

S E R V I C E N O T E

SUPERSEDES: None

37717C PDH/SDH/Jitter Test Set

Serial Numbers: GB00000000/GB99999999

Build Status: 1.00 and above

Replacing the Processor Assembly (CPU)

To be Performed by: Qualified Service Personnel

Parts Required

Description	Part Number	Qty
Replacement Processor Kit	37717-60159	1

Situation

This Service Note gives information on parts and instructions required when changing a processor on the 37717C.

Action

When changing the processor order the appropriate part from the table above and use the following procedure to fit it. Note: If you are unsure what to order, or have problems fitting the above parts, please contact your Agilent representative or TNTD Product Support on +44 131-331-7532.

Continued

DATE: October 1996

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

AUTHOR:	ENTITY:	ADDITIONAL INFORMATION:
DBG	E610	

Use these instructions when replacing the CPU on a 37717C.

The instructions cover the following:

- Correct procedure for removing the old CPU Module from the instrument.
- Procedure for transferring the special Memory IC from the old CPU Assembly.

This IC stores information on the option structure of the instrument and all soft calibration constants for the instrument. Transferring this IC means that it is not necessary to recalibrate the instrument or replace firmware options.

- Procedure for assembling the new CPU Board into the Module and replacing in the Instrument.
- Checking Options and Calibration Dates.
- Setting the Internal Clock Time and Date.
- Testing the instrument with the New CPU.
- Changing the MAC address Label (applies to option A3B units only).

Every instrument shipped with Option A3B LAN interface has a unique MAC address associated with it. This address is stored in U15 on the CPU, so will be transferred over with U15 (see above). There is also a label fitted to the old CPU with this unique address which must also be transferred.

WARNING

The CPU board contains a battery. To prevent overheating or an explosion DO NOT expose to high temperatures or short circuit.

CAUTION

These procedures should only be carried out by Qualified Service Personnel. Anti-static precautions must be observed at all times. - Use the anti-static wrist-strap provided in this kit if an anti-static work-area conforming to Corporate Standard 741.808 is unavailable. Read the anti-static documentation at the end of this procedure.

Removing the old CPU Assembly.

1. Switch off the instrument and disconnect the power cord and any interconnecting cables.
2. Place the instrument face down on the workbench.
3. Remove the 4 screws securing the rubber feet to the rear panel.
4. If Optical Modules are fitted, unscrew optical shield from the input and output connectors.
5. Withdraw the outer cabinet sleeve back and out of the instrument.
6. Remove the two clamp screws on the top and bottom right-hand side of the chassis which secure the CPU module.

7. Withdraw the CPU module from the instrument using the two knobs to help with removal.

Transferring the Memory IC from the old CPU Board Assembly

On the old CPU Module

1. Unscrew the posidrive screws which secure the Disk Drive with it's metal shield to the disk-drive supports on the CPU Board.
2. Unscrew the two nuts which secure the PARALLEL Interface Connector to the module Front Panel.
3. Unclip the GPIB, RS-232 and Disk-Drive ribbon cables from their sockets on the CPU board Assembly.
4. Using a long posidrive screwdriver, unscrew the two screws which secure the module Front Panel to the CPU Board.
5. Remove the module Front Panel together with the disk-drive assembly and metal shield and place to one side in an anti-static bag.
6. Locate U15 (marked on the topside of the board) and carefully remove this IC from it's socket using a Quilext 1 Universal IC Extraction tool or equivalent.

On the new CPU Module

1. Fit U15 from the old CPU into the socket on the new CPU assembly taking great care not to touch any pins on the IC or socket. Ensure correct alignment before pushing firmly home in the socket.

NOTE

You MUST discard any IC in the new module fitted into U15 position and replace with the part from the old module. This memory IC contains option and calibration data UNIQUE to your instrument.

NOTE

You may need to repeat steps 1 to 6 above to access this IC on the new CPU.

2. Once this IC has been fitted, check the switches on the new CPU Assembly are set as follows;

Assembly Description	Switch Number	Finger Number	Position
A4 Processor Assembly	SW1	1,2 & 4	Closed
A4 Processor Assembly	SW1	3	Open
A4 Processor Assembly	SW2	1,3,4,6,7,8	Closed
A4 Processor Assembly	SW2	2 & 5	Open

Transferring the LAN Interface MAC Address Label (Option A3B only)

1. Check the instrument rear panel to see if option A3B (LAN Interface) is fitted. If it is, there will be a MAC ADDRESS label stuck to the rear of the old CPU board. Write down the number on this label (this will be keyed into the CPU memory later), then remove the label and attach it to the new CPU board in the same position.

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.

CAUTION

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.

Downloading New firmware (#UKZ or USK only)

The new processor has already be loaded with the current revision of firmware. This is applicable to all options EXCEPT options USK or UKZ. If either (or both) of these options is fitted to your instrument, you will need to download the new firmware using the disks supplied in this kit Use the procedure described in Service Note 37717C-01 to do this.

Checking Options and Calibration Dates.

1. Switch on the instrument and check for a valid power-up routine.
2. Press the OTHER key, then [MORE] softkey until [OPTIONS] softkey is displayed.
3. Press the [OPTIONS] softkey and select each option type in turn (i.e PDH, SDH, JITTER, ATM etc).
4. Ensure that the options shown as FITTED on the display agree with the options listed on the instrument rear panel.
5. Press the [MORE] softkey until [CALIBRATION] softkey appears at the bottom of the display.
6. Enter the Calibration password [1243].

