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A NEW ERA IN AMATEUR RADIO ARRIVES

ATLAS 350-XL

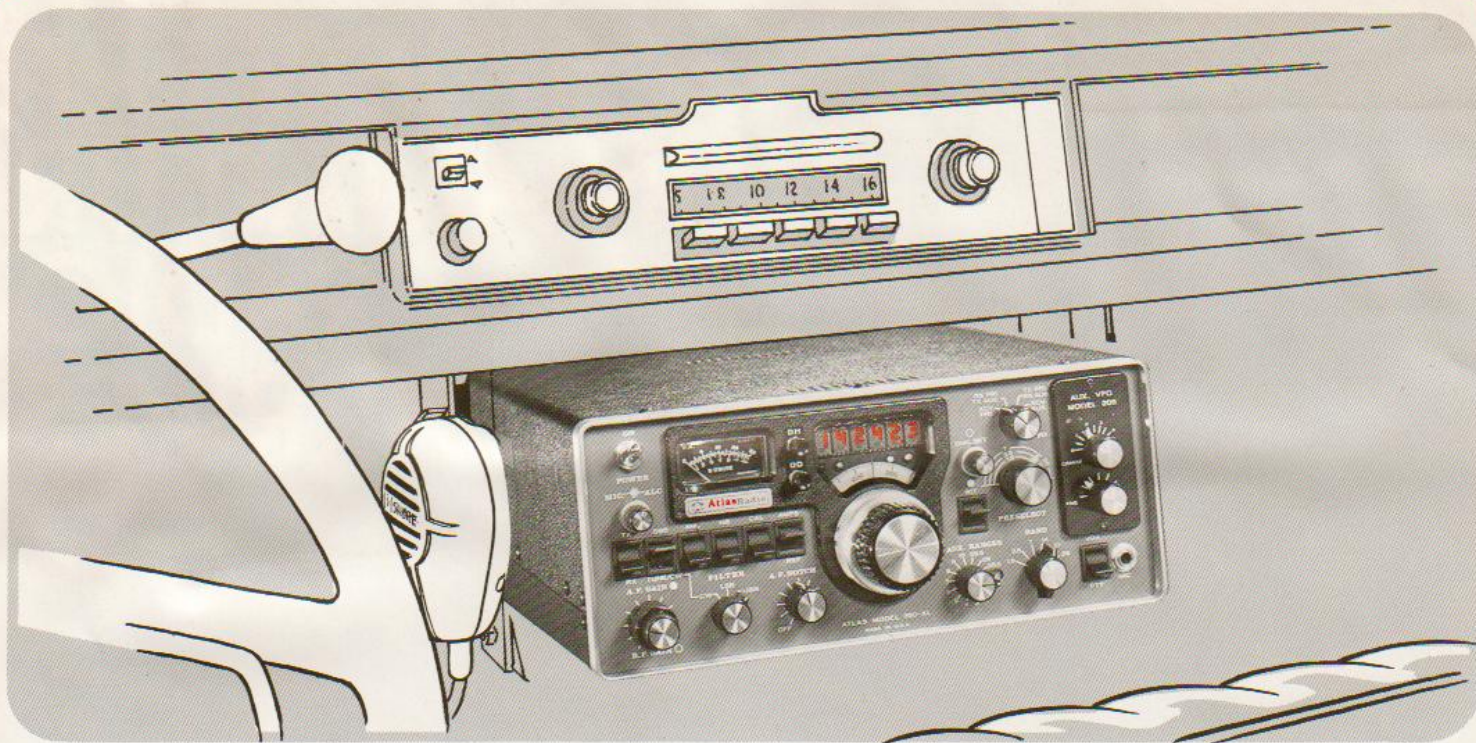
ALL SOLID STATE SSB/CW TRANSCEIVER
350 WATTS • 10-160 METERS



The State of the Art in
Amateur Radio Transceivers
for the Next Decade



ATLAS
RADIO INC.



ATLAS 350-XL

With all the new features and superior performance you want, and should expect to have in a deluxe transceiver.

COMPLETELY SOLID STATE DESIGN

9 IC's, 47 transistors, and 54 diodes. Final transistors are fully protected against infinite SWR and thermal runaway. Even with constant operating they should never need replacement!

