N1060A-04

Modification Available Performance Enhancement Service Note

Supersedes:
NONE

N1060A Precision Waveform Analyzer

Serial Numbers: US00000000-US63030100, MY00000000-MY63030100

A hardware upgrade is available which may improve 12-Edge Output Jitter EOJ measurement repeatability for some devices.

Parts Required:

P/N	Description	Qty.
N1076-68043	56G CDR Board, Quarter-Step	1

ADMINISTRATIVE INFORMATION

X Calibration Required	PRODUCT LINE: 8F
[[]] Calibration NOT Required	AUTHOR: MM

ADDITIONAL INFORMATION:
Labor charges should not exceed 0.5 hours labor for repair. Standard charges for calibration apply.

Situation:

When performing repetitive Even-Odd Jitter (EOJ) measurements on some device-under-test (DUTs), it is possible that measurement results may have a bi-modal distribution due to interaction between the DUT signal (baud rate, pattern length) and the clock recovery (CR) circuit inside the N1060A plug-in module.

IEEE 802.3ck defined alternative measurement methods to mitigate this issue (measure EOJ with PRBS9 pattern or a lower CR loop BW). Additionally, Keysight's continuous product improvement (CPI) effort has resulted in a hardware design change to the N1060A clock recovery circuit that has been demonstrated to improve EOJ measurement repeatability for some devices, especially when combined with FlexDCA SW Revision A.07.00, or later.

Beginning with N1060A SN MY63030101, all new N1060A modules will be equipped with the new CR board design. If desired, N1060A units with SN < MY63030101 may be sent to Keysight for upgrade to the new CR board design.

IMPORTANT! BEFORE REQUESTING UPGRADE:

1. Confirm the hardware version of the unit
2. Evaluate a new-design N1060A

Note that new-design hardware may have been installed during a previous repair. Therefore, it is recommended to confirm the hardware version of units with SN < MY63030101 (instructions below).

The degree to which the bi-modal distribution is present, if present at all, is highly dependent on the signal under test. Likewise, the degree of improvement which may be obtained from this upgrade is also highly signal dependent. For some devices, it is possible that no improvement will be observed.

Keysight strongly recommends evaluating a new-design N1060A WITH YOUR DEVICE before sending units for upgrade. Contact your Keysight representative to arrange for evaluation.

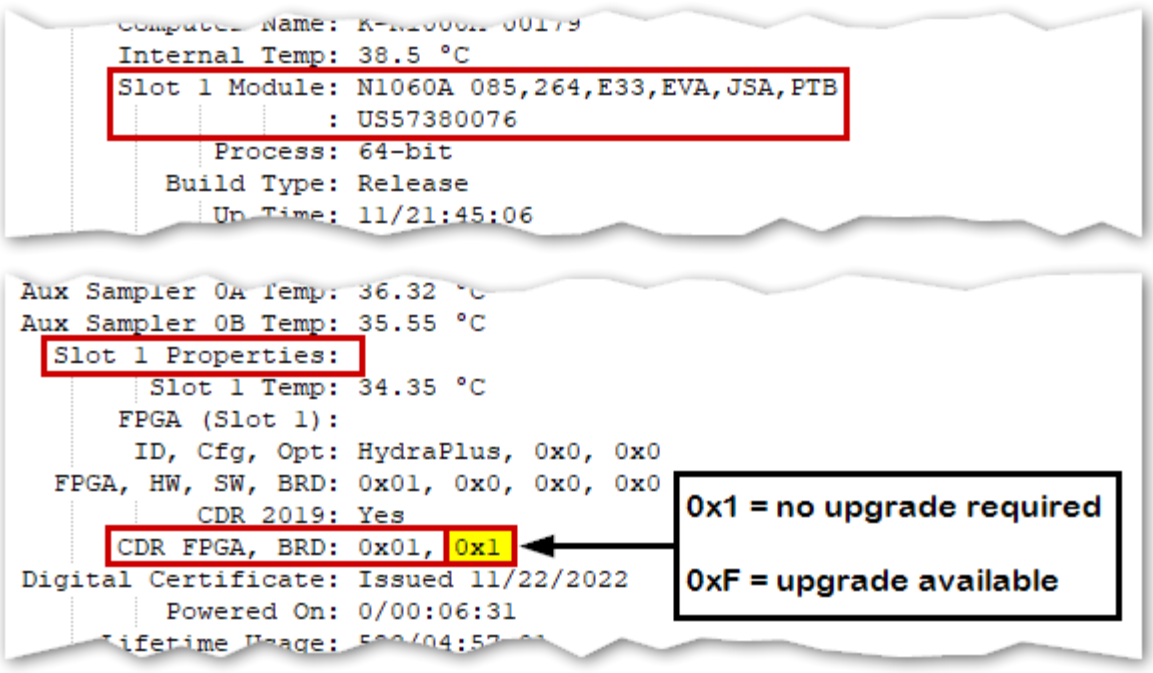
NOTE TO KEYSIGHT REPRESENTATIVE: Contact COE/product support for help identifying a suitable demo unit.

Identifying Board Version:

All N1060A modules shipped with serial number MY63030101 and greater have the new CR design. All units with lower serial numbers were shipped with the old design. However, it is possible that a new-design board may have been installed during repair and it is recommended that you confirm the board version before requesting this upgrade.

To determine if your N1060A has the new-design CR board installed:

1. Use FlexDCA SW Revision 6.71 (or later) and save a Support Info file from the FlexDCA Help > About dialog. This action will place a file called "FlexDcaSupport.zip" onto the desktop.
2. Open the "SystemInfo.txt" file found in the FlexDcaSupport.zip file.
3. Scroll down to the Slot 1 or Slot 2 Properties section (depending on N1060A position) and identify the "CDR FPGA, BRD" line below it:
    - BRD = 0x1 → Unit already has new-design board installed. No upgrade required.
    - BRD = 0xF → Unit has old-design board installed. Unit may be upgraded, if desired.



Solution/Action:

To request an upgrade:

1. Confirm the current hardware version of the N1060A is equipped with the old-design CR board (BRD = 0xF).
2. Evaluate a new-design N1060A (BRD = 0x1) to determine if sufficient improvement is observed with your device.
3. Contact Keysight Technologies to open a Service Order, www.keysight.com/find/contactus. Select 'Request Repair/Calibration'. Reference this Service Note with your request.

NOTE: In some cases, a newer version of FlexDCA may be required after upgrade and a notification dialog will be displayed indicating the minimum version required. To update FlexDCA software, download from www.keysight.com/find/flexdca_download and install. While only the indicated version is required, updating to the latest version is recommended.

NOTE TO KEYSIGHT REPAIR TECHNICIAN: The customer should be charged for this upgrade according to the normal repair process. Labor charges should not exceed 0.5 hours labor for repair. Standard charges for calibration apply.

Revision History:

Date	Service Note Revision	Author	Reason for Change
9 Mar 2023	01	MM	As Published