RMS INSTRUMENTS
Data Recording Systems

RELEASE NOTES

GP300 GRAPHIC PRINTER / CHART RECORDER

Firmware Release RMS1780-00-F

These release notes contain important information about the new firmware and how it will affect the performance of instruments in which it is installed. The notes include information about enhancements, adaptive changes, and corrections to known problems. Please read this documentation carefully.

1. The key combination CLR & CHART will now also cause exiting from RG and GS modes (in addition to NT B&W and NT GS modes).

2. Problem correction – Fixed problem that could cause overrun errors when (a) receiving data on serial port A at 115 kbps, (b) working in RG Gray Scaling mode, and (c) printing a narrow image.

3. Real-time data output can now be directed to the default data output port (serial port C), or to the remote control port (serial port A). In the latter case, data frames will be interspersed with STS frames.

4. Added range checking for some of the arguments of several commands (of the binary protocol): GRDD [21_{hex}], EVC [44_{hex}], VMSGP [60_{hex}], VMSG [61_{hex}], HMSGP [62_{hex}], HMSG [63_{hex}], IDMSG [66_{hex}].

5. Added protection: chart speed v.s. print power requirement. If speed is > $C_{S\text{-}CRIT}$ = 19.6 mm/sec, make sure each static page has no more than 1200 dots ON. This number has been determined experimentally – beyond that, the 24-VDC power supply and/or step motor controller may shut off.

6. Added display of FW revision if CLR key is on immediately after power-up.

7. The biasing load to the 24-VDC power supply is now hardwired ON permanently.

8. Added protection to disallow setting of chart speed while the printhead test is in progress. The speed is set automatically to 1.00 mm/sec.

9. Added new built-in printhead test. The new test is referred to as *test #1*, while the original is *test #0*.

10. Added support for on-board Flash programming. Downloading of 'Intel ASCII Hex' records is supported through the *monitor* utilities, via serial port B. *FLASHU11* and *FLASHU12* may be used to program the firmware into the device at U11 or the one at U12, respectively. *FLASHF* may be used to program the FPGA configuration into the device at U12.

11. Re-organized data in Flash memory to allow for extended-ASCII character set.

12. Support extended-ASCII character set as per ISO 8859-1.

13. Extended DRAM test during unit's self-testing: MCPU now also tests full *heap* area. As a result of this, self-test time after start-up is significantly longer.

14. Problem correction – Processing (binary) command *host control disable* (HCD) when no corresponding *host control enable* (HCE) had been processed, could cause various problems (e.g., error 1-12, error 0-2).

15. The RTS signal in serial port A is now set non-active while the main printing task is running (in chart mode, and with host-control disabled). If this is not done, the SIO controller's receive buffer may overflow if (a) the host is sending a continuous stream of data to the GP300, at relatively high bit rates, and (b) the GP300's configuration is such that the print process is quite long (real-time math enabled, elaborate trace drawing algorithms, etc.). For example, typical "demo" configurations would run into this problem at 19.2 kbps or higher bit rates.

16. The 3-byte sequence for the 'quit' function of the TOI was changed from {0x11, 0x00, 0x00} to {0x1b, 0x51, 0x51}. This is to minimize the chance of accidentally disabling the TOI, for example, when Windows NT sends some characters to COM ports during startup.

17. On switching chart from Off to On, the unit will ramp up gradually to the target speed if this is greater than 100 mm/sec.