

# Collins SSB Amateur Equipment

"S/LINE" MEDIUM PRICED SSB EQUIPMENT



325-3

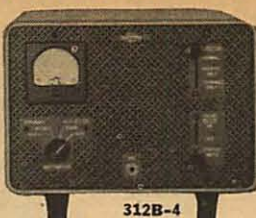
## MODEL 325-3 TRANSMITTER

The finest transmitter of its kind, SSB or CW unit delivers terminal 100-watt output. Offers mechanical filter type sideband generation, permeability-tuned VFO, crystal-controlled HF oscillator, RF inverse feedback and automatic load control. Assures better linearity, higher talk power and protection against flat-topping. CW keying method with hardness control, spotting control, side-tone level adjust and easy access to patch cords. **Features:** VFO tunes 80 to 10 meters in fourteen 200 kc segments; crystal provides 28.5-28.7 mc part at 10 meters; switch and sockets permit two extra crystals. Antenna loading control is factory preset for 50 ohms; adjustable for other impedances up to 2:1 SWR. Automatic load control provides a higher average output without distortion. Unit is powered by the 516F-2. Panel meter monitors final amplifier plate current, grid current and ALC voltage. Transmitter completely shielded and bypassed for TVI reduction. **Plate Power Input:** 175 watts PEP on SSB; 160 watts on CW. **Power Output:** 100 watts into a 50 ohm load except 90 watts on 15 meters, 80 watts on 10 meters. **Frequency Range:** 3.4-5.0 and 6.5-30.0 mc. With crystal sockets, crystals and bandswitch positions for 13 bands, each 200 kc wide. Three positions are for 10-meter band (one crystal is included, with space for two additional). **Oscillator:** Double conversion circuit; CR18 crystals in HF oscillator; crystal oscillator at 455 kc provides carrier for SSB generator and choice of upper or lower sideband operation; VFO tunes 2.500 to 2.700 mc. **Frequency Stability:** 750 cps overall; backlash, no more than 50 cps; calibration accuracy, 1 kc. **Dial Accuracy:** Visual, 200 cps; electrical, 300 cps (after calibration). **Spurious Radiation:** Carrier suppression, unwanted sideband, oscillator and mixer products, -50 db; second harmonic, -40 db; third order distortion, -30 db. **Audio Input:** High impedance mike and 600-ohm phone patch. **Audio Response:** Nominal 300-2400 cps, +6 db. **Audio Compression:** ALC applied to IF and RF amplifier stages, capable of 10 db compression. **RF Feedback:** 10 db used around PA and driver for improved PA linearity. **Noise Level:** 40 db below single-tone carrier. **Controls:** Band Selector; VFO Dial; Emission Switch (Tune-Lock Key-LSB-USB-CW); Exciter Tune; PA Tune; PA Load Control (concentric with PA tune); Mike Gain; Meter Switch (ALC, PA grid, PA plate); Frequency Control (Off, Rec VFO, Trans VFO, Syno); VOX Gain; Anti-VOX Gain; VOX Time Constant. **Power Required:** Use Collins 516F-2 for AC operation. Requires 800 v. DC at 220 ma PA plates, 275 v. DC at 175 ma PA screens and low voltage plates; -60 to -80 v. DC adjustable bias supply; and, 6, 12 or 24 v. DC at 6, 3 or 1.5 amps respectively. **Size:** 14 1/2" w. x 11 1/2" d. x 6 1/4" h. Weight, 16 lbs. **Collins Model 325-3 Transmitter—Net Each.....\$750.00**

