DC PRO-X2

Quick Reference Guide

David Clark

WWW.DAVIDCLARK.COM

Thank you for purchasing the DC PRO-X2

DC PRO-X2

Congratulations on your purchase of the most technologically advanced electronic noise-cancelling headset available. As with all of our products, DC PRO-X2 Series Electronic Noise Cancelling Headsets are backed by extraordinary customer service and support.

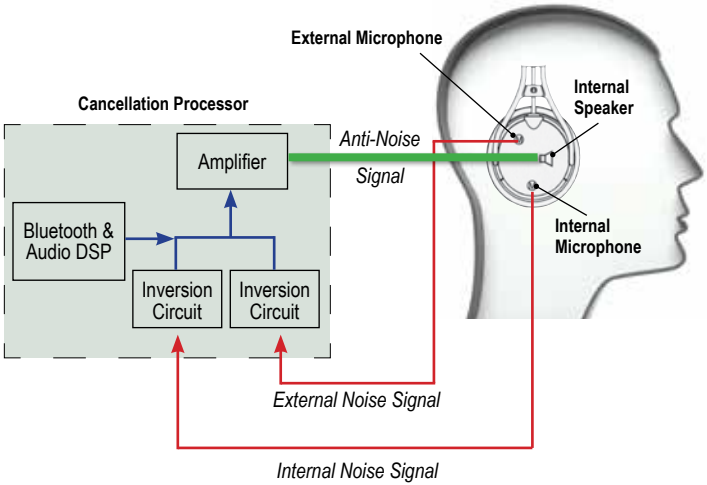
David Clark Company assumes full responsibility for the quality and performance of our products. We are committed to a policy of service whereby we will respond in a prompt and positive manner to any question or issue regarding one of our products.

David Clark Company products have set the standards of performance and excellence for pilots throughout the world. Your new DC PRO-X2 continues this legacy. We have earned a reputation for excellence; we intend to keep it by continuing to deserve your confidence.

Richard M. Urella, President

Hybrid ANR Electronic Noise-Cancelling

HYBRID ENC Your DC PRO-X2 headset features leading-edge Hybrid Electronic Noise-Cancelling Technology (ENC) with feed-forward and feed-back technology for superior active noise reduction. Feed-forward noise cancelling is accomplished through an exterior microphone in the ear dome that is isolated from the speaker. The exterior microphone acquires the noise before it gets to the ear Feed-back noise cancelling is performed by the internal microphone placed near the speaker. The signals are then inverted to produce a reverse, 'anti-noise' signal. This hybrid technology results in unsurpassed active noise reduction performance.



DC PRO-X2 Features

Approved
FAA TSO-C139a
Patent 10,951,974

DC PRO-X2 Features

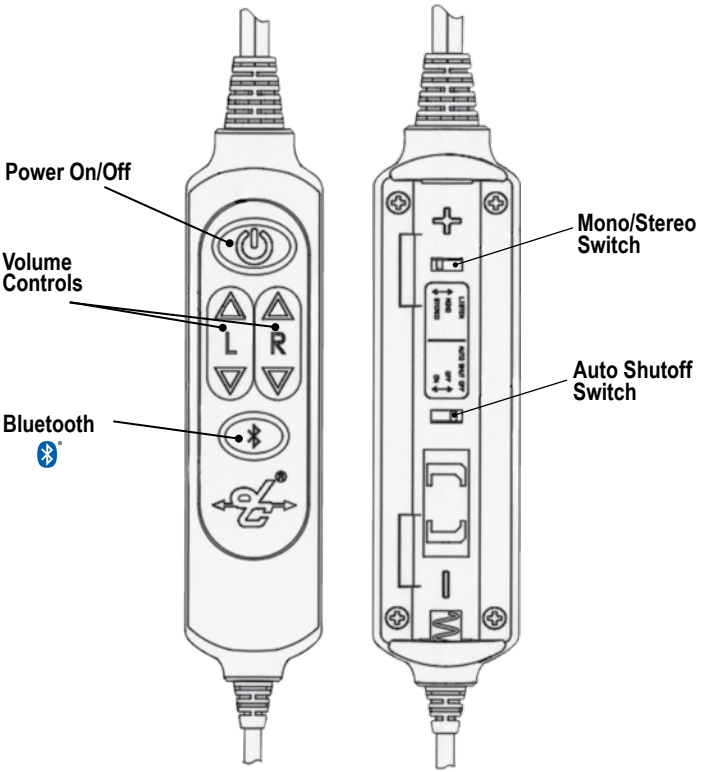
Technologically Advanced. Intelligently Designed.

