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A3.170719

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UHF DIGITAL TRANSCEIVER
DJ-NX45

Type: NXDN Conventional

<NOTE> The digital protocol of this product
NXDN but does NOT support Type-C/D
Trunking.

Thank you for purchasing your new Alinco transceiver. Please read this manual carefully before using the product to ensure full performance, and keep this manual for future reference as it contains information on after-sales service. In case addendum or errata sheets are included with this product, please read those materials and keep them together with this Quick Guide for future reference.

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Introduction

Thank you very much for purchasing this excellent Alinco transceiver. Our products are ranked among the finest in the world. This radio has been manufactured with state of the art technology and it has been tested carefully at our factory. It is designed to operate to your satisfaction for many years under normal use.

Please read this Guide completely from the first page to the last, to learn all the functions the product offers. It is important to note that some of the operations may be explained in relation to information in previous chapters. By reading just one part of the Guide , you may risk not understanding the complete explanation of the function.

Before transmitting

There are many radio stations operating in the frequency ranges this product covers. Be careful not to cause interference when transmitting around such radio stations.

■ Lightning

Any person is not safe outdoor during thunderstorm and lightning. This condition is getting worse if somebody keeps a hand-held radio; chances of being hit by lightning are doubled since lightning may hit a radio antenna as well. At this time, there is no hand-held radio having any kind of protection against lightning current (which is higher than 10 kA.). Note also that no car provides adequate protection of its passengers or drivers against lightning as well. Therefore, Alinco will not take responsibility for any danger associated with using its hand-held radios outdoor or inside the car during lightning.

■ IP67 Dust and waterproof

About IP67 rating

6: Dust tight / No ingress of dust; complete protection against contact. Test duration of up to 8 hours based on air flow using specified powders.

7: No water penetration / Submerge the device for 30 minutes at a depth of 1 meter from the fresh water's surface.

The IP67 designation provides for limited dust and fresh water proofing of the radio, antenna and battery pack when integrated, perspecified above. This compatibility is factory guaranteed for a period of one year provided all specified conditions of use are respected, any accessories connected must be specified genuine Alinco accessories and the device has not been disassembled by the consumer. The device is designed to remain operational when used in rain, severe weather or in accidental cases of dropping it in wet place when used in extreme conditions and is in no way stating that you should attempt to use the device under water or submerge the radio for cleaning. Warranty will not cover devices that are damaged due to negligence or misuse of the product. Never remove the small label attached on the rear chassis of this product, or cover it with other materials. This label is essential to adjust an air pressure inside to secure dust/water proofing. A

Note: This model only waterproof when MIC-SP jack cover is tightly closed to body.
periodical, professional maintenance is recommended when the ingress protection is very important to you.

■ Covering ranges

You may expect a range of approx 4km(2.5 miles) or more when located on a flat, noise-free place like on a beach. However, it may vary drastically depending on how to wear and carry the radios, surrounding locations/conditions and static noise levels (below or near power transmission lines), etc. In urban areas with many buildings or inside a building, such covering range will become drastically short even to several tens of meters.

■ Dealer Programming

The utility software may be available to distributors/dealers only. An optional programming cable is required for programming. The manufacturer will not release the software to unauthorized party so please contact your dealer for details. This product is delivered to consumers after being preprogrammed with the operating parameters, then certain operation may be disabled for user-accesses. For this reason some features mentioned in this booklet may not be available, or features NOT mentioned in this manual may be available to your radio. The manufacturer and distributors are not aware of details of such dealer-programming. Therefore, please contact to your dealer in case any technical assistance may be necessary.

■ Compliance Information Statement

FCC WARNING

This equipment generates or uses radio frequency energy.

Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this

equipment if an unauthorized change or modification is made.

NXDN™

NXDN™ is a protocol name for a new digital communications system using 4-level FSK technology. Please visit here for details at <http://www.nxdn-forum.com/>

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INFORMATION TO THE DIGITAL DEVICE USER REQUIRED BY THE FCC

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 generate 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 the 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 to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer for technical assistance.

