USRP™ E310 Certificate of Volatility

This document describes all memory types present on the Ettus Research USRP E310 series and how to remove all user data from the device.

Memory Types

This section contains information on the memory components used in the USRP E310 series, including details on the size, type, purpose, location, volatility, and the required sanitization procedure.

The device uses both volatile and non-volatile memory types. The volatile memory in the device does not have battery backup and therefore does not retain any information when power is removed or the device is shutdown. On the other hand, the non-volatile memory requires specific sanitization procedures to clear it of any user data.

The following reference table will provide a breakout of the memory types used on the USRP E310 series which currently includes both the USRP E310 and the USRP E310 OEM.

Memory Type & Model	Memory Size	Volatile	Purpose/Contents	Location	Sanitization Procedure
FPGA – Xilinx XC7Z020-1CLG484C - Level 1 Cache, Instruction - Level 1 Cache, Data per processor - Level 2 Cache - On-chip boot ROM* - On-chip RAM (OCM)	32 KB 32 KB 512 KB n/a 256 KB	Yes Yes Yes No Yes	Configuration and Digital Signal Processing Data. --- *Manufacturer defined, not user accessible.	MB: U011	1
EEPROM - Microchip 24LC025/SN or equivalent	2 Kbits	No	Model, revision, MAC address & serial number. Contains no user data.	MB: U005	2
EEPROM - Microchip 24AA256-I/ST or equivalent	256 Kbits	No	Model, revision & serial number. Contains no user data.	DB: U015	2
AVR - Atmel ATTINY88-MU - In-System Programmable Flash - EEPROM - Internal SRAM	8 KB 64 B 512 B	No No Yes	Module power administration. Contains no user data.	MB: U018	1, 3

DDR3L SDRAM - Micron MT41K256M16HA-125 IT:E - Processor dedicated memory - FPGA dedicated memory	512 MB x 2 512 MB	Yes Yes	FPGA & User application memory	MB: U002, U010, U021	1
MicroSD Card – Apacer 708278A-01 708278B-01	4 GB 8 GB	No	Operating system and user data	n/a	4

(Legend: MB = Motherboard; DB = Daughter board)

Sanitization Procedures

This section contains information on sanitization procedures required to clear all software from the USRP E310 series devices.

Procedure 1

Remove power to clear all volatile memory.

Procedure 2

Although the onboard EEPROM can be cleared, it is not necessary as it does not contain any user data. However if desired, our technical support can provide a script that will clear the contents of the EEPROM making the device inoperable.

Procedure 3

Although the onboard AVR can be cleared, it is not necessary as it does not contain any user data. However if desired, our technical support (support@ettus.com) can provide instructions on how to wipe the microcontroller using an In-System Programmer (ISP).

Procedure 4

Remove the memory card from the slot on the front of the unit.

Recovery Procedure

Please note that an in-system programmer (ISP) will be required to restore the USRP E310 to a functional state after executing procedure 2 & 3.

The source code required by the AVR is available upon request emailing support@ettus.com.

The default compiled FPGA image (.bin file) is available on ettus.com as part of the UHD driver distribution or on any computer where the appropriate version of the UHD driver is installed.

Note: Ettus Research will not be held responsible for reprogramming USRP devices that have been cleared using this procedure.