



DX15

Handheld VHF Air Band Transceiver

User Guide

P/N 101219-000, Revision B

Copyright © 2011 by Dynon Avionics, Inc

Contact Information

Dynon Avionics, Inc.

19825 141st Place NE

Woodinville, WA 98072

Phone: (425) 402-0433 - 7:00 AM – 5:00 PM (PST, M-F)

Fax: (425) 984-1751

Email: support@dynonavionics.com

Dynon Avionics offers online sales, extensive support, and continually-updated information on its products via its Internet sites:

- www.dynonavionics.com: Dynon Avionics primary web site; including:
- docs.dynonavionics.com: Complete product documentation.
- downloads.dynonavionics.com: Software downloads.
- support.dynonavionics.com: Support resources.
- store.dynonavionics.com: Dynon Avionics' secure online store for purchasing all Dynon products 24 hours a day.
- wiki.dynonavionics.com: Dynon Avionics' Documentation Wiki provides enhanced, extended, continuously-updated online documentation contributed by Dynon employees and customers.
- forum.dynonavionics.com: Dynon Avionics' Internet forum where Dynon customers can interact outside of telephone support hours.
- newsletter.dynonavionics.com: Dynon Avionics' email newsletter.
- blog.dynonavionics.com: Dynon's blog, where you can find new and interesting Dynon-related content.

Copyright

© 2011 Dynon Avionics, Inc. All rights reserved. No part of this manual may be reproduced, copied, transmitted, disseminated or stored in any storage medium, for any purpose without the express written permission of Dynon Avionics. Dynon Avionics hereby grants permission to download a single copy of this manual and of any revision to this manual onto a hard drive or other electronic storage medium to be viewed for personal use, provided that such electronic or printed copy of this manual or revision must contain the complete text of this copyright notice and provided further that any unauthorized commercial distribution of this manual or any revision hereto is strictly prohibited.

Information in this document is subject to change without notice. Dynon Avionics reserves the right to change or improve its products and to make changes in the content without obligation to notify any person or organization of such changes. Visit the Dynon Avionics website (www.dynonavionics.com) for current updates and supplemental information concerning the use and operation of this and other Dynon Avionics products.

Registering Your DX15

Please take a moment to register your DX15 Handheld VHF Air Band Transceiver at dx15.dynonavionics.com/register. Registering your product with Dynon ensures that your contact information is up-to-date. This helps verify product ownership and can expedite warranty claims. You can also optionally sign up to receive other Dynon news and product announcements. Dynon will not share your contact information with third parties or send you announcements without your explicit consent.

Limited Warranty

Dynon Avionics warrants this product to be free from defects in materials or workmanship for three (3) years from date of shipment. Dynon Avionics will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor. The customer is, however, responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident, improper installation or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE, AND IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING ANY LIABILITY ARISING UNDER WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL DYNON AVIONICS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Dynon Avionics retains the exclusive right to repair or replace the instrument or firmware or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

Dynon Avionics' products incorporate a variety of precise, calibrated electronics. Except for replacing the battery pack and other external accessories, this device does not contain any field/user-serviceable parts.

Units that have been found to have been taken apart may not be eligible for repair under warranty.

Table of Contents

Contact Information.....	iii
Copyright.....	iv
Registering Your DX15.....	iv
Limited Warranty	v
1. Safety and Licensing Information	1-1
Important Radio Frequency Energy Safety	1-1
Additional Important Safety Information	1-1
FCC Licensing Requirements (USA Only).....	1-2
2. Introduction	2-1
Visual Tour	2-2
Unpacking Your DX15.....	2-4
Assembling Your DX15	2-5
3. Basic Functions	3-1
Charging the Battery	3-1
Power On / Off	3-2
Volume Adjustment	3-2
Transmitting	3-3
Backlight On / Off.....	3-3
Setting Squelch.....	3-3
Emergency Frequency (121.500 MHz)	3-5
Entering a Frequency Directly	3-5
Keypad Lock	3-6
4. Features In Depth	4-1
Band Scanning.....	4-1

Recalling Recently Used Frequencies.....	4-2
Using Memory Channels	4-3
Key Beep Volume Adjustment	4-7

5. Advanced Settings **5-1**

Option: Assume Leading 1 During Frequency Entry	5-1
Option: Side Buttons Used for Direct Squelch	5-2
Option: Backlight Behavior	5-3
Option: Memory Bank Scanning	5-3
Option: Disable Transmit	5-4
Option: Stop Transmitting on Stuck Mic	5-4

6. Appendices **6-1**

Appendix A: DX15 Specifications	6-1
Appendix B: Troubleshooting.....	6-3
Appendix C: Requesting Support / Repair.....	6-4
Appendix D: Factory / Reset Defaults	6-6
Appendix E: Accessories.....	6-7
Appendix F: Using the (optional) Desktop Rapid Charger.....	6-8
Appendix G: Using the (optional) Vehicle Power Adapter.....	6-9
Appendix H: Connecting a Headset / Push-to-Talk Switch.....	6-10
Appendix I: External Antenna	6-11

1. SAFETY AND LICENSING INFORMATION

Important Radio Frequency Energy Safety



While transmitting, your DX15 Handheld VHF Air Band Transceiver emits Radio Frequency (RF) Electromagnetic Energy. Please take the time to familiarize yourself with the properties of and the proper methods of using this device.



Maintain at least a 3-inch (5 cm) gap between this device and your body while transmitting.



Do not transmit without an antenna attached. Transmitting without an antenna attached may cause damage to the DX15.



Do not transmit, or allow this device to transmit in areas or conditions that are inherently hazardous in the presence of radio transmissions, such as hospitals, in the vicinity of blasting (blasting caps), and around robotic systems.

