

HEATHKIT

SPECIFICATIONS

MODEL HW-101

SSB

TRANSCEIVER



the world's best low cost rig is now even better

Heath have done it again...by adding important new performance features to the world's most popular piece of gear — and keeping the low price. Here's the new HW-101 in detail.

Improved receiver circuitry. An outstanding receiver is an absolute necessity on today's crowded bands, and the HW-101 has what it takes to dig those signals out and keep your QSO going longer. Refinements in the already excellent HW-100 receiver result in sensitivity that's now better than 0.35 μ V for 10 db S + N/N. Image & IF rejection are better than 50 dB. Compare those specs against the competition...few transceivers at any price offer as much...none other at this price.

Improved dial drive. A completely new planetary ball-bearing dial drive assembly provides a 36 to 1 knob to dial turning ratio...delivers 34 velvet-smooth knob revolutions per 500 kHz band segment. Couple this with new preselector circuitry and a thermal stabilized FET VFO with 5 kHz readout and you've got rock-solid, drift-free tuning from 80 through 10 meters. And the built-in 100 kHz crystal calibrator and zero reset button provide accurate, stable calibration.

Now — front panel selection of SSB or CW crystal filters. The HW-101 now has provision for a CW crystal filter, giving it the same remarkable CW performance as its famous big brother, the SB-102. The optional SBA-301-2 filter installs in minutes, giving razor sharp 400 Hz CW selectivity to carve away the QRM. Built-in 2.1 kHz SSB crystal filter provides superior SSB copy.

Power input consistent with maximum versatility at lowest cost. The HW-101 delivers a solid 180 watts PEP SSB input...170 watts CW...more than sufficient to get out with a good, healthy signal. This power level permits using the right tubes for the job — rugged, dependable, low cost, RF-designed 6146's — and means you don't have to sacrifice useful features to pay for increased power. And the HW-101 is ideal for driving a grounded-grid

linear, such as the Heathkit SB-220 or SB-200 for a really big signal. Carrier and unwanted sideband suppression is 45 dB down, third order distortion 30 dB down; RF compression (TALC) is 10 dB or better. Compare the HW-101 with other rigs for power versus features...you'll see that the HW-101 delivers a lot more versatility for a lot less cost.

"Extra cost options" at no extra cost! When Heath design a rig, they put in all the features and conveniences you need to do the job. The endless, extra cost options on other rigs are already in the HW-101. Make the comparison yourself. Complete VOX circuitry, including controls for sensitivity, delay and anti-trip...standard on the HW-101. Selectable upper or lower sideband on all bands...standard on the HW-101. 1 kHz CW sidetone...standard on the HW-101. Front panel switch selected metering of ALC/S units, relative power and plate current...standard on the HW-101. Full coverage of 10 meters...standard on the HW-101. Selectable SSB or CW crystal filter capability...standard on the HW-101. Front panel phone and microphone jacks for extra convenience...ALC input...spare rear panel jack for connection of auxiliary equipment. Put it all together and you've got the new HW-101...a lot more rig for a lot less money.

Fast enjoyable assembly. You build the entire rig...even the VFO...and the famous Heathkit manual makes it easy. Most components mount on nine circuit boards, and a wiring harness makes inter-connections fast and simple...point-to-point wiring is kept to an absolute minimum. Initial checkout is equally simple...all you need is a mike, dummy load and a VVM.

Run fixed or mobile. Heath offers a wide variety of fixed & mobile accessories that allow you to go from one type of operation to the other in minutes.

Check out the new HW-101. Compare the specs...compare the features...and try to compare the price. There isn't another rig made that offers as much solid capability at such low cost. Compare the detailed chassis photos, & specs then order your HW-101.

HEATH

Schlumberger

HEATH (GLOUCESTER) LTD
GLOUCESTER. GL2-6EE. ENGLAND

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Two rugged, dependable,
RF-designed 6146's in a
completely shielded final

