FT-817 FAQ - Frequently Asked Questions

AGC
Does it really matter to what mode I set the AGC?

To enhance your operating experience, you should select the proper mode for the AGC. With put into the AUTO mode, the FT-817 will automatically select the AGCslow setting for the voice modes and the AGCfast setting for the CW and DIG modes. In some situations, it may be neccessary to turn the AGCoff for fastest response; however, unexpected behavior can occur. Note that when operating PSK or CW under strong signal condition (S-9+), AGCslow will likely give better performance.
18/04/01-R

ALIGNMENT
How do you enter the alignment menu?

With the FT-817 turned OFF, press the A, B, and C keys at the same time and turn the power ON. When you enter the first time, you should record each and every value before changing anything. *** BEWARE ***

ANTENNA CONNECTOR
How can I tell if the front or rear antenna connector has been selected?

If you see a "R" on the right end of the second line of the display, the the rear connector has been selected. Otherwise, the front antenna connector has been selected.

ANTENNA CONNECTOR
When the front or rear antenna connector has been selected, does that selection apply to all bands?

NO. Each band (HF as a group, 50, 144, adn 440 MHz) can have either antenna connection assigned to it. Use Menu Item 07 [ANTENNA]. If you change bands and it seems like the antenna is no longer connected, then check to see which antenna connection is active. When the REAR ANTENNA CONNECTOR is selected, the "R" icon will appear on the display (see page 15 in Operating Manual).
26/03/01-R

ANTENNA CONNECTOR
My BNC connectors will not completely seat. Can this be fixed without returning the unit to Yaesu?

YES. W2PW suggests that you first take off the front panel (it's surprisingly easy... after the top and bottom covers are off; it simply pops off). Next, take a reamer tool that looks like a cone with teeth and make the hole that the BNC fits through a little wider. Use a BNC plug as a test fit to make sure the plug's lower ring fits through, just snugly. When you replace the front panel, you will find those recalcitrant BNCs go on nicely as they bottom out INTO the panel as they seat. Note that you do not have to remove the BNC from the inner panel.

ANTENNA TUNER
How do I produce a carrier for tuning my system?

It depends upon what mode you are using. If you are operating AM or FM, then you can just key the microphone and tune given that you don't modulate the carrier. If you are operating CW with a straight key, then you just have to hold down the key. For other modes it becomes more complicated. If you are using the built-in keyer, then you have to turn off the keyer, press the "dit" paddle while tuning, and then turn on the keyer again. If in USB, you will need to change modes to AM or the like, key the microphone while tuning, and change the mode back to USB. The only mode that can safely be used to produce a legal carrier throughout the amateur bands is PKT. The number of "actions" needed to be taken during tuning typically ranges from 5 to 11. Recently, W4RT Electronics introduced One-Touch Tune as a FT-817 accessory. It mounts on the rear of the FT-817 and is operationally transparent to the FT-817. By pressing a single button, the unit determines the status of the FT-817, commands it to produce a carrier, and returns the FT-817 to its prior settings upon release of the button. If used with an updated LDG Electronics Z-11 QRP Autotuner, the tuning process becomes highly automated. Simply pressing the Tune Button on the Z-11 results in the completed tuning process being accomplished. See www.w4rt.com or major amateur radio dealers in the US or Waters & Stanton (www.wsplc.com) in the UK.
03/06/01

ANTENNA TUNER
Does the FT-817 include an internal antenna tuner?

NO. You either use an antenna that matches the 50-ohm unbalanced input of the FT-817 or use an external antenna tuner such as the LDG Z-11 (http://www.ldgelectronics.com/z-11.html) or the EMTCH ZM-2 ATU http://www.emtech.steadynet.com/zmdesc.htm. The Z-11 is a fully automatic tuner that requires power; however, it has latching relays so that power is conserved. A pair of 9-V NiCad batteries in series will provide hundreds of tunings. The ZM-2 is a manually tuned unit. They cover 10-80 m with the Z-11 also covering 160 m. Both are good units. Price of the Z-11 is several times that of the ZM-2.
25/03/01-R

ANTENNA TUNER
Will the Z-11 antenna tuner work with the FT-817 on 6 m?

The Z-11 specifications state that it covers 160 m through 10 m; however, the Z-11 may or may not work on 6 m depending upon what the SWR of the antenna is with respect to that caused by the insertion of the tuner itself. The Z-11 actually increases the system SWR (on 6 m) if you insert it in-line with a 6-m antenna having low SWR at the selected operating frequency. Since the antenna's SWR is lower than that associated with the tuner, the tuner cannot do anything to improve the situation. In the case of a non-resonant antenna with its SWR being higher than that of the Z-11, the Z-11 will tune and reduce the system SWR. However, if the SWR is so bad that the output power of the transmitter is reduced below the amount needed for the Z-11 to tune, then no improvement will be realized.
01/04/01

AUTOMATIC BAND SELECT
Is there an interface for the FT-817 that provides a band output for interfacing with power amplifiers, coax switches, etc.?

YES. K6XX has designed an interface box for the Yaesu FT-817 that includes a band output port, a computer serial interface, and a remote interface for the FL-7000 (and Quadra?) solid state power amplifiers. The band output port drives things like relay-

switched bandpass filters (BPF)—DuneStar 600 or ICE 419, for example—remote coax switches, etc., and does not require a computer. The serial interface allows rig control via computer, and makes logging programs like TR-Log and CT really shine (if the program supports the FT-817 protocol). The amplifier remote interface provides complete band switching and transmit/receive sequencing control for Yaesu solid state power amplifiers—change the band on the FT-817, and the amplifier follows automatically. See http://www.k6xx.com/ft817/ft817.html.
04/09/01-R

BATTERIES
Do I really have to cut the "green" wire?

