KENWOOD

TH-D7E (G2.0)

DATA COMMUNICATOR
FM Dual Bander

Built-in 1200/9600bps TNC compliant with AX.25 protocol and KISS mode

Outward bound? Don't set off without the Data Communicator.
Kenwood's new TH-D7E(G2.0) FM dual-band (144MHz/430MHz)
handheld transceiver offers superb performance plus APRS.

Explore the new opportunities of APRS™ with a handheld transceiver built for the future.

Kenwood's new TH-D7E(G2.0) is equipped with a TNC and provides the Ham radio enthusiast with a wide range of data communications options. As well as simple packet operation using the AX.25 protocol, there's APRS (Automatic Packet/ Position Reporting System), which is rapidly gaining popularity world-wide for the transmission of positional data and messages. You can also send and receive SSTV images using Kenwood's VC-H1 Visual Communicator.

APRS (Automatic Packet/Position Reporting System)

Using APRS, the TH-D7E(G2.0) lets you transmit your co-ordinates to a friend, who can then pinpoint your position using a map on a computer. APRS software has been developed for a variety of platforms; however, what makes the Data Communicator so special is that it enables APRS operation without requiring a computer. And when you receive your friend's positional data, you can display latitude/longitude, direction and distance on your own Data Communicator.
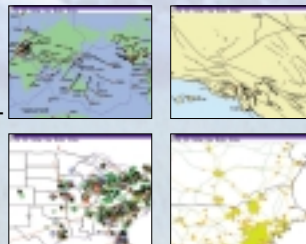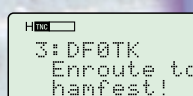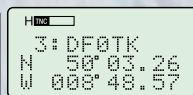
■ My Position

If you connect a NMEA-0183 compatible GPS receiver – either NMEA (4800bps) or **NMEA96 (9600bps)** – the TH-D7E(G2.0) can automatically display your own position data. Included are current **time**, **speed**, **heading** and **altitude**. And if you do not have a GPS receiver, no problem: you can input your position manually (up to 3 locations can be stored for selective transmission).
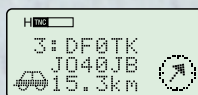
*¹ NMEA-0183 compatible

■ Receiving position data

On receipt of data, your TH-D7E(G2.0) pops up the relevant call sign and status text on the display – in either full-screen mode or together with the frequency (you can now choose between 2 different interrupt displays). The detailed display includes the **station's type** (fixed, moving, weather, etc.), position comment, icon, grid square locator, direction and distance. And in the case of a moving station, you can check on its **altitude**, speed and heading. Incoming emergency data is indicated by an audible signal and a special screen. (Note: the data from 40 stations can be stored in memory.)

■ Sending position data

You have control over transmission of your own data to other stations, determining call sign, icon, **position comment (choice of 15)**, TX interval, and position ambiguity (the last 1~4 digits of your latitude and longitude can be masked). The options for status text transmission now include a choice of **three types** (up to 20 characters each) and a variable rate (once every 1~8 times a beacon is transmitted, or disabled). Also, the auto TX beacon interval can now be set as low as 0.2min.

■ Exchanging messages

On receipt of a message, it pops up on screen. A detailed display identifies message type, call sign, contents, and **time passed since transmission/reception**. When you send a message, it is displayed with such information as line number, status, and time passed since transmission. A total of 16 messages – sent and received – can be stored for easy reference. Other messaging features include **auto-replay** (with separate storage for a message of up to 45 characters), **query packets**, and **group message reception** (up to 6 different group names, max. 9 characters each).

■ **Way point** position data output (selectable: 6~9 characters)
■ **Data band select** (cross-band compatible) ■ Packet path selection with Digipeat ■ Independent selection of units (i.e. Fahrenheit + meters, Celsius + feet, etc.)

TH-D7E(G2.0) + VC-H1
(Visual Communicator)

The TH-D7E(G2.0) also works hand-in-hand with Kenwood's VC-H1 Visual Communicator, which combines an image-scan converter and 1/4-inch CCD camera in a compact battery-operated unit. Simply connect it to the TH-D7E(G2.0) to start sending and receiving colour images over the air. As well as viewing incoming pictures, you can review your own prior to transmission on the 1.8-inch TFT display. And there's sufficient memory to store 10 pictures (your own or those sent to you). Other features include:

■ **Text superimpose function**
Add your call sign, RSV reports, messages (Eight text colours available).

■ **VC shutter**
You can control a connected Visual Communicator (VC-H1) from your Data Communicator to initiate transmission.

■ **Fast FM**
This high-speed transmission mode lets you send an image in 14 secs (approx.).

■ **SSTV transmission mode selection (9 modes)**
You can use any of the 8 standard SSTV modes, in addition to Fast FM.

■ **Dual receive for voice & image transmissions (VHF only)**

As well as allowing you to enjoy both APRS and SSTV (with Kenwood's VC-H1), the TH-D7E(G2.0) is fully equipped to provide the performance and features you would expect of the latest generation of dual-band transceivers.

