
CasaTunes PoE++ Module

Technical Overview & Installation Guidelines

What is PoE?

Power over Ethernet (PoE) allows both power and data to be delivered over a single Ethernet cable. This simplifies installation by eliminating the need for a separate power supply at the device.

PoE standards include:

- PoE (802.3af): up to 15W
- PoE+ (802.3at): up to 30W
- PoE++ (802.3bt): up to 90W

The CasaTunes PoE module requires PoE++ (802.3bt) to operate reliably.

How PoE Works

PoE uses a power negotiation process between:

- PSE (Power Sourcing Equipment) — PoE switch or injector
- PD (Powered Device) — CasaTunes server with PoE module

Process:

1. Detection
The PSE verifies that a PoE-compatible device is connected
2. Classification
The device requests the required power level
3. Power Delivery
The PSE supplies appropriate voltage (typically ~48–57V DC)

4. Monitoring

Power is continuously managed and shut off if the device disconnects

This ensures safe, efficient, and reliable operation.

Why PoE++ is Required

CasaTunes PoE modules require approximately 62W of power, which exceeds the limits of PoE+.

- PoE+ (30W) → insufficient
- PoE++ (60–90W) → required

For best results, use a 90W (Type 4) PoE++ source to provide adequate headroom.

Ordering & Product Configuration

The CasaTunes PoE module:

- Must be specified at the time of order
- Is factory-installed and not field-retrofit
- Is available for CT-Plus music servers only

The CT-Plus music server includes two network ports:

- LAN → standard network connectivity
- POE → dedicated for PoE++ power input

Important:

Connect the PoE cable only to the port labeled “POE” on the music server.

Injector & Switch Requirements

Use one of the following:

PoE++ Injector

- IEEE 802.3bt compliant
- Minimum 90W output
- Ideal for single-device or retrofit installations

PoE++ Switch

- Must support 802.3bt (Type 3 or Type 4)
- Verify per-port power budget, not just total switch capacity

Many PoE switches only support PoE+ (30W)—these will not power the CasaTunes module.

Cabling Recommendations

PoE++ places higher demands on cabling due to increased current and heat.

Recommended:

- Cat6 or Cat6A (preferred for new installations)

Acceptable:

- Cat5e (short runs, limited bundling)

Best Practices:

- Keep cable runs \leq 100 meters (328 ft)
- Avoid tightly bundled high-power PoE cables
- Use solid copper conductors (avoid CCA cables)
- Ensure proper terminations and connectors
- Prefer shielded cable (Cat6A) in rack or AV environments

Heat & Power Considerations

Higher power over Ethernet can generate heat, especially in bundled cables.

To ensure long-term reliability:

- Use higher-grade cabling (Cat6A recommended)
- Avoid dense cable bundles in confined spaces
- Maintain proper rack ventilation

Installation Guidelines

- Connect the PoE cable from the PoE++ injector or switch directly to the POE port on the CasaTunes music server
- No external power supply is required when using PoE++
- Verify link and power status on both injector and device

Deployment Benefits

Using the CasaTunes PoE module:

- Eliminates the need for local AC power
- Simplifies rack and structured wiring installations
- Enables flexible placement of music servers
- Reduces installation time and cost

Common Issues

Issue	Cause	Solution
Device does not power on	Using PoE or PoE+	Use PoE++ (802.3bt) injector
Intermittent rebooting	Insufficient power budget	Use 90W injector
PoE cable connected to wrong port	Connected to LAN port instead of POE	Move cable to POE port
Excess cable heat	Low-grade or bundled cable	Upgrade to Cat6A
No link/power	Non-PoE port	Verify PoE++ enabled port

Summary

The CasaTunes PoE module is designed for high-performance, simplified installations using PoE++ (802.3bt). For optimal performance:

- Specify the PoE module at time of order (factory-installed)
- Use 90W PoE++ injectors or switches
- Connect to the dedicated POE port
- Deploy Cat6/6A cabling
- Follow proper installation and thermal guidelines