Quiet,
enclosed relays

New receiver circuitry
for increased sensitivity

Carrier-null controls

Built-in 100 kHz
crystal calibrator

New ball-bearing dial
drive for smoother
tuning

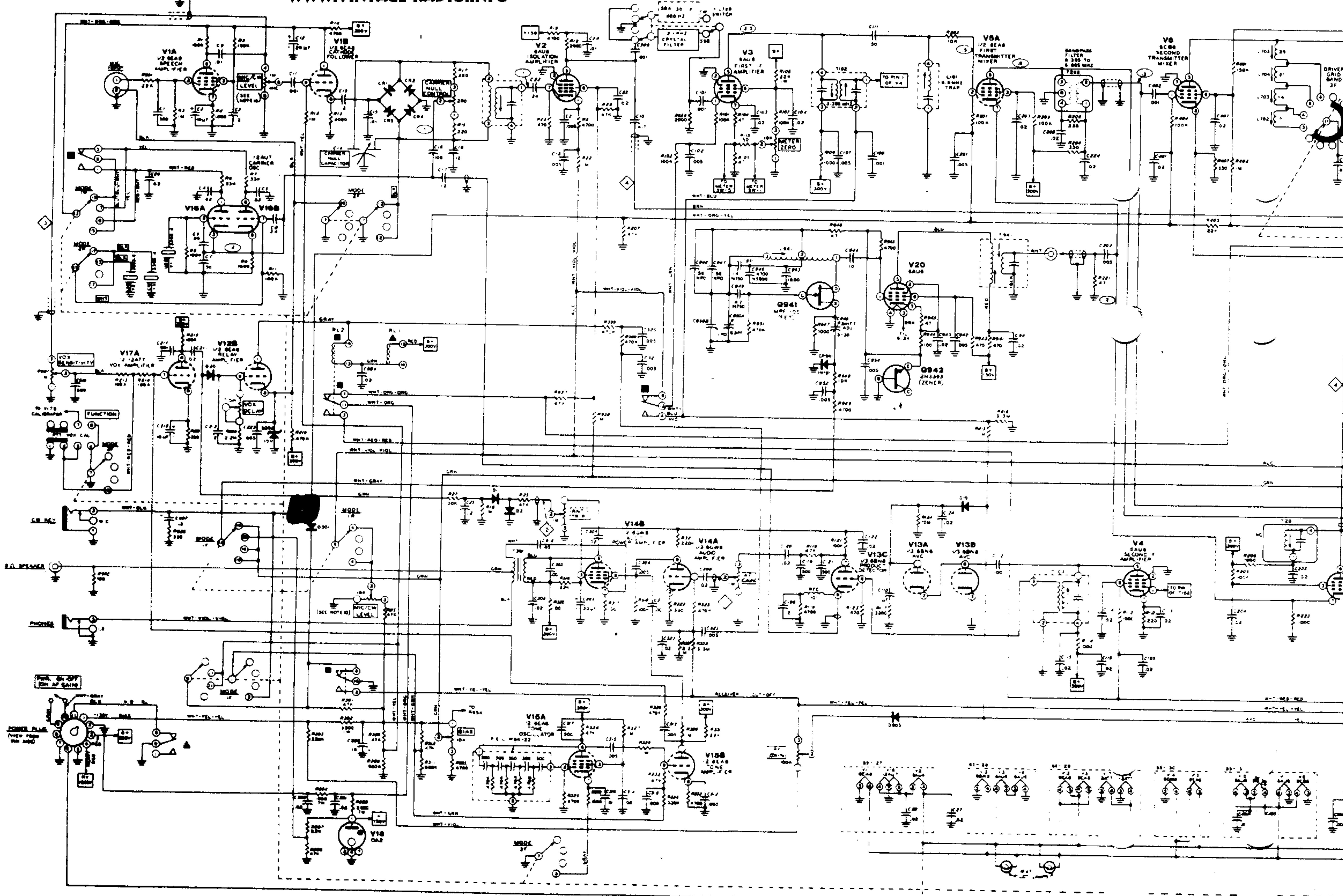
Solid-state FET VFO

HW-101 SPECIFICATIONS

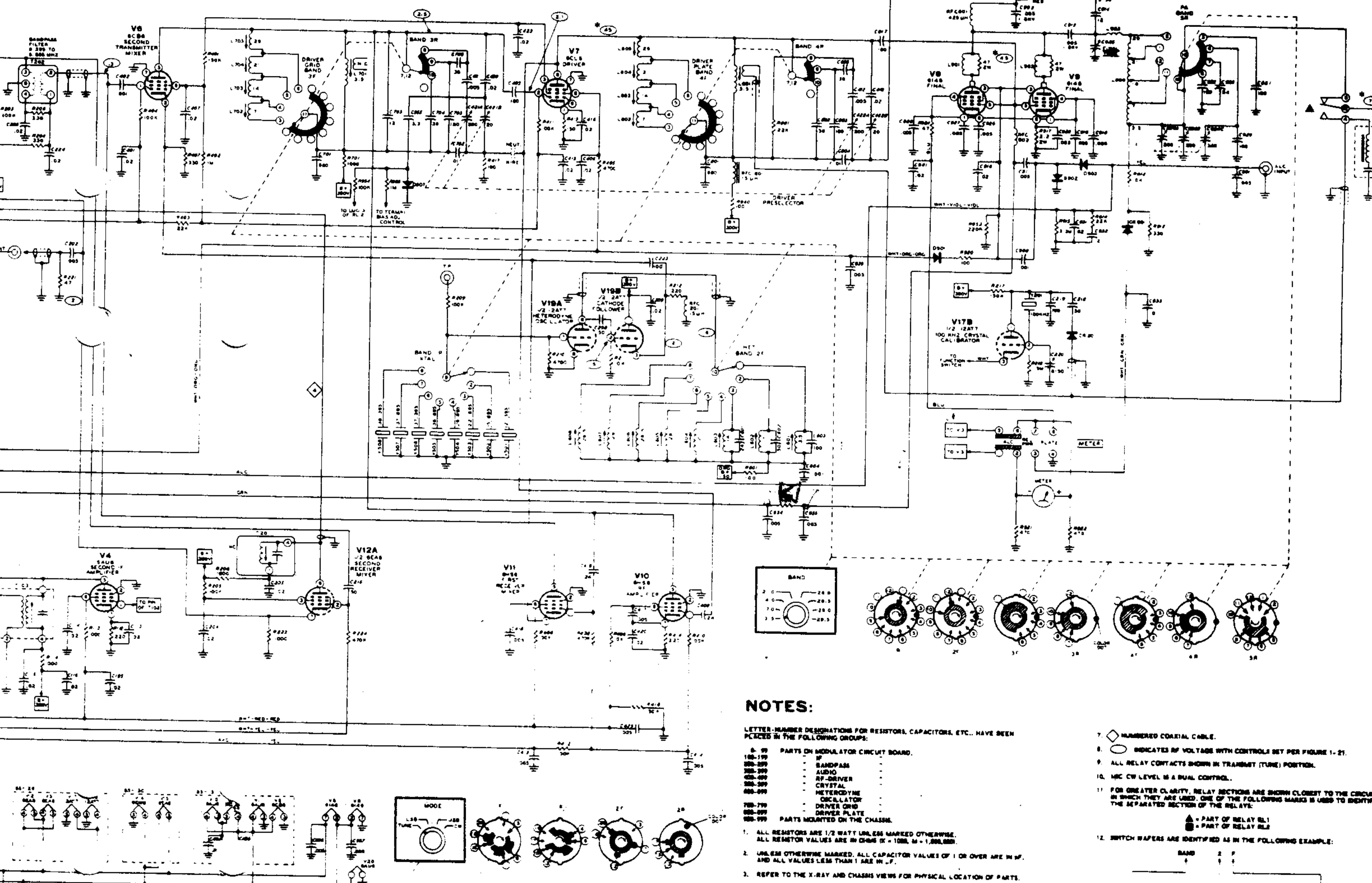
RECEIVER – **Sensitivity:** Less than .3 microvolt for 10 dB signal-plus-noise to noise ratio for SSB operation. **SSB Selectivity:** 2.1 kHz minimum at 6 dB down, 7 kHz minimum at 60 dB down (3.395 MHz filter). **CW Selectivity (With Optional SBA-301-2 CW Filter Installed):** 400 Hz minimum at 6 dB down, 2.0 kHz maximum at 60 dB down. **Power Output:** 2 watts with less than 10% distortion. **Spurious Response:** Image and IF rejection better than 50 dB. **TRANSMITTER – DC Power Input:** SSB, (A3J emission) 180 watts PEP (normal voice, continuous duty cycle). CW, (A1 emission) 170 watts (50% duty cycle). **RF Power Output:** 100 watts on 80 through 15 meters; 80 watts on 10 meters (50 ohm nonreactive load). **Output Impedance:** 50 ohm to 75 ohm with less than 2:1 SWR. **Oscillator Feedthrough or Mixer Products:** 55 dB below rated output. **Harmonic