

 **KENWOOD**

**1.8-28MHz SSB  
TRANSCEIVER**

**TS-520S** SERIES  
TS-520S / VFO-520S / SP-520





Features Include 2-Position ALC, Double Split Frequency Controlled Operation, Rugged Die

# THE NEW TS-520S A NEW STANDARD IN ECONOMY TRANSCEIVERS

The NEW TS-520S combines all of the fine, fieldproven characteristics of the original TS-520 together with many of the ideas, comments, and suggestions for improvement from amateurs world-wide. Kenwood's ultimate objectives... to make quality equipment available at reasonable prices.

## Full Coverage Transceiver

The new TS-520S provides full coverage on all amateur bands from 1.8 to 29.7 MHz. Kenwood gives you 160 meter capability, WWV on 15.000 MHz., and an auxiliary band position for maximum flexibility. And with the addition of the TV-502 and TV-506 transverters, your TS-520S can cover 160 meters to 2 meters on SSB and CW.

## Outstanding Receiver Sensitivity and Minimum Cross Modulation

The new TS-520S incorporates a 3SK35 dual gate MOSFET for outstanding cross modulation and spurious response characteristics. The 3SK35 has a low noise figure (3.5 dB typ.) and high gain (18 dB typ.) for excellent sensitivity.

## Vernier Tuning for Final Plate Control

A new vernier tuning mechanism allows easy and accurate adjustment of the plate control during tune-up.

## Highly Effective Noise Blanker

An effective noise blanking circuit developed by Kenwood that virtually eliminates ignition noise is built-in TS-520S.



## Digital Display DG-5 (option)

The new Kenwood DG-5 provides easy, accurate readout of your operating frequency while transmitting and receiving. (See back page for details.)



## Final Amplifier

The new TS-520S is completely solid state except for the driver (12BY7A) and the final tubes. Rather than substitute TV sweep tubes as final amplifier tubes in a state of the art amateur transceiver, Kenwood has employed two husky S-2001A (equivalent to 6146B) tubes. These rugged, time-proven tubes are known for their long life and superb linearity.

## SPECIFICATIONS

### GENERAL

Frequency Range: 160 meter band - 1.8 to 2.0 MHz  
80 meter band - 3.5 to 4.0 MHz  
40 meter band - 7.0 to 7.3 MHz  
20 meter band - 14.0 to 14.35 MHz  
15 meter band - 21.0 to 21.45 MHz  
10 meter band - 28.0 to 28.5 MHz  
28.5 to 29.1 MHz  
29.1 to 29.7 MHz  
WWV - 15.0 MHz (receive only)  
Mode: SSB(USB,LSB), CW  
Antenna Impedance: 50 to 75 Ohms  
Frequency Stability: Within  $\pm 1$  kHz during one hour after one minute of warm-up, and within 100 Hz during any 30 minutes period thereafter



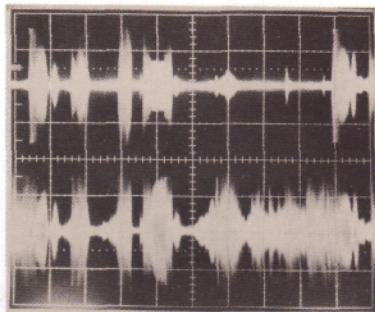
# Cast Front Panel A Superb Transceiver Designed And Built For The Serious Enthusiast.

## Comparison with and without Speech processor

RF output wave  
0.5 cm/sec

without

with



(option) allows for mobile operation of the TS-520S.

## Easy Connection to Phone Patch

The TS-520S has 2 RCA phone jacks on the rear panel for PHONE PATCH IN and OUT.

## YG-3395C - CW Filter (option)

The YG-3395C (CW-520) 500 Hz filter can be easily installed and will provide improved operation on CW.

## Amplified Type AGC Circuit

The AGC circuit has 3 positions (OFF, FAST SLOW) to enable the TS-520S to be operated in the optimum condition at all times whether operating CW or SSB.

The TS-520S retains all of the features of the original TS-520 that made it tops in its class: RIT control•8-pole crystal filter•Built-in 25 KHz calibrator•Front panel carrier level control•Semi-break-in CW with sidetone•VOX/PTT/MOX•TUNE position for low power tune up•Built-in speaker•Built-in Cooling Fan•Provisions for 4 fixed frequency channels•Heater switch.

## New Improved Speech Processor

A new audio compression amplifier gives you extra punch in the pile ups and when going is rough.

## RF Attenuator

The new TS-520S has built-in 20 dB attenuator that can be activated by a push button switch conveniently located on the front panel.

