CuddeLink

FCC Notice

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Quick Start Guide

This guide assumes you know how to navigate the camera's user interface. All the settings explained in this section are in the **CL MENU** item. To access the CL MENU press MODE until **COMMANDS** is selected, then press MORE until **CL MENU** appears, then press UP to enter. Use UP and DOWN to make selections. Press MORE to advance to the next item.

1. One CuddeLink equipped camera must be the HOME camera. HOME is the camera that collects images from the REMOTE cameras.
2. Set up HOME camera:

a. Set the normal camera parameters as explained in the camera's manual. Date, time, camera delays, etc.

b. Set **CL MODE** to HOME

c. Set **CL LOC** to 001. This is a location id number used to identify each camera.

d. Skip over **CL INFO** by pressing **[MORE]**

e. Set **CL CHAN** to any number. You can leave this at 1 but we recommend you change this. Pick any channel, but remember what you selected.

f. That is all you need to do.

g. ARM the camera (Press MODE until ARM is selected)

3. Set up the REMOTE camera:

a. Set the normal camera parameters as explained in the camera's manual. Date, time, camera delays, etc.

b. Set **CL MODE** to REMOTE

c. Set **CL LOC** to 002. IMPORTANT – all cameras should have a unique CL LOC (location) number. For this quick start set 1 for home, and set remotes as 2, 3, 4 and so on.

d. Set **CL CHAN** to the same channel you set on the HOME camera. IMPORTANT – all cameras must be set to the same channel.

e. Leave **CL DELAY** and **CL COUNT** in the default settings of CL DELAY 15, and CL COUNT 100.

f. Press [MORE] to view **RF LEVEL** and observe the display. A number will appear that represents the signal strength. If the strength is displayed you can deploy the camera. IMPORTANT – CuddeLink transmission distance varies with terrain and distance and can be from 2/10 of a mile to over a mile (1/4 mile typical in a forest). You must use RF LEVEL to verify you have a signal before you deploy a remote camera.

g. ARM the camera (Press MODE until ARM is selected)

h. Continue to deploy all your Remote cameras in a similar manner.

4. Checking the HOME camera

   a. Checking the CuddeLink HOME camera is similar to checking a conventional trail camera. Remove the SD card and use your normal image viewing method.

   b. On the SD card is folder named 400CUDDY. Within this folder are images from the CuddeLink remote cameras. If you used a unique CL LOC then each remote camera's images will be in a different folder within the 400CUDDY folder.

   c. The images taken with the HOME camera are in the 100CUDDY folder.

Using CuddeLink is this easy. However, do yourself a favor and read this entire manual as there is more you should know to get the best from CuddeLink.

Reference Manual

What CuddeLink Does

Hunters long ago realized the importance and benefits of using multiple trail cameras. But checking these cameras can be a time consuming task that takes away from hunting time, and pollutes the area with human scent. Cuddeback's patent pending CuddeLink eliminates checking multiple cameras and utilizes 1 camera as an image depository for up to 16 CuddeLink cameras.

CuddeLink is a wireless network of cameras that transmit their images to 1 camera. The depository camera is called the **HOME** camera, and the transmitting cameras are called **REMOTE** cameras. The cameras can be deployed in any arrangement with the only requirement being that each camera must be in radio contact with another radio and have a link back to Home. Transmission range is highly terrain dependent, but in a forest a range of over 1/3 mile is common, allowing for an end-to-end link of over 4 miles. In open terrain we have tested camera-to-camera transmission to over 1 mile.

***ROCKET SCIENCE**. The technology in CuddeLink is complicated, but using CuddeLink is not. However, using CuddeLink is not intuitive and does require some time to learn. You must read this manual, preferably multiple times. We also recommend you watch our tutorial videos at www.cuddelink.com. Because of the advanced nature of this technology we do not offer phone support. All questions must be answered by trained technicians and engineers, which we cannot afford to have taking phone calls (unless you want to pay much more for CuddeLink cameras). Therefore, all support must be done via email. Visit www.cuddelink.com to email us and a qualified technician or engineer will answer your questions.*

The problem with explaining CuddeLink concepts is it is easier to use CuddeLink then it is to explain. We recommend you read this manual twice. After which you will find setup and deployment very easy.

