N1913A-07

S E R V I C E N O T E

Supersedes:
NONE

N1913A EPM Series Single-Channel Power Meter

Serial Numbers: MY00000000- MY53060004

Enhancement on Noise Measurement

Parts Required:

P/N	Description	Qty.
N1913-66502	Mother Board	1

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **MODIFICATION AVAILABLE**	
ACTION CATEGORY:: AGREEABLE TIME	[X] PERFORMANCE ENHANCEMENT [[]] SERVICE / RELIABILITY ENHANCEMENT
LOCATION CATEGORY: [[]] CUSTOMER INSTALLABLE [[]] ON-SITE **(active on-site contract required)** [X] SERVICE CENTER [[]] CHANNEL PARTNERS	AVAILABILITY: February 28th 2014
[X] Calibration Required [[]] Calibration NOT Required	PRODUCT LINE: WC AUTHOR: CMK
ADDITIONAL INFORMATION: Customer pays for this enhancement.	

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Agilent Technologies

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 N1913A 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 (N1913-66502), refer to Fig. 1 below. Customer can order this enhancement through the nearest Agilent Service Center.

Procedure to verify power sensor measurement noise:

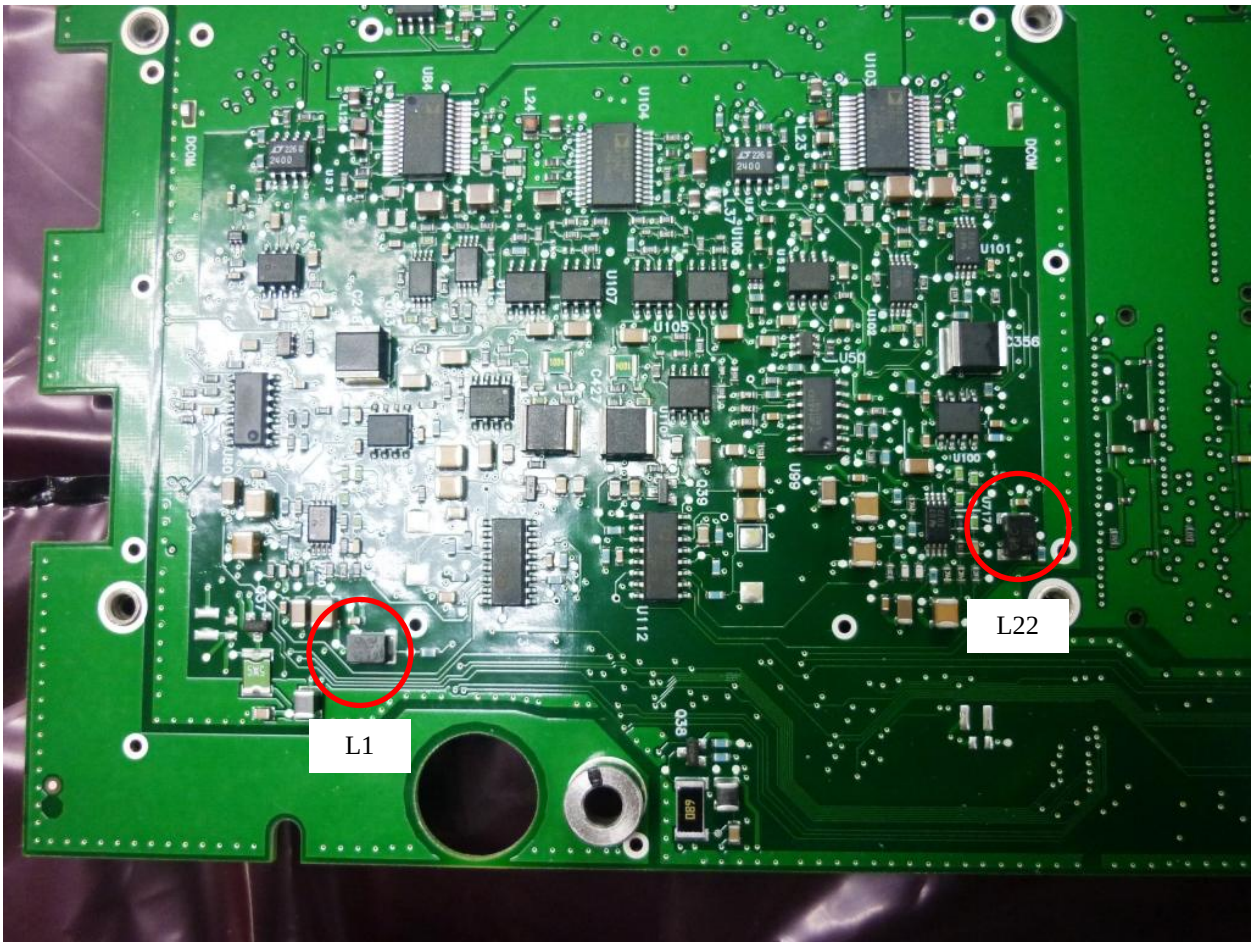
1. Perform sensor zeroing and cal.
2. Set range to Lower (only applicable to E9300A/B/H, E9301A/B?H and E9304A.)
3. Without any input source connected to the sensor, continuously take 1000 measurement with averaging set to 1.
4. Compute 2 sigma (ie. 2*std dev) of the 1000 measurements captured in step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

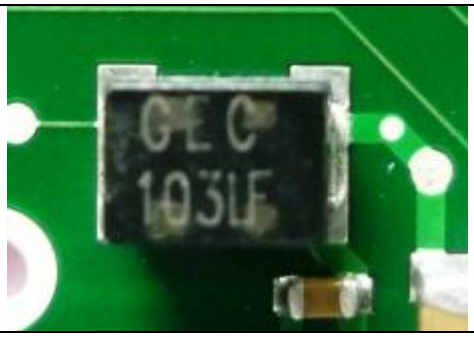
Final value should be within the measurement noise specification captured in N1913A/4A user manual:

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*

Mother board modification :
The new mother board will have two new inductor 9140-1109 to replace old inductor 9140-1121 at location L1 and L22.



	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.