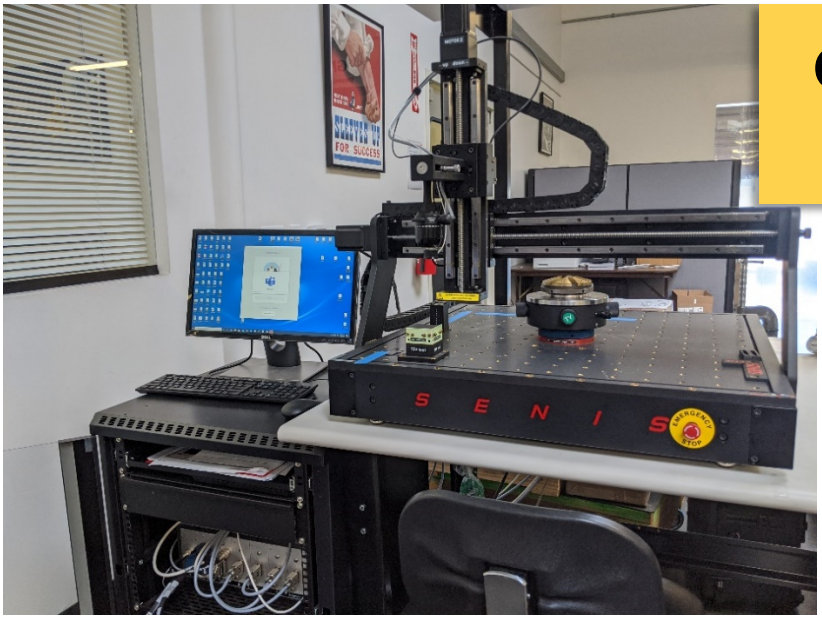
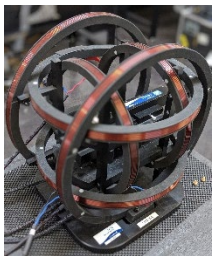
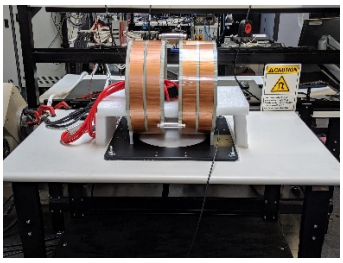
# GMW Magnetic Field Calibration Lab





## OVERVIEW

Your ability to deliver accurate and reliable measurements depends on the stability of your equipment, and your equipment depends on the accuracy and quality of its calibration. With over 25 years of calibration experience, GMW has become a recognized leader in magnetic field calibration. GMW calibrates or brokers calibrations for the following manufactures: Metrolab, Bartington, Group 3 and Senis.

GMW also has the capability to do in-house repairs if required. Beyond calibrations and repairs GMW offers Mapping of samples using a Senis Mapper and in-house and on-site normalization services for the Metrolab 3048 / 9046 probe array.

Delivery is typically 10 business days after receipt and 30 days for probe arrays.

Revised February 16, 2021

## Capabilities

- NIST Traceable Calibration for DC Magnetic Field Calibration up to 3T
- Magnetic Object Mapping
- Magnetic Field Exposure Testing, DC to 50mT
- Magnetic Field manufacturers calibrated by GMW include
  - Metrolab, Bartington, G3 and Senis

## Applications

- Metrology
- Mapping
- Motors and Motor Drives
- Particle Accelerators
- Electromagnets
- MRI Gradient Magnets

RMA Request Form

GMW Associates

www.gmw.com
sales@gmw.com
+1-650-802-8292
955 Industrial Road
San Carlos, California, USA

Sales Order: 30695
Normalization date : 4/23/2020
Enviromental Conditions: 22C / 42%

Probe Array Model Number : MFC3048 3.0T
Probe Array SN : 481574
MFC3045 Camera SN : 450539

Target Averge Value [MHz] : 127.7296007

Before MFC probe Normalization:

| Probe # | NMR f. [MHz] | Probe Deveation +/- 0.2 [ppm] |
|---|---|---|
| 1 | 127.729583 | -0.140 |
| 2 | 127.729621 | 0.158 |
| 3 | 127.729620 | 0.153 |
| 4 | 127.729604 | 0.024 |
| 5 | 127.729621 | 0.158 |
| 6 | 127.729628 | 0.211 |
| 7 | 127.729590 | -0.085 |
| 8 | 127.729610 | 0.072 |
| 9 | 127.729607 | 0.052 |
| 10 | 127.729622 | 0.163 |
| 11 | 127.729607 | 0.048 |
| 12 | 127.729579 | -0.168 |
| 13 | 127.729603 | 0.014 |
| 14 | 127.729605 | 0.034 |
| 15 | 127.729621 | 0.162 |
| 16 | 127.729590 | -0.082 |
| 17 | 127.729622 | 0.168 |
| 18 | 127.729610 | 0.076 |
| 19 | 127.729585 | -0.121 |
| 20 | 127.729595 | -0.044 |
| 21 | 127.729595 | -0.043 |
| 22 | 127.729583 | -0.140 |
| 23 | 127.729594 | -0.053 |
| 24 | 127.729585 | -0.121 |
| 25 | 127.729595 | -0.044 |
| 26 | 127.729600 | -0.005 |
| 27 | 127.729583 | -0.142 |
| 28 | 127.729584 | -0.131 |
| 29 | 127.729598 | -0.024 |
| 30 | 127.729595 | -0.043 |
| 31 | 127.729596 | -0.034 |
| 32 | 127.729592 | -0.072 |

