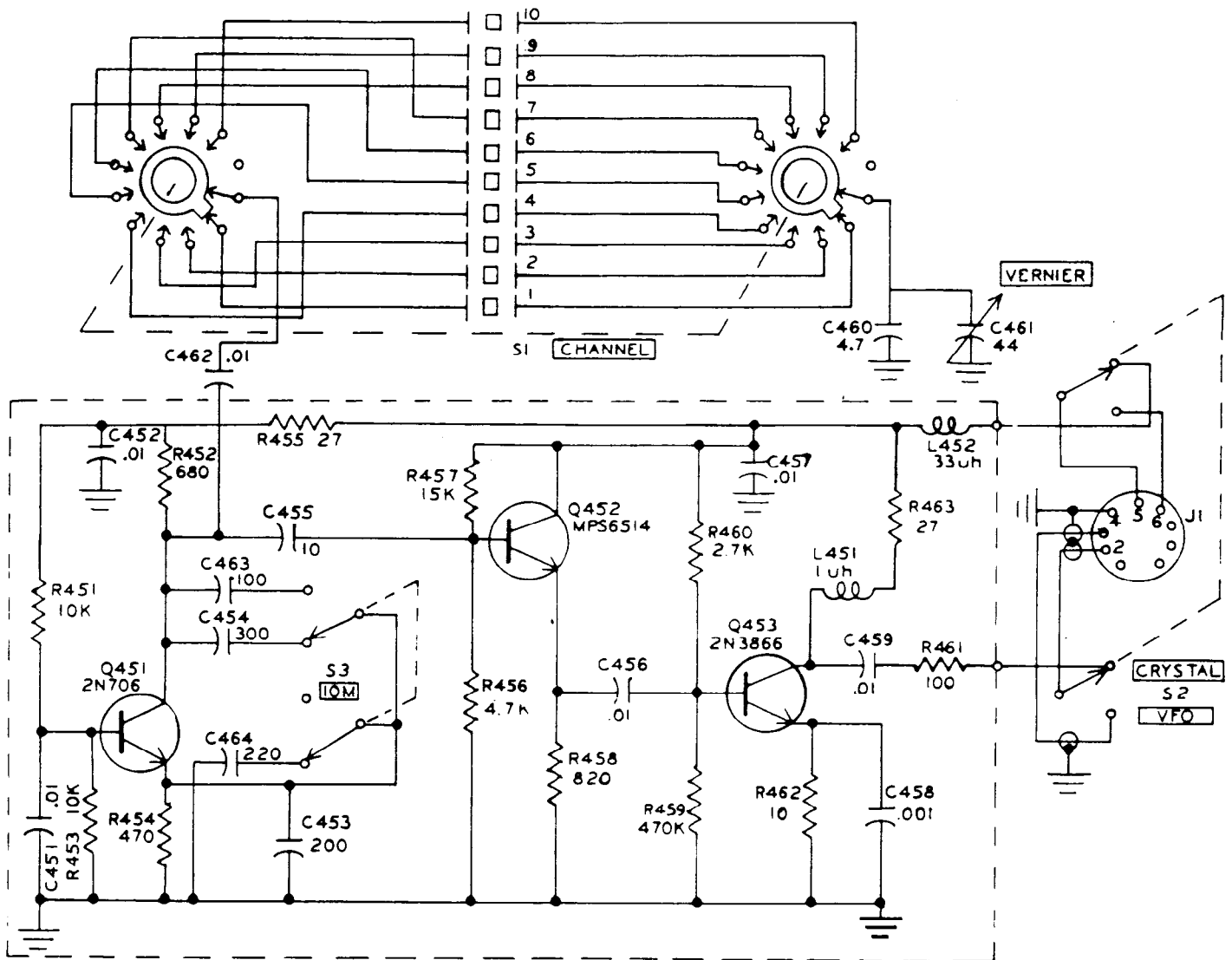# ATLAS MODEL 10XB
CRYSTAL OSCILLATOR ACCESSORY

The Model 10XB oscillator provides for added versatility with the Atlas transceivers by crystal controlling the operating frequency. Vernier frequency adjustment is provided and a switch selects either crystal or VFO control. A ten position switch allows selection of up to ten crystal frequencies.

The slide switch located on the side of the 10XB allows for selection of either 10 meter operation or 160 thru 15 meter operation with the 10XB oscillator.