7. Select each Calibration Item and ensure the calibration dates are valid.

NOTE

An annual Calibration cycle is recommended for the 37717C

Setting the Internal Clock Date and Time

You will need to set the internal clock to the correct time and date as this will be incorrect after changing the CPU.

1. Switch on the instrument.
2. Press OTHER key, then [MORE] softkey until [TIME & DATE] softkey is displayed.
3. Press [TIME & DATE] softkey then move the cursor to CLOCK MODE.
4. Select [SETUP] then move the cursor to TIME. Set the clock to the correct time using [<],[>], and [INCREASE DIGIT], [DECREASE DIGIT] softkeys.
5. Move the cursor to DATE. Set the clock to the correct date using [<],[>], and [INCREASE DIGIT], [DECREASE DIGIT] softkeys.
6. Return the cursor to CLOCK MODE and press [RUN].

The internal clock is now set.

Checking the LAN Interface MAC Address (Option A3B only)

Check the MAC address in memory after ensuring option A3B is enabled (see above) by carrying out the following procedure:

1. Switch on the instrument and press the OTHER key then [MORE] softkey. Select the [CALIBRATION] function.
2. Select CALIBRATE PASSWORD and set to [1243] using the INCREASE DIGIT and DECREASE DIGIT softkeys.
3. Select the calibration item [SET MAC ADDRESS].

The MAC Address is displayed at the bottom of this page. If it is different to that on the label which you transferred from the old CPU, then you will need to change it as follows;

4. Move the cursor to the [MAC ADDRESS EDIT] field and change the address to that shown above using the INCREASE DIGIT and DECREASE DIGIT softkeys.
5. Move the cursor to the [ACCEPT CHANGES] field and press the ON softkey.
6. Ensure the change is reflected at the bottom of the display.

Testing

Perform all the instrument selftests.

NOTE

It is very important to cable the instrument correctly when running the selftests. Cabling depends on options fitted - see Calibration or Service Manual for this information.

When a pass has been obtained on all selftests the instrument is ready for use.

Important Operational Note

If the new CPU is pre-loaded with firmware version A.01.62 ANDyour instrument contains options A1M,A1N,A1P (or the equivalent options with small siemens connectors), you will find the Jitter receive menu contains a selectable HP2 filter on SDH rates.

This filter should always be set OFF in the menu as the filter hardware is NOT fitted.

This inappropriate selection is due to a firmware bug in version A.01.62 ONLY.

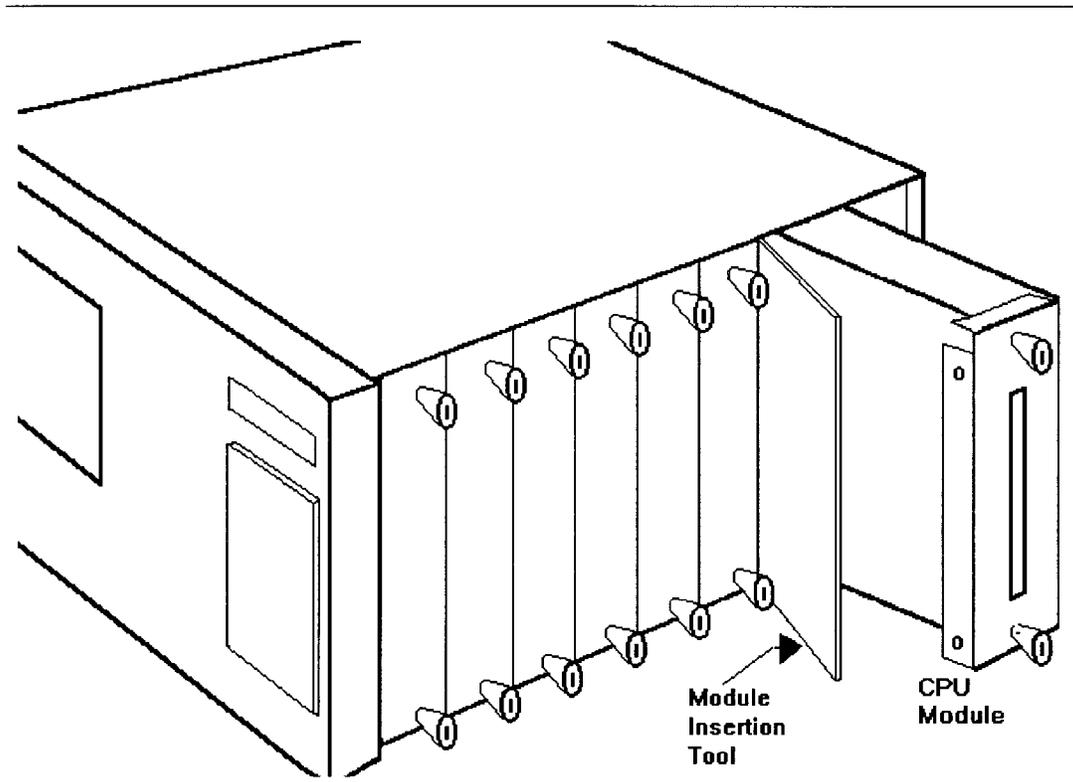


Figure B. Position of Processor Module and Insertion Tool