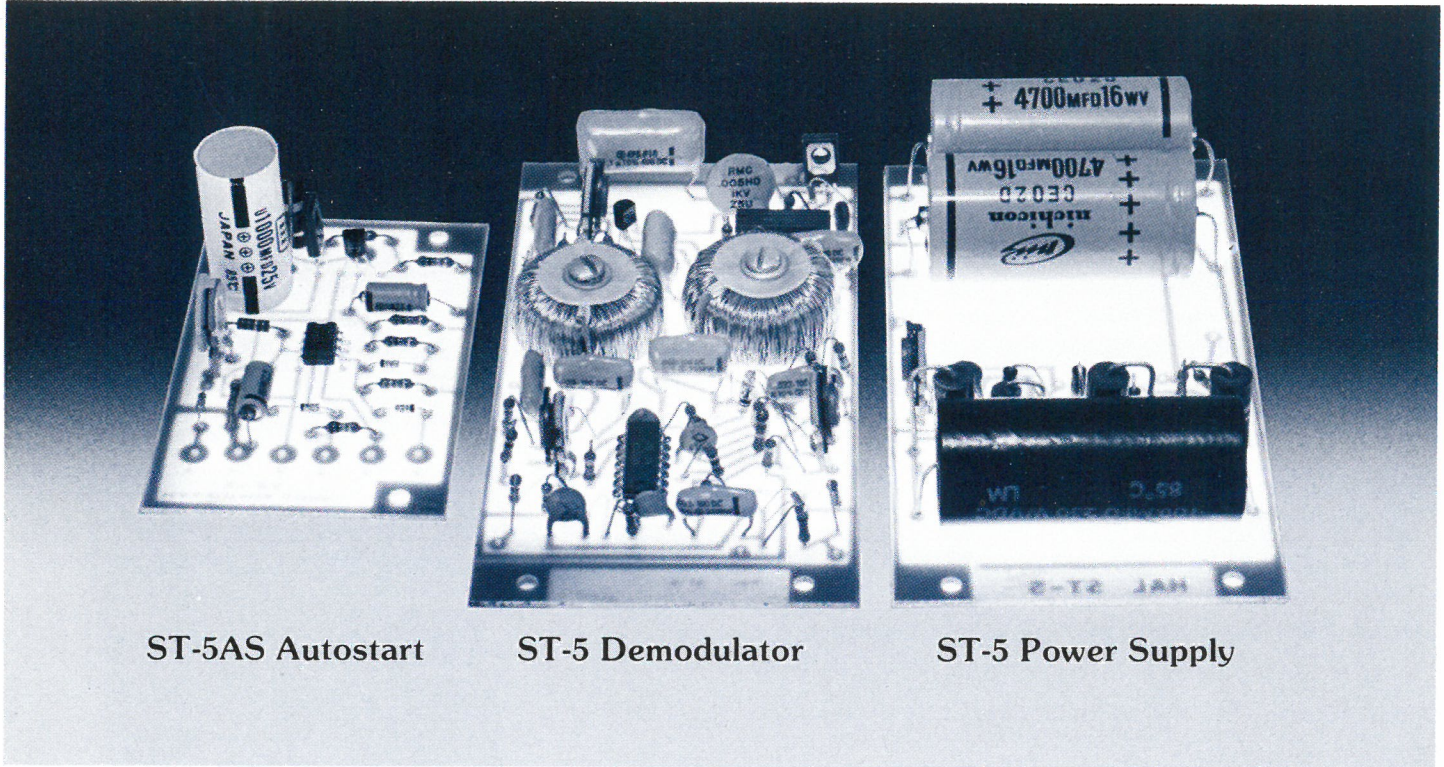## HAL COMMUNICATIONS CORP.

ST-5 DEMODULATOR

ST-5AS Autostart   **ST-5 Demodulator**   **ST-5 Power Supply**

GENERAL

The ST-5 provides excellent performance from a relatively inexpensive, easy-to-build terminal unit. Features include 850 and 170 Hz shifts and a self-contained loop supply. The addition of the optional ST-5AS Autostart kit and the AK-1 Tone Keyer makes a complete terminal unit for transmission and reception of RTTY on HF SSB or VHF FM. The St-5 is compatible with HAL TTY video display units and conventional mechanical equipment. The kit comes complete with two glass-epoxy printed circuit boards, all components, 120 VAC three-wire cord, tuning meter, and manual.

SPECIFICATIONS

Electrical

Input Signal:	Audio tones in the range of 2000—3000 Hz
Input Impedance:	500 ohms, unbalanced.
Limiter Performance:	Threshold, 1.0 mV rms input.
	Maximum signal input, 3.5 V rms.

Output Signals — Loop or Low Level

Loop:	TTY current loop, 60 ma at 175 VDC.
Low Level:	Bipolar voltage compatible with RS-232.
	Nominal voltages: Mark, -15 VDC; Space, +15 VDC.