Additional Important Safety Information



Your DX15 Handheld VHF Air Band Transceiver uses Li-Ion batteries. Li-Ion batteries are safe when used as directed, but can also be hazardous if they are not used in accordance with their instructions.



Only charge batteries with Dynon Avionics chargers. Using non-Dynon chargers to charge Dynon batteries could cause them to explode.



Do not expose Dynon Li-Ion batteries to fire or otherwise expose them to excessive heat.



Do not short the contacts of your Dynon battery. This is most often accidentally done with small, loose metallic objects, such as coins or keys.



Please dispose of non-functional batteries in a responsible manner. The batteries for your DX15 are very similar to mobile phone batteries and can likely be recycled wherever mobile phone battery recycling is available. For

Safety and Licensing Information

a list of recycling locations in your area (USA only), call 1-800-8-BATTERY or see the Call 2 Recycle website at www.rbrc.org.



This device is designed to operate safely only with Dynon-supplied batteries and power supply accessories.



Do not operate this device without the supplied Dynon battery pack installed.



Do not operate Dynon power supply accessories at input voltages other than those recommended.



This device is not waterproof. While care has been taken in its design to operate safely and reliably in conditions such as light rain, it is not designed to be used in severe wet conditions.



Do not operate this device below -4°F (-20°C) or above 131°F (55°C). Prolonged sunlight exposure may result in excessive high temperatures.



Do not drop this device, especially onto hard pavement or from great height.



Do not operate this device at high volume levels when using a headset. If you experience ringing in your ears, reduce the volume or do not use this device.



Do not attempt to modify or repair this device. There are no user-serviceable parts inside. Doing so will void the warranty and may result in unauthorized transmissions.

FCC Licensing Requirements (USA Only)

Per the FCC:

(http://wireless.fcc.gov/services/index.htm?job=operations&id=ground_stations)

You may only use your hand-held aviation VHF radio from your aircraft, or under the authority of an FCC ground station authorization. Ground station authorizations are usually only issued to aviation service organizations located on airports, businesses engaged in pilot training,



aircraft manufacturers, or persons engaged in chase activities related to soaring and ballooning.

Per the FCC

(http://wireless.fcc.gov/services/index.htm?job=licensing&id=aircraft_stations)

... you do not need a license to operate a two-way VHF radio, radar, or emergency locator transmitter (ELT) aboard aircraft operating domestically. All other aircraft radio stations must be licensed by the FCC either individually or by fleet.

2. INTRODUCTION

Congratulations on your purchase of the Dynon Avionics DX15 Handheld VHF Air Band Transceiver.

Your DX15 is a compact, easy-to-use handheld transceiver for aviation use, and includes the following standard features:

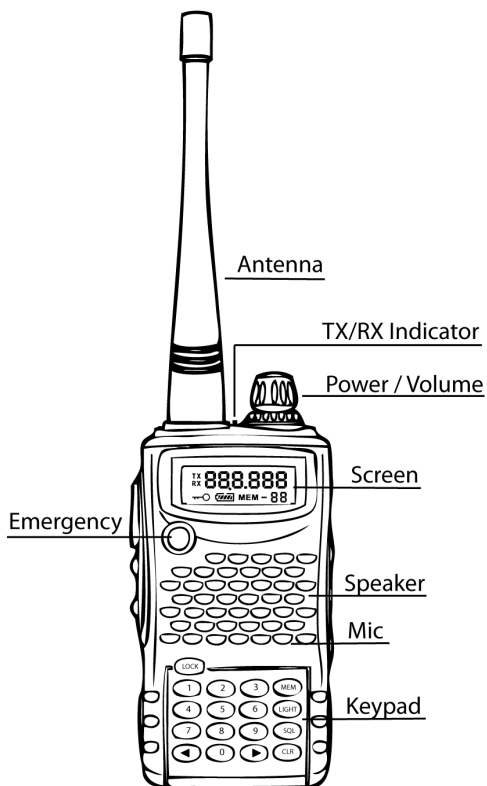
- Compact, handheld size
- High Capacity Li-Ion 1300 mAh Battery Pack
- Backlighting of both the display and keypad
- Dedicated Emergency button for quick tuning of 121.5 MHz
- Keypad Lock
- On-screen battery capacity meter
- Adjustable side tone for (optional) headset connection
- Instant recall of the last 10 most recently used frequencies
- Scanning of entire air band, memory channels, and most recently used frequencies
- External power, headset/microphone/PTT, and antenna connections

Your DX15 is an ideal transceiver for:

- Keeping in your flight bag - just in case
- Listening to the tower at air shows
- Family members listening to flight communications
- Monitoring nearby airfields
- Backup aircraft communications
- Small and light for ultralight and experimental aircraft

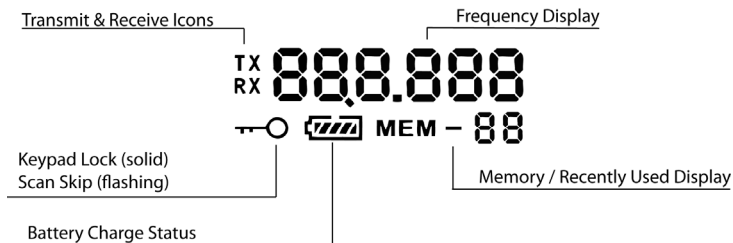
Visual Tour

FRONT VIEW

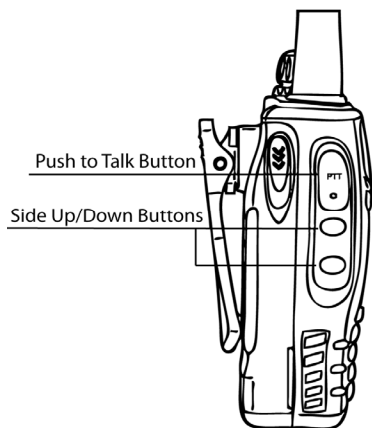




SCREEN DETAIL

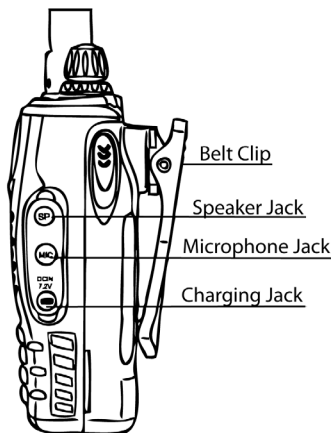


LEFT SIDE



Note: Though they are not labeled on the radio, the Side Up/Down Buttons will be shown as ▲ and ▼ throughout this guide.

