



MOTOROLA
Automotive and Industrial
Electronics Group

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Carl T. Jones Corporation
Attn: Mike Nicolay
7901 Yarnwood Court
Springfield, VA 22153

Dear Mr. Nicolay:

As we discussed on the phone, we have sent you one of our "Lojack-III" units for testing. Reference the FCC identifier: IDILJU-03U.

The new version incorporates a different final output transistor. A Toshiba 2SK3075 MOSFET (Q12 at schematic coordinate B-5) replaces the original Motorola MRF5003 MOSFET. The two devices have similar gain and power ratings. Also, there are changes to the gate-match circuit of this stage, to provide the proper drive conditions to the new part, which has slightly different input impedance. Specifically, C90 (coordinate C-5) was changed to 1.5pF (was 12pF) and C84 (location C-4) was changed to 12pF (was 18pF). The gain of the previous stage has been decreased slightly by decreasing the shunt resistor R101 (coordinate C-4) which is across the base of Q11, to 150 ohms (was 330 ohms). These changes modify only the RF power amplifier. The matching networks are very broad-band so that there should be no change to modulation due to the change. There is no change in the back end of the radio, including the oscillator, modulator, frequency conversion stages or preamps, compared to previous models of this FCC type, or to the power supply.

Because the new power transistor has a different geometry than the old transistor, the printed circuit had to be changed to accommodate the new part. The new schematic and PCB are attached.

There is no change in rated or actual output power at the connector. This is a Class-II change, which we intend to phase into production as our stock of the old MRF5003 transistors is depleted.

This unit, labeled "FCC Test Sample" has specially modified product software, to allow for easier testing of RF power and conducted or radiated harmonics. The product has been modified so that it transmits a 10-second burst of unmodulated RF (at 173.075 MHz) every 20 seconds as long as primary power is supplied to the unit.

Power the unit by attaching the red wire to +12 volts and the black wire to ground. RF output power into a 50-ohm load is approximately 2 watts.

Sincerely,

Hugh Gibbons
Electrical Engineer

Included: one engineering evaluation sample LJU-3 unit, model #5RLJ00M3U
 one RCA-male to BNC female adapter for antenna connector (attached)
 one 50-ohm terminator for antenna connector, for use in radiated testing