W2PW observes that anyone concerned about restoring the unit for alkalines should not perhaps CUT the green wire, but rather take a safety pin (or the like), and poke into the connector to release the clip that holds the pin or socket connection in the white plug or socket body. Slide out the wire with the tiny connection intact, tape it out of the way and you can reseat it when desired.

BATTERIES
Is there a NiMH batery pack that fits into the FT-817?

YES. (1) Radio Shack has a 9.6 volt / 1600 mAh battery pack (NiMH) designed for radio controlled vehicles. The number is 23-331 and it fits perfectly into the battery compartment of the FT-817. Price is $25. (2) Maha Energy (www.mahaenergy.com) will offer in April the new MH-FNB-72 NiMH battery pack specifically for the FT-817. The MH-FNB-72 is reported to offer 1800 mAh at 9.6 V. It will also include a special charging cable that will allow the pack to be directly pluged into the Molex connector on the MH-C888 charger (the MH-C777 should work also). Price is $60. Also, see TOPIC - CONNECTORS to find source for connector to the FT-817. (Ed.: A transition cable can be made to minimize the amount of wear and tear on the FT-817 internal power connector. One approach is to replace the rather large connector on the RS battery pack with a Molex plug 03-06-2024 with 3 A pico fuses in each leg (see TOPIC - FUSE). Next make the transition cable using a Molex receptacle 03-06-1022 and the little female Molex connector that mates with the FT-817. This can be taken from the Yaesu supplied battery holder or a new Molex connector. The ears on the larger Molex connector need to be cut off. The wires dress nicely and the fit is fine. The terminals are 02-06-1103 for the female and 02-06-2103 for the male.)
01/04/01-R

BATTERIES
Can NiMH batteries be used?

YES. Despite Yaesu's statement to the contrary, you CAN fill the AA holder with NiCd or NiMh AA cells. They can be charged at about 18mA trickle and 180mA which is about right for 10 or more hours. However you are cautioned to install a fuse at the battery pack. Try a 2.5 or 3 A "picofuse" which has leads and is tiny. Also make sure the cut green wire is insulated from ground. Beware your warranty.
01/04/01-R

BATTERIES
How much current is drawn by the FT-817?

The approximate values are 380 mA on RX and 1.8 A on TX.
01/04/01

BATTERIES - CHARGING TIME ESTIMATION
How is the charging time estimated when using the internal FT-817 charger?

An estimate of charging time for the NiMH batteries (assuming nominally discharged, 0.9 V per cell or 7.2 V total) is as follows: Tchg = (charging time), Ichg = (charging current), and F = 1.5 to 1.8 (factor due to charging efficiency < 1). The relationship between these parameters is Tchg = F * CP / Ichg. Example: 1.6 * 1600 mAh / 190 mA = 13 hr 30 min. The charging current varies with the voltage of the external DC supply. ZL1BK, KB2TQX and others have measured the charge current vs. external voltage to be 190 mA for 13.8 V, 180 mA for 13.0 V, 160 mA for 12.5 V, and 100 mA for 12.0 V. The internal charger provides the nominal charging current during the time the charger is turned on. The charging current reduces somewhat as the cells approach full capacity. When the charger is off and the external power supply is connected, the charger provides trickle charging current of appropriately 14 to 18 mA. The minimum current to affect charging is 60 mA (ref. Energizer engineering data sheet). The min/max overcharge currents are 60/110 mA. You should avoid overcharging your batteries. For a fully discharged set of 1600 mAh batteries (7.2 V), the charge time could vary within the range of 13-15 hours. Two 8-hours cycles would likely work. Although a 6-hour cycle and an 8-hour cycle would be preferred. The trickle charging will not harm the NiMH batteries even if fully charged. Caution, the maximum momentary (1 second) discharge current can exceed 15 A.
24/04/01-R

BATTERIES - NiMH
Do NiMH batteries need to be conditioned?

YES. Even though NiMH batteries don't suffer from the "memory effect," new NiMH batteries should be fully cycles at least 3 times before general recharging. Thereafter, you should perform a conditioning cycle every 10 charges to ensure top performance from your battery.
01/04/01

BATTERIES - NiMH
How well do NiMH batteries maintain their voltage under FT-817 discharge rates?

In general, they will hold the 1.2 V value until about 80-90% discharged. Actual performance varies by battery brand and discharge rate.
01/04/01

BATTERIES - NiMH
What is the hold time or shelf life of NiMH batteries?

It depends upon the storage temperature. Assuming that the batteries were properly conditioned and fully cahrged when stored, it should be reasonable to expect, after a month of storage time, a charge retention of 70-85% at room temperature and 30-40% at 40 deg C (113 deg F). If the batteries are cooled, the retention time is significantly increased. [At room temperature, the capacity decreases about 1% per day.]
06/06/01-R

BATTERIES - OPERATING TIME ESTIMATE
How do I estimate the operating time for the batteries?

For an approximate estimate of the operating time for a battery pack, the following may be used. This assumes that the battery pack is full. *** Itx = 1800 mA (transmit at 5 W), Irx = 380 mA, CP = 1600 mAh (battery capacity), Ttx = 0.5 hr (transmitting time), Trx = ? (receiving time), and * ==> multiplication. The relationship between these parameters is CP = Ttx * Itx + Trx * Irx. This equation is then solved for Trx. For the example values, Trx = 1 hr 50 min. Also see TOPIC - CURRENT DRAIN.
07/04/01

BATTERY OPERATION - CUT OFF
What is the minimum operating voltage for the FT-817 using the internal batteries?

