

S E R V I C E N O T E

SUPERSEDES: None

**37717C PDH/SDH/Jitter Test Set**

**Serial Numbers:** GB00000000/GB99999999

**Options:** All

**Build Status:** All

**Premature Failure of NVM Battery**

**To be Performed by:** Qualified Service Personnel

**Parts Required:**

Description	Part Number	Qty
Battery 3.6Volts Lithium	1420-0380	1
Intergrated Circuit MAX695	1820-8403	1

**Situation**

The lithium battery fitted to the 37717C Processor Module is designed to last in excess of five years under all operating conditions specified for the instrument. If the NVM battery fails (i.e is fully discharged) within this period, then the NVM standby current should be checked at the same time as the battery is replaced. If the standby current is outwith specification, the NVM standby IC must be replaced.

*Continued*

DATE: April 1997

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

**INFORMATION ONLY**

AUTHOR:	ENTITY:	ADDITIONAL INFORMATION:
DBG	E610	

**Solution/Action**

If there is an "NVM Failure" message on the instrument display immediately after switch-on and the instrument has assumed DEFAULT SETTINGS (see Operating or Service Manual), then suspect NVM battery failure (i.e fully discharged). Use the following procedure to check the NVM battery voltage and standby current. If the standby current is excessive, U16 on the processor board should be replaced.

**NOTE**

This IC is a 16 pin Surface Mount component. If facilities for replacement are unavailable, contact your local Service Center for assistance.

**Removing the Processor (CPU) Module**

1. Switch off the 37717C and DISCONNECT THE POWER CORD.
2. Remove the rear panel feet.
3. If Optical Modules are fitted, unscrew the optical shield from the input and output connectors.
4. Withdraw the outer cabinet sleeve back and out of the instrument.
5. Remove the clamp screws on the top and bottom right-hand side of the chassis which secure the CPU Module (see Fig 1).
6. Withdraw the CPU module from the instrument.

**Hint:** If this module is difficult to remove, insert an 8mm (5/16AF) open-ended spanner under one of the module knobs and lever out against the knob on the adjacent module.

**CAUTION**

Never use a screwdriver or other sharp implement to lever the module as circuit tracks may be cut or the module metalwork irreparably damaged.

**Checking the NVM Battery Current**

1. With the processor module on the bench, connect a DVM between battery POSITIVE and NEGATIVE terminals.
2. If the measured voltage is less than 3.4Volts the battery should be replaced. (follow the procedure in the Service Manual when replacing this battery).
3. With a good battery fitted, connect the DVM between battery NEGATIVE terminal and TP13 (ground).
4. The measured voltage on the DVM should be less than 20mV.

**NOTE**

This equates to a drain current of less than 20uA, as the measured voltage is across a 1000 ohm resistor in series with the battery.

5. If the measured voltage is greater than 20mV, replace U16 on the CPU board (this is a 16 pin surface-mount IC).
6. Repeat steps 1 to 4 and ensure the current is within specifications.