## VFO-520S New Remote VFO

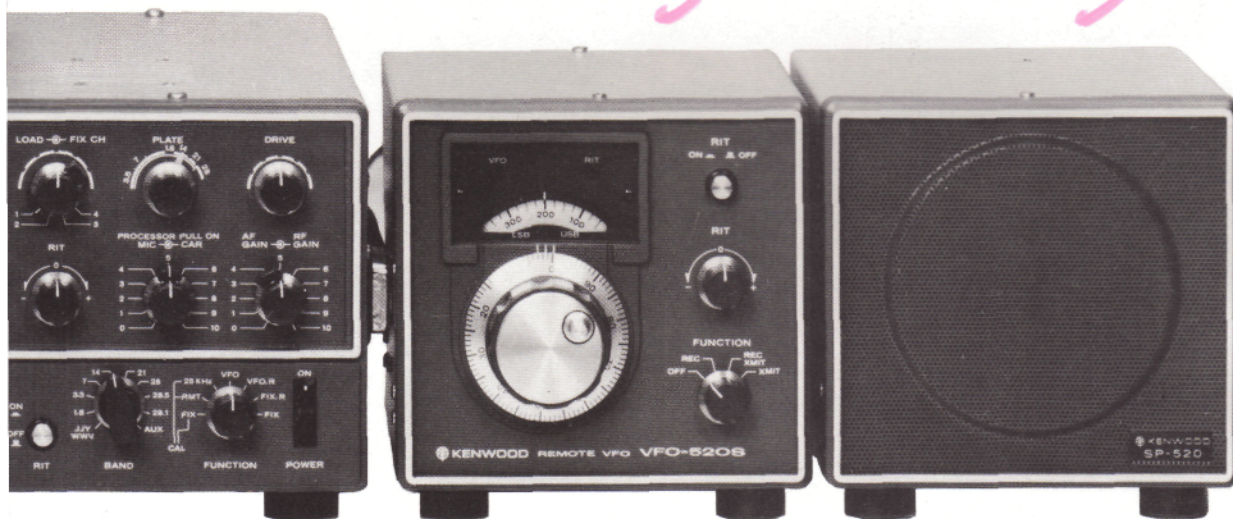
The VFO-520S remote VFO has been designed to match the styling of the TS-520S and provide maximum operating flexibility on the band selected on your TS-520S.

## Mobile Capability

The addition of the DS-1A DC-DC converter

## Accessories Supplied

- 1 Operating Manual
- 1 Microphone Plug
- 1 Jumpered 9-pin Plug (installed)
- 3 RCA Phono Plugs
- 1 Alignment Tool
- 2 Plastic Extension Feet with Screws
- 1 AC Power Cord
- 1 Speaker Plug
- 1 8P US Plug
- 5 Fuse (6A × 2, 4A × 2, 2A × 1)



Tubes and Semiconductors: Tubes...3(S2001Ax2,12BY7A)  
Transistors...52  
FETs...19  
Diodes...101

Voltage Requirements: 120/220V AC, 50/60 Hz

Power Consumption: Transmit: 280 Watts

Receive: 26 Watts(with heater off)

Dimension: 333(13-1/8) wide × 153(6-0) high ×  
335(13-3/16) deep mm(inch)

Weight: 16.0 kg(35.2 lbs)

## TRANSMITTER

Input Power: SSB: 200 Watts PEP

CW: 160 Watts DC

Carrier Suppression: Better than 40 dB

Unwanted Sideband Suppression: Better than 50 dB

Spurious Radiation: Better than -40 dB

Microphone Impedance: High impedance microphone(50 k Ohms)

AF Response: 400 to 2,600 Hz

## RECEIVER

Receiver Sensitivity: 0.25 $\mu$ V for 10 dB (S+N)/N

Receiver Selectivity: SSB: 2.4 kHz/-6 dB, 4.4 kHz/-60 dB

CW: 0.5 kHz/-6 dB 1.5 kHz/-60 dB\*

(with optional CW filter)

Image Rejection: Better than 50 dB

IF Rejection: Better than 50dB

Audio Output: 1.0 Watt(8 Ohms load, with less than

10% distortion)

AF Output Impedance: 4 to 16 Ohms

## VFO-520S

Frequency Range: 5.5 to 4.9 MHz

Frequency Stability: Within  $\pm 1$  kHz during one hour after one minute of warm-up, and within 100 Hz during any 30 minute period thereafter

Semiconductors: Transistors...2

FETs...2

Diodes...7

Dimension: 166(6-1/2)wide × 150(5-7/8)high ×  
190(7-1/2)deep mm(inch)

Weight: 3.0 kg(6.6 lbs)

## SP-520

Speaker Diameter: 12 cm(4-3/4")

