CASAMBI

Large installation commissioning recommendations – an application note

Foreword

The Casambi Mesh system supports network sizes of up to 250 devices. However, it is nearly always better to create multiple smaller networks rather than one large network. Multiple smaller networks can be connected to service vast areas. When a network exceeds 100 devices, the network can be considered a “large network”.

This document describes the required practices regarding the commissioning philosophy for larger installations. However, the topics presented can be considered good practice for any size network and should ensure a smooth commissioning process for both big and small projects utilizing the Casambi system.

Before commissioning

Understand the bigger picture: Interview stakeholders, investigate any other systems to be integrated and plan your commissioning accordingly. We highly recommend that you familiarize yourself with all the relevant Casambi materials. The overarching control intent should be detailed in a specification document or similar.

For projects integrating Casambi with other systems or protocols, the party doing the integration is responsible for ensuring reliable end-to-end system performance and functionality.

Keep the future in mind: To allow flexibility for possible future additions, planning networks containing a maximum device quantity should be avoided. To ensure the best performance of the network, smaller networks are always recommended.

Carefully consider which network mode to use: Different modes can be selected when creating a network and each mode affects communication speed, range, and recommended device density in the network.

Please refer to our network mode selection application note:
https://support.casambi.com/support/solutions/articles/12000091601-considerations-for-selecting-the-network-mode

Selection of the correct network mode is very important to ensure trouble-free network operation. Default network frequencies do not need adjusting unless there are known frequencies to avoid, or if two networks are in close proximity to each other and use the same frequencies. If in doubt, please contact Casambi Support.

Have a full project specification plan: Verification of network operation is far easier if a clear specification plan exists detailing how the network should operate, for example, how sensors should operate, which scenes are triggered and how the manual controls should behave.

If data, for example, D4i, is intended to be extracted from the network devices, ensure that correct profiles (in DALI addressing fixture modes) are used and that all devices from which data is to be desired, are capable of producing the data.

During commissioning

Use the latest version: Use only production-version applications and firmware and ensure that the application you are using is the latest version.

The first device paired to the network should be updated to the newest production firmware. In doing so, all subsequent devices will receive the latest firmware version as they are paired to the same network. The added devices will be updated by the system as further devices are added to the network. Devices can be renamed and grouped during firmware update spreading. Please wait for the firmware updates in the network to be ready before starting any other commissioning work (scene creation etc). Please ensure that ‘Firmware Updates’ are activated for the network in the ‘Performance & Security’ tab.

Check for pairing errors: Regularly check the ‘Nearby devices’ view for any Network names displayed in Red or Purple text. Unpair and re-pair any such devices to the network. The Red and Purple colors carry the following meanings:

- Red: A device’s configuration indicates that it is in a network, but the device isn’t actually recognized in the network configuration. Fix: Unpair & re-pair to the network.
- Purple: Duplicate device ID. This may be caused if multiple persons are trying to pair devices to the same network simultaneously. Fix: Unpair all devices showing purple text and re-pair to the network.

Give the system time to synchronize: When introducing changes to, for example, large scenes, or implementing scenes containing many luminaires, work at a pace that allows time for the system to spread the changes before introducing more.

Whenever "synchronizing" or "communicating" is displayed, pause any programming and wait for the text to disappear. If the text continues to display for more than 1 minute, close and reopen the Casambi App or switch Bluetooth on your device off and on again.

Do not commission the network in ‘shared mode’: This is to avoid synchronization problems during commissioning. After finishing each day's programming, share the network with the Casambi Cloud. When returning to continue commissioning, unshare the network and continue.

Never use more than one device for commissioning a single network at the same time. Using multiple devices at the same time can result in multiple cloud storage versions of the network.

For large installations containing multiple networks, it is important to ensure that networks in close proximity to each other are configured using different, non-conflicting, frequencies.

If possible, commission the network in smaller node quantities keeping part of the installation powered down when adding other devices to the network.

Check as you go: During commissioning, frequently check that all paired luminaires follow the global controls / scenes set. This way you will quickly see if any "islands" are forming – these are areas that are not connected to the main network or are struggling with a poor connection to the rest of the network. For example, only one node could be linking an "island" to the main network. Please also see our Knowledge Base video "Troubleshooting communication problems: The "Island" issue" at https://support.casambi.com/support/solutions/articles/12000079335-troubleshooting-communication-problems-the-island-issue

Avoid making changes to scenes (especially scenes with many luminaires) after the scene has been assigned to a switch or sensor. If changes are required, reverify the correct revised scene is triggered as desired. **Save your hard work and restart the network:** After commissioning of the network has been finished, please ensure that the network is placed into shared mode and shared with Casambi. When a network is shared with the Casambi Cloud, for example, it will never be lost and can always be retrieved.

When the network is ready, you can use "restart network" from More – Network setup to ensure that the network is up to date and network operation starts as "new". This step is not mandatory, and the network will operate properly without it. Network restart may with large networks take up to a minute. Please do not introduce changes to the network immediately after pressing "restart network".

After commissioning

Five final important steps:

Verify that the network has been shared properly with Casambi via the Casambi Cloud.

Verify that all the specified functions operate without a delay and as intended. Ensure that all devices are and stay online.

When the system has been commissioned and verified to be fully operational as desired, store a logically named Backup of the network using the Network Setup, Network history option.

Record all email addresses and passwords used for the network for future reference.

If a Casambi network is to be integrated to third-party system (such as DALI, BMS, etc.), ensure that all the integrated systems operate as intended. Correct integration planning, performance and verification of correct operation is the responsibility of the partner who did the integration.

A note about Casambi 4C commissioning partners

While Casambi's solution is designed with a user-first approach, we do provide additional free training – including both online and classroom courses. This scales up from introductory presentations and enhanced training to what we call the 4C assessment. Casambi-accredited training and certification ensure that a commissioning partner will operate at a high level.

Casambi Commissioning Competence Certification (4C) is an assessment where Casambi verifies the ability of an individual to interpret typical customer requirements into the correctly programmed functionality. This ensures a 4C Partner-level of understanding of the Casambi App and system capabilities that can enable them to confidently commission a wide variety of Casambi projects. The assessment is carried out on two mid-size networks and no Ecosystem partner products are involved, nor is integration to third-party solutions evaluated. For more information about our training and certification programs, please contact Casambi Support.

To ensure a successful result, large complex projects should always be considered to require additional understanding effort, patience, and systematic working practices from those involved in commissioning.