

User Guide for eMetrPlus Universal Reciprocal Frequency Counter/Meter (SFM+112A, SubVer: A10+)



eMetrPlus SFM+112A is a Universal Reciprocal Frequency Counter/Meter, and can display Equal High Resolutions from LOWEST to HIGHEST of measurable frequencies. Frequency Range: 0.8999999Hz- (<0.9Hz) to 2.4000001GHz+ (typical >2.7GHz). At 50/60Hz (Mains Power Frequency) the Finest Resolution is 1uHz (0.000001Hz), the Units Hz, KHz, MHz, GHz, S, mS, uS, nS etc. are also Directly Displayed. Ultra Stable 16MHz TCXO, SFM+112A Basic Accuracy (0C to 45C) = 0.5PPM + 1 Count. SFM+112A is a Dual Function PORTABLE/BENCH equipment and can be used without plugging into a Mains AC Outlet. The STN LCD Display is Ultra LARGE, SHARP & BRIGHT (Character Height >0.3inches with LED BackLight). The SFM+112A operates through an Extremely User Friendly MENU-Based Interface with 3 Front Buttons.

SPECIFICATIONS for eMetrPlus SFM+112A UNIVERSAL RECIPROCAL FREQUENCY COUNTER/METER

Consistent 8 Digits Equal-Precision from Lowest to Highest of Measurable Frequencies [finest resolution@1Hz = 0.1uHz; finest resolution@2GHz = 0.1KHz].

Frequency Range: ChA(Hi-Impedance): 0.89999999Hz- (<0.9Hz) to 105.000001MHz+ (>110MHz typical);
ChB(50 Ohm): 49.9999999MHz- (<50MHz) to 2.4000001GHz+ (>2.7GHz typical).

Ultra Stable 16.00000MHz TCXO Time Base, Accuracy/Tolerance MAX +/- 0.5PPM (-30C to +85C), Aging
per Year MAX +/- 1.0PPM.

SFM+112A Readout Basic Accuracy = Time Base Accuracy (0.5PPM) + 1 count.

Normal Operation Range: Temperature 0C to 45C, Humidity <95%.

SFM+112A is Factory Calibrated at 25C.

Recommended TCXO Warm-Up Time: 5mins (after powering up from OFF mode).

Portable/Bench equipment, uses Batteries [6 X AA: Alkaline or Pre-charged Re-chargeable] And/Or with
9V DC Adaptor (OPTIONAL) [(9V, 300-800mA, Unregulated), DC plug type (5.5 x 2.1mm, Center Positive
+)] ; e.g. (JAMECO, 9VDC-600mA, 120VAC-60Hz, Product NO: 202180, Model NO: DCU090060).

Battery Life (6 X AA, Alkaline) OPERATION Mode: >60Hr with 5Min BL (Backlight ON time).

Battery Life (6 X AA, Alkaline) OFF Mode (Shutdown/Sleep Mode): >1.5 Year.

LOW BATT Indication: "bat" shows on Right side of LCD Display on Alternate readout cycles when Last
10% of Battery Life is reached.

Ultra LARGE, SHARP & BRIGHT LCD Display, Character Height >0.3 inches with Yellow/Green Backlight.

Backlight Function: Constant ON/OFF with DC Adaptor (OPTIONAL), ON with ~5+ Sec Timer with Battery
Only.

Number of LCD Contrast Settings: 12

Auto Ranging Input Channels: A, B via BNC Female Input Connectors.

Attenuator Function [Input A Only]: X1() =NO Attenuation, X10(a) =Attenuate by 10.

Input Channel A: 0.9Hz to 105MHz+ (>110MHz typical), AC Coupling, Input Impedance: [(1Mohm ||
<30pF) at Attn =X1()], [(110Kohm || <30pF) at Attn =X10(a)].

Input A MAX Input Voltage (Continuous): 30Vrms.

Input A Momentary (Accidental) MAX Input Voltage (Short Time, Low Frequency): 350Vrms (<15Sec,
<300Hz).

Selection A1: Low Pass Filter engaging; normal operation [0.9Hz to 900Hz, Sensitivity ~100mVrms];
extended operation [0.9Hz ~ 9KHz].

Selection A2: Middle Pass Filter engaging; normal operation [900Hz to 1MHz, Sensitivity <50mVrms];
extended operation [0.9Hz ~ 9MHz].

Selection A3: High Pass Filter engaging; normal operation [(1MHz to 50MHz, Sensitivity <50mVrms),
(50MHz to 80MHz, Sensitivity <100mVrms)]; extended operation [90KHz ~ 110MHz].

Input Channel B: 50MHz to 2.4GHz+ (>2.7GHz typical), AC Coupling, Input Impedance: 50ohm;
extended operation [9MHz ~ 2.7GHz].

Input B MAX Input Voltage (Absolute): 3Vrms.

Sensitivity: [(50MHz to 1.2GHz, <15mVrms), (1.2GHz to 2.4GHz, <45mVrms)].

Readout Mode: FREQUENCY in Hz, KHz, MHz, GHz; PERIOD in S, mS, uS, nS.

Sampling Time: 0.1Sec, 0.5Sec, 1Sec, 5Sec, 10Sec.

Data Hold Function: Long Press MENU Button or Long Press SELECT Button.

System Reset Function: Pressing ALL 3 Buttons simultaneously will SYSTEM RESET the SFM+112A.

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3 BUTTON MENU FUNCTION TABLE for eMetrPlus SFM+112A

-----	-----	ON/BL Button	MODE/MENU Button	SELECT Button
LONG PRESS	in DATA Readout	ON/OFF	HOLD Readout	HOLD Readout
LONG PRESS	in MENU Display	ON/OFF	NO Function	NO Function
SHORT PRESS	in DATA Readout	BackLight	1ST Menu	CURRENT Mode
SHORT PRESS	in MENU Display	BackLight	NEXT Menu	NEXT Mode

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You can reconfigure, manufacture & sell/market this product. Licensing cost is USD30/unit Negotiable.

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PMIDCS Technology Inc. Designer & Manufacturer for electronic products: eMetrPlus (CANADA).
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