

Technical Support
Knowledge Center Open

Get all waveform data in
U2701A or U2702A

Notices

© Keysight Technologies Incorporated, 2002-2020

1400 Fountaingrove Pkwy., Santa Rosa, CA 95403-1738, United States All rights reserved.

No part of this documentation may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Keysight Technologies, Inc. as governed by United States and international copyright laws.

Restricted Rights Legend

If software is for use in the performance of a U.S. Government prime contract or subcontract, Software is delivered and licensed as "Commercial computer software" as defined in DFAR 252.227-7014 (June 1995), or as a "commercial item" as defined in FAR 2.101(a) or as "Restricted computer software" as defined in FAR 52.227-19 (June 1987) or any equivalent agency regulation or contract clause.

Use, duplication or disclosure of Software is subject to Keysight Technologies' standard commercial license terms, and non-DOD Departments and Agencies of the U.S. Government will receive no greater than Restricted Rights as defined in FAR 52.227-19(c)(1-2) (June 1987). U.S. Government users will receive no greater than Limited Rights as defined in FAR 52.227-14 (June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

Portions of this software are licensed by third parties including open source terms and conditions.

For detail information on third party licenses, see [Notice](#).

Contents

Frequently Asked Questions (FAQs) 4

Summary 4

Question 4

Answer 4

Attachments..... 7

Frequently Asked Questions (FAQs)

Summary

Introduce how to get all waveform data in U2701A or U2702A.

Question

How can user get all waveform data in U2701A or U2702A?

Answer

U2701A has the capability to 32Mpts of waveform data. You can refer to the IVI help file to understand better the readwaveform and readfullwaveform. The main difference is that readwaveform only grab 1250points whereas readfullwaveform is to grab the memory depth depending on your settings with and without interleaving.

We have the VEE based example that can show how to do full memory depth acquisition. Please also refer to AMM manual on how to grab full memory if you're interested. However, for AMM, the result is a binary file that needs further conversion. Users may make their own converter or we can supply a conversion program in VEE for illustration. Please refer to attached VEE program for detail information.

Data size in the scope's buffer

Operation Mode	Single Shot Operation	Continuous Operation
1 Channel ON	32M (64M when interleave)	16M (32M when interleave)
2 Channels ON	32M	16M

There are 2 buffers in the U2701/2A USB modular scope. Each buffer can store either 16M of data (Continuous Mode operation) or 32M of data (Single Shot operation).

Under Single Shot operation:

- If both channels are turned ON, buffer 1 will store 32M of data from ch1 and buffer 2 will store 32M of data from ch2.
- If only 1 channel is turned ON, interleave will happen. Buffer 1 will capture all the odd numbers data points (1st, 3rd, 5th, ...), while buffer 2 will capture all the even numbers data points (2nd, 4th, 6th, ...) detected by the ON-ed channel. User need to read both buffers in a zig-zag manner in order to achieve 64M of data.

Under Continuous operation:

- If both channels are turned ON, buffer 1 will store 16M of data from ch1 and buffer 2 will store 16M of data from ch2.
- If only 1 channel is turned ON, interleave will happen and the condition is the same as in Single-channel Single Shot operation.

There are 2 ways to get points

1. Why only 1250 points and not the whole 32/64Mpts? (single channel acquisition

You can refer to the IVI help file to understand better the readwaveform and readfullwaveform. The

