

## **TH-D74E 144/430 MHz DUALBANDER**

### **Kenwood introduces new Dual Band Portable Transceiver**

This Dual bander Amateur radio is packed with convenient features and the advantage of a digital transceiver with D-STAR, APRS/NAVITRA support. Featuring colour transfective TFT display that offers excellent visibility in day or night. Plus, built-in GPS and Bluetooth support, as well as Micro USB and microSD/SDHC this radio is ready to harness the exciting developments in radio communications.

#### **1. Overview**



TH-D74E

#### **2. Models**

Model Name	Type	Description	Launch
TH-D74E	E	144/430 MHz DUALBANDER Incl. CHG, BATT, ANT, Belt Clip	Sep / 2016
KNB-74L	W	Li-ion Battery, Slim, 1100mAh	
KNB-75L	W	Li-ion Battery, STD, 1800mAh	
KBP-9	W	Battery Case	
ARFC-D74	W	FREQUENCY CONTROL PROGRAM	Data only (Free)
MCP-D74	W	MEMORY CONTROL PROGRAM	Dataonly (Free)

## 3.Key Feature

### < APRS >

Compatible with the APRS communication protocol, which allows real-time two-way data transmission by using packet communications, This stand-alone device provides enjoyment of communications that make use of a variety of features, including sharing of local and GPS positional information and message exchange.

- Other station positional information, weather station information
- Station list and, object compatibility
- Messaging functionality
- QSY Functionality
- KISS mode TNC
- APRS menu settings

### < Digital >

Compatible with D-STAR, the amateur radio communications network that has both voice and data modes. Both local and international communications are possible through diverse operations including simplex communications, single repeater relay communications, and inter-repeater gateway communications.

- Compatible with D-STAR, as recommended by JARL
- DV fast data mode
- Simple operation in DR (D-STAR repeater) mode
- Setting via the digital function menu
- Easily updated repeater list
- Inherit the reputable Kenwood sound

### < Improved voice quality, along with various enhanced features, which provides increased Amateur Radio enjoyment.>

- Wideband and multimode reception
- Built-in IF filter for comfortable reception
- IF output mode
- High-performance DSP voice processing

### < The perfect combination of visibility, durability, and user-friendliness.>

- Visibility and user-friendliness taken into account
- Tough weatherproofing meeting IP54/55 standards
- Easily understandable pop-up screens

## < Other Key Features >

- Built-in GPS
- Standard compatibility on a rich interface
- Greater convenience through free PC software

## 4. General Features

- Multi-band operation: 144/430 MHz transmission on Band-A (main band), 0.1 to 524 MHz wide-band continuous reception on Band B (sub-band)
- Dual frequency reception (VxV, UxU, and VxU functions)
- SSB/CW mode: Simplified zero in with variable fine-step frequency between 20, 100, 500, and 1000 Hz
- Standard equipped with Ferrite Bar Antenna suitable for receiving mid- and low-HF bands
- 12 kHz IF output on Band B
- Dual-protocol radio with APRS and D-STAR support
- D-STAR is a digital communications method for Amateur radio users recommended by JARL for clear audio and data transmission
- D-STAR modes: DV (digital voice) and DV-Fast Data Transmission
- D-STAR offers Simplex, Multiplex, Zone, and Gateway transmission methods
- D-STAR Repeater modes: Station call (including CQ) by selecting a repeater from a repeater list downloadable from D-STAR website, direct reply function, intuitive menu operation
- Standard-equipped with APRS: Equipped with KISS mode modem to perform APRS operation without requiring PC or GPS. Also enables packet transmission with PC via USB or Bluetooth connection.
- APRS supports a number of information via menu display including positional/directional data, station list, meteorological information, QSY function, Smart Beacons, APRS lock, beacon and more. Some compatibility restrictions apply in use with older repeaters.
- English Voice Guide for Menu
- Micro-USB (Serial, Mass Storage Class, USB Audio) to enable use of external decoding software via single USB cable
- micro SD/SDHC supporting 2 GB memory with microSD and max. 32 GB memory with SDHC
- Built-in GPS (Auto Clock Setting) with highly sensitive patch antenna to track GPS signals from vehicle dashboard
- Bluetooth (SPP, HSP) support
- External Decode function (PC Decode 12kHz IF output, BW: 15 kHz)
- Color 1.74" (240 x 180 pixel) Transflective TFT Display for high visibility even under the sun or in brightly lit room; also excellent visibility in nighttime or dark with the use of backlighting
- Screen background colors selectable between black and white

