

# KENWOOD

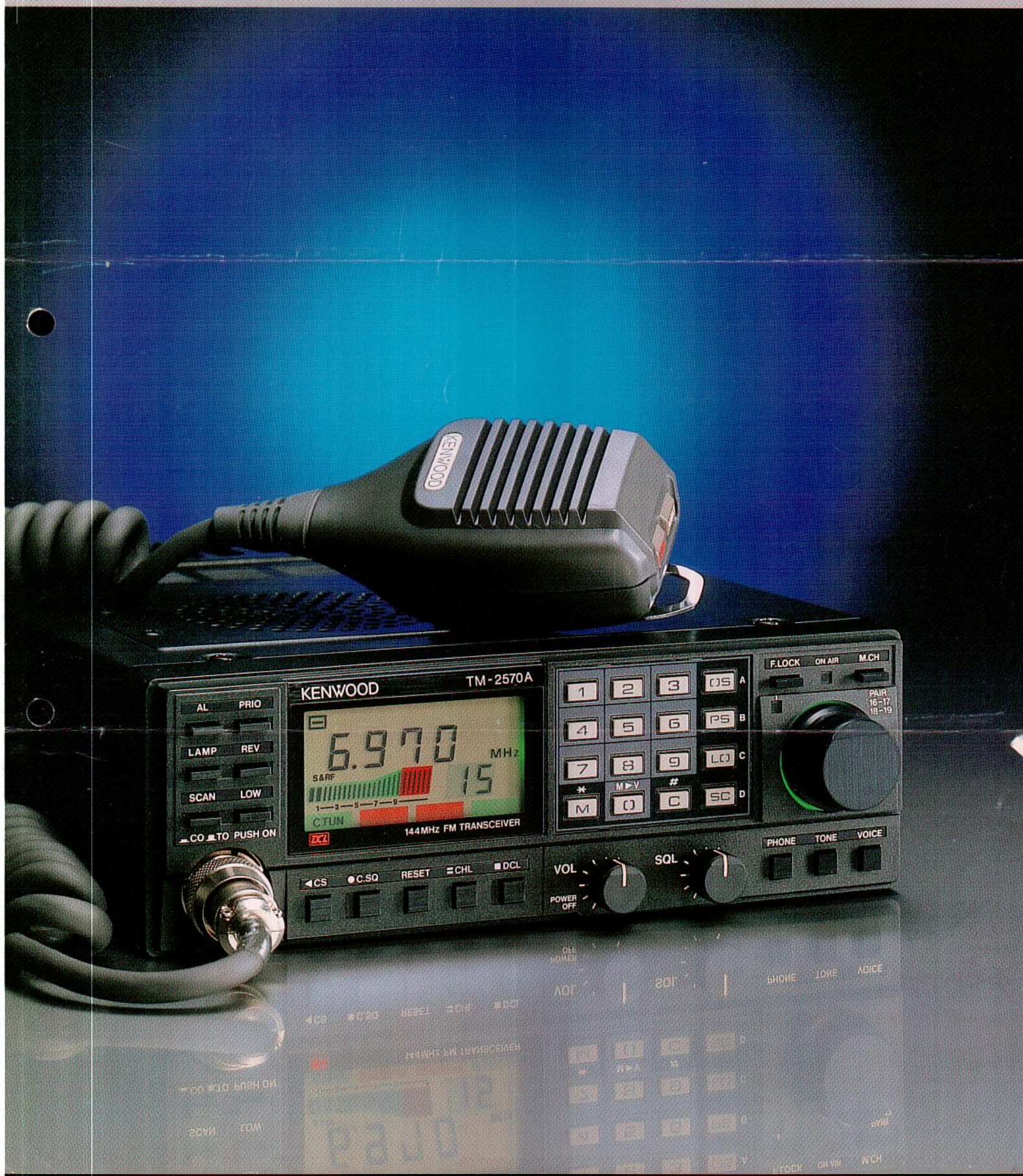
2 m FM  
Mobile Transceiver

25 watts

45 watts

70 watts

# TM-2530A/2550A/2570A





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## 2m FM Mobile Transceiver

The KENWOOD TM-2530A/TM-2550A/TM-2570A 2 meter FM Mobile Transceivers have been designed to satisfy the needs of the most demanding 2 m mobile operator. A wide range of innovative features have been incorporated in the basic design, including a large, new, easy-to-read LCD display, 23 multi-function memory channels for storing frequency, offset, telephone number and sub-tone (sub-tone unit optional), auto-offset, programmable priority, memory and band scans, automatic center-stop tuning, and Hi/Lo power selection. The new "25-Series" offers 2m FM mobile transceivers in three power output versions: TM-2530A, 25 W output, TM-2550A, 45 W output, or the TM-2570A, a 70 W industry first by KENWOOD!

An optional MU-1 DCL (Digital Channel Link) unit provides a revolutionary new signalling capability, giving the operator maximum flexibility and efficiency in his normal, day-to-day contacts, or in high speed net operations. Easy-to-operate front panel controls provide the final touch, making this new 2m series easily the last word in state-of-the-art technology.



### <FEATURES>

#### 70 W, 45 W, and 25 W RF Output Versions.

The use of automatic final amplifier protection circuitry in conjunction with a high reliability RF power amplifier stage makes possible three model versions, each having a different maximum power output: TM-2570A at 70 W, TM-2550A at 45 W, and TM-2530A at 25 W. A Hi/Lo power switch allows operation at the high output, or at a more conservative level of 5 watts when higher power is not needed.

#### Optional MU-1 DCL "Digital Channel Link System" Unit.

DCL is a revolutionary new signalling system developed by KENWOOD for Amateur radio, that utilizes the most advanced digital data transmission technology. Its features include automatic connection, recall, vacant frequency location, reverse function, and selective calling of individual transceivers or groups of transceivers.

