

Flashing instruction and software
installation procedure for the
Transmitter (Tx) and Receiver (Rx)
boards in the 760308EMP 200W
development kit.

Contents

1. Scope	3
i) Introduction	3
ii) Hardware and Software Requirements	3
2. Flashing instruction for the 760308EMP 200W development kit	5
i) Installation of J-link Driver	5
ii) To import 760308EMP software to DAVE IDE	7
iii) To flash the Tx and Rx board	9
3. 760308EMPLCD Board Flashing Procedure	12
i) Procedure to set up the LCD board with the 760308EMP 200W development kit	12
ii) Connection Procedure to configure the LCD display	13
4. Important links	15

1. Scope

i) Introduction

- The scope of this document is to provide a detailed procedure for software installation and flashing the hardware, namely the Transmitter (Tx) and the Receiver (Rx) boards of the 760308EMP kit.
- The 760308EMP 200W development kit is no longer available to order from the Würth Electronic (WE) online website. However, the schematics, layout, Gerber files, and other supporting material is available for the customer to freely download from the website or to build up the design. ([Development Kit Wireless Power 200 W Downloads](#))
- The target audience for this document scope are:
 1. Customers who have purchased the 760308EMP kit and want to customize or develop the software further and
 2. Customers who want to or have already built up their designs from available material provided on the WE website.

ii) Hardware and Software Requirements

- 760308EMP 200W development kit (the Tx and Rx boards are delivered with pre-flashed and ready to use software) or equivalent Tx and Rx boards. For equivalent Tx and Rx follow the flashing instruction mentioned in this document.
- Before proceeding with the flashing instructions explained in this document, please check if the boards in the 760308EMP 200W development kit are the latest version of 2021, as shown below in [Figure 1](#). If not, contact at wirelesspower@we-online.de

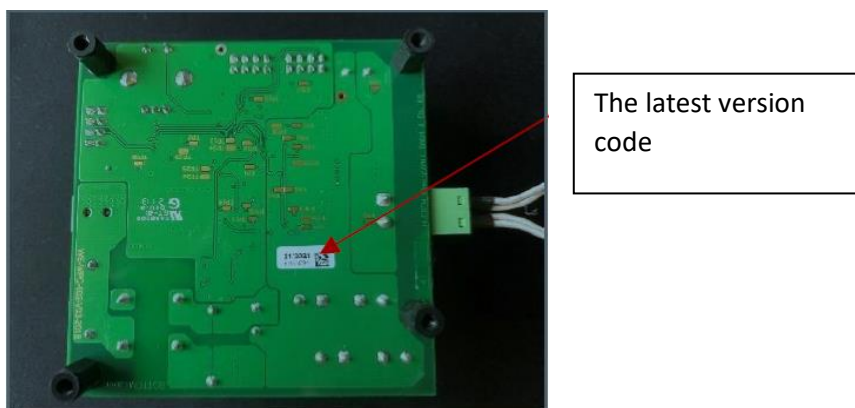


Figure 1: The bottom side the Tx board showing the current version code

- To make changes to the software, a debugger and compatible cables are necessary (not part of the 760308EMP 200W development kit). The XMC link debugger with flat ribbon cable is recommended or any other compatible debugger.

[\(KITXMCLINKSEGGERV1TOBO1 Infineon Technologies\)](#)

- For the recommended XMC link debugger USB A to micro USB cable is needed.
- PC with power supply.
- Optionally, LCD display board (760308EMPLCD) to use with the 760308EMP 200W development kit (not part of the kit 760308EMP) can be used to display various measurement parameters. It is available to buy on the WE website. [LCD Board for Wireless Power Transfer 200 W development kit](#)

2. Flashing instruction for the 760308EMP 200W development kit

Aim: To flash the Receiver (Rx) and Transmitter (Tx) board of the 200W development kit (760308EMP).

