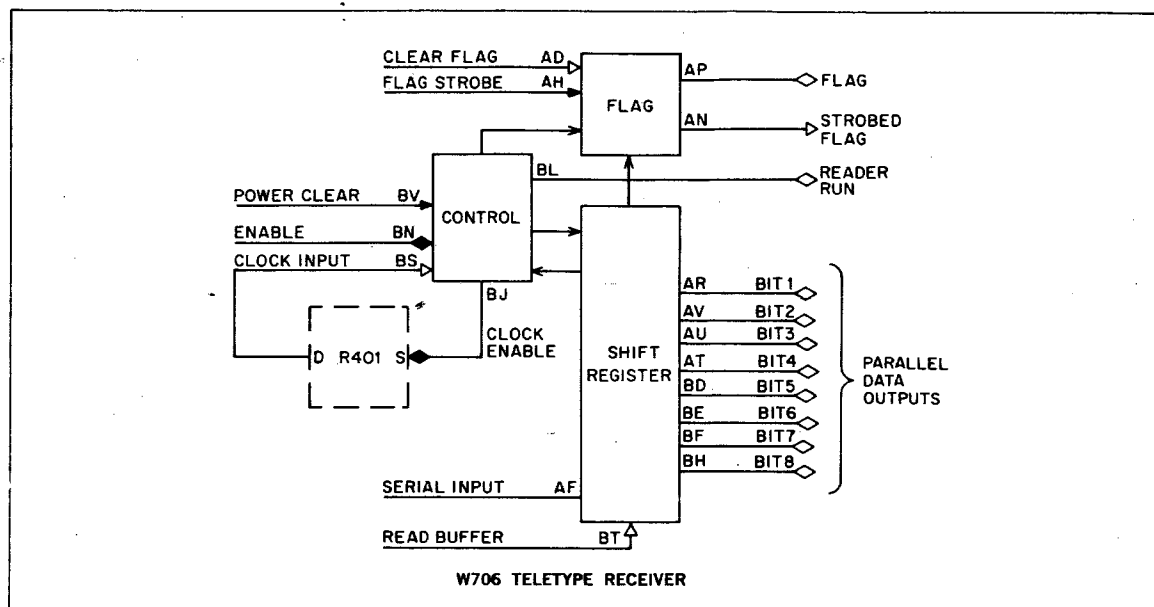


TELETYPE RECEIVER

TYPE W706

(DOUBLE HEIGHT)

W
SERIES



The W706 Teletype Receiver is an integrated-circuit, serial-to-parallel Teletype code converter, self contained on a double-height module. This unit includes all of the serial to parallel conversion, buffering, gating, and synchronizing necessary to transfer information between an incoming asynchronous serial teletype line and a parallel binary device. Either a 5-bit serial character consisting of 7.0, 7.5, or 8.0 units or an 8-bit serial character of 10.0, 10.5, or 11.0 units can be assembled into parallel form by the W706 through the use of selective jumpers on the module. The serial input for one character is expected to be in sequence; a one unit -3 volt start signal, the five or eight character bits, a ground level stop signal of 1.0, 1.5, or 2.0 units. When the conversion is complete, the start and stop elements accompanying the serial character are removed. A logical 1 for a character bit is a ground level and a logical 0 is -3 volts. The first bit received on the serial line is Bit 1 at the parallel output.

To perform the serial to parallel conversion, the re-

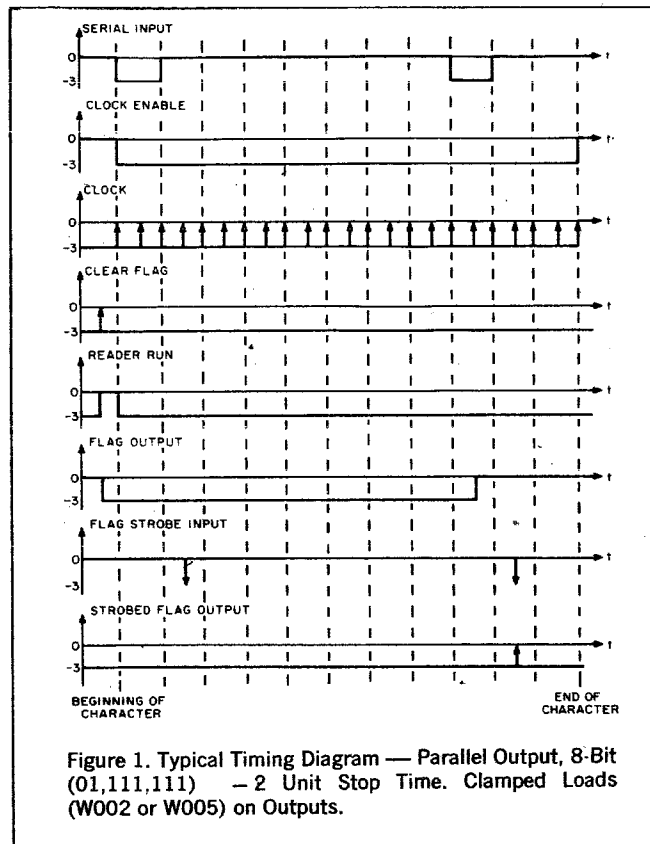
ceiver continuously examines the serial input line, and when a start element is recognized, the receiver enables the external clock through the Clock Enable Output and synchronizes with the incoming signal.