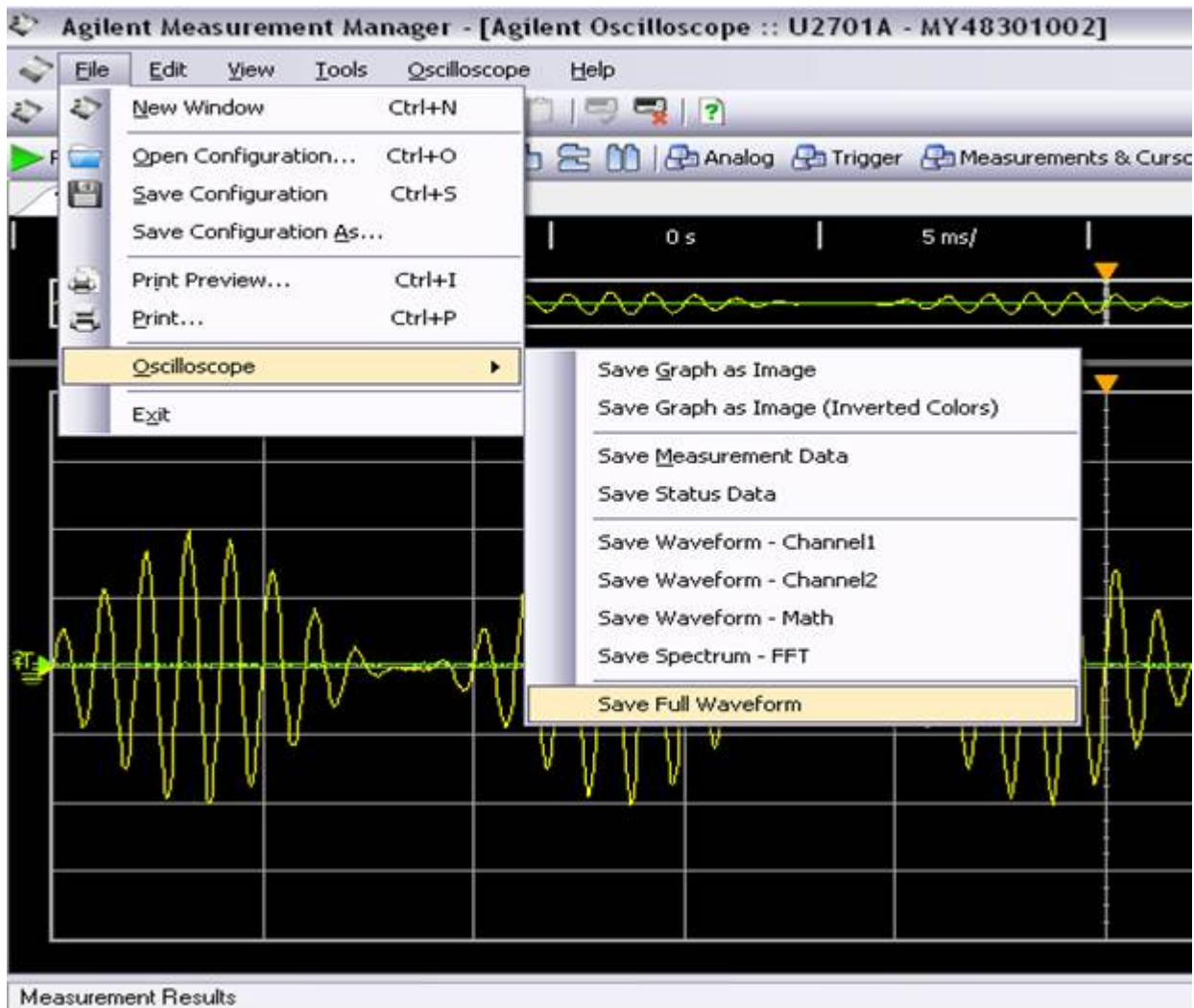
main difference is that readwaveform only grab 1250points whereas readfullwaveform is to grab the memory depth depending on your settings with and without interleaving.

Please keep in mind that the FFT is 1250 points (for 500 ns and above).

For example the 250 Video frame sample, the frame period should be 5 seconds which make up $250 \times 5 = 1250$ (Number of point display)

2. How can we acquire / display (and save) the whole 32Mpts in AMM?

You can use AMM to create the Full waveform 32 MB BIN files.

