

Functional Checks

If the transceiver **FSG 2T** does not operate correctly, check the following:

- Is the required frequency visible? Adjust required frequency or channel number!
- Is onboard supply sufficient? Observe onboard supply indicator particularly during transmit, at least 11 Vdc must be shown!
- Weak RX signal? Adjust **SQ** control counter-clockwise!
- Weak TX signal? Check microphone, mic setting, radio, or antenna system! Lights **TX/RX** LED RED while speaking? The voice volume is too low, check MIC setting. Speak loud and clear while the lips are facing the microphone! The **TX/RX** LED must flicker YELLOW!
- Singing during transmit? Adjust sidetone more quietly; keep microphone in other position!
- Rattles when transmitting? Metal propellers between antenna and ground station!
- Tower hears carrier, but no voice? Check **TX/RX** LED (red or yellow?), microphone and contacts on microphone jack!
- Noisy - distorted - garbled? Suppress electrical interference of motor aircraft or vehicle (generator, regulator), check antenna-, microphone- and radio- connector for proper seat!
- Flashing display, transmitter switches off itself? PTT key sticks! Check PTT key and cables. Transmitter was keyed longer than 2 minutes. Release PTT key, normal operating is possible again. In case of emergency turn radio OFF and switch ON again, this permits another two minutes to transmit "blind".

If service is necessary please consult your authorized dealer or an approved workshop.

How to obtain maximum operating range

The radio operates in the VHF frequency band, this is a Line-Of-Sight (LOS) frequency; therefore, siting of the radio greatly affects its operating range. The longest range is normally obtained when a direct LOS is maintained between the radios and a vertically positioned 50 Ω VHF broad-band antenna is used.

The operating range may be reduced considerably if:

- the aircraft and therefore the radio is on the ground,
- persons nearby or other antennas are screening the avionics antenna,
- large obstacles are between aircraft and ground station,
- electrical interference sources, such as power and telephone lines, radar, welders and electrical generators, are near.

Safety Information

Every radio, when transmitting, radiates energy into the atmosphere that may, under certain conditions, cause the generation of sparks. All users of our radios should be aware of the following warning:

Do not operate radio near flammable liquids or nearby explosive devices.

During normal use, the radio will subject you to radio energy substantially below the level where any kind of harm is reported.

To ensure personal safety, please observe the following simple rules:

- **DO NOT** turn ON the radio while starting or stopping the engines!
- **DO NOT** transmit
 - when persons are very close to the avionics antenna, or even touching it!
 - when antenna or part of it is inside the cockpit or driver's cab!
 - when not actually desiring to transmit!
- **DO NOT** allow children to play with any radio equipment!



CE 0682 ⓘ FC BVYXXXXX

LBA.O.10.911/103 JTSO
DFS-No.: B-785XX/XX

FSG 2T

VHF/AM AIRBAND TRANSCEIVER

118.000 ... 136.975 MHz
25 kHz Channel Spacing

5 Watt

Operating Instructions OM 035/1.00

Date of Issue June 2002

Applies for FSG 2T Article No. F10350

- **Before operating the radio, please read these instructions thoroughly!**
- **Keep for future use!**
- **Please observe the Safety Information!**

Technical data

Frequency range:	118.000 ... 136.975 MHz
Number of channels:	760 / 25 kHz channel spacing, all free selectable
RF output:	≥ 5.0 W into 50 Ω (carrier power), ≥ 18 W (PEP) @ 9 to 16 Vdc
Frequency stability:	< ± 5 ppm (0°C ... +40°C), < ± 10 ppm (-20°C ... +55°C)
Sensitivity:	≤ 1 μV / 50 Ω (for 6 dB S/N with 1 kHz, 30% modulation)
Audio output:	≥ 4 W into 4 Ω and ≥ 50 mW into 200 Ω (phone)
AF AGC:	≤ 1.5 dB, m = 30% ... 90%
Audio distortion factor:	≤ 10% THD for 1 kHz
Supply voltage:	11.0 to 16.1 Vdc, 9.0 to 11.0 Vdc emergency operation below 8.5 ... 9 Vdc and above 16.1 Vdc automatic turn-off
Current consumption @ 13.8 Vdc:	≤ 1.4 A Transmit / 70% modulation ≤ 0.9 A Receive, or 250 mA for Intercom and/or AF external ≤ 40 mA Standby, add 60 mA for backlight
Fuse:	3.15-Amp quick acting, or automatic circuit breaker 3-Amp
Temperature range:	-20° C ... +55° C / -4°F ... +131°F; up to +70°C / +158°F for ½ hr
Overall dimensions:	63 mm × 60 mm × 226 mm (W × H × L)
Weight:	approx. 600 grams/1.32 lbs. w/out harness and mating connectors
Additional features:	20 pilot-programmable, non-volatile memory channels; 2 operating modes; voice activated Intercom; separate inputs for up to two non-amplified dynamic and/or Standard carbon microphones; transmit Sidetone via headphone; onboard supply display; three-color status LED; TX Time-out-Timer; error code. OPTION: AF external input.