By utilizing a 5 digit code group, 100,000 combinations are possible, thus providing a high level of code security. In addition to the selective calling code, the DCL system also transmits a maximum 6 digit alpha numeric group, which is normally used for the station call sign, e.g. WD6DJY, or JA1YKX. The call sign is inserted using decimal ASCII code. By using the optional CD-10 call sign display, which can be used with any receiver, the operator may store up to 20 incoming call signs for later review or logging. Installation inside the cabinet is simple and easy.

#### New Large, Easy-to-read LCD Display.

A green, multi-function, back-lighted semi-penetration type LCD display is provided, for best visibility in direct sunlight or after dark. It indicates frequency, digital code, call sign code, tone frequency, telephone numbers, memory channel number, repeater offset (+, s, -), S/RF meter, CENTER TUNING, PRIORITY, REVERSE, CHL, SCAN, and TELEPHONE.

#### New, Easy-to-operate, Illuminated Keys.

A functionally designed control panel features expanded convenience and ease of operation during night-time use, through backlighted, individually illuminated keys.



#### 23 Multi-function Memory Channels.

23 memory channels allow storage of frequency, repeater offset, telephone numbers, and sub-tone frequencies (TU-7 sub-tone unit optional), providing quick and easy access during mobile operations. The priority channel can be programmed from any of the memory channels. With the optional TU-7 38 channel sub-tone unit installed, sub-tone information can be stored in any of the memory channels. Memories 1 through 15 may be operated simplex or  $\pm 600$  kHz offset. Memory pairs 16/17 and 18/19 are paired for non-standard repeater offset, allowing easy selection of transmit and receive frequencies. Memory "A" is an operator selected reference frequency for the automatic connection function to use in finding a vacant channel during DCL operations. Any channel frequency stored in memory "b" will be skipped while operating in automatic connection mode during DCL operations. Memories "U" and "d" establish the upper and lower limits for programmable band scan, but they may also be used in the same manner as memories 1 through 15. When the "M.CH" (memory channel) key is depressed, a circle of light appears around the memory channel selector knob. When the "M.CH" key is in the "off" position, the circle of light will be extinguished. An audible "beep" will sound when the memory channel selector control knob is rotated in either direction to the channel 1 position.

