

Motus Traffic Limited

**TM-150-2 Technical Reference Guide
Handset Commands**

Version 1

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1 Introduction

This document provides user information about how to use the Handset Command Terminal found of firmware version 6.95 onwards on the Motus TM-150-2 and TM-150-2P.

1.1 Related Documents

Other documents exist relating to the controller and are listed below:

TM-150-2 User's Manual	MOTUS/139/075000/001/3-2
TM-150-2P Service Manual	MOTUS/139/075000/002/3
TM-150-2 Programmer's Manual	MOTUS/139/075000/003/1
Motus Traffic RMS Manual	MOTUS/139/075000/004/B
TM-150-2 Training Notes	MOTUS/139/075000/005/A
TM-150-2 Spares List	MOTUS/139/075000/006/A
Motus TM-150-2 Reset Errors Guide	MOTUS/139/075000/009/1-1
Motus RMS OMU Set-up Guide	MOTUS/139/075000/009/2-1
Motus TM-150-2 Web Interface Log Extraction Guide	MOTUS/139/075000/009/3-1
Motus RMS & Cloud Administration Guide	MOTUS/139/075000/009/5-1

2. Handset Commands

2.1 Set-up

The terminal is a standard powered 25pin RS232 port. Connection can be made by laptop or other terminal device such as a TechTerm or Oyster Terminal. The default connection settings are configured using the web admin pages. The default comp port settings are. 1200 baud, 7data bits, Even parity, 1 stop bit and no flow control. The configuration text is given below:

```
name=/dev/ttyS0
speed=1200
opt=7-E-1
```

Figure 2.1 shows the web admin page. If settings need to be changed, they are changed here.

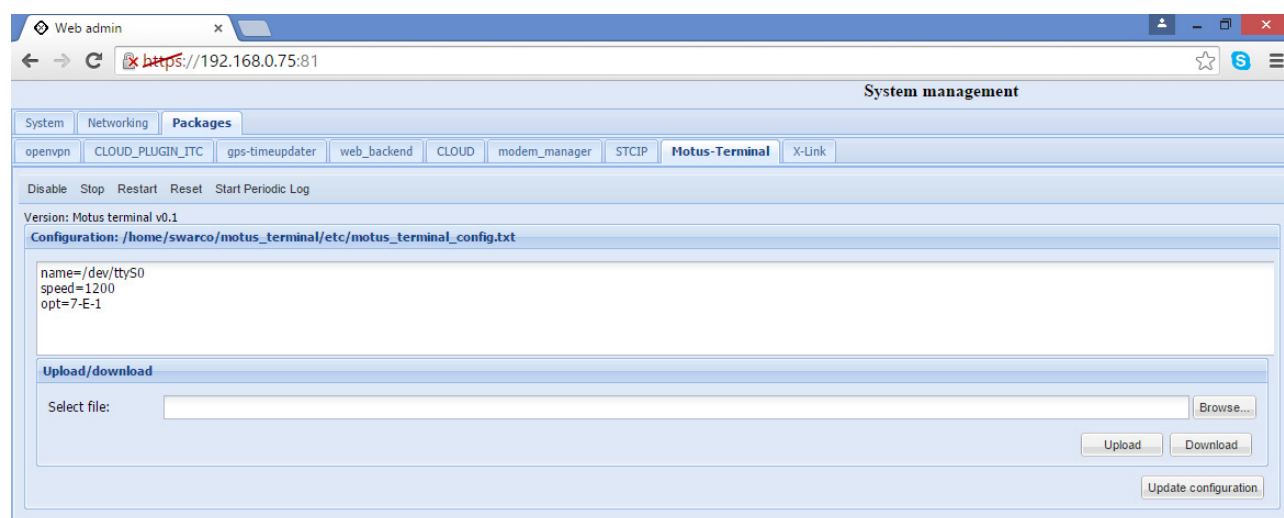


Figure 2.1 – Configuration Page for Motus Terminal Interface

To change the settings, over-type the current settings and click on the **Update configuration** button. Next, click the **Stop** button followed by the **Restart** button to accept the new settings.