## MODEL 625-1 VHF CONVERTER



Doubles frequency coverage by providing full 6- and 2-meter operation with the flick of a switch. No cable changing required when moving from HF to VHF. Self-contained unit supplies 3-5 db noise figure on receive; 160 watts PEP input on transmit. For use with Collins S/Line, KWM-2 and KWM-1, this adapter converts most equipment operating in the 14.0-14.2 mc range. Accurate .005% crystals used throughout for highest frequency stability. **Features:** Panel meter to monitor PA grid and plate current or output. High image and IF rejection. Operates on standard AC current, plus DC power from exciter. Can be used with CW, SSB, AM or RTTY systems. **Frequency Range:** 49.6-54.2 and 143.6-148.2 mc; crystals supplied for 50-54 and 144-148 mc in 200 kc increments. **Power Input:** 160 watts PEP. **Power Output:** 65 watts PEP. **Noise Level:** -40 db below rated PEP output. **Rejection:** Greater than 100 db, image on 6 meters; 60 db, 2 meters. Greater than 90 db, IF rejection. At least 50 db below 1 µv desired signal level, other spurious responses. **Sensitivity:** 1.2 µv max. for 10 db signal-plus noise-to-noise, 3 kc audio bandwidth, 2 meters; 1.3 µv, 6 meters. **Controls:** Function switch (Off, HF, VHF tune, VHF operate); RF gain; Exciter Tune; Bandwidth; Crystal switch; PA tune and load; Meter switch (PA Grid, PA plate, Output); Transmit gain (on rear of chassis). **Power Source:** 115 v. AC, 50/60 cps plus 800 v. DC at 220 ma and 275 v. DC at 20 ma from external source. **Size:** 14 1/2" w. x 13" d. x 7 3/4" h. Weight, 25 lbs. **Collins Model 625-1 VHF Converter—Net Each.....\$895.00**



312B-4



755-3B

## MODEL 755-3B RECEIVER

Versatile receiver provides sharpest selectivity available in SSB, CW and RTTY. Also provides AM reception plus provision for mechanical filter for improved skirt selectivity. **Features:** Rejection tuning with single control for 50 db nominal rejection of unwanted heterodynes and carriers. Choice of variable or crystal BFO. Mechanical 2.1 kc filter for sharp skirt selectivity and band-pass for SSB; can also be used for CW and RTTY. AGC permits choice of characteristics to suit operating conditions. Concentric RF/AF gain controls for operating convenience. Oscillator injection voltages for transmitter without auxiliary coupling units or wiring changes. **Frequency Range:** 3.4-5.0 mc (6.5-30 mc with selection of proper crystal for HF oscillator). Crystals provided for 3.4-4.0 mc; 7.0-7.4 mc; 14.0-14.4 mc. WWV, 14.8-15.0 mc; 21.0-21.6 mc; 28.5-28.7 mc. Sockets provided for two extra crystals for 10-meter band. **Stability:** Within 100 cps after warm-up. **Calibration Accuracy:** 1 kc. **Selectivity:** SSB, 2.1 kc with 2.5:1 shape factor; CW, no filter; AM, 5 kc. **Sensitivity:** 0.5 µv for 10 db signal-plus-noise-to-noise ratio, SSB. **Spurious Response:** Image rejection better than 50 db; internal spurious signals below 1 µv equiv. antenna input. **Noise:** At least -40 db at 1 watt. **Distortion:** No more than 10% at 1 watt. **Automatic Gain Control:** Threshold 1.5-3.0 µv nominal. Selectable for fast, slow and off AGC time constant. **Q Multiplier:** Rejection notch depth 50 db, nominal. **Muting:** Receiver silenced during transmit by opening external ground on mute terminal. **Controls:** Function switch (Off-Standby-Operate-Calibrate); RF gain; AF gain; Pre-selector tune; Dial zero set; Bandswitch; Tuning dial; Emission switch (AM-LSB-USB-CW); AGC switch (Off-East-Slow); Variable BFO tune-off; Rejection tune-off. **Power Required:** 85 watts, 105-125 v. AC, 50-60 cps. **Size:** 14 1/2" w. x 7 3/4" h. x 12 1/2" d. Weight, 20 lbs. **Collins Model 755-3B Receiver—Net Each.....\$620.00**  
**Collins Model 755-3B Receiver With Sockets For AM, Mechanical Filters—Net Each.....\$635.00**  
**Collins Model 755-3C Receiver—Extended frequency version\* of Model 755-3B. Net Each.....\$690.00**  
**Collins Model 755-3C Receiver With Sockets For AM, Mechanical Filters—Net Each.....\$705.00**  
**Collins AM Mechanical Filters for 755-3B or -3C—Specify F455FA-31, -40 or -60. Net Each.....\$47.00**  
\*Has ext. a board accommodating 14 crystals for use outside of amateur bands, e.g., Mars frequencies. Front panel switch permits instant switching between standard and extra crystal boards.

