

KENWOOD

TM-D700E

DATA COMMUNICATOR

144/430MHz FM Dual Bander

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

One of the greatest pleasures of exploration is being able to communicate each new discovery. And Kenwood's TM-D700E Data Communicator allows you to do just that.

This FM dual-band mobile transceiver harnesses APRS®, GPS and SSTV technologies to provide world-class communications for the Great Outdoors.



Just as the Internet has ushered in a new era of computing, **APRS**[®] has added a new dimension to radio communications. And you can experience it all with Kenwood's new TM-D700E.

As smart as Kenwood's new TM-D700E is – with its extra-large amber & black display (reversible) – it is even smarter inside. This new-generation mobile transceiver features a built-in TNC to offer a wide range of data communications options, including simple packet operation using the AX.25 protocol. You can even send and receive SSTV images (using Kenwood's VC-H1). But above all the TM-D700E is fully equipped to make the most of APRS[®] – the Automatic Packet/Position Reporting System.



Main Features

- Built-in 1200/9600bps TNC compliant with AX.25 protocol and KISS mode
- Full dual-band operation: VHF x VHF/ VHF x UHF/ UHF x UHF
- Full dual-band operation with wide/narrow channel spacing
- Remote panel (extension cable and panel holder supplied) with extra-large (188 x 54 dots) backlit LCD & multifunction key display (reversible)
- D-sub 9-pin terminal (for PCs)
- GPS input terminal (NMEA-0183)
- 9600bps PC-based packet communications for chat, BBS

Other Features

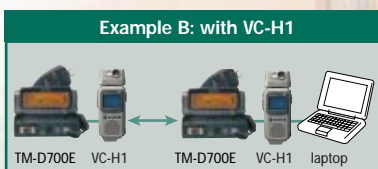
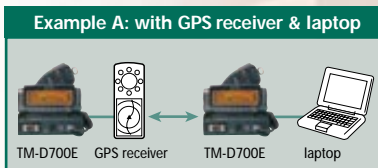
- **Key operation announcement with optional VS-3 voice synthesizer**
Individual characters of call signs are announced one at a time upon reception of an APRS transmission; in addition, messages beginning with a % mark are also announced.
- **Dual receive on same band for voice & data (two frequencies simultaneously)**
- **Advanced Intercept Point (VHF band)**
- **Wide/narrow Channel Spacing Switchable**
- **200 memory channels with 8-character memory name input**
- **2 call channel memory capacity**
- **Programmable memory (PM) available for selection/storage of 5 operation profiles**
- **Up to 10 programmable memory scan banks**
- **Built-in CTCSS (38 EIA-standard subtone frequencies) plus 1750Hz tone burst**
- **DCS (Digital Code Squelch) with 104 selectable codes**
- **DX cluster monitoring (using built-in TNC)**
- **DTMF memory (10 channels, 16 digits)**
- **10-channel program scan**
- **DCS code scan, TONE, CTCSS scan**
- **Visual band scope (Visual Scan)**
- **Mute function**
- **MCP memory control**
The transceiver can be connected to a PC with appropriate software for control of memory settings (MCP).

TM-D700E + VC-H1 (Visual Communicator)

The Kenwood VC-H1 Visual Communicator, which combines an image-scan converter and CCD camera in a compact battery-operated unit, makes it easy to receive and transmit colour pictures — whether a majestic mountain panorama or just a self-portrait. Simply connect the VC-H1 to your TM-D700E to start sending and receiving colour images over the air.



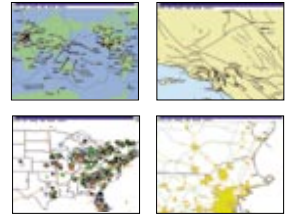
- **Image memory (VC-H1)**
Up to 10 pictures can be stored in memory. This allows you to compare and pick the best shot to send. You can also store incoming pictures and protect them from unintentional deletion.
- **Fast FM mode (VC-H1)**
This high-speed transmission mode lets you send an image in 14 seconds (approx.).
- **SSTV transmission mode selection (VC-H1)**
You can select either Robot 36 or Fast FM mode.
- **Simultaneous reception of voice & image transmissions (VC-H1)**



APRS®

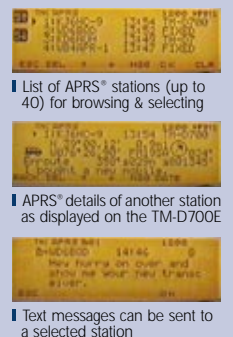
(Automatic Packet/Position Reporting System)

The TM-D700E has everything you need to explore the exciting possibilities of APRS® — and you don't even have to own a computer. If you know your current position, you can manually input latitude and longitude data for transmission to other members of your group or to anyone using APRS®. Of course, a GPS unit will do this for you automatically, and ensure accuracy. When you receive a friend's coordinates, you can display his latitude/longitude, direction and distance on your own Data Communicator. Like all of the best ideas, in both conception and execution APRS® is beautiful in its simplicity.