Discriminator Frequencies

Shift:	850 Hz	170 Hz
Mark:	2125 Hz	2125 Hz
Space:	2975 Hz	2295 Hz

Discriminator Filter Bandwidth: 140 Hz.

CW ID: Narrow Shift CW ID capability.

Physical

Power:	120/240 VAC, 50-60 Hz, ±10%, 14 watts max power consumption.
Shipping Weight:	5 lbs.

OPTIONAL EQUIPMENT

ST-5AS Autostart Kit

For autostart reception with your ST-5 terminal unit, order the budget-priced ST-5AS kit. The kit is complete with instruction manual and all necessary components. A single operational amplifier and two transistors provide mark-hold operation and printer motor control. Power is taken from the ST-5's built-in supply.

ST-5AS Specifications

Input "Trip" Voltage:	2.5 to 4.2 V (adjustable)
Autostart Bandwidth:	275 Hz (minimum)
Autostart Response Time:	2 to 4 seconds
Motor Dropout Time:	20 to 40 seconds
Relay Contact Rating:	120 VAC, 10 amp
Power Requirements:	+12 VDC regulated (5 ma),
	-12 VDC regulated (10 ma),
	-12 to -15 VDC unregulated (115 ma).

AK-1 AFSK Oscillator (Tone Keyer)

The AK-1 is an easy-to-build oscillator which provides mark, space, and CW ID audio tones for AFSK transmission with SSB transmitters. The AK-1 can be used as a plug-in accessory for the mainline ST-6 terminal unit, with the ST-5 terminal unit kit, or separately. It is available in kit form or assembled.

The circuit provides switch selection of either 170 or 850 Hz shift using standard AFSK tones. With the six-pole shift selector switch provided in the ST-6, you can change the terminal unit and AFSK oscillator shifts simultaneously. The AK-1 is compatible with the keying system used in both the ST-6 and the ST-5. It can normally be powered directly from the ST-6 or ST-5 power supply.

The kit comes complete with circuit board, all components, edge connector, audio output connector, and manual. The AK-1 can be housed in a 3-½ x 6 x 10 inch Bud Minibox (not included) along with the ST-5 boards and the ST-5AS Autostart. See the price list for ordering information.

AK-1 Specifications

Input Data Form: Serial Data
Input Data Level — (Mark, Space, Line)
  -3 to -15 VDC Mark
  -3 to +15 VDC Space
  Compatible with ST-6 and ST-5 FSK line.

Standard Frequency Shifts Available: 170 and 850 Hz shifts.

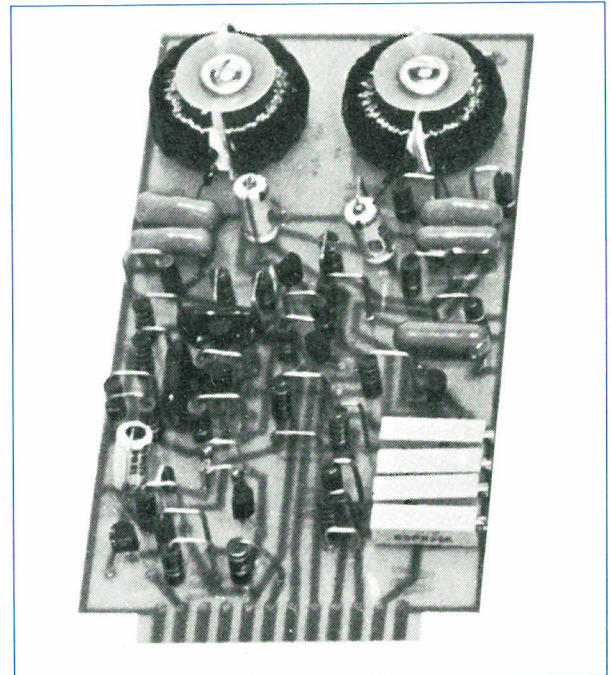Frequency Stability (after 15 minute warm-up): ±5 Hz (all tones).

Output Impedance: 600 ohms, unbalanced.

Output Frequencies:

Shift	170 Hz	850 Hz
Mark	2125 Hz	2125 Hz
Space	2295 Hz	2975 Hz
CW ID (key down)	2225 Hz	2225 Hz

Output Amplitude:
  High level output   100 mV rms
  Low level ouput   20 mV rms

Size:
  2-⅞ x 5-¾ inch circuit board
  (7.0 x 14.6 cm)
  Edge connector type.

Power Requirements: +12 VDC, 35 ma.

OTHER INFORMATION

All kits are covered by the Hal 1 year Warranty on Parts. The assembled AK-1 carries a 1 year warranty on materials and workmanship. (Complete warranty statements contained in the manuals). See the price list for ordering information.

Manufactured by:

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