## MODEL 312B-4 SPEAKER CONSOLE

Includes speaker, directional wattmeter (200 and 2000 w. scales), phone patch and control switches for control of 30S-1, 30L-1, 32S-3 and 75S-3. Upper control switch has three positions (Normal; Receive Only; Transmit Only). Lower switch has three positions (Phone Patch On and Off; Station Mute). **Size:** 10" w. x 12 1/2" d. x 7 3/4" h. Weight, 8 1/2 lbs. **Collins Model 312B-4 Speaker Console—Net Each...\$195.00**

## MODEL 312B-3 SPEAKER

Contains a 5" x 7" speaker and connecting cable. **Size:** 10" w. x 8" d. x 7 3/4" h. Weight, 4 lbs. **Collins Model 312B-3 Speaker—Net Each.....\$32.00**

## POWER SUPPLY

**Collins Model 516F-2 AC Power Supply—Operates from 115 v. AC, 50-400 cps; provides all voltages for Model 32S-3 transmitter or Model KWM-2 transceiver. Size:** 10" w. x 12" d. x 7 3/4" h. Weight, 28 lbs. Net Each.....\$115.00

## EQUIPMENT ACCESSORIES AND BOOKS

**Crystals For S/Line or KWM-2—Net Each.....\$3.00**  
**Collins No. 440E-1 (MP-1 or 516E-2 to KWM-2) or 440F-1 (S/Line or KWM-2 to 516F-2) Cable Kit—Net Each...\$17.00**  
**Collins No. 399B-4 Novice Adapter For 32S—Net Each. 40.00**  
**Collins No. 399B-5 Novice Adapter For KWM-2—Net. 46.00**  
**Collins Table Mount No. 351E-1 (For 32S, 75S), 351E-2 (For 516F-2, 312B-4), 351E-3 (For 312B-3) or 351E-4 (For KWM-2)—Net Each.....\$24.00**  
**Collins Rack Mount No. 351R-1 (For 75S-3, 32S-3, KWM-2, 30L-1, 62S-1 or 51S-1) or 351R-2 (For S/Line and KWM-2 accessories)—Net Each.....\$ 32.00**  
**Collins No. TD-1 Dipole Antenna—Net Each..... 125.00**  
**Collins No. CC-3 Carrying Case—Accommodates 312B-4 or 312B-5 Console, 516E-2 or MP-1 Power Supply, TD-1 Antenna and supply of spare tubes and fuses. Net Each.....\$107.00**  
**Collins No. CP-1 Crystal Packet—Complete set of crystal grippers and crystals for S/Line or KWM-2. Net Each.....\$480.00**  
**Collins No. SM-1 Desk Top Microphone—Net Each..... 36.00**  
**Collins No. SM-2 Omnidirectional Desk Mike—Net..... 48.00**  
**Collins No. MM-1 Mobile Microphone—Net Each..... 25.00**  
**Collins No. MM-2 Microphone/Earphone—Net Each..... 44.00**  
"Amateur Single Sideband"—Written exclusively for the amateur operator, hard bound book is valuable addition for any ham shack. Covers practical and equipment aspects. Net Each...\$4.00

# Collins SSB Amateur Equipment

## SSB TRANSCEIVER AND ACCESSORIES, AMPLIFIER



KWM-2

### MODEL KWM-2 TRANSCEIVER

Designed for mobile or fixed station. Features include: Operation on all bands between 3.4 mc and 29.7 mc, voice or CW; VOX and anti-trip circuits; ALC, permeability-tuned oscillator and RF inverse feedback; SSB generation and crystal-controlled double conversion. Easily moved between mobile and fixed station installations, etc. **Power Output:** Nominal 100 watts PEP into a 50 ohm load. **Frequency Range:** 3.5, 7.0, 14.0, 21.0 and 28.0 mc amateur bands plus 14.8-15.0 mc band for WWV. Choice of any fourteen 200 kc bands by crystal switch easily retuned to frequencies between amateur bands by using crystals. **Stability:** Within 100 cps after warm-up. **Calib. Accuracy:** 1 kc. **Power Input:** 175 watts PEP, SSB; 160 watts CW. **Power Required:** 800 v. DC, 275 ma; bias adjustable between -60 and -80 volts; 6 (11 a.), 12 (5.5 a.) or 24 (2.75 a.) v. DC. **Power Consumption:** Approx. 235 watts in receive; 475 watts in transmit at 110 v. AC, 50/60 cps. **Oscillators:** Double conversion circuit; CR-18 crystals in HF oscillator. PTO, tuning 2.5-2.7 mc, provides 200 kc bands. Crystal oscillator at 453.650 or 456.350 kc provides carrier for SSB generator and choice of upper or lower sideband. Tone oscillator operates at about 1,350 cps. **Harmonic and Spurious Radiation:** Carrier suppression, -50 db; unwanted sideband, -50 db; second harmonic, -40 db; oscillator feed-through and/or mixer products, -50 db; third order distortion, -30 db. **Keying Characteristics:** No chirps or clicks; break-in CW and sidestone provided. **Audio Input:** High-impedance mike, 600 ohm or high-impedance phone patch. **Audio Frequency Response:** Nominal =6 db, 300-2,400 cps. **Audio Compression:** ALC operates on LF and RF amplifier stages; capable of 10 db compression. **Automatic Gain Control:** Audio output level does not change more than 20 db as input signal is changed from 10  $\mu$ v to 1 v. Fast attack, slow release. **RF Feedback:** 10 db around PA and driver. **Noise Level:** -40 db below single-tone carrier. **Controls:** Band Selector; PTO Dial; Emission Switch (Tune Lock, LSB, USB, CW); Exciter Tune; PA Tune; PA Load; Mike Gain with Mike Off Switch; Meter Switch (ALC, PA Grid, PA Plate); Off; On; NB; Cal Switch; AF Gain; RF Gain; VOX Gain; VOX Time Constant and Anti-VOX Gain. Panel meter used as S-meter on receive and tuning meter on transmit. **Receiver Sensitivity:** 0.5  $\mu$ v for 10 db S/N ratio within amateur bands. **Receiver Selectivity:** 2.1 kc bandwidth at 6 db down; 4.2 kc at 60 db down. **Receiver Spurious Response:** Image rejection better than -50 db. **Audio Output Level:** 1 watt maximum. **Size:** 14 $\frac{3}{4}$ " w. x 14" d. x 7 $\frac{3}{4}$ " h. Weight, 18 lbs., 3 oz.