**Fitting the CPU Module and Re-assembling the Instrument.**

1. Replace the CPU module back into the instrument.

**VERY IMPORTANT NOTE**

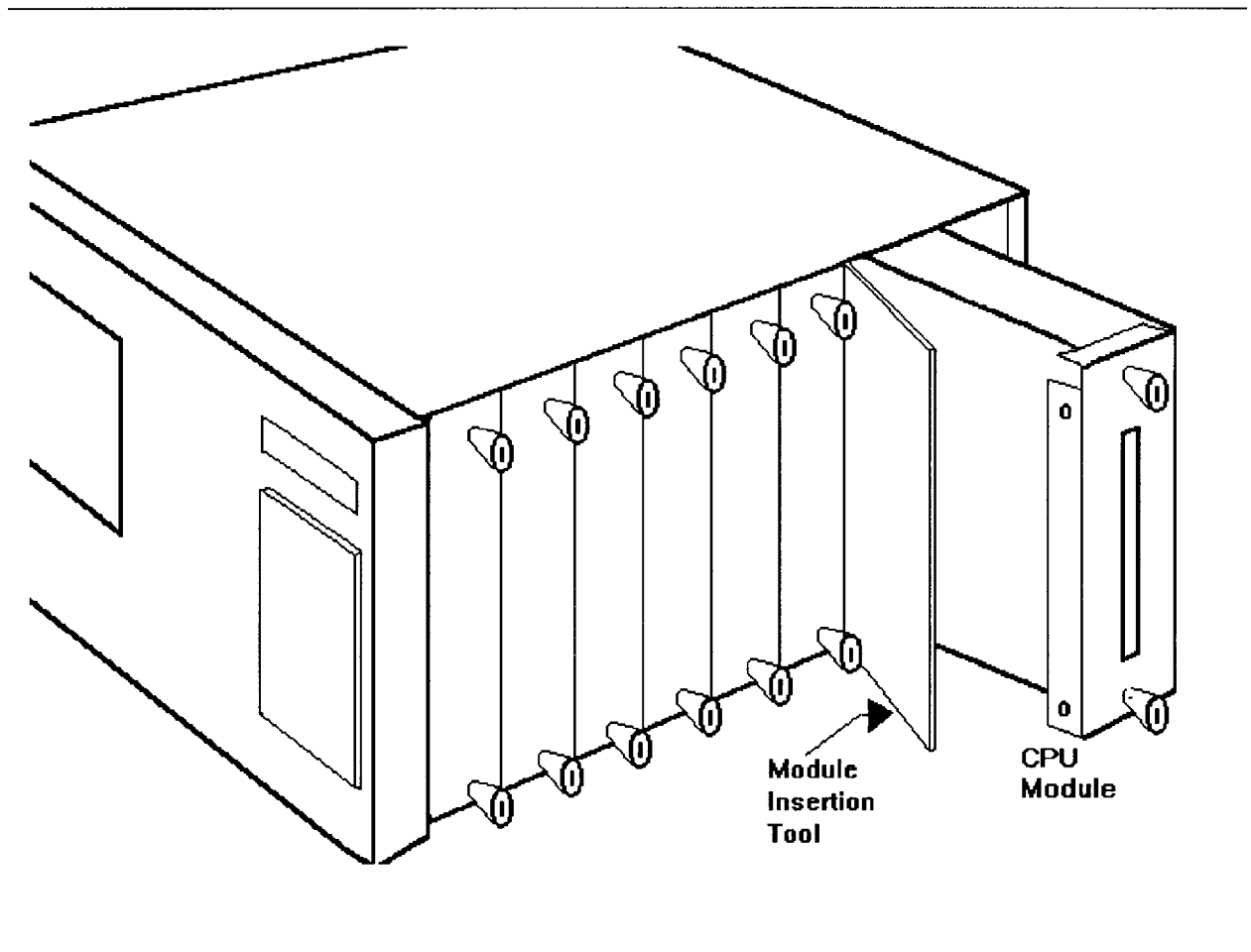
To prevent removal of, or damage to the metal RFI STRIP on the module next to the CPU, you **MUST** use special tool part number 03776-00016 or a thin LOW-STATIC plastic or fibre card (200mm x 135mm x 0.5mm) when inserting the CPU module back into the instrument. Place this card against the RFI Strip, then slide the CPU Module back into the instrument. Push the CPU Module fully home, then pull out the card - see Figure 1. Severe damage can result if an RFI Strip is dislodged and falls inside the instrument. Always ensure that RFI strips are securely in position and unbroken.

2. Replace the outer cabinet sleeve, optical module shields and rear panel feet - this is a reversal of the removal procedure.

**Testing**

1. Switch on the instrument and check for a sensible display.
2. Ensure there is no "NVM Failure" message on the instrument display immediately after switch-on and that the instrument has not assumed **DEFAULT SETTINGS**. (check this by changing any parameter on the transmit or receive menu and ensuring the new setting is maintained after power has been cycled).
3. Obtain a pass on all instrument Selftests.

The instrument is now ready for use.



**Figure 1 Position of Processor Module and Insertion Tool**