TERMS

- ***CuddeLink** is Cuddeback's trademark name for Cuddeback's network enabled trail cameras.*
- ***Network** refers to a collection of CuddeLink cameras that are in radio contact with each other.*
- ***Home** refers to the camera or device that collects all images.*
- ***Remote** refers to cameras that transmit images to the HOME node.*
- ***Repeater** refers to a device that acts as a relay station on a CuddeLink network. The REPEATER does not take pictures, it only transmits images from one node to the next node.*
- ***Node** is a general name for any camera, home and repeater device on the network.*
- ***Chain** is 2 or more cameras that are linked together via the CuddeLink network.*
- ***CL** is an abbreviation for CuddeLink.*

EQUIPMENT. CuddeLink enabled cameras are required to build a network. Each CuddeLink camera can be configured to be a HOME, REMOTE or REPEATER. A network can have only 1 HOME and up to 15 REMOTEs & REPEATERs. Total nodes on a single network is limited to 16.

DEPLOYMENT. CuddeLink cameras use a proprietary mesh network wireless system that allows the cameras to send images to HOME by *hopping* the images from camera-to-camera. This daisy chain system allows for simple deployment with the only requirement that the cameras are in radio contact with each other. Refer to the sample deployment scenarios below.

MORE THAN 16. A single CuddeLink network is limited to 16 cameras. If you require more than 16 cameras you can deploy additional networks. Each network must be assigned a unique CL CHANNEL.

RETRIEVING IMAGES. The advantage of the CuddeLink system is you can retrieve all your images from one camera; or have them collected on a PC; or images can be sent to a phone or PC via the Internet or via a cell phone modem *(additional equipment required for PC or cell support)*.

HOME Image Collection. All images transmitted from the REMOTE cameras will be saved on the HOME node's SD card. You check the HOME camera as if it were a conventional trail camera.

PC Image Collection. The CuddeLink Home Plus node connects to a Windows PC running Cuddeback's Trophy Room PC program. The PC will copy the images from the Home Plus node to the PC. Cuddeback's free Windows program Trophy Room can be used to view the images from all CuddeLink cameras on your network.

Internet Connected Windows PC. If your CuddeLink cameras are deployed where you have access to an Internet connected PC you can get CuddeLink images anywhere you have internet access. And you can do this without an additional monthly Internet fee. Most likely this is a

dwelling on the property with Internet access. This Internet access can be from a DSL, Cable, or Cell Modem. Access is accomplished by connecting the CuddeLink Home Plus to a Windows PC with Cuddeback's Trophy Room program installed. Trophy Room will copy the images from the HOME node and place them in Microsoft's OneDrive folder to allow you to access the images anywhere with a smart phone, tablet or PC.

Note – this feature is only available when CuddeLink Home Plus is attached to a Windows PC, however images can be viewed on any Internet capable device.

Cell Modem. Cuddeback offers the CuddeCell Modem that attaches to any CuddeLink camera and allows images to be emailed or texted to a cell phone. This method requires a cell phone contract with additional cell connection fees, but only 1 cell phone connection is required to transmit images from up to 16 cameras.

CuddeLink Setup

CuddeLink is very easy to setup and deploy and only requires a few settings in each camera.

Settings Summary

SETTING	RANGE	HOME	REMOTE	DESCRIPTION
CL MODE	OFF, HOME, REMOTE, REPEATER	X	X	One camera must be set to HOME. All other cameras must be REMOTE or REPEATER. Choose OFF if you want CuddeLink disabled on this camera.
CL LOC	000 thru 999	X	X	Set this so your cameras can be identified. Each camera should be assigned a unique number.
CL CHAN	1 thru 16	X	X	Every camera on the network must be set to the same CL CHANNEL. You can choose any channel.
CL DELAY	5 sec to 1 hour		X	Remote only. Controls how often images are queued for transfer.
CL COUNT	All, 25,		X	Remote only. Sets the maximum number of images that

	50, 100, 250			will be queued to send. Deletes the oldest images to make room for the newest.
CL LEVEL	Signal level		X	Remote only. Use this to verify the camera is on the network and how strong the signal is.
CL NODES	Camera Status	X		Home only. Displays the status of each remote camera.

Step 1. Program CuddeLink CL MODE

All CuddeLink settings are in the CL MENU in the COMMANDS menu. To access the CL MENU navigate to the COMMANDS menu and press MORE until CL MENU is displayed, then press UP.

CL MODE is used to select the camera's CuddeLink mode. Choices are OFF, HOME, REMOTE, REPEATER. Press UP or DOWN to select, then press MORE to continue programming additional CuddeLink settings.