#### 15 "Telephone Number" Memory Channels.

Channels 1 through 15 may be used to store up to 15 7-digit telephone numbers, entered using the front panel keyboard. Depressing the telephone key during transmission causes the selected telephone number to be automatically transmitted.



#### Pre-programmed Automatic Offset.

The built-in microprocessor is pre-programmed for simplex or  $\pm 600$  kHz offset in accordance with the 2 meter band plan, allowing easy operation on the selected frequencies. A manual change in the offset frequency is easily accomplished through use of the "OS" key on the keyboard, and a temporary change in the offset frequency as stored in the memory may also be programmed using this key.

144.0	145.5	146.4	147.0	147.6 MHz
S	- S	+ S	- + S	-
	146.0	146.6	147.4	148.0

#### Center Stop During Programmable Band Scan, with Indicator.

During band scan, scanning action will stop in the center of the selected channel (5 kHz step), making it easy to operate on the correct frequency without the need for programming the scan steps. The CENTER TUNING indicator verifies reception in the



### Indicator section

—, s, + = offset/T = tone indicator  
SCAN = SCAN indicator  
Frequency, digital code and call sign (ASCII code)  
Telephone indicator/S/RF level meter  
Memory channel display indicator  
★ mark: memory channel scan lock-out designator  
C.TUN: CENTER TUNING indicator  
PRIO: PRIORITY indicator  
REV: REVERSE indicator  
CHL: CHL indicator

### REV (reverse) switch

Reverses the repeater shift ( $\pm 600$  kHz) and other transmit/receive frequencies (CH-16~17, 18~19).

### LAMP switch

HI/LO switch  
Selects full or low output power

### SCAN switch (CO TO)

TO (Time Operated):  
Scanning stops on channels which are busy, then scanning is resumed after 5~6 seconds (adjustable 0~5 seconds)  
CO (Carrier Operated):  
Scanning stops on channels which are busy, then resumes when the channel becomes open.

### PRIORITY switch

Recalls the priority channel.

### ALERT switch

Checks the specified priority channel.

### Clear key

Clears frequency selection and cancels scan function.

### Number keys

Selects frequency, also selects DTMF tones on transmit.

### Memory key

Stores displayed frequency in selected memory.

Offset Select key Selects frequency shift



MIC connector (8 pin)

CS (Code Set) key

C.SQ (Code Squelch) key

RESET key

CHL (Channel Link) key

VOLUME control/  
POWER switch

DCL (Digital Channel Link) key

channel center during all operations, such as scan, memory, or keyboard frequency selection.

### Memory Scan and Programmable Band Scan Resume Selection.

During memory scan or band scan, scanning may be programmed to stop automatically on a busy channel. When the scan mode switch is in the "TO" (Time Operated Resume) position and a busy channel is encountered, scanning will stop on the channel, hold for approximately 5 seconds, and then resume scanning. When the scan mode switch is in the "CO" (Carrier Operated Resume) position, scanning will stop on the busy channel and will resume immediately when the signal ceases. In either case, "TO" or "CO", a scan delay circuit (approximately 1.5 seconds) prevents unexpected scan resume in the event of signal fading, or during "no-signal" intervals typical of normal transmit-receive operations.

### (a) Memory Scan plus Programmable Memory Channel Lock-Out.

Scans only those channels in which frequency data is stored. The "LO" key allows programming of memory scan to skip selected memory channels during scan without loss of data previously stored in that channel. A star lights on the display, indicating that the specific channel is in the LOCK-OUT mode of memory scan. To reinstate the channel to the IN-SCAN mode, simply depress the "LO" key a second time, after manually tuning to the locked-out channel.

### (b) Programmable Band Scan.

Utilizing memories "U" and "d", the upper and lower limits of the band of frequencies to be scanned may be set, allowing maximum efficiency in band scanning.