Attention:

Please also read the Radio Frequency Energy Safety Information separately included in the package of this product for your RF safety.

■ RADIO FREQUENCY ENERGY SAFETY INFORMATION

This Alinco transceiver has been tested and complies with the standards listed below, in regards to Radio Frequency (RF) energy and electromagnetic energy (EME) generated by the transceiver.

- FCC RF exposure limits for Occupational Use Only. RF Exposure limits adopted by the FCC are generally based on recommendations from the National Council on Radiation Protection and Measurements, and the American National Standards Institute.
- FCC OET Bulletin 65 Edition 97-01 Supplement C
- American National Standards Institute (C95.1 - 1992)
- American National Standards Institute (C95.3 - 1992)

! WARNING

This Alinco transceiver generates RF EME while transmitting. RF EME (Radio Frequency Electric and Magnetic Energy) has the potential to cause slight thermal, or heating effects to any part of your body less than the recommended distance from this radio transmitter's antenna. RF energy exposure is determined primarily by the distance to and the power of the transmitting device. In general, RF exposure is minimized when the lowest possible power is used or transmission time is kept to the minimum required for consistent communications, and the greatest distance possible from the antenna to the body is maintained. The transceiver has been designed for and is classified for Occupational Use Only. Occupational/ controlled exposure limits are applicable to situations in which persons are exposed to RF energy as a consequence of their employment, and such persons have been made aware of the

potential for exposure and can exercise control over their exposure. This means you can use the transceiver only if you are aware of the potential hazards of operating a transceiver and are familiar in ways to minimize these hazards. This transceiver is not intended for use by the general public in uncontrolled environments. Uncontrolled environment exposure limits are applicable to situations in which the general public may be exposed to RF energy, or in which the persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

The following list provides you with the information required to ensure that you are aware of RF exposure and of how to operate this transceiver so that the FCC RF exposure limitations are not exceeded.

- While transmitting (holding the PTT key or speaking with VOX enabled), always keep the antenna and the radio at least 3 cm (1.18 inches) from your body or face, as well as from any bystanders. A LED on the top of the radio shows red when the transmitter is operating in both PTT and VOX modes.
- Do not transmit for more than 50% of the total transceiver use time; transmitting over 50% of the total use time may exceed the limits in accordance to the FCC RF exposure requirements. Nominal transceiver operation is 5% transmission time, 5% reception time, and 90% stand-by time.
- Use only the specified antenna for this transceiver; this may be either the antenna provided with the transceiver or another antenna authorized by Alinco.

Use only Alinco authorized accessories (antennas, battery packs, belt clips, Speaker/Mics or headsets etc.): When worn on the body, always place the radio in a Alinco recommended clip or carrying case

meant for this product. The use of other than recommended or approved body- worn accessories may result in RF exposure levels which exceed the FCC's occupational/ controlled environment RF exposure limits.

WARNING

To ensure that your exposure to RF EME is within the FCC limits for occupational use, you must observe and adhere to the above points.

■ **Electromagnetic Interference Compatibility**




Electronic devices are susceptible to electromagnetic interference (EMI) if they are not adequately shielded or designed for electromagnetic compatibility. Because this transceiver generates RF energy, it can cause interference to such equipment.




- Turn OFF your transceiver where signs are posted to do so. Hospitals and health care facilities use equipment that is sensitive to electromagnetic radiation.
- Turn OFF your transceiver while on board an aircraft when so instructed.

Use of the transceiver must be in accordance with airline regulations and/or crew instructions.

WARNING










To prevent any hazard during operation of Alinco's radio product, in this manual and on the product you may find symbols shown below. Please read and understand the meanings of these symbols before starting to use the product.





 Danger	This symbol is intended to alert the user to an immediate danger that may cause loss of life and property if the user disregards the warning.
 Alert	This symbol is intended to alert the user to a possible hazard that may cause loss of life and property if the user disregards the warning.
 Caution	This symbol is intended to alert the user a possible hazard that may cause loss of property or injure the user if the warning is disregarded.

	Alert symbol. An explanation is given.
	Warning symbol. An explanation is given.
	Instruction symbol. An explanation is given.