- OFF – use this if you do not want this camera to be part of a CuddeLink network. The CuddeLink radio will be disabled.
- HOME – Set Home on the camera that collects images. Only 1 camera can be set to HOME.
- REMOTE – Set Remote on the cameras that take pictures and transmit the pictures to the HOME camera.
- REPEATER – use this when you need a repeater to transmit images, but you do not want the camera to record images. Refer to REPEATER section latter in this manual.

Step 2. Program CL LOC

CL LOCATION (CL LOC) assigns a unique number to each camera on the network. It is important that each camera on your CuddeLink networks has a unique CL LOC number. Refer to section **CAMERA NAMING** for our recommendations on how to use this setting.

Step 3. Program CL CHAN

The channel is the radio frequency the cameras use to transmit images. All cameras on your network must be set to the same channel. CuddeLink has 16 channels available numbered 1 thru 16. You can choose any number you like, but do not choose a channel number used by another network in the immediate area.

Step 4. Network Control – Overview

This information can be confusing for first time users. You may want to use the default CL DELAY and CL COUNT setting for the first few weeks and then come back and review this section.

Background. The CuddeLink network, like all wireless networks, has limits to how much data can be transmitted in a specific amount of time. Think of the CuddeLink network as highway where only so much traffic can pass in a given amount of time, and the more traffic on the highway the slower it moves and the longer it takes to reach a destination. Your cameras can send all the images they record, but this can create a backlog of images that will require more time to transfer HOME.

With 5 or more cameras the network limit is about 24MB (about 1000 images) per day. If you deploy 5 cameras this averages to 200 images per camera per day. For 10 cameras the average is 100 images per day per camera. Actual throughput will vary with each network setup and image size.

When a camera records an image the full size image is placed on the SD card, and a compressed image is placed into a transmission queue where the image waits its turn to transmit home. Cameras can queue up 100s or even 1000s of images that will eventually be transmitted home.

However, sending all images is not necessarily best. The network of cameras may record more images then can be transmitted in a reasonable amount of time, resulting in hours or even days for an image to get transmitted home. You will want to control how much image traffic you put on your CuddeLink network. CuddeLink has 2 methods for you to control the images a camera sends.

Note – all images the camera records are saved on the remote camera's SD card. This discussion only applies to images transmitted to the HOME camera.

Step 5. Network Control - Program CL DELAY (Remote only)

CL DELAY is somewhat like Camera Delay, except it controls how often images are transmitted. Let's use an example to demonstrate how this feature works:

<Insert diagram>

Let's assume you set a CAMERA DELAY of 5 seconds and a CL DELAY of 30 seconds.

The camera takes a picture at 00 seconds and the image is transmitted and the 30 second CL DELAY is started.

A second picture is taken at 10 second, this picture is not transmitted because the CL DELAY has not gotten to 30 yet.

A third picture is taken at 33 seconds, this image is transmitted because it is more than 30 seconds since the last image was transmitted.

CL DELAY has settings of 5 seconds to 1 hours. It is important to understand that a combination of a short CL DELAY (5 seconds) and many images taken per day (100s) will create a situation where 100s or even thousands of images are queued to transfer, which could require days to be transmitted home. For this reason we recommend using a reasonable CL DELAY to limit the number of images sent home. (Daily throughput is about 1000 images combined across all cameras on the network).

Recommendations:

Trails – CL Delay of 5 seconds. Most likely a trail will not have much activity in a day so you may want to send every image home.

Fields and Plots – CL Delay of 30 seconds or more. In fields the camera may record dozens to hundreds of images in a day. You will want to use a longer CL Delay to limit the number of images the camera transmits.

Feed Site – CL Delay of 1 or even 5 minutes or more. Feed sites are where a camera can record 100s of images in a day. We recommend you use a longer CL Delay to compensate for all the images recorded.

***Experiment**. We recommend you monitor the number of images in the camera's queue and how quickly the images are getting home then adjust CL DELAY as required.*

Step 6. Network Control - Program CL COUNT (Remote only)

CL COUNT allows you to set a maximum number of images that the camera can place in its transmit queue. Think of this as a safety net to prevent overloading the network and assures you get the most recent images in a timely manner. Available settings are ALL, 25, 50, 100, 250. Once this limit is reached the oldest images are removed from the Queue to make room for newer images.