1. Ultra lightweight, yet rugged alloy headband and suspension
2. Fully adjustable suspension assembly for personalized comfort
3. Outlast® technology, heat-absorbing head pad with breathable, vented design
4. Swivel hinge stirrups disperse clamping pressure for secure yet comfortable fit
5. Plush, 'rest on ear', Dura-Stitched leatherette ear seals reduce heat build up and enhance comfort
6. Hybrid ENC technology for best-in-class active noise attenuation
7. Digital Signal Processing (DSP) Technology provides high-fidelity audio for superior communications and music listening
8. M-5B Electret Microphone with enhanced noise cancelling
9. Full flex boom for precise microphone placement
10. Bluetooth® wireless technology (on selected models) provides seamless integration for connecting to cell phones, MP3, tablets or other personal electronic devices
11. Collapsible design for compact storage in David Clark headset bag

DC PRO-X2 MODELS

Model Part Number	Description	Bluetooth®	Aircraft Powered
43105G-01	ENC Headset-Mic., Dual Plug, BT	√	
43105G-02	ENC Headset-Mic, 6-Pin Panel Mount, BT	√	√
43105G-04	ENC Headset-Mic., 5-Pin XLR, BT	√	√
43105G-07	ENC Headset-Mic, 5-Pin XLR		√
43105G-10	ENC Headset-Mic, Dual Plug		

Control Module - Quick Reference Guide



The Control Module is powered by two (2) ‘AA’ batteries for up to 50 hours of continuous use.

Control Module - Quick Reference Guide

Power

Press and hold until Power LED turns on to turn unit ON or OFF:

- Solid Yellow: Initializing
- Flashing Green: ON
- Flashing Red: ON, Low Batteries
- Solid Blue: Powering Down

Power (LED 'Dark' Mode)

- First, press and hold Bluetooth® button, then press and hold the Power button
- Power and Bluetooth® LED will turn ON yellow
- Release the Power ON button
- Continue to hold Bluetooth® button until yellow Power ON LED turns OFF
- Release Bluetooth® button
- Control Module is now in 'Dark' mode (no flashing Power LED).
- To disable 'Dark' mode, simply repeat the above steps

Note: 'Low Batteries' red flashing LED will still function in 'Dark' mode. 'Dark' mode is disabled when aircraft powered headsets are connected to aircraft and power is present.

Volume Up/Down

- Adjust listen level volume up or down
- Left/right adjustments are independent
- Only usable when power is ON; Levels default to max when unit is OFF

Mono/Stereo

- Set per type of intercom/audio panel (factory default is “Mono”)

Enhanced Auto Shutoff

The factory default Auto Shutoff position is ***“OFF”*** (See page 8, "Control Module Operation" for Enhanced Auto Shutoff details).

Bluetooth® Wireless Technology

Press and hold until Bluetooth® LED turns on, to turn on Bluetooth® Wireless Technology:

- Flashing Purple: Initializing/Mute Disabled
- Flashing Green: On, Not Connected
- Flashing Yellow: Pairing Mode
- Flashing Blue: Paired and Connected/Mute Enabled

To Pair:

- Turn Bluetooth® Wireless Technology on (flashing green)
- Press Bluetooth® Wireless Technology button to enter pairing mode (flashing yellow)
- Search for devices from your phone/device
- Select DC PRO-X2 and initiate pairing on your device
- If prompted for PIN code, enter 0 0 0 0

NOTE: Bluetooth wireless technology is not available on Model Part Numbers 43105G-07 and 43105G-10

Control Module Operation

1. **Fail Safe** - if batteries are dead or the unit is turned off, microphone and earphones will function when connected to aircraft intercom.
2. **Enhanced Auto Shutoff**

   DC PRO-X2 Series headsets are shipped with the Enhanced Auto Shutoff feature set to the '**OFF**' position. Enhanced Auto Shutoff can be enabled/disabled via a small switch located under the batteries (see Quick Start diagram page 6).

