
RPS, Technical information, IT-HIST-MPSHP-DSP-v3001-r116.

Subject: History for MPSHP-DSP firmware.

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PXM3001 rev.117 (input DSP MPS, ck=88DF)(itda,220223,scma).hex

- added reduction of battery charging current whe the Vdc decreases.
This to avoid oscillation between charging and discharging
in case of presence of high output load.
- correction of a wrong battery discharging current
when present the command "dicharging battery on mains".
Error present on rev. 114, 115, 116.

PXM3001 rev.116 (input DSP MPS, ck=1C9C)(itda,250722,scma).hex

- Internal voltage control added for MHT / MHE 500..800
upstream of the battery fuses to have the battery alarm
even in case of blown fuses.
- improved management of the input current limitation.

PXM3001 rev.114 115 not used

PXM3001 rev.113 (input DSP MPS, ck=8AE8)(itda,070322,pasi)

- Modification of the input current limitation threshold in correspondence
with the output overload value for which it is requested the drawing
of current from the battery.
This is to avoid fluctuations in the input current when the value
overload remains around the threshold value at which it is required
the beginning of current absorption from the battery.

--->>> Warning: on PXM3001 rev.112,
this version is not to be used due to oscillations in overload.
Use the previous PXM3001 rev.110.

PXM3001 rev.112 (input DSP MPS, ck=C8DB)(itda,270921,scma

- Inserted input voltage filter to avoid oscillations
in systems with multiple units connected to a single power supply
having low power compared to that of ups.

PXM3001 rev.111

- unpublished version, used only for tests.

PXM3001 rev.110 (input DSP MPS, ck=3630)(itda,230721,scma).hex

- in the MHT/MHE set for operation with "SuperCap"
reduction of the restart time of the input contactor
from 1 to 0.2 sec., when the mains voltage returns after its interruption.
- For MHT/MHE set with "Zero" mode (code 457667 "current mode 0"),
correction of an overcurrent at start which occurred
when set e starting delay> 1 sec. (code 412746)

IT-HIST-MPSHP-DSP-v3001-r117(MPSHP-DSP firmware history)(scma,240223,scma).TXT
and also a softstart> 10 sec. (code 412756)

PXM3001 rev.109 (input DSP MPS, ck=F7B7)(itda,040521,scma).hex

- Increase of the phase locking range from 0.5 to 2 degrees to improve operation with generators.
- correction in the battery converter control, to avoid a wrong shutdown in some cases, and only at the first return voltage from the mains after the first start-up of the system.
- in a system with common parallel battery, modified the threshold of the DC voltage to avoid a wrong block of the unit that is inserted with the others already active

PXM3001 rev.108 (input DSP MPS, ck=D981)(itda,050321,scma).hex

- Increase of the phase lock range from 0.5 to 2 degrees to improve operation with genset
- Correction in the regulation of the converter from battery to avoid a wrong shutdown ONLY in some cases, and ONLY at the first return voltage from the mains after the FIRST start-up of the system.
- In a system with battery parallel, modified the threshold of the DC voltage to avoid an incorrect block of the unit that is inserted with the others already active

PXM3001 rev.107 (input DSP MPS, ck=00D0)(itda,100221,scma).hex

- The alarm "High battery voltage" is conditioned to the presence of battery current, this is to avoid false alarms

PXM3001 rev.106 (input DSP MPS, ck=B0E4)(itda,091120,scma).hex

- A filter has been added to measure the mains input frequency.

PXM3001 rev.105 (input DSP MPS, ck=EC02)(itda,081020,scma)

- Correction to avoid that the battery discharge stage is temporarily reset when the mains voltage returns with brief fluctuations or disturbances. Problem present in all previous versions.
- Correction of an incorrect "Pmax" message shown in debug
- Modification of the parameters relating to operation as SPS

PXM3001 rev.102..104

- not used on installed ups (used only for tests)

PXM3001 rev.101 (input DSP MPS, ck=EAB3)(itda,040220,scma)

- Corrections relating to operation with the "Energy Manager" card

PXM3001 rev.100 (input DSP MPS, ck=41CC)(itda,111219,scma).hex

- improved operation with generator power supply with power equal to or less than the rated power of the UPS
- Corrections related to operation with lithium batteries

PXM3001 rev.99 not used

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PXM3001 rev.98 (input DSP MPS, ck=ABA4)(itda,160919,scma)

- Changed the threshold to stop input stage for High Vdc voltage
This to avoid the inverters stop in case of transitory overvoltages
- Enlarged also the accepted range of input voltage phase variations
that can be present in case of feeding from a motor generator

PXM3001 rev.97 not used

PXM3001 rev.96 (input DSP MPS, ck=52C2)(itda,130519,scma).hex

- added the function for reduction of the regulation gain,
to be used to avoid any oscillations in case of taking power
from a low power motor generator compared to the power of the UPS
The function can be set from system menu cod.457667

PXM3001 rev.92..95 not used

PXM3001 rev.91 (input DSP MPS, ck=52C2)(itda,130519,scma)

- added 2% hysteresis on voltage value used to stop the input
when the input voltage is high.
Therefore the input turns off when $V_{in} > 120\%$ and turns on again if $V_{in} > 118\%$.