RIGHT SIDE



Unpacking Your DX15

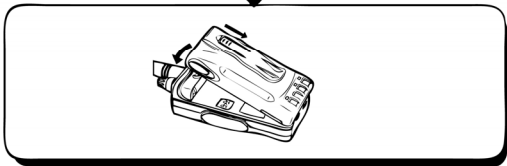
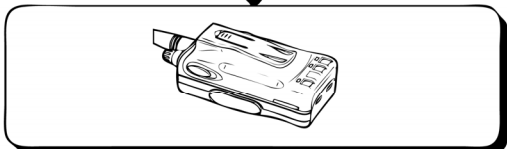
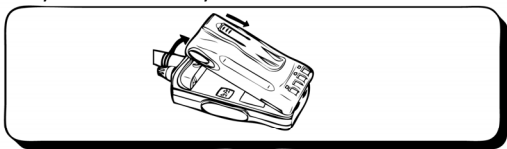
Inside your DX15 box, you should find the following:

- 101204-000 DX15 Handheld VHF Air Band Transceiver
- 100993-000 Flexible Antenna
- 100965-000 7.4V 1300mAh Li-Ion Battery
- 101299-000 Belt Clip
- 101298-000 Lanyard
- 100846-000 AC-to-DC Wall Adapter (charger)
- 101219-000 DX15 User Guide



Assembling Your DX15

- Screw the supplied antenna onto the antenna connector, clockwise, using light finger pressure (do not tighten excessively).
- Attach the supplied battery pack by mating the two tabs on the bottom of the battery with the associated slots at the bottom of the battery holder on the radio.
- Gently, click the upper part of the battery into place.
- The two spring-loaded latches on the sides of the battery should now be in the up position.
- Attach the belt clip to the battery pack.
- Insert the supplied lanyard into the lanyard tab on the DX15.



Your DX15 is now ready for use. Note that the Li-Ion battery is shipped only partially charged. Dynamil recommends that you fully charge your DX15 as described in the Charging the Battery section below.

3. BASIC FUNCTIONS

Charging the Battery

Your DX15 is equipped with a rechargeable Li-Ion battery pack.

To charge your DX15's battery:

- Connect the AC-to-DC Adapter to the DX15's DC input jack as illustrated.
- Plug the AC-to-DC Adapter into an 110V AC outlet.

When your DX15 is connected to external power, it will charge the battery whether your DX15 is turned on or off. During charging the Battery Charge Icon will flash to indicate that it is charging. When charging is complete, the Battery Charge Icon will remain solid and icon will appear full.

The Battery Charge Icon visually indicates the charge remaining in the battery.

A discharged battery will require between 6-10 hours to fully charge via the AC-to-DC Adapter. While the DX15 can be used to receive and/or transmit while charging, such usage will increase the time it takes for the battery to fully charge.

If you are using your DX15 as a backup transceiver that will be stored without being used for long periods, the battery will hold its charge longest if it is disconnected from the radio. Store the battery so that its electrical contacts are not able to be shorted by surrounding metal objects. Recharge your battery every few months to ensure it is full in an emergency.

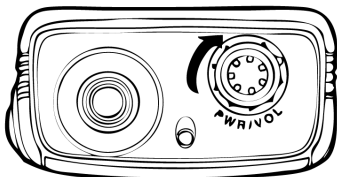


As with all rechargeable batteries, the usable capacity of your DX15's battery will decrease with time and usage. Replacement batteries can be obtained from Dynon Avionics and authorized dealers.

Power On / Off

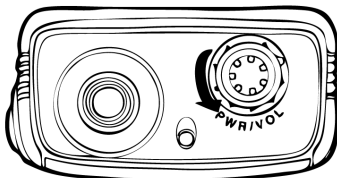
POWER ON

Rotate the PWR/VOL knob clockwise until it clicks. The TX/RX indicator, backlighting, and all display elements will illuminate for a moment to indicate that they are working.



POWER OFF

Rotate the PWR/VOL knob counter-clockwise until it clicks.



Volume Adjustment

While turned on, rotate the PWR/VOL knob clockwise to increase volume, counter-clockwise to decrease volume.

Note: It may be useful to adjust Squelch low so that the speaker is active during Volume Adjustment. See the section Setting Squelch for details.



Transmitting

To transmit on the tuned frequency, press and hold the Push-to-Talk button on the left side of your DX15 while speaking into the microphone on the front of the transceiver.

Note: If the “Stop Transmitting on Stuck Mic” option is turned on, transmitting will cease after a continuous 30 second hold of Push-to-Talk (either the radio-mounted button or any externally connected Push-to-Talk button). See the Advanced Settings section of the manual for more information

Backlight On / Off

The backlight can be turned on or off by pressing the LIGHT button at any time.