2.2 Syntax and Formatting

When connected to the terminal, pressing enter should return:

```
>
*S
```

Currently there are several reply codes indicating different states. They are listed below.

Table 2.2 – Motus Terminal Interface Syntax Replies

Reply	Meaning
*S	Syntax Error, text not recognized
*V	Value Error, the entered value did not match format expected
*R	Range Error, the entered value was out of range of acceptable values
*A	Authorisation Error, command needs higher access level

There is no requirement for upper or lower case, either case is acceptable, the terminal will use upper case. If a mistake is made, it can be corrected before the **ENTER** or **RETURN** key is pressed.

2.2.1 Displaying a Parameter

When displaying a parameter the controller will follow the mnemonic with a colon, then the value. For example Minimum Green for Phase A would return:

```
> MIN C
MIN C: 6
>
```

2.2.3 Scrolling a Parameter

When displaying a parameter, such as MIN C, pressing the + or – keys will scroll to the next parameter for example pressing – will display MIN B, and pressing + will display MIN D.

2.2.4 Changing a Parameter Value

Currently when a parameter such as MIN A is displayed, the mnemonic will have to be re-typed, followed by the parameter e.g. phase letter, followed by = and the value. For example to change the value of MAX A, the alternative Maximum Green Set A value for phase A, the user would need to type *MAX A=30*.

It is anticipated that in a future update to the terminal the ability to press = after the last returned parameter will automatically allow the user to try to set the value. The terminal will accept or reject the change subject to value and permission level.

2.2.5 WID Command

It is important to be able to restrict the terminal to a certain length of characters for correct display on small terminal devices. The WID command can set the number of characters displayed before a Carriage Return. The range is 14 to 80 characters. The default is 20. This is particularly important to Pass-Through mode as many of the replies are quite long.

2.2.6 Changing between Motus Terminal Mode and Pass-Through Mode

The default mode of the terminal is Motus Terminal Mode, using the new mnemonics to access controller parameters. The legacy terminal remains available as a pass through mode to ensure that parameters not yet defined in the new terminal can still be accessed. This is called Pass through mode. To change between the two terminals, press the # key. The controller will indicate what mode has been made available before the first prompt.

2.2.7 Escape Character in Pass-Through Mode

The legacy controller terminal requires the user to escape (ESC) out of a viewed parameter in order to view something else. Many UK systems don't correctly pass the ESC character to the terminal, so the @ symbol was chosen as a replacement.

2.3 Level Access Commands

The Command LEV is used to change access levels in the controller. Level 3 access is only granted when the controller display panel has Level 3 access, to ensure that there is someone on site when the Terminal is granted L3 access.

Table 2.3 – Access Levels

Command	Controller Access Level Reply	Meaning
LEV=1	LEV: 1	Closed code levels
LEV=2	LEV: 2	L2 access granted
LEV=3	LEV: 2	Display Not in L3, L2 access granted
LEV=3	LEV: 3	L3 access granted (display in L3)

2.4 Basic Commands

The Commands below are implemented in firmware 6.95 or later. The timing limits are under review.

