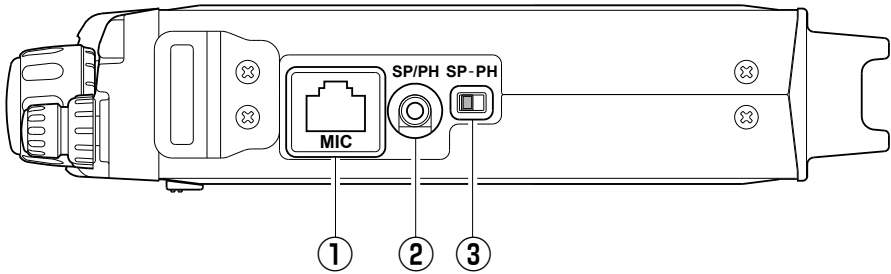


Side Panel Switch & Connectors




① MIC Jack

Connect the supplied **MH-31A8J** Hand Microphone to this jack.

② SP/PH Jack

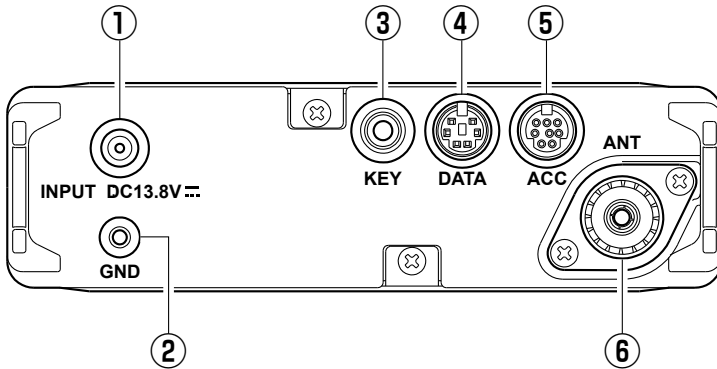
This 3.5-mm, 2-pin jack provides variable audio output for an external speaker (4 Ω - 16 Ω impedance) or earphones. The audio level varies according to the setting of the front panel's **AF** knob.

 When you insert an earphone plug into this jack, the **SP-PH** slide switch (located to the right side of this jack) **MUST BE** set to the “**PH**” position, to prevent the possibility of injury to your ears.

③ SP-PH Switch

If you use earphones with this transceiver, move this switch to the “**PH**” position before inserting the earphone plug into the **SP/PH** Jack, to prevent injury your ears.

Rear Panel Connectors



① **INPUT:13.8V** Jack (+-)

This is the DC power supply connection for the transceiver, used when operating the transceiver with an external power supply. Use the supplied DC cable to connect this jack to the car battery or base station DC power supply, which must be capable of supplying at least 3A @ 8 ~ 16 VDC. This jack is also used for battery charging (when using the supplied **SBR-32MH** battery pack).

② **GND** Terminal

For best performance and safety, this Ground lug may be connected to a good earth ground using a short, heavy, braided cable.

③ **KEY** Jack

This 3.5-mm, 3-pin jack is used for connection to a CW keyer paddle or a straight key.

④ **DATA** Jack

This 6-pin, mini-DIN jack accepts AFSK input from a Terminal Node Controller (TNC); it also provides fixed-level Receiver Audio Output, Push-To-Talk (PTT), Squelch Status, and ground lines.

⑤ **ACC** Jack

This 8-pin, mini-DIN jack provides a closure to ground during transmission, ALC, a transmitter-inhibit pin, and “band data” for connection to an external amplifier. It is also used for Transceiver-to Transceiver Cloning and for control of this transceiver using a personal computer.

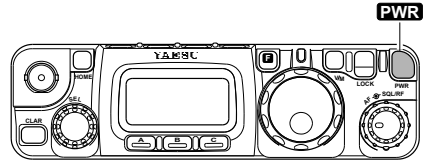
⑥ **ANT** Jack

Connect your HF and/or 50 MHz antenna’s 50 Ω coaxial cable to this **M**-type (“SO-239”) connector.

In its default setting, this jack does not function on 50/144/430 MHz bands. If you want to enable this jack on 50/144/430 MHz bands, recall and change the settings of Menu #07.