Say a nuisance animal stops in front of your camera and the camera records 200 images of the nuisance animal. Then the animal leaves and the camera begins capturing deer as they walk past the camera. The camera will want to send all the images of the nuisance animal, and the later images of the deer will have to wait their turn. Depending upon the other cameras on the network, this could require hours or days before the newer images are sent home. However, if you set CL COUNT to 50 or 100, you are assured that your camera's image queue will not get overloaded with excessive images.

Recommendation – we recommend using the formula 1000 divided by the number of cameras. For example, if you have 10 cameras deployed, then 1000/10 = 100. Set CL COUNT to 100 on all cameras. An advantage of this feature is that you can reduce the CL Delay to as low as 5 seconds and not be concerned that a camera will overload the network, as this CL Count will control the number of images queued for transmission and assure the most recent images are sent home.

Step 6. Verify CL LEVEL (Remote only)

CL LEVEL is a signal strength meter. The range is 0 (poor) to 99 (best). A level above 20 is sufficient for reliable image transmission. We have successfully deployed networks with signal level as low as 10, however, if at all possible try to keep the levels at 20 and above.

- It may take up to 1 minute for the CL LEVEL to detect a signal.

- It is good practice to enable CL LEVEL while next to a deployed camera, and then move away from that camera with the CL LEVEL displayed. This allows you to monitor the level as you move farther from the deployed camera.
- CL LEVEL can change depending upon vegetation and air conditions. Vegetation, trees, hills will reduce signal level.

Step 7. CL INFO (Home only)

CL INFO is a special item that only appears only on the HOME camera. CL INFO is used to verify that remote cameras have been deployed and have connected to the HOME camera. When CL INFO is displayed press the UP key to display information on each network camera.

Screen 1 is a summary of cameras. It will show CL INFO and the number of cameras on the network.

<screen shots of the 2 display types>

Press UP and the first camera status will be displayed. Continue to press UP or DOWN to display the status of each camera. The CL INFO menus allows you to see how many camera are on the network and what their battery status is. Here is some examples:

1st Screen	2nd Screen	Explanation
01 / HOME	001 OK	1st node is HOME with CL LOC 001. Battery is OK.
02 / CAM	005 OK	2nd node is a remote camera with CL LOC 005, battery OK.
03 / CAM	003 LO	3rd node is a remote camera with CL LOC 003, battery LO.

CL INFO file. The CL INFO information is also on the HOME camera's SD card. Click the file **Report.html** in the DCIM\400CUDDY folder. Your computers web browser will display a report that shows detailed status of all cameras on the network.

Date: 10/14/2016											
#	Mode	Location ID	Camera ID	RF Level	Battery	Image Queue	SD Images	SD Free Space	RF Error	HW Version	FW Version
1	Home	000	HOME	99	Good	0	1060	3719 MB	-	G23	5.0.15
2	Camera	140	FIRST CORNER	40	Good	14	0	1854 MB	-	G23	5.0.16
3	Camera	070	FIRST FIELD	64	Full	33	33	906 MB	-	G23	5.0.16
4	Camera	090	HILLTOP	42	Good	54	46	14723 MB	-	G23	5.0.15
5	Repeater	020	FIRST CORNER	44	Full	Repeater	0	1885 MB	-	G23	5.0.15
6	Repeater	110	TWIN ROADS	18	Full	Repeater	45	1593 MB	-	G23	5.0.15
7	Repeater	080	HILL TOP	40	Full	Repeater	0	3779 MB	-	G23	5.0.15
8	Repeater	050	MAIN ROAD POPLE	42	Full	Repeater	0	3779 MB	-	G23	5.0.15
9	Repeater	010	DRIVE WAY	72	Fair !	Repeater	0	3794 MB	-	G23	5.0.15
10	Camera	130	MILLER PARK	34	Good	24	3	3736 MB	-	G23	5.0.15
11	Repeater	060	VISION CORNER	14	Full	Repeater	0	3794 MB	-	G23	5.0.15
12	Repeater	100	GRAVEL PIT	32	Full	Repeater	0	1885 MB	-	G23	5.0.15
13	Repeater	030	TRACTOR ROAD	66	Ext. Good	Repeater	0	3794 MB	-	G23	5.0.15
14	Repeater	040	FIRST FIELD	20	Ext. Fair !	Repeater	0	3794 MB	-	G23	5.0.15
15	Repeater	120	BOBCAT PASS	52	Full	Repeater	0	3794 MB	-	G23	5.0.15
16	-										

Camera Naming: recommended usage of CL LOC & CAM ID

Keeping track of the location and images from 15 remote cameras is not a trivial task. Where is camera 6? Where was this image taken? To make camera and image management easy CuddeLink has 2 features to simplify image management.