PXM3001 rev.90 (input DSP MPS, ck=7557)(itda,250119,scma)

- Correction of malfunction in case the inverter had a special setting
with high frequency PWM. The error was in revision 83-89.

PXM3001 rev.89 (input DSP MPS, ck=4FD9)(itda,061218,scma).hex

- Changing the battery charger setting to prevent oscillations
during charging with LITHIUM batteries.
-> Attention: to update firmware it is required DSPflash 2.00

PXM3001 rev.88 (input DSP MPS, ck=1E39)(itda,191118,scma).hex

- not used as standard, only for testing

PXM3001 rev.87 (input DSP MPS, ck=80F0)(itda,240918,scma)

- Correction on the operation of the battery charge in MHT / MHE.
The problem was that after a complete discharge,
the battery was not recharged with the restart of the UPS
on the return of the network
The problem does not occur if the control logic of the UPS
has turned off completely after the end of the discharge.
This problem is present in the DSP firmware from the PXM3000 rev.80

PXM3001 rev.86 (input DSP MPS, ck=91A1)(itda,110918,scma).hex

- not used as standard, only for testing.

PXM3001 rev.85 (input DSP MPS, ck=7022)(itda,020718,scma).hex

- not used as standard, only for testing.

PXM3001 rev.84 (input DSP MPS, ck=836B)(itda,060618,scma).hex

- not used as standard, only for testing.

PXM3001 rev.83 (input DSP MPS, ck=FEDA)(itda,230318,scma).hex

- not used as standard, only for testing.

PXM3001 rev.82 (input DSP MPS, ck=EEFD)(itda,310118,scma).hex

- Added handling of MHT/MHE set as "SPS"

PXM3001 rev.81 (input DSP MPS, ck=4C8B)(itda,071117,scma).hex

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- Modified operation of battery charger when testing with DEBUG open loop, to avoid high current in the ups having capacitors added to the battery input.

PXM3001 rev.80 Beta (input DSP MPS, ck=38A7)(itda,121017,scma).hex

- Improved operation in case of ups used as a voltage stabilizer without battery

PXM3001 rev.79 (input DSP MPS, ck=6382)(itda,050617,scma)

- improvement on input current balancing on MHT/MHE500-600, when operating without load. Note it is not required to upgrade the ups on field.

- PXM3001 rev.78 (input DSP MPS, ck=0251)(itda,200317,scma)

- Added operation with Supercap. Required system firmware PXP028.rev97.

- PXM3001 rev.77 (input DSP MPS, ck=1398)(itda,310117,scma).hex

- New mode of synchronizing to input voltage that uses the three input voltages insted of the only one. This to increase the immunity to disturbances.

- PXM3001 rev.76 (input DSP MPS, ck=82A5)(itda,180117,scma).hex

- Used only for testing.

- PXM3001 rev.75 (input DSP MPS, ck=CC96)(itda,141016,scma).hex

- In case of MHT/MHE set to operate as voltage stabilizer without battery. it has been decreased down to -60%, the transitory minimum input voltage threshold to stop the input converter, and also increased the internal Vdc to 640Vdc. This is available only with system firmware from PXP028.rev91.

- PXM3001 rev.74 (input DSP MPS, ck=2D92) (itda,210416,scma).hex

- In the MHT continue the operation of the converter for low battery even in the case of the converter lock due to high output voltage Vdc.
- In case of first starting added a pause of 2 sec. before activating the input converter, after the closing of the input mains contactor.
- Increase in the acceptable range of input voltage phase error and output voltage error when starting the first time. This is to achieve a correct first starting with power from a motor generator or from a main line with less power than the UPS.
- Increased max time. Precharge from 24 to 30 sec., required for MHT800.

PXM3001 rev.73 (input DSP MPS, ck=D365)(itda,211015,scma).hex

- Filter on the input current measurement for better stabilizing the reading in Ampere on ups panel

PXM3001 rev.72 (input DSP MPS, ck=3947)(itda,010915,scma).hex

- Correction the starting delay set with cod.412746. When set delay over 63 sec. the system started wrong with few seconds. Now it is corrected up to 120 sec.

PXM3001 rev.71 used only for testing.

PXM3001 rev.70 (input DSP MPS, ck=A12D)(itda,070715,scma).hex

- Correction of a problem present only when debugging the input stage on MHE ups The command Y/PzPrch gets low precharge voltage. The command C/Rad_On gets high dc voltage and stops the input stage.

PXM3001 rev.69 used only for testing.

PXM3001 rev.68 (input DSP MPS, ck=709B)(itda,300914,scma).hex

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- correction of failure to recognize main line voltage, in case of main line voltage return with initial high frequency oscillation.

PXM3001 rev.65..67 used only for testing.

PXM3001 rev.64 (input DSP MPS, ck=CF3A)(itda,270614,scma).hex

- Correction of a small voltage oscillation on rectifier output voltage (Vdc) when selected the mode "2" of operation.

PXM3001 rev.63(input DSP MPS,ck=C32E)(itda,161013,scma).hex

- added capability of current dynamic soft-starting

PXM3001 rev.62 (input DSP MPS, ck=DEBC)(itda,220514,scma).hex

- correction on input voltage measuring when the main line is off.

PXM3001 rev.61 (input DSP MPS, ck=D9E8)(itda,070514,scma).hex

- Correction on wrong overload operation when selected custom operation mode=2.

PXM3001 rev.60 (input DSP MPS, ck=BFFE)(itda,210314,scma).hex

- Improved switching from battery to normal operation to avoid some wrong power exchanging.

PXM3001 rev.59 (input DSP MPS, ck=99D5)(itda,161013,scma).hex

- added the predisposition for increasing sensitivity to errors on input voltage. The increasing sensitivity must be enabled with custom code 341155.

PXM3001 rev.58 (input DSP MPS, ck=C2BC)(itda,190613,scma).hex

- Correct the usage of custom input current limiting setting. The set custom current limiting was used only after ups restarting.

PXM3001 rev.57 (input DSP MPS, ck=8553)(itda,110413,scma).hex

- Upgraded battery charging current regulation, to have the possibility to customize control in case of ups with special batteries.

PXM3001 rev.56

- not used.

PXM3001 rev.55 (input DSP MPS, ck=67C7)(itda,220313,scma).hex

- correction on battery discharging current value shown on display. In the rev.54, the value was slightly lower than the real

PXM3001 rev.54 (input DSP MPS, ck=DFA8)(itda,120213,scma).hex

- correction on battery charging regulation to avoid oscillation in case of large battery capacity.

PXM3001 rev.53 (input DSP MPS, ck=BC03)(itda,221112,scma).hex

- Correction on input current regulation when using the ups as converter without battery.

PXM3001 rev.52 (input DSP MPS, ck=8C40)(itda,130912,scma).hex

- Correction on input current regulation when it is active the input soft starting option.

PXM3001 rev.51 Used for testing.

PXM3001 rev.50 (input DSP MPS, ck=3AE4)(itda,270612,scma).hex

- Added signals to operate in system with "STBYON_HE" operation on custom MHT500kW "ENI"

PXM3001 rev.49 (input DSP MPS, ck=1580)(itda,210612,scma).hex
-Added signals to operate in system with "STBYON_HE" operation
on custom MHT200kW "ENI"

PXM3001 rev.46..48 Used for testing.

PXM3001 rev.45

- Insert converter stop showing Fault 6, in case of input contactor fault and resulting input circuit self oscillations with high current
- correction of wrong starting on inverter solar systems

PXM3001 rev.42

- Correct input current oscillations when applying high overload on Master HP 250kVA.

PXM3001 rev.41 (input DSP MPS, ck=DB75)(itda,010911,scma).hex

- Correct reandom input stage lock when starting whole control logic on Master HP.

PXM3001 rev.40 (input DSP MPS, ck=FCB9)(itda,010711,scma).hex

- Not to be used because it locks input stage after battery testing.

PXM3001 rev.39 (input DSP MPS, ck=6A05)(itda,270511,scma).hex

- Correct operation some input stage lock when operating with input frequency 60Hz and high input voltage.

PXM3001 rev.34..38, Used for testing

PXM3001 rev.33 (input DSP MPS, ck=E411)(itda,220411,scma).hex

- Correct current limitation in battery discharging stage to avoid "Fail4" when switching back from battery to main line operation with high load.
- Correct input stage Fail when the main line has a short balck_out with also a return of voltage with wrong phase sequence.

PXM3001 rev.25..32, Used for testing

PXM3001 rev.24 (input DSP MPS, ck=8748)(itda,120410,scma).hex

- Insert input stage lock after precharging fail for 3 times.
The panel will show "Internal fault 1"

PXM3001 rev.23 - used only for testings.

PXM3001 rev.22 (input DSP MPS, ck=CA56)(itda,120410,scma).hex

- Insert the input PWM temporary disable in case of Pfc output dc overvoltage caused by fast input phase or frequency changing.
This to avoid the inverter stopping due to the internal dc bus overvoltage.
NOTE: from this version it require a new DSPFLASH with version 1.08 to upgrade the DSP firmware.

PXM3001 rev.21 - used only for testings.

- Correction on input current control to reduce dc voltage oscillation when changing operation from battery to normal mode.

PXM3001 rev.20 - used only for testings.

- Increased the frequency range for synchronizing Pfc PWM to Inverter PWM.

PXM3001 rev.19 (input DSP MPS, ck=D8FB)(itda,140110,scma).hex

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- Enable the handling of parallel ups system using a single common battery.

PXM3001 rev.18 (input DSP MPS, ck=IE9B)(itda,191009,scma).hex
- Handling of sizes 300 and 400kVA input stage.

PXM3001 rev.16 (input DSP MPS, ck=8C94)(itda,091028,scma).hex
PXM3001 rev.14 (input DSP MPS, ck=9AFB)(itda,290709,scma).hex
PXM3001-rev.01 (input DSP MPS, ck=B25B)(itda,100209,scma).hex