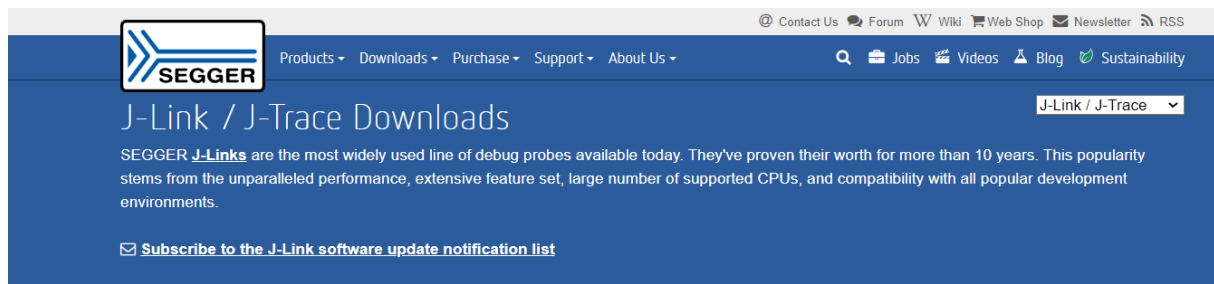
Measurement Equipment: 760308EMP 200W development kit or equivalent Tx and Rx boards, XMC link debugger, flat ribbon cable, USB-A to micro USB cable and 64-bit PC with power supply.

Procedure: Before starting the flashing procedure, the J-link software and the Dave software have to be installed. The instructions for this is explained below.


- The J-link software is a driver software required to flash the Tx and Rx boards.
- The Dave software is an Integrated Development Environment (IDE), where you can edit the software code and make further changes to the code as required.
- The following software flashing instruction is only necessary if the user wants to make some changes to the pre-flashed TX and Rx software of the 760308EMP 200W development kit. For example changing the frequency, step size etc.
- The flashing instruction is also needed for users using equivalent Tx and Rx boards, or boards built up using the design documentation provided for the 760308EMP 200W development kit. This is because the boards are not pre-flashed in this case and they have to be flashed before use.

i) Installation of J-link Driver

- Download and Install the software of J-link Driver from [J-link driver software download](#) as shown below in [Figure 2](#).
- For further information and assistance, please refer to the user manual provided by Infineon at [KIT_XMC_LINK_SEGGER_V1 - Infineon Technologies](#).



[Login](#) | [Register](#)

 Our downloads are protected and signed with [SEGGER emSecure!](#) [More information](#) about signed downloads, how signatures are created and how easy downloaded files can be verified.

J-Link Software and Documentation Pack		Version	Download
J-Link Software and Documentation pack <ul style="list-style-type: none"> All-in-one debugging solution Can be downloaded and used free of charge by any owner of a SEGGER J-Link, J-Trace or Flasher model. Not all features of it may be available on all J-Link / J-Trace / Flasher models. Updated frequently Release Notes More information 	V7.88j	64-bit Installer 32-bit Installer	
	[2023-06-28]	Windows ARM 64-bit Installer	
		Linux 64-bit DEB Installer 32-bit DEB Installer 64-bit RPM Installer 32-bit RPM Installer 64-bit TGZ Archive 32-bit TGZ Archive	
		Linux ARM 64-bit DEB Installer 32-bit DEB Installer 64-bit TGZ Archive 32-bit TGZ Archive	
		macOS 64-bit Installer 64-bit Apple Silicon Installer	

Figure 2: Screenshot of software download page from J-link showing the latest version


- Download and Install Dave software from Infineon website on the PC. Use the link [Infineon Products and Tools - Infineon Developer Center](#) to download the software. Refer [Figure 3](#) below.
- For detailed installation procedure of the software please refer to the [Infineon Developer Community](#)

<https://softwaretools.infineon.com/tools/com.ifx.tb.tool.daveide>

Due to planned maintenance, the system will face short interruptions on Tuesday, June 19

Infineon Developer Center Technical Support | myInfineon | Cart

My Space Tools Software

 **DAVE™ IDE**

DAVE™ and complementary tools supporting the entire development process from evaluation-to-production (E2P). Experience DAVE™ IDE, XMC™ Lib (Low Level Driver), DAVE™ APPs and examples and reuse in one of the major ARM® compiler/IDEs.

[XMC](#) | [IDE](#) | [XMC1000](#) | [XMC4000](#) | [Development Tools](#) | [Software Development \(SDK\)](#) | [Compilers](#) | [Debugger/Test & Verification Tools](#) | [Programming & Testing](#)
[SW Automation/Autocoding](#) | [Embedded Software](#) | [Code Example](#) | [Middleware \(Device Drivers & Libraries\)](#) | [Firmware \(Hardware Abstraction Layer\)](#)

Select your operating system

All Systems

▼ Version: 4.5.0.202105191637

Windows (x64) (exe) [Install via Launcher](#) [Download](#)

File size: 1101.25 MB

[Related links](#)

▶ Version: 4.4.2

Figure 3: Screenshot of Infineon webpage to download the Dave software

- Download the latest software for the 760308EMP 200W development kit from Würth Elektronik website using the following link [Development Kit Wireless Power 200 W Software](#) as shown in Figure 4 below. The files should be saved under a folder locally. They are downloaded as a zip file and therefore must be extracted before importing to Dave IDE.