The FT-817 is set to terminate operation (to turn itself off) went the indicated voltage is 7.2 V. This is the full discharge voltage of both NiCd and NiMH batteries (8 cells times 0.9 V per cell = 7.2 V). If you wait a few minutes, the battery pack will recover slightly (showing 8 V or so) and will run the radio for another minutes or so.
12/06/01

CALIBRATION MENU
Does the FT-817 contain a "Hidden Menu?" If so, what is its purpose.

YES. *** B E W A R E *** W A R N I N G *** This is the factory calibration area. The data stored in here is NOT recovered when you do any reset, it is unit specific. DO NOT CHANGE ANYTHING unless you know exactly what you are doing. There are 76 menu items. You should WRITE DOWN everything displayed for all 76 menu items when you first enter this area. Put this information in a safe place. Access is obtained by first turning the power off. Next turn the power back on while holding down the A, B, and C buttons at the same time. You should hear a "diddle-diddle-diddle" sound. You are now in the Hidden Menu area. The SEL knob allows you to move between menu items. The Main Dial adjusts the parameter in the menu item. To exit, press and hold the "F" button. *** HEED THE WARNING PLEASE ***
07/04/01

CARRYING CASE
Where can I find a carrying case for the FT-817, the tuner, power supply, and other items?

The "right" carrying case for you likely depends upon how you are planning to use your rig and what additional items need to be carried. FT-817 users have reported finding interesting cases at Office Depot, Best Buy, All Electronics, Mountain-Ops Communications, and other such companies. The "ideal" or "universal" case has not been identified yet. *** 10 APR 2001: CSE-10 is sold out and no longer available *** W4WB recently received the All Electronics Model CSE-10 padded, shoulder-carrying case with inside dimensions of 16 x 6 x 2.5 inches for $5. See http://www.allelectronics.com/cgi-bin/category.cgi?category=search&item=CSE-10&type=store. The FT-817, Z-11, microphone, CUP36-12-1 power supply, 4:1 balun, batteries for the Z-11, and interconnecting coax cables fit fine in this case.
10/04/01-R

CAT
How do I connect the FT-817 and my computer together?

Use the Yaesu CT-62 cable. It includes the electronics to perform the level translations between the FT-817 and teh serial port of the computer. Alternatively, DL3DAZ suggest that you can make one and refers to http://krasnodar.online.ru/hamradio/images/yaesucat.gif He has tried it and the cable worked fine even at 38400 Baud. Transistors can be any NPN type that can handle 20mA and 15V. He put the circuit into a DB9 case using SMD resistors from a defective harddisk PCB. WARNING: Any mistake leading to excess voltage connected to the FT-817 may cause damage! So be careful...

CAT
Is it possible to make my own CAT cable for the FT-817?

YES. VE3CVG has posted a file in the "FT817 Files Section" (click on Files to the left) that contains a schematic of his version of a CAT cable suggested by DL3DAZ (see TOPIC -CAT). Rick warns that you use this information at your own risk! File reference is http://groups.yahoo.com/group/FT817/files/817cat.gif.
30/01/01

CAT CONTROL SOFTWARE
What software is available to operate the FT-817 via the CAT port? Can the memories be managed with this software?

YES. Several programs will soon be announced. G4HFQ just announced that FTBasic has been enhanced to provide management of the 200 memories in the FT-817. The first Beta release is available at http://www.bob.freeth.dial.pipex.com/polarplot/download.shtml. Look for FTB144B7EX.EXE. You must already have a 'full package' version of FTBasic installed.

CLONE
What is the CLONE speed for the FT-817? Can it be adjusted?

G4HFQ reports that the clone speed for the FT-817 is fixed internally at 9600,N,8,2. It can not be adjusted.
28/04/01

CODE PRACTICE
The manual for the FT-817 explains how to use the radio for cw sending off the air using a straight key. Can this feature be used with an iambic keyer as well?

W4RK comments that "I use a Logi-Key iambic keyer with my FT-817 when I'm in the hamshack and not in the field. Just plug in the keyer output cable to the FT-817 key jack, turn off the KYR flag and you're done. If you want to practice, also turn off the BK IN flag and you get the rig's sidetone, but no RF. (You'll need to be in CW or CWR mode) You can do the same thing with the FT-817's internal iambic keyer for practice. In this case turn ON the KYR flag, plug your iambic paddles into the 817's key jack on the rear and leave the BK IN flag OFF. If you're in CW or CWR mode, you'll get the sidetone."
11/04/01

CONNECTORS
Any recommendations for inexpensive, yet functional, interconnecting connectors for the power supplies/sources?

KQ6AX describes a standardized modular system based on using "2-Wire Trailer Plug Connectors." See http://www.qsl.net/kq6xa/connect/. She provides a wealth of photographs, ideas, and good common sense advise on things to do and NOT to do to protect your equipment and power sources.

CONNECTORS
Where can I find the plug that fits the DATA socket on the FT-817?

W4JZ observes that the needed plug is the same as the one commonly used on a Mouse and many keyboards.
26/01/01

CONNECTORS
Where can I find the connector for the internal battery pack?

DG1SMD identified the connectors as Molex parts. The female housing is part 51021-0500 (5 pole) and the (5 each) female terminals are part 50058-8100. The male connector housing is part 51047-0500 and the corresponding pins are 50125-8000. One source is Digi-Key.
28/01/01

CONNECTORS
Where can I get a DC power jack for the FT-817?