CL LOC. You probably do not want images from 15 cameras saved in one folder on your SD card. The Home camera saves the images from each camera in unique folder based upon the CL LOC setting. We recommend you assign each camera a unique CL LOC number and that number will determine where images are saved on the HOME camera's SD card.

If you move a camera to a new location the images from that camera will continue to be saved in the same folder. If this is acceptable to you then you can keep the CL LOC the same as you move the camera to a new location. However, if you prefer to organize your images by location then you should change the CL LOC every time you move the camera. If you do change CL LOC then you must make sure you do not reuse a CL LOC that another camera might be using. We have found the following method helps assure there isn't any CL LOC numbering conflicts:

Use 10-based numbers for CL LOC, such as 010, 020, 030, and so on up to 160 for 16 remote cameras. As you move a camera you only need to increment the CL LOC one number – CL LOC 030 becomes 031 when moved. If you move the camera again, set the CL LOC to 032. *(Just remember that when you get to 039 that you shouldn't advance to 040, but go back to 030 or*

pick a new 10-based number that is not being used). This method will assure you never have duplicate CL LOCs and creates a new image folder each time a camera is moved.

DCIM/400CUDDY/LOC__010 this is folder where images from camera with CL LOC 010 are saved

DCIM/400CUDDY/LOC__020 this is folder where images from camera with CL LOC 020 are saved

DCIM/400CUDDY/LOC__021 this is folder where images from camera with CL LOC 021 are saved

CAM ID. With 15 remote camera it can be difficult to determine where an image was taken. We recommend you use CAM ID to define the location of the camera as this will make it easy for you to determine where the images were taken. Each time you move the camera you should assign a new CAM ID that defines the new location. Some examples of names that we have used are POND FIELD, VISION TRAIL, HILL TOP. The CAM ID is printed on the image and makes it easy to determine where an image was taken.

CuddeLink Field Deployment

Setting up a CuddeLink network is easy, but to assure cameras are connected you *must* deploy cameras in proper sequence. Deploying a network of cameras is comparable to making a chain and you are adding links to the chain.

Step 1 – Deploy the Home Camera

1. Assign one CuddeLink camera to be HOME by setting the CL MODE to HOME.
2. We recommend you place the included HOME sticker to the inside of the camera's UI door.
3. Use the COMMANDS menu to assign a CL LOC of 010 to this camera. We recommend you write 10 on the HOME sticker.
4. Set the CL CHANNEL. The CL CHANNEL prevents neighboring CuddeLink cameras from accessing your network. If there are no other networks in your area you can select any numbers you like. CuddeLink performance is not affected by the channel number. If you

suspect interference change the CL Channel. Remember the channel number as all cameras in your network *must be assigned the same channel number.*

5. Set the other camera parameters as required. Selected EZ or ADV mode and set the delays, time lapse, etc. as desired.
6. Arm the camera and mount it. You will return to this camera after you deploy the remaining cameras on your network. *You must ARM the Home camera before you deploy additional cameras.*

Step 2 – Deploy the 1st Remote Camera

1. We recommend you setup the camera while at the HOME node.
2. Set basic camera parameters as required. Selected EZ or ADV mode and set the delays, time lapse, etc. as desired.
3. Assign a CL LOC of 020 to this camera. Each camera should be given a unique CL LOC number. You can use any CL LOC number between 001 and 999. We recommend Home be assigned 010, the 1st remote be assigned 020, the second remote 030, and so.
4. Use the CL MENU to set these settings:
    a. Set CL MODE = REMOTE.
    b. Set the CL CHANNEL to the same number you set on the HOME camera.
    c. Set the CL DELAY as required.
    d. Set the CL COUNT as required.
5. Enable the CL LEVEL menu. If you are in range of a camera, within 30 to 60 seconds you should see a number & text displayed. This is the strength of the signal received from the HOME node. As long as the signal is GOOD this camera is connected to the HOME node. If a number is not displayed within a few minutes you are too far from a camera. See topic Understanding Transmission Range for more details.