SETTING BACKLIGHT BRIGHTNESS

To adjust the brightness of the backlighting:

- Push and hold the LIGHT button until it says LitE-X, where X represents the current backlight level between 1 and 9.
- Adjust the backlight level by using the ◀ and ▶ buttons.
- To exit, push the LIGHT or CLR button, or wait a few seconds.

Note: The backlight can also be set to turn on for 5 seconds with each button press. See the section Advanced Settings for details.

Setting Squelch

Squelch silences the speaker, eliminating the background noise which is present on all frequencies when no signal is being received. Squelch is

adjusted to keep the speaker muted except when a signal is being received on the frequency that is being monitored.

Note: The functionality of the side ▲ and ▼ buttons can optionally be set to adjust Squelch all the time. See the Advanced Settings section for details. These instructions reflect the factory default behavior of the side ▲ and ▼ buttons.

To Set Squelch:

- Push the SQL button.
- Using the ◀ and ▶ buttons on the keypad or the side ▲ and ▼ buttons, adjust the squelch setting from 0 to 24.
- Setting Squelch to 0 results in static being heard all the time, even when no signal is being received (no Squelch being applied). This will drain the battery more quickly.
- Setting Squelch to 24 means that only a signal that is extremely strong will break Squelch (un-mute the speaker) and be heard.
- Typically, Squelch is set to the lowest setting that causes all background noise to be muted, but allows desired transmissions to be received. The Squelch setting may need to be adjusted in different environments and conditions.

Exit Setting Squelch mode by:

- Pushing the SQL or CLR buttons on the keypad.
- Waiting a few seconds.
- Pushing the Emergency button.
- Pushing the Push-to-Talk button.

The previous menu or mode will then continue.

Note: Squelch can be changed in any mode or menu.



Emergency Frequency (121.500 MHz)

Push and hold the orange Emergency button. The digits

1 2 1 . 5 0 0

appear sequentially on the display as if they are being quickly typed.

When the last digit has appeared, 121.500 is tuned, and your DX15 is now ready to receive and transmit on 121.500 MHz.

Note: If the Emergency button is released before all digits of 121.500 are displayed, 121.500 will not be tuned.

Entering a Frequency Directly

If the radio is in another mode, such as Scan, Memory Recall mode or Most Recently Used Frequency Recall mode, exit these modes first by pushing the CLR button on the keypad in order to enter a frequency. Then, simply type out the full frequency on the keypad.

EXAMPLE

To enter the frequency 128.775, you would enter:

1 2 8 7 7

The display will then read:

128.775

The decimal point (".") is automatically entered for you. The last digit is automatically rounded to the nearest 0.025 MHz (25 KHz) since there is only one possible valid air band frequency once the first five digits are typed.

This frequency is now tuned and you can receive and transmit to other radios that are also tuned to the same frequency.

Note: The "Assume leading 1 / 100 MHz" setting will change this behavior - see the Advanced Settings section for details. The instructions above reflect the factory default behavior of the "Assume leading 1 / 100 MHz" function.

Keypad Lock

Keypad Lock is used to protect against accidental button pushes, such as when your DX15 is worn on a belt and you want to monitor only a single frequency.

To activate Keypad Lock:

- Press and hold the LOCK button.
- After a moment, the Keypad Lock icon will appear on the display.

Keypad Lock inhibits all keypad buttons, except for the following:

- Push-to-Talk (PTT) button works normally.
- Emergency button works normally.
- LIGHT button works normally.

To cancel Keypad Lock:

- Push and hold the LOCK button until the Keypad Lock icon disappears.
- All keypad buttons / behaviors will now function normally.

Note: The Keypad Icon, when flashing, is used to denote a Memory Channel that will be skipped when scanned. See the Memory Channel section for details about that behavior.

4. FEATURES IN DEPTH

Band Scanning

Band scanning rapidly checks every frequency within your DX15's operating range of 118.000 MHz through 136.975 MHz sequentially. In Band Scanning mode, the DX15 will pause on frequencies that have a strong enough signal to break squelch so that they can be heard.

To enter Band Scanning mode:

- Exit any other mode by pushing the CLR button on the keypad.
- Adjust Squelch (see section Setting Squelch for details) so that the speaker is quiet. If a signal is received during scanning the scanning will pause, allowing you to listen to the received signal. When band scanning your DX15 may receive a variety of signals at widely-varying signal strengths. Setting Squelch too high will allow only the very strongest signals to be heard. Setting Squelch too low will result in the scan being stopped frequently, often on noisy frequencies that cannot be understood. Thus, setting Squelch properly for band scanning will necessarily be a compromise.
- To scan up push and hold (for at least 1 second) the ► button. To scan down push and hold the ◀ button.

During Band Scanning (or any of the other scan operations - see section Memory Scanning and Last Ten Frequencies Scanning for details), the decimal point between the digits flashes to indicate that a scanning mode is active.

When a signal is received that exceeds the Squelch setting, Scan mode will pause for as long as the signal is being received. Scanning will resume a few seconds after the last signal is received. To force the radio to continue scanning while Band Scanning has paused on a frequency, press either the ◀ or ► button to "nudge" Band Scanning to continue its scan.

Features In Depth

The direction of scanning can be changed by pressing ◀ or ▶.

Band Scanning can be stopped by:

- Pushing the CLR button.
- Pushing PTT.
- Pushing the Emergency button.

Recalling Recently Used Frequencies

Your DX15 automatically stores the ten (10) most Recently Used Frequencies. These can be quickly recalled using the ▲ and ▼ buttons on the side of the DX15. Think of them like an extended version of the flip-flop feature found on most digital panel-mounted aircraft radios.

