INPUT

Frequency

Two MFU's will be installed (provided separately) within the MSA chassis to form the Dual Frequency STALO subsystem. Possible MFU (reference oscillator) frequencies are as follows: 96.875 MHz, 98.125 MHz, 99.375 MHz, 100.625 MHz, 102.250 MHz or 103.750 MHz

Input Phase Noise L(f), goal

100 Hz	-128 dBc/Hz
1 kHz	-158 dBc/Hz
10 kHz	-176 dBc/Hz
20 kHz	-176 dBc/Hz

Input Level

+13 dBm ±2 dBm into 50 ohms

OUTPUT

Frequency

Any one of the following frequencies may be created, but the final frequency will be determined by selecting one of the two reference oscillators installed at any given time: 7.750 GHz, 7.850 GHz, 7.950 GHz, 8.050 GHz, 8.180 GHz or 8.300 GHz

Level

+25.5 dBm +3/-0 dB into 50 ohms

Switching Time

0.1 second, max

VSWR

1.2:1

STABILITY

Phase Noise L(f)

	Typical	Goal
1 kHz	-117 dBc/Hz	-120 dBc/Hz
2.5 kHz	-120 dBc/Hz	-125 dBc/Hz
10 kHz	-133 dBc/Hz	-134 dBc/Hz
20 kHz	-134 dBc/Hz	-135 dBc/Hz
100 kHz	-134 dBc/Hz	-135 dBc/Hz
1 MHz	-134 dBc/Hz	-136 dBc/Hz

Temperature Stability

$\pm 5 \times 10^{-7}$, -25° to +55°C (Ref: +25°C)

Long Term Stability

$\pm 1 \times 10^{-6}$ / 8 hours after 1-hour warm-up

Harmonics

-45 dBc, max

Spurious

(Excluding Line Related Spurs)

±1 kHz (from carrier)	-50 dBc
1 kHz to 100 kHz (from carrier)	-90 dBc
+29 to +31 MHz (from carrier)	-90 dBc
-30 to -31 MHz (from carrier)	-90 dBc
Elsewhere	-70 dBc

MECHANICAL

Dimensions

8 x 6 x 4.125" max

Connectors

RF Output: SMA(f)

Power and control: 9 pin D-Sub

Mounting

Through Holes, 0.168" diam, 6 places

POWER REQUIREMENTS

Supply Voltage

+28 VDC (Coaxial Relays)

+20 VDC (Supply Voltage)

Warm-Up Power

<22 Watts for 10 minutes

Total Power

<18 Watts at +25°C

ENVIRONMENTAL

Storage Temperature

-30° to +60°C

Humidity

10% to 100% relative humidity for operation and storage. Hermetic seal not required.

Altitude

Operating – to 7,000 ft

Storage – to 12,000 ft

Atmosphere

Designed for operation in a warm, humid, salt air environment.

Fungus

Designed using inert materials to resist fungus growth.

Vibration (Non-Operational)

Designed to survive significant vibration during transport on a tracked vehicle.

OTHER

Frequency Selection

Only one of the installed oscillators (MFU's) can be selected at a time. F1 is the default selection. F2 can be selected when the +28 VDC Return (Ground) is applied to Pin 1 of the DB-9 connector, and will remain selected until the ground is removed.

REV	DATE	REVISION RECORD	DWN	AUTH
-	03-04-14	Initial Release	PAC	

Test Data

Per Wenzel Doc # 450-27909-1 DS

Label

501-27909 (Current Rev.)
Multiplier/Switching Assy
+20 VDC / +28 VDC
Serial # - Date Code

DB-9 Connector Pin-Out

Pin 1	F2 Select / +28 VDC Return
Pin 2	N/C
Pin 3	+28 VDC (Relays)
Pin 4	N/C
Pin 5	N/C
Pin 6	N/C
Pin 7	+20 VDC (Supply Voltage)
Pin 8	N/C
Pin 9	Ground