### (c) Programmable Priority Alert.

The "PRIORITY" channel may be programmed from any of the 23 memory channels, by depressing the "PS" key on

the keyboard. Specially designed circuitry assures shorter sampling intervals with minimum switching noise. With the "ALERT" switch "on", the unit scans back to the programmed priority channel once every 6 seconds for approximately 0.3 seconds, to check for activity. A dual "beep" will sound if the channel is active. Depressing the "PRIO" (priority) switch causes operation to be immediately transferred to the priority channel.

### Programmable Sub-tone Channels.

The internal installation of the optional TU-7 sub-tone unit provides 38 keyboard selectable sub-tone frequencies. A selected sub-tone frequency may be stored in any of the memory channels. Pressing the "TONE" switch causes the LCD display to indicate TONE OFF, (FO), or the tone frequency of the selected sub-tone channel. 38 tone frequencies beginning with 67.0 Hz through 250.3 Hz may be programmed.

### Built-in 16-Key Autopatch, with Audible Monitor Circuit.

The front panel keyboard functions as a 16-key autopatch encoder during transmission. 16-key operation is indicated by DTMF speaker output when a key is pressed while transmitting.

### Lithium Battery Memory Back-up.

An internal lithium battery memory back-up prevents loss of memory data when the radio is disconnected from its main power source, as when the radio is being moved to or from the automobile and/or the ham shack.

### Front-Panel Keyboard Operation.

A convenient front-panel keyboard is used for selecting frequency, offset, programming memories, controlling scan functions, and selecting autopatch encoder tones.

### Extended Frequency Coverage.

Covers 142—149 MHz in 5 kHz steps, allowing simplex and repeater operation on many MARS and CAP frequencies.

Frequency range also expendable for coverage 141-151 MHz.

Specifications are guaranteed for the 144—148 MHz Amateur band only.

### Repeater Reverse Switch.

The repeater reverse switch transposes the receive and transmit frequencies for checking signals on the input of a repeater, if the other station is within simplex range, or if a repeater is "upside down".

### High Performance Receive/Transmit Specifications.

The extra high receive sensitivity and excellent dynamic range provided by the use of GaAs FETs in the RF amplifier, plus KENWOOD's special high-speed antenna switching circuit, coupled with transmitter modulation characteristics that have been carefully selected for superior sound quality and minimum distortion, result in an outstanding KENWOOD 2 meter radio series having the highest in receive/transmit specifications.

### "BEEPER" Amplified Through Audio Circuit.

The operation of the various functions is confirmed by the sounding of distinct "beeper" tones. With the front panel volume control set at your usual operating position, the audio output level of these tones may be adjusted to a comfortable level, through use of an internally located variable resistor.

### Microphone Test Function.

With the Hi/Lo power switch in the low power position, the RF bar meter reading varies with relative modulation, verifying output from the microphone. Microphone output level may be adjusted using a variable resistor mounted internally.

### Low Power Output Level Adjustment.

An internally mounted variable resistor is provided for adjusting the power output for "LO" power operations.