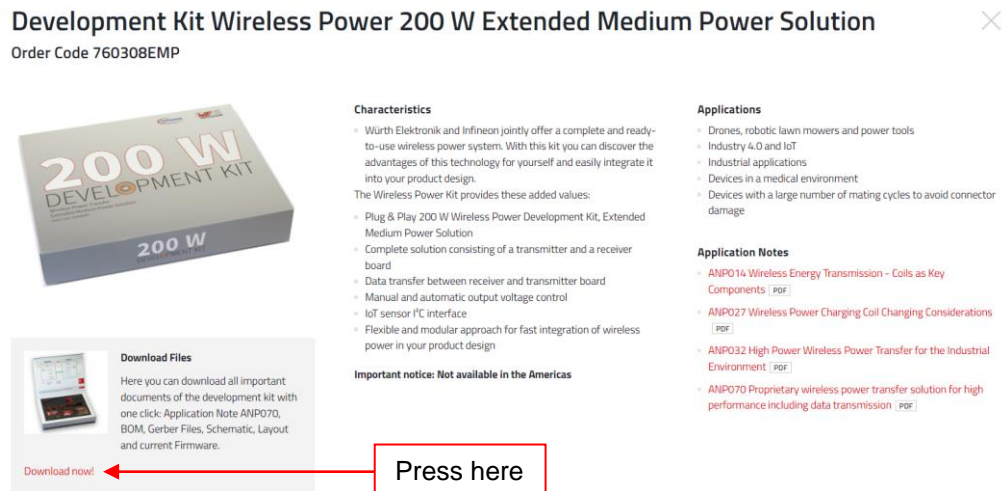


Figure 4: Screenshot showing download options for the 200W kit from Würth Elektronik website.

- Once the J-link driver software, the Dave IDE and the 760308EMP software are downloaded and installed we can start assembling the hardware to start the flashing procedure, as explained in the below sections.

ii) To import 760308EMP software to DAVE IDE

- After installation, start the Dave IDE.
- To import 760308EMP 200W development kit Software into Infineon's Dave IDE, follow the steps from 1 to 7 as shown below in the Figures 5a to Figure 5b.
 1. Select Open Projects from *File*.
 2. Select *Directory*.
 3. Select the whole extracted local folder where the 760308EMP software is saved. Here in the Figure 5a the software folder is named as 200W_ASK_Parameter and then click 'ok'.
 4. Click on *Finish* as shown in Figure 5a.
 5. Right click on the 'Transmitter_200W' on the left side under Projects tab and click on 'Set Active Project'. Ignore the warning message window that pops up as shown in Figure 5b.
 6. Click on 'generate code', which is the icon in the menu bar on top highlighted with a red pen as shown in Figure 5b.