TIP – It is good practice to program a remote camera while next to the HOME or previously deployed REMOTE camera. Then enable CL LEVEL while next to the deployed camera. This will assure you have a CL Signal. Then as you move away from the Home camera and towards your place of deployment you can observe the CL LEVEL to assure sufficient signal.

6. Arm the camera and mount it as desired. *Note – you must ARM the camera before you deploy additional cameras.*

Step 3 – Deploy Additional Remote Cameras

Deploying additional remote cameras is identical to setting up the 1st remote, except you should assign a new CL LOC number as explained above.

When you enable the CL LEVEL command the remote will display the signal strength of the strongest signal received. As long as a signal is received your camera is connected to the network.

Complete the setup of the camera parameters and then ARM the camera. *Note – you must ARM the camera before you deploy additional cameras.*

Continue deploying additional remote cameras as required.

Step 4 – Verifying the CuddeLink Network

After you have deployed all your cameras you should verify that they all can talk to the HOME node. Return to the HOME camera and use the CL NODES command to verify that all REMOTE cameras are connected to HOME, and to determine the REMOTES battery level.

*Note – it may take an hour for the network to **build**. We recommend waiting 1 hour or more after deploying the last camera before you check the HOME node CL INFO.*

1. Visit the HOME node and enable CL MENU, then enable CL NODES.
2. The display will show **## NODES** where ## is how many cameras are in the network. This includes the HOME node.

3. Press the UP key to view each of the connected cameras. The CL LOC number and battery level will be displayed (this is the reason we encourage unique CL LOCs for each camera).
4. Press the UP key consecutively to see all cameras on the network and their battery level.
5. Once you have verified that all cameras are on the network your deployment is complete.

Step 5 – Checking the Home Camera

Checking the HOME camera is similar to checking a conventional trail camera. Disarm the camera by pressing the UP key and remove the SD card. We also recommend you use the CL NODES command (explained above) to check the status of your network and the battery level of the REMOTE cameras. This allows you to keep track of the REMOTE cameras battery status without having to visit them. *See section SD CARD below for how images are saved on the CuddeLink cameras.*

Each REMOTE camera will periodically send a status image to the HOME camera. This status report can be displayed as a conventional image and shows basic stats about the REMOTE camera. This allows you to verify that the REMOTE cameras are functioning correctly, eliminating the need to visit the REMOTE cameras.

Note – we recommend using a PC with running our PC Trophy Room to view images. See section *Trophy Room*.

Step 6 – Moving a Remote Camera

Moving a REMOTE camera can temporarily disrupt your network. Think of your network as a chain of links and you can see that removing one link may break the chain. This means you need to take precautions when moving cameras to assure your network remains functioning.

To move a camera we recommend this process:

1. Disarm the camera and put it into CL LEVEL mode. CL LEVEL will keep the camera from auto-arming for 30 minutes, while keeping the radio enabled. If you require more time

pressing the UP or DOWN key while CL LEVEL is displayed will extend the time an additional 30 minutes

2. Move the camera to the new location and verify you are connected to the network using the CL LEVEL indicator.
3. This is where the mapping feature on a GPS is valuable. Using the map you can determine if moving the camera might have broken links to other cameras. If you think a link may have been broken you must visit the other cameras to verify their CL LEVEL is good.
4. After moving the cameras, allow sufficient time for the network to adjust. Then visit the HOME camera and use CL INFO command to verify all cameras are still connected. If cameras are not connected you will need to visit them to verify the CL LEVEL and potentially relocate them.
5. We recommend you increment the CL LOC number every time you move a camera. This will allow HOME node to create a new folder for this new location. We also recommend changing the CAM ID to name this new location.

This completes the setup guidance section of this manual. As stated above, we recommend you go back to page 1 and read this section 1 more time. Doing so may save you considerable time and frustration when you first deploy your CuddeLink cameras.

Understanding Transmission Range

The CL LEVEL command is a signal strength meter you can use to verify radio reception. The range is -- to +99 with descriptive words to simplify the meaning. A signal of FAIR, GOOD, BEST is sufficient signal to assure image transmission. It is ok to have a signal strength of POOR, but we recommend you try to not use POOR unless at the end of a chain.

We recommend using a map based GPS or online aerial photos to help deploy cameras. A map will allow you to check distance between cameras and verify how the cameras are

connected. For example, you may think camera 3 is connected to camera 2 while the map may show you that camera 2 is actually closer to camera 