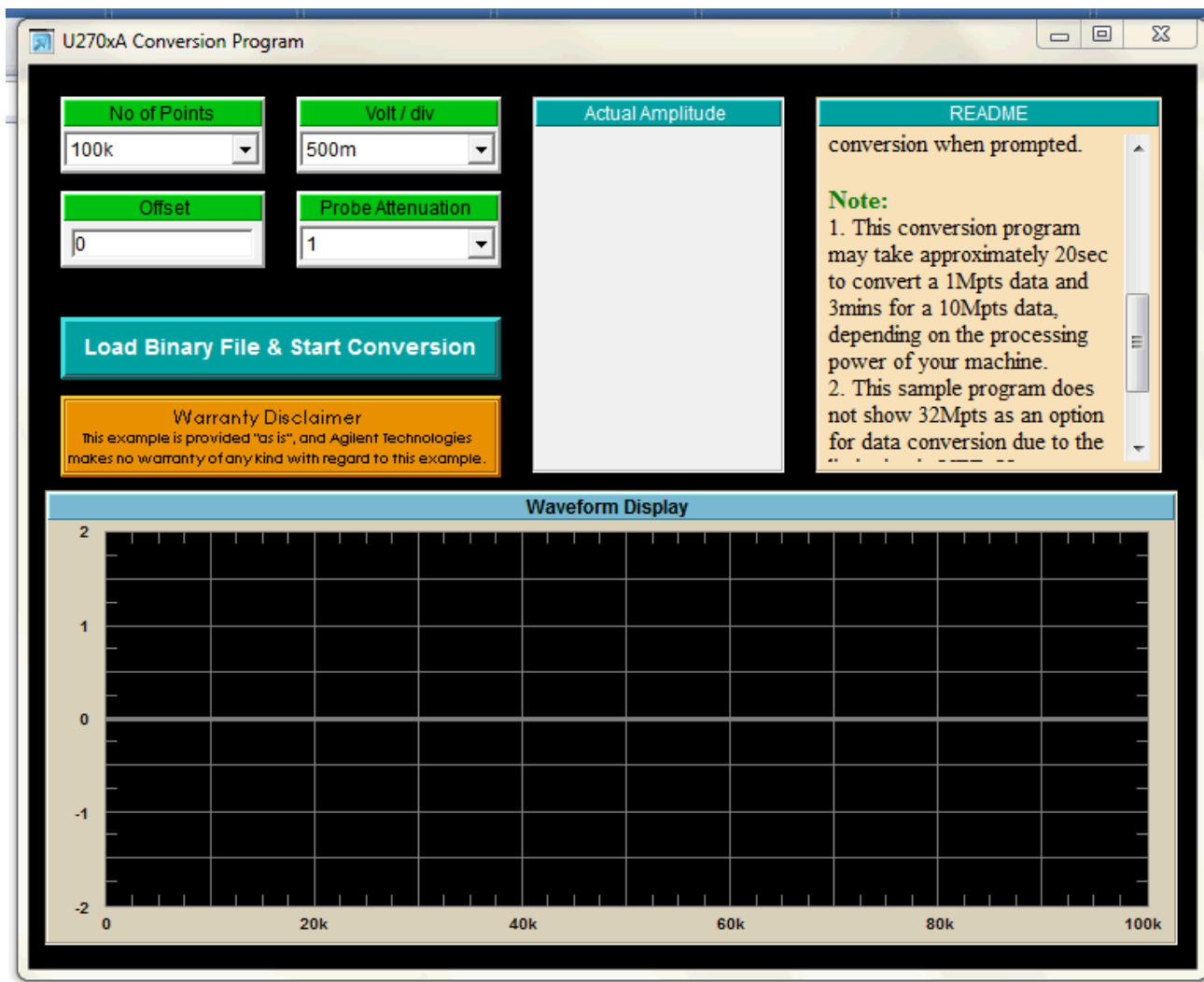


The BIN file is useful when using with VEE converter program as attached. Once we had converted the file by using the VEE, a different data as text file is created. The file name is (binary file name) .bin .txt. You may refer to the bin.txt to use it as the ASCII file. You need to open the bin.txt file with notepad ++ cause the file size is very big (32 million rows). BTW, notepad ++ is a free software and it is available to download.

Note: If open with notepad, an error with occurred.

The picture is U270xA conversion program.

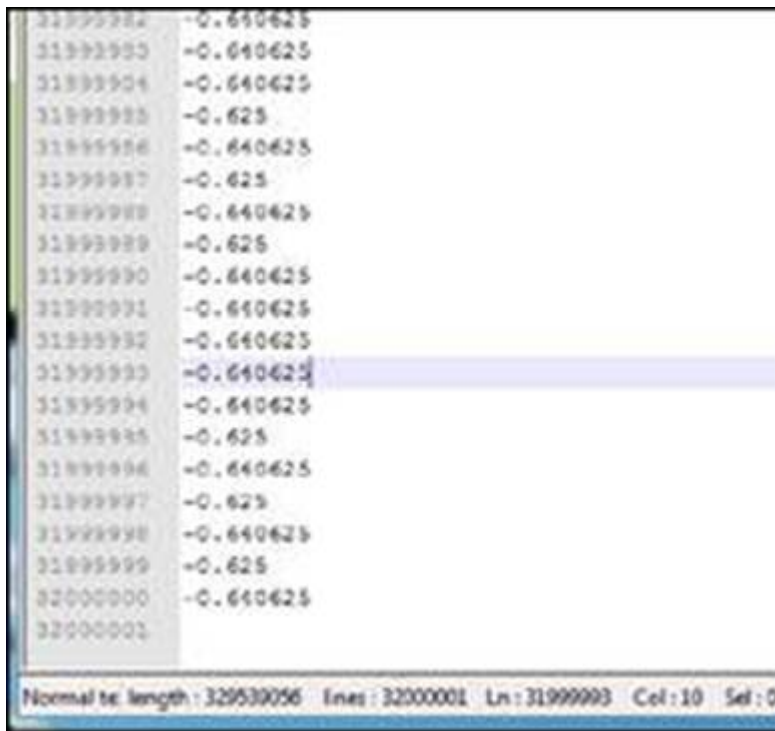
Get all waveform data in U2701A or U2702A



Once we had converted the file by using the VEE, the file name with "Type" (binary file name) .bin .txt will create at the same folder as the binary data *.bin file. See the picture as below.

Name	Date modified	Type	Size
test1.bin	7/15/2014 3:13 PM	BIN File	32,764 KB
test1.bin	7/15/2014 3:14 PM	Text Document	321,816 KB
test1	7/15/2014 3:13 PM	XML Configuration File	1 KB

The text file open by using the notepad ++



31999984	-0.640625
31999985	-0.640625
31999986	-0.640625
31999987	-0.625
31999988	-0.640625
31999989	-0.625
31999990	-0.640625
31999991	-0.640625
31999992	-0.640625
31999993	-0.640625
31999994	-0.640625
31999995	-0.625
31999996	-0.640625
31999997	-0.625
31999998	-0.640625
31999999	-0.625
32000000	-0.640625
32000001	

Normal te: length: 329530056 Lines: 32000001 Ln: 31999993 Cell: 10 Sel: 0

Note: We are not able to convert the BIN file (created by AMM) to CSV format excel file as there is limitation on the csv format. For your information, there is only 1 million rows in csv format. Hence, our bin file which contain about 32 million rows cannot convert into csv format. If we insist to convert, an error will occur. That is one of the reasons why we are not provide data in csv format.

Attachments

[U270xA_Readfullwaveform](#)

[U270xA_Convesion_Program32M](#)

