

## Product Overview

# Multi-Channel Encoding Monitor (MCEM)

### What is it?

The Nielsen Audio Multi-Channel Encoding Monitor (MCEM) is the latest version of the PPM encoding monitor. Radio stations use this device to monitor the status of their PPM Critical Band Encoding Technology (CBET) codes.

The MCEM is a rack-mountable dedicated-purpose device that can monitor up to four independent Nielsen Audio encoded stations. The monitor includes a web interface that provides details about the station's current encoding status. It also includes insights about encoding performance with new minute level encodability and detectability graphs and reports.

### How does it work?

The MCEM monitors up to four audio streams for the presence of CBET watermarks (PPM Codes). In addition to simply monitoring for the presence of code, the monitor reports the Code Strength (Detectability) and Code Frequency (Encodability).

It displays the information in graphical form on a web-based interface and the data can be downloaded in csv format for further analysis. The MCEM offers multiple options to alert users of potential encoding errors such as incorrect code, no code, or double encoding. The alert capabilities include information displayed on the front panel LEDs, Alarm Relays, and SNMP alerting.

### Proactive Monitoring

Proactive Monitoring is a service available to stations which use our MCEM. Proactive Monitoring allows Nielsen to actively monitor data from a station's MCEM and alert stations more quickly should any issues arise.

The MCEM contains a cell modem, and is configured to call Nielsen back office systems to provide alarm data. It is important to ensure that the external cellular antenna (supplied with the MCEM) is attached and located so that a cellular signal is available. Proactive Monitoring helps ensure programming is encoded appropriately with more timely alerts should any problems need to be addressed.

### Key Benefits

- Can monitor up to 4 independent stations in 1RU device
- A web interface that provides details about the station's current encoding status
- Multiple options to alert users of potential encoding errors such as incorrect code, no code, or double encoding
- Contains a cell modem and is configured to call Nielsen back office systems to provide alarm data.

### Specifications

#### Platform:

1RU Linux-based server platform with custom audio input board Audio Input levels: -10-+19 dBu

#### Dimensions:

1 RU

#### Maximum ambient temperature:

35°C (95°F)

#### Safety:

UL60950-1/CSA C22.2 No. 60950-1, Information Technology Equipment -Safety - Part 1: General Requirements

EC60950-1, Information Technology Equipment-Safety-Part 1: General Requirements

EN60950-1, Information Technology Equipment-Safety-General requirements

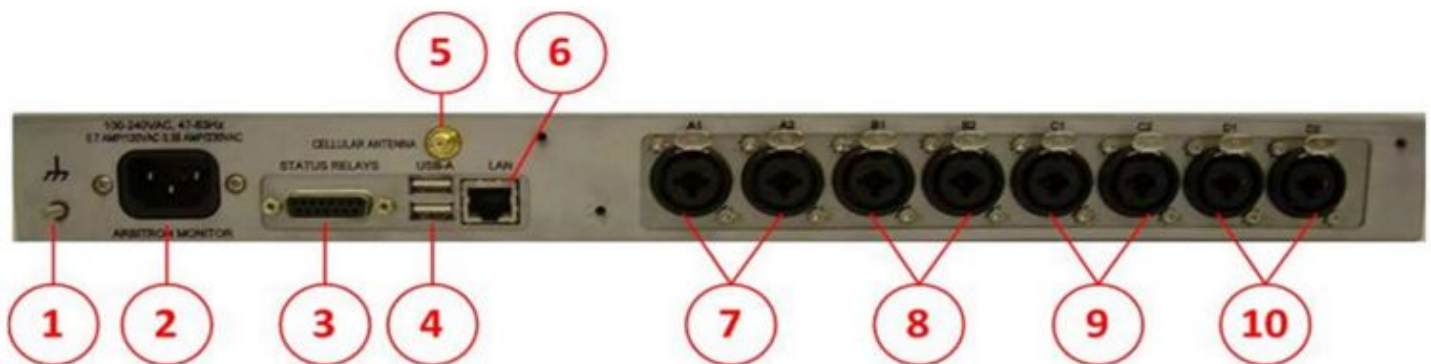


## Product Overview

# Multi-Channel Encoding Monitor (MCEM)

### Feature Summary

- Cellular interface to support connectivity exclusively to Nielsen Audio for remote monitoring.
  - The unit supports outgoing calls only.
- A set of relays that may be connected to a third-party device to facilitate remote monitoring of alarm conditions.
  - These relays will trigger during an alarm condition of the system on one or more of the physical input channels.
- Monitoring system support using SNMP Version 2C with read-only attributes and traps for alarms.
- Two type 'A' USB ports on the rear panel that can be used to support streaming encoding and system status information in real-time to a third-party monitoring device.
- LCD display provides textual detail about encoding and operational status.
- LEDs provides a visual display of encoding and operational status.
- Eight XLR/quarter-inch tip-sleeve combo jacks supporting monitoring of monophonic (mono, or single-channel), stereophonic (stereo, or dual-channel), or surround (three-channel) audio signals.
  - The number of signals an individual unit can monitor varies depending on their types.
- Ethernet interface for connectivity to a network using a secure protocol.
  - This supports using a web client interface for control, status monitoring, and log file download.
- One type 'A' USB port on the front panel which can be used for firmware and configuration updates as well as downloading encrypted log files using a USB mass storage device.



1. Electrical ground post.
2. International Electrotechnical Commission (IEC) 320 input power socket.
3. DA-15 female socket, used as an interface for remote status monitoring (pin out and relay diagrams in section 3.3 of the Encoding Monitor Equipment Manual).
4. Two USB 2.0 Host Ports Type 'A' for real-time serial status output.
5. SubMiniature version A (SMA) cellular antenna jack.
6. RJ-45 Ethernet jack with integrated transmission/reception link status LED indicators.
7. 7-10—combined female balanced XLR jacks with push button release/unbalanced quarter-inch tip sleeve phono jacks (combo jacks), to accept input for channels A1 and A2 through D1 and D2.

**For more information contact your Audio Client Engineer at 1-866-767-7212, or email [encoding@nielsen.com](mailto:encoding@nielsen.com)**