- Screen text character sets include ASCII, European, Katakana and Kanji characters
- Command control Protocol (ARFC, PC, Smartphone)
- Voice Recording (Files up to microSD memory)
- 32-bit DPS for TX RX Audio Equalizer and DSP IF Filter (SSB, CW)
- TSV Data Import / Export, (Digital Repeater List, Call sign, List\_Digital)
- GPS Logger mode (Un-limited Number of Data stored to microSD memory)
- TX Power 4 position select. (5/2/0.5/0.05 W)
- IP 54/55
- Shareware available: Memory Channel Program MCP-D74 and Amateur Radio Frequency Control Program Lite ARFC-D74L

## 5.Exisiting Accessories

Model name	Description	Model name	Description
SMC-32	Speaker Microphone	KHS-35F	Headset
SMC-33	Speaker Microphone with Rmt, w/o J	KSC-25LS	Stand Charger
SMC-34	Speaker Microphone with Vol/Rmt	PG-2W	DC Cable
HMC-3	Headset with VOX	PG-3J	Cigar Lighter Cord with Noise Filter
EMC-3	Clip Microphone with Earphone & PTT	PS-60	DC Power Supply
EMC-11	Clip Microphone	HS-9	Earphone (J only)
EMC-12	Clip Microphone	HMC-4	Headset with VOX, PTT, TOT J only
KHS-21	Headset		

## 6. Specifications

GENERAL	
Frequency Range	Band-A TX: 144 - 146, 430 - 440 MHz RX: 136 - 174, 410 - 470 MHz  Band-B RX: 0.1 - 76, 76 - 108 MHz (WFM) 108 - 524 MHz
Mode	TX F3E, F2D, F1D, F7W RX F3E, F2D, F1D, F7W, J3E, A3E, A1A
Operating Temp. Range with Incd. KNB-75L	-20 °C ~ +60 °C -10 °C ~ +50 °C
Frequency Stability	+/- 2.0 ppm
Antenna Impedance	50 Ω
Operating Voltage	DC-IN DC 11.0 - 15.9 V (STD: DC 13.8 V) BATT DC 6.0 - 9.6 V (STD: DC 7.4 V)
Current Consumption (TYP.)	TX EXT.PS 13.8 V / Battery:7.4 V H M L EL 1.4 A 0.9 A 0.6 A 0.4 A BATT 2.0 A 1.3 A 0.8 A 0.5 A
Current Consumption (TYP.)	RX SINGLE 260 mA (Rated Power) 135 mA (SQ Close) 48 mA (Avg. Save on) DUAL 310 mA (Rated Power) 185 mA (SQ Close) 50 mA (Avg. Save on) GPS receiver mode 115 mA
Battery Life Approx.	Single, Save on, Rate 6:6:48 sec, GPS off H M L EL KNB-75L (1,800 mAh) 6 hours 8 hours 12 hours 15 hours KNB-74L (1,100 mAh) 4 hours 5 hours 7 hours 9 hours KBP-9 (Alkaline AAx6) ----- 3.5 hours ----- Approx. 10 % shorter when GPS is ON
Dimensions (W x H x D)	Projections not included with KNB-75L 56.0 x 119.8 x 33.9 mm with KNB-74L 56.0 x 119.8 x 29.3 mm with KBP-9 56.0 x 119.8 x 36.0 mm
Weight (net)	Body only 202 g with KNB-75L 345 g (w/ Antenna, Belt Clip) with KNB-74L 315 g (w/ Antenna, Belt Clip) with KBP-9 360 g (w/ Antenna, Belt Clip, AAx6 Battery)