It is a coax-style jack having dimensions of 4.0 x 1.7 mm. One source is Radio Shack and the part number is 274-1532. WARNING: The power plug is not the most durable plug seen, so be careful not to try to force the wrong size jack onto the plug. An "exact" replacement for the Yaesu supplied jack is Philmore No. TC240 (6 Ft. DC Power Cord).
01/07/01-R

CONNECTORS - MOLEX FOR INTERNAL BATTERY
Is there a source for the completed Molex connector with pigtails that mates with the internal battery connector?

YES. KG4CHX is a limited duration source. Connectors are made with OEM connector and teflon insulated wire (largest gauge possible, #26). They do not include a fuse, just a connector with 4 wires attached (the "green" wire is omitted). Battery-side connectors are $5 eash and radio-side connectors are $7 each. Send CASH only {checks will be sent back} and a SASE {Self-Addressed Stamped Envelope with US postage or IRC}. No foreign currency please. He also takes Pay Pal but add $1 for each order (KG4CHX@Telocity.com). You might consider sending Tim a protected (foam or bubble lined) envelope about 3" by 5" with 55 cents postage. Priority mail adds $4 more. Send requests to: Tim O'Rourke KG4CHX, 4316 Dianne Dr., Charlotte NC 28215. Also see TOPIC - CONNECTORS for details of the connector. Special thanks to Tim for taking on this challenging effort.
12/06/01-R

CURRENT DRAIN
What is the approximate current drain of the FT-817?

(Source is K9QI appearing in "The QRP Quarterly," April 2001.) The following values are for when the external 13.8 V power supply is used. RX fully active = 380 mA; RX with backlight off = 348 mA; RX with backlight off and squelched audio = 338 mA (note that Yaesu manual states 250 mA); TX CW @ 5 W = 1.92 A; TX CW @ 2.5 W = 1.62 A; TX CW @ 1 W = 1.17 A; TX CW @ 0.5 W = 1.05 A; TX SSB with 2 tones @ 5 W PEP = 1.26 A.
07/04/01

CW - OPERATING TECHNIQUES
Is there a guide that will help me to improve my CW operating skills?

YES. An excellent resource is "A Beginner's Guide to Making CW Contacts" by Jack Wagoner - WB8FSV. See http://www.netwalk.com/~fsv/CWguide.htm.
11/04/01

CW FILTER
What are the settings for the CW filter?

After the CW filter is installed, set Menu #38 to CW. No change is noise heard will occur. If you switch Menu #38 to SSB, the noise heard will change. Be sure you set Menu #38 to CW. Press and hold the F button to exit the Menu. To use the CW filter, press the NAR button (button C on row 7 of the operating functions). The CW filter is toggled by this button. You can use the CW filter in CW, CWR, and DIG modes. See also TOPIC - FILTERS.
08/04/01

FAST STEP TUNING
How do I turn ON or OFF the Fast-Step Tuning mode?

On the supplied MH-31ABJ microphone, there is a FST key located between the DWN and UP keys. When the Fast-Step Tuning is ON, an icon of a running man is displayed in the lower right of the display. Pressing the FST key toggles this mode. When ON, the VFO tuning rate increases by a factor of 10 (steps are 100 Hz rather than 10 Hz). The FM steps double.
09/0701

FILTER
How do I install the optional filters?

The procedure is explained in the manual; however, AD6A has prepared an excellent web page that provides detailed installation instructions and photographs for the CW filter. See http://www.cooltechstuff.com/FT817_CWfilterinstall.html. NOTE: When you install the filter, you should be able to see the writing on the filter. It doesn't work upside down!
28/01/01-R

FILTER
Can I install both the optional SSB and CW filters at the same time in my FT-817?

NO. You must select one. The CW filter is highly desirable if you plan to work CW. The merit of using the optional SSB filter has not yet been established since no one has had

one to use yet and because the specifications are so close to the factory installed filter.

FILTER
What sources are available for obtaining the optional filters?

Yaesu and INRAD (http://www.qth.com/inrad/ft-817.htm) are the only commercial sources at present. Both use Collins Mechanical Filters, but not the same ones. Note that the Yaesu CW filter is 500 Hz @ -6 db with a shape factor of 4 and the INRAD CW filter is 600 Hz @ -6 dB with a shape factor of 2.5. INRAD also offers a 340 Hz CW filter @ -6 dB having a shape factor of 2.5. Shape factor = (BW @ -60 dB / BW @ -6 dB). For the SSB filter, INRAD offers two choices with one identical to the Yaesu YF-122S and the other provides about 250 Hz more bandwith, Another option is to build your own. K6XX prepared a quality presentation on how to make your own optional filter using available Collins mechanical filters. See http://www.k6xx/ft817/817cwf.pdf.
04/09/01-R

FILTER
What are the characteristics of the optional CW filter for the FT-817? Do I need one?

Although the original Yaesu ad for the FT-817 on the inside-rear cover of QST clearly states that the optional filters are 10-pole Collins filters, the CW filter is actually a 7-pole filter. Yaesu has determined that the ad was in error and has corrected future ad copy. The correction first appeared in the April 2001 issue of QST. The Collins part number of the filter is 526-8686-030. The specifications that Yaesu supplied with the filter are as follows: Center Freq: 455 kHz, Selectivity (-6/-60 dB): 500Hz/2.0 kHz, Poles: 7 poles, and Dim: 56x9x14 mm. The shape factor is a 4 (BW@-60 dB / BW@-6 dB). How does the filter work in practice? Simply put, if you work CW, then this filter makes CW enjoyable with this rig.
23/03/01-R

FILTER - SSB
Does the optional Yaesu SSB filter Y-122S provide any meaningful improvement?

