

# ONE-TOUCH TUNE™

For the FT-897

## GENERAL

One-Touch Tune (OTT) is a custom add-on accessory for the Yaesu FT-897. The OTT solves the tedious and annoying tuning process that presently needs to be used to produce a carrier for tuning an antenna tuner. Installation is a snap, just as simple as 1-2-3!

1. Mount the OTT module as you desire using the Velcro attached to it.
2. Plug the OTT cable into the CAT/Linear jack on the FT-897.
3. Plug the supplied OTT TUNE push-button switch (or your own) into the OTT Command jack.

That's all there is to it. When you want to tune your station, press the TUNE button and One-Touch Tune takes control of the FT-897. Regardless of the mode you are using, OTT commands the FT-897 to produce a carrier having the same power as previously set by the FT-897 PWR function command. When you have completed adjusting the antenna tuner, release the TUNE button and the FT-897 returns to the mode you had selected. If you have an LDG Electronics AT-11MP/RT-11 antenna tuner (that is FT-897 compatible) and the optional cable, you may plug into the AT-11MP/RT-11 remote jack and into the OTT Command jack. Whenever you press the AT-11MP/RT-11 TUNE button, OTT jumps into action and commands the FT-897 to produce a carrier as long as required by the AT-11MP/RT-11. Upon completion of the tuning process by the AT-11MP/RT-11, the FT-897 returns to the mode configuration you had already selected!

One-Touch Tune is also transparent to any auxiliary equipment you have attached to the FT-897. For example, if you have a CAT controller attached to the FT-897, you only have to plug it into the OTT ACC input jack. Anything attached to the KEY or DATA jacks will not be interfered with at all, except the FC-20 or ATAS-100.

The One-Touch Tune is power friendly with the FT-897. When OTT is not in use, the current drain is < 25  $\mu$ A. During the brief time needed for tuning, OTT draws about 20 mA.

## INSTALLATION

- 1. Turn the FT-897 power OFF and read these instructions completely before doing anything else.
- 2. If you have anything plugged into the FT-897 CAT/Linear jack, then unplug it now.
- 3. Plug the OTT male DIN plug into the CAT/Linear jack on the FT-897.
- 4. If you had something plugged into the FT-897 CAT/Linear jack (2. above), then plug it into the female DIN connector from the OTT.
- 5. Plug the supplied push-button cable into the remaining OTT Command cable jack. This is a standard 3.5-mm stereo jack. The push-button is connected to the *tip* and ground. You may attach any switch desired to satisfy your particular operating needs. DO NOT use the *ring* connection.
- 6. Turn the FT-897 power ON and set **Menu #085 to OFF, Menu #019 to 9600, & Menu #020 to CAT.**
- 7. The standard installation is now complete.
- 8. If you want to use the OTT with a LDG AT-11MP or RT-11 in a highly integrated manner, then connect the OTT to the remote jack on the tuner (remote head if the RT-11). Cable available from W4RT or you can make it yourself.

## OPERATION

One-Touch Tune operation is very easy. Once you have OTT installed, the operating steps are as follows:

1. Press and hold the OTT Tune button (or whatever button you may be using).
2. Adjust your antenna tuner appropriately.
3. Release the OTT Tune button and return to operation of the FT-897.

## TECHNICAL

One-Touch Tune is a microprocessor-based device that utilizes both analog and digital surface-mount technologies. Since batteries frequently power the FT-897, power conservation was given significant consideration in the OTT design. When the OTT is in its monitor mode, i.e., waiting to be commanded to be turned on, it is essentially shut down. The microprocessor is off as is all of the other circuitry except for passive monitoring of the OTT inputs. This approach provides two important benefits to the FT-897 operator. First, the OTT can not generate any “birdies” or spurious emissions during your non-tuning operation of the FT-897. Second, the OTT power consumption is essentially nil during the monitor mode (< 25  $\mu$ A).