**Priority Select key**

**Memory Channel Lock-Out key**  
Allows programming of memory scan to skip selected memory channels during memory scan.

**Scan key**  
Activates automatic band or memory scan, according to position of key memory select switch.

**M. CH (memory channel) switch**  
Selects keyboard operation or memory channel operation.

**LOCK (frequency lock) switch**

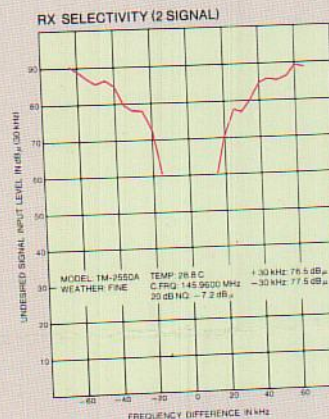
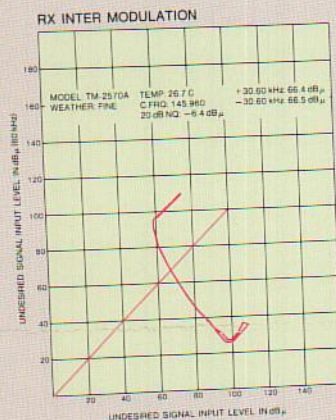
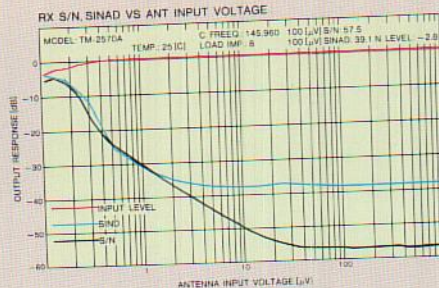
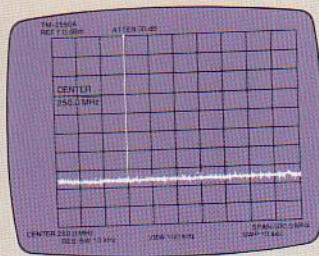
**MEMORY channel and TONE FREQUENCY selector**  
Selects the desired memory channel. There are 23 memory channels.

**VOICE switch**  
Announces the frequency, memory channel number, digital code, tone frequency and telephone number.

**TONE switch**  
Selects the desired tone frequency.

**PHONE switch**  
Selects the telephone address number and programs or recalls the desired telephone number.

**SQUELCH**  
Eliminates noise during no-signal periods.



**Rugged Die-cast heatsink, and an internally mounted cooling fan (TM-2570A).**

The 70 W final amplifier stage of the TM-2570A is mounted directly on its die-cast heatsink, for maximum thermal conduction efficiency, and an internally mounted cooling fan further assures efficient operation within the design parameters of the final amplifier device.

**Frequency Lock Switch.**

A front panel "F. LOCK" switch prevents accidental loss of selected frequency when in the "LOCK" position.

**Optional VS-1 Voice Synthesizer Unit.**

An optional VS-1 Voice Synthesizer unit is available, which announces the frequency, memory channel number, digital code, tone frequency, and telephone number.

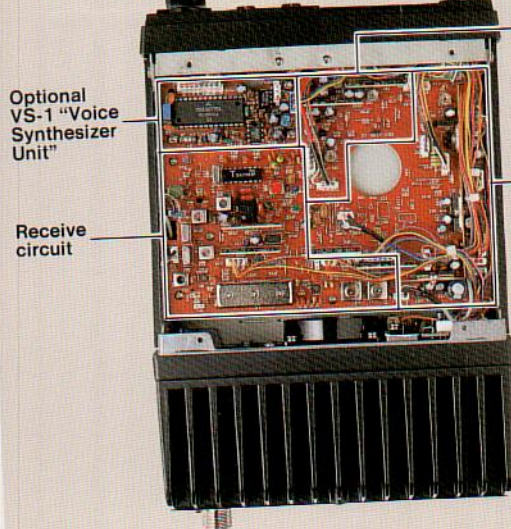
**Easy-to-Install Mobile Mount.**

**Compact, Lightweight Design.**

The TM-2530A measures only 180 (7.09) W × 60 (2.36) H × 195 (7.68) D mm (inch), weighs 1.8 (3.97) kg (lb.).  
The TM-2550A measures only 180 (7.09) W × 60 (2.36) H × 215 (8.46) D mm (inch), weighs 2.0 (4.41) kg (lb.).  
The TM-2570A measures only 180 (7.09) W × 60 (2.36) H × 250 (9.84) D mm (inch), weighs 2.35 (5.18) kg (lb.).