TURNING THE TRANSCEIVER ON AND OFF

1. To turn the transceiver on, press and hold in the **PWR** switch for one second.
2. To turn the transceiver off, again press and hold in the **PWR** switch for one second.



The one-second delay helps you avoid accidental switching on (or off) of DC power.

SUPPLY VOLTAGE DISPLAY

When you turn on the transceiver, the DC supply voltage is indicated in the upper right corner of the LCD for two seconds. After this interval, the display will resume its normal indication of the operating mode (VFOa, VFOb, or Memory Channel Number).



To view the supply voltage at any time during operation:

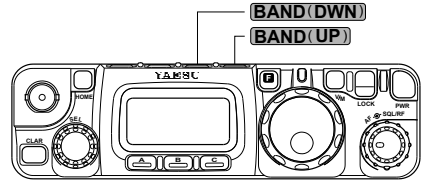
1. Press the **F** key momentarily, then rotate the **SEL** knob to select Operating Function Row 11* [CHG, VLT, DSP] on the display.
2. Press the **B** (VLT) key momentarily to display the supply voltage in the upper right corner of the LCD.
3. To cancel the supply voltage display, again press the **B** (VLT) key.

Remember, the Operating Row Number does not appear on the display.

If you have not operated your **FT-818** within the past week, we recommend that you plug in the Battery Charger, and perform a 10 hour (use for **PA-48B/C/U**) charge cycle, to ensure that the **SBR-32MH** is ready for operation when you are.

OPERATING BAND SELECTION

This transceiver covers an incredibly wide frequency range, over which a number of different operating modes are used. Therefore, this transceiver's frequency coverage has been divided into different operating bands, each of which has its own pre-set channel steps and operating modes. You can change the channel steps and operating mode once you get started, of course, per the next section.



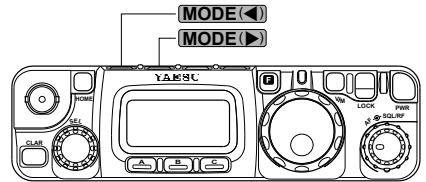
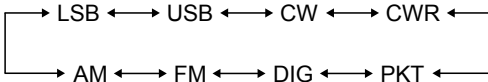
To change the frequency band, press either the **BAND(DWN)** or **BAND(UP)** key to move to the next lower or higher operating band, respectively.

1.8 MHz ↔ 3.5 MHz ↔ 7.0 MHz ↔ 10 MHz ↔ 14 MHz ↔ 15 MHz ↔ 18 MHz ↔ 21 MHz
 ↳ 430 MHz ↔ 144 MHz ↔ 108 MHz ↔ 88 MHz ↔ 50 MHz ↔ 28 MHz ↔ 24 MHz ↳

- 1) *Recalling the 5 MHz band (U.S. model) requires different procedure. See page 20 for details.*
- 2) *VFOa and VFOb are independent VFOs, so they may be set to different bands. See the “Stacked VFO System” discussion on page 19 for details.*

MODE SELECTION

Press either the **MODE(◀)** or **MODE(▶)** key to move among the eight settings for the operating modes, respectively.

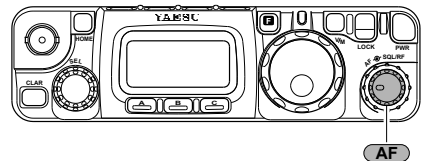


You can also set VFOa and VFOb to different modes in the same band, allowing you to have a “Phone” VFO and a “CW” VFO, for example.

ADJUSTING THE AUDIO VOLUME LEVEL

Rotate the **AF** knob to set a comfortable listening level.

When operating in the “DIG” or “PKT” modes, you may set the **AF** knob to any comfortable setting, or even all the way off, because the output from the **DATA** jack is a fixed-level audio signal.



