

GRC-215 Charging Circuit

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Subject: GRC-215 manpack power & battery charge

GRC-215 Manpack battery charging and external powering.

Method 1. This is the simplest method. It allows you to run the radio as well as charge the battery. It requires a male 4 pin military spec. connector std. mil number is MS3116F8-4P. These are available special order from Newark electronics, or any supplier that handles military spec. connectors. It also requires a 28 volt DC supply capable of at least 2 amps. (3 or 4 amps would be better if you want to run the radio as well)

The connector requires soldering - Pin C (as in Charlie) is + 28 (positive), and pin D (as in David) is - 28 (ground - negative)

Using this charging method requires that the toggle switch on the battery pack be set in the "External" position. The green LED near the switch indicates current flow into the batteries. Depending on supply voltage, the light will go out when the battery charging current drops below a certain level (this is a fairly good indication that the battery is charged). If the voltage is not high enough (28 volts minimum) the lamp will never come on, and/or the batteries will not fully charge. You can also run the radio using voltages as low as 24 volts with this connection method. However, the battery will not charge at 24 volts. With the switch in "External," the radio takes its power from the power supply, not the battery.

Method 2. (Techie method - allows charging (no running of radio) from a 12 volt system)

This method allows charging of the battery only using ANY DC voltage in the 10 to 30 volt range (apx 2 amps). The connection method uses the same connector and pins as above, but it also requires a jumper plug to be made for the top of the battery pack. The connector required is a 50 PIN D sub Male (this is the less common 3 row 50 pin version of the popular 25 pin DB-25 serial connector) One jumper is required on the connector between pin 33 and pin 1. The switch on the battery pack should be set to "Normal."

In this method, the internal PWM switching charger circuit is enabled in

the battery pack. The jumper between pin 1 and 33 simulates the "on" function that the pack would have gotten from the vehicular adapter or radio. You can plug the radio into the battery pack, and turn it on, but the radio draws more current (in receive mode) from the battery than the charger supplies, and the batteries will gradually go dead.

The Green LED will come on to indicate charging. It will NOT go out when the batteries are charged, so it would be advisable to watch the time. Overnight (12 to 14 hours) is probably about right for a dead set of batteries.

IMPORTANT SAFETY NOTE: When Non-Rechargable Lithium batteries are used in place of the BB-590/U Nicads, the internal charging circuit in the battery pack is disabled by the Lithium batteries.

SPECIAL NOTE SEE: [GRC-215 Technical Publication List](#)

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