To recall a Recently Used Frequency:

- Exit any other mode by pushing the CLR button on the keypad.
- Push the ▲ or ▼ buttons on the side to enter Recently Used Frequencies mode. The ten (10) most Recently Used Frequencies are displayed as r0 (most recently used) through r9 (10th most recently used) in the lower right corner of the screen while in Recently Used Frequencies.
- When you first enter this mode, the radio will both store and display the currently-tuned frequency into the r0 location. r0 will be displayed in the lower right corner of the screen to denote that you are currently recalling a Recently Used Frequency.
- Press ▲ and ▼ to cycle through the Recently Used frequencies.

Recently Used Frequencies can be scanned by pressing and holding ◀ or ▶ for 2 seconds, similar to band scanning. To stop scanning your Recently Used Frequencies, push the CLR button.

Any of the following actions or events causes a frequency to be added to the list of Recent Frequencies:



- A frequency is manually entered from the keypad.
- A frequency is received for more than two (2) seconds.
- A frequency is transmitted on for more than two (2) seconds.
- When Recently Used Frequencies mode is entered, the current frequency is stored as the most recently used

Note: To use Recently Used Frequencies, the “Side Buttons Used for Direct Squelch” option must be set to **OFF** (factory default). See the Advanced Settings section of this manual for details.

Advanced Tip: The Recently Used frequency being displayed can be deleted from the Recently Used list by holding CLR for a few seconds.

Using Memory Channels

Memory Channels allow you to store commonly used frequencies for easy recall.

STORING FREQUENCIES INTO MEMORY CHANNELS

- Exit any other mode by pushing the CLR button on the keypad.
- Select a frequency.
- Push and hold the MEM button for one to two (1-2) seconds, until MEM-XX is displayed, where XX is the lowest numerical unused Memory Channel location between 00-99.
- MEM will flash to indicate you are in Memory Channel programming mode.
- The first available Memory Channel is automatically selected. If a different Memory Channel is desired: Press the ◀ and ▶ or the side ▲ and ▼ buttons to decrement or increment, respectively, the Memory Channel that will be used to store the current frequency. Or, use the numeric keypad to enter a two-digit Memory Channel location manually.

- To store the frequency, push the MEM button again. MEM-XX will flash momentarily.
- Your DX15 is now in Memory Channel mode on the just-stored Memory Channel.

Push the CLR button to exit Memory Channel mode at any time.

Note: If all 100 Memory Channels have frequencies stored, Memory Channel 99 will be selected, and if a new frequency is stored, the frequency already stored in Memory Channel 99 will be overwritten.

RECALLING MEMORY CHANNELS

- Exit any other mode by pushing the CLR button on the keypad.
- Push the MEM button momentarily. This enters Memory Channel Recall mode.
- Use the ◀ and ▶ or side ▲ and ▼ buttons to scroll through Memory Channels.
- Or, type the two-digit Memory Channel Number directly.

Push the CLR button to exit Memory Channel mode at any time.

QUICKLY RECALLING MEMORY CHANNELS 0-9

- Exit any other mode by pushing the CLR button on the keypad.
- Press and hold 0-9 to recall the channel stored in that location.

Push the CLR button to exit Memory Channel mode at any time.

SCANNING MEMORY CHANNELS

- Exit any other mode by pushing the CLR button on the keypad.
- Push the MEM button momentarily (enters Memory Channel mode).
- To scan up push and hold (for at least 1 second) the ▶ button. To scan down push and hold the ◀ button.



Push the CLR button to stop Memory Channel band scanning mode at any time.

Note: Only Memory Channels that have a frequency stored in them will be scanned.

During Memory Channel scanning (or any of the other scan operations), the decimal point between the digits flashes at a 1/2 second interval to indicate that a scanning mode is active.

When a signal is received that exceeds the Squelch setting, Memory Channel Scanning will pause for as long as the signal is being received. Scanning will resume a few seconds after the last signal is received. To force the radio to continue scanning while Memory Channel Scanning has paused on a frequency, press either the ◀ or ▶ button to "nudge" Memory Channel Scanning to continue its scan.

Memory Channel Scanning will continue until stopped by:

- Pushing the CLR button.
- Pushing PTT during the reception of a signal.
- Pushing the Emergency button.

SKIPPING MEMORY CHANNELS WHILE SCANNING

Some frequencies - such as ATIS and AWOS - are broadcast continuously. While you may want to store these frequencies into Memory Channels for quick access to them, you may not want to stop on them during a scan of your Memory Channels. To skip a Memory Channel while scanning:

- Select a Memory Channel as described in the Recalling Memory Channels section above.
- Push and hold MEM for one to two (1-2) seconds.
- The key icon will flash continuously to indicate that this Memory Channel will be skipped during a scan.

- Repeat the above procedure to allow a skipped memory channel to be scanned again. The flashing lock icon will cease flashing.

DELETING MEMORY CHANNELS

- Recall a Memory Channel as described above.
- Push and hold the CLR button for one to two (1-2) seconds
- MEM-XX will flash twice.
- The selected Memory Channel is now empty.
- Other Memory Channels are not affected when an individual Memory Channel is deleted.
- You are now in Memory Channel mode, on the next Memory Channel that has a location stored in it.

Push the CLR button to exit Memory Channel mode at any time.

MEMORY BANK SCANNING

By default, any Memory Channels stored are scanned sequentially whenever Memory Channels are scanned. However, you may prefer to break up your memory channels into banks so that only 10 of them are scanned at any one time. This is useful for programming small groups of frequencies that you scan through at a particular location, such as at an air show or at particular airports.

To turn Memory Bank Scanning on and off, see the Advanced Settings section of this manual.

When Memory Bank Scanning is enabled, only Memory Channel Scanning behavior is affected. All 100 Memory Channels can still be stored and accessed normally. However, when a scan is initiated, only the Memory Channels that start with the same number are scanned. For example, if you start a scan from Memory Channel 34, only Memory Channels 30-39 are scanned. Similarly, if you start a scan from Memory Channel 03, only Memory Channels 00-09 are scanned.



