

## STR—SATELLITE TIME REFERENCE GUIDE SPECIFICATION

All or part of this text may be copied and inserted into a project specification, as desired. In the US, Satellite Time Reference (STR) is typically part of CSI spec section 26 09 13—Electrical Power Monitoring System (EPMS).

### A. SATELLITE TIME REFERENCE (STR)

The Satellite Time Reference shall provide a precision time reference for power monitoring devices, such as power meters, relays, circuit breakers and event recorders. The Satellite Time Reference shall be designed and manufactured in the USA by Cyber Sciences, Inc., model STR-100 [or STR-100/IRIG-B], or approved equal.

1. **Time signal input.** The Satellite Time Reference (STR) shall accept a Global Positioning System (GPS) time signal as follows:
  - a. Antenna interface time signal (RS-422) from a Trimble Acutime GG Smart GPS antenna
  - b. Modulated IRIG-B (B12x) time signal from a GPS receiver or clock.
2. **Precision time reference output.** The STR shall provide electrically-isolated time-sync outputs in the following formats:
  - a. DCF77.
  - b. 1per10 (1 pulse every 10 seconds).
  - c. [Optional: Unmodulated IRIG-B. Requires model STR-100/IRIG-B].
3. **Time reference accuracy.** The STR shall be capable of ensuring a precision time reference accurate to within +/- 50 microseconds, required for applications such as Sequence of Events Recording (SER), which typically need one (1) millisecond resolution or better.
4. **DIN-rail mounting.** The STR shall mount on a standard DIN rail or on a flat pan.
5. **IRIG-B output [option].** When IRIG-B unmodulated output is used (model STR-100/IRIG-B), an IRIG-B Distribution Module (IDM) shall also be provided to facilitate distribution of these signals over longer distances and/or to larger number of IRIG-B devices.
  - a. The IDM shall be Cyber Sciences model STR-IDM, or approved equal.
  - b. The IDM shall accept one 24 Vdc IRIG-B input and support up to 8 IRIG-B devices.
  - c. The IDM shall derive its 24 Vdc control power from the STR-100/IRIG-B. No external power supply shall be required.
  - d. The IDM shall include an output connection to additional modules (up to 8 IDMs total).
6. **Standards and regulatory compliance.** The STR shall meet the following standards:
  - a. UL-listed to UL-508.
  - b. cUL (Canada).
  - c. FCC class A emissions standards.
  - d. CE mark.
  - e. RoHS-compliant, lead-free.
7. **Technical specifications.** The STR shall meet or exceed the following:
  - a. Control power: 24Vdc.
  - b. Operating temperature: -30C to +80C.
  - c. Storage temperature: -40C to +85C.