FREQUENCY RANGE OF 10XB

BAND, mHz	RANGE, kHz
1.8 (215x only)	1800-3000
3.5	3000-5300
7	5900-10,000
14	13,800-14,900
21	20.600-21.600
28 (210x only)	27.500-30,000

INSTALLATION:

A 9 pin Noval socket on the back of the Atlas transceiver is labeled EXT. OCS. The 10XB plugs into this socket. It will be necessary to remove the two jumper wires plugged in between pins 2 and 3; and pins 5 and 6. Once the wires have been removed the transceiver VFO will not function unless the 10XB is plugged in and switched to its VFO position, or the dummy jumper, which is furnished with the 10XB, is inserted in the EXT. OSC. socket.

For information on calculating and ordering crystals, see other side.

CRYSTAL REQUIREMENTS FOR MODEL 10XB OSCILLATOR ACCESSORY:

The sideband selector switch on the 210x and 215x changes carrier frequency from the low side of the I.F. pass band in "NORM" position, to the high side of the I.F. pass band in "OPP" position. The "NORM" position produces Lower Sideband (LSB) on the 1.8, 3.5, and 7 mHz bands, and Upper Sideband (USB) on the 14, 21, and 28 mHz bands, which is the normal operating mode on these respective bands. In the "OPP" position of the SB selector switch operation will be USB on 1.8, 3.5, and 7 mHz but frequency will be offset by about 3.3 kHz. On the 14, 21, and 28 mHz bands operation will be LSB, and again the frequency will be offset by about 3.3 kHz Therefore, it is vital that the *crystal frequency must be ordered for the sideband which is to be used.* Before the crystal frequency can be calculated, it must be known whether operation is to be LSB or USB.

INTERMEDIATE FREQUENCY:

The Atlas 210x and 215x were originally manufactured with the I.F. at 5520-5523.3 kHz. The latest series has been changed to 5645-5648.3 kHz. In calculating crystal frequencies for the 10XB, it must be known which I.F. is in the transceiver.

Earlier models have serial numbers beginning with the prefix TB, TC, TD, TE, TF, TG, TH, TJ, TK, and TL. These all must use 5520 or 5523.3 kHz in calculating crystal frequencies.

Later series of the 210x and 215x have serial numbers with the prefix TM or TP. These models will also have the number 5645 kHz stamped on the back for easier identification, and must use 5645 or 5648.3 kHz in calculating crystal frequencies.

CALCULATION OF CRYSTAL FREQUENCY,   **LOWER SIDEBAND:**

BAND	Early Series with 5520-5523.3 kHz I.F.	Later Series with 5645-5648.3 kHz I.F.
1.8, 3.5, and 7 MHz bands, SB Selector in "NORM" position.	Crystal Freq. = Signal Freq. + 5520 kHz Example: 4020 + 5520 = 9540 kHz	Crystal Freq. = Signal Freq. + 5645 kHz Example: 4020 + 5645 = 9665 kHz
14, 21, and 28 MHz bands. SB Selector in "OPP." position	Crystal Freq. = Signal Freq. − 5523.3 kHz Example: 14,370 − 5523.3 = 8846.7 kHz	Crystal Freq. = Signal Freq. − 5648.3 kHz Example: 14,370 − 5648.3 = 8721.7 kHz

CALCULATION OF CRYSTAL FREQUENCY,   **UPPER SIDEBAND:**

BAND	Early Series with 5520-5523.3 kHz I.F.	Later Series with 5645-5648.3 kHz I.F.
1.8, 3.5, and 7 MHz bands, SB Selector in "OPP." position	Crystal Freq. = Signal Freq. + 5523.3 kHz Example: 4020 + 5523.3 = 9543.3 kHz	Crystal Freq. = Signal Freq. + 5648.3 kHz Example: 4020 + 5648.3 = 9668.3 kHz
14, 21, and 28 MHz bands. SB Selector in "NORM" position	Crystal Freq. = Signal Freq. − 5520 kHz Example: 14,370 − 5520 = 8850 kHz	Crystal Freq. = Signal Freq. − 5645 kHz Example: 14,370 − 5645 = 8725 kHz

HOW TO ORDER CRYSTALS:

There are several crystal companies who can supply crystals for the 10XB oscillator. Price and delivery times vary considerably, so it will pay to shop. If assistance is needed, contact Atlas Radio, Customer Service Dept.

(a) Be sure to specify that the HC6U type crystal holder is required, with .050 diameter pins.

(b) Specified frequency is at parallel resonance with 20 pF shunt capacity.

(c) A frequency tolerance of .0025 per cent at 25 deg. Centigrade is adequate.