**Standard Accessories (supplied)**

- Operating manual
- Hand microphone
- DC cable with fuse
- Mobile mounting bracket
- Microphone hanger

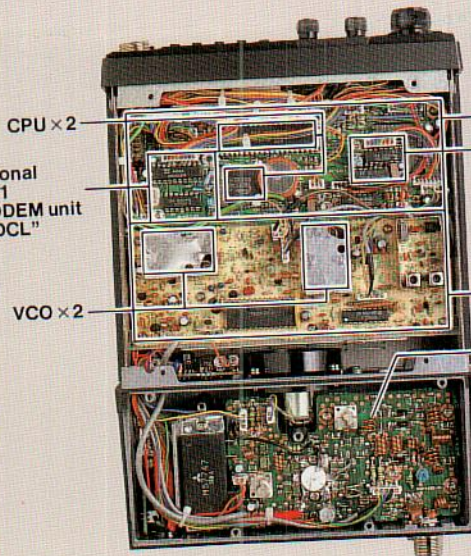


Optional VS-1 "Voice Synthesizer Unit"

Receive circuit

Mic amplifier

AVR and AF power amplifier



CPU × 2

Optional MU-1 "MODEM unit for DCL"

VCO × 2

Control unit

Optional TU-7 "38 tone CTCSS encoder"

PLL unit

Final unit

**TM-2570A 2 m FM Mobile Transceiver (70 W)**



# OPTIONAL ACCESSORIES



**PS-50 Heavy Duty DC Power Supply**  
(for TM-2570A)  
Supplies regulated 13.8 VDC at 20 A with built-in cooling fan and protection circuit for maximum reliability.



**PS-430 DC Power Supply**  
(for TM-2530A/50A)  
Supplies regulated 13.8 VDC at 10 A continuous with built-in cooling fan and protection circuit for maximum reliability.



**CD-10 Call Sign Display**  
The CD-10 stores the call sign of the calling station in its memory and displays it on an LCD display. Call signs of up to 20 of the most recently calling stations are stored, allowing the operator to quickly check for and return any call.

**[Features]**

- Automatic Display of the Call Sign
- Easy-to-connect
- 20-ch Memory Storage of Call Signs
- Easy-to-Read Dot-matrix LCD Display
- 2 switchable Output Terminals
- DATA PORT Supplied for External Computer

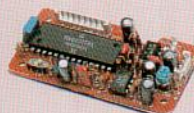
**[Option] AC-10 AC Adaptor**



**TU-7 38 Tone CTCSS Encoder**  
With the TU-7 installed into the cabinet, sub-tone information can be stored in any of the memory channels.



**MU-1 MODEM Unit for DCL system**  
Optional MU-1 is available, which provides DCL (Digital Channel Link) system. Installation inside the cabinet is simple and easy.



**VS-1 Voice Synthesizer unit**  
Announces the frequency, memory channel number, digital code, tone frequency and telephone number when installed inside the cabinet.



**MB-10 Mobile Mount**  
The mobile mount, MB-10 allows easy installation and removal of the TM-2530A/2550A/2570A.



**SW-100A/B SWR/POWER Meter**  
Compact and lightweight SWR/POWER/VOLT meters cover 1.8–150 MHz (SW-100A), 140–450 MHz (SW-100B) in range of 150 W full scale for mobile use.



**SW-200A/B SWR/POWER Meter**  
(supplied with a coupler)  
SW-200A supplied with SWC-1, SW-200B supplied with SWC-2. Selectable Peak-leading/RMS. SWR/POWER meters cover 1.8–150 MHz (SW-200A), 140–450 MHz (SW-200B) in range of 0–20/200 W, full scale for base station use.

**SP-40 Compact Mobile Speaker (4 Ω)**



**SP-50 Mobile Speaker (8 Ω)**



Compact and smart, high quality external speakers, provide flexibility of installation for maximum convenience.



**SWT-1 2-m Antenna Tuning Unit**  
The SWT-1 (2-m band) is an antenna tuning unit designed for use in conjunction with an SWR/POWER meter to allow efficient transmission. This unit is especially convenient for monitoring SWR, using a KENWOOD SWR/POWER meter.

**PG-2K DC Cable**



**PG-3A DC Line Noise Filter**  
(for Mobile Transceivers)  
Max. current 15 A.  
(continuous)



(for TM-2530A/50 A)

**MC-60A (8 pin)**  
Deluxe Desk-top Microphone  
(50 k Ω/500 Ω)



Unidirectional dynamic microphone  
The zinc die-cast base provides high stability, and the MC-60A is complete with PTT and LOCK switches, UP/DOWN switches, an impedance selector switch and a built-in pre-amplifier.

