

TCR-MBA-50 WB Multiband Power Amplifier

Quick Reference Guide



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Refer to the TCR-MBA-50 WB Operator Manual (90400-01152) for additional detailed information on amplifier operation.

GENERAL INFORMATION

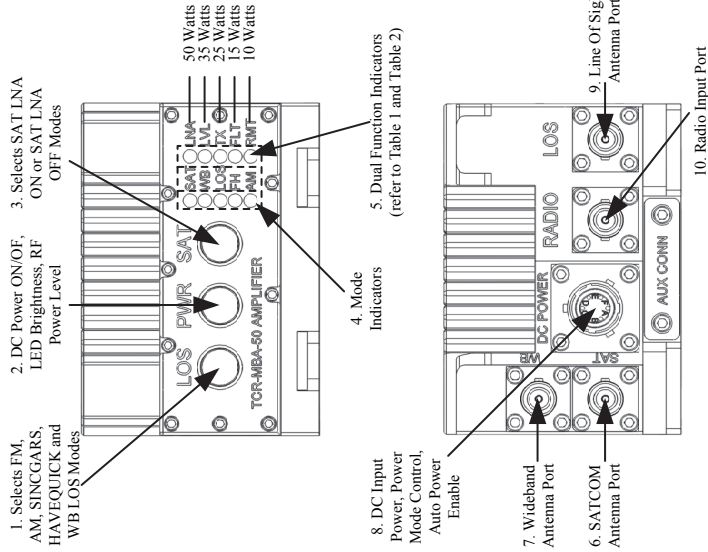
ANTENNA PORTS:

The amplifier has three antenna ports:

- Line of Sight (LOS)
- SATCOM (SAT)
- Wideband (WB)

INITIAL SETUP

1. Apply power to the PWR connector on the back of the amplifier (refer to Page 5 for input power connector pinout).
2. Ensure radio is turned OFF.
3. Connect the radio's antenna port to the RADIO BNC connector on the back of the amplifier.
4. Connect the correct antenna to the appropriate antenna port (LOS, SAT or WB).
5. Press and hold (1-2 seconds) the PWR button to turn ON the power amplifier.
6. Select the appropriate mode of operation (LOS FM, LOS AM, LOS SINGARS, LOS HAVE QUICK, SAT or WB refer to page 3).
7. Select the desired power level (refer to page 4).
8. Turn ON the radio and select the appropriate net for operation.

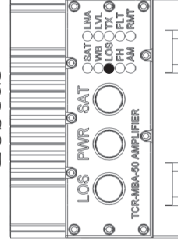


BASIC OPERATION

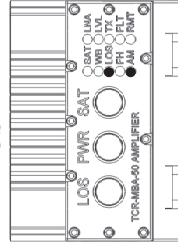
Selecting Mode Of Operation

1. **LOS** – To change LOS modes press the LOS button momentarily repeatedly until the desired LOS mode is selected.

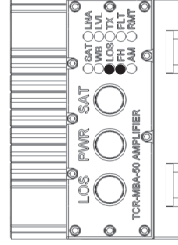
LOS FM



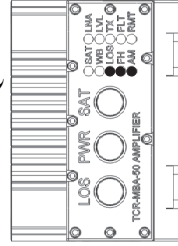
LOS AM



LOS SINGARS

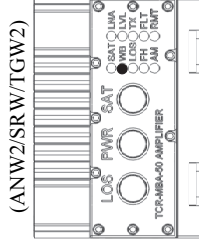


LOS HAVEQUICK

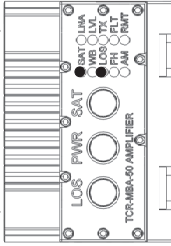


2. **WB** – To Select a WB mode press the LOS button momentarily repeatedly until the desired WB mode is selected.

LOS WB

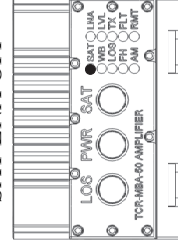


LOS WB FHOP
(ANW2/SRW/TGW2)

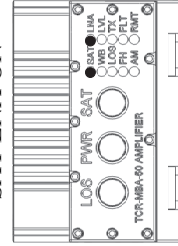


3. **SAT** – To select a SAT mode press the SAT button momentarily repeatedly until the desired SAT mode is selected.

SAT LNA OFF



SAT LNA ON



BASIC OPERATION (Continued)

Output Power Adjustment

Refer to Table 1 for a description of the dual function power level indicators.

1. The power level available for operation depends on two primary factors, mode of operation and operating voltage.
2. To select the desired power level press the PWR button momentarily repeatedly until the desired power level is selected.