This mode effectively divides up your Memory Channels into 10 scannable banks of up to 10 Memory Channels each.

Key Beep Volume Adjustment

To adjust key beep volume:

- Push and hold the SQL button until it says "BEEP XX". XX represents the current key beep volume level. (You will need to keep holding the SQL button as the radio first passes through Side Tone Adjustment, which is displayed as "Side XX".)
- Adjust key beep volume level by using the ◀ and ▶ buttons.
- The display will show 0 through 8; 0 is no key beeps (muted), 8 is loud key beeps.
- To exit Key Beep Volume Adjustment, press the SQL or CLR button, or wait a few seconds.

5. ADVANCED SETTINGS

Option: Assume Leading 1 During Frequency Entry

When this option is turned ON, the first "1" that you would normally enter when typing frequencies is automatically typed for you. This is possible because all frequencies that can be tuned by the DX15 begin with "1".

To set:

- Turn power OFF.
- Push and hold the 1 button.
- Turn power ON.
- If message "1 - off" is displayed, this behavior is OFF.
- If message "1 - on" is displayed, this behavior is ON.
- The message will clear after two seconds, followed by a beep. You can then use your DX15 normally.
- To change between modes, repeat the procedure (repeated cycles toggle between the two modes).

Example :

If set to OFF (Factory default), the following frequency entry method is used:

To set a frequency of 128.775, type the following:

1 2 8 7 7

The display should then read:

128.775

If set to ON, the following frequency entry method is used:

To set a frequency of 128.775, type the following:

2 8 7 7

The display should then read:

128.775

Option: Side Buttons Used for Direct Squelch

Lets the side ▲ and ▼ be used exclusively to set Squelch.

To set:

- Turn power OFF.
- Push and hold the SQL button.
- Turn power ON.
- If message "SQL off" is displayed, this behavior is OFF. When in modes such as Setting Squelch or Recalling Memory Channels that use the keypad ◀ and ▶ buttons, the side ▲ and ▼ buttons can also be used interchangeably. The side ▲ and ▼ buttons are also used to enter and cycle through the ten most Recently Used frequencies - see the Recalling Recently Used frequencies section for details.
- If message "SQL on" is displayed, this behavior is ON. In this mode, the side ▲ and ▼ buttons have a single use: to set Squelch. In this mode, Squelch can easily be increased or decreased with single button pushes. However, when this mode is selected, Recently Used frequencies can not be recalled.
- The message will clear after two seconds, followed by a beep. You can then use your DX15 normally.
- To change between modes, repeat the procedure (repeated cycles toggle between the two modes).



Option: Backlight Behavior

Sets the behavior of the backlight when keys are pressed.

To set:

- Turn power OFF.
- Push and hold the LIGHT button.
- Turn power ON.
- If message "L-On" is displayed, pushing LIGHT button causes backlighting to be on continuously until LIGHT button is pushed again.
- If message "L-5SEc" is displayed, pushing the LIGHT button still causes backlighting to be on continuously until LIGHT button is pushed again. However, pushing any other button (except Push-to-Talk) will also cause backlighting to come on temporarily for five (5) seconds.
- The message will clear after two seconds, followed by a beep. You can then use your DX15 normally.
- To change between modes, repeat the procedure (repeated cycles toggle between the two modes).

Option: Memory Bank Scanning

Toggles whether or Memory Channels are scanned as a single block of 100 Memory Channels, or in banks of 10 Memory Channels each. See the Memory Bank Scanning section for more details.

To set:

- Turn power OFF.
- Push and hold the MEM button.
- Turn power ON.
- If message "BANK-n" is displayed, this behavior is OFF. Memory Channels are scanned as a single large bank.

- If message "BANK-Y" is displayed, this behavior is ON. Memory Channels are scanned in banks of 10 Memory Channels each.
- The message will clear after two seconds, followed by a beep. You can then use your DX15 normally.
- To change between modes, repeat the procedure (repeated cycles toggle between the two modes).

Option: Disable Transmit

Toggles whether or not the DX15 can transmit when Push-to-Talk is pressed. Disabling the ability to transmit can be useful for when you do not wish to ever transmit on the air band by accidentally pushing the Push-to-Talk button.

To set:

- Turn power OFF.
- Push and hold the ▼ button.
- Turn power ON.
- If message "tx OFF" is displayed, transmitting is disabled.
- If message "tx on" is displayed, transmitting is enabled.
- The message will clear after two seconds, followed by a beep. You can then use your DX15 normally.
- To change between modes, repeat the procedure (repeated cycles toggle between the two modes).

Option: Stop Transmitting on Stuck Mic

Toggles an option that stops the radio from transmitting if a stuck Mic is detected.

To set:



-
- Turn power OFF.
 - Push and hold the ► button.
 - Turn power ON.
 - If message "Stuc-Y" is displayed, transmitting ceases when a stuck Mic button is detected. The Mic is considered stuck open after 30 seconds of continuous transmitting. At this time, the DX15 will beep, and the display will show the transmit icon and the text "Stuck". Transmitting will be re-enabled once the Push-to-Talk button is released.
 - If message "Stuc-n" is displayed, the radio will transmit as long as the Push-to-Talk button is held; Stuck Mic detection is inhibited.
 - The message will clear after two seconds, followed by a beep. You can then use your DX15 normally.
 - To change between modes, repeat the procedure (repeated cycles toggle between the two modes).

6. APPENDICES

Appendix A: DX15 Specifications

All specifications are subject to change without notice or obligation.

PHYSICAL

Dimensions (exclusive of projections - knobs, etc.)

