Software Historie

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/**
\mainpage Description : Firmware for ACS-Sources \n
****************************************************************************** \n
** \copyright     : HBS Electronic GmbH
** \version
** Version        : 1.21\n
** Version        : 1.22 / 080205-remove serial echo / 150205 query command response fixed \n
** Version        : 1.23 / 080305-add *opc, *opc? cmd / change *esr?, *stb? \n
** Version        : 1.23 / 080305-add *opc, *opc? cmd / change *esr?, *stb? \n
** Version        : 2.25 / 020505-first complete 3-phase version with keil   \n
** Version        : 2.26 / 170505-add ee-write-protect with p1.2 pin                    \n
** Version        : 2.27 / \n
** Version        : 2.28 / 220905-p-meas, pf-meas and serial version / change p_con_fact /32 bit overflow by > 3750 W\n
** Version        : 2.28xF / 201005- remove phase and DDS-ON/DDS-OFF by frequenz setting for one-phase-system cause dead time on output-voltage\n
                   :  / needed for 3-phase-system cause phase loose \n
** Version        : 2.29xF / 101106- correct phase setting cause 40 Degree fail to 0 Degree \n
** Version        : 2.30xF / 200607- version correct for phase 1, phase 2 and phase 3 starts by 0 degree by 0, 120, 240 degree on 3-phase system \n
** Version        : 2.30xFP / 160707- allow on 800W source 1000W for 1 minute \n
** Version        : 2.30xFPL / 080708- remove command for VFD-display brightness cause new LCD-display \n
** Version        : 2.30xFPL / 090708- command fix for  R S by old style command load, exton, phaseon \n
**                : Change i2c_ee64.s51 - try second time for read/write  \n
**                : 2.30.01EFPL fix display delay 250614 \n
**                : 2.30.03EFPL overload -> relais off 211014 \n
** Version        : 3.00 15.July 2015 added reverse power shutdown; extension by external UARTs; modiefied serial command processing \n
**                - Modfikation: I/U/P Faktoren; calc_measure Faktor \n
**                - Extension: I2C-UART interface incl. ext0 interrupt handling \n
**                                                              .
** Version        : 3.01 13.Oct.2015 \n
**                - Fixed display MSG after Load-Button press (input_no_disp == 0) \n
**                - Fixed Grossgeraete: I_RMS & I_MAX (division by 10) \n
**                - Fixed I!: removed (disp_signal = ID_I_ERROR_IC) for values <I becaus of "disp_signal" variable and error MSG prioritization \n
**                - Extended: For switched off display (input_no_disp =1) clearing of displayed MSG \n
**                                                              .
** Version        : 3.02 21.Oct.2015 \n
**                - Added: Return power command for serial Interface (meas:revpow?) \n
**                - Fixed: Display statusline OFF during sequenz execution \n
**                                                              .
** Version        : 3.03 04.Nov.2015 \n
**                - Fixed: MB2 scaling \n
**                                                              .
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** Version       : 3.04 29.Dez.2015 \n
**              - Fixed: Phasing from lagging phase (360-input_dds_phas_x) to lead phase (input_dds_phas_x) \n
**                                                  .
** Version       : 3.05 22.Jan.2016 \n
**              - Fixed: Display status line off during remote RWL \n
**                                                  .
** Version       : 3.06 26.Jan.2016 \n
**              - Fixed: I_Peak measure for Phase 2 (all phases are affected!)\n
**                                                  .
** Version       : 3.07 12.Feb.2016 \n
**              - Added wave modul to serial interface and menu \n
**                                                  .
** Version       : 3.08 29.Feb.2016 \n
**              - Fixed power VA comp for MB2 \n
**              - Fixed status input / output of granular frequency 16_5 \n
**              - Added Wave signal relais  (Status ON wenn wave != 0) \n
**                                                  .
** Version       : 3.09 01.Apr.2016 \n
**              - Adapted Wave loop display status time in function play_wave_loop() \n
**              - Added wave relais activation (15) / deactivation (0) in serial_wave_once and serial_wave_loop functions\n
**                                                  .
** Version       : 3.10 12.Apr.2016 \n
**              - Fixed 3-Phase detection during boot, for non present slave 2 &3 \n
**              - Added Wave 3 phase (gain) option \n
**              - Extendend Menu 3 phase WAVE menu \n
**              - Extendend Menu MAX_CMD_COUNT & MAX_SUBMENU_CNT \n
**              - Fixed SOURCE_SELECT modification during run \n
**                                                  .
** Version       : 3.11 27.Aug.2016 \n
**              - Wave player enhancement up to 30 wave files (31 is STILLE!) \n
**              - Display characters for phase & degree changed for new display model (old display shows now strange charater!) \n
**                                                  .
** Version       : 3.12 29.Nov.2016 \n
**              - BUG_FIX Sequenz timing: Timer0 adjusted to 10ms \n
**              - Start-Up display screen firmware version added \n
**                                                  .
** Version       : 3.13 02.Dez.2016 \n
**              - Q_MAX Protection cut off
**               - FU_MAX Protection cut off
**                                                  .
** Version       : 3.14 18.Jan.2017 \n
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**                - Extension of serial command for reading wave gain