7. Click on 'Rebuild Active Project', which is the blue hammer icon, as shown in Figure 5b.

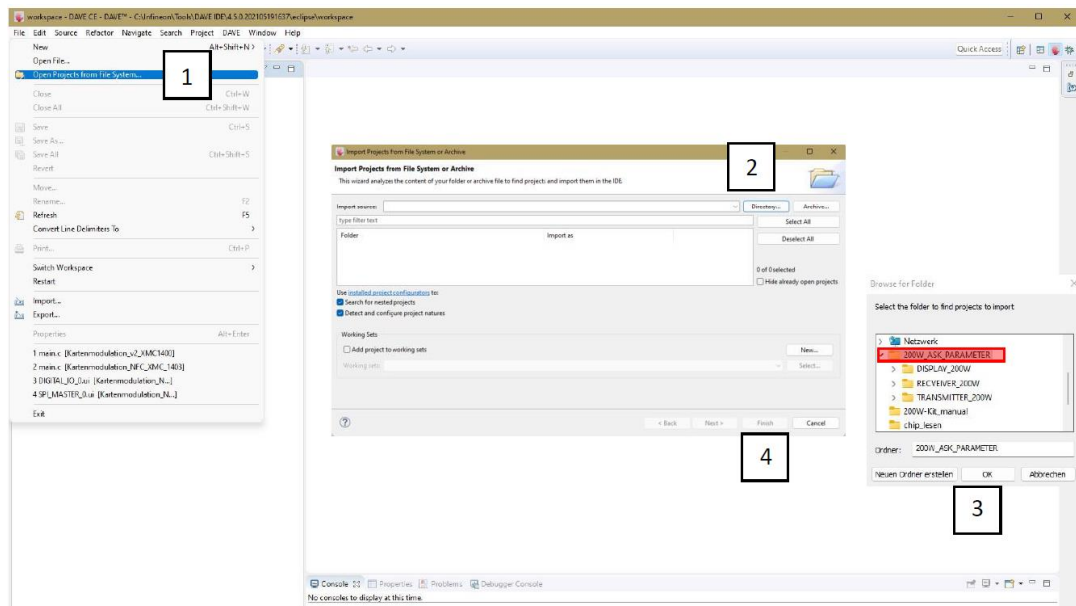


Figure 5a: Screenshots of Dave software IDE

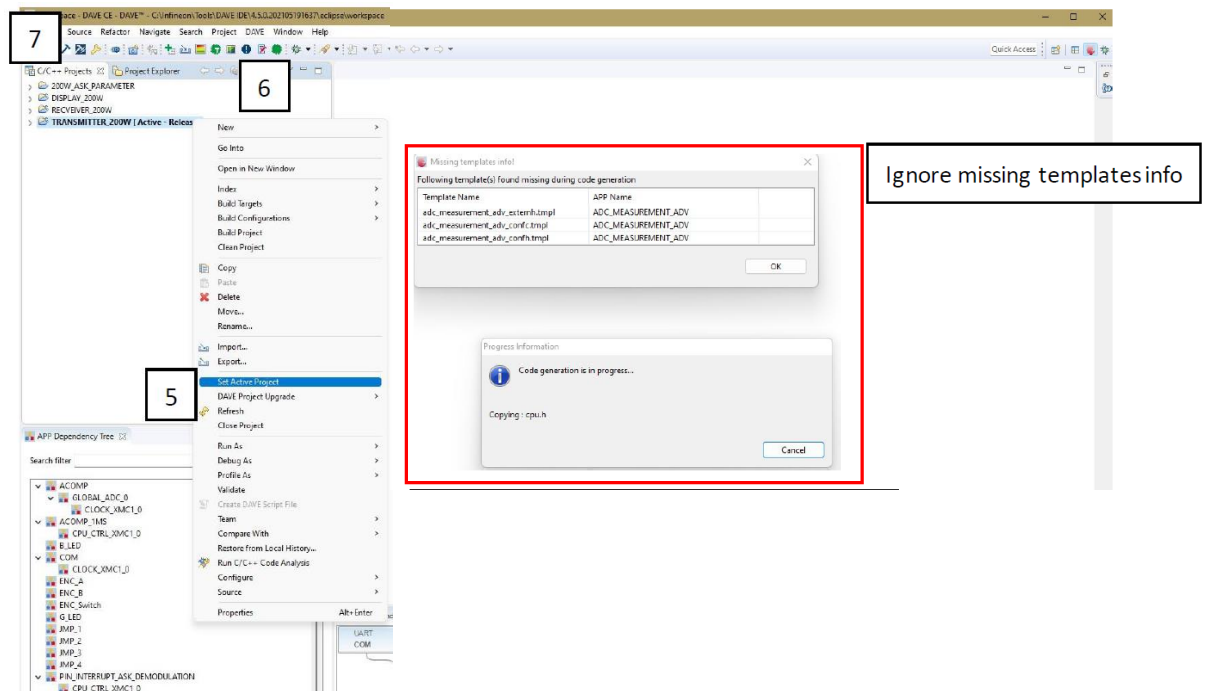


Figure 5b: Screenshots of Dave software IDE

iii) To flash the Tx and Rx board

First we flash the transmitter board and then repeat the same procedure for flashing the receiver board.

- Once the Transmitter_200W software is imported successfully to the DAVE IDE it is ready to be flashed. For this first step, the hardware has to be set up as shown below.
- Connect the transmitter (Tx) board with power supply cable and connect the receiver (Rx) board with load as shown in the [Figure 6](#) below.

