

Technical Specifications and Operation: AirLite Pro™

Scanning Aviation Receiver with Dual Reception™

Last updated by James Wiebe, Aug 24, 2022

The AirLite Pro receives all aircraft channels between 118 and 137 mhz. Standard US spacing of 25khz is supported. Significantly, this new product also provides simultaneous reception on two different frequencies, allowing a listener to monitor frequencies such as tower and ground at the same time. We call this feature “Dual Reception™”.

The feature list includes:

- Dual Reception – monitor two channels
- Ham VHF / UHF Tx/Rx ⁽¹⁾
- Storable Channel Memory Locations – allows scanning of the user’s preselected list of frequencies
- Support for Euro Aviation
- FM Radio, for leisure listening
- NOAA Weather Channels
- VOR Rx (Voice) support for 108 – 118 Mhz ⁽²⁾

This document provides the specifications and simplified operation of AirLite Pro, with an emphasis on the Aviation features.

Specifications:

- Dual Reception (two independent frequencies simultaneously monitored)
- 118 – 136 Mhz Aircraft Receive (does not transmit)
- 108 – 118 Mhz Aircraft Receive (to support VOR audio) (does not transmit)
- 136 – 174 Mhz (Rx / Tx) (Ham radio, NOAA, Marine)
- 220 – 260 Mhz (Rx / Tx) (Ham radio)
- 350 – 390 Mhz (Rx / Tx) (Ham radio)
- 400 – 520 Mhz (Rx / Tx) (Ham radio)
- Frequency Mode (direct frequency entry)
- Channel Mode (rotate through pre-stored channels)
- FM Radio



AirLite Pro™ demonstrating dual channel simultaneous aircraft reception

- Frequency Step: 2.5K / 5K / 6.25K / 10K / 12.5K / 20K / 25K / 50K
- Direct Frequency Input via numerical pad
- Programming via Computer Application
- Automatic Backlight
- Various Scanning modes are supported: via Time / Carrier / Search
- 256 Memory channels
- Charging stand is included. 4 hour charge time
- Earbud is included
- Programming USB cable (type “k”) is included
- Speaker
- Adjustable Squelch
- Sensitive operation
- When used as a receiver, runs all day on a single charge

Quick Start:

There is a learning curve associated with the usage of this product. Study and practice the usage before relying on it.

BASICS:

- Ensure that the battery is charged prior to first usage. It will take up to 4 hours to charge the battery with the provided desktop charger station.
- Connect the antenna before usage.
- Twist the volume knob to turn the unit on.

CHANGING BETWEEN TOP / BOTTOM; CHANGING FROM FREQUENCY TO CHANNEL MODE:

- Depressing **P1** causes the display to switch between Top or Bottom screen. If you want to change the frequency or channel on the **top** screen, you must be on the **top** screen. If you want to change the frequency or channel on the bottom part of the screen, you must be on the bottom part of the screen. Toggling **P1** will cause top and bottom precedence to switch back and forth.
- Depressing **P2** causes the unit to switch between Frequency and Channel mode. In Frequency mode, the frequency is directly input via the numeric keypad. In Channel mode, the channels may be selected by twisting the top center knob.

ADJUSTING VOLUME:

- Twisting the volume knob will change the volume of the radio.



ENTERING A NEW FREQUENCY:

- Make sure you are in frequency mode! Push **P2** repeatedly until the voice says: “Frequency Mode”.
- Then, enter a frequency via the keypad.
- You may also twist the center knob to change frequency. The stepping value is preset to 25K, for standard aircraft communication channel spacing.

PERMANENTLY SAVING A FREQUENCY:

- Depress the menu button. It is the button with an “OK” printed on it. The tiny voice will announce, “Menu”.
- There are about 50 things in the menu that can be adjusted. To save a frequency, we only need to know two of the menu items, and they are: MEMORIZE CHANNEL and DELETE CHANNEL. The scroll up and down arrows allow you to scroll between the various items in the Menu selections.
- MEMORIZE CHANNEL is menu item #2. Depress the menu button again to enter this menu item. You can then scroll through all 256 available memory locations. Hit the OK button again to save your current frequency to a channel. After memorizing the channel, the backup / home button to the right will step you backwards out of the menu.
- DELETE CHANNEL is menu item #3.
- If a channel is already saved, it will show up with a “CH” ahead of the channel. Channels must be DELETED before they can be saved over. Operation is identical to MEMORIZE CHANNEL.

SCANNING:

- If scanning is begun in Frequency mode, scanning will occur throughout the RF spectrum, changing by step value.
- If scanning is begun in Channel mode, scanning will occur by stepping through the list of your MEMORIZE channels.
- The lower button on the left side of the radio starts and stops the scanning function.

FM RADIO:

- The upper button on the left side of the radio turns on the FM radio. Adjust the frequency by twisting the middle knob or directly entering a frequency.

NOAA Weather:

- While in frequency mode, directly enter the frequency of your desired NOAA weather station. You may save it as Channel if you desire.

SQUELCH:

- Squelch is menu item #0.
- To enter menu mode, press the menu / OK button.
- Scroll up or down to menu item #0.
- Depress the OK button again.
- Scroll up or down to your desired squelch level.
- Depress the backup / exit button to resume normal operation.

VOR AUDIO:

- When in frequency mode, enter the desired VOR frequency.
- The frequency may be permanently saved as a channel.

