S *DUAL DSR* SPECIFICATIONS

General Specifications (with direction sense)

Type:	Dual Antenna Direction Sensing Moving/Stationary Doppler Radar
Operating Frequency:	33.4 GHz - 36.0 Ghz (Ka-Band)
Stability:	?100 Mhz (Ka-band)
Power Requirements: (With 2 Antennas)	9.0 to 16.0 VDC. (currents are typical at 13.6VDC): XMIT with all displays on: 1.28A XMIT with all displays off: 1.08A XMIT with moving target: 1.15A XMIT with no target: 1.11A Standby with no target: .8A
Environmental:	-30 to +70 C, 90% Relative Humidity Operating -40 to +85 C, non-operating
Display:	Triple (red, green, amber) 3-digit Light Emitting Diode (LED) for target, lock, and patrol, plus LED icons
Mechanical:	**Display Unit** Weight - 0.5 lb. Size - 1.65" Height, 1.05" Depth, and 5.50" Width
	Counting unit Weight - 1.6 lbs. Size - 1.65" Height, 3.90" Depth, and 5.50" Width
	Antenna Weight - 1.4 lbs. Size - 3.25” Dia X 3.5” (K), 2.50" Dia. X 4.60" (Ka)
	Remote Weight - 0.4 lb. Size - .80" Height, 6.50" Length, and 2.70" Width
Accuracy:	? 1 mph (? 1 kmh) stationary and ? 2 mph (? 2 kmh) moving
Automatic Self-Test:	Performed every 10 minutes while transmitting
Stationary Speed Range:	12 mph to 200 mph Standard or 2 mph to 200 mph (set-up menu selectable) **Stationary Fastest Speed -** Same speed range as stationary speed
Moving Speed Range:	**Patrol speed** – Once acquired, will track to 150 mph. Acquistion speed is selectable with **P.S. 5/20** key. **5** in patrol window for patrol speed acquistion speeds of 5 to 85 mph; **20** in patrol window for patrol speed acquistion speeds of 20 to 85 mph
	Opposite lane target speed – 200 mph Max closing For 5 mph patrol speed: 20 mph to 195 mph; For 70 mph patrol speed: 35 mph to 130 mph. **Opposite lane Fastest Speed –** Same speed range as opposite lane speed
	Same lane target speed – Related to patrol speed: ?70% of patrol speed within 5 mph of patrol speed. i.e. For 50 mph: 15 ? 45 mph and 55 ? 85 mph. Same lane patrol speed must be greater than 15 mph

Microwave Specifications (with direction sense)

Antenna:	Conical horn with corrective lens
Polarization:	Circular
3 db Beam width:	12? ±1º
Microwave Source:	Gunn-Effect diode
Antenna Receiver Type:	Two Direct Conversion Homodyne receivers using four low-noise Schottky barrier mixer diodes
Power Output:	10 mw minimum 25 mw nominal 50 mw maximum
Power Density:	2 mw/cm^2 maximum at 5 cm from lens

Display Messages (with direction sense)

PASS:	**PASS** spelled out in display with a 4-beep “happy” tone indicates the unit has just passed self-test.
FAIL:	**FAIL** spelled out in display with a 15-beep tone indicates a circuit malfunction has been detected, in which case speed readings are inhibited. Remove the unit from service and repair. **FAIL** will remain on the display until reset by being powered off.
[ ], SC, SA, or S_:	Indicates the radar mode of operation in the patrol speed window. **[ ]** or a speed display in the patrol window indicates moving mode radar operation. **SC** indicates stationary operation with display of closing targets only. **SA** indicates stationary operation with display of targets proceeding away from the radar unit. **S_** is a mode for stationary operation which allows the display of targets in both directions.