YES. The stock filter is a ceramic filter that rolls off somewhat either side of about the center of the passband and has modestly wide skirts. The optional Yaesu SSB filter is a 10-pole mechanical filter by Collins. Its bandwidth is 2.3 kHz and its frequency response is very flat with rather sharp skirts. Measurement of average RF output was about +2 dB greater than that observed when using the stock filter. On-the-air performance reports consistently are that the signal is a couple of dBs stronger and that the audio sounds "cleaner" or more articulate. On receive, the difference between the filters is not very great. However, if the FT-817 has a good quality external speaker attached, the difference in hearing is noticable improved.
18/06/01

FM MODE
What is the maximum deviation in the FM mode?

The maximum deviation in the FM mode is +/-5 kHz. See TOPIC - FMN MODE also.
15/04/01

FMN MODE
What is FMN?

FMN is the narrow FM mode having a maximum deviation of +/-2.5 kHz. This mode is activated by turning NAR ON (Operating Function Row 7, Key C) when in the FM mode. The display will show FMN. In the US, there is no specific FCC Rule that limits the bandwidth used for phone modes; however, Rule 97.101(a) does require that the amateur follow good engineering and operating practices. It is common practice to use the narrow mode on 10-m FM for example. (Tnx to G0EHX for noting the FMN.)
15/04/01

FUSE
What is a "pico fuse" and what size is appropriate to use with the battery pack?

A pico fuse is a small fuse that can be used in the battery leads to protect the battery and the radio from damage should a short circuit occur. A 3 A fuse is suggested. The FT-817 draws 2 A during high-power transmissions. A 3 A pico fuse is rated to blow at 3 A in 4 hours and at 6 A in 5 seconds. In a recent test by W4WB and N4BK, a sample 3 A pico fuse blew at 5.1 A in just about a second or so. Pico fuses may be found in many electronic supply stores. One source is All Electronics Corp. (www.allelectronics.com). See also TOPIC - BATTERIES.
08/04/01

GREEN WIRE
What is the purpose of the green wire modification?

See also TOPIC - BATTERIES. The cable from the FT-817 to the FBA-28 battery holder contains five wires, one of which is green, two that are black, and two that are red. The green wire needs to be connected to the FBA-28 when alkaline batteries are being used. Should you desire to put NiCd or NiMH cells in the FBA-28 battery holder, then disconnect the green wire. When the FT-817 is powered from a 13.8V power supply, the FT-817 will charge the batteries for the time set in the BATT-CHG menu option and then drop to trickle charge. (NOTE: The red wires (positive leads) are connected together in parallel and in a like manner, the black wires (negative leads) are connected in parallel. This is required because the Molex connector used is rated at 1 A per pin and the FT-817 is specified at a maximum current draw of 2 A.)
16/06/01-R

IF CONTROL
Is there a variable IF width control?

NO. However, you can see some adjacent-frequency interference reduction by using the IF shift control with the frequency control. This creates a makeshift narrow filter that can help some when working CW and you don't have the optional CW filter.

IF CONTROL
Can the IF be shifted?

YES. Use it to move an interfering signal out of the passband. See the manual for instructions to operate the IF shift control.

IF SHIFT CONTROL
Can the IF Shift control be used in the PSK mode?

YES. It is generally necessary to use this control when the CW filter (NAR = ON) is used. See TOPIC - PSK31.
17/02/01

IPO
What is the IPO and when should it be used?

IPO stands for Intercept Point Optimization. A detailed explaination of the IPO is beyond the scope of these FAQ; however, it can be considered as a means to bypass the receiver preamp to improve the signal overload performance of the receiver. See page 15.19 in the 77th edition of the ARRL Handbook or similar book to understand more about this parameter. In general, atmospheric noise dominates the HF bands and is much greater than the receiver noise. Improved performance can often be realized by turning ON the IPO under such conditions or when you experience strong signals. If the band is quiet, you may benefit by turning the preamp back ON by turning the IPO OFF. The feature is not available on 2 m and 70 cm bands.

LOCK
The radio doesn't respond to changing the dial or other frequency-control keys. What's wrong?

It is likely that the LOCK feature has been turned ON. Look on the right-hand side of the display and see if a symbol of a key is shown. If so, you may turn it OFF by pressing the front panel LOCK Key. There are several levels of LOCK that can be selected through the menu.

LOCKED UP SYSTEM
My system is locked up! Nothing seems to work. What should I try?

Several people have reported that proper operation was restored by unplugging the microphone cable from the FT-817 and then replugging it one or two times. Why this worked is not presently known. Other things to try are to (1) be sure the LOCK function is turned off, (2) turn power off and remove all power sources (disconnect battery too) for 30 seconds and restore power, and (3) perform the system reset(s) given in the Operating Manual plus perhaps with the unit off, press and hold F+V/M buttons while turning the power back on.
10/04/01

MANUALS - REFERENCE CARDS
Where can I find simple reference cards to quickly locate the feature or command I need to use with my FT-817?

N7RR has produced the "Vade Mecum" comprising two laminated cards. One is about 7"x10" and the other is about 4"x3-1/2". The larger card is divided into four sections, viz., Basic Controls, Operating Menu, Customizing Menu, and Power-Saving Settings. The smaller card covers the Operating Menu and Customizing Menu in an abbreviated form. Price is $6 plus $1 S/H in the US and $3 S/H outside the US. The Vade Mecum (meaning roughly something to take with you) can be obtained from either (1) Kairos Research, 853 Alder St., Blaine, WA 98320-8030, USA or (2) www.w4rt.com.

MEMORY CHANNEL TO VFO
How can a memory channel be copied to one of the VFOs?