GPS	
TTF (Cold start)	Approx. 40 sec
TTF (Hot start)	Approx. 5 sec.
Horizontal Accuracy	10 m or less
Receive sensitivity	Approx. -141 dBm (Acquisition)
Ta = 25 °C, Open sky	

Bluetooth	
Version, Class	Version 3.0, Class 2
Output Power	-6 < Pav < 4 dBm
Modulation Characteristics	140 ≤ Δf 1avg ≤ 175 kHz
Initial Carrier Frequency	-75 ≤ fo ≤ +75 kHz
Carrier Frequency Drift	±25 kHz (One Slot packet) ±40 kHz (Three Slot Packet) ±40 kHz (Five Slot Packet)

Except for sensitivity, these specifications are guaranteed for Amateur Bands only.

JVCKENWOOD follows a policy of continuous advancement in development.

For this reason, specifications may be changed without notice.

\*Alterations may be made without notice to improve the ratings or the design of the transceiver.

\*The photographic and printing processes may cause the coloration of the transceiver to appear different from that of the actual transceiver.

TRANSMITTER	
RF Power Output	EXT.PS 13.8 V / Battery:7.4 V H M L EL 5 W 2 W 0.5 W 0.05 W
Modulation	FM Reactance Modulation DV GMSK Reactance Modulation
Modulation Deviation FM	+/-5.0kHz NFM +/-2.5kHz
Spurious Emissions	HI / MID -60 dBc or less L -50 dBc or less EL -40 dBc or less
Microphone Impedance	2 kΩ

RECEIVER		Band-A	Band-B
Circuitry	F3E, F2D, F1D, F7W J3E, A3E, A1A	Double Super Heterodyne Triple Super Heterodyne	
IF Frequency	1st IF 2nd IF 3rd IF J3E, A3E, A1A	57.15 MHz 450 kHz	58.05 MHz 450 kHz 10.8 kHz
Sensitivity (TYP.)	Amateur Band FM 12dB SINAD FM/ NFM 144 MHz FM/ NFM 430 MHz DV PN9GMSK 4.8kbps, BER 144 MHz 430 MHz SSB 10 dB S/N AM 10 dB S/N Except above Amateur Band AM 10 dB S/N	0.18/ 0.22 uV 0.18/ 0.22 uV 0.20 uV 0.22 uV	0.19/ 0.24 uV 0.20/ 0.25 uV 0.22 uV 0.22 uV 0.16 uV 0.50 uV
	0.3 - 0.52 MHz 0.52 - 1.8 MHz 1.8 - 54 MHz 54 - 76 MHz 118 - 174 MHz 200 - 250 MHz 382 - 412 MHz 415 - 524 MHz		4 uV 1.59 uV 0.63 uV 1.12 uV 0.50 uV 0.63 uV 1.12 uV 1.12 uV

RECEIVER		Band-A	Band-B
	FM 12dB SINAD 28 - 54 MHz 54 - 76 MHz 118 - 144 MHz 148 - 175 MHz 200 - 222 MHz 225 - 250 MHz 382 - 400 MHz 400 - 412 MHz 415 - 430 MHz 450 - 490 MHz 490 - 524 MHz	0.36 uV	0.32 uV 0.56 uV 0.36 uV 0.36 uV 0.36 uV 0.36 uV 0.50 uV 0.36 uV 0.36 uV 0.36 uV 0.63 uV
	SSB 10 dB S/N 1.8 - 54 MHz 54 - 76 MHz 144 - 148 MHz 222 - 225 MHz 430 - 450 MHz		0.40 uV 0.79 uV 0.16 uV 0.20 uV 0.16 uV
	FM BC Band WFM 30 dB S/N 76 - 95 MHz 95 - 108 MHz		1.59 uV 2.00 uV
Squelch (TYP.)		0.18 uV	0.25 uV
Spurious Rejection	144MHz 430MHz	50 dB or more 50 dB or more	45 dB or more 40 dB or more
IF Rejection		60 dB or more	55 dB or more
Channel Selectivity	-6 dB 12 kHz or more -50 dB 30 kHz or less		
Audio Output	7.4 V, 10% Dist.	400 mW or more / 8 Ω	