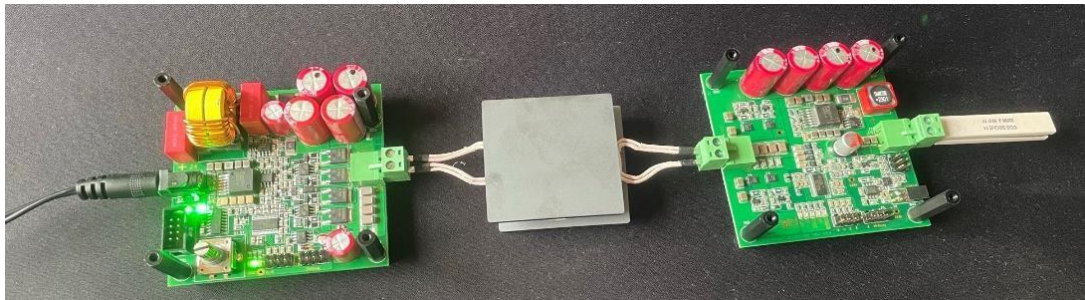


Figure 6: Transmitter (Tx) board and Receiver (Rx) board setup for flashing the software

- Connect the ribbon cable with XMC debugger to the Tx board as shown below in [Figure 7](#).

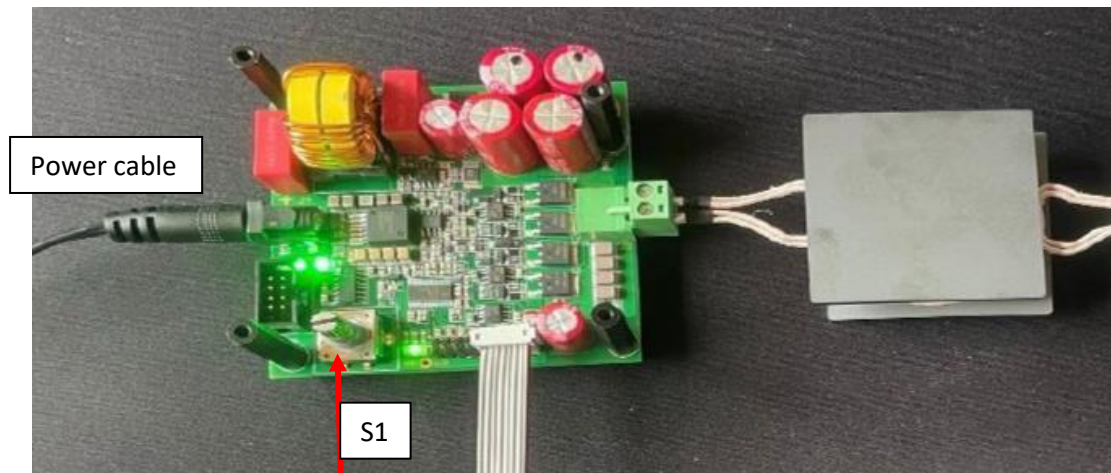


Figure 7: Connect XMC Debugger with flat ribbon cable at the Tx side

Once the hardware connections are done, turn on the power at the Tx end and click the switch S1 to power up the Tx and correspondingly the Rx board.

The Tx flashing procedure are explained in the steps from 1 to 4 below.

1. Click on 'Debug Transmitter_200W', which is the bug icon as shown in [Figure 8](#).
For the first time, choose the right debugger configuration from the drop down menu that opens upon clicking the arrow mark next to the bug icon.
2. Click on 'resume'
3. Click 'Terminate'
4. Exit the debug view by clicking 'Dave CE'