Radiation:** 45 dB below rated output. **Transmit-Receive Operation:** SSB, PTT or VOX, CW, provided by operating VOX from a keyed tone, using grid-block keying. **CW Side-Tone:** Internally switched to speaker or headphones in CW mode. Approximately 1000 Hz tone. **Microphone Requirement:** High impedance with a rating of -45 to -55 dB. **Carrier Suppression:** 45 dB down from single-tone output. **Unwanted Sideband Suppression:** 45 dB down from single tone output at 1000 Hz reference. **Emissions Not Possible Or Not Recommended:** A0, A2, A3B, A4 through A9, F0 through F9, and P0 through P9. **Third Order Distortion:** 30 dB down from two-tone output. **RF Compression (TALC^{*}):** 10 dB or greater at .1 mA final grid current. **GENERAL – Frequency Coverage:** 3.5 to 4.0; 7.0 to 7.3; 14.0 to 14.5; 21.0 to 21.5; 28.0 to 28.5; 28.5 to 29.0; 29.0 to 29.5; 29.5 to 30.0 megahertz. **Frequency Stability:** Less than 100 Hz per hour drift after 30 minutes warmup from normal ambient conditions. Less than 100 Hz for +10% line voltage variations. **Modes of Operation:** Selectable upper or lower sideband (suppressed carrier) and CW. **Dial Calibra-**