When the last character bit, either bit 5 or bit 8, is received, the flag is set and a ground level appears at the Flag Output. At this time, the Parallel Data Outputs of the W706 can be examined by a Read Pulse, and if desired, the flag can be cleared by a pulse on the Clear Flag Input. A new serial character must not be put on the Serial Input until the stop time of the previous character is counted out and so indicated by a ground level on the Clock Enable Output. For additional timing information see Figure 1. The W706 may be connected to devices other than a Teletype, providing that their serial output is similar to a Teletype code. Start element noise rejection of the W706 is approximately one volt from ground, requiring a line filter or use of the W708 on noisy teletype lines. To obtain additional Teletype applications data, write for Applications Note AP-W-1.

INPUTS: Standard Digital levels of -3 volts and ground or 400 nsec pulses as generated by module types R602 and W103. Input pins are shown on the diagram above.

CLOCK: 400 nsec positive pulses with a maximum receiver input frequency of 200 kHz. The clock fre-

quency must be twice the required serial input frequency thus defining one unit of character time as two clock periods. Input loading is 2.8 ma at -3 volts. The clock used must be externally gateable and similar to a R401 unless the W706 is used with a W708.



ENABLE: A diode input, which if brought to ground, will disable the clock through clock enable. Disabling (or enabling) the clock during a serial input character can result in incorrect character reception.

CLEAR FLAG: A ground level or Digital standard 400 nsec positive pulse will clear the flag. If a level is used, it must be returned to -3 volts before the flag can be set. Loading is 1.4 ma at -3 volts. Typically the flag is sensed through one of the flag outputs and then cleared.

FLAG STROBE: Digital standard 400 nsec negative pulse or a -3 volt level. Loading is 1.4 ma at -3 volts. This input is NAnDED with the flag and provides a ground level Strobed Flag Output signal when the flag is set.

READ BUFFER: A 400 nsec positive pulse provides parallel information from the W706. During this pulse, any bit which is a logical 1 will generate a 400 nsec positive pulse at the corresponding bit output. This input can be held at ground for continuous monitoring of bit outputs. Typically, this pulse is generated after a Flag Output has been sensed so that no incorrect character will be received on the parallel lines. Loading is 2.8 ma at -3 volts.

POWER CLEAR: Same input signals and loading as for Flag Strobe. Initialization of module components by a Power Clear signal is not necessary if the first

character received after power turn-on is insignificant. When not used, Power Clear can be left disconnected.

SERIAL INPUT: Digital standard levels of -3 volts and ground. A ground level during a bit input represents a logical 1. The first character bit to come in on this input appears at Bit 1 output. Loading is 2.8 ma at -3 volts.

OUTPUTS: All outputs are capable of supplying 20 ma at ground. The external load may be connected to any voltage between ground and -20 volts. Clamped loads such as W002 and W005 can also be used.

BITS 1 THRU 8: Buffered outputs generated by NANDING the internal bit and the Read Buffer. A ground level or positive pulse output represents a logical 1 for that bit. Unused outputs can be left open.

FLAG OUTPUT: Ground level output when the flag is set.

STROBED FLAG OUTPUT: Ground level output or pulse output when Flag Strobe is at -3 volts and the flag is set.

CLOCK ENABLE: Used with R401 clock or equivalent to synchronize the clock to incoming serial data. The output is an open circuit whenever a serial input is

present and at ground at all other times. When used with a R401, this output is connected to the enable input of the R401.

