

CPU PCB

Technical Reference

This technical reference contains service information on the 3V CCPU and older 5V CPU 2000 (CPU PCBs). (See [Figure 1](#) and [Figure 2](#)). It also includes instructions for testing and replacing the battery.

General information

Table 1: General information

Document date	August 2015		
Part numbers	Multiple ACQUITY and HPLC instruments	700001518	ASSY, CPU 2000, BGM
	Multiple ACQUITY and HPLC instruments	700005763	ASSY, PCB, 3VCCPU, AHCT
	2475 and ACQUITY FLR Detectors	700009212	ASSY, PCB, 3V CCPU, FLR
	Note: For the latest part numbers, check the part locator on the Waters portal. Note: 700005763 is backward-compatible with all instruments that used the older 5V CPU 2000 Assembly (700001518) which is discontinued; 700009212 is only for the 2475 and ACQUITY FLR Detectors		
Related information	For instructions on replacing the PCB, see the specific instrument's CPU PCB replacement procedure.		

Functional description

The CPU PCB acts as the intelligent processor board. It is used in many Waters instruments but is loaded with firmware specific to the product. It provides the microprocessor, RAM, flash memory, RS232, and Ethernet functions.

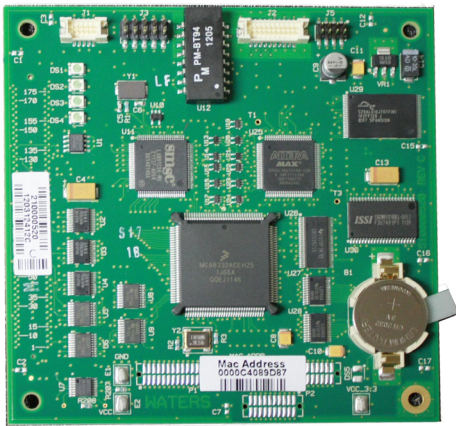


Figure 1 - 3V CCPU PCB (700005763 and 700009212)



Figure 2 - CPU 2000 PCB (700001518)

Location

The CPU PCB stacks on top of the personality (or control) PCB.