2.25 inches (57.1mm) W

4.00 inches (101.6mm) H

1.43 inches (36.3mm) D

Weight

8.2 oz (232g) (includes Battery With Belt Clip, Antenna)

Temperature Range

Operating: -20°C to $+55^{\circ}\text{C}$ (-4°F to $+131^{\circ}\text{F}$)

Storage : -30°C to $+80^{\circ}\text{C}$ (-22°F to $+176^{\circ}\text{F}$)

Connectors

Antenna Connector: SMA (50 Ohm)

External Speaker Connector: 2.5mm

External Microphone Connector: 3mm, with PTT interface

External Power: 2-conductor DC Power

POWER

Battery Requirements

Genuine Dynon Avionics Battery Packs Only

Power Consumption (@ 7.4V DC):

Transmit: 1.0 A

Receive (squellch open): 250 mA

Standby (squellch closed): 65 mA

TRANSCEIVER

Frequency Range

118.000 to 136.975 MHz inclusive

Channel Spacing

25 KHz

Mode

A3E 6K00

Transmit Power

1.5W nominal (carrier power)

Transmit Frequency Stability

+/- 2 ppm

Receive System

Double Conversion Super Heterodyne

Receive Sensitivity

-107 dBm, minimum (6dB SINAD)



Memory

100, in a single bank or divided into 10 scannable banks of 10

Audio

Internal Speaker Output Power: > than 500mW @ 10% distortion

External Speaker Output Power: > More than 500mW, 4 Ohm load

Appendix B: Troubleshooting

Problem Description	Possible Cause	Solution
When turned on, nothing shows on the display	Battery is completely discharged	Charge the battery
Battery life is too short	Backlight is on continuously	Use backlight only intermittently
	DX15 is constantly receiving audio	Adjust Squelch setting to block unwanted signals
	Battery is worn out	Replace with new battery

Battery display does not indicate charge when plugged in	No power at wall outlet	Check that wall outlet is supplying power
Battery will not charge with Vehicle Power Adapter	Fuse blown	Check the fuse in the body of the vehicle charger plug
	No power coming from vehicle	Check that vehicle is supplying power
Nothing happens when front panel buttons are pushed	Keypad is locked	Unlock Keypad by pressing and holding the LOCK button
Noise bursts are heard often	Squelch is set too low	Adjust squelch to a higher number
Display says ERR	The DX15 has detected a software fault	Cycle Power, including removing battery; Perform factory reset procedure; if this doesn't help, contact Dynon Avionics Technical Support

Appendix C: Requesting Support / Repair

Before contacting Dynon Avionics Technical Support, please consult the Troubleshooting Appendix for common issues and solutions for details.

In some circumstances, performing a Factory Reset may fix some issues - please consult Appendix D - Factory Reset / Defaults for details.



Before contacting Dynon Technical Support, please do the following:

- Please have your DX15 at hand; if possible have the AC-to-DC Wall Adapter (charger) also at hand to provide power if there is a battery issue.
- If possible, please perform the three procedures below to display your DX15's *electronic (internal)* software version, hardware version, and serial number:
 - Displaying your DX15's *electronic software* version:
 - Turn power OFF.
 - Push and hold the LOCK button.
 - Turn power ON while continuing to hold the LOCK button.
 - After an “r” is displayed, release the LOCK button.
 - Push the 1 button.
 - The number displayed is your DX15's *software* version. Please write down this number for the Dynon Avionics Technician.
 - Displaying your DX15's *electronic hardware* version:
 - Turn power OFF.
 - Push and hold the LOCK button.
 - Turn power ON while continuing to hold the LOCK button.
 - After an “r” is displayed, release the LOCK button.
 - Push the 2 button.
 - The number displayed is your DX15's *electronic hardware* version. Please write down this number for the Dynon Avionics Technician.
 - Displaying your DX15's *electronic serial number*:
 - Turn power OFF.

- Push and hold the LOCK button.
- Turn power ON while continuing to hold the LOCK button.
- After an “r” is displayed, release the LOCK button.
- Push the 3 button.
- The number displayed is your DX15's electronic *serial number*. Please write down this number for the Dynon Avionics Technician.

DYNON AVIONICS TECHNICAL SUPPORT CONTACT INFORMATION

Phone: (425) 402-0433 7:00 AM - 4:00 PM (Pacific), Monday - Friday

Email: support@dynonavionics.com

Web: www.dynonavionics.com

Appendix D: Factory / Reset Defaults

In rare circumstances, a Factory Reset may fix some problems with your DX15.



Performing a Factory Reset will delete all of your settings, including *all* (as many as 100!) memory channels that you have programmed. There is no way to save or preserve memory channels in the process of performing a Factory Reset. If you wish to restore your memory channels, please verify each memory channel's setting and record them for later re-programming.

When performing a Factory Reset, the following settings will be changed to factory defaults:

- Memory Channels: **Not Programmed**
- Quick Recall Memories: **Not Programmed**
- Side tone: **0**



- Transmit: **ON**
- Assume Leading 1 During Frequency Entry: **N**
- Side Buttons Used for Direct Squelch: **N**
- Backlight Behavior: **CONTINUOUS**
- Memory Bank Scanning: **N**
- Disable Transmit: **N**
- Stop Transmitting on Stuck Mic: **N**

FACTORY RESET PROCEDURE

- Turn power OFF.
- Push and hold the LOCK button .
- Turn power ON while continuing to hold the LOCK button.
- After an “r” is displayed, release the LOCK button.
- Push and hold the CLR button for at least one (1) second.
- After approximately one (1) second, all of the display's icons and digits will be displayed.
- Your DX15 is now reset to factory defaults.

Appendix E: Accessories

All included accessories may also be purchased separately. For current pricing and availability, visit store.dynonavionics.com.

