Information Only Service Note

Supersedes:
N9020A-01A

N9020A MXA Signal Analyzer

Serial Numbers: ALL

Selecting Proper CPU Replacement Part Number

The CPU used in the N9020A MXA has changed since the product was introduced. The current CPU (N9020A-PC6S) looks similar to its predecessors (N9020A-PC2, N9020A-PC4 and N9020A-PC6) but features higher performance. Replacing the CPU with the proper part number will ensure that the analyzer is returned to the end-user with the same performance-level CPU as was installed in the analyzer prior to the repair.

Parts Required:
Refer to Solution / Action Below

ADMINISTRATIVE INFORMATION

[[]] Calibration Required	PRODUCT LINE: 12
X Calibration NOT Required	AUTHOR: BDT

ADDITIONAL INFORMATION:

Situation:

The standard CPU used in the N9020A MXA has changed since the product was introduced. The current standard CPU looks very similar to the earlier CPUs. Replacing the CPU with the proper part number will ensure that the analyzer is returned to the end-user with the same performance-level CPU as was installed in the analyzer prior to the repair.

There are four CPU replacement assemblies available:

- N9020-60031 KIT, CPU BOARD REPLACEMENT W/O HARD DRIVE 2GB RAM
- N9020-60081 KIT, DUO CORE PROCESSOR BOARD REPLACEMENT
- N9020-60135 KIT, OPTION PC4 PROCESSOR BOARD REPLACEMENT
- N9020-60247 KIT, OPTION PC6/PC6S PROCESSOR BOARD REPLACEMENT

Solution/Action:

There are several methods to determine what the currently installed CPU type is depending upon whether the CPU is functional and whether the X-Series Signal Analyzer measurement application is running.

NOTE: The CPU replacement kits listed in this service note should not be used to upgrade from one type of CPU to another. The N9094AK-PS6 Upgrade to Quad Core High Performance Processor is available to upgrade from any earlier CPU to the current high-performance CPU. Refer also to http://www.keysight.com/find/N9020A_upgrades for more information.

Method 1: If CPU is functional, but X-Series SA Measurement Application is not Running

If the CPU is functional to the point that it can display the Windows Desktop, connect a mouse to the analyzer and click Start. Right-click My Computer and select Properties. Look at the text following "Manufactured and Supported by:" Select the appropriate CPU replacement part number based upon the Properties of My Computer as shown in Table 1 below.

Table 1. CPU Identification Based Upon Properties of My Computer

Properties of My Computer	CPU Replacement Part Number
Intel® Pentium ® M processor 1600 MHz	N9020-60031
Intel ® Core ™ Duo CPU T2500 @ 2.00 GHz	N9020-60081
Intel ® Core ™ i7 CPU L 620 @ 2.00 GHz	N9020-60135
Intel ® Core i7 – 3615QE CPU @ 2.30 GHz	N9020-60247

Method 2: If X-Series SA Measurement Application is Running

If the X-Series SA Measurement Application is running, press System, Show, System. Note the Instrument SW Revision. Beginning with revision A.02.00, one of the first two entries in the Options list should identify the type of CPU installed. The CPU option will be N9020A-PC1, N9020A-PC2, N9020A-PC4, N9020A-PC6, or N9020A-PC6S. Select the appropriate CPU replacement part number based upon the CPU Option and the Instrument SW Revision as shown in Table 2 below.

Table 2. CPU Identification Based Upon CPU Option and Instrument SW Revision

CPU Option	Instrument SW Revision	CPU Replacement Part Number
N9020A-PC1 Intel® Pentium ® M processor 1600 MHz	>= A.02.00	N9020-60031
N9020A-PC2 Intel ® Core ™ Duo CPU T2500 @ 2.00 GHz	>= A.02.00	N9020-60081
N9020A-PC4 Intel ® Core ™ i7 CPU L 620 @ 2.00 GHz	>= A.04.21	N9020-60135
N9020A-PC6 Intel ® Core i7 – 3615QE CPU @ 2.30 GHz	>= A.16.05	N9020-60247
N9020A-PC6S Intel ® Core i7 – 3615QE CPU @ 2.30 GHz	>= A.25.08	N9020-60247
None Listed	<= A.01.99	N9020-60031

NOTE: The CPU replacement part number N9020-60247 is the same for both N9020A-PC6 and N9020A-PC6S. The CPU will be the N9020A-PC6S CPU but will identify as a PC6 if the instrument SW revision is <A.25.08. Functionally, the only difference between the PC6 and PC6S is the that the PC6S includes internal cal memory (referred to as Internal Flash in the Alignment Data Wizard).

Method 3: If CPU is Not Functional

If the CPU is not functional, it will be necessary to determine the installed CPU based upon the physical attributes of the CPU assembly itself.

Start with the CPU installed in the MXA. View the CPU from the rear panel of the MXA and note the position of the GPIB connector relative to the USB connectors. If the GPIB connector is to the right of the USB connectors, the installed CPU is the Intel ® Pentium ® M Processor and the CPU replacement part number is N9020-60031.

If the CPU has the GPIB connector to the left of the USB connectors, the installed CPU could be either the Duo-Core or, one of the i7 CPUs. It will be necessary to check the label on the CPU assembly to determine which of these three CPUs it is. In some cases, the CPU part number will appear on a label below the LAN connector on the rear panel. If not, remove the CPU and locate the part number label on the bottom of the CPU assembly nearest the GPIB connector. Select the appropriate CPU replacement part number based upon the CPU part number as shown in Table 3 below.

Table 3. CPU Identification Based Upon CPU Part Number

CPU Part Number	CPU Replacement Part Number
0960-2688	N9020-60031
W1312-60068	N9020-60081
W1312-60190	N9020-60081
W1312-60196	N9020-60135
W1312-60141	N9020-60247
W1312-60214	N9020-60247

Revision History:

Date	Service Note Revision	Author	Reason for Change
4/26/2012	01	Brian Torr	As Published
12/21/2016	01A	Brian Torr	Added references to PC6 and N9020-60247
6/4/2024	01B	Brian Torr	Added reference to PC6S