Another important design consideration of One-Touch Tune was to make OTT transparent to the operation of the FT-897 and to the operation of any external devices attached to the FT-897. When OTT has been activated, it immediately disables the communication lines to/from any external device attached to the OTT's ACC jack, determines the status of the FT-897, commands the FT-897 to switch to the PKT mode, activates the PTT in order that the radio transmits the desired carrier for the time you (or the autotuner) want, deactivates the PTT, restores the FT-897 to its prior status, enables the communication lines to/from any external device attached to the ACC port, and returns itself to its monitor mode. The power output of the carrier is the same as you had set using the FT-897 RF POWER SET, Menu #075. During operation, the FT-897 draws about 20 mA. OTT derives its power from the FT-897 and functions over the entire range of FT-897 power source voltages.

One-Touch Tune can be used with both manual and certain automatic antenna tuners. The OTT activation for manual antenna tuners is made by simple switch closure. The OTT Command cable jack is a standard 3.5-mm stereo jack. The switch closure is accomplished by shorting the tip and ground connections together. DO NOT short the ring and ground, or ring and tip, together; OTT will not function if you do. Since FT-897 operators use the rig in many creative arrangements, OTT provides excellent flexibility in selecting the switch. Some operators might like the supplied push-button switch while other might prefer a foot switch, toggle switch, double action push-button switch, etc. When the OTT is requested to activate, the FT-897 carrier is output in approximately 80 ms. One-Touch Tune was optimized to operate the FT-897 at its maximum speed using the FT-897 CAT commands.

One-Touch Tune can also be used with certain automatic antenna tuners. The LDG AT-11MP/RT-11 is an excellent match with the FT-897. You can, of course, use the OTT Tune button to activate the carrier for the AT-11MP/RT-11 and then press the LDG AT-11MP/RT-11 Tune button. Once the AT-11MP/RT-11 has completed its tuning process, you simply release the OTT Tune button and start operating. However, if you install the optional cable that connects the AT-11MP/RT-11 to the OTT Command Jack and your tuner has the FT-897 compatible software, then you only need to press the AT-11MP/RT-11 Tune button (with the AT-11MP/RT-11 in the Semi mode) for OTT to automatically spring into action. (If you need to upgrade your CPU, contact LDG directly.) Once the AT-11MP/RT-11 has completed its tuning process, OTT returns to its dormant state. If the AT-11MP/RT-11 is set to the Auto mode and activates itself due to detection of the SWR exceeding 3, One-Touch Tune will generally not be activated when the FT-897 is in a “key-down mode” such as SSB, FM, PSK, DIG or AM. If the PTT is active due to depression of the microphone button or closure of the PTT at the DATA port, then OTT will not activate. Of course, the AT-11MP/RT-11 Tune button can be depressed while in the Auto mode and it will behave as it does in the Semi mode. You can use One-Touch Tune with other appropriate automatic antenna tuners for the FT-897 if they provide a “tuning-activated” signal voltage in the range of less than 0.5 VDC when off and +2.5- 20 VDC when on by using the ring and ground connections. The timing delay from the start of the tune command until the FT-897 carrier is present is approximately 80 ms.

One-Touch Tune was designed for simple installation and removal. Either requires nothing more than inserting or removing the OTT ACC plug into/from the FT-897 CAT/Linear jack and sticking onto or pulling off the OTT module from the Velcro pad.

NOTICE: The ott-897 is also compatible with the FT-817. See instruction for the OTT-817 for use of the OTT-897 with the FT-817.

**\*\*\* Installation photographs, this instruction sheet, and additional information can be found at [www.w4rt.com](http://www.w4rt.com). \*\*\***

**WARRANTY:** One-Touch Tune is warranted for a period of one year from the date of purchase to be free of electrical defects in materials and workmanship. If the One-Touch Tune module and/or cables are determined to be defective, the defective item(s) will be repaired or replaced, at the sole option of W4RT Electronics, provided that the purchaser returns said item(s), postage prepaid, with proof of purchase to W4RT Electronics, ATTN: Technical Support, 3077-K Leeman Ferry Rd, Huntsville, AL 35801. Include a description of the problem, daytime phone number, email address, and return mailing information. Any modification to the One-Touch Tune or its cables by purchaser voids the warranty. The warranty applies only to the original purchaser and is not transferable. 18 January 2003