Other optional accessories that do not come with the DX15 include:

- 100845-000 Vehicle Power Adapter
- 100997-002 Desktop Rapid Charger
- 100844-000 Headset / Push-to-Talk Adapter Cable
- 101300-000 BNC Antenna Adapter

Accessory availability and specifications are subject to change without notice.

Appendix F: Using the (optional) Desktop Rapid Charger

Note: The Desktop Rapid Charger consists of:

- 100997-000 Desktop Rapid Charger Cradle
- 100997-001 Desktop Rapid Charger Wall Power Adapter

The Desktop Rapid Charger is a quicker and more convenient way to recharge your DX15. It can also charge spare batteries without the DX15.

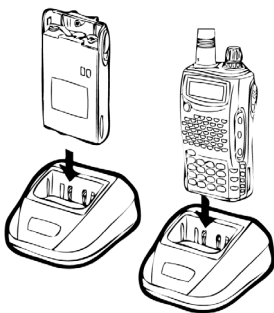
To charge your DX15 in the Desktop Rapid Charger, carefully insert your DX15 as illustrated. For fastest charging, turn the DX15's power switch to the off position.

To charge spare batteries in the Desktop Rapid Charger, carefully insert the battery as illustrated.

When a DX15 or battery has been inserted into the Desktop Rapid Charger, the charger's indicator will glow red. When charging is complete, the indicator will change color to green.

A fully discharged battery will require approximately 4.5 hours to charge using the Desktop Rapid Charger.

Note: When your DX15 is being charged in the Desktop Rapid Charger. The DX15 display itself will not provide any indication of charging status.





Appendix G: Using the (optional) Vehicle Power Adapter

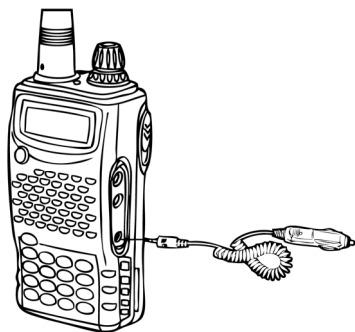
In situations where a cigarette lighter power outlet is available, the Vehicle Power Adapter can be used to power and simultaneously charge your DX15.



Connecting your Vehicle Power Adapter to voltage outside its labeled range will damage your DX15, requiring repair or replacement not covered by warranty. When in doubt, test the aircraft power outlet with a voltmeter to be sure the input voltage is acceptable for the version of the Vehicle Power Adapter you have purchased.

To connect your DX15 to the Vehicle Power Adapter:

- Connect the radio power connector to the DX15's DC input jack as illustrated.
- Plug the cigarette lighter plug into a cigarette lighter power outlet.



When your DX15 is connected to external power, it will charge the battery whether your DX15 is turned on or off. During charging the Battery Charge Icon will flash to indicate that it is charging.

When charging is complete, the Battery Charge Icon will remain solid and icon will appear full.

The Battery Charge Icon visually indicates the charge remaining in the battery.

A discharged battery will require between 6-10 hours to fully charge via the Vehicle Power Adapter. While the DX15 can be used to receive and/or transmit while charging, such usage will increase the time it takes for the battery to fully charge.

CHANGING THE FUSE IN THE VEHICLE POWER ADAPTER

The 100845-000 Vehicle Power Adapter includes a fuse to protect against excessive current draw. The fuse can be replaced with a fuse meeting the following specifications:

- Glass tube / barrel type
- 0.25 inches (6.3mm) x 1.25 inches (32mm)
- 2A, 250V
- Fast-acting

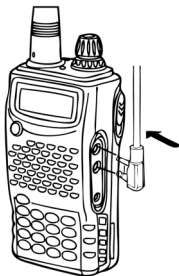
To reassemble the Vehicle Power Adapter, insert the four (4) pieces into the cavity at the tip of the Adapter, in the following order:

- Spring.
- Fuse.
- Screw the knurled nut (with the tip inserted).
- Hand-tighten the knurled nut until snug.

Appendix H: Connecting a Headset / Push-to-Talk Switch

Connection to a headset, microphone, and/or Push-to-Talk switch requires the optional 100844-000 Headset / Push-to-Talk Adapter Cable. This cable and its connectors are configured for headset connections common in aviation.

Note: When the 100844 Headset Adapter Cable is plugged in, your DX15's built-in microphone and speaker are disabled.





SIDE TONE ADJUSTMENT

Side Tone is audio fed from the microphone back to the headset. Side Tone helps you hear yourself speak when wearing a headset in a noisy environment like an airplane.

To set Side Tone:

- Push and hold the SQL button for 1-2 seconds until “SidE-X” appears (XX will be a number between 0 and 8).
- Adjust Side Tone level by using the ◀ and ▶ buttons.
- The display will show 0 through 8; 0 is no side tone, 8 is very loud side tone.
- To exit Side Tone Adjustment, push the SQL or CLR button, or wait a few seconds.

CONNECTING AN EXTERNAL PUSH-TO-TALK BUTTON

The optional Headset / Push-to-Talk Adapter Cable can accept a dedicated Push-to-Talk switch. Both the single wire (dedicated 1/8” plug) and the inline (with the headset wiring, on the mic plug) are supported.

Appendix I: External Antenna



Dynon Avionics has not tested, nor does it recommend the use of any antenna other than the included 100993-000 Flexible Antenna.



Using your DX15 Handheld VHF Air Band Transceiver with an external antenna is done entirely at your risk of the following:

- Potential damage to your DX15.
- Potential improper transmissions, such as interference.
- Potential excessive exposure to Radio Frequency (RF) Electromagnetic Energy.

The 101300-000 BNC Adapter can be used to connect your DX15 to a 50-ohm external antenna using coaxial cable that terminates in a female BNC connector.



Notes