   When Enhanced Auto Shutoff is set to '**OFF**' (factory default), ANR headset power is manually controlled using the Power Button. When Enhanced Auto Shutoff is set to '**ON**', at turn-on of the headset using the Power Button, the headset will function as follows:

   A. If the headset is connected to the aircraft audio panel, the headset will automatically turn off after 5 minutes under the following conditions:
      - aircraft audio panel is turned off,
      - headset is disconnected from the aircraft panel, or
      - an active cell phone conversation is concluded.

   B. If the headset is not connected to the aircraft audio panel, headset power is controlled by the Power Button, allowing continuous use for cell phone conversation or streaming audio.
3. **Cell Phone Interface**
   - Use of the Bluetooth® wireless technology cell phone feature while plugged into aircraft intercom is not recommended and may violate applicable regulations
   - All intercom parties hear cell phone outbound audio but cell phone recipient's voice is heard only by the headset connected/paired to the cell phone
   - Sidetone is always present
   - Briefly pressing the Bluetooth® wireless technology button will answer or terminate a call (if supported by the cell phone)
   - Cell phone receive audio is not muted when receiving a transmission from ATC or intercom

Control Module Operation (cont.)

4. Music Listening

The Bluetooth® wireless technology feature allows you to listen to your favorite music when paired with cell phones, MP3, tablets, or other compatible devices. When listening to music briefly pressing the Bluetooth button will enable/disable muting:

- Flashing blue (default): When receiving transmission from ATC or intercom, music will mute to prioritize communication. Once transmission is completed, music audio will gradually return to the previously set volume level. A falling two-tone chime is heard when entering this mode.
- Flashing purple: Music will not mute when transmission is received from ATC or intercom. A rising two-tone chime is heard when entering this mode.

Each time the DC PRO-X2 is powered 'ON', this setting will revert to the default (muting) mode.

For DC PRO-X2 Aircraft-Powered Models Only

- Power is provided by the aircraft when using the 6-pin Redel® connector (11-30 VDC), or 5-pin XLR connector (18-32 VDC).
  Please note: Not all aircraft with XLR-5 connector provide power at pin 5. The batteries provided with the headset are only required when no power is available at pin 5, or when the headset is disconnected from the aircraft panel.
- When powered by aircraft, power LED will be solid green.
- If external power is lost, headset will revert to battery power.
- Headset will automatically turn on when external power is applied, without using the Power Button on the control module.

Proper Fitting

The advanced suspension system of the DC PRO-X2 Series is designed for a simple and comfortable fit. Proper fit is necessary for maximum effectiveness. The headset should be worn so that the head pad lightly touches the top of the head. Adjust the sliding assembly on each side as necessary (see Fig. 1), keeping slide positions equal on either side, until the center of the ear phone aperture within the ear seal is directly aligned with the ear canal.

The ultra-soft memory foam of the ear seal will conform to the contours of the ear to provide an adequate seal. While in the presence of noise, turn on the ANR circuitry and then adjust headset and ear seal position for lowest noise heard, allowing optimum performance of the Hybrid ENC technology for communications and music listening.

To adjust microphone placement, adjust boom up/down and in/out by rotating and flexing the boom as necessary. Ideal microphone placement is 1/8" from the lips, as this will provide maximum intelligibility and ambient noise rejection.

Fig.1

DC PRO-X2

(Aircraft Powered/6-Pin)

The DC PRO-X2 Aircraft Powered Model (P/N 43105G-02) provides a 6-pin Redel® connector that is compatible with aircraft that feature a 6-pin receptacle on the aircraft panel.

Note: The batteries provided with the headset are required if the headset is disconnected from the aircraft panel.

DC PRO-X2

(Aircraft Powered/5-Pin XLR)

The DC PRO-X2 Aircraft-Powered Models (P/N 43105G-04, P/N 43105G-07) These models receive power directly from the aircraft, when power is provided at pin 5 of the XLR connector.

Note: Not all aircraft with XLR-5 connectors provide power at pin 5. The batteries provided with the headset are only required when no power is available at pin 5, or when the headset is disconnected from the aircraft panel.

