
3. Section 2.4: Performance Verification Tests

A complete test data package is shipped with each switch assembly for reference. Complete the performance tests in Section 2.4 as soon as possible after satisfactory completion of the mechanical check. If the equipment fails the performance test and therefore, does not meet the specifications, refer to section 2.2.3, Claim for Damage.

2.2.3. CLAIM FOR DAMAGE

If physical damage is evident or if the instruments do not meet specifications when received, notify the freight carrier and Millitech Corporation, Commercial Products Division, to arrange for repair or replacement. Refer to section 2.2.4, Packaging for Shipment, and 2.2.5, Communicating with the Factory