



MMWAVE Studio Release Notes

1 Introduction

The mmWaveStudio GUI is designed to characterize and evaluate the TI Radar devices. The mmWave device is configured and controlled from the mmWaveStudio by sending commands to the device over SPI. ADC data is captured using DCA1000 EVM or the TSW1400 EVM board and the data is processed in Matlab and the results are displayed in the GUI.

2 Release Overview

2.1 Platform and Device Support

The device and platforms supported with this release are

Supported Devices	Supported EVMs
xWR1243 ES3.0	AWR1243BOOST
xWR1443 ES3.0	AWR1443BOOST IWR1443BOOST
xWR1642 ES2.0	AWR1642BOOST IWR1642BOOST
IWR6843 ES1.0	IWR6843BOOST
xWR1843 ES1.0	AWR1843BOOST IWR1843BOOST

NOTE: Support for Pre-production devices has been removed from this version onwards. Use [MMWAVE_STUDIO_01.00.00.00](#) to work with Pre-production variants (xWR1243 ES2.0, xWR1443 ES2.0, xWR1642 ES1.0)

The capture solution to capture raw ADC data can be either TSW1400 EVM or DCA1000 EVM. If the user is using TSW1400 EVM, then he should use MMWAVE-DEVPACK with the booster pack, else he should use only DCA1000 EVM with the booster pack.

2.2 Release contents and component versions

Component	Version	Device	Type
RadarSS Firmware	1.2.0.1	xWR1642 ES2.0 xWR1243 ES3.0 xWR1443 ES3.0 xWR1843 ES1.0	Binary
	6.0.5	xWR6843 ES1.0	Binary
MSS Firmware	1.2.0.1	xWR1243 ES3.0 xWR1443 ES3.0 xWR1642 ES2.0 xWR1843 ES1.0	Binary
	6.0.5	xWR6843 ES1.0	Binary
FTDI Driver	2.12	NA	Binary
mmWaveStudio	2.0.0.2	NA	Executable
Documents	Release Notes	NA	PDF
	mmWaveStudio user guide		PDF
	DCA1000 Quick start Guide		PDF

2.3 Directory Structure

Directory Name	Content
docs	mmwave_studio_release_notes.pdf mmwave_studio_user_guide.pdf DCA1000_Quick_Start_Guide.pdf
ftdi	FTDI Driver
mmWaveStudio	mmWaveStudio GUI TSW1400 firmware files DCA1000 FPGA file Lua scripts JSON Sample files
rf_eval_firmware	RF evaluation firmware

2.4 Tools and dependencies

Below tools are required to run mmWaveStudio

Tools	Version	Download Link
HSDC Pro Software (if capture solution is TSW1400)	4.2 or later	download link
Matlab Runtime Engine	8.5.1 only	download link
FTDI Driver	2.12	Included in the package

2.5 Licensing

Please refer to the mmwave_studio_manifest.html, which outlines the licensing information for mmWave Studio package.

3 Release Contents

3.1 Features and enhancements

- Added JSON based Import/Export Feature
- Support for xwr1843 device variant
- Support for iwr6843 device variant

3.2 Changes in this release

Item type	Key	Description
FEATURE	MMWSTUDIO-57	Added support to select device variant and frequency band selection via LUA APIs. Please refer to the following APIs in mmWaveStudio ar1.frequencyBandSelection ar1.deviceVariantSelection
BUG	MMWSTUDIO-59	Fixed the issue related to run time calibration and trigger Lua API when issued without enabling the calibration report.
BUG	MMWSTUDIO-56	Fixed the incorrect display of MSS patch version in GUI.
FEATURE	MMWSTUDIO-60	Added support to read and inject phase shifter calibration data via GUI and LUA.
BUG	MMWSTUDIO-61	Fix the issue related to frame trigger in case of hardware trigger