Collins Model KWM-2 Transceiver—Net Each. . . . \$1150.00

Collins Model KWM-2 Transceiver with 136B-2 Noise Blanker—Ideal for mobile operation. Net Each. . . . \$1296.00

Collins Model KWM-2A Transceiver—Extended frequency version\*. Net Each. . . . \$1250.00

Collins Model KWM-2A with 136B-2 Noise Blanker—Net Each. . . . \$1396.00

Collins Model 136B-2 Noise Blanker—For KWM-2. Net Each. . . . 124.00

Collins Model 351D-2 Mobile Mount for KWM-2—Net Each. . . . 120.00

Collins Model CC- Carrying Case—For KWM-2, KWM-2A. Can also accommodate PM-2 Power Supply. Net Each. . . . \$85.00

Collins Model PM-2 Portable Power Supply—Has built-in auxiliary speaker and provides all voltages needed for KWM-2 on 115 v. or 220 v. AC, 50-400 cps. Net Each. . . . \$168.00

Collins Model 516E-2 Mobile Power Supply—For operation of KWM-2 on 28 v. DC. Net Each. . . . \$470.00

\*Has extra board accommodating 14 crystals for use outside of amateur bands, e.g., Mars frequencies. Front panel switch permits instant switching between standard and extra crystal boards.

### MODEL 312B-5 VFO CONSOLE

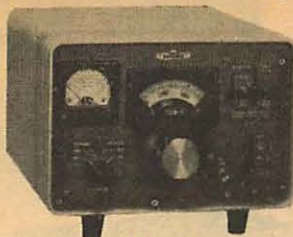
Combines KWM-2 and accessories into a fixed station operating system. Tuning dial and PTO provides for the following combinations of frequency control: Transceive on KWM-2 PTO; transceive on 312B-5 PTO; receive on KWM-2 PTO and transmit on 312B-5 PTO. Function switch provides for "Normal" station operation, and "Transmit Only" disables the receiver and operates the transmitter VOX. **Size:** 10" w. x 12 $\frac{1}{2}$ " d. x 7 $\frac{3}{4}$ " h. Weight, 8 $\frac{1}{2}$  lbs. **Collins Model 312B-5 VFO Console—Net Each. . . . \$350.00**

### MODEL 180S-1 ANTENNA TUNER

Basic 1 kw pi-network matches various antenna impedances to 50-ohm coax transmission line. Functions as an L network when full pi-network is not required. Range, 3-30 mc. **Collins Model 180S-1 Antenna Tuner—Net Each. . . . \$740.00**

### DIRECTIONAL WATTMETER

Consists of a coupler and an indicator unit which may be housed in a small box on the operators desk or mounted in a custom panel. Wattmeter scales read to 2000 and 200 with  $\pm$ 5% accuracy over the 2 to 30 mc range. SWR is negligible. **Collins Model 302C-3 Directional Wattmeter—Net. . . \$130.00**