ZL2IH discovered that to copy a memory channel to one of the VFO's, you may use the following procedure. (1) Put the Operating Functions to Row 1 (A/B, A=B, SPL); (2) Turn to memory channel of choice (via V/M button); (3) When displaying memory channel, press/hold A=B button until display changes to the VFO mode; and (4) This will write the memory channel to the VFO not displayed, i.e., you will have to press the A/B button to access the other VFO and your newly transferred memory channel contents.
16/04/01

MEMORY CHANNELS
Can I mask (soft erasure) memory channels?

YES. K7JA provided the procedure for masking (soft erasure) memory channels in the FT-817: 1. Press the [F] key momentarily, then rotate the SEL knob, as needed, until Operating Function Row 2 [MW, MC, TAG] appears on the display. 2. Press the [A(MW)] key momentarily, then rotate the SEL knob to select the memory channel to be deleted. 3. Press the [B(MC)] key momentarily. The frequency display field will go blank. 4. Wait about three seconds; the data will now be "masked" and will not be available for operation. 5. To restore the masked frequency data, repeat the above steps. However, if you store new frequency information on a channel containing masked data, the masked data will be over-written and lost. 6. Memory Channel 1 is used for Priority operation, and frequency information may only be over-written (not masked) on this channel.

MEMORY TAG
Is there a convenient way for entering the text for Memory Tags without leaving the memory mode?

YES. SM6LKM found an undocumented way to enter text tags for memory channels without having to access the Menu [Menu #35 - MEM TAG]. The procedure is as follows: (1) Make sure "MW MC TAG" is selected for the A-B-C softkeys [Function Row 2]. (2) If the menu is visible, momentarily press [F] to get rid of it. (3) Press [V/M], then select the memory channel with <SEL>. (4) Press [A] (MW) twice, the memory number (top left) starts to flash, the text tag is shown and a cursor is visible under the first character. (5) Enter the text with <SEL> and <DIAL> in the usual manner. (6) Press and hold [A] (MW) for a second BEEP.... BEEP and the text is now entered. (7) Rotate <SEL> to the next memory channel to be edited and then GO TO Step 4 above and repeat the process until you have completed the Memory Tagging. Contrary to the documented method of entering memory text tags, this method has an "inactivity timeout" of about 5-6 seconds (the memory number stops flashing and the display returns to its previous state).
19/07/01

MICROPHONE MODIFICATION
Can the FT-817 Yaesu microphone be modified to use the Heil HC-4 and HC-5 inserts?

YES. M0AWS removed the Yaesu microphone insert, modified the TONE switch on the back, and connected the HC-4 and HC-5 inserts instead of the discrete components. Then with a flick of the switch, you have either HC-4 or HC-5 insert ready to use! For information on this modification, see his web site http://www.cybatek.fsnet.co.uk/m0aws/FT817-mic-mod.html. The photographs and discussion should help you accomplish this modification

MODIFICATIONS
When a solder ball modification was made, it appears that the repeater shift is lost when I QSY. Any fix?

DL6OBU suggests that the FT-817 will remember the duplex setting if ARS (Menu #1 and #2) is set to OFF.
25/04/01

MODIFICATIONS
Is it possible to extend the receive and transmit coverage of the FT-817?

YES. The coverage is controlled in general by the selection of the solder ball jumpers. See the message board and use the search function to learn what others believe they have discovered. It seems that different lots of the FT-817 behave somewhat differently. Once the information for modications can been sorted out, one or more modification files will be placed in the Files Sections.

MODIFICATIONS
My FT-817 is the Japanese market version. It doesn't have the coverage I need for my area. Is there a simple modification to change the coverage?

NO. Some changes can be made by selection of solder balls, but it really requires changing the CPU. GL!

POWER CORD
Is the length of the power cord of importance?

Perhaps. The resistance of each leg of the Yaesu supplied power cord is about 0.033 Ohm/foot. The total resistance of the power cord is 2 * 6 ft * 0.033 Ohm/foot = 0.4 Ohm. The voltage drop due to the power cord when transmitting at 5 W (about 2 A) is therefore 0.8 V and the power dissipation is 1.6 W. Consequently, you should attempt to keep your power cord short when running off of an external battery. If you are using an AC power supply, the importance is less.
13/04/01

POWER OUTPUT
Can the RF power output be adjusted to any value under 500 mW?

NO. You must select from 5/2.5/1/0.5 watts. To attain intermediate RF outputs, including less than 0.5 W, you might consider using an QRP-type attenuator. Unless the attenuator is rigged with a bypass on receive, the received signal will also be attenuated.
11/04/01-R

POWER OUTPUT
Is the RF output really 5/2.5/1/0.5 W?

YES, it appears to be that, based upon a limited sample, the RF output is very close to the stated value with the exception of 2 m. On 2 m, all of the outputs were notably higher. If you are planning to work QRP distance tests (miles/watt) or other such activity where knowing the real RF power output is important, then you should consider obtaining a QRP wattmeter.

POWER OUTPUT
How can I tell the current power output setting or what does the icon mean?

See page 28 in the Operator's Manual. There are two situations to consider, viz., when operating from an external power source or the internal battery pack. In both cases, when the power output icon shows 1 bar, it indicates 500 mW, 2 bars indicates 1 W, and 3 bars indicates 2.5 W. When using the internal battery pack, a flashing 3-bar icon indicates 5 W. When using an external power source, the icon is OFF or not visible for the 5 W setting.
05/03/01

POWER OUTPUT
Can the power level be set differently for each band (HF/50/144/430)?

NO. Although the Operating Manual (bottom of page 28) states that one can set the power level differently for each band (HF/50/144/430), it does not seem to be the case. Yaesu has been notified of this issue.
02/04/01

POWER SUPPLY
Is there a light-weight power supply that can be used with the FT-817?

