COMMUNICATIONS WATCHDOG TIMER

Overview

The SLCD firmware contains a Communications Watchdog Timer feature that can be used to execute a macro with one of four predefined labels when a corresponding communications event is detected:

1. Short Term loss of communication
   - No characters received for X seconds
   - Specified macro executes with label ":st_down"

2. Communication restored after Short Term loss
   - A character is received after a Short Term loss occurred
   - Specified macro executes with label ":st_up"

3. Long Term loss of communication
   - No characters received for Y seconds
   - Specified macro executes with label ":lt_down"

4. Communication restored after Long Term loss
   - A character is received after a Long Term loss occurred
   - Specified macro executes with label ":lt_up"

The macro to execute and the definitions of Short Term and Long Term communications loss are specified using the '*comwdt' command, which also enables the feature. Once enabled, it remains active until a '*comwdt off' command is received, power is cycled or the SLCD is reset.

Using the '*comwdt' command

Command: `*comwdt <macro> <short> <long>`

Arguments:

`<macro>`	-	name or index of macro to execute
`<short>`	-	Short Term timeout, in seconds
`<long>`	-	Long Term timeout, in seconds

Example

Below are example macro definitions demonstrating a simple usage of the Communications Watchdog:

```
// example macro to enable the watchdog
// short term timeout is 5 seconds, long term is 10 seconds
//
#define enable_wdt
z
f32B
ta CC
t "Communications Timeout Demo\n" 240 25
*comwdt com_wdt 5 10
#end
// macro that gets executed when comwdt times out
// predefined labels are used for the timeout actions:
//
#define com_wdt
//
// the following is a required label, do not change the name
:st_down
// short term timeout expired; animate backlight blinking
ani 0 xbbs 127
ani 0 y 250
ani 0 xbbs 255
ani 0 y 250
anie 0
//
// the following is a required label, do not change the name
:st_up
// recover from short term timeout; kill the animation and
// restore to full brightness
anix 0
xbb 255
//
// the following is a required label, do not change the name
:lt_down
// long term timeout expired; clear screen and warn user
anix 0
xbb 255
z
f32B
ta CC
t "Communications Timeout\n" 240 75
ta CC
t "Please Restart System"
//
// the following is a required label, do not change the name
:lt_up
// recover from long term timeout; in a real system the power-on macro or some other startup
// macro would be run
z
f32B
ta CC
t "Communications Restored" 240 200
#end
```