312B-5



DL-1

### TRANSMITTER DUMMY LOAD

A 100-watt resistive load used for various tuning functions without putting the transmitter on the air. Front panel control selector switch permits the load to be switched in and out of the transmitter antenna circuitry without changing connections. Type N or RCA phono connectors may be used in connecting to the antenna or transmitter. May be used with 30S-1 for short tune-up period. Power required for operation of relay is 6.3 v. AC. **Collins Model DL-1 Dummy Load—Net Each. . . . \$79.50**

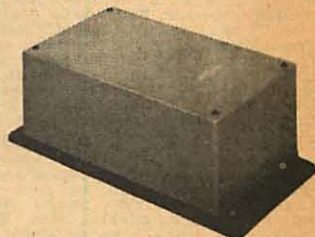
### MODEL 30L-1 LINEAR AMPLIFIER



Compact, grounded grid linear amplifier with 1,000 watts PEP input (500 watts nominal output). May be driven by most excitors with 70 to 100 watts output. Matched companion for 32S-3, KWM-2 or KWM-1. Completely self-contained and designed for table top use. Provides SSB and CW emission and covers 80, 40, 20, 15 and 10 meter bands. Also provisions for limited general coverage use. RF inverse feedback permits maximum talking power without overdriving and distortion. Exclusive automatic load control features not only more power but a sharper signal than any comparable unit. Four 811A triodes are instantly heated and can be replaced without removing the unit from the cabinet. Automatic transfer of antenna to the exciter when switch is in off position. Comparator tuning meter simplifies tuning. All removable panels interlocked and input line fused for maximum protection. Easily transported in a CC-2 carrying case. Finish and size match KWM-2. **Power Output:** 500 watts PEP into a 50-ohm load. **Frequency Range:** 80, 40, 20, 15 and 10 meter amateur bands with overlap for 3.4-30 mc. **Radiation:** Second harmonic -40 db. Third order distortion -30 db at full power output. **Noise Level:** -40 db below single-tone carrier. **Output Impedance:** Variable. Nominally 50 ohms unbalanced with not more than 2:1 SWR (amateur bands). **Controls:** Band Selector; PA Loading; PA Tuning; Meter Switch (Tune, Plate Voltage, Plate Current); On-Off Switch. Rear Connectors: ALC, RF input, antenna relay, RF output. **Power Required:** 115/230 v., 50-400 cps, 400 cps operation requires 600 cps inverter for fan motor. CW, key closed, 1200 watts, AC; SSB, speech modulated, 550 watts, AC; SSB, no modulation, 300 watts, AC. **Size:** 14 $\frac{3}{4}$ " w. x 13 $\frac{3}{4}$ " d. x 7 $\frac{3}{4}$ " h. Weight, 38 lbs. **Collins Model 30L-1 Linear Amplifier—Net Each. . . . \$520.00**

### MOBILE POWER SUPPLY

Permits operation of KWM-1, KWM-2 or KWM-2A transceivers from 12 v. DC. May be mounted in any clean, cool and dry location in an automobile, aircraft or boat. Designed for use with 351D-2 Mobile Mount without requiring extra connecting cable. Toroidal transformers and reactors for increased efficiency and noise reduction. All necessary mounting and wiring hardware supplied. **Input Requirements:** 11 to 16 v., 14 v. nominal; up to 30 amps. **Nominal Outputs:** Bias -50 to -80 v., adjustable (47,000-ohm load); Low B+ 265 v., 210 ma.; High B+ 750 v., 185 ma. **Output Regulation:** Low Voltage 290 v. max. at 170 ma.; 260 v. min. at 210 ma. High Voltage 860 v. max. at 55 ma.; 690 v. min. at 230 ma. **Ripple:** Bias less than .35 v.; low B+ less than .2 v.; high B+ less than 10 v. **Efficiency:** 80% approx. **Size:** 11" w. x 5 $\frac{3}{4}$ " d. x 3 $\frac{3}{4}$ " h. Weight, 7 $\frac{1}{2}$  lbs. **Collins Model MP-1 Mobile Power Supply—Net Each. . . \$198.00**



### FIXED STATION POWER SUPPLY

**Collins Model 516F-2 AC Power Supply—Operates from 115 v. AC, 50-400 cps; provides all voltages for Model 32S-3 transmitter or Model KWM-2 transceiver. Size:** 10" w. x 12" d. x 7 $\frac{3}{4}$ " h. Weight, 28 lbs. Net Each. . . . \$115.00