YES, there are a number of them. One relatively inexpensive, small, and light-weight power for the FT-817 is the Radio Shack part number 22-503. Regular price is $50. Beware that this is a switching power supply and can create noise in the rig. This particular power supply from Radio Shack has a mixed history. Some works just fine and others are noisy. You might take your rig to the store and try out different ones until you fine a quiet one.

POWER SUPPLY
Is a very light-weight and compact power supply available that can be used over a wide input voltage range?

YES. International Power Sources offers the Model CUP36-12-1 switching power supply. It is rated at 13.5 V +/-4%, 2.4 A, 32 W continuous duty. The CUP36-12-1 is provided in a non-vented 94V-0 rated polyphenylene oxide case only 4.3" x 2" x 0.8". Included is a strain-relieved, six foot output cable with standard barrel type connectors. Full power operation from 0 to 40ºC allows use in virtually any inside environment. Universal Input allows input voltages of 90-264VAC without the need to configure the supply with jumpers, switches or straps. Input to output isolation is 3000VAC for safety agency requirements. Approvals have been received from UL, CSA and TÜV as well as it meets EMI limits per FCC and CISPR. Output voltage accuracy is better than 2% at full line, load and temperature range. Fully loaded 100% burn-in greatly enhances reliability. Protection is provided for overvoltage, short circuit and input surge. More information can be found at http://www.intlpower.com/series/cup36.html that includes a link to a pdf version of the complete specification sheet. (Ed.: My lab and operational measurements of this power supply have validated the specifications. It works great with my FT-817. See TOPIC-CONNECTORS or POWER SUPPLY for information about the correct power plug to install.) NOTE: It is reported that Morse Express/Miles Technologies (http://www.morsex.com), Universal Radio (http://www.universal-radio.com/catalog/hamps/0565.html), and ForeSight Electronics (http://www.fse-power.com/html/ips_tabletops.html and 800-253-0490) are now selling the CUP36-12-1.
04/09/01-R

POWER SUPPLY
How can I protect my FT-817 from power supply problems?

It is noted that the FT-817 does not have 100% protection for that time when Mr. Murphy (of Murphy's Law fame) helps you to place the negative wire from the FT-817 on the positive side of the battery and the positive on the negative side. Examination of the circuit diagram indicates that there will be some smoke if this happens. Remember that whenever something loses its smoke, it's dead! An inexpensive way to protect the FT-817 from this type of “operator error” and from overvoltage glitches is to place a 2.5-A fuse in-line with the positive wire and install a Zener diode (such as 1N4745 or RS 276-564) across the power leads. The fuse goes between the diode and the power source (external battery or power supply). The cathode should be connected to the POSITIVE wire and the anode to the NEGATIVE wire. Be sure to test this setup BEFORE you plug the power cable into the FT-817. If the measured voltage at the power source and the output of the power cable are not the same, you need to replace the diode with a good one. Reverse the leads and verify that the fuse blows. (Sadly, first smoke cause by unprotected lead reversal was recently reported on eHam.com.) Thanks to W4JZ and W3PM for their input.
10/02/01

POWER SUPPLY
Where can I obtain the ferrite bead for the power supply cord to mitigate the RF pickup on 440 MHz?

Contact Yaesu Parts Department and request this part from them. It is a no-cost item. See TOPIC - MANUALS for contact information.
05/03/01

POWER SUPPLY
Where can I get another power plug?

You can find it at many electronic supply stores. It is a coax-style plug having dimensions of 4.0 x 1.7 mm. Radio Shack has them as part number 274-1532
05/02/01-R

POWER SUPPLY
Can I use Yaesu's E-DC-5 cord?

NO. It has been shown to have an unacceptable voltage drop.

PROGRAMMING
Where can I find information about how to program the FT-817 other than what is in the manual?

WARNING! Messing around with this aspect of the FT-817 can lead to an unusable radio. BEWARE! KA7OEI has sniffed around inside the FT-817 and has been able to map a significant portion of the memory. You can find this information at http://www.ussc.com/~turner/ft817_meow.html.
08/06/01

PROGRAMMING
Can I program the FT-817 using a program like ADMS?

YES. RT Systems now offers a programmer for the FT-817. It is available directly from RT Systems at www.cloningsoftware.com or 1-678-354-3500 (Tues, Wed, and Thurs, 5:30-9:00 PM), www.w4rt.com, and several other vendors. Also see TOPIC - CAT CONTROL SOFTWARE
03/06/01-R

PROGRAMMING
Is the information in the FT-817 Operating Manual regarding "CAT System Programming" correct?

NO. There are several misprints. (1) In the Opcode Command Chart, under Operating Mode, "P1 = PKT" should read "P1 = 0C: PKT". (2) In the Opcode Command Chart, under Read RX Status, "(Note 3)" should read "(Note 4)". (3) In the Opcode Command Chart, under Read TX Status, "(Note 4)" should read "(Note 3)". (4) Under Note 3: "RX" should read "TX". (5) Under Note 4: "TX" should read "RX".
29/03/01

PSK31
The manual states on page 39 that the FT-817 can operate in the PSK31 mode. What is PSK31?

PSK31 is a new digital mode designed by Peter G3PLX. PSK31 is based on the RTTY mode of operation and useful for live keyboard to keyboard QSO that works at 31.25 baud. It uses varicode character coding that performs well at 50 wpm. PSK31 is easy to use and monitor, and gives very good copy under poor or weak signal conditions and is thus suitable for QRP. Software is available for free for many platforms, including Windows (c) with SoundBlaster-type soundcard. PSK31 utilizes advanced DSP techniques to generate a narrow-band filter with a bandwidth of just 31 Hz! Although the PSK31 software includes digital filters, it often can be helpful to use the CW filter to minimize the AGC pumping of strong nearby stations. PSK31 stations typically run less than 30 W and worldwide communications are easily achieved using this mode.