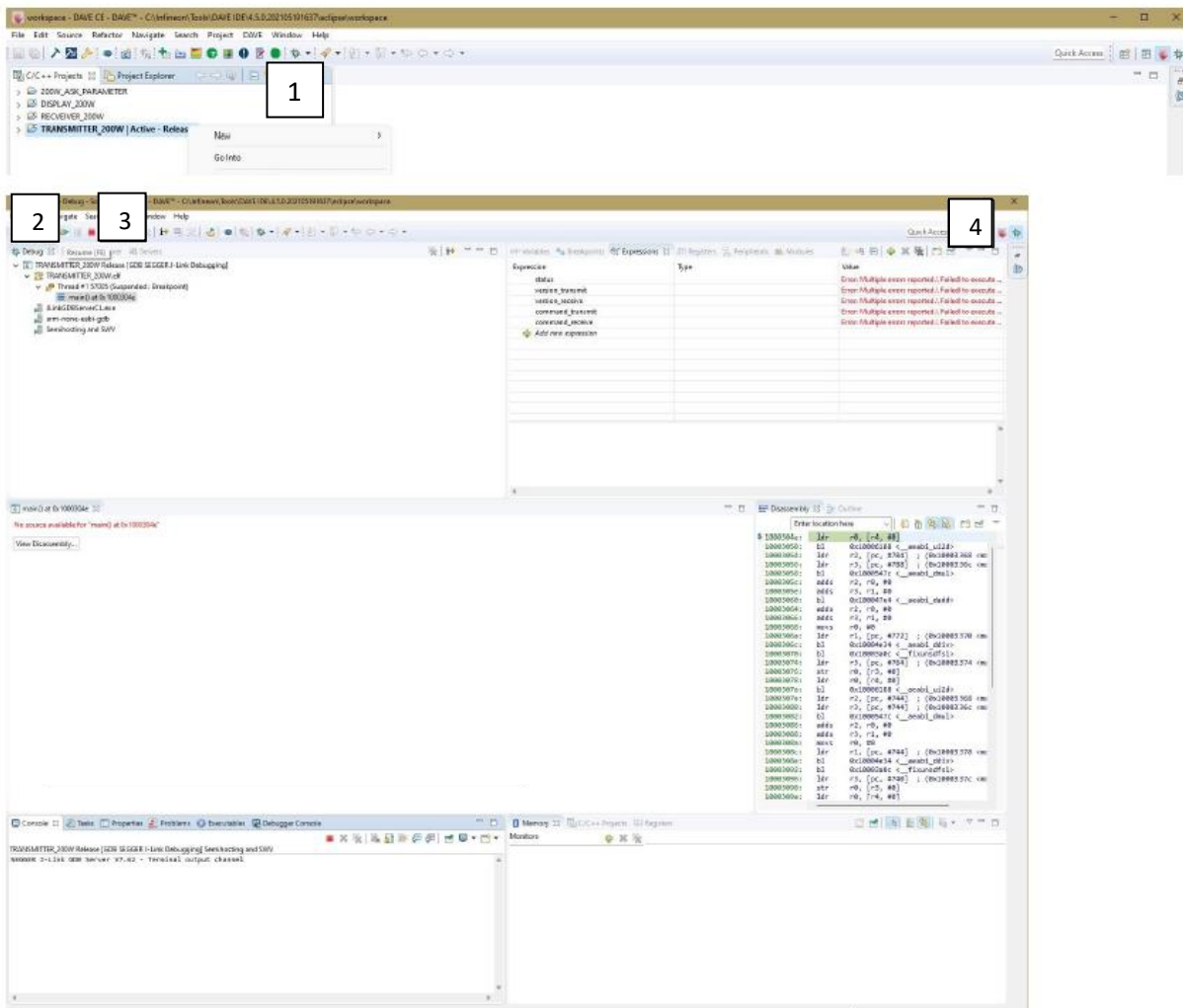


Figure 8: Procedure to flash the Tx board

- Once the Tx software is flashed, the whole system has to be restarted. So press S1 to turn off the boards. Turn off the power. Restart the whole development kit again before flashing the Rx board.

To flash the Rx board software, it has to be first, set as current project on the DAVE IDE. To set this, the steps below have to be followed:

- a) Right click on the '*Receiver_200W*' and click on '*Set Active Project*', as shown in [Figure 5b](#).
 - b) Click on '*generate code*', as shown in [Figure 5b](#).
 - c) Click on '*Rebuild Active Project*', as shown in [Figure 5b](#).
- To flash the Rx board, the same hardware set up as the Tx board must be used. The set-up is as shown below in [Figure 9](#). The XMC debugger with flat ribbon cable must be removed from Tx board and connected to the Rx board, inverted as indicated by the red arrow on the right in the [Figure 9](#) below.

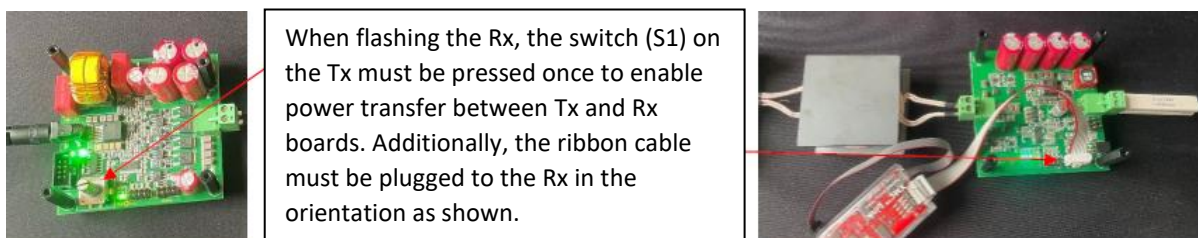


Figure 9: Hardware Set-up before flashing the Rx board.