PCB diagram

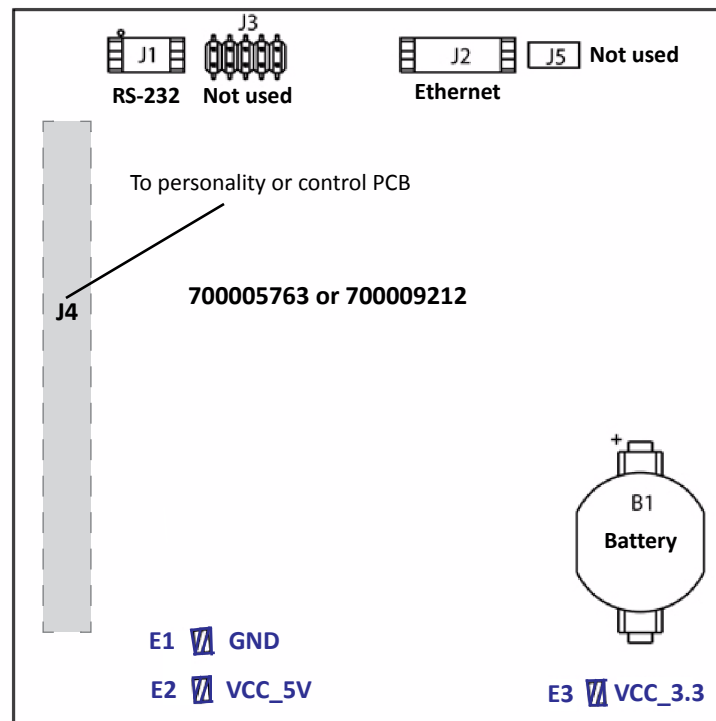


Figure 3 - CCPU PCB (3.3V) connectors and test points

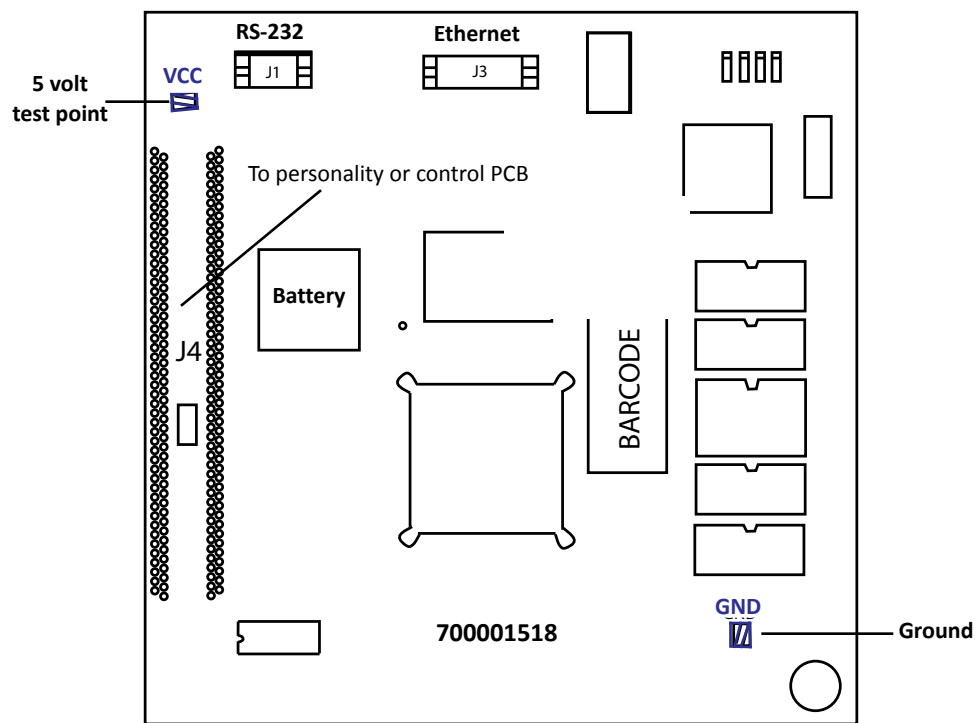


Figure 4 - CPU 2000 PCB (5V) connectors and test points

Test points

If a reset occurs, check VCC and ground on the CPU PCB.

Note: The CPU PCB must be connected to the power supply and the instrument must be powered on.

Table 2: CPU PCB test points

CPU PCB	Test point	Voltage (V)	Tolerance
CCPU (700005763 or 700009212)	E1	0	N/A
	E2	5	+/- 5%
	E3	3.3	+/- 5%
CPU 2000 (700001518)	VCC	5	+/- 5%
	GND	0	N/A

Battery

Testing the battery voltage

To test the battery voltage, set the multimeter to DC and then measure voltage as follows:

- CPU 2000 (700001518): across the two pins on the right side of the battery ([Figure 5](#)).

NOTE: You may have to remove the battery to access pins.

- CCPU (700005763 or 700009212): at the battery clips ([Figure 6](#))

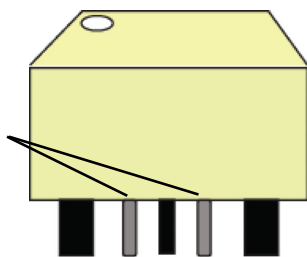


Figure 5 - CPU 2000 battery



Figure 6 - CCPU battery

Replacing the battery

When to perform

Replace the CPU PCB battery when the instrument displays memory errors after power-up. (Error examples: *NV-Ram Bad*, *Configuration not found*, *Method not found*, *Lamp data not found*)

Parts required

Part number	Description	Qty
WAT080443	Battery, 3V Lithium (coin type)	1
700001834	Battery, 3V Zeropower, Snaphat (square)	1



Figure 7 - 3V Lithium battery (WAT080443)



Figure 8 - 3V Zeropower (700001834)

Tools/materials required

- Dip extractor tool (included in standard toolkit)

Procedure

Figure 9 shows how to replace the coin-type battery, and Figure 10 shows how to replace the square battery.

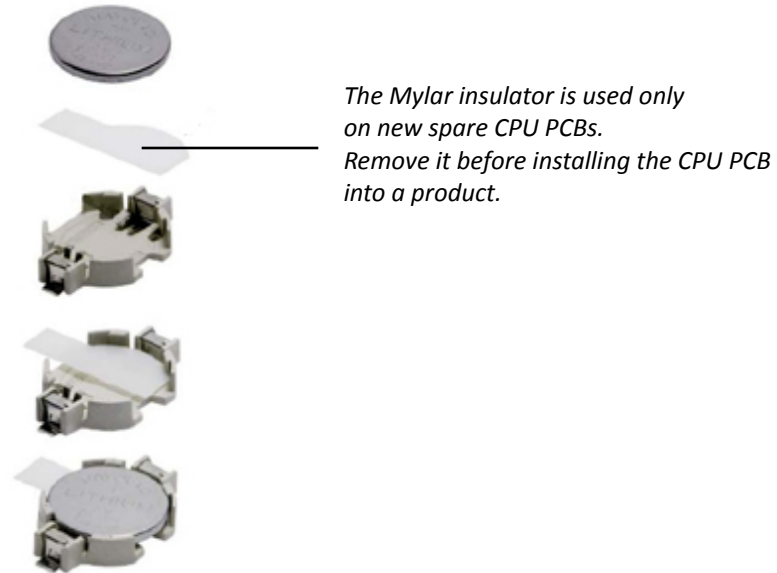


Figure 9 - Replacing the coin battery (WAT080443)

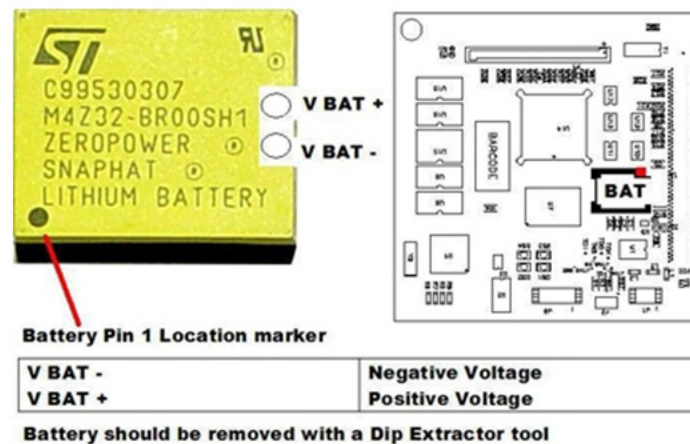


Figure 10 - Replacing the square battery (700001834)