Subject to technical changes

A/N D10049

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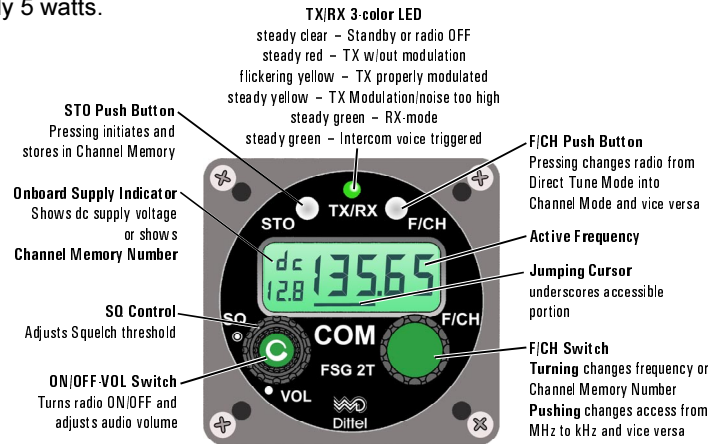
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General Information

The radio **FSG 2T**, article-no. F10350, is a panel-mounted VHF AM Transceiver covering the airband frequency range of 118.000 MHz to 136.975 MHz. The **FSG 2T** radio is capable of receiving and transmitting on 760 channels in the 25 kHz channel spacing. Operating mode is Simplex, i. e. receiving or transmitting only in turns. The transmitter output power is approximately 5 watts.



Selecting Active Frequency or Memory Number - Radio Communication

1. Turn the radio **FSG 2T** ON by rotating the VOL knob clockwise. The TX/RX LED and all segments of the display light up. For a short time the software version is visible. The Operating mode and frequency used last are displayed, the radio is ready for operation.
2. To alter the operating mode: Press the F/CH button once.
3. Selecting the appropriate active frequency/channel number depends on operating mode:

Direct Tune Mode Standard



Use the F/CH switch to adjust the underscored portion of the frequency to the desired frequency. Press the same switch and note that the cursor has jumped to underscore the other portion of the frequency. Rotate the F/CH switch to select the desired frequency.

This is the new **Active Frequency!**

Channel Mode



Condition: The appropriate operating frequency is stored already in a channel memory (refer to **Memory Programming**).

Use the F/CH switch to adjust the underscored Channel Memory Number to the desired memory number.

The frequency shown at the display is the **Active Frequency!**

Receive (Listen)

1. If the operating mode shall be changed: Press once the F/CH button.
2. If the Active Frequency shall be changed: refer to **Selecting Active Frequency or Memory Number**
3. **DO NOT** press the PTT (push to talk) key if you want to receive! A RED TX/RX LED **must not** appear!
4. **SQUELCH:** From the full counter-clockwise position turn the **SQ** Control slowly clockwise till RX noise stops. Standard position = ●. Normal signals are received, weak signals and interfering pulses are disabled. Set the volume of loudspeaker or headphone to a comfortable level by rotating the VOL knob.

5. Weak signals can be received by turning the **SQ** Control counter-clockwise. Then typical RX noise is heard during communication breaks.

Turning the **SQ** Control clockwise switches the squelch circuit ON again.

Transmit (Talk)

1. If the operating mode shall be changed: Press the F/CH button once.
2. If the active frequency shall be changed: refer to **Selecting Active Frequency or Memory Number**.
3. Transmit only on a free channel (no communication audible).
4. Press and hold the PTT (push to talk) key, the TX/RX LED lights RED. Talk in a loud, clear voice with the microphone one or two inches from your lips. Make each transmission as brief as possible. While speaking the TX/RX LED **must flicker YELLOW**.
5. Release the PTT key to end the transmission and to open the channel for reception; the TX/RX LED must turn to GREEN during Receive or clear during Standby.

Onboard Supply Indicator

The onboard supply voltage is permanently monitored and displayed in the Direct Tune Mode. At a dc level below 11 Vdc the dc display starts flashing as a warning!

Provided:
12 Vdc Battery, 6.5 Ah



flashing dc only while transmitting:	ca. 4 hours operation left
flashing dc also during receive:	ca. 45 min operation left, reduce redundant transmitting!
Short-time flashing dc during Standby:	ca. 45 min left in Standby condition Cease transmitting!
Continuous flashing dc during Standby:	Emergency Operation! Radio will soon switch OFF itself.

If a Low Supply Condition occurs while in the Channel Mode a toggling sequence is displayed: it shows 25 second Channel Mode followed by 5 second Direct Tune Mode with flashing dc indication!

Memory Programming

1. Memory programming is disabled at a supply voltage below 11 Vdc!
2. Adjust the desired frequency to be programmed at the display!
3. Initialize storing by pressing the STO button. Frequency should be stored within 1 min.
4. Release the STO button. The dc display changes to a flashing 'CH' and an underscored channel number which was used last. Use the F/CH Switch to select the desired memory location. A previously stored frequency will be overwritten without warning!
5. Press the STO button for at least 1 second. The flashing 'CH' should change to 'St' indicating that it has been stored into memory successfully.
6. Release the STO button and the radio returns to Direct Tune Mode. The programmed frequency is now the Active Frequency.

Voice Controlled Intercommunication (with headsets only)

If available, turn on INTERCOM switch (instrument panel mounted). Aircraft speaker = OFF. Without switching over intercommunication may be carried out as well as transmitting (press PTT!) or receiving. During IC and proper microphone signal the TX/RX LED must light steady GREEN. Adjust IC volume to a comfortable level with the ON/OFF-VOL switch! During RX (and AF ext.) IC volume is reduced.

Backlighting

If available, turn on/adjust illumination switch or dimmer (instrument panel mounted).

Turning OFF

Turn off the radio **FSG 2T** by rotating the VOL knob fully ccw to the ● (OFF position). The frequency display disappears. The operation mode and frequency/memory number used last are stored.