- Once the hardware is setup, then the Tx board should be powered on by pressing the switch S1, on Tx board as shown in [Figure 9](#). This enables the power transfer between Tx and Rx so that the Rx board will be powered up before it can be flashed with software.

The steps 1 to 4 describe the flashing procedure for the Rx board.

1. Click on '*Debug Reciever_200W*', which is the bug icon. Choose the right debugger configuration from the drop down menu that opens upon clicking the arrow mark next to the bug icon as shown in [Figure 8](#).
 2. Click on '*resume*'.
 3. Click '*Terminate*'.
 4. Exit the debug view by clicking '*Dave CE*'.
- Once the Rx board is flashed, turn off the whole system and restart to use the Tx and Rx boards.

Conclusion: The J-link driver software and Dave software are installed along with the 760308EMP 200W development kit software. The Tx and Rx boards are flashed with the 760308EMP software.

3. 760308EMPLCD Board Flashing Procedure

Aim: To flash the Tx and Rx board with the LCD board software to use it with the 760308EMP.

Measurement equipment: 760308EMP 200W development kit, 760308EMPLCD board with ribbon cable, PC with power supply, XMC debugger or similar, USB-A to micro USB cable.

Procedure: 760308EMPLCD is an optional set up. It can be used to display the measurement parameters of the 760308EMP 200W development kit during measurement such as frequency of operation and efficiency of the system.

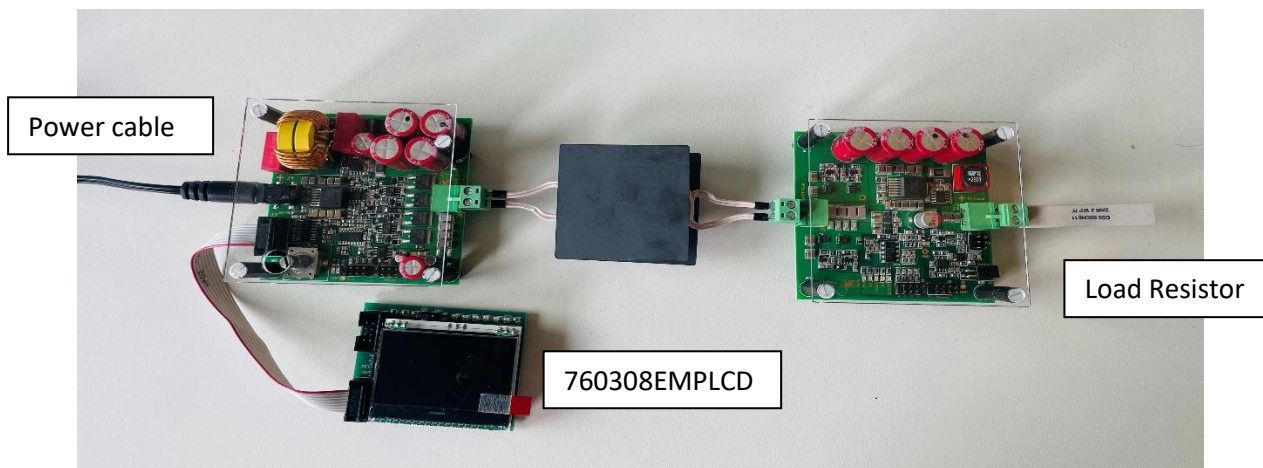


Figure10: Connection diagram of the 760308EMP with the 760308EMPLCD board

i) Procedure to set up the LCD board with the 760308EMP kit

- The working voltage of the board is 3.3V. The 760308EMPLCD board is delivered with a pre-installed software. However, the Tx and Rx board have to be flashed with a different software to use the LCD board with the 760308EMP 200W development kit. This software (200W Receiver_LCD_firmware and 200W Transmitter_LCD_firmware) is already included in the downloadable package for the 760308EMP 200W development kit.

[Development Kit Wireless Power 200 W Software](#)

- To Flash the Tx and Rx board with this software go to [section ii](#) of this document.

ii) Connection Procedure to configure the LCD display

- Set the jumper as shown in Figure 11 below.