Alert

■ Environment and condition of use




-  Use of this product may be prohibited or illegal outside of your country. Be informed in advance when you travel.
-  It is recommended that you check local traffic regulations regarding the use of a radio equipment while driving. Some countries prohibit or apply restrictions for the operation of radios and mobile-phones while driving.
-  Do not use this product in close proximity to other electronic devices, especially medical ones. It may cause interference to those devices.
-  Keep the radio out of the reach of children.
-  In case a liquid leaks from the product, do not touch it. It may damage your skin. Rinse with plenty of cold water if the liquid contacted your skin.
-  Never operate this product in facilities where radio products are prohibited for use such as aboard aircraft, in airports, in ports, within or near the operating area of business wireless stations or their relay stations.
-  The manufacturer declines any responsibilities against loss of life and/or a property due to a failure of this product when used to perform important tasks like life-guarding, surveillance, and rescue.
-  Do not use multiple radios in very close proximity. It may cause interference and/or damage to the product(s).
-  Risk of explosion if battery is replaced with an incorrect type. Dispose of, or recycle used batteries according to your local regulations.



-  Turn off the radio before entering any area with a potentially explosive atmosphere or blasting caps.
-  Do not operate the radio, disassemble or charge the battery in the potentially flammable and explosive atmosphere (such as gas station, coal gas station, etc.).
-  The manufacturer declines any responsibilities against loss of life and property due to a failure of this product when used with or as a part of a device made by third parties.
-  Use of third party accessory may result in damage to this product. It will void our warranty for repair.

■ Handling this product

-  Be sure to reduce the audio output level to minimum before using an earphone or a headset. Excessive audio may damage hearing.
-  Do not open the unit without permission or instruction from the manufacturer. Unauthorized modification or repair may result in electric shock, fire and/or malfunction and voids warranty.
-  Do not operate this product in a wet place such as in a shower room. It may result in electric shock, fire and/or malfunction. This product is splash-proof but not a complete water-proof.
-  Do not place the product in a container carrying conductive materials, such as water or metal in close proximity. A short-circuit to the product may result in electric shock, fire and/or malfunction.


■ About chargers

-  Do not use adapters other than having the specified voltage. It may result in electric shock, fire and/or malfunction. Never turn on the radio while charging.
-  Do not plug multiple devices using an adapter into a single wall outlet. It may result in overheating and/or fire.
-  Do not handle adapter with a wet hand. It may result in electric shock.


-  Securely plug the adapter into the wall outlet. Insecure installation may result in short-circuit, electronic shock and/or fire.
-  Do not use the adapter if the plug or socket contacts are dirty. Overheating and/or short-circuiting may result in fire, electric shock and/or damage to the product.

■ In case of emergency

In case of the following situation(s), please turn off the product, switch off the source of power, then remove or unplug the power-cord. Please contact your local dealer of this product for service and assistance. Do not use the product until the trouble is resolved. Do not try to troubleshoot the problem by yourself.








- When a strange sound, smoke and/or strange odor comes out of the product.
 - When the product is dropped or the case is broken or cracked.
 - When a liquid penetrated inside.
 - When a power cord (including DC cables, AC cables and adapters) is damaged
-  For your safety, turn off then remove all related AC lines to the product and its accessories from the wall outlet if a thunderstorm is likely.

■ Maintenance



-  Do not open the unit and its accessories. Please consult with your local dealer of this product for service and assistance


Caution


■ **Environment and condition of use**

-  Do not use the product in proximity to a TV or a radio. It may cause interference or receive interference.
-  Do not install in a humid, dusty or insufficiently ventilated place. It may result in electric shock, fire and/or malfunction.
-  Do not install in an unstable or vibrating position. It may result in electric shock, fire and/or malfunction when/if the product falls to the ground.
-  Do not install the product in proximity to a source of heat and humidity such as a heater or a stove. Avoid placing the unit in direct sunlight.
-  Be cautious of a dew formation. Please completely dry the product before use when it happens.
-  Electronics devices such as solar panels and LED light bulbs may generate high levels of RF noise that may cause an interference. This is not a defect of receiver circuits of our product.
-  Do not transmit within 10 meters at the same time. Even if these are same channel, high level of RF noise may cause an interference.