PSK31
Where can I find out more about obtaining PSK31 software?

See the PSK31 Official Home Page at http://aintel.bi.ehu.es/psk31.html. This page also contains a wealth of information to help you become involved in PSK31.

PSK31
Do I need a TNC (terminal node controller) to operate PSK31?

NO. You just need a computer with a good sound card of the SoundBlaster type. The FT-817 can be hooked directly to the sound card with excellent results. Follow the instructions in the FT-817 Manual. You may need to adjust the output of the sound card and the DIG MIC of the FT-817 to achieve a high-quality PSK31 signal. Transmit control can be manual by taking the PTT line from the DATA plug to ground. For perhaps more enjoyable operation, you may find it desirable to build a simple interface or to purchase something like the popular RigBlaster from West Mountain Radio (http://www.westmountainradio.com/RIGblaster.htm) or the RASCAL PSK31 kit (Model FTMDIN) from BUX CommCo (http://www.packetradio.com/psk31.htm).
13/04/01-R

PSK31
Can the CW filter be used in the PSK31 modes? If so, when should it be used?

YES. The CW filter can be used as an effective tool in mitigating undesired signals when operating in the PSK31 modes. When you have NAR set ON, you will see the signals displayed on the waterfall display be limited to about 500 Hz (filter bandwidth) and all others signal are essentially eliminated. However, the spectral position of the CW filter passband is determined initially by the CW setup in Menu. Consequently, you may have to move the CW filter passband center frequency to the desired signal by using the IF shift control. See manual for control operation.
17/02/01

QRM SUPPRESION ON CW
How can QRM be reduced when working CW?

Effective QRM suppression when working CW can be often achieved by using a combination of the IF Shift, CW/CWR mode selection, NAR, AGC recovery time constant selection, and the Clarifier. The CW/CWR mode selection switches between USB and LSB carrier injection and is frequently an overlooked but powerful tool to move the QRM source out of the passband.
18/04/01-R

RTTY
I have a TNC that I have used for RTTY with my other rig. Do I have to lug that around to operate RTTY when portable?

NO. If you have a computer with a soundcard (see comments under PSK31), you can use one of several software realizations of RTTY operation. For example, TrueTTY works well and also includes a PSK31 mode (see www.dxsoft.com).

S-METER
My S-meter just quit working. What's wrong?

Most likely, you have turned your AGC to OFF. In this mode, the S-meter will not work since it monitors the AGC voltage. You can reset it by pressing the Function Key and going to Operating Function Row 8 and toggling key B to select auto, fast, or slow.

S-METER
Is the calibration of the S-meter accurate?

Based upon the evaluation of one unit, the S-meter appears to provide a reasonably good representation of signal strength. Over all bands, it was within a S-unit except on 2 m. It should be noted that the difference in S-units dramatically decreases for lower S-unit values. The signal difference between S-2 and S-3 is less than 2 dB (1/3 of a S-unit). Consequently, use care when interpreting low signal levels with the S-meter.
31/05/01

S-METER
What is a S-unit?

The S-unit is defined to be a 6-dB change in the signal strength. S-9 is typically defined to be 50 microvolts at the antenna input.

SEL KNOB
The SEL knob seems to have some play in it. Is this normal?

YES. In general, this knob has a slight amount of play in it. Remember that it is both a push button and rotary switch.
12/09/01

SERIAL NUMBER
How do you interpret the FT-817's serial number?

Yaesu uses the same serial number scheme for all of their ham gear. The serial number has the form YMLLNNN where Y = the last digit of the year of manufacture, M is a letter representing the month of manufacture with "C" = January, "D" = February, and so on, the lot number is representated by the two digit LL (00 - 99), and NNNN (0001-9999) is the unit number within lot LL. As an example, 0N070145 means December 2000, lot 7, unit 145. The lot number is not linked to the year & month, i.e., LL does not reset to 00 each year. Service bulletins refer to lot numbers.

SPEAKER
My speaker is not centered over the grill holes. Should I fix this mistake made by Yaesu?

NO. It is not a mistake. This is a "trick" used to improve the frequency response of the speaker for better sound.

SPURIOUS SIGNALS
Have any spurious signals been observed?

YES. WB6CKT was the first to report a spurious signal at 7240 kHz (17 Dec 2000). KC3VO reported that this "birdie" can be greatly reduced by adding a third harmonic trap to the reference oscillator output. This spurious signal can be heard without any antenna attached to the FT-817. Others have reported spurious signals in the VFH/UHF bands. No fix from Yaesu has been announced as of yet.
22/03/01

SQUELCH & RF GAIN
The SQL/RF control is fully clockwise and I hear no sounds at all from the rig. What's wrong?

Likely nothing is wrong with the FT-817. First, it should be noted that the default configuration of the US version of the FT-817 is different than the other export versions. This control can be set to either control the squelch or the RF gain (via Menu #45). The default for the US version is RF GAIN. Maximum gain is when the control is fully clockwise. When in the squelch mode, the control knob fully counterclockwise opens the squelch. The RF gain is always set for maximum sensitivity in this setting. If the control knob is fully clockwise and the LED just above the Main Dial is not glowing green, it is likely you are in the Squelch mode. See pages 20 and 67 in the manual for more detail.

SSB FILTER
What are the settings for the SSB filter?
After the SSB filter is installed, set Menu #38 to SSB. Press and hold the F button to exit the Menu. See also TOPIC - FILTERS.