# greenGO network protocol usage and trouble shooting guide.

GreenGO communication protocol is divided into 2 parts.
- Communication between the devices
- Communication between devices and the PC control software.

Communication between devices:
All communication is done in multicast. The IP multicast address used is chosen randomly when a new configuration is send to the devices. The Multicast address can also be set to a fixed custom one in the configurations setting panel.
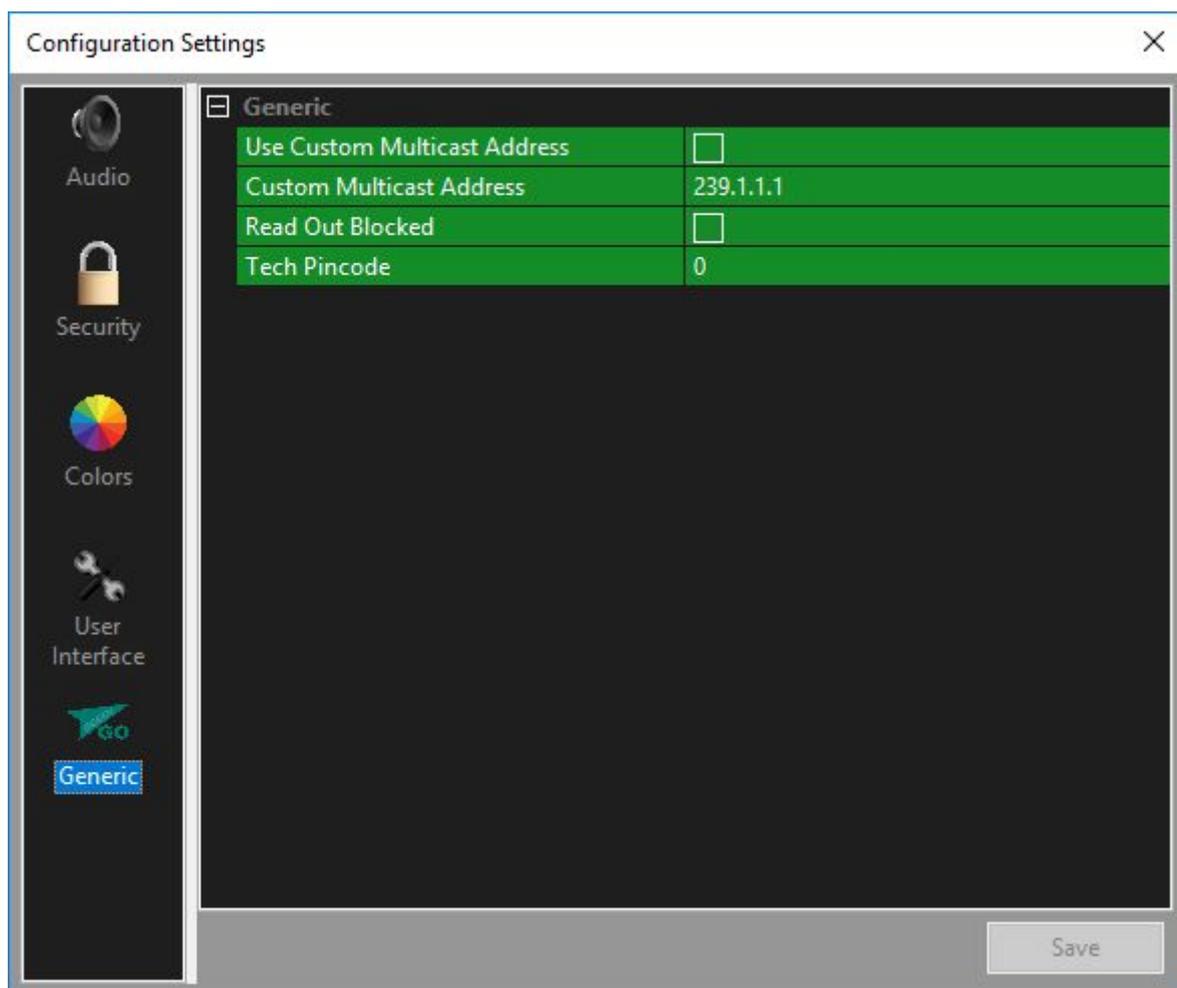
Communication between devices is all done via Multicast UDP packets on UDP port 5908 with the Diffserve (DSCP) set at 46. The packets hold information about routing / status / audio. A device not contributing audio to the system only sends out regular status and routing info (very little bandwidth usage). Devices sending audio use about 400kbit/s or 800kbit/s in enhanced audio mode.

Protocol:

- Multicast IPv4
- UDP port 5908
- Diffserve (DSCP) at 46 (RTP / Voice)
- 400kbit/s - 800kbit/s per engine sending active audio
- 2.5kbit/s per engine, not sending audio

Communication between Devices and Computer is done in a combination of multicast and unicast.
The Computer is using multicast address 239.255.255.253. It sends out a discovery packets, to where unconnected devices connect. The located devices then get connected via unicast and then start to listen to the multicast stream of the control software. All communication back from the devices to the computer is done in unicast. The connection status of the devices in the software is indicated by the dots left of the device.
- Green: Device is connected and the Configuration in the device matches the current configuration in the control software.
- Orange: Device is connected, but holds a different configuration.
- Red: Device connection is lost
- Grey: Device found, but connection issues (rarely, mostly changes to Red)

Trouble Shooting

- Beltpacks is blinking or Setup button on Multichannel desk/rack is blinking:
  The unit does not "see" any other device with the same configuration,
  go into Setup > Clone Config and select a different configuration available on the network. If no other config is visible (4 lines with -) then check if the unit is on the same network / vlan.
- Device take 30 seconds or more to become active and online after plugging in to s switch. This is normally because of Spanning Tree protocol in the switch. The switch will only allow data in and out of a port after being sure that the newly connected device does not cause a network loop.
- No audio from one device to another. Setup the same group on 2 devices. Send a call on a group and see if it arrives at the other device (be sure that call receive and send are enabled on the channel). If that is going thru, then check if the channel audio level is on and the channel is not muted. Check if the sending device also gets a sidetone. if call is OK and the sidetone is ok, then enable talk on one device and start talking. On the other device, the channel should come up in yellow, indicating it is receiving audio. If it is blinking, then another channel is also being received with a higher priority. If audio is being received, but no audio is heard, then check the channel volume and mute, and also the main volume.
  Also make sure that Encryption is turned off.
- IGMP snooping sometimes causes issues, if so please switch is off.
- VLAN's be sure that all devices are on the same vlan and that the vlan is not blocking any of the above described protocol details.