

Many of the commands, such as `editmem`, `i2c`, and `memtest`, are for manufacturing test purposes. System configuration commands include `rtc`, `config`, and `ver`. The `debug` command lists the tasks running on the WORKABOUT PRO system and shows their state.

4.7.1 ac97

AC97 link command.

Usage:

```
ac97 [close | open | read <addr> | write <addr> <data>]
```

Options:

<code>close</code>	Close
<code>open</code>	Open
<code>read</code>	Read
<code>write</code>	Write

4.7.2 adc

Capture touch screen ADC samples.

Usage:

```
adc <channel>
```

Options:

<code><channel></code>	The ADC channel to sample, must be one of:
<code>x</code>	Differential X position measurement
<code>y</code>	Differential Y position measurement
<code><n></code>	ADC control byte (in hex, only bits 2 through 6 valid)

4.7.3 audio

Test the terminal's audio system.

Usage:

```
audio [<options>] <command> [<command>...]
```

Options:

<code>-d<name></code>	Use the named audio device.
<code>-g<gain></code>	Specify the input gain setting (range: 0 - 100)
<code>-i<chan></code>	Input from the specified channel.
<code>-o<chan></code>	Output to the specified channel.
<code>-v<vol></code>	Specify the output volume setting (range: 0 - 100).
<code>-w<type></code>	Specify the output waveform. <code><type></code> can be 1 for sine, 2 for square, 3 for triangle, 4 for sawtooth, or 5 for inverse sawtooth.

The `<chan>` parameter is any combination of `l` (the letter `el`) for left, `r` for right, `f` for front, `b` for back, `u` for up, and `d` for down. For example, the command `audio -ofl` outputs to the front left channel.

Sample commands:

```
output <freq>[,<ms>]
```

Output the specified frequency for the specified time (default = until stopped)

```
output stop
```

Stop output.

```
input
```

Sample the audio input and report the detected signal's frequency and amplitude

```
wait <ms>
```

Delay for the specified number of milliseconds before continuing

4.7.4 cksum

Calculate a POSIX.2 CRC checksum for a file.

Usage:

```
cksum <file>
```

Options:

`<file>` the full path and file name to work on (e.g. `/mmc0-0/test.bin`)

If a memory card containing a known file is installed in the WORKABOUT PRO, you can verify operation of the card slot via a `cksum /<card and partition ID>/<filename>` command (for example,

`cksum /cf0-0/test.bin`) and comparing the resulting checksum value to that of a known good checksum for the file.

See Section 4.6 on page 32 for description of Psion Teklogix' path naming convention.

4.7.5 config

Read or configure certain parameters of the terminal.

Usage:

```
config [get | set [boostSecurity | cpuSpeed | flags | hwSerNo | mlbRev | scan  
| termSerNo]]
```

Options:

`boostSecurity` Enables or disables the menu of restricted BooSt commands.

Choices: 0 for disable, 1 for enable, 2 for lockdown mode. When lockdown is selected, and the terminal is rebooted, the BooSt menu is not available through the WORKABOUT PRO's own display or keyboard, just through the console port.

`cpuSpeed` Read or set a record of the CPU speed.

`hwSerNo` Read or set a record of the terminal's hardware serial number.

`mlbRev` Read or set a record of the revision level of the terminal's main logic board.

scan Read or set a record of the type of scanner installed in the WORKABOUT PRO.

termSerNo Read or set a record of the terminal's serial number.

4.7.6 debug

Show a list of the tasks running in the WORKABOUT PRO system, and their state.

Usage:
debug [zero]

zero If specified, this option causes the thread run times to be reset

The information is displayed as a table:

Thread list:

Name	ID	Status	Pri	Unused Stack	Run Time
mqUsbInt	0005BA00	Blocked	BF/BF	714/800	0.000022
touch	0005AD00	Blocked	7F/7F	410/800	0.000750
Scanner	0005A2E0	Blocked	01/01	61C/800	0.000147
PortMonitor	00059A60	Blocked	01/01	4A8/800	0.000972
Keyboard	000591E0	Blocked	80/80	640/800	0.000037
loader	00057B00	Blocked	3F/3F	3C4/800	0.002778
beeper	00056A60	Blocked	BF/BF	708/800	0.000004
cf	000561E0	Sleeping	BF/BF	71C/800	0.005037
sdmmc	00055960	Sleeping	BF/BF	718/800	0.013495
textWin	000548A0	TimedBlock	7F/7F	694/800	0.016252
power	000530C0	Blocked	FF/FF	730/800	0.000008
fileSysMan	000527C0	Blocked	7F/7F	564/800	0.091518
TimedEvents	00051F40	Blocked	3F/3F	728/800	0.000003
I2C slave	0004DB60	Blocked	C0/C0	21C/300	0.000108
I2C master	0004D7E0	Blocked	BF/BF	1E4/300	0.001496
clock	0004CEA0	Sleeping	01/01	6F8/800	0.003485
console	0004C0A0	Ready	7F/7F	384/800	0.130508
idle	00048CA0	Ready	00/00	6C/100	857.443100

Free pool stats: A4DA0/A3D40/4

The columns are as follows:

Name	Thread name
ID	Address of the pthread structure (in hex)
Status	Current state of the thread
Pri	Current priority / scheduled priority (in hex)
Unused Stack	Unused stack / total stack size (bytes, in hex)
Run Time	The cumulative time spent executing the thread (in seconds, in decimal)
Free pool stats	Total free / largest block / num blocks (in hex)

4.7.7 distest

Test the WORKABOUT PRO's display.

Usage:

`distest [<options>] [<id>|close]`

Options:

`-b<R,G,B>` Set background colour red, green, and blue (use with test 0)

`-f` Force a new window to be created

`-i<id>` Window ID to control (0 = newest)

`-s<num>` Set the grid/checkerboard square size (in pixels)

`-w<X,Y,W,H>` Use left X, top Y, Width, and Height when opening window

`<id>` Select a test by ID:

- 0 for Black/background
- 1 for White
- 2 for Full red
- 3 for Full green
- 4 for Full blue
- 5 for B & W checkerboard
- 6 for W & B checkerboard
- 7 for Grid
- 8 for Box and cross
- 9 for Colour bars
- a for Colour test
- b for Walking bits

`close` Causes a previously opened display test window to be closed.

During these tests, the WORKABOUT PRO's console port remains active, and you may continue to issue commands to it through the serial connection.

After performing a touch calibration you can 'doodle' on the screen to test the accuracy of the touch panel. Exit from this test by pressing **<Esc>** on the terminal keyboard, or issuing the `touch close` command at the console.

If the calibration has been previously done you can get directly to the 'doodle' screen through the `touch i n` command. While the 'doodle' screen is open you can clear it by pressing the **<SPACE>** key on the WORKABOUT PRO.

4.7.8 doc

Operate on the WORKABOUT PRO's 'Disk On Chip' flash memory.

Usage:

`doc [-b] [-s<socket>] [<action>]`

Options:

`-b` Operate on boot area as well as the main flash memory.

`-s<n>` Operate on Disk On Chip socket `<n>` (default: socket 0)

and `<action>` is one of:

<code>format [<partition>]</code>	Format the partition (default: partition 0)
<code>info</code>	Display Disk On Chip info (default action).
<code>mount [<partition>]</code>	Let file system mount the partition (default: all partitions).
<code>partition <size></code>	Set the OS partition size in kilobytes.
<code>unmount [<partition>]</code>	Force file system to unmount partition (default: all partitions)
<code>verify [<partition>]</code>	Verify the partition (default: partition 0).

4.7.9 editmem

Edit memory.

Usage:

```
editmem [-d<length>] [-s<word size>] [-w] <address> [||=| "|&=] [<value>]
```

Options:

<code>-d<length></code>	dump specified length of memory contents instead of editing
<code>-s<word size></code>	start editing with the specified word size (1, 2, or 4)
<code>-w</code>	use write only mode (reads are not performed unless requested)
<code><address></code>	the starting address for memory editing

Memory-modification operators:

<code>?<value></code>	read <value> from address
<code>=<value></code>	write <value> to address
<code> =<value></code>	bitwise-OR <value> with current value at address
<code>&=<value></code>	bitwise-AND <value> with current value at address
<code><value></code>	value to use (if a memory-modification operator was specified)

All editmem values are specified in hexadecimal.