READER RUN: Of use in teletypes equipped with relay controlled paper tape readers. The Reader Run Output is enabled (ground level) by a Clear Flag pulse and disabled by the W706 circuitry when a start pulse is received on the serial input. For ad-

ditional information see Figure 1.

JUMPERS: Jumper positions are indicated on the top view physical sketch shown in Figure 2. The W706 is shipped with all jumpers in position.

POWER: -15 (B)/12 ma; +3.6 volts/400 ma. This power is available from a W705 or any commercial supply that has an output regulation of $\pm 5\%$.

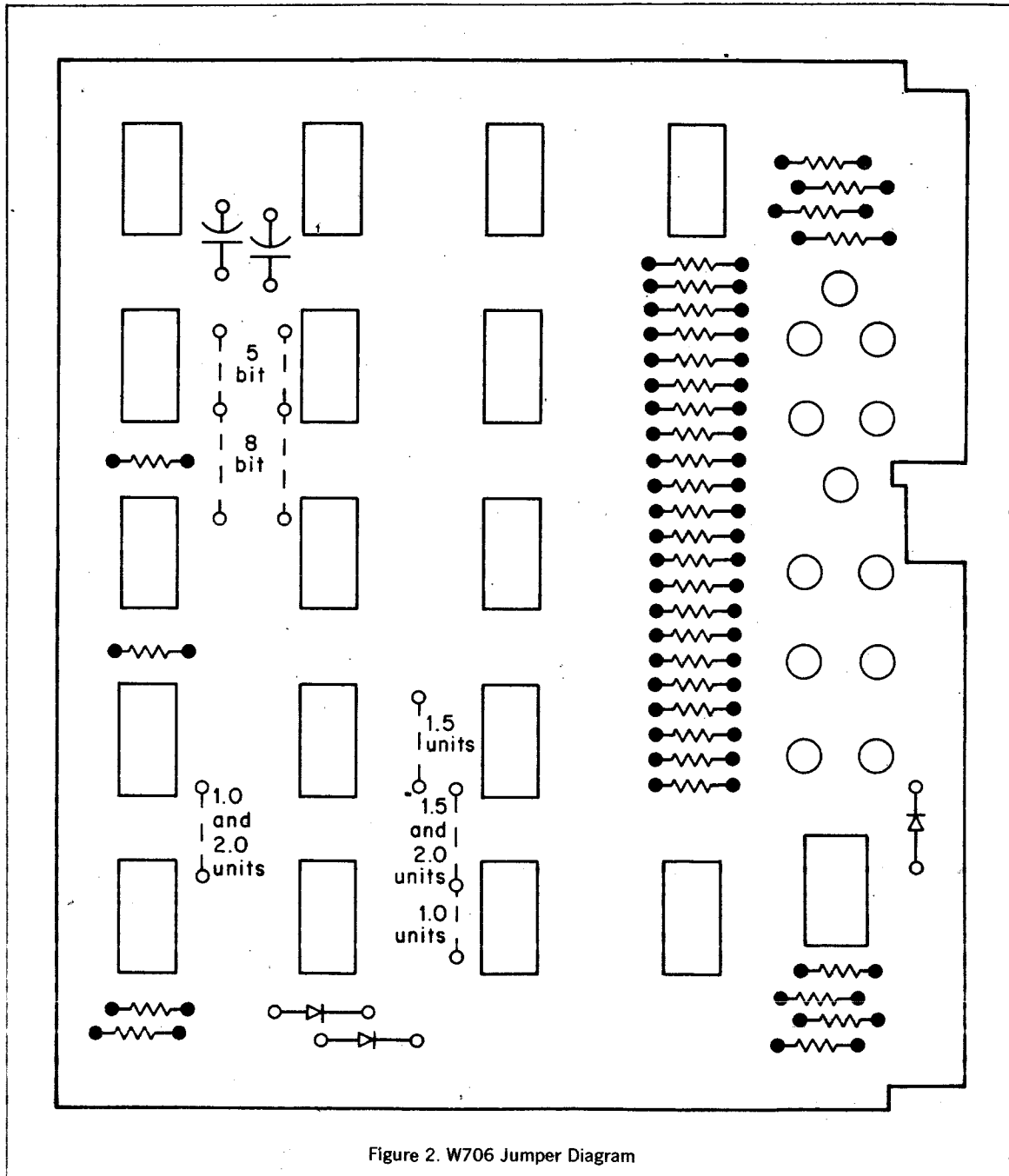


Figure 2. W706 Jumper Diagram