

Device affected	Package Codes
ISP4520EU	Change from Hardware Revision D to Hardware Revision E
ISP4520US	Change from Hardware Revision A to Hardware Revision B
ISP4520AS	Change from Hardware Revision A to Hardware Revision B

Date (YYYY-MM-DD)	PAN number	Document version:
2020-10-19	ISP4520_PCN	1.0

### Change log

Version	Change #
ISP4520EU	Product Change from Revision D to Revision E
ISP4520US	Product Change from Revision A to Revision B
ISP4520AS	Product Change from Revision A to Revision B

In order to improve LoRa performance when using High Spreading Factors (SF>=10) the source for the 32 MHz clock has been changed. The Initial engineering versions (D for EU and A for US and AS) use a 32 MHz crystal and the oscillator circuit in the SX1261/2. The production versions (E for EU and B for US and AS) use a more accurate TCXO to ensure better stability during long Tx bursts. The difference between engineering and production versions is indicated in the data sheets "isp\_lora\_DS4520\_R5.pdf" , "isp\_lora\_DS4520\_R6.pdf" respectively.

Both data sheets are available on Insight SiP website.

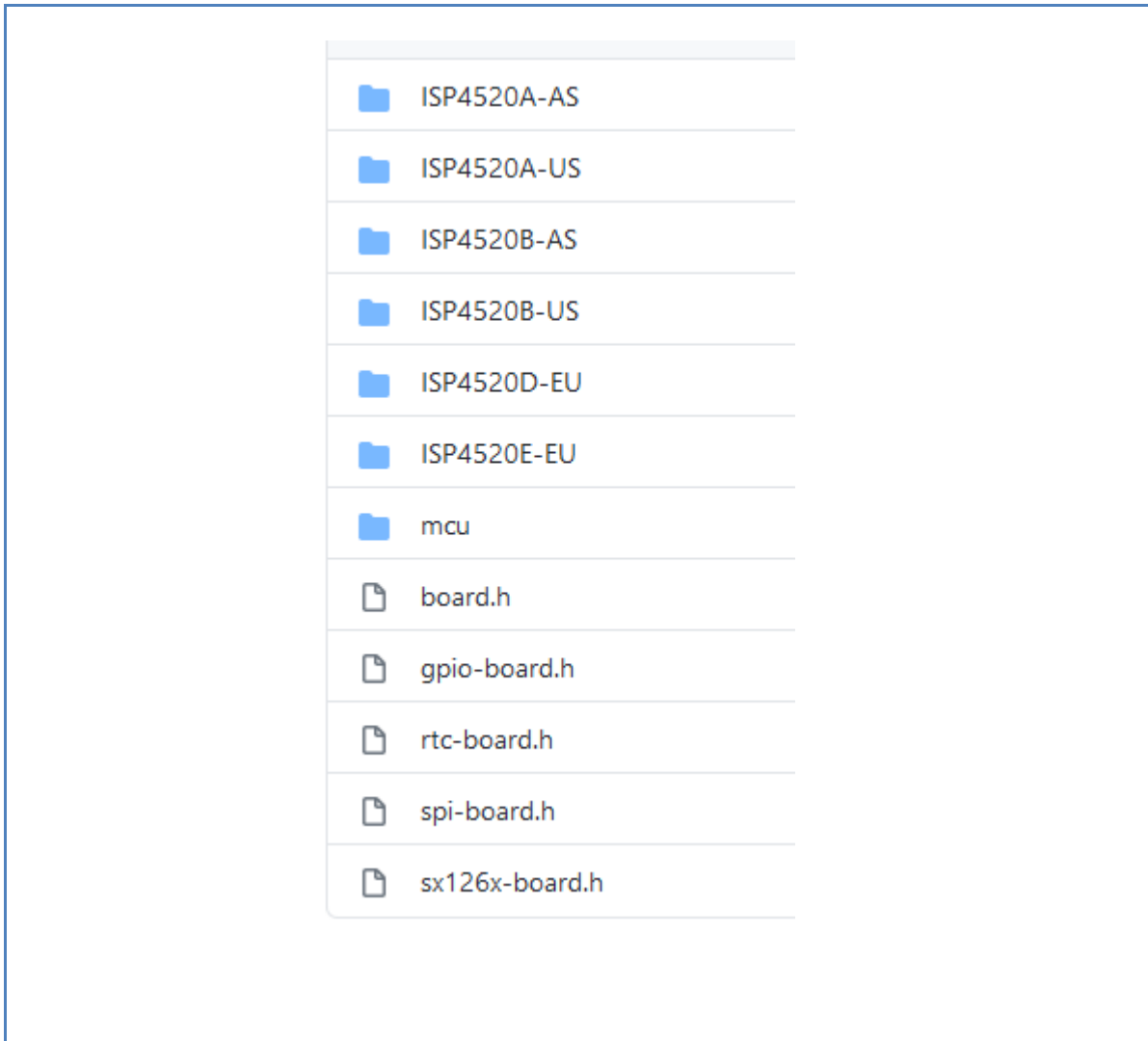
The above differences between engineering and production versions of the module require some minor modifications to the firmware.

Insight SiP supplies source code examples as a starting point for development of LoRa and LoRa WAN solutions. These can be found on Insight SiP's Github : <https://github.com/insightsip/ISP4520-examples>

For each version of the module (EU, US, AS) and each revision (D/E and A/B) there are specific branches of the code that modify the hardware drivers to accommodate the differing hardware operations.

In particular the hardware drivers are located on the following page of the github: <https://github.com/insightsip/ISP4520-examples/tree/master/src/lora/boards>:

The screen shot on the next page shows the different options that are available.



When updating from the engineering module version to the certified production version the firmware code must be adjusted using the github examples as a guide.

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