*Start with the **AF** knob set fully counter-clockwise, especially when using FM (the background noise on FM can be surprisingly loud)!*

MENU QUICK START

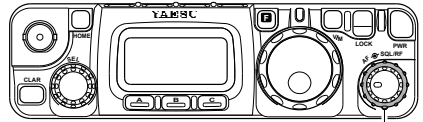
Many aspects of this transceiver's configuration may be customized using the convenient "Menu" system, which allow you to configure many "set and forget" settings just the way you want to. A full discussion of the Menu system beings on page 56; for now, here is a brief discussion on how to change Menu settings:

1. Press and hold in the **[F]** key for one second to enter the Menu mode.
2. Rotate the **[SEL]** knob to recall the Menu item to be changed (for example, Menu #01, which Enables or Disables the Automatic Repeater Shift on the 144 MHz band).
3. Rotate the **[DIAL]** knob to set this feature (in this example, the default setting is "ENABLE," so rotate the **[DIAL]** knob to set this feature to "DISABLE."
4. Press and hold in the **[F]** key for one second to save the new setting and exit to normal operation.

*If you have momentarily pressed the **[F]** key to change an operating function, press the **[F]** key momentarily again (to clear the function indications for the **[A]**, **[B]**, **[C]** keys) before engaging the Menu.*

ADJUSTING THE RF GAIN AND SQUELCH

The **[SQL/RF]** control is configured differently, depending on the country to which the **FT-818** has been exported. In the U.S. version, the default function of this control is "RF Gain." The configuration of the **[SQL/RF]** control is set via Menu #45; see page 65 for details.



If your transceiver is configured for "RF Gain" use, rotating this control fully clockwise in the SSB/CW/Digital modes will provide best sensitivity. To reduce the receiver's RF Gain somewhat, rotate this control counter-clockwise slightly. You will observe an increasing number of bars on the S-meter as you rotate the **[SQL/RF]** control counter-clockwise; this indicates increasing AGC voltage, which is causing the front-end gain to be reduced. In the FM and Packet modes, this control will automatically be set to an "Auto-Squelch" mode, wherein the FM/Packet squelch threshold is pre-set at the factory; the **[SQL/RF]** control still acts as an "RF Gain" control, however, and it normally should be set fully clockwise.

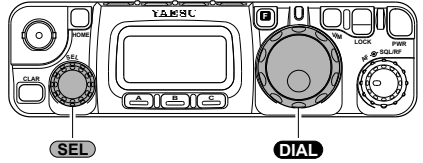
If this control is configured for "SQL" operation, the **FT-818**'s RF Gain will be set for maximum sensitivity in all modes, and the **[SQL/RF]** control will function solely as a Squelch control. In this case, rotate the **[SQL/RF]** control to the point where the background noise is just silenced; this will provide the best sensitivity to weak signals, while keeping the receiver quiet when no signal is received. The LED just above the Main Dial will glow Green when the squelch is opened by an incoming signal or noise.

Note: Squelch operation does not function in the FM Broadcast frequencies.

Battery consumption is significantly reduced if the receiver is squelched, as the audio amplifier stage is shut off when the receiver is muted.

SETTING THE OPERATING FREQUENCY

1. In the “**SSB/CW/DIG**” modes, rotate the **DIAL** knob to set the frequency. Clockwise rotation of the **DIAL** knob increases the operating frequency.
2. In the “**AM/FM/PKT**” modes, rotate the **SEL** knob to set the frequency. Clockwise rotation of the **SEL** knob increases the operating frequency.
3. You may also use the **SEL** knob to adjust the operating frequency in the “**SSB/CW/DIG**” modes. The **SEL** knob provides faster tuning, ideal for making quick changes in frequency when you want to move across the band in a hurry. You can then use the **DIAL** knob to make fine frequency adjustments.
4. If you press the **SEL** knob momentarily, then rotate the **SEL** knob, you can now change the operating frequency in 1 MHz steps, allowing very quick frequency excursions. This can be particularly helpful on the VHF and UHF bands.
5. In step 2 above, it was mentioned that tuning in the “**AM/FM/PKT**” modes is accomplished using the **SEL** knob. By default, the **DIAL** knob is disabled in these modes; if you wish to enable the **DIAL** knob in these modes, use Menu #04; see page 58.
6. The synthesizer steps for the **SEL** knob may be adjusted independently by mode. Use Menu #06 for AM, #30 for FM, and #47 for SSB/CW/Digital. See pages 58, 62, and 65 for details.



