Concerning RF measurements

Maximum allowable continuous exposure to the public varies from $1mW/cm^2$, such as in the US and some Western Europe countries, to the most stringent standard of $0.01\ mW/cm^2$, such as in Switzerland and Russia. However, typical maximum RF from a cellular base station 50 meters away is only about $0.001mW/cm^2$* (note that units in the footnoted paper are W/m^2, and that $10\ W/m^2 = 1mW/cm^2$, $0.1\ W/m^2 = 0.01mW/cm^2$). The TriField Meter only has one range available for RF measurement, and the range $0.01 – 1\ mW/cm^2$ was chosen to represent all world standards, even though in most locations, the RF is well below $0.01mW/cm^2$.

RF measurement is different from AC magnetic measurement in that RF signal strength can vary a great deal even if the test location (or the person holding the meter) moves by a half inch, or if something is moving near the RF source. For example, a microwave oven with a rotating carousel will have an outside field that increases and decreases cyclically as the carousel rotates, and there is variation when holding an RF meter and changing its location slightly. The effect is stronger with microwaves, which have a wavelength on the order of one inch. A dedicated RF meter should be compared to the TriField Meter (set to Radio/Microwave) to demonstrate this effect. The TriField Meter in the RF mode does not attempt to measure and cannot display the RF frequency. This is the case with most dedicated RF meters, which only show the total RF signal and cannot display how much is present in each frequency band. It would be difficult to make a smaller meter (without a graphic display) that can show RF frequencies vs. amplitude. That is why the TriField does not measure RF frequency (it only measures total signal strength).

Please clarify what the conditions are in which the meter shows either flat line or full peg.

Concerning magnetic (as opposed to RF) measurements, each model of AC magnetic (EMF) meter has a frequency response curve. All models of meters (if correctly calibrated) will show the same if the field is pure 60Hz, such as from power lines. If additional frequencies are present, different models respond differently. The TriField Meter is more sensitive to frequencies that are higher than 60Hz, because a conductive body (like the human body) has a stronger induced AC current per unit of magnetic field at higher frequencies. The TriField magnetic field frequency sensitivity was chosen to match the human body frequency sensitivity.

If several EMF meters, including the TriField, are held under a high-tension line, they should all agree on the number of milligauss present. If brought indoors where various electronics or fluorescent lights are present, a lot of magnetic field at higher frequency will be present. The various models will read differently, but the TriFeld will generally read higher than most models, because of its sensitivity to high frequencies and the fact that the TriField has a 3-axis magnetic field sensor. (The less complex 1-axis models will read less than the actual field unless oriented correctly. Even then, a 1-axis meter may read low, for technical reasons regarding the square root of the sum of the squares of the X,Y, and Z fields). For magnetic measurements, the TriField should be compared with a 3-axis EMF meter and both should be held under a power line, where they should agree, regardless of the frequency response curve of the other EMF meter.

*See World Health Organization paper at http://www.who.int/entity/peh-emf/meetings/en/day2Varna_Foster.pdf?ua=1