Replaceable Parts Removal/Installation

M-5B Microphone (P/N 09168P-85)

- To remove microphone: Gently pull off foam cover. Grasp microphone firmly and pull straight out.
- To install microphone: Align keyway on microphone with keyway on boom. “TALK” should be inward towards the user’s face. Push until microphone snaps into place.

Microphone Foam Cover (P/N 40062G-02)

- Slide foam cover over top of microphone and secure with ‘O’ ring (included).

Leatherette Ear Seals, Pair (P/N 15976P-03)

- To remove: Gently pull off.
- To install : Stretch ear seal over lip of dome until completely seated on dome

Outlast® Technology Head Pad (P/N 15977P-04)

- To remove: Gently pull off.
- To install : Align head pad with headband assembly and push all around the perimeter to engage hook-and-loop fasteners.

Control Module Mounting Clip (P/N 41068G-03)

- Place Control Module into mounting clip and snap in place.
- Use clip to attach Control Module to apparel or any convenient location within the aircraft.

Customer Service and Support

David Clark Company aviation headsets are covered by a 5-year warranty. We make every effort to prevent problems and the need for repairs. In the unlikely event that you experience a problem, David Clark Company qualified representatives are available to answer your questions and provide the best customer service in the industry. Many repairs are covered under warranty. Contact Customer Service:

Tel. 800-298-6235 • 508-**751-5800 (outside the USA)**

Visit our website at **www.davidclark.com**

DC PRO-X2 SERIES - Environmental Test Summary

RTCA			Airbus Directive		DC PRO-X2 Part Numbers				
DO-214A 18-Dec-13	DO-160G, 08-Dec-10		ABD0100.1.8.1 Issue C, 2009	Test Description	431850-01	431850-02	431850-04	431850-07	431850-10
Section	Section	Comment							
2.1.4		FAR Part 25, Appendix F, Para 5		**Horizontal Flame**	Y	Y	Y	Y	Y
2.3.9		12 drops onto concrete floor from 1-m		**Drop Resistance**	Y	Y	Y	Y	Y
2.5.1	4.0			**Temperature and Altitude Tests**					
2.5.1.1b	4.5.1 4.5.2	Per Category B1 (-55/-40 C)		Short-Time Operating Low, Ground Survival Low-Temperature Operating Low-Temperature	Y	Y	Y	Y	Y
2.5.1.2b	4.5.3	Per Category B1 (+85/+70 C)		Ground Survival High-Temperature, Short-Time Operating High-Temperature	Y	Y	Y	Y	Y
2.5.1.3b	4.5.4	Per Category B1 (+70)		Operating High Temperature	Y	Y	Y	Y	Y
2.5.1.4b	4.6.1	Per Category B1		Altitude	Y	Y	Y	Y	Y
2.5.1.5b	4.6.2	Per Category A2		Decompression	Y	Y	Y	Y	Y
2.5.1.6b	4.6.3	Per Category A2		Overpressure	Y	Y	Y	Y	Y
2.5.2b	5.3.1	Per Category B		**Temperature Variation**	Y	Y	Y	Y	Y
2.5.3b	6.3.1	Per Category A		**Humidity**	Y	Y	Y	Y	Y
2.5.4.1	7	Test not applicable to Headsets		**Shock**	NA	NA	NA	NA	NA
2.5.5b	8.5.1	Sine Vibration, Curve M, 5-500 Hz, 1-hr./axis, 3-axes		**Vibration**	Y	Y	Y	Y	Y
	8.5.2	Random Vibration, Curve B2, 10-2000 Hz, 1-hr./axis, 3-axes			Y	Y	Y	Y	Y
2.5.6b	15	Per Category Z		**Magnetic Effect**	Y	Y	Y	Y	Y
2.5.7	16.0	**VDC Power Input**		**Operational Temperature Range (-40 - +55C)**					
2.5.7.1b	16.6.1.1.b	Per Category A, 28 VDC Equipment	LDC 101	Normal Operation (Steady-state, 22.0 - 31.7 VDC)	NA	Y	Y	Y	NA
2.5.7.2b	16.6.2.1.b	Per Category A, 28 VDC Equipment	LDC 201	Abnormal Operation (Steady-state, 20.5 - 32.5 VDC)	NA	Y	Y	Y	NA
	16.6.1.1.b	Per Category A, 28 VDC Equipment	LDC 301	Emergency Operation (Steady State, 18.0 - 32.5 VDC)	NA	Y	Y	Y	NA
				Voltage Ripple	NA	Y	Y	Y	NA
	16.6.1.2	Per Category A, 28 VDC Equipment	LDC 103	Normal Operation (Mean level 31.7 VDC followed by 24.5 VDC)	NA	Y	Y	Y	NA
	16.6.1.2	Per Category A, 28 VDC Equipment	LDC 302	Normal Operation (Mean level 32.5 VDC followed by 18.5 VDC)	NA	Y	Y	Y	NA
				Voltage Transients	NA	Y	Y	Y	NA
	16.6.1.4.b	Per Category A	LDC 102-1	Normal Operations	NA	Y	Y	Y	NA
	16.6.2.3.b 16.6.2.4.c	Per Category A	LDC 202-1	Abnormal Operation	NA	Y	Y	Y	NA
2.5.8b	17.4	Per Category A/B		**Voltage Spike Conducted**	NA	Y	Y	Y	NA
2.5.9b	18.3	Per Category B		**Audio Frequency Conducted Susceptibility**	NA	Y	Y	Y	NA
2.5.10b	19.3	Per Category B/C		**Induced Signal Susceptibility**	Y	Y	Y	Y	Y
2.5.11	20.4	Per Category R		**RF Conducted Susceptibility**	Y	Y	Y	Y	Y
	20.5			**RF Radiated Susceptibility**	Y	Y	Y	Y	Y
2.5.12	21.4	Per Category M		**RF Emissions, Conducted**	Y	Y	Y	Y	Y
	21.5			**RF Emissions, Radiated**	Y	Y	Y	Y	Y
2.5.13b	22.5	Per Category B2K2L2		**Lightning Induced Transient Susceptibility**	Y	Y	Y	Y	Y
2.5.14	2.2.2			**Final Distortion**	Y	Y	Y	Y	Y
2.5.15	NA	Test not applicable to this Headset		**Push-to-Talk Life**	NA	NA	NA	NA	NA
2.5.16b	25.5	Per Category A		**Electrostatic Discharge (ESD)**	Y	Y	Y	Y	Y