After MFC Probe Normalization:

| Probe # | NMR f. [MHz] | Probe Deveation +/- 0.2 [ppm] |
|---|---|---|
| 1 | 127.7295828 | -0.140 |
| 2 | 127.7296209 | 0.158 |
| 3 | 127.7296203 | 0.153 |
| 4 | 127.7296038 | 0.024 |
| 5 | 127.7296209 | 0.158 |
| 6 | 127.7296020 | 0.010 |
| 7 | 127.7295898 | -0.085 |
| 8 | 127.7296099 | 0.072 |
| 9 | 127.7296074 | 0.052 |
| 10 | 127.7296215 | 0.163 |
| 11 | 127.7296068 | 0.048 |
| 12 | 127.7295792 | -0.168 |
| 13 | 127.7296025 | 0.014 |
| 14 | 127.7296050 | 0.034 |
| 15 | 127.7296214 | 0.162 |
| 16 | 127.7295902 | -0.082 |
| 17 | 127.7296222 | 0.168 |
| 18 | 127.7296104 | 0.076 |
| 19 | 127.7295853 | -0.121 |
| 20 | 127.7295951 | -0.044 |
| 21 | 127.7295952 | -0.043 |
| 22 | 127.7295828 | -0.140 |
| 23 | 127.7295939 | -0.053 |
| 24 | 127.7295853 | -0.121 |
| 25 | 127.7295951 | -0.044 |
| 26 | 127.7296001 | -0.005 |
| 27 | 127.7295826 | -0.142 |
| 28 | 127.7295840 | -0.131 |
| 29 | 127.7295976 | -0.024 |
| 30 | 127.7295952 | -0.043 |
| 31 | 127.7295963 | -0.034 |
| 32 | 127.7295915 | -0.072 |

*Probe deveation is measured by placing each probe successevily into a fixed uniform magnetic field.
Only probes exceedings the deveation tolerance are readjusted and measured.
Probe deveation target is shall not exceed +/- 0.2 PPM.

Figure 1 – Before and After data of 32 points for probe array MFC3048

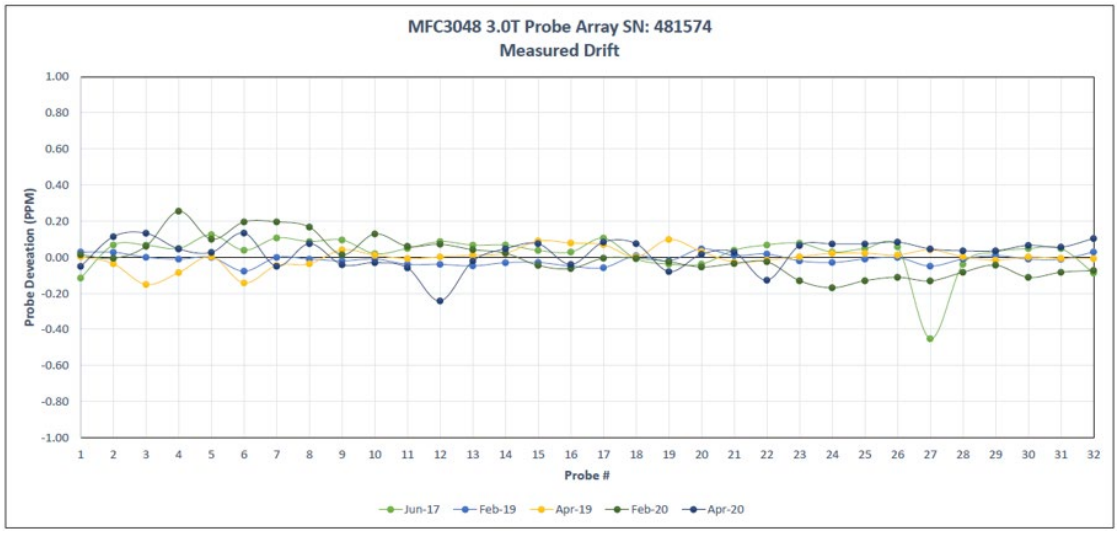



Figure 2 – Yearly data plotted of 32 points for probe array MFC3048