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INSTRUCTION INFORMATION FOR THE G-9813

TELCO INTERFACE MODULE

- RING DETECTOR
- -9 dbm SINGLE FREQUENCY PEAK
- DIAL TONE DETECTOR
- LATCH CIRCUIT



GENERAL DESCRIPTION

The G-9813 Telco Interface Module is used to interface a dial-up telephone line to a telemetering system. This module allows the transmitting side of the remote telemetering system to be monitored and the receiving side to be controlled over a dial-up telephone line using FSK tones and modems. The composite peak voltage output of the telemetering system is set for a -9dbm single frequency peak. Frequencies and signal frequencies in the band of 2450 to 2750 Hz are used by the telephone company for the control of the telephone system. These frequencies are not used for telemetering.

The G-9813 Telco Interface Module consists of a ring detector circuit, a latch circuit to control ON-HOOK and OFF-HOOK conditions of the interface and a dial tone detector to reset the latch to ON-HOOK at the completion of the call.

INSTALLATION

The G-9813 Telco Interface requires a clean dial tone at the receiving site. The G-9813 uses the dial tone of the telephone company to reset the ON-HOOK after completion of a call. The dial tone level should be measured at the time of installing the G-9813 using the following procedure:

a. Set the G9813 up as a transformer carrying loop current. That is, short J1,J2,J3 with shorting bars supplied on the G-9813 printed circuit board. Measure across pins 6 and 7 of the G-9813 with a Fluke Type 8060A tester or equal battery driven meter for the dial tone at -22 dbm.

b. Plug the RJ11 connector into the telephone line and observe the dial tone at about 12 seconds followed by keyed alarm tone.

c. The control R10 is set at the factory so the dial-tone detector output goes from zero to four volts dc at -30 dbm. The dial tone detector output is TP4 across R14 (100K). This setting allows 6 to 8 dbm margins to assure the dial tone will reset the G-9813 after a call.

d. If it becomes desirable to reset R10, apply power and connect an oscillator set for 400 Hz at TP6 and 7 with J2 shorted so as to get the desired 400 Hz level to C10. Adjust R10 until the dial tone detector just begins to trip to 4.0 Vdc. The Fluke type 8060A measures both ac and dc. The input of the dial tone detector across R10 is 400 Hz and the output (TP4) is a dc change.

e. Remove all shorting bars; J1, J2, J3. Turn on the power as power on resets the latch to ON-HOOK condition.

f. Ask the MASTER station operator to dial the REMOTE station while you observe the front panel lights. Red for ring, yellow for loop current. Ask the MASTER station operator to hang up (ON-HOOK), the yellow loop current should go out immediately due to pulses generated by the transformer T1 at the MASTER station G-9813 Telco Interface if the distances are short. The telephone line generates a dial tone about 12 seconds after the MASTER station hangs up (ON-HOOK). This test above indicates the connection to the telemetering system is good.

OPERATION

The block diagram GBS-3660 (Figure 1) shows the G-9813 Telco Interface in a typical telemetering system set up for use on dial-up telephone lines. The distance between MASTER and REMOTE station is less than 10 miles and no hybrids and 1/2 duplex voice switches are used by the telephone company to decrease line attenuation. If longer telephone lines are used the telemetering tone can only go one direction (1/2 duplex). This allows monitoring functions at the REMOTE site via telemetering.

At the MASTER site the G-9813 Telco Interface is set up as a transformer (J1, J2, J3 shorted) that can draw loop current and is protected from high voltage pulses (part 68). The REMOTE G-9813 has no jumpers installed and operates as an interface between the telephone line and the filters of the telemetering system.

To operate, check that the TR switch is open, remove the DTMF handset and dial the telephone number of the telemetering system. When the telemeter tones are established move the TR switch to the closed position and observe the instrumentation.

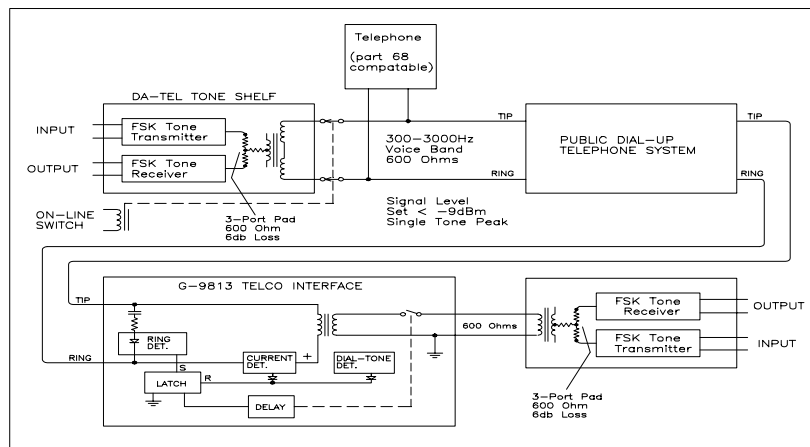


FIGURE 1

NOTICE

As of the date of this printing, the specifications for the G-9813 in this Instruction Information sheet apply to all G-9813's, except as indicated. Because all Da-Tel products are continually being refined and improved, these specifications are subject to change without notice.

SPECIFICATIONS

Power Supply:

+5 Vdc, .1amp.

Temperature Range: -20° C to + 50° C

Line Side:

FCC Registration #:IDF USA-36002-OT-N

Received dial tone: min. -40 dbm

Dial tone: 350Hz and 400Hz, at -22 dbm

Ring signal detect time: 0.4 seconds

Transient protection

IEEE SWC C37.90

System Side:

Transient protection: 500 Vac HIPOT, ungrounded

APPLICATION NOTES

Frequency Selectivity: A -10dbm tone at 800Hz as measured at term 6 to 7 trips off the dial tone detector. Tones and voice signals should be above 800Hz and below -10dbm in level to be transmitted and received. Telemetry tones and modulation products must be -55dbm in the 2450 to 2750 hertz band.

Dial Tone Detector Gain: Set dial tone detector to trip at -30dbm at 400Hz at pin 6 and 7 for normal dial tone levels of -22dbm on the telephone line.

Dedicated Line: Short J1, J2, J3 (+5 Vdc supply not needed).

Dial Up Line: J1, J2, J3 open (+5 Vdc supply required).

FCC EQUIPMENT LABEL

Model G-9813 Interface Module

Da-Tel Research Company, Inc. complies with Part 68, FCC Rules

FCC Registration Number: IDF USA-36002-OT-N

Serial Number _____

Date of Manufacture _____

FCC RULES AND REGULATIONS, PART 68

The G-9813 Interface Module complies with Part 68, FCC Rules. The FCC registration number is pending.

Notify the telephone company as soon as you have installed the G-9813 Interface Module. Give your service representative the above registration number. You are required to do this or you can lose your telephone service.

No telemetering tones are to be transmitted or received in the 2450 to 2750 hertz band

FCC REQUIREMENTS FOR CONSUMER PRODUCTS

(1) This equipment complies with Part 68 of the FCC rules. On the handle of this equipment is a label that contains, among other information, the FCC registration number for this equipment. If requested, provide this information to your telephone company.

(2) If your telephone equipment, G-9813 Interface Module, causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But, if an advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

(3) Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.

(4) If you experience trouble with this equipment, G-9813 Interface Module, please contact Da-Tel Research Company, 970-249-6129, for repair/warranty information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.

(5) Contact manufacturer at the above number for repair information.

(6) This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. (Contact your state public utility commission or corporation commission for information.)