The editmem command has an interactive memory editing mode that is entered when you specify an address but not a command.

When in this mode, the normal BooSt command prompt is replaced with a prompt displaying the current memory address and optionally the current value stored at that address. A single ? followed by <ENTER> will display a list of interactive commands for editmem. To exit from this mode send a single . (dot) followed by <ENTER>.

4.7.10 go

Jump to and run code.

Usage:

```
go [boot|hw|os[!]|ram <address> [noreset]]
```

Where `boot` = boot code, `hw` = cause a hardware reset, `os` = main OS (default), `os!` = clean start main OS, and `ram` = RAM module

This command is often used for starting the main OS after using BooSt. Thus,

```
go os starts Windows CE.
go os! starts Windows CE cleanly, discarding previously-stored Windows settings.
go boot restarts BooSt
go hw reboots the WORKABOUT PRO.
```

The `1` and `!` options from the restricted BooSt menu correspond to the `go os` and `go os!` commands respectively.

4.7.11 i2c

Issue a command to the I²C bus.

Usage:

```
i2c write <device> <data> [ <data> [ <data> [ ... ] ] ]
i2c read <device> <numBytes>
i2c writeRead <device> <data> <numBytes>
```

Where: `<device>` is the address of the device on the I2C bus (in hex)

`<data>` is the data byte to be written (in hex)

`<numBytes>` is the number of bytes to be read (decimal)

4.7.12 kbd

Send a command to the keyboard controller.

Usage:

```
kbd <command> [<data>]
```

Commands:

```
backlight <data>
```

Set the illumination level of the keyboard's backlight. Range: 0 to 255. Specify 0 to turn the backlight off.

```
cmd <data>
```

Send a hex byte to the keyboard controller.

```
id
```

Display keyboard id value.

```
mode [normal | test]
```

Select keyboard driver mode

```
status
```

Displays keyboard status

`ver`
Display version of keyboard software.

4.7.13 load

Load an ‘image’ (usually an executable program) file.

Usage:
`load [-f] <file> [run]`

`-f` Force load

`<file>` The full path and name of the file to load. See Section 4.6 on page 32 for information on specifying pathnames.

`run` If the load is successful, run the image

4.7.14 ls

List the contents of a directory.

Usage:
`ls [<path>]`

This command accepts an optional pathname. If the pathname is not specified, the root directory / is assumed. See Section 4.6 on page 32 for information on pathnames.

4.7.15 memtest

Test unused memory regions.

Usage:
`memtest [<address> <size>]`

Options:

`<address>` the starting address of the region to test (in hex)

`<size>` the length, in bytes, of the region to test (in hex)

4.7.16 pcctest

Sycard PCCtest172/CFtest222 interface test command

Usage:
`pcctest [socket]`

Options:

`socket` socket number to test (default 0)

4.7.17 rtc

Send a command to the WORKABOUT PRO’s Real Time Clock

Usage:

`rtc get` Display current RTC time and data

`rtc set <hour> <minute> <second> <dayOfWeek> <month> <dayOfMonth> <year>`
Set the time

In this command, <hour> is in 24-hour format (00:00 to 24:00), days of the week are numbered starting with Sunday = 0, and months are numbered starting with January = 1

4.7.18 sleep

Delay for the specified amount of time

Usage:

sleep <duration> [ms]

<duration> is specified in seconds unless the `ms` argument is supplied, in which case it will be in milliseconds. By default duration is expressed as a decimal value.

4.7.19 standby

Put the terminal in suspend mode.

Usage:

standby

4.7.20 touch

Test the touch screen.

Usage:

touch [-p<x>,<y>] <command>

-p<x>,<y> Specify the target location for the next sample.