BROADBAND POWER AMPLIFIER

No transmitter tuning or loading, only the "preselect" control requires peaking. Instant QSY and band change.

RECEIVER DESIGN

Results in spectacular performance. The very latest state-of-the-art techniques include a double balanced diode mixer, and a minimum of signal amplification before coupling into the I.F. crystal filter. As a result, the receiver's ability to handle very strong adjacent channel signals without overload and intermodulation establishes new standards of comparison. If you have not yet operated an Atlas transceiver in a crowded band and compared it with others, you have a real thrill coming.

10-160 METERS COVERAGE

Full coverage of all six amateur bands in 500 kHz segments. Primary frequency control provides highly stable operation. Also included with no additional crystals is reception of WWV at 5, 10, and 15 MHz. In addition, there is provision for adding up to 10 other 500 kHz ranges between 2 and 23 MHz by plugging in auxiliary crystals.

350 WATTS POWER

P.E.P. and CW input. Enough power to work the world barefoot!

MAXIMUM OPERATING PLEASURE

Finally, with the new Atlas 350-XL, you have all the flexibility, performance, power, and convenience you've always wanted, all in one compact, American made package. Operating the Atlas 350-XL is pure pleasure!

EVERY ATLAS TRANSCEIVER AND ACCESSORY IS MADE IN AMERICA!

With the exception of a few components of foreign origin, every Atlas transceiver is designed and manufactured right here in our plant in Oceanside, California, U.S.A. We think the American worker, and our employees in particular, are the most talented, hardest working people in the world. The quality of Atlas transceivers and our very competitive prices are the proof of this.

CUSTOMER SERVICE SECOND TO NONE!

Built to the best commercial specs. Service will not be required very often. But, when required, Atlas Radio backs its product with a service policy second to none. Your satisfaction is guaranteed!

OTHER STANDARD FEATURES INCLUDE:

RECEIVER INCREMENTAL TUNING • AUDIO FREQUENCY NOTCH FILTER • FULL BREAK-IN CW OPERATION • CW FILTER • SIDETONE • NOISE BLANKER • PUSH TO TALK • VOX OPERATION •



SPECIFICATIONS, GENERAL:

Frequency Coverage: With crystals supplied as standard: 1.5-2 MHz, 3.5-4, 7-7.5, 14-14.5, 21-21.5, 28-28.5, 28.5-29, 29-29.5, 29.5-30 MHz. **Optional Coverage:** Up to 10 auxiliary crystals permit operation in any other 500 kHz segment between 2.0 and 23 MHz (except for I.F. guard band between 5 and 6 MHz). **Primary Frequency Control:** Highly stable primary oscillator operation in a fixed 500 kHz range with less than 500 Hz drift during first 30 minutes and less than 100 Hz per hour thereafter. Less than 50 Hz shift with supply line variations from 11 to 16 volts. **Frequency Readout:** Zero to 500 kHz on a rotary, illuminated dial scale with 5kc increments. Velvet smooth dual ratio tuning provides 180 kHz per revolution fast tune, and 18 kHz per revolution slow tune. **Optional Digital Frequency Readout:** Dot Matrix LED's provide direct 6 digit reading in kHz. Last digit is in tenths of kHz, providing accurate frequency readout to within 50 Hz. Installation is simple 4 screw installation behind tinted window. Connector plug makes all connections instantly. Digital Readout also functions as frequency counter with switch and input connector on back of transceiver. **R.I.T.:** Receiver Incremental Tuning is a standard feature which permits receiving up to 5 kHz above or below your transmitting frequency. This is a useful feature when operating CW, and at times when in a network of SSB stations that are not all on the same frequency. L.E.D. in dial window indicates when R.I.T. circuit is engaged.

Dial Set Control: Concentric with R.I.T. control, provides for setting dial scale to exact calibration. **Auxiliary Frequency Control:** On the upper right-hand corner of the 350-XL is provision for a plug-in auxiliary oscillator. This may be either a tuneable VFO (Model 305) or a crystal controlled, fixed channel oscillator with choice of up to 12 crystal controlled channels (Model 311).