**                - Now shows Wave STOP display menu entry even if wave is start via serial CMD
**                                                                .
** Version       : 3.15 27.Jan.2017 \n
**                - Fixed startup voltage UAC = 0V  Phase 2 u. Phase 2
**               - Fixed startup voltage UDC = 0V  Phase 1 u. Phase 2 u. Phase 2
**               - Fixed startup IRMS Phase 2 u. Phase 2 equal to single phase machine!
**                                                                .
** Version       : 3.16 16.Mar.2017 \n
**               - External UART deavitvated! Save Eprom space
**               - Show Wave-Nr from serial input in display and sync withinternal variable
**               - Fixed display init (lcd_i2c.c) to avoid dark diplay (crash)
**                                                                .
** Version       : 3.17 16.Apr.2017 \n
**                - Wave player activation timing and gain setup modified
**                - Wave play Once start pulse time adapted; now depends on wave active signal

**                 - Wave play ONCE & LOOP & STOP function 3 phase adaption
**                                                                .
** Version       : 3.18 16.June.2017 \n
**               - Wave play time out (dead lock) limit reduced to 18000
**               - Wave player stop for 3 phase system improved
**               - Cleanup code (timer enable / disable)
**               - encapsulation of load relais off function (load_relais_off)
**                                                                .
** Version       : 3.19 26.June.2017 \n
**               - Sequence encapsulation
**               - encapsulation of serial and key input functions
**               - Pre-set removed but LIMITS kept
**               - Info message for active Limits during start up included
**                                                                .
** Version       : 3.20 27.June.2017 \n
**               - Baud rate setup reorganized and standard baud rate set to 19.200
**               - Baud rate selection extended up to 57.600 Baud
**               - Sequence case 0 DAC I/O removed
**               - Code clean up by analysis!
**                                                                .
** Version       : 3.21 30.October.2017 \n
**                - FU_MAX Protection shutdown procedure adapted from load-off
**               - External AUX display status corrected!
**                                                                .
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** Version       : 3.22 14.December.2017 \n
**                - SW ported to Keil C51 compiler (Linker: BL51)
**                - unused functions deactivated for compiler / linker to reduce binary (hex) size
**                - removed global chr1 variable! Encapulated local (poi_chr) and interrrupt (int_chr) usage
**                - Front panel keys beep with out action (fail beep) removed
**                - AUX-Relay and Phase-Relay switch function encapsulated
**                - Status display output for AUX-Relay and Phase-Relay
**                - Status display output for OPT1 and MB2 (IRg2)
**                                                    .
** Version       : 3.23 20.März.2018 \n
**                - Load On/Off UDC Bug Phase 1 und 2 (Pio hängt)
**                                                    .
** Version       : 3.24 15.April.2018 \n
**                - Wave:Stop      ohne Funktion.
**                - Ausgabe am PIO zu Kurz, geändert von 3,2ms auf 100ms
**                                                    .
** Version       : 3.25 01.Juni.2018 \n
**                - Output Regelung UAC and UDC
**                - output_volt_compensation()
**                - Added serial command for output_volt_compensation()  : sour:COMPENS  and sour:COMPENS?
**                - Added menu entry for output_volt_compensation, syncronized with serial input
**                - Q_POWEROFF_LIMIT_PERCENT
**                - Neue Berechnung von Qvar/Blindleistung. Neues Limit ist: Qvar Quadrat =(VA Quadrat - W Quadrat)
**                - Eingabe Prozentwert (der Maximalleistung) zum Quadrat
**                                                    .
** Version       : 3.26 10.Juli.2018 \n
**                - Hardware protection. Reverse Power protection. Over current protection.
**                - BUG_FIX. Bei Überlastung werden die Spannungen auf "0" gesetzt.
**                - Mit Load-On werden die ursprünglichen Werte wieder gesetzt.
**                                                    .
** Version       : 3.27 17.Aug.2018 \n
**                - BUG_FIX Granular Function int_to_str_16_5 without reentrant
**                                                    .
** Version       : 3.28 29.Oct.2018 \n
**                - BUG_FIX Removed Debug output in ser_cmf_freq: "Freq. in Hz set!"
**
** Version       : 3.29 14.Dec.2018 \n
**                - BUG_FIX Q_MAX Protection.
**                - Pmax Einstellung beeinflusste die Q_max Abschaltung.
**                - Referenzwert von "raw_max_power_ac_0" auf "raw_short_max_power_ac_0" geändert.
**                : 3.29 18.Dec.2018 \n
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**                - Nachtrag: raw_short_max_power_ac_0 ist der reduzierte Endwert der VA Leistungsmesssung
**                - und musste daher auf den Ursprungswert zurückskaliert werden.
**                - BUG_FIX Frequenzeinstellung bei F größer 2600Hz Zahlenüberlauf
**                - Kalkulation Float Zahl für SMA/Granular
**                - BUG_FIX Grossgeräte: PMAX Vorgabe, Anzeige PMAX 8.000Kx
**
** Version (Beta): 3.30 29.Aug.2019 \n
**                - Stromregelung hinzugefügt output_current_compensation() und output_current_compensation_controller()
**                - Verriegelung  output_volt_compensation mit output_current_compensation
**                - Aktiv "CC" im Display
**                : 3.30 31. Oktober 2019 \n
**                - BUG_FIX "Frequenzausgabe bei Sequenz in Verbindung mit 10 mHz (granular) um Faktor 10 zu  klein
**                - inp_int =buf_dmt_to_int_HI_FREQ(ptr_dat,100,MIN_IN_FREQ0,max_in_freq0);
**                : 3.30 4.Nov.2019 \n
**                - BUG_FIX "DC-Spannungsausgabe bei Sequenz, wenn über Frontbedienung keine Sequenznummer
**                -  angewählt wird"
**                - seq_cnt =1; // Zeile fehlte nach Revision von "DIS11C"
**                : 3.30 17.Dez.2019 \n
**                - BUG_FIX "Sprünge beim verändern der Frequenz im 3 Phasenbetrieb entfernt"
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