■ **About transceiver**

-  Be cautious of the whip antenna when carried in your shirt-pocket etc. It may make contact with your eye and cause injury.
-  Do not connect devices other than specified ones to the jacks and ports on the product. It may result in damage to the devices.

-  Turn off and remove the power source (AC cable, DC cable, battery, charger adapter etc.) from the product when the product is not in use for extended period of time or in case of maintenance.

-  Never pull the cord alone when you unplug AC cable from the wall outlet.

-  Use a clean, dry cloth to wipe off dirt and condensation from the surface of the product. Never use thinner or benzene for cleaning.



Check with your local waste officials for details on recycling or proper disposal of the electronics product, battery-packs and accessories in your area.

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◦ STANDARD ACCESSORIES

(((Standard Accessories

EBP-101 Li-ion battery pack (7.4V,1800mAh)
EDC-305 AC Adapter
EA-259 Whip Antenna
EDC-219 Rapid Charger Stand
EBC-51 Belt Clip
User Manual
Hand Strap

NOTE: Accessories may differ depending on the version you have purchased. Please contact your local dealer for details of standard accessories and the warranty-policy before purchase.

◦ BATTERY INFORMATION

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(((Charging Operation

The battery is not charged at the factory, so please charge it before use.

Charge the battery for the first time after purchase or extended storage (more than 2 months) may not bring the battery to its normal operating capacity. After repeating fully charge/ discharge cycle, the operating capacity will reach the best performance. The battery life is over when its operating time decreases even though it is fully and correctly charged and it must be replaced with a new one.

(((Battery Charger Type

Please use Alinco's designated charger, other models may cause explosion. After installing the battery pack, if the radio sounds "Low Voltage" prompt, please charge the battery.

(((Notice for Charging Battery

- ▼ Do not shortcircuit the charger. Never attempt to remove the casing from the battery, otherwise the warranty is void and you risk serious damage to yourself and properties.
- ▼ The ambient temperature should be between 5°C and 40°C while charging. Charging outside this range may not charge the battery.
- ▼ Always switch OFF the transceiver before charging. Otherwise, it may not charge correctly.
- ▼ To avoid interfering the charging procedure, please do not cut off the power or take out the battery during charging.
- ▼ Do not recharge the battery if it is already fully charged. This may shorten the life of the battery or damage the battery.
- ▼ Do not charge the battery or transceiver when wet. Dry it before charging to avoid danger.

◦ BATTERY INFORMATION

Caution:

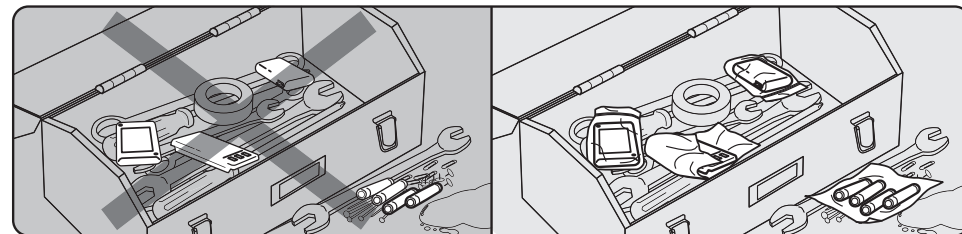
- ▼ Risk of explosion, generation of heat or leak of chemicals inside if the battery is replaced by an incorrect type or reverse polarity. Use always the recommended types of batteries in this manual only.
- ▼ The battery pack isn't fully charged when shipped. It must be charged before use.
- ▼ Charging should be conducted in a temperature range of +5°C to +40°C (+41°F to +104°F).
- ▼ Don't modify, dismantle, incinerate or immerse the battery pack in the water as this can be dangerous.
- ▼ Never short-circuit the battery pack terminals, as this can cause damage to the equipment or lead to heating of the battery which may cause burns.
- ▼ Unnecessary prolonged charging (overcharging) can deteriorate battery performance.
- ▼ The battery pack should be stored in a dry place where temperature is in -10°C to +45°C (-14°F to +113°F) range. Temperatures outside this range can cause the battery liquid to leak. Exposure to prolonged high humidity can cause corrosion of metal components.
- ▼ Battery-packs are a consuming part. When its operating time becomes considerably short after a normal charge, please consider that the pack is exhausted and replace it with a new one.
- ▼ The battery pack is recyclable. Check with your local waste officials for details on recycling options or proper disposal in your area.
- ▼ Use specified genuine chargers only to charge battery packs. Use of other chargers may cause damage to products, you and your property.
- ▼ Never carry battery packs together with conductive articles such as metals in a same bag to prevent from short-circuiting. Put the packs only in nylon bags to carry them safely.
- ▼ Even if you do not use the battery pack for a long time, charge it at least once every three months to prevent deterioration.