With the 305 auxiliary VFO you have a second tuneable VFO for tuning to a separate transmit or receive frequency, covering the same 500 kHz range as the primary VFO. Green, yellow and red LED's indicate which VFO, primary or auxiliary, will be used for receive and transmit. 10:1 planetary drives smooth vernier control. Coarse tune covers 100 kHz per revolution. Fine tune covers only 10 kHz per revolution. Calibration of tuning controls on the Auxiliary VFO is approximate, so the optional Digital Dial is recommended. The Model 311 Auxiliary Crystal Oscillator permits transmit, receive or transceive on crystal controlled channels. There are 12 crystal sockets available, with a vernier control for exact frequency setting. This accessory is a great convenience for MARS or network operation.

Filter Control: Panel switch provides selection of upper or lower sideband with 2700 Hz bandwidth, or 500 Hz CW bandwidth. The upper and lower sideband filters are an 8 pole crystal ladder design. Bandwidth of 2700 Hz at 6 dB down, selected to provide audio response from 300 to 3000 Hz in both transmit and receive modes. Filter provides a bandwidth of 4300 Hz at 60 dB down (shape factor of 1.6) and a bandwidth of only 9200 Hz at 120 dB down. Ultimate rejection in excess of 130 dB. CW filter is a standard feature that provides 500 Hz bandwidth at 6 dB down. **Noise Blanker:** Effectively reduces or eliminates pulse type noises. **ANL:** Reduces hash type noise interference, which is not of intermittent pulse type. **AF Notch Filter:** Provides better than 30 dB rejection of an audio frequency, adjustable from 300 to 3000 Hz. **Completely Solid State Design:** 47 Transistors, 9 Integrated Circuits, and 54 diodes.

Modes of Operation: Single Sideband Voice Transmission and Reception with choice of upper sideband or lower sideband. Panel switch selection of push-to-talk or VOX operation. Also CW operation with full break-in operation. RTTY (AFSK), and SSTV at reduced power. **Modular Construction:** Plug-in PC boards for R.F., I.F. and Audio Circuits. Easy access to all modules for maintenance and service.

Plug-in Design: For mobile operation, a bracket assembly is available which permits instant plug-in of the transceiver for mobile operation, and instant removal to avoid theft as well as transfer to the ham shack for base operation. (Although larger than the Atlas 210x/215x series, the 350-XL will still fit into many mobile installations. If it is too large, the 210x/215x are still in production.)

Power Requirements: 12-14 volts D.C., negative ground only. Terminal P1 is high current circuit for power amplifier, requiring 32 amps. peak in transmit mode. Terminal P2 is low current circuit for receiver and low level stages, draws 300 to 600 ma in Receive and Transmit modes. (Digital Frequency Readout will draw an additional 700 to 800 ma. A panel switch permits turning it off when desired.) **Finish:** Vinyl Covered Aluminum Cabinet, Anodized aluminum front panel. **Dimensions:** 12½ in. (32 cm) wide, 5¼ in. (14 cm) high, (plus 1½ in. for rubber feet), 16 in. (41 cm) deep (including knobs and rear extensions). **Net Weight:** 18 lbs. (8.2 kg). **Shipping Weight:** 22 lbs. (10 kg).

RECEIVER SPECIFICATIONS:

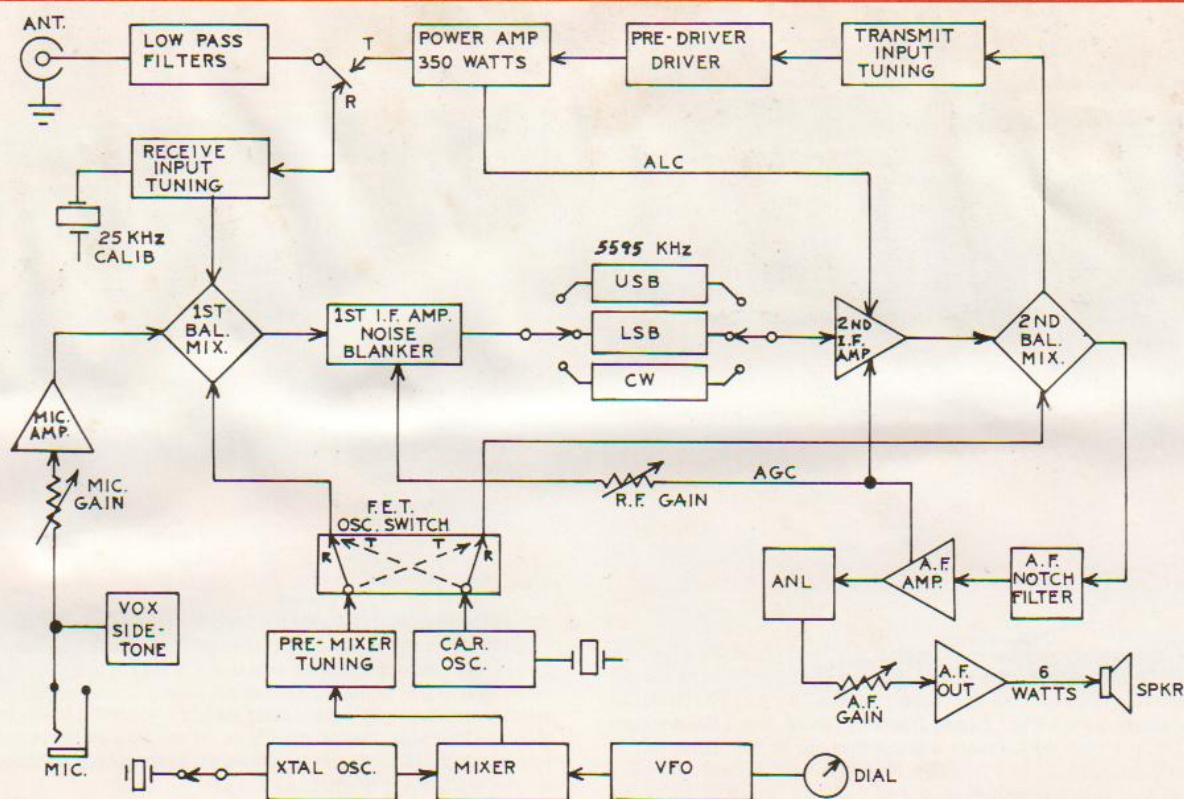
Circuit Design: Single conversion to 5595 kHz I.F. using double balance diode ring mixer. Provides exceptionally high immunity to overload and cross modulation from adjacent and strong in-band signals. Blocking requires a signal at least -20 dBm, or 115 db above noise floor. IMD 3 db above noise floor requires a signal at least 80 db above noise floor. 3rd order intercept is better than 0 dBm, typically +3 dBm.

Sensitivity: Noise floor less than -135 dBm, which provides 10 db signal-plus-noise to noise ratio with less than 0.4 microvolts input.

Image Rejection: Down more than 60 dB. Local oscillator is 5595 kHz above the signal frequency on all bands. **Internal Spurious:** Less than equivalent 2 microvolt signal in amateur bands. **AGC:** Audio output is constant within 4 dB with signal input from 5 microvolts to more than 3 volts. **Overall Gain:** 1 microvolt signal input provides more than ½ watt audio output (CW carrier with 1000 Hz heterodyne). **Audio Output:** 6 watts at 10% distortion, 300 to 3000 Hz, plus or minus 3 dB. **Internal Speaker:** 3-inch diameter, 4 ohm, 0.68 oz. magnet rear jack permits plug-in of larger speaker in AC power supply cabinet. **Meter:** Reads "S" units from 1 to 9 and plus 10 to 50 dB. **Calibrator:** Provides calibration markers at 25 kHz increments on tuning dial. **Dial Set Control:** Permits adjustment of tuning dial to exact calibration at 25 kHz increments. **Incremental Tuning (R.I.T.):** Permits plus or minus 5 kHz adjustment of receive frequency without disturbing transmit frequency.