Maximum Input Power: 2 Watts

Input Impedance: 8 Ohms

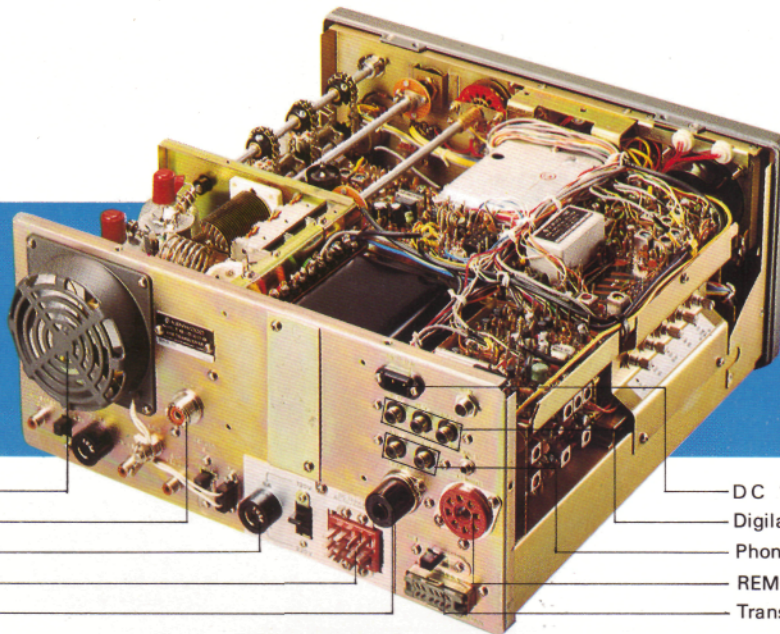
Frequency Response: 100 to 5,000 Hz

Dimensions: 160(6-1/2)wide × 150(5-7/8)high ×

190(7-1/2)deep mm(inch)

Weight: 1.4 kg(3.1 lbs)





- Cooling Fan
- ANT Connector
- AC Fuse
- Power Connector
- EXT VFO Connector
- DC 13.8V Power Connector
- Digital Display Connector
- Phone Patch Connector
- REMOTE Connector
- Transverter Control Connector

## DIGITAL DISPLAY **DG-5**



### DG-5 (option)

The luxury of digital readout is available on the TS-520S by connecting the new DG-5 readout (option). More than just the average readout circuit, this counter mixes the carrier, VFO, and heterodyne frequencies to give you your exact frequency. This handsomely-styled accessory can be set almost

anyplace in your shack for easy to read operation...or set it on the dashboard during mobile operation for safety and convenience. Six bold digits display your operating frequency while you transmit and receive. Complete with DH (display hold) switch for frequency memory and 2 position intensity selector. The DG-5 can also be converted to a normal frequency counter (up to 40 MHz) at the touch of a switch.

### DG-5

#### SPECIFICATIONS

Measuring Range: 100 Hz to 40 MHz  
 Input Impedance: 5 k Ohms  
 Gate Time: 0.1 Sec.  
 Input Sensitivity: 100 Hz to 40 MHz ... 200 mV rms or over  
 10 kHz to 10 MHz ... 50 mV rms or over  
 Maximum Input Voltage: 200V (DC + Peak)  
 5 V rms  
 Measuring Accuracy: Internal time base accuracy  $\pm 0.1$  count

Time Base:  
 Internal time base frequency: 10 MHz  
 Frequency accuracy:  $\pm 1 \times 10^{-6}$   
 Frequency stability:  $\pm 3 \times 10^{-6}$  ( $0^\circ$  to  $40^\circ$  C/ $32^\circ$  to  $122^\circ$  F)  
 Operating Temperature:  $-10^\circ$  to  $50^\circ$  C/ $14^\circ$  to  $122^\circ$  F  
 Power Requirement: Supplied from TS-520S or 12 to 16 VDC (nominal 13.8 VDC)  
 Dimensions: 167 (6-9/16) wide x 43 (1-11/16) high x 268 (10-9/16) deep mm (inch)  
 Weight: 1.3 kg (2.9 lbs)

### Digital Adapter Kit **DK-520**



The DK-520 is the specially designed kit to connect the DG-5 to the TS-520. Just install it to the TS-520, then you can enjoy the digital display operation.

### TV-502



### TV-506



#### TV-502(TV-506) SPECIFICATIONS:

● Frequency Range: 144.0 - 145.7(50.0 - 54.0 MHz)  
 ● Input/Output Frequency: 28.0 - 29.7 MHz  
 ● Mode: SSB, CW  
 ● RF Input Power: SSB-20 Watts PEP, CW-16 Watts DC  
 ● Spurious Radiation: Better than -60 dB

● Receiving Sensitivity: S/N 10 dB or better at 0.5  $\mu$ V  
 ● Image Ratio: Better than -60 dB  
 ● Power Requirement: 120/220 VAC, or 12 - 16 VDC  
 ● Dimensions: 168(6-5/8)W x 153(6-0)H x 336(13-1/4)D mm(inch)  
 ● Weight: TV-502-5.2kg(11.5 lbs), TV-506-5.3kg(11.7 lbs)

\* TV-506 is not available depended upon country.



**YG-3395C**  
500Hz CW Filter



**HS-4**  
Headphones



**MC-50**  
Dynamic Desk Mic.



**DS-1A**  
DC-DC Converter

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