<command> is one of:

init [auto|nocal]

Start calibration. Use the `auto` option to specify automatic sampling. Use the `nocal` option to skip calibration and go straight to testing.

samp

Capture an X/Y sample for calibration.

cal [write]

Calculate calibration values based on recent samples. The `write` option may be specified to store the result in EEPROM.

erase

Clear the post-calibration screen.

line <x>,<y> <x>,<y> [<red>,<green>,<blue>]

Draw a reference line between the two given points. The colour parameters are optional, with a range of 0-255 for each component; the default is the last colour used.)

close

Exit calibration

print

Display the current calibration parameters.

read

Read calibration parameters from EEPROM.

4.7.21 uptest

Test the keyboard processor (sometimes referred to as the 'uP').

Usage:

`uptest <command>`

where `<command>` is one of:

`bat` Display basic battery data

`command <code>`
 send a command to the keyboard processor (`<code>` is in hex).

`read <address>`
 Read battery data from the DS2761 (`<address>` is in hex).

`setAcc <value>`
 Set the “accumulated current” register in the DS2761 (`<value>` is in mAH).

`write <address> <data>`
 Write battery data to the DS2761 (`<address>` and `<data>` are in hex)



Important: *The `setAcc` and `write` commands may adversely affect current battery readings.*

`ver` Display the version of the keyboard processor’s firmware.

4.7.22 **usb**

Issue a USB-related command.

Usage:

`usb <command>`

`<command>` is one of:

`disable` Disable the USB device.

`enable` Enable the USB device.

`use <device>` Set the block storage device `<device>` to be accessible via USB.

By default, when you connect a WORKABOUT PRO to a PC through USB, the WORKABOUT PRO makes the reserved partition of the WORKABOUT PRO’s internal flash accessible to the PC as a USB Mass Storage Device. This is used for quick operating-system image-file transfers (see Section 5.2.2 on page 47).

The `usb use <device>` command allows you to make a SD/MMC or CF card installed in the WORKABOUT PRO available as the USB Mass Storage Device on your PC, instead of the reserved portion of the internal flash memory.

For example, `usb use sdmmc0u` will make any card inserted in the SD/MMC slot available through USB. The command `usb use cf0` will make the card in the Compact Flash slot available, and `usb use doc0` makes the reserved portion of the WORKABOUT PRO’s internal flash available again.



Important: *Be sure to always use Window’s “Unplug or Eject Hardware” icon in the system tray to stop the USB device before unplugging it or rebooting the terminal. If this is not done, the memory device may be left in a corrupt state, with data left unwritten. This could result in an unreadable file system or files that contain corrupt data.*

4.7.23 ver

Display BooSt version information.

Usage: ver

4.7.24 wan

Test Psion Teklogix' GSM/GPRS expansion module.

Usage:
wan

This command configures the WORKABOUT PRO's console port and full-function (FF) UART for serial pass-through communication with the GSM/GPRS expansion module.



Important: *The WORKABOUT PRO must be reset following the use of this command to resume normal console operation!*

While this command is running, the following control characters may be used to trigger events:

^P	Generate power pulse.
^R	Reset WAN module.
^S	Report SIM on/off status.
^X	Exit WAN test mode.

4.7.25 ymodem

Perform a YMODEM transfer

Usage:
ymodem [<destination> [<options>]]

Where <destination> is one of

boot	Load a new version of BooSt.
load	Load a file using the BooSt loader.
load!	Force the load.
module	Load a BooSt module to RAM.
ram	Load binary data to the specified memory address (in hex).

If no destination for a downloaded file is specified, the ymodem command passes the file to the BooSt loader, which examines the header of the file to decide what to do with it.

If you send a BooSt image, the WORKABOUT PRO will reprogram the boot code region of the reserved partition of its internal flash memory, then reboot into the new BooSt image. If you send a Windows CE image, the WORKABOUT PRO will reprogram the OS region of the reserved partition of its internal flash memory, then reboot into the new Windows CE image.

When the "Boot to BooSt" key combo is used (<LEFT SCAN>, <BLUE>, and <ENTER> held for 6 seconds) a boot from the Compact Flash card is always attempted first. If no CF card is present or if the

CF card does not contain a 7525 .img file, the WORKABOUT PRO tries a normal boot to BooSt. This behaviour can be used to ensure that a full BooSt & WinCE software update goes as expected, running under new BooSt code on the CF card rather than relying on the old BooSt code already in the terminal.