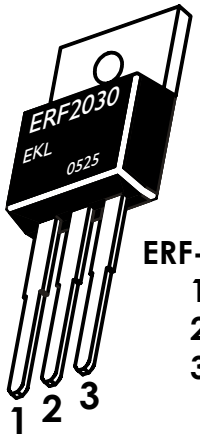
EKL COMPONENTS

Application Note AN-2030-2c (revised Sept. 3, 2005)
ERF-2030 High Power Conversion for AM/FM 10 Meter Radios
Manufactured by Ranger Communications Inc. (RCI)

This application note describes how to substitute/add a total of three ERF-2030s for the discontinued Mitsubishi 2SC1969 and 2SC2166 RF transistors in the Galaxy DX33HML, DX44V, DX55V, DX66V, and DX73V 10 meter transceivers. This application note may apply to other similar transceivers manufactured by RCI.

The supplying of this information in no way holds EKL Components, or any of its members, responsible or liable for any damage incurred to person or property. This application note, or any other information, provided by EKL Components is to be used at YOUR OWN RISK.

Required Parts:
3pc ERF-2030
1pc EN-369DR
1pc EN-369FN
1pc 480K ohm, 1/4 watt Resistor
1pc 1500pF Ceramic Disc Capacitor
1pc 100 ohm, 1/4 watt Resistor
TO-220 Transistor Hardware Kit (Insulator, Washer, Screw/Nut, Thermal Grease)
Insulated Jumper Wire
1pc 68pF Ceramic Disc Capacitor (optional - see below)
1pc Aluminum Heatsink (optional - see below)



ERF-2030 Pins:
1. Gate
2. Drain
3. Source

1) Remove the 2SC1969 at TR43.
2) Remove the 2SC2166 at TR44.
3) Install the ERF-2030's at TR43, TR56, and TR44. Install ERF-2030's exactly the same way the 2SC1969 and 2SC2166 were installed, using all the SAME HARDWARE. When adding the ERF-2030 at the TR56 location, make sure to use the necessary transistor hardware (insulator, washer, screw/nut, thermal grease).
4) Install the EN-369DR at TR44. Install this part on the solder side of the PCB. IMPORTANT: Do NOT stress the leads of the EN-369DR by bending them to aggressively. Bend the leads carefully and make sure that they are as short as possible.
    a) Solder the EN-369DR positive lead (marked +) to the gate pin of the ERF-2030 at TR44.
    b) Solder the EN-369DR negative lead (unmarked) to the source pin of the ERF-2030 at TR44.
5) Install the EN-369FN at TR43. Install this part on the solder side of the PCB. IMPORTANT: Do NOT stress the leads of the EN-369FN by bending them to aggressively. Bend the leads carefully and make sure that they are as short as possible.
    a) Solder the EN-369FN positive lead (marked +) to the gate pin of the ERF-2030 at TR43.
    b) Solder the EN-369FN negative lead (unmarked) to the source pin of the ERF-2030 at TR43.
6) Remove capacitor at C167.
7) Remove the 22µH choke installed from location R215 to R216.
8) Remove the 22µH choke installed in one of the holes at location R218.
9) Remove the 560pF capacitor that is connected from TR44 (driver) to TR43 (final). There is no designator for this part.
10) Install jumper wire at J77.
11) Install jumper wire at J98.
12) Install jumper wire from the left hole at C208 to the right hole at C171. See illustration below for radio orientation.
13) Install 1500pF capacitor at C209.
14) Remove resistor at R285.
17) Add 100 ohm resistor at R285.
18) Install the 480K ohm resistor from the right pad at L41 to the pad closest to the back of the radio at C175. It will be easiest to install this part on the solder side of the PCB. See illustration for radio orientation.

NOTE: Steps 19 through 25 are optional and are not necessary for a functioning radio. However, these steps may increase power and performance.

19) Remove jumper wire from TP8 to TP7.
20) Remove jumper wire from TP7 to TP9.
21) Install jumper wire from TP8 to TP9.
22) Install jumper wire from TP7 to the positive (+) 13.8 volts at C195. It will be easiest to install this wire on the solder side of the PCB.
23) Install the 68pF capacitor across C165.
24) Remove tuning slug from L33.
25) Install an aluminum heatsink from a dual final Galaxy radio on the rear chassis of the radio.

EKL COMPONENTS

Application Note AN-2030-2c (revised Sept. 3, 2005)
ERF-2030 High Power Conversion for AM/FM 10 Meter Radios
Manufactured by Ranger Communications Inc. (RCI)