

N1914A-07A

Modification Available Performance Enhancement Service Note

Supersedes:
N1914A-07

N1914A EPM Series Dual-Channel Power Meter

Serial Numbers: MY00000000-MY53040007/ SG00000000-SG53040007

Enhancement on Noise Measurement

Parts Required:

P/N	Description	Qty.
N1914-66502	Mother Board	1

ADMINISTRATIVE INFORMATION

<input checked="" type="checkbox"/> Calibration Required		PRODUCT LINE: WN
<input type="checkbox"/> Calibration NOT Required	Calibration NOT Required	AUTHOR: LSL

ADDITIONAL INFORMATION:

Situation:

Product with listed serial number has a higher tendency to be above the typical noise specification. Enhancement has been incorporated in to the new design of N1914A improving the noise performance closer to the typical value. This enhancement will provide better stability and slight improvement on the measurement noise performance.

Solution/Action:

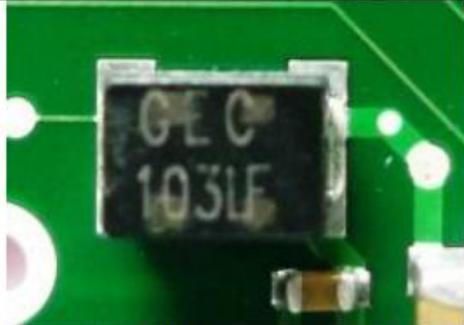
This enhancement requires a new mother board replacement (N1914-66502), refer to Fig. 1 below. Customer can order this enhancement through the nearest Keysight Service Center.

Procedure to verify power sensor measurement noise:

1. Perform sensor zeroing and cal.
 2. Set range to Lower (only applicable to E9300A/B/H, E9301A/B/H and E9304A.)
 3. Without any input source connected to the sensor, continuously take 1000 measurement with averaging set to 1.
 4. Compute 2 sigma (ie. 2*std dev) of the 1000 measurements captured in step 2.
 5. The computed 2 sigmas is then divided by 5.5 (ie. Noise multiplier for normal mode with averaging of 1).
- Final value should be within the measurement noise specification captured in N1913A/4A user manual:

Table 1. Power sensors zero set, zero drift and measurement noise

Model	Zero set	Zero drift ¹	Measurement noise ²
E9300A, E9301A, E9304A ³	±500 pW	<±150 pW	<700 pW
E9300B, E9301B ³	±500 nW	<±150 nW	<700 nW
E9300H, E9301H ³	±5 nW	<±1.5 nW	<7 nW
E4412A, E4413A	±50 pW	<±15 pW	<70 pW
N8481A, N8482A, N8485A, N8487A, N8486AR, N8486AQ	±25 nW	<±3 nW	<80 nW
8483A	±50 nW	<±10 nW	<110 nW
N8481B, N8482B	±50 μW	<±10 μW	<110 μW
8481D, 8485D, 8487D	±20 pW	<±4 pW	<45 pW
N8481H, N8482H	±5 μW	<±1 μW	<10 μW
R8486D, Q8486D	±30 pW	<±6 pW	<65 pW
V8486A, W8486A	±200 nW	<±40 nW	<450 nW

	OLD	NEW
PART NUMBER	9140-1121	9140-1109
IMAGE		
Note	Part's body marking are subjected to change due to different supplier. The inductor value is 100uH.	Part's body marking are subjected to change due to different supplier. The inductor value is 4.7uH.

Revision History:

Date	Service Note Revision	Author	Reason for Change
26 Sept 2016	01	LSL	As Published