*The main **DIAL** knob synthesizer’s tuning rate (the number of steps per rotation of the **DIAL** knob) can be adjusted using Menu #33. See page 63 for details.*

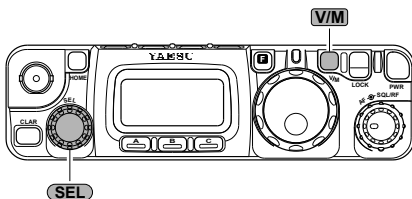
STACKED VFO SYSTEM

1. Press the **F** key momentarily, then rotate the **SEL** knob, as needed, until Operating Function Row 1 [A/B, A=B, SPL] appears on the display.
2. Now press the **A** (A/B) key to toggle between the “**A**” and “**B**” VFOs. There are two such VFOs provided on each Amateur band, so you may set VFO-A to the CW sub-band, and VFO-B to the SSB sub-band, if you like. The operating mode will be preserved, along with the frequency information, on each VFO.

OPERATION ON 5 MHz BAND (U.S. VERSION ONLY)

The **FT-818** includes the capability for transmission and reception on the five spot frequencies assigned to the Amateur Service in the United States. To operate on the 5 MHz band:

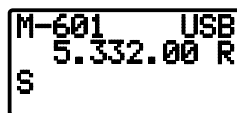
1. Press the **[V/M]** key once to enter the “Memory” mode (a memory channel number “M-*nnn*” will appear on the display in the space previously occupied by “VFOa” or “VFOb”).



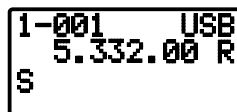
2. Rotate the **[SEL]** knob to select the desired channel (“M-601” through “M-605”), at the factory, with the permitted frequencies in the 5 MHz band.

If you have partitioned your memory channels into Memory Groups via Menu #34, the memory channel numbers for 60-meter operation will be displayed as “I-001” ~ “I-005.” See page 44 for details regarding Memory Group operation, and page 63 for details regarding Menu #34.

3. Pressing the **[MODE<|>]** or **[MODE>|<]** key momentarily, switches the operating mode between SSB and CW.
4. To exit from 60-meter operation and return to the VFO mode, just press the **[V/M]** key (the memory channel number will be replaced by “VFOa” or “VFOb”).



Memory Group “OFF”



Memory Group “ON”

CH No.	Frequency
M-601	5.3320 MHz
M-602	5.3480 MHz
M-603	5.3585 MHz
M-604	5.3730 MHz
M-605	5.4050 MHz

The frequencies and operating mode for 5 MHz band operation are both fixed, and may not be changed.

PSK Operation on 5 MHz Band

1. Press the **[V/M]** key once, if necessary, to enter the “Memory” mode.
2. Rotate the **[SEL]** knob to select the desired channel (“M-601” through “M-605”), at the factory, with the permitted frequencies in the 5 MHz band.
3. Press the **[MODE<|>]** or **[MODE>|<]** key to select the SSB mode.
4. When the “transmit” command is received from the TNC, the **FT-818** transmitter will be engaged. The microphone input is disabled automatically when transmitting the PSK signal.

Likewise, the TNC “receive” command will cause the radio to revert to the receive mode.

You can adjust DATA input level using Menu #25 [DIG MIC].

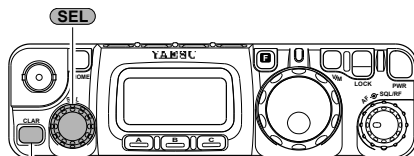
During PSK operation via the rear panel DATA jack, the front panel MIC jack is cut off, so you won't have a “live microphone” problem during data operation.

Set the PSK sub carrier frequency of the TNC to 1.5 kHz.

CLARIFIER (RECEIVER INCREMENTAL TUNING)

The Clarifier (RIT) allows you to set an offset of up to ± 9.99 kHz of the receive frequency relative to your transmit frequency. To achieve a wider offset than this, you may use the “Split” operating mode, described later.

