



HATFIELD & DAWSON
CONSULTING ENGINEERS

DRAWING SHOWING
MODIFICATION OF FIM-21/41
FOR HIGH-LEVEL FIELD MEASUREMENT USE

USING THE FIELD METER FOR HIGH LEVEL MAGNETIC FIELD MEASUREMENTS

A typical FIM-21, sn. 744, owned by Hatfield and Dawson has a correction factor of 457.8 between normal operation and operation with the loop antenna shield shorted. It reads 0.83 mV/m with the loop shorted in a field of 380 mV/m measured normally.

From impedance of free space, for plane wave conditions:

$$1 \text{ A/m} = 377 \text{ V/m. } (377 \approx 120 \Pi)$$

So, for a reading on the meter of 500 mV/m, the magnetic field is:

$$0.5 \times 458 = 229$$

$$299/377 = 0.61 \text{ A/m}$$

(This example is at 1530 kHz. The calibration factor will differ for other frequencies, so calibration should be performed for each meter at each frequency used.)