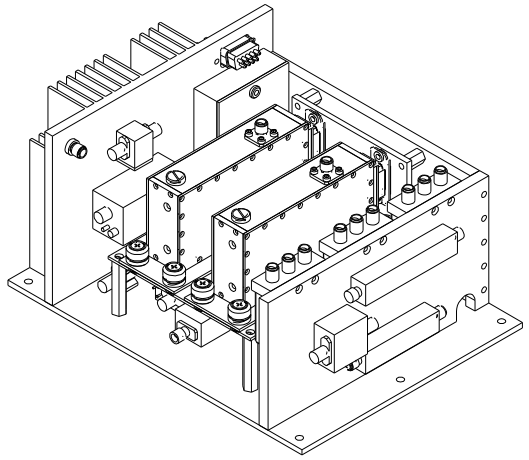
Wenzel Associates, Inc.
Austin, Texas

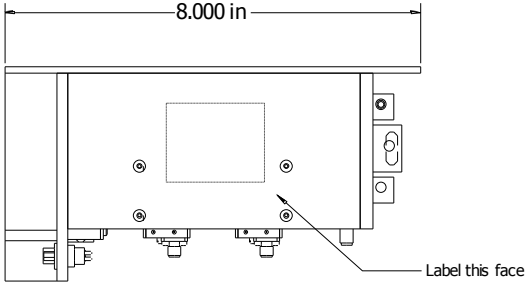
Title: **Multiplier/Switching Assembly (MSA)**

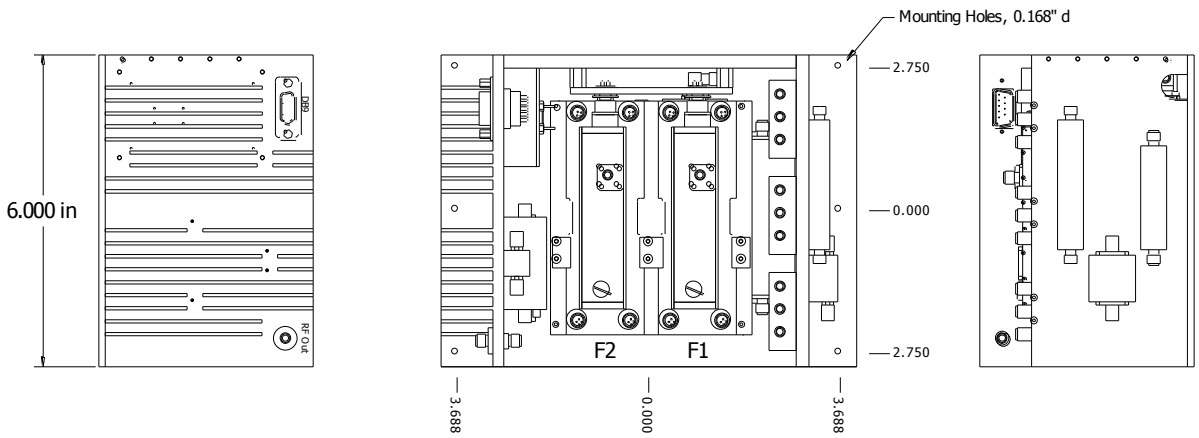
P/N:	Rev:	Date:	Drawn:	Ref:
501-27909	**-**	**03-04-14**		14486c

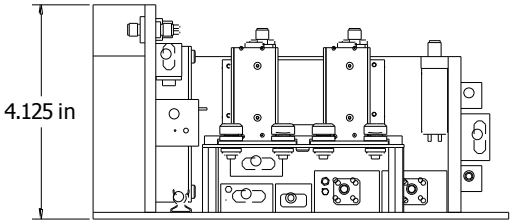
Tolerances: (except as noted) Dimensions are in inches	0.XX Dec:	0.XXX Dec:	FSCM:	Page 1 of 3
	±0.030"	±0.010"	62821	

DB-9 Connector	
Pin	Function
P1	F2 Select / +28 VDC Return
P2	N/C
P3	+28 VDC (Relays)
P4	N/C
P5	N/C
P6	N/C
P7	+20 VDC (Supply Voltage)
P8	N/C
P9	Ground