1. Press the **CLAR** switch momentarily to activate the Clarifier function.
2. Turn the **SEL** knob, which allows the receiver frequency to be varied over a range of 9.99 kHz.
3. When the receiving frequency is higher than transmit frequency, the “↑” icon will appear at the right of the frequency display. Similarly, when the receiving frequency is lower than transmit frequency, the “↓” icon will appear at the right of the frequency display.
4. When the receiving frequency is equal to transmit frequency (Clarifier offset is zero) while the Clarifier is activated, the “-” icon will appear at the right of the frequency display.
5. To turn the Clarifier off, again press the **CLAR** switch momentarily. When you turn the Clarifier back on, the offset previously stored will still be applied.
6. To reset the Clarifier offset to zero, turn the Clarifier off, then turn the **DIAL** knob by any amount. The Clarifier will reset to zero after the first “step” of the **DIAL** knob.



```

VFOa     LSB
 7.000.32↑R
S
    
```

[TX < RX]

```

VFOa     LSB
 6.999.03↓R
S
    
```

[TX > RX]

```

VFOa     LSB
 7.000.00-R
S
    
```

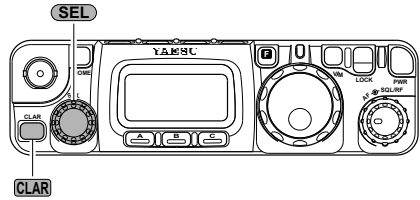

[TX = RX]

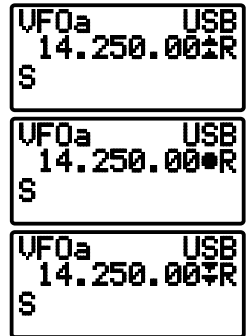
*If you leave the Clarifier on, moving the **DIAL** knob will not cause the offset to be cancelled.*

Receiver Accessories

IF SHIFT

The receiver's IF SHIFT feature is an effective interference-reduction tool, which allows you to shift the passband response higher or lower without changing the pitch of the incoming signal.

1. Press the **CLAR** switch for one second to activate the IF SHIFT feature. A “A line drawing of the receiver's control panel. It features a central LCD display, a large SEL knob on the left, and a CLAR switch on the right. The SEL knob is labeled 'SEL' and the CLAR switch is labeled 'CLAR'. The panel also includes various other controls like 'VOLUME', 'TUNE', 'MODE', 'LOCK', 'METER', and 'SIGNAL'.



*Engaging of the IF Shift feature does not disable the setting of the Clarifier control. With the IF Shift activated, press the **CLAR** switch momentarily to switch to Clarifier operation.*

AGC (AUTOMATIC GAIN CONTROL)

The receiver recovery time constant of the AGC system may be modified to match your operating needs.

1. Press the **[F]** key momentarily, then rotate the **[SEL]** knob, as needed, until Operating Function Row 8 [NB, AGC] appears on the display.
2. Press the **[B]** (AGC) key to toggle the AGC recovery time constant among the following selections:

“AGCauto” → “AGCfast” → “AGCslow” → “AGCoff” → “AGCauto”

where “AGCauto” represents “AGCfast” on CW and DIG(AFSK), and “AGCslow” on the voice modes.

If “AGCoff” selected, the S-meter (which monitors AGC voltage) will cease to function.

NOISE BLANKER

The IF Noise Blanker may be useful in reducing or eliminating some types of impulse noise, especially noise generated by automotive ignition systems.

1. Press the **[F]** key momentarily, then rotate the **[SEL]** knob, as needed, until Operating Function Row 8 [NB, AGC] appears on the display.
2. Press the **[A]** (NB) key to activate the Noise Blanker. The “▶” icon will appear at the right of the “NB” indication.
3. Press the **[A]** (NB) key again to turn the Noise Blanker off.

IPO (INTERCEPT POINT OPTIMIZATION)

The IPO feature bypasses the receiver RF preamplifier, thereby eliminating the preamp’s gain. This feature is not available on the 144 MHz and 430 MHz.

1. Press the **[F]** key momentarily, then rotate the **[SEL]** knob, as needed, until Operating Function Row 7 [IPO, ATT, NAR] appears on the display.
2. Press the **[A]** (IPO) key to bypass the receiver input preamplifier. The “▶” icon will appear at the right of the “IPO” indication.
3. Press the **[A]** (IPO) key once more to re-activate the preamp.

On the bands below 14 MHz, the input preamplifier is rarely necessary, and activation of the IPO feature will provide substantial protection against intermodulation and other problems associated with strong signal input to the receiver. Rule of thumb: so long as the S-meter is moving on background noise, additional front-end gain is not necessary.