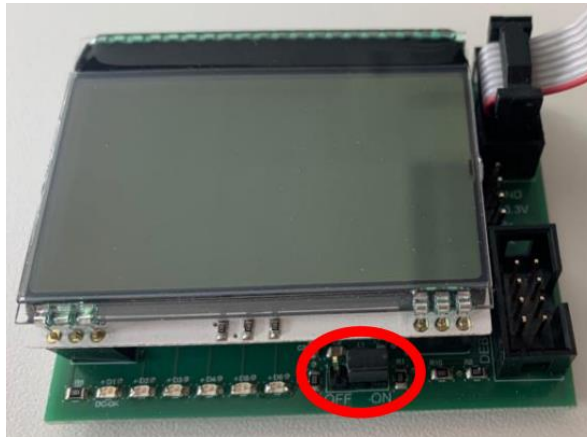


Figure 11: Set the jumper at the position where a red circle

- Connect the cable with the transmitter board as shown below.

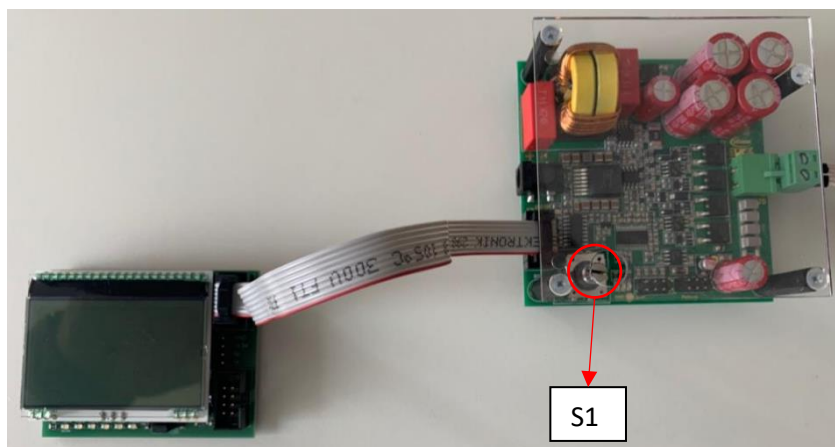


Figure 12: Connect the TX board to the LCD display

- Once the hardware connection is made as shown in [Figure 10](#) then the LCD software has to be flashed to the Tx and Rx board using the DAVE IDE.
- The system has to be powered on before flashing. Refer to [section \(iii\) of Part 1](#).
- This is similar to the procedure used to flash the 760308EMP 200W development kit software. Please refer [section \(ii\) of Part 1](#) in this document to follow the procedure to import the LCD software to DAVE IDE and [section \(iii\) of Part 1](#) to flash the Tx and Rx boards with the LCD display software.
- Once the software is flashed, the system has to be restarted before use.
- Once the software is flashed, turn on the Tx by pressing the switch S1 as marked in [Figure 12](#),
Data is displayed upon turning on the LCD display board after connection as shown in the [Figure 13](#) below.

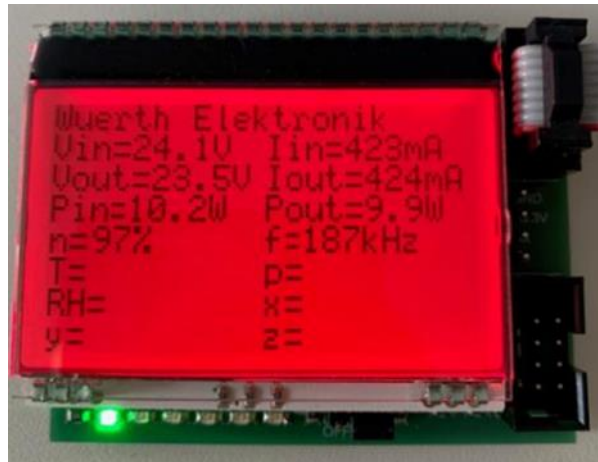


Figure 13: LCD Board display upon Turn on

Conclusion: The 760308EMPLCD add on board is flashed and can be connected with the Tx board as shown in the example above in [Figure 10](#). Upon turn on, it will display the data as shown in [Figure 13](#).

4. Important links

1. 760308EMP (200W kit) software, 760308EMPLCD software, schematic, Gerber files and layout files.
[Development Kit Wireless Power 200 W](#)
2. DAVE IDE software download and documentation on Software Installation correspondingly.
[DAVE™ IDE - Software download](#)
[Dave installation procedure](#)
3. 760308EMPLCD board available from WE website.
[LCD Board for Wireless Power Transfer 200 W Development Kit](#)
4. Link to purchase the recommended XMC Debugger.
[KITXMCLINKSEGGERV1TOBO1 Infineon Technologies](#)
5. To download the J-Link driver software for the XMC Debugger.
[J-Link driver software download link](#)