Table 1 Dual Function Indicators.

LED	FUNCTION
LNA	50W* SAT LNA ON
LVL	Low RF or DC input
TX	PA in TX Mode
FLT	PA Fault
RMT	PA in remote Control Mode

*Power level is displayed briefly when the power level is adjusted, when the mode is changed, and when the PA is turned on.

Table 2 Power Level Indication

MODE OF OPERATION	LED					
	10 W	15 W	25 W	35 W	50 W	50 W
LOS MODES	RMT	FLT	TX	LVL	LNA	
LOS FM/AM SE/FHOP 25 W	ON	ON	ON	ON	ON	
LOS FM/AM SE/FHOP 50 W (Note 1)	ON	ON	ON	ON	ON	ON
WB MODES						
LOS WB SE/FHOP 25 W	ON	ON	ON	ON	ON	
SATCOM MODES						
SAT LNA ON/OFF 10 W	ON	ON	ON	ON	ON	
SAT LNA ON/OFF 15 W	ON	ON	ON	ON	ON	
SAT LNA ON/OFF 25 W	ON	ON	ON	ON	ON	ON
SAT LNA ON/OFF 35 W (Note 1)	ON	ON	ON	ON	ON	ON
SAT LNA ON/OFF 50 W (Note 1)	ON	ON	ON	ON	ON	ON

Note 1: The 35 and 50 Watt power levels are only available in military vehicle mode (pin D grounded on the DC input power connector with a 28 VDC source).

BASIC OPERATION (Continued)

LED Brightness Adjustment

The brightness for the LED indicators can be adjusted to one of four levels, HIGH, MED, LOW and LOW.

1. Press and hold the PWR button for more than 2 seconds. The LED intensity will decrease.
2. Release the PWR button when the desired LED intensity has been selected.
3. Holding the PWR button too long (>6 seconds) will shut down the power amplifier.
4. If external DC input is interrupted, the power amplifier will lose the LED brightness setting and will revert back to the default setting of HIGH.

5. If the power amplifier is turned OFF and turned back ON using the PWR button, the power amplifier will remember the LED brightness setting.

DC Input Power

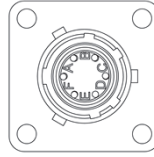


Table 3 DC Input Power Connector Pinout

Pin #	I/O	Connection
A	I	12-32 VDC
B	I	GND
C	I	Commercial Vehicle Select
D	I	Military Vehicle Select
E	I	Auto Power ON Select
F	I/O	Reserved

Table 4 DC Input Power Control Pin Functions

Pin C	Pin D	Power Source
OC	OC	Military Battery Mode (12 V nominal)
GND	OC	Commercial Vehicle Mode (13.8 V nominal)
OC	GND	Military Vehicle Mode (28 V nominal)
GND	GND	Reserved

Table 5 Auto Power ON

Pin E	Operation
OC	Front panel PWR button turns PA ON
GND	PA will turn ON when DC power is applied

OC=Open Circuit
GND=Ground

REMOTE CONTROL OPERATION

The power amplifier can be operated remotely from a PC via a USB or RS-232 interface. The command set for remote control is described in Table 2. Each valid command is responded with an “ack”; invalid commands due to incompatible operational parameters will be responded with a “nack” and invalid commands due to syntax errors will be responded with an “unknown command” message. The LOS and SAT mode switches are disabled when the power amplifier is in remote mode.

1. Ensure power amplifier is turned OFF.
2. Remove the dust cover on the AUXILIARY port.
3. Connect the remote control interface cable (USB or RS-232) to the AUXILIARY port and to the PC.
4. Turn ON the power amplifier.
5. Start the terminal emulation application such as HyperTerminal.
6. Setup the terminal application for the appropriate COM port at 9600 bps, 8 bits, no parity, 1 stop bit and software flow control.
7. Type “remote on” and hit the return key on the terminal application. This will enable the remote control mode on the power amplifier and the RMT LED will illuminate.

Table 6

COMMAND	FUNCTION
remote on	Turns on remote control mode
remote off	Turns off remote control mode
?	Displays command list
status	Displays current PA status
los fm	Selects FM mode
los am	Selects AM mode
los fm hop	Selects LOS SINGGARS mode
los am hop	Selects LOS HAVEQUICK mode
wb	Selects LOS WB single frequency mode
wb hop	Selects LOS WB frequency hopping mode
sat lna on	Selects SATCOM mode with LNA ON
sat lna off	Selects SATCOM mode with LNA OFF
power ##w	Selects the desired power level ## = 10, 15, 25, 35 or 50