tion: 5 kHz divisions. **Calibration:** 100 kHz crystal. **Bandspread:** 35% solutions for 500 kHz. **Audio Frequency Response:** 350 to 2450 Hz. **Front Panel Controls:** Main tuning dial, Driver Preselector, Final tuning, Final loading, Mic and CW level control, Mode switch, Band switch, Function switch, Meter switch, RF Gain control, Audio Gain control, Filter selector switch. **Side Controls:** Meter Zero control, Bias Adjust, VOX Sensitivity, VOX delay, Anti-Trip. **Internal Controls:** Neutralizing, Crystal calibrator, VFO trimmer, VFO shifter, VFO coil. **Tube Complement:** OA2 Regulator (150 V), 6HS6 RF amplifier, 6HS6 1st receiver mixer, 6AU6 isolation amplifier, 6AU6 1st IF amplifier, 6AU6 2nd IF amplifier, 6BN8 Product detector and AVC, 6AU6 VFO amplifier, 6CB6 2nd transmitter mixer, 6CL6 driver, 6EA8 speech amplifier and cathode follower, 6EA8 1st transmitter mixer, 6EA8 2nd receiver mixer and relay amplifier, 6EA8 CW side-tone oscillator and amplifier, 6GW8 Audio amplifier and audio output, 12AT7 Heterodyne oscillator and cathode follower, 12AT7 VOX amplifier and calibrator oscillator, 12AU7 Sideband oscillator, 6146 Final amplifier (2). **Diode Complement:** 6 Germanium Diodes – balanced modulator, RF sampling, and crystal calibrator harmonic generator. 9 Silicon Diodes – ALC rectifiers, anti-trip rectifiers, and DC blocking. 1 zener diode: cathode bias. **Transistors:** MPF-105 FET-VFO, 2N3393 Voltage regulator. **Rear Apron Connectors:** CW key, 8 ohm output, ALC input, power and accessory plug, antenna, spare. **Power Requirements:** 700 to 850 volts at 250 mA with 1% maximum ripple, 300 volts at 150 mA with .05% maximum ripple, -115 volts at 10 mA with .5% maximum ripple, 12 volts AC/DC at 4.76 amps. **Cabinet Dimensions:** 14 $\frac{1}{8}$ " W x 6 $\frac{1}{8}$ " H x 13 $\frac{3}{8}$ " D. **Net Weight:** 17 $\frac{1}{2}$ lbs.

*Triple Action Level Control



SCHEMATIC OF THE
HEATHKITE®
SSB TRANSCEIVER
MODEL HW-101



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DIODES		
COMPONENT DESIGNATION	TYPE	HEATH PART NO.
D 1, 2, 101 301 301 802 803, 804 805 806	1N4071 (1A 500 PV)	56-27
D 801	1N4148	56-56
CR 1, 2, 3, 4, 201 901 941	1N4191	56-26-1
D 202	15 V Zener	56-29

TRANSISTORS			
COMPONENT DESIGNATION	HEATH PART NO.	MANUFACTURER'S NUMBER	BOTTOM VIEW SATING
Q841	411-108	MPF108 FET	<img alt="Bottom view of Q841 transistor showing Pin 1, Pin 2, Pin 3, Pin 4, Pin 5, Pin 6, Pin 7, Pin 8, Pin 9, Pin 10, Pin 11, Pin 12, Pin 13, Pin 14, Pin 15, Pin 16, Pin 17, Pin 18, Pin 19, Pin 20, Pin 21, Pin 22, Pin 23, Pin 24, Pin 25, Pin 26, Pin 27, Pin 28, Pin 29, Pin 30, Pin 31, Pin 32, Pin 33, Pin 34, Pin 35, Pin 36, Pin 37, Pin 38, Pin 39, Pin 40, Pin 41, Pin 42, Pin 43, Pin 44, Pin 45, Pin 46, Pin 47, Pin 48, Pin 49, Pin 50, Pin 51, Pin 52, Pin 53, Pin 54, Pin 55, Pin 56, Pin 57, Pin 58, Pin 59, Pin 60, Pin 61, Pin 62, Pin 63, Pin 64, Pin 65, Pin 66, Pin 67, Pin 68, Pin 69, Pin 70, Pin 71, Pin 72, Pin 73, Pin 74, Pin 75, Pin 76, Pin 77, Pin 78, Pin 79, Pin 80, Pin 81, Pin 82, Pin 83, Pin 84, Pin 85, Pin 86, Pin 87, Pin 88, Pin 89, Pin 90, Pin 91, Pin 92, Pin 93, Pin 94, Pin 95, Pin 96, Pin 97, Pin 98, Pin 99, Pin 100, Pin 101, Pin 102, Pin 103, Pin 104, Pin 105, Pin 106, Pin 107, Pin 108, Pin 109, Pin 110, Pin 111, Pin 112, Pin 113, Pin 114, Pin 115, 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