DIAL-UP MORSE TERMINAL

SET-UP AND OPERATION

Arrange the various units as convenient to the operator and interconnect as shown in the sketch.

The idle power drain of the wall transformers is very small and they are designed to be left plugged in continuosly hence no on-off switch has been provided in the primary side.

Since the modems used for this type of service are approved for direct connection to the public switched telephone network under part 68 of FCC rules, and is the only unit so connected, setting up and operating this terminal is completely within the regulations and permissible.

Connected as shown, the telephone will operate normally when the Morse feature is not engaged.

There are two switches on the Morse Terminal Unit. That on the left is the power on and off switch. The right switch designated "cut", when thrown "on" will hold the receive relay on mark, closing the set so it can be used locally. For a dial-up connection, it must be in the "off" position (lamp dark).

To establish a Morse connection:

Turn on the power to the MTU, with the "cut" switch normal. (off)

Key on the set should be closed. (1)

Modem "answer-originate" switch in "originate" position. (2)

Dial the desired number in the usual way.

When the called party is on the line and ready, (3) depress the modem "connect" switch. The "on" lamp will be displayed and a tone will be heard in the telephone. Hang up, as the modem will now hold the connection.

The "CD" lamp (carrier detect) will light when the distant end is set up and ready to telegraph.

At the end of the contact, all that is necessary is to release the "connect" switch and turn off the MTU power.

To answer a Morse call:

Once it's determined that the incoming call is Morse, put the modem "answer-originate" switch in the "answer" position, turn on the MTU and hang up the phone. All else will be as above. (2)

If for some reason it is desireable to go to the phone before concluding the contact, remember to take the phone off the hook BEFORE releasing the modem. Otherwise, the connection will drop off and be lost.

JA
2/90

NOTES

(1) With the Radio Shack DCM-3 and -6 modems, it is necessary for the receiving modem to see a marking carrier (closed) to cut through and give a "CD" signal. This applies at either end.

(2) This is the conventional arrangement. If is is known that the other end is using a fixed mode modem, such as an unmodified TLA which operates "originate" only, the near-end switch must be in "answer" to accomodate it, regardless of which end originated the call. Modems must work with complimentary settings, originate to answer. Originate-originate or answer-answer will not work.

(3) How this is done varies. Some operators will put their modem on line as soon as the phone at the distant end starts to ring or is picked up, avoiding voice contact. They will wait for the "CD" lamp and Morse signals. This is perhaps the ideal method if other family members are educated to recognize the tone as an incoming Morse call and so inform the operator. Of course, if the response is "Oh, it's that awful noise again" and the person answering hangs up, or perhaps the operator is not there, the call is wasted. Experience will indicate what response to expect from the various offices.

Additional Note: Spark Killer .

The spark created at key and relay contacts generates a radio-frequency signal which can be radiated into the modem. This can cause poor quality signals. Applying the spark killers provided which are simply a 0.22 mfd condenser in series with a 22 ohm resistor across the contacts usually cures the problem. A 0.1 mfd condenser across the contacts by itself will eliminate the problem as well, but provides no protection to the contacts.

When this problem is present, there will be an audible click in the signal when listened to in the telephone receiver as the Morse circuit is keyed. Normally, the mark/space transitions should be clean with no audible clicks, thumps or chirps.

JH 2/90

Add Note: R3 Receive relay bias winding circuit replaced with 1000 ohm cermet trimmer, 3/4 watt rating. This permits adjustment of the weight of the incoming signals. Turning clockwise makes them heavier.

1000 ohm cermet trimmer, 3/4 ohm added to R1 group in place of 1 K ohm fixed resistor to facilitate adjustment of loop current. Current is set at 65 ma. with 100 ohms in loop, 60 ma. with 150 ohms.

Send relay bias current reduced from 30 ma. to 20 - 22 ma. to reduce tendency to kick back with certain sounders having an unusually high inductance. (add 300 ohm, 2w resistor in series with R2).

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