

P4dragon Firmware-Update

Description of modifications / improvements

Firmware-Version 2.30.30 (02/2017)

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Firmware-Update-Information für **P4dragon DR-7X00**

(P4dragon-Firmware 2.30.30, February 2017)

1. General information

Firmware 2.30 replaces firmware 2.20 (and subsequent beta versions). It mainly fixes some long-term stability issues. Furthermore, the new firmware allows to configure the REStart command. The REStart command then will no longer cause the loss of all modified modem parameters. Even application software that always utilizes a REStart command (at every start-up) will no longer inevitably reset the modem parameters to factory settings but special settings (e. g. the display configuration) can be retained.

2. New Features

2.1 Commands

cmd: **RESTPar**

Value range: 0-1

Default: 0

Example: RESTP 1 <Enter>

This command is available in the cmd: menu and allows to configure des REStart command:

- 0: normal REStart function, modem parameters will be loaded from the Flash ROM at system start.
- 1: modem parameters will be loaded from the EEPROM, i.e. parameters stored by using SAP command will be utilized. (For that feature, the EEPROM parameter block must be available, i.e. at least stored once using the SAP command.)

sys: **LOG DISABLE**

Value range: 0-1

Default: 0

Example: sys log disable 1 <Enter>

This command is available in the sys: menu and allows to switch off system logging.

The individual functions:

- 0: normal system logging function (log stored in Flash ROM).
- 1: system logging function disabled. That only refers to the mode „Flash ROM Log” but not to the mode “Hostmode Log”, see below in chapter “Log channel on Hostmode”.

sys: TUnit

Value range: 0-1

Default: 0

This command is available in the sys: menu and allows to configure the temperature unit.

Defines if temperature readouts (e.g. on the display of the DR-7800) are displayed as °C or °F.

0: degrees Celsius

1: degrees Fahrenheit.

2.2 Log channel on Hostmode

The new firmware allows to retrieve system log messages through the virtual Hostmode channel 248.

For that purpose, all log entries are always (even in parallel with saving the same entries into the Flash ROM) written to a RAM buffer working as FIFO. That log buffer can store up to 100 log messages. If the log buffer gets full, always the oldest message is automatically removed and the latest message is saved instead of it. Thus, the length cannot exceed 100 log messages.

As soon as the Hostmode is activated and virtual channel 248 is polled once, the modem switches from mode “Flash ROM log” to the mode “Hostmode log”. In that mode, system log messages are no longer written to the Flash ROM (“normal” system logbook) but only into the log buffer. All buffered/available log messages then can be fetched (polled) through virtual channel 248. Channel 248 is also included to the “Extended Hostmode” mechanism, i.e. it appears on channel 255 as long as there is data available in the log buffer (at least one message).

Messages fetched through channel 248 are deleted from the log buffer. Usually, fetching messages is continued until no current message is left in the log buffer.

If an overrun occurs while the mode “Hostmode log” is active, i.e. more than 100 available messages were not fetched, the modem again disables mode “Hostmode log” and resets logging to “Flash ROM log”. Channel 248 then is no longer included to “Extended Hostmode”. It must be polled at least once in order to re-active “Hostmode logging”.

Log messages that are sent by the modem as a response to a (G-)poll on channel 248 are always assembled in so-called “byte count” format. The first 4 bytes contain a 32 bits long timestamp. That timestamp holds the number of seconds that elapsed since date 01.01.2000 at 00:00:00. The MS byte is sent first. The timestamp can be corrected to the usual C timestamp (seconds since 01.01.1970, 00:00:00) simply by adding 946684800 (seconds) to it.

3. Other improvements and corrections

3.1 Improved long-term stability

Since the release of firmware version 2.20, several flaws that mainly affected the long-term stability of the modems could be fixed. As a result, the reliability at long-term usage of the modems could be improved. That addresses base stations at email providers, for example. Therefore, we highly recommend to utilize firmware version 2.30.30 (or successors, respectively) if the modems are in continuous operation.

3.2 Miscellaneous

- RPR on KISS: Support of automatic throughput control (“speedlevel” adaptation depending on channel conditions) again included.
- Hostmode command “M” (Monitor) improved: If the current setting was requested, always “N” was returned independent of the actual setting.
- Default of CSDelay parameter incremented from 5 to 10.
- Bug on APRS fixed: The APRS timer was always set to 100 seconds after power-on of the modem and APRS parameter set to 1 (GPS mode) – but not to the value stored in the EEPROM parameter block or the default, respectively.
- PACTOR-III channel estimator improved. That can yield 1-2 dB of gain on speedlevel 6.

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