EUROPEAN (8. 33khz) SUPPORT:

- When in frequency mode, enter the first 6 digits of the frequency. For instance, to tune 122.00833, enter 122.008. The VFO (Variable Frequency Oscillator) inside the radio will select the closest available value, which is usually within 500 hertz of the target European frequency. In the example, the radio will tune to 122.00875.

HAM FEATURES:

- The usage of this radio is intuitive to ham operators familiar with other similar ham radios. Programming is recommended via the Windows application.
- The transmit power is 4.4 watts in High; 1.4 watts in Low.
- The significant application programming screens are shown below.

| Ch... | Tx Enable | Rx Freq | Rx QT/DQT | Tx Freq | Tx QT/DQT | Power | W/N | PTT-ID | Busy | Scan Add | Signal | Name | Enc... | Learn | Code |
|-------|-----------|-----------|-----------|-----------|-----------|-------|-----|--------|------|----------|--------|------------|--------|-------|------|
| 1 | Yes | 122.70000 | OFF | 133.85000 | OFF | H | W | OFF | OFF | ON | 1 | KAAA Un... | OFF | OFF | |
| 2 | Yes | 118.20000 | OFF | 118.50000 | OFF | H | W | OFF | OFF | ON | 1 | ICT Tower | OFF | OFF | |
| 3 | Yes | 126.60000 | OFF | 126.60000 | OFF | H | W | OFF | OFF | ON | 1 | ICT West | OFF | OFF | |
| 4 | Yes | 133.80000 | OFF | 133.80000 | OFF | H | W | OFF | OFF | ON | 1 | EC Appr | OFF | OFF | |
| 5 | Yes | 134.80000 | OFF | 134.80000 | OFF | H | W | OFF | OFF | ON | 1 | ICT Lo | OFF | OFF | |
| 6 | Yes | 134.85000 | OFF | 134.85000 | OFF | H | W | OFF | OFF | ON | 1 | ICT Hi | OFF | OFF | |
| 7 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | |
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Figure 1: Editable Channel List

RADIANT TECHNOLOGY

The image shows a software window titled "Optional Feature" with a standard Windows-style title bar (minimize, maximize, close buttons). The window is divided into several sections of settings, each with a "Default" button at the bottom.

- General Settings:** Time Out Timer(TOT)[s] (120), Squelch Level (1), VOX (OFF), Vox Delay (1.5s), Voice Prompt (OFF), Auto BackLight (10s), WorkMode A (CH Mode), WorkMode B (CH Mode), Scan Mode (CO), Battery Save (OFF).
- A Band Freq Mode:** Freq (134.87500 MHz), Tx Power (High), Rx QT/DQT (OFF), Tx QT/DQT (OFF), W/N (Wide), Step (25.00 KHz), SFT_D (OFF), Offset (00.0000 MHz), Signal Code (1), Encryption (OFF).
- B Band Freq Mode:** Freq (133.85000 MHz), Tx Power (High), Rx QT/DQT (OFF), Tx QT/DQT (OFF), W/N (Wide), Step (25.00 KHz), SFT_D (OFF), Offset (00.0000 MHz), Signal Code (1), Encryption (OFF).
- Display and Sound Settings:** Channel_A Display (CH + Name), Channel_B Display (CH + Freq), DTMF ST (KB ST+ANI ST), PTT Delay (600ms), Local ID (36), Rx Timer (OFF), Skey Short (FM), Skey Long (Search), Skey3 Short (Scan), Tail Noise Clear (OFF), RPT Noise Clear(ms) (400ms), RPT Noise Delay(ms) (400ms), Power On Msg (picture2), Menu Auto Quit (10s), Keyboard Auto Lock (OFF), ANI Display (ON), Save QT Scanned (All), Tone (1750Hz).
- Alarm and Radio Settings:** Alarm Sound (checked), Alarm Mode (CODE), Roger (OFF), Dualstandby Tx (A), TDR (checked), FM Radio (checked), KB_Lock (unchecked), BCL (unchecked), GPS (checked), Beep (unchecked), Enable Tx(350M) (checked).

Buttons: Default, Close

Figure 2: Editable Features

Important product footnotes:

⁽¹⁾ This product is primarily an aircraft receiver. ***It is not an aircraft transceiver.*** It does, however, offer a complete range of market competitive features for the amateur radio (ham) market, and these are described in more detail on our website. Although it is not an aircraft transceiver, *it is a ham radio transceiver.*

⁽²⁾ Many VORs also have voice capability that can identify the VOR or give the pilot weather information, including HIWAS (hazardous in-flight weather advisories), TWEBs (transcribed weather broadcasts), and instructions from flight service stations.

All features and pricing are subject to change without notice.

About RADIANT Technology Instruments

RADIANT Technology is starting anew, after a fire ended most business activities in 2019 and after the Covid pandemic. RADIANT Technology is focused on providing products which “Enable Adventure” for all who enjoy and use aviation: pilots, passengers, radio listeners and every adventurer at heart.

About James Wiebe

James Wiebe is a serial entrepreneur, with RADIANT Technology being his latest startup (or startover). In the 80’s and 90’s, James grew Newer Technology to be the largest Macintosh CPU upgrade company on the planet (over 250k accelerators sold; Steve Jobs was not a fan). In 2000, James started and eventually sold WiebeTech, a forensic technology company. James holds four patents and is an instrument rated pilot with about 2000 flight hours in many different aircraft. James’ proudest achievement is being the father of two twin grandbabies, with a third coming later in 2022. James is supported by Kathy, who provides support, guidance and love. James is also supported by a little dog named Cocoa, who wandered into his and Kathy’s lives after a tough start to life in the wild fields near Wichita, KS.

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