COMPLIANCE

FCC Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Changes and modifications not expressly approved by David Clark Company, Inc. can void your authority to operate this equipment under Federal Communications Commission rules.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Important Safety Information

- Make sure portable devices do not interfere with the aircraft's navigation and communication systems. Reference FAA AC 91.21-1D or later revision for installation approval.
- It is the pilot's responsibility to ensure that portable devices do not interfere with the aircraft's navigation and communication systems, as well as to determine if the portable device is suitable for use with the headset.
- Do NOT attempt to repair this headset. Contact David Clark Company for specific care, return and shipping instructions (see page 12 for contact information).

FAA Technical Standard Order

The David Clark Company, DC PRO-X2 family of headsets, PN 43105G-( ) are approved to TSO and ETSO C139a and are marked to indicate this approval. This family of headsets has been designed to perform and withstand exposure to the environmental conditions summarized on page 13. This article meets the minimum performance and quality control standards required by the technical standard order (TSO). Installation of this article requires separate approval. Reference FAA AC 91.21-1D, or later version, for installation guidance. This article may contain the non-TSO function of Bluetooth® Bluetooth® does not interfere with this article's TSO-C139a compliance.

The conditions and tests required for TSO approval of this article are minimum performance standards. Those installing this article either on or within a specific type or class of aircraft must determine that the aircraft installation conditions are within the TSO standards which include any accepted integrated non-TSO functions. TSO articles and any accepted integrated non-TSO function(s) must have separate approval for installation in an aircraft. The article may be installed only according to 14 CFR part 43 or the applicable airworthiness requirements (see table on page 13).

RSS-Gen, Sec. 7.1.3

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

French version of RSS-Gen, Sec. 7.1.3

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CE UK CA **FAA TSO-C139a Approved**

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