◦ BATTERY INFORMATION

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■ Handling and storing information of batteries and battery packs.

Batteries contain flammable materials. Mishandling shall cause batteries to rupture producing extreme heat, fire, deteriorate or cause damages to you and your properties. Please care about the following information.

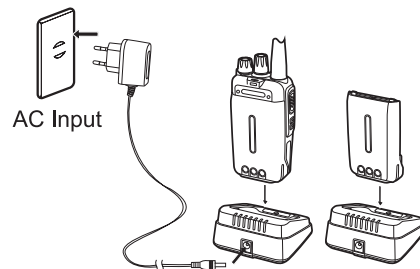


- Do not carry batteries in metal containers or in a bag containing objects such as metal tools, clips, screws, keys and jewelries.
- Do not carry batteries in wet conditions. Water is conductive and may cause short-circuit.
- The batteries must be packed in a dry nylon bag one by one when carried or stored to avoid short-circuit.
- Take batteries off of the transceiver before storing them for extended period of time. Store them in a dry, cool and dark place. Supplementary chargers is required from time to time and details are explained later in this manual.
- Please dispose of batteries according to your local regulations. When batteries are restored in a container for disposal, cover battery terminals with insulation tape to avoid short-circuit.

◦ BATTERY INFORMATION

Ⓜ How to Charge

1. Plug the AC adaptor into the AC outlet, then plug the cable of AC adaptor into the DC jack, LED has no indicator (waits to charge).
2. Slide the battery or transceiver with battery into the charger, make sure the battery terminals properly contact with charging terminals. LED indicator lights RED on (charging).
3. It takes about 4 hours to fully charge the battery, and LED indicator lights RED off when the charge is complete. Remove the battery or the transceiver equipped with battery from the stand charger.



NOTE: Please always turn off the unit while charging. When the unit is turned on, the charge can't be performed correctly.

◦ BATTERY INFORMATION

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NOTE:

- ▼ Trouble means battery heating, short-circuit or charger malfunction. Remove the battery pack from the charger immediately and contact to your local dealer for services.
- ▼ The max trickle pre-charging time is 30 minutes. In case the red indicator continues to blink longer, please stop charging and consult with your local dealer for services.
- ▼ It is known that Li-Ion battery packs heat up over 400°C by itself when kept in a temperature of over 80°C for extended period of time. Although the packs are protected against overheating with a protective circuit, never leave the battery packs in a car or similar locations in hot seasons.
- ▼ Li-ion packs may deteriorate by over 30% regardless of conditions after 3 years. This is a nature of Li-ion pack and not a defect of the product.
- ▼ The charger is to charge the battery pack only. It is not an AC adaptor to operate the radio. Never attempt to transmit the radio with using the charger as it will cause the damage to the charger and a repair/replace may become necessary.
- ▼ The charge should be conducted in an ambient temperature with a minimum proper air-conditioning in an extremely hot or cold seasons.
- ▼ Try charging the battery pack only when having trouble charging with the radio. In case the radio may have troubles, the charge can't be conducted properly. If the battery pack can be charged alone, please take the radio to your local dealer for services.
- ▼ Battery pack discharges faster when it is attached to the radio. Please always remove it from the radio when not in use.