SEn 1, SEn 2, SEn 3 or SEn 4:	**SEn 1** thru **SEn 4** is used to indicate the current range (sensitivity) setting . **SEn 1** is minimum; **SEn 4** is maximum. Opposite lane sensitivity is independent of same lane sensitivity. They are separately set.
5 or 20:	**5** or **20** spelled out in the patrol window indicates the low-end patrol speed is set to either 5 mph or 20 mph
Aud 0, Aud 1, Aud 2, Aud 3, or Aud 4:	**Aud 0** thru **Aud 4** spelled out on the display unit indicates the current speaker volume setting. **Aud 0** is off; **Aud 4** is loudest.
b 0, b 1, b 2, or b 3:	These symbols are spelled out in the Patrol Speed display during the time that the audio number (Aud 3) is shown in the Target and Lock displays. The b number indicates the beep volume and is accessed by using the **P.S. BLANK** key.
U 0, u 1, u 2, or u 3	These symbols are spelled out in the Patrol Speed display during the time that the audio number (Aud 3) is shown in the Target and Lock displays. The **u** number, when displayed, indicates the state of the voice volume and is accessed by using the **SQL** key.
bri 1, bri 2 bri 3, bri 4, bri 5, or bri 6:	Used to indicate display brightness. **bri 1** is the dimmest; **bri 6** is the brightest.
Hot:	The display flashes **Hot** and powers down when the internal temperature exceeds specifications. Automatically resumes operating when the temperature drops.

Remote Control Functions (with direction sense)

SAME/OPPOSITE:	The **SAME/OPPOSITE** key is used to alternate between same lane moving mode and opposite lane moving mode. The **SAME** icon toggles on and off to indicate same lane mode.
LOCK/RELEASE (black): **START/STOP (blue):**	The **LOCK/RELEASE** key is a dual function key in radar mode. This key alternates between the lock and the release functions. **LOCK** is used to transfer the contents of the target window to the lock window. **RELEASE** clears the locked contents of the lock window and the patrol window. During lock, the patrol window will lock the present patrol speed and the **LOCK** icon will light. The target window and Doppler audio remain active after locking. The **START/STOP** key allows the operator to begin and end timing of target motion.
ANT:	Used to switch between the front and rear antenna. The **FRONT** or **REAR** icon will light. A 1-beep tone corresponds to the front antenna while a 2-beep tone corresponds to the rear antenna. The counting unit can sense the presence or absence of either antenna.
XMIT/HOLD:	Toggles between xmit and hold (standby). The **XMIT** icon will light.
RADAR MODE:	Sequences between Moving mode and three stationary modes of operation: targets closing only, targets away only and targets in either direction.
STOPWATCH MODE:	Toggles the unit from radar mode to stopwatch mode and back again.
SEn (black): **100 (blue):**	Used to adjust the range (sensitivity) at any time. Maximum sensitivity is **SEn 4**; minimum sensitivity is **SEn 1**. Opposite lane sensitivity is independent of same lane sensitivity. They are separately set. In stopwatch mode, this key can be used to change the timing distance in 100 yard increments.
SQL (black): **10 (blue):**	In radar operation, this a a dual function key. Toggles the squelch override off and on. In the normal (off) position, audio will only be heard when a target is being tracked. When the Doppler audio menu is displayed, this key can be used to change the voice volume. In stopwatch mode, this key can be used to change the timing distance in 10 yard increments.
P.S. 5/20 (black): **1 (blue):**	Used to select a low-end patrol speed of either 5 mph or 20 mph. For example: **5** in patrol window for patrol speed acquisition of 5 to 85 mph **20** in patrol window for patrol speed acquisition of 20 to 85 mph In stopwatch mode, this key can be used to change the timing distance in 1 yard increments.
TEST:	In radar operation, performs a complete self-test on display/counting unit and the selected antenna. The display unit shows speeds of **10**, **35**, and **65**; temperature inside the display/counting unit in ?F (e.g., **110 ?F**); and input battery voltage (e.g., **bAt 13.8**); followed by "**PASS**" and a 4-beep "happy" tone or "**FAIL**" and a 15-beep tone. At the end of a successful test, the **FORK** icon is lit on the display to allow a measurement of non-directional speeds such as that produced by a tunig fork.
	Used to adjust the volume of the Doppler audio up or down. **Aud 0** is off; **Aud 4** is loudest.
P.S. BLANK:	In radar operation, this is a three function key. Used to re-acquire patrol speed. Also, blanks the patrol speed after a target speed and patrol speed are locked. Pressing the **P.S. Blank** key again restores the blanked speed. When the Doppler audio menu is displayed, this key can be used to change the beep volume.
	Dual function key. A single depression of the key activates the keyboard backlight for six (6) seconds. Two rapid depressions of the key activates the display brightness control. Additional depressions of the key toggles the display unit's brightness from bri 1 (low) to bri 6 (high).