

F3GTFC3111AG01 - JCER MFEL 1000

Attachment 1 - Salient Characteristics

1. Below are the technical specifications unique to MFEL-1000:
 - a. Pulse Amplitude accuracy: 60 dBm
 - b. PW Range: 25 ns – 10 ms
 - c. PW Accuracy: 10 ns RMS
 - d. PRI Range: 1 μ s to 30ms
 - e. PRI Accuracy: 10 ns RMS
 - f. Scan Measurement Range: 5 ms to 30 s
 - g. Pulse Density: >Mpps (within IBW)
 - h. No. of Emitters Tracked: > 500
 - i. Intentional Modulation on Pulse Recognition: Linear Chirp, Non-linear Chirp, FSK, Barker codes, Nested Barker Codes, BPSK, QPSK, Frank Costas Codes, Polyphase (P1 – 4) codes
 - j. Emitter types (freq): CW, Frequency Agile, Random or periodic Hopper, Dwell-Switched, Modulated
 - k. Emitter types (PRI): Fixed, Jitter, Slide, Stagger, Dwell-switched, Sliding, Modulated
 - l. Emitter PW Types: Agile, Fixed, Dwell-Switched
2. Must be compatible with the following software:
 - a. Chesapeake Technologies Inc. (CTI) MEERKAT software
 - b. MathWorks MATLAB and SCEPTRE software
3. Comprised of a **0.2 – 40 GHz** omni-directional antenna with a super-heterodyne receiver (with **12-Bit** data converters) allows for sensitivity at full instantaneous bandwidth (IB)W of approximately **-80 dBm**.
4. The Global Positioning System (GPS), CLK-15A can generate timing signals and maintain them in a GPS-denied environment.
5. MFEL includes **proprietary** tools for signal analysis called Signal Visualization and Analysis Software (SVAS). This tool allows scanning from **500 MHz to 18 GHz** and the creation of customizable scan tables. **IBW is 10 MHz to 500 Mhz.**
6. Pulse Descriptor Words (PDW) are displayed on a waterfall or scatter plot that shows signal activity. **Automatic** de-interleaving will create emitter tracks that can be displayed in a track table.
7. **Measurement** and **recognition** of intentional/unintentional modulation on pulse (IMOP/UMOP) is **automatic**.
8. Tailorable **Emitter Library** will match intercepted signals/emitters and automatically perform friend vs foe matching with confidence levels labeled for each.
9. Operate with **minimal operator training**. Once the system is setup with appropriate frequency scan parameters, the system starts providing situational awareness with detected signal details without human intervention.
10. The operator has control over dwell time that will be used for all hops in a predetermined scan pattern.
11. The operator can enable/disable bands and set relative revisit weighting for each band.
12. **Offline report generation** is possible for all missions displaying statistics of the intercepted emitters and is exportable to PDF.
13. Storage capacity is **24 Terabytes**.