TRANSMITTER SPECIFICATIONS:

Circuit Design: Broadband circuitry, eliminates transmitter tuning. Only the "preselector" control requires peaking. Single conversion produces minimum spurious products. 2 section low pass output filters provide high harmonic and TVI suppression. ALC panel adjustment. Infinite SWR protection reduces transmit power as SWR increases. At SWR of 4:1 input power is down to approximately 25 watts, which will still permit communications, but with low output. **Power Rating:** 1.5 to 23 MHz: 350 watts P.E.P. input and CW input, 28 to 30 MHz: 250 watts P.E.P. input and CW input. (50 ohm nonreactive load, 14 volt D.C. supply.) **Power Output:** 1.5 to 23 MHz: 160 watts minimum. 28 to 30 MHz: 100 watts minimum. **RTTY-SSTV Power Rating:** Approx. 180 watts input, depending on heat sink ventilation. **Spurious Suppression:** Unwanted Sideband better than 60 dB at 1000 Hz audio input. Carrier down more than 50 dB. Third order distortion approx. 30 dB down. Harmonic output and other spurious output signals are more than 50 dB below peak input. **CW Transmit:** Full-break-in operation. Automatic frequency offset moves transmit frequency 800 Hz lower in frequency. Sidetone included, with internal adjustment for pitch and audio volume as required. **Transmit Control:** Manual transmit with panel switch, PTT (Press-to-talk) with Mic. button, or VOX (Voice operated transmit). VOX controls are thumb wheels accessible just under front edge of cabinet. Mic. jack is on front panel, and also on rear panel. **Microphone:** Dynamic or crystal, High impedance. Requires ¼ in. diameter 3 circuit plug. (Plug is supplied with transceiver, but microphone is not.) **Audio Fidelity:** 300 to 3000 Hz, plus or minus 3 dB. **Meter:** Reads P.A. collector current, 0 to 32 amps., or reflected voltage from built-in SWR bridge. **Linear Amp Control:** Rear terminals provide for keying of linear when in transmit mode. **Rear Connectors Include:** +14 volt Hi Amp., +14 volt Lo Amp., Mic. Jack, Key Jack, Digital Frequency Counter Input, Digital Dial Switch, Phono Jack for PTT, Tip Jacks for +14 volts in Transmit Mode, Receiver Ant. Input Switch with Phono Jack for separate receiving antenna. Also, Phono Jack for antenna connection to a second auxiliary receiver.



ATLAS 350-XL BLOCK DIAGRAM

ATLAS 350-XL OPTIONAL FEATURES



• DIGITAL DIAL READOUT

The Atlas 350-XL has space provided for quick installation of this plug-in accessory. Provides precise frequency readout within 50 Hz. All L.E.D. Dot Matrix 6 digit display.

• PLUG-IN AUXILIARY VFO or CRYSTAL OSCILLATOR



Auxiliary VFO is plugged into the space provided on the front panel of the 350-XL. You have a second tuneable VFO with the same tuning ranges as primary VFO for tuning to a separate transmit or receive frequency. L.E.D.'s indicate which VFO, primary or auxiliary, will be used for receive and transmit.

Or instead of the auxiliary VFO a Crystal Oscillator may be plugged into the front panel, providing fixed channel, crystal controlled operation. Twelve crystal sockets are available with a vernier control for exact frequency setting.

ACCESSORIES:

• 350-PS MATCHING AC SUPPLY

Includes front facing speaker and phone jack. Provides 14 volts filtered and regulated D.C. for both low current and high current circuits of the 350-XL. Internal space provided for installation of accessories such as CW keyer, Speech Processor, Digital clock/phone patch, etc. (These accessories will be announced in the near future.) Operates on 100 to 130 or 200 to 260 volts, 50-60 Hz.

• SAME PLUG-IN-AND-GO MOBILE FEATURE AS OUR FAMOUS 210x/215x

The 350-XL has its own optional Mobile Mounting Kit for quick, easy plug-in or removal from your car. All connections are made automatically.

ACCESSORY LIST

DIGITAL READOUT	MODEL DD6-XL
PLUG-IN AUXILIARY VFO	MODEL 305
PLUG-IN AUXILIARY CRYSTAL OSCILLATOR ..	MODEL 311
MATCHING AC POWER SUPPLY	MODEL 350PS
PLUG-IN MOBILE MOUNTING KIT	MODEL DMK-XL



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