**MC-80 (8 pin)**  
Desk-top Microphone  
(700 Ω)



Omnidirectional electret condenser microphone  
The MC-80 is an omnidirectional electret condenser microphone provided with UP/DOWN switches, volume adjustment for output level, PTT and LOCK switch, and built-in pre-amplifier.

**MC-85 (8 pin)**  
Deluxe Desk-top Microphone (700 Ω)



Unidirectional electret condenser microphone  
The MC-85 is a unidirectional high-class electret condenser microphone provided with the output selective switch, audio level compensation circuit, low cut filter, level meter, PTT and LOCK switch.

**MC-48 (8 pin)**  
16-key Auto-patch UP/DOWN Microphone



The MC-48 is 16-key auto-patch UP/DOWN microphones with PTT switch. Encodes 16 autopatch tones. UP/DOWN switches provide step frequency change, or initiate band scan in the appropriate direction, if held depressed momentarily.

**MC-55 (8 pin)**  
Mobile Microphone



Electret condenser microphone  
The MC-55 provides UP/DOWN switches, LED display for switching transmit or receive, adjustable microphone gain, automatic receive returning circuit (approx. 5 minutes) and many functions.





## TM-2530A/2550A/2570A SPECIFICATIONS

### (General)

Frequency Range: 144~148 MHz  
 Mode: FM (F3, F2 = with DCL function)  
 Power Requirement: 13.8 VDC  $\pm$ 15%  
 Grounding: Negative  
 Current Drain:

	TM-2530A	TM-2550A	TM-2570A
HI transmit power	6.5	9.5A	16A
Receive mode (no signal)	0.6A		0.8A

Antenna Impedance: 50  $\Omega$   
 Microphone Impedance: 500~600  $\Omega$   
 External Speaker: 8  $\Omega$   
 Dimensions & Weight:

	TM-2530A	TM-2550A	TM-2570A
W mm (inch)	180 (7.09)	180 (7.09)	180 (7.09)
H mm (inch)	60 (2.36)	60 (2.36)	60 (2.36)
D mm (inch)	195 (7.68)	215 (8.46)	250 (9.84)
Weight kg (lbs.)	1.8 (3.97)	2.0 (4.41)	2.35 (5.18)

\*Projections not included

Specifications are subject to change without notice.

### (Transmitter)

RF Output Power:

	TM-2530A	TM-2550A	TM-2570A
HI	25 W	45 W	70 W
LOW	5W approx.		

Modulation: Reactance Modulation  
 Spurious Radiation: Better than 60 dB  
 Maximum Frequency Deviation:  $\pm$ 5 kHz  
 Modulation Distortion: Less than 3% (300~3000 Hz)  
 Frequency Stability: Better than  $\pm$ 15 PPM (-20°C~+50°C)

### (Receiver)

Circuitry: Double Conversion Superheterodyne  
 Intermediate Frequency: 1st IF = 10,695 MHz  
 2nd IF = 455 kHz  
 Sensitivity: 12 dB SINAD less than 0.25  $\mu$ V  
 Selectivity: More than 12 kHz (-6 dB)  
 Less than 25 kHz (-60 dB)  
 Spurious Response: Better than 70 dB (except IF/2)  
 Squelch Sensitivity: Less than 0.125  $\mu$ V  
 Scan Stop Level: Less than 0.2  $\mu$ V  
 Audio Output Power: More than 1.5 W (at 8  $\Omega$  load 5% distortion)

## TRIO-KENWOOD CORPORATION

Shionogi Shibuya Building, 17-5, 2-chome Shibuya, Shibuya-ku, Tokyo 150, Japan

TRIO-KENWOOD COMMUNICATIONS

1111 West Walnut Street, Compton, California 90220, U.S.A.

TRIO-KENWOOD (AUSTRALIA) PTY. LTD. (INCORPORATED IN N.S.W.)

4E Woodcock Place, Lane Cove, N.S.W. 2066, Australia