■ **Built-in 1200/9600bps* TNC (1 packet, 1 frame, 256 bytes) compliant with AX.25 protocol and KISS mode**
*Selectable with communicator unit

■ **High-speed (9600bps) PC-based packet communications for chat, BBS, etc.**

■ **Monitoring DX cluster**

■ **Dual receive on same band (VHF only) for both voice and data (two frequencies simultaneously)**

■ **Wide/narrow TX deviation (VHF only)**

■ **Large (12 digits x 3 lines) dot-matrix LCD, multi-scroll key, menu mode & other user-friendly features**

■ **200 memory channels with 8-character memory name input**

■ **16 backlit keys**

■ **Built-in CTCSS plus 1750Hz tone burst (38 EIA-standard subtone frequencies)**

■ **AIP (Advanced Intercept Point) (VHF only)**

■ **16-digit, 10-channel DTMF memory**

■ **Auto repeater offset (144MHz)**

■ **MIL-STD 810C/D/E water resistance**
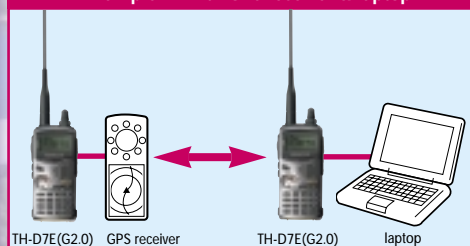
■ **DC 13.8V input (built-in recharger)**

■ **High-gain dual band antenna**

■ **Low-loss SMA connector**

■ **Compatible with NMEA-0183 ver. 3.0**

Example A: with GPS receiver & laptop
TH-D7E(G2.0)   GPS receiver   TH-D7E(G2.0)   laptop

Example B: with VC-H1
TH-D7E(G2.0)   VC-H1   TH-D7E(G2.0)   VC-H1

APRS — A Global Phenomenon

APRS is the name given to Ham radio packet communications network software developed in 1992 by Bob Bruninga (WB4APR). There are now about twenty thousand APRS users in the US, and groups are springing up in several other countries, including the UK, Italy, Netherlands, Argentina, and Venezuela.

Information can be found on many Internet sites (such as *http://web.usna.navy.mil/~bruninga/aprs.html)*, some of which display real examples of APRS in action. You can even check operations in areas far beyond the range of your own equipment. This is one of the reasons why APRS is catching on so fast.

Optional Accessories

VC-H1
Interactive Visual
Communicator

PB-38
Standard
Battery Pack
(6.0 V, 650 mAh)

PB-39
High-Power
Battery Pack
(9.6 V, 600 mAh)

BT-11
Battery Case
(4 x AA)

BC-19
Rapid
Charger

BC-17
Wall Charger

SC-40
Soft Case

SMC-31
Speaker
Microphone

SMC-32
Speaker
Microphone

SMC-33
Remote
Control Speaker
Microphone

SMC-34
Speaker
Microphone
with 3 Function
Keys & Volume Control

HMC-3
Head Set
(VOX & PTT)

EMC-3
Clip Microphone
with Earphone

PG-3J
Filtered
Cigarette
Lighter Cord

PG-2W
DC Cable

PG-4V
Connection Cable

PG-4W
PC Connection
Cable (with PC
software and
Instruction manual)

Specifications

TH-D7E(G2.0)		
GENERAL		
Frequency Range		
144 MHz (VHF)	TX/RX:	144 ~ 146 MHz
430 MHz (UHF)	TX/RX:	430 ~ 440 MHz
	RX:	144 ~ 146 MHz
Mode	F1D, F2D, F3E (FM)	
Operating Temperature Range	-20 ~ +60° C	
Antenna Impedance	50 Ω	
Power Requirement		
External	DC 5.5 ~ 16 V (13.8 V)	
Battery	DC 4.5 ~ 15 V (6.0 V)	
Current Drain (approx.)		
Transmit		
HI (13.8V DC)	1.7 A (VHF), 2.1 A (UHF)	
(9.6V DC)	1.7A (VHF), 1.8 A (UHF)	
(6.0V DC)	1.3 A (VHF), 1.5 A (UHF)	
LO (6.0V DC)	0.5 A (VHF/UHF)	
EL (6.0V DC)	0.3 A (VHF/UHF)	
Standby (TNC off)	45 mA (VHF/UHF)	
Dimensions (W x H x D) [projections not included]	54 x 119.5 x 35.5 mm with PB-38	
Weight	Approx. 340 g with PB-38	
TRANSMITTER		
RF Output Power (approx.)		
HI (13.8V DC)	6 W (VHF), 5.5 W (UHF)	
(9.6 DC)	5 W (VHF/UHF)	More than 300 mW
(6.0V DC)	2.5 W (VHF), 2.2 W (UHF)	
LO	0.5 W (VHF/UHF)	
EL	50 mW (VHF/UHF)	
Modulation	Reactance modulation	
Maximum Frequency Deviation	±5 kHz	
Spurious Radiation		
HI	Less than –60 dB	
LO	Less than –50 dB	
EL	Less than –40 dB	
Frequency Stability	±10 ppm (-10 ~ +50° C)	
	±15 ppm (-20 ~ +60° C)	
Modulation Distortion	Less than 3% (300 Hz ~ 3 kHz)	
Microphone Impedance	2 kΩ	
RECEIVER		
Circuitry	Double Super Heterodyne	
Intermediate Frequency		
1st IF	38.85 MHz (VHF), 45.05 MHz (UHF)	
2nd IF	450 kHz (VHF), 455 kHz (UHF)	
Sensitivity (12 dB SINAD)		
Main	Less than 0.18 μV	
Sub	Less than 0.28 μV	
Squelch Sensitivity	Less than 0.1 μV	
Selectivity		
-6 dB	More than 12 kHz	
-40 dB	Less than 28 kHz	
Audio Output Power		
9.6V (At 8 Ω,10% distortion)	More than 450 mW	
6.0V (At 8 Ω,10% distortion)		

Kenwood follows a policy of continuous advancement in development.
For this reason specifications may be changed without notice.
These specifications are guaranteed for Amateur Bands only.