

Quick Start Guide SPRUIK7-May 2018

DCA1000EVM Quick Start Guide



This guide describes how to get started with raw ADC data capture from the xWR mmWave sensor EVMs.

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference, and the user may be required to take adequate measures.

Contents

1	Getting Started	2
	List of Figures	
1	Hardware Connection: DCA1000 With xWR mmWave Sensor EVMs	2
2	Data and Supply Cable Connections	
3	Configure Static IP Address on the PC	3
4	COM Ports	3
5	Capture and Post ADC Data	4
6	Visualization of the Captured Raw ADC Data	5



1 Getting Started

1. Interface the DCA1000 board with the xWR mmWave sensor EVMs, as shown in Figure 1.



Figure 1. Hardware Connection: DCA1000 With xWR mmWave Sensor EVMs

2. Connect the microUSB and Ethernet cables to the PC interface, as shown in Figure 2. The DCA1000 and the xWR EVM are powered with 5-V, 2.5-A supplies.







www.ti.com

3. Select the static IP address in the PC local area network properties, as shown in Figure 3.

etworking Sharing	Internet Protocol Version 4 (TCP/IPv4) Properties
Connect using: Intel(R) Ethemet Connection I218-LM This connection uses the following items: Connection uses the following items: Connection uses the following items: File and Printer Sharing for Microsoft Nets Connection Uses Connection Uses Connection Uses The Connection Uses Connection Uses Connection Uses Connection Uses Connec	General You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. Obtain an IP address automatically IP address: IP address:
Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) Ink-Layer Topology Discovery Mapper I/ Ink-Layer Topology Discovery Responde III Install	Subnet mask: 255 . 255 . 255 . 0 Default gateway:
Description Transmission Control Protocol/Internet Protocol wide area network protocol that provides comm	Alternate DNC convert
across diverse interconnected networks.	Validate settings upon exit Advanced

Figure 3. Configure Static IP Address on the PC

- 4. Download and install the mmWave Studio tool from the following link: http://www.ti.com/tool/MMWAVE-STUDIO. Install the Matlab Runtime Engine from here.
- 5. When the EVMs are powered and connected to the PC, install the FTDI drivers available from the mmWave Studio installer package. For details on the FTDI driver installation, refer to the mmWave Studio User Guide.
- The device manager shows the COM ports, as shown in Figure 4. The RS232 COM port is shown as XDS110 Class Application/User UART.



Figure 4. COM Ports



Getting Started

www.ti.com

- **NOTE:** If the XDS110 ports do not appear in the device manager, install the EMUPACK from http://processors.wiki.ti.com/index.php/XDS_Emulation_Software_Package.
- 7. Issue a board reset and connect the RS232 COM port.
- 8. Select the DataCapturedemo_xWR.lua file from the \mmwaveStudio\Scripts\ folder by clicking on the browse button, then click on the run button.

File View Tools ToolBars Window Help DCA1000 «new»	
▲ RadarAPI	Output
DCBISTMon TuRxGainTemp MSSMon DynamicChirpClg ClockOutClg CalibDateClg	
Connection StateConfig DataConfig TestSource SensorConfig IntChapBlkCBCIg RegOp ContStream BPMConfig AdvFrameConfig RampTimingCalculator LoopBack EstFittePhog CalabConfig Dy Sector	er Utility Startedplease
Institution (1997)	11:12] [RadarAPI]:
Board Control B522 Operations No of Devices Detecte 1	PacketReorderZeroFill("C:\\ti
FTDI Connected	wave_studio_01_00_00_00 WaveStudio\\Scripts\\\\PostPro
SPICenertial State Connected \\ad	c data Raw O.bin", "C:\\ti
Set (1) Baud Rate \$21000 * Device Status: (WR1642/ASIL-B/SOP:2/ES:1	wave_studio_01_00_00_00
Disconnect DDD formation and the address of the add	WaveStudio\\Scripts\\\\PostPr c_data.bin", "C:\\ti
TSW1400 SOP Mode controlled via jumper on EVM BSS Patch firmware ver.	wave studio 01 00 00 00
	WaveStudio\\Scripts\\\\PostPro
GUI Version: 1.0.0.0	tlogfile.txt") 11:13] [RadarAPI]:
	RECORD COMPLETED Async event
	eved(8)
	11:13] [RadarAPI]: CaptureCardConfig StopRecord()
(19:1	11:13) [RadarAPI]: Status:
Passe	
55000	11:13] [RadarAPI]: RD STOP CMD CODE Async event
pri operations recie	eved(6)
	11:17] [RadarAPI]: Packet
	der Utility process completed! 11:10] Reordering required : NO
MSS-FW. C. Emmany mass of Comminant States Comminant States (1911)	11:18) Packet loss : NO
Config File Load	11:18] Number of packets ived : 2879
	11:18] Number of zero filled
	ets : O
(1911) bytas	11:18] Number of zero filled
	11:28] Packet reorder utility
	essing done!!!!
[191]	11:28) Please wait for a few nds for matlab post processing
	.1111
	11:20] [RadarAPI]: StartMatlabFostProc("C:\\ti
	wave studio 01 00 00 00
View.//	WaveStudio\\Scripts\\\\PostPr
	c_data.bin") 11:381
[191]	11:38) ***Script completed
succe	essfully.***
The second s	
Ruat Pause C\th/mmwave_studio_01_00_00_00/mmWaveStudio\Scripts\DataCaptureDemo_VWR/ua	- Drowse Dr
	TEMP INSTRUMENTS

Click **'Run'** after selecting the file

Click 'Browse' and select DataCAptureDemo_xWR.lua





www.ti.com

Data is captured by the captured card for a sample profile and frame, and the captured data is processed and displayed as shown in Figure 6.



Figure 6. Visualization of the Captured Raw ADC Data

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265 Copyright © 2022, Texas Instruments Incorporated