144 MHz DIRECTION FINDING RECEIVER

SUPERFOX 145DX

The SUPERFOX145DX direction finding receiver is a digital version of the successful receiver SUPERFOX145E. The SUPERFOX direction finding receivers are modern sports equipment satisfying even most demanding requirements of top sportsmen. Their ergonomical solution results from the following features: low weight and small size, all receiver controllable by single hand even in full run, shock-resistant, waterproof house. The symmetrical super-gain antenna especially optimized for direction finding gives sharp direction pattern and high receiver sensitivity. The SUPERFOX 145DX contains special features: the direction pattern expander, which sharpens aiming and rejects unwanted sidelobes and timer which announces coming end of the transmitting period. Digital synthesizer makes tuning to frequency stable and allows saving up to 4 channels to the non-volatile memory and fast and easy switching betwen them.

The SUPERFOX receivers are used by many top competitors and their outstanding results prove the quality of the equipment.

FEATURES:

- ***Ergonomical solution – single hand controllable***
- ***High sensitivity***
- ***Optimized antenna reaches the front-to-rear ratio 40 dB***
- ***Sharp main antenna lobe gives precise bearings***
- ***Sensitivity control range 120 dB***
- ***1 min- or 30 sec timer announces the end of the transmitting period***
- ***Direction pattern expander improves aiming***
- ***Digital tuning makes receiver stable***
- ***Memory for up to 4 channels***
- ***Shock-resistant, waterproof house***
- ***Detachable antenna elements for easy transport and packing***

BRIEF OPERATING INSTRUCTIONS:

1. CONTROLS:

FREQ button:	frequency tuning
GAIN button:	GAIN control
ANT switch:	controls the signal postprocessing which improves the direction pattern of the receiver
VFO/MEM switch:	VFO: normal continuous tuning MEM: frequency "jumps" between stored channels
TIMER switch:	TIMER announces the forthcoming end of the transmitting interval. The timer is automatically reset at switching the receiver on (by connecting the headphones). From now, clock is running regardless of the position of the timer enable switch. If set, you will hear a double beep 10 seconds before the end of every minute or 30 seconds. This gives you enough time to get the last bearing and you need not waste time by checking you watches. OFF: announcement disabled (clock are still running) MEMORY WRITE: in VFO mode stores the current frequency

2. RECEIVER ASSEMBLY

The antenna elements can be separated from the main receiver body for easy transportation. The elements are color marked (blue for front and red for rear elements). Tight the screws firmly.

3. ELECTRONIC COMPASS MODULE OPERATION

The FINDER09 allows the competitor to keep stored direction exactly even after the end of the transmission period.

The FINDER09 is controlled by the red button on the right side of the receiver. When you short click the button, the current direction is stored into memory and this is indicated by a short trill in your headphonest. When you push and hold the button, you activate tracing mode and according to the current direction you will hear a tone in your headphones (in addition to the normal received signals from the band).

If the receiver is aimed to the stored direction or up to 20° to the left, you will hear low pitch in your headphones (833 Hz), if the receiver is aimed up to 20° to the right from the stored direction, you will hear high pitch (1250 Hz). At the exact direction the pitch just changes. Out of the +-20° range no tone can be heard in the headphones.

The direction remains stored in the memory until you store another one by clicking the button (even if you release the button). If you turn off the receiver, the memory content will be lost.

Using the compass: Let us asssume that you are running towards the transmitter. Before the end of transmitting period (see below: the timer) aim the receiver to the desired direction and click the compass button. After the end of transmitting period, you simply continue to run in full speed and from time to time check the direction by pressing and holding the compass button. The main advantage is that you need not to slow down or stop to check the magnetic compass or look at the receiver.

At highest GAIN setting (over 6) the compass module produces some interference while in operation. This cannot be avoided but you will find that the receiver is sensitive enough anyway and normally you will use lower GAIN settings.

When you operate the compass (storing or tracing), keep the receiver horizontal. The measured azimuth is sensitive to a receiver tilt which will cause the azimuth error up to the tilt angle (depending to a tilt direction).

> *Note: the FINDER09 compass does not use a tilt-compensated sensor for two reasons: First, tilt compensated sensor is much more expensive (5-10 times), and second, it needs for calculation the direction of the gravity vector (towards the center of Earth), which is normally measured by a accelerometer sensor. This works fine in steady conditions but running competitor adds his current (very variable) acceleration to the gravity vector which makes the measurement unreliable.*

4. MEMORY OPERATION:

VFO mode: normal continuous tuning.

Memory write: in the VFO mode tune to the tx frequency and then turn the TIMER switch to the MEMORY WRITE position. You will hear short beep in the headphones (number of dots indicates the channel number). The memory content remains stored even when the receiver is switched off.

MEM mode: when turning the FREQ button, the receiver moves to the closest stored channel ("jumps between marks"). The frequency change is indicated by short beep in the headphones. If no channel is stored, you will hear warning beep while switching to the MEM mode.

Memory erase: turn the FREQ button fully counterclockwise and make MEMORY WRITE.

5. ACCUMULATOR:

The receiver is equipped with a built-in Li-Pol accumulator, which lasts for approximately 10 hours of operation (fully charged). The accumulator status is indicated after switching on in the headphones:

_ _ fully charged, _ 80%, . . . 60%, . . 40%, . 20%

Charging: Use the N40 charger. The yellow light indicates charging in progress, flashing indicates end of charging. Keep the charged (i.e. charge it after the activity - you will lenghten the accumulator lifespan).

6. INCREASING WATERPROOFNESS

The back cover of the receiver is sealed with a Scotch tape. If you open the receiver (for exchanging the battery or drying the receiver), please remember to seal it again after closing the cover back.

SPECIFICATIONS

Receiver system:	single conversion superheterodyne
Antenna:	optimized symmetrical HB9CV
Main lobe width (WIDE):	20° / -3 dB
(NARROW):	10°/ -3 dB
Front to rear ratio:	> 40 dB
Mode:	A2A
Frequency coverage:	143,9 ... 146,1 MHz
Sensitivity (S/N 10 dB):	0,2 µV
IF bandwidth:	100 kHz
Sensitivity control range:	> 120 dB
Headphones impedance:	> 4 ohms
Timer:	10 sec prior to the end of transmitting period (30 or 60 s)
Supply:	built-in LiPol accumulator 8,4 V/ 450 mAh
Consumption (typ.):	40-50 mA
Operation period :	min. 9 hours
Compass bearing influence:	max. ± 2° (compass mounted according to the picture)
Covering:	IP63
Dimensions:	1040 (W) x 50(H) x 290 (L) mm (including antenna) 500x70x40 mm (folded)
Weight:	380 g (including antenna)
Operating temperature range:	-10 ... + 60°C
Storage temperature range:	-20 ... + 60°C

SUPPLIED ACCESSORIES

- antenna elements set
- instruction manual

OPTIONS

- electronic compass module FINDER09
- headphones SL28
- accumulator charger N40
- accumulator tester T840
- spare antenna elements

ok2bwn RADIO SPORTS EQUIPMENT

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