Table 2.4 – Commands

Command	Index 1	Index 2	Data	Level Access	Description
PIC	-	-	-	1	Firmware Version
CII	-	-	-	1	Intersection Name
CIO	-	-	-	1	Intersection Owner
CIC	-	-	-	1	Controller ID
CID	-	-	-	1	Backplane ID Number
WID	No. of Chars	-	14-80	1	Width of text before new line.
LEV	Level Access	-	1-3	N/A	Access Level
MIN	Phase Letter	-	0-255	3	Minimum Green (Seconds)
MAX	Phase Letter	-	0-255	2	Max Green Set A (Seconds) (VA)
MBX	Phase Letter	-	0-255	2	Max Green Set B (VA)
MCX	Phase Letter	-	0-255	2	Max Green Set C (VA)
MDX	Phase Letter	-	0-255	2	Max Green Set D (VA)
MEX	Phase Letter	-	0-255	2	Max Green Set E (VA) PT-MAX Set A on Crossings only
MTX	Phase Letter	-	0-255	2	Max Green Set F (VA) PT-MAX Set B on Crossings only
MGX	Phase Letter	-	0-255	2	Max Green Set G (VA) PT-MAX Set C on Crossings only
MHX	Phase Letter	-	0-255	2	Max Green Set H (VA) PT-MAX Set D on Crossings only
IGS	-	-	0-25	3	Starting Intergreen (Seconds)
IGN	Phase Letter	Phase Letter	0-25	3	Intergreen (Seconds)
TOD	Date YY-MM-DD	Time HH:MM:SS	-	3	Date and Time can be entered separately
CDT	Index	-	0-255	3	Special Conditioning Parameters
PAR	0	Phase Letter	0-255	3	Pedestrian All Red Gap Change (Seconds)
PAR	1	Phase Letter	0-255	3	Pedestrian All Red Max Change (Seconds)
PAR	2	Phase Letter	0-255	3	Pedestrian All Red Forced Change (Seconds)
PAR	3	Phase Letter	0-255	3	Pedestrian All Red UTC Change (Seconds)
PIT	0	Phase Letter	0-2	3	Pelican Intergreen Step 0 (Seconds) Flashing Green Man, Red Traffic
PIT	1	Phase Letter	6-18	3	Pelican Intergreen Step 1 (Seconds) Flashing Green Man, Flashing Amber Traffic
PIT	2	Phase Letter	1-2	3	Pelican Intergreen Step 2 (Seconds) Red Man, Flashing Amber Traffic
PMN	Phase Letter	-	2-25	3	Min Clearance (Seconds)
PMX	Phase Letter	-	2-25	3	Max Clearance (Seconds)
PMC	Phase Letter	-	0-25	3	Extra Clearance Max Change (Seconds)
PGC	Phase Letter	-	0-25	3	Extra Clearance Gap Change (Seconds) Pedestrian Type 14 (All Red) Only
PFR	Phase Letter	-	0-25	3	Pedestrian Final Red (Seconds) Pedestrian Type 17 (Blackout) Only
ERR	-	-	-	1	List Errors. Currently asks user to use Pass-Through Mode.
CYC	Plan Number	-	0-255	3	CLF Plan Cycle Time. Plans 0 to 3 implemented
OFS	Plan Number	-	0-255	3	CLF Plan Offset Time. Plans 0 to 3 implemented
ACT	Action Table	Instruction	-	3	CLF Influence, Stage and Group Time See separate paragraph for details.

2.5 CLF ACT Command (for CLF Influence, stage and time)

To examine an action table influence instruction, type in ACT_1_1 for first action table, first instruction. Note the _ denotes a space between ACT and the two numbers. Controller plan 10 uses action table 1, plan 13 uses action table 4. The first index is the action table index, the second index is the instruction index. The following table gives the influence codes currently in use.

Table 2.5 – CLF Influences

Name	Example Code	Description
IM	061-00s-ttt	Immediate move to stage s in stream 1 at time ttt seconds.
DM	071-00s-ttt	Demand Dependent move to stage s in stream 1 at time ttt seconds.
HS	049-00r-ttt	Hold Current Stage in Stream r at time ttt seconds.
DM	041-00s-ttt	Prevent All moves except to stage s in stream 1 at time ttt seconds.

ACT 2 1 will return something like:

```
ACT 2 1: IM 1 1 0
```

Which is Immediate move, stream 1, stage 1 time 0s.

To edit the first line of the this CLF plan to make the time 10s, type in:

```
IM_1_1_10
```

Which would be IM Stream 1, Stage 1 time 10. Please note that there is no space between the I and M but there is between everything else. The controller will return:

```
ACT 2 1:IM 1 1 10
```

To wipe out an action i.e. completely erase it, simply select the plan and instruction number and make it equal to zero. All action table instructions after this will be ignored. The CLF plan reads instructions up to the first blank entry. For example, to wipe out action table 3 instruction 4, the user would type:

```
ACT 3 4=0
```

The controller will return:

```
ACT 3 4:OK
```

END OF DOCUMENT