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		mode.
BUG	MMWSTUDIO-62	Fixed the phase shifter maximum value to 63 instead of 100
BUG	MMWSTUDIO-63	Fixed the automatic selection of device variant in the GUI based on the efuse definition
FEATURE	MMWSTUDIO-73	Added support for generic PMIC register read and write operations
BUG	MMWSTUDIO-74	Fix for packet sequence enable when configured using Lua (ar1. CaptureCardConfig_StartRecord) would not enable the packet sequence number if it is later enabled through GUI.
BUG	MMWSTUDIO-75	Changed minimum and maximum values of sampling rate to 200 and 50000 ksp/s respectively in profile configuration and continuous streaming configuration
BUG	MMWSTUDIO-76	Fixed the incorrect configuration when using TX3 channel in Loop Back Burst configuration API
FEATURE	MMWSTUDIO-77	Added feature of detecting device variants by using part number
BUG	MMWSTUDIO-79	Fixed the incorrect reporting of TX1 and TX2 phase shifter monitoring values
FEATURE	MMWSTUDIO-83	Used part number field from efuse to detect the device variant.
BUG	MMWSTUDIO-85	Provided complete configuration to program filter coefficient RAM API in output window for LUA interface and GUI as well
BUG	MMWSTUDIO-90	Added valid data for chirp configuration in chirp manager csv.
BUG	MMWSTUDIO-91	Added chirp start index and chirp end index as fields in chirp manager csv.
FEATURE	MMWSTUDIO-96	Provided selection of file names in calibration store-restore configuration and phase shifter calibration store-restore configuration.
BUG	MMWSTUDIO-103	Fixed the incorrect reporting of BSS patch version in SOP4 mode
BUG	MMWSTUDIO-104	Provided clear steps to connection tab on 60GHz mmWaveStudio
BUG	MMWSTUDIO-105	Chirp manager usage documentation added
BUG	MMWSTUDIO-106	Unified the naming of TX indices across mmWaveStudio GUI.
BUG	MMWSTUDIO-107	All fields from profile configuration were not visible in the profile manager. This issue has been fixed.
BUG	MMWSTUDIO-109	ar1.GetInternalRfCfg LUA API always returns 32-bit data even if user requested any bit fields. This issue has been fixed.
FEATURE	MMWSTUDIO-113	PMIC clock out, MCU clock out, MSS test pattern and CQ configuration in data path are disabled for both in xWR6843 and xWR1843 as the test application does not support these APIs.
FEATURE	MMWSTUDIO-116	Added the Start frequency and frequency slope computation in Loopback Burst Configuration as done in profile configuration for both 60GHz and 77GHz Radar devices
FEATURE	MMWSTUDIO-117	Enable per chirp phase shifter in Radar Miscellaneous Control configuration API for XWR12, XWR18, xWR6843 devices.
BUG	MMWSTUDIO-173	Cannot trigger frames for the second time without doing DCA ARM

BUG	MMWSTUDIO-171	SPI disconnect should happen when pressing the BoardControl-> Reset button
FEATURE	MMWSTUDIO-169	Sample JSON files for supported variants
FEATURE	MMWSTUDIO-168	Dynamic Chirp Tab Updated as per latest ICD
FEATURE	MMWSTUDIO-161	chirp row select and program mode parameters added in dynamic chirp configuration
BUG	MMWSTUDIO-157	DCA Configuration window shows erroneous message
BUG	MMWSTUDIO-155	The Device ID is not as per the check boxes(Device select) after running lua scripts for cascade setup
BUG	MMWSTUDIO-153	Cannot capture data using DCA1000 when using LUA script
FEATURE	MMWSTUDIO-139	Cal mon frequency limit API GUI update for 60G devices
FEATURE	MMWSTUDIO-138	Lua API for configuring the RF DC Card EEPROM added
FEATURE	MMWSTUDIO-136	JSON based Import/Export added
Bug	MMWSTUDIO-130	automation lua script does not work for 60GHz mmwave studio
FEATURE	MMWSTUDIO-125	Enable LUA script path to configure & capture from DCA1000
BUG	MMWSTUDIO-122	RFTemperatureGet API should write values to the log
BUG	MMWSTUDIO-121	If ar1.DisableTestSource Lua API is very first time called then it called ar1.EnableTestSource Lua API instead of ar1.DisableTestSource Lua API
FEATURE	MMWSTUDIO-120	Chirp based phase shifter configuration is disable in XWR16xx but it enable in XWR12xx, XWR14xx, xWR6843,and xWR1843 devices
FEATURE	MMWSTUDIO-119	In advance frame configuration, chirps per data packet parameter disable in XWR12xx and XWR14xx devices but it enable in xWR6843, XWR16 and xWR1843 devices
FEATURE	MMWSTUDIO-118	Fix for configuring 8 LVDS lanes in LVDS mode for xWR6843 and xWR1843
BUG	MMWSTUDIO-115	Fix for chirp Manager showing third TX even for AWR1642 devices
BUG	MMWSTUDIO-114	Fix for Firmware version is reported as 0.0.0.0 if SOP4 mode boot is used
BUG	MMWSTUDIO-82	Fix for mmwave user guide document for wrong DCA1000 capture format.
BUG	MMWSTUDIO-54	Fix for mmWave_studio overwriting PostProc/adc_data.bin at startup

3.3 Known issues

Key	Description
MMWSTUDIO-41	At times a crash on mmWave_studio is observed while exercising the below sequence:

	capture data -> MATLAB post processing -> reset DCA1000 -> disconnect. The mmwaveStudio needs a restart post the crash.
MMWSTUDIO-44	Occasional crash seen on mmWave_studio when working with DCA1000 with the Connect->Capture->Disconnect sequence. The mmwaveStudio needs a restart post the crash.