

TYPE N2 CARRIER TELEPHONE SYSTEM
POWER SUPPLY UNITS J87216A AND J87216C
SWITCHING

The substitution of an alternate 21-volt power supply unit for a working 21-volt power supply unit exhibiting voltage instability or excessive ripple may be done, without interruption to service on the system, by the use of a switching set. This substitution facilitates the maintenance of the N2 carrier system. To replace a power supply unit, the N2 switching set is connected to a jack on the alarm unit. The alternate 21-volt power supply unit is plugged into the switching set. Preliminary tests are made on the alternate power supply unit to verify proper operating characteristics. A rotary switch in the switching set provides means for switching back and forth between the regular and alternate units.

This section is reissued to include the J87216C unit.

Caution should be exercised in following the operational procedures to avoid errors and thus prevent hits on the system.

APPARATUS:

- 1—J87216A or J87216C 21-Volt Power Supply Unit
- 1—J99272U Switching Set (N2)
- 1—▶KS-14510 Volt-Ohm-Milliammeter (VOM)◀
- 1—▶400-Type◀ Vacuum Tube Voltmeter (VTVM)

STEP	PROCEDURE
1	Set the ADJ VOLTS potentiometer on the alternate power supply unit fully counter-clockwise.
2	On the switching set, turn the VM & RIPPLE switch to the ALT position and the LOAD switch to the TEST ALT position.
3	Plug the alternate power supply unit into the switching set.
4	Connect the switching set cord to the TEST PWR jack of the alarm unit on the N2 terminal.

STEP	PROCEDURE
5	<p>Set the ADJ VOLTS potentiometer of the alternate power supply unit for an output voltage of 21 volts as read on the voltmeter on the switching set.</p> <p>Requirement: The ammeter shall read 1 ± 0.2 ampere.</p> <p>Note: An output voltage under load in excess of 23 volts may cause sufficient current to flow in the voltage protection circuit to open the protection fuse in the unit.</p> <p>Note: If it is not possible to set the output voltage to 21 volts, check the dc input voltage across RIPPLE TEST jacks -48V and G with the VOM. If the input voltage is 44 to 52 volts, the alternate unit is defective and not suitable for use in the system.</p>
6	<p>Measure the output ripple voltage across RIPPLE TEST jacks -21V and G with the VTVM.</p> <p>Requirement: Maximum 0.012 volt rms.</p>
7	<p>If the requirement of Step 6 cannot be met, measure the input ripple across RIPPLE TEST jacks -48V and G with the VTVM.</p> <p>Requirement: Maximum 0.30 volt rms.</p> <p>Note: If the input ripple voltage is within requirements and the output ripple voltage exceeds requirements, the alternate supply is defective and should not be used.</p>
8	<p>Operate the test switch to the FULL LOAD position to check the voltage regulation of the alternate unit.</p> <p>Requirement: The voltmeter shall read 21 ± 0.1 volts, and the ammeter shall read approximately 2 amperes.</p>
9	<p>Operate the test switch to the NO LOAD position.</p> <p>Requirement: The voltmeter reading shall be no greater than 27 volts (not harmful to diodes for short periods due to low current).</p> <p>Note: If the alternate unit does not meet no-load and full-load voltage regulation requirements, it is defective and should not be used in the system.</p>
10	<p>Operate the VM & RIPPLE test switch back and forth between the REG and ALT positions.</p> <p>Requirement: The voltmeter on the N2 switching set shall read between 20 and 22 volts.</p> <p>Note: If the voltage of the regular power supply unit as read on the REG position is not within 20 and 22 volts and cannot be adjusted, the regular power supply unit is so seriously defective that in-service replacement should be attempted only at the risk of incurring damage to the alternate unit due to overload caused by the defective regular unit.</p>
11	<p>Set the ADJ VOLTS potentiometer on the alternate power supply unit for a reading on the ALT position approximately 0.1 volt higher than the reading on the REG position.</p>

STEP	PROCEDURE
12	If the output voltages appear normal and can be adjusted as in Step 11, operate the load switch to the TRANSFER position. The ammeter should register a reading indicating that the alternate power supply unit has assumed all or a part of the load, thereby completing a switch of power supply units. If the load has not been transferred as indicated by the ammeter, force the transfer by raising the voltage of the alternate power supply unit an additional one or two tenths of a volt.
13	Remove the regular power supply unit from the terminal and set the ADJ VOLTS potentiometer on the alternate power supply unit for a reading of 20.9 volts.
14	Place a 21-volt power supply unit, which has been previously checked and adjusted for a 21-volt output in the N2 switching set, in the terminal mounting. Observe that the ammeter reading is reduced to zero, indicating that the load has been transferred to the regular power supply unit. Force the load transfer, if necessary, by raising the voltage of the regular power supply unit one or two tenths of a volt.
15	Operate the LOAD switch to the TEST ALT position.
16	Set the VM & RIPPLE switch to the REG position, and adjust the ADJ VOLTS potentiometer on the regular unit for 21 volts.
17	Disconnect the switching set from the alarm unit.