- **Positional/directional data**
With an NMEA-0183 compatible GPS receiver you can transmit your exact position for automatic calculation of distance, current speed and heading. Any of the last 4 digits can be masked for variable "position ambiguity" if you wish to limit accuracy. You can also limit your own APRS® reception from a maximum range of approximately 2,500 km to just 10 km.
- **Unprotocol**
When you need to focus, this function allows you to control what data you receive. Choose all calls, special (events), or alternate net (group code).
- **Versatile messaging**
Transmission of position data can be accompanied by position comments (15 selectable settings), 5 programmable status texts (up to 28 characters), icons, and bulletins. For added messaging flexibility, individual alpha messages (up to 64 characters) can also be sent. Internal memory can store up to 16 transmitted/received messages.
- **Station list**
Received APRS® data can be stored in up to 40 memory channels for listing on the LCD display. You can pick any one to see full details of a station's status (fixed, moving, weather, etc.), as well as its position and heading.
- **Grid square locator**
- **TX interval (0.2/0.5/1/2/3/5/10/20/30 min.)**
- **Packet path selection with Digipeat**
- **Weather station & Power Height Gain (PHG) data reception**
- **Digipeat function capability**
- **Auto Message Reply**
- **Audible APRS® message receive (call sign) notification (requires VS-3)**
- **Waypoint position data output**

APRS® Displays



Optional Accessories

<p>■ VC-H1 Portable SSTV terminal</p> 	<p>■ SP-50B External speaker</p> 
<p>■ PG-4X Extension cable kit</p> 	<p>■ PG-3B Noise filter</p> 
<p>■ PG-4T Connection cable (for the VC-H1)</p> 	<p>■ PG-2N DC cable</p> 
<p>■ MJ-88 Microphone plug adapter</p> 	<p>■ PS-33 DC power supply</p> 
<p>■ MJ-89 Modular plug microphone switch</p> 	<p>■ PS-53 DC power supply</p> 
<p>■ MC-45 Microphone</p> 	<p>■ PS-53 DC power supply</p> 
<p>■ MC-53DM Multi-function microphone with DTMF</p> 	<p>■ PG-5A Data cable</p> 
<p>■ MC-80 Standing microphone (requires MJ-88)</p> 	<p>■ VS-3 Voice Synthesizer Unit</p> 

Not all products are available in all markets.

Specifications

TM-D700E

GENERAL

Frequency Range		
VHF Band	TX/RX:	144 ~ 146 MHz
	TX/RX (SUB UHF):	430 ~ 440 MHz
UHF Band	TX/RX:	430 ~ 440 MHz
	TX/RX (SUB VHF):	144 ~ 146 MHz
Mode		F1D, F2D, F3E
Operating Temperature Range		-20° ~ +60° C
Frequency Stability		± 5ppm (-10° ~ +50° C)
Antenna Impedance		50 Ω
Power Requirement		DC 13.8 V ±15%
Current Drain (approx.)		
Transmit		
HI	50 W (VHF), 35 W (UHF)	Less than 11.5 A (VHF), 10.0 A (UHF)
MID	10 W	Less than 5.5 A (VHF), 6.5 A (UHF)
LOW	5 W	Less than 4.0 A (VHF), 5.0 A (UHF)
Receive		Less than 1.0 A (VHF/UHF)
Dimensions (W x H x D)		
[Body: projections not included]		140 x 40 x 195 mm
[Panel: projections not included]		140 x 60 x 33.3 mm
Weight		
[Body]		Approx. 1.2 kg
[Panel]		Approx. 180 g

TRANSMITTER

RF Output Power (approx.)	
HI	50 W (VHF), 35 W (UHF)
MID	Approx. 10 W (VHF/UHF)
LOW	Approx. 5 W (VHF/UHF)
Modulation	Reactance modulation
Maximum Frequency Deviation	Less than ±5 kHz/±2.5 kHz
Spurious Radiation	Less than -60 dB
Modulation Distortion	Less than 3% (300 Hz ~ 3 kHz)
Microphone Impedance	600 Ω

RECEIVER

Circuitry	Double Super Heterodyne
Intermediate Frequency	
1 st IF	38.85 MHz (VHF), 45.05 MHz (UHF)
2 nd IF	450 kHz (VHF), 455 kHz (UHF)
Sensitivity (12 dB SINAD)	Less than 0.16 μV (VHF/UHF)
Squelch Sensitivity	Less than 0.1 μV (VHF/UHF)
Selectivity	
-6 dB	More than 12 kHz
-40 dB	Less than 28 kHz

TERMINAL INTERFACES

TNC	AX.25: Level 2, Version 2.0 (1200/9600bps)
PC	RS-232C (9600/19200/38400/57600bps)
GPS	NMEA: RS-422 (4800bps) NMEA 96: RS-232C (9600bps)

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.



ISO9001 FM34304 JQA-1205
Communications Equipment Division
Kenwood Corporation
ISO9001 certification

KENWOOD ELECTRONICS UK LIMITED

Kenwood House, Dwight Road, Watford, Herts, WD1 8EB, United Kingdom