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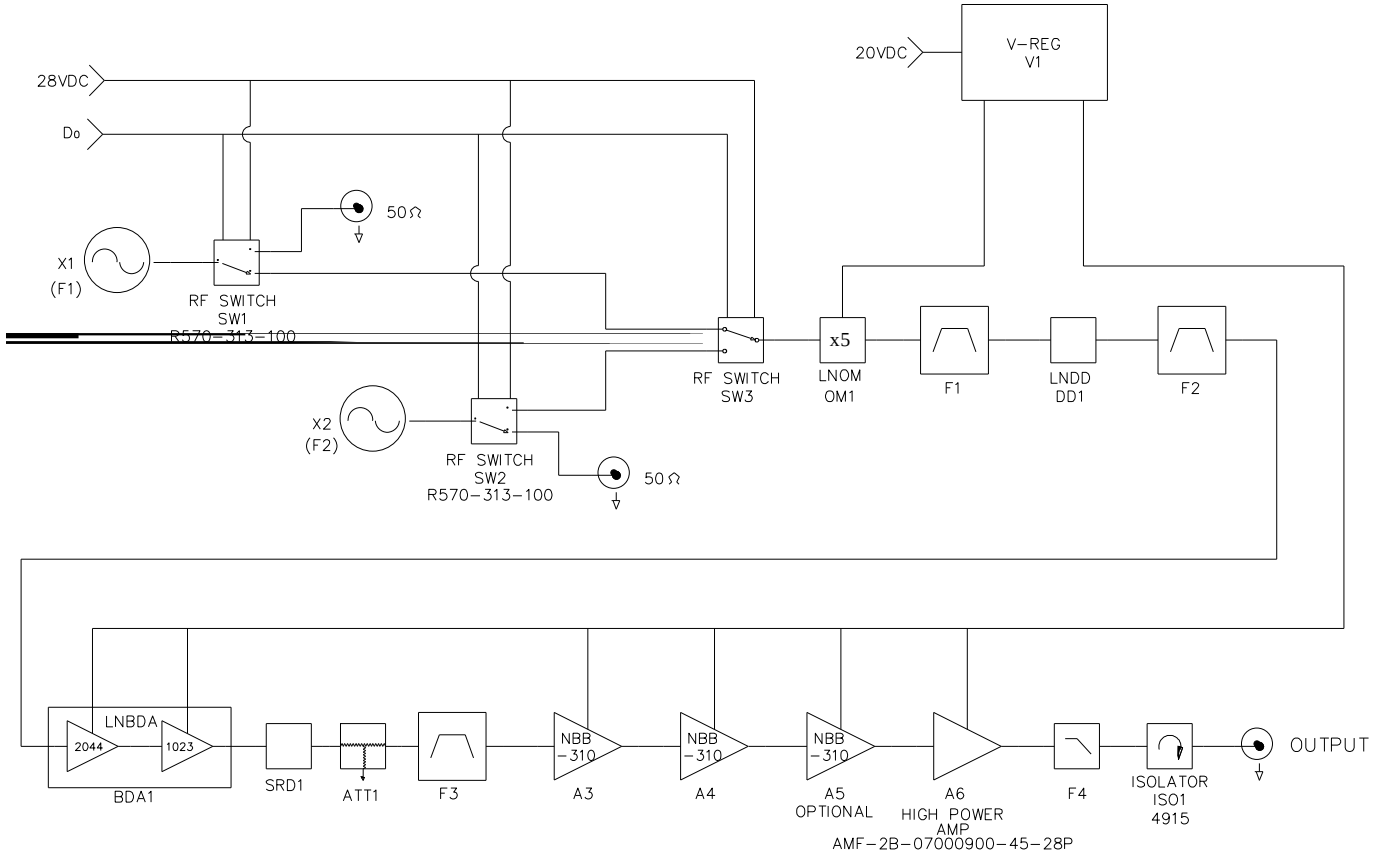
	±0.030”	±0.010”	62821	



Wenzel Associates, Inc. Austin, Texas				
Title: **Multiplier/Switching Assembly (MSA)**				
P/N: **501-27909**	Rev: **-**	Date: **03-04-14**	Drawn:	Ref: 14486c
Tolerances: (except as noted) Dimensions are in inches	0.XX Dec: ±0.030”	0.XXX Dec: ±0.010”	FSCM: 62821	Page 3 of 3