

XDPL8221 errata sheet

XDPTM Digital Power

About this document

Scope and purpose

This errata sheet lists the known issues of [XDPL8221](#) digital PFC + flyback controller IC with the firmware version 1.0.0.

Intended audience

This errata sheet is intended for engineers who design power supplies for different loads using the [XDPL8221](#) controller.

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1 Known issues

The known issues of the XDPL8221 controller with firmware version 1.0.0 are listed as follows:

1.1 UART communication time-out

XDPL8221 with firmware version 1.0.0 might not answer with ACK (0x00) to a UART command independent of the operation code. The communication recovers after repeated attempts. This might cause time-out at master on the communication line (e.g. the micro-controller).

Reason

The reason is the noise on the UART communication line caused by the SMPS (Switching Mode Power Supply).

Occurrence

This happens occasionally.

Workaround

The master on the communication line (e.g. the micro-controller) should monitor the time-out event all the time during operation, so that if any sent command is not acknowledged by XDPL8221, the next attempt should be initialized with a SYNC command at the beginning.

1.2 UART communication stop

XDPL8221 with firmware version 1.0.0 will not answer with ACK (0x00) to a UART command independent of the operation code. The communication fails and does not recover. It can be re-established through a new V_{CC} power cycle (XDPL8221 V_{CC} voltage must first be discharged under off-threshold and then charged to exceed on-threshold).

Reason

XDPL8221 changes its originally fixed (slave) baud rate 57.600 baud beyond +/- 6.25% (allowed tolerance range) by mistake due to the occasional mistracking of UART (master) baudrate. This wrong UART transmission speed of XDPL8221 leads to communication stop.

Occurrence

This happens seldom.

Workaround

To avoid XDPL8221 mistracking of UART (master) baudrate, a recommended additional idle time of 100us must be inserted between the first and the second byte of a multi-byte command sent by UART master as illustrated in the **Figure 1** below.

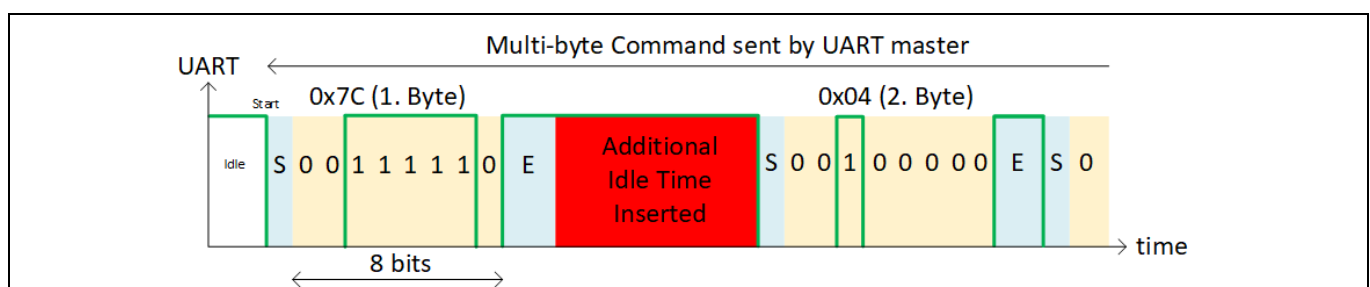


Figure 1 Required Additional Idle Time after the First Byte

1.3 Adaptive Temperature Protection

The adaptive temperature protection in XDPL8221 with firmware version 1.0.0 will not work as described in the datasheet. Once the adaptive temperature protection is activated, XDPL8221 reduces the output current according to temperature with a fixed time (328 ms) to the minimum current, without using the programmed time steps.

Reason

The programmed time steps given in the CSV file as parameter is not used in the firmware version 1.0.0.

Occurrence

This happens always.

Workaround

There is no workaround for this issue.

1.4 Flyback CCM Protection

The flyback CCM protection works normally as long as the parameter “EN_FB_CCM” is set to “enabled”. Once this parameter is set to “disabled”, the flyback switching frequency could get stuck at minimum value as the output load reduces to minimum. After the output load increases, the switching frequency stays at minimum value.

Reason

XDPL8221 does not support CCM operation.

Occurrence

This happens always.

Workaround

As XDPL8221 is not able to operate in CCM, the parameter “EN_FB_CCM” should be always set to “enabled”.

1.5 Incorrect CSV file Compatibility

XDPL8220 CSV file can be used in .dpVision to parameterize XDPL8221.

Reason

XDPL8221 only checks the firmware version but does not have CSV file compatibility check.

Occurrence

This happens always.

Workaround

To parameterize XDPL8221, only XDPL8221 CSV file should be used. Do not use XDPL8220 CSV file.

Revision history

Document version	Date of release	Description of changes
1.3	22.05.2020	Known issues 1.3, 1.4, 1.5 added and update for all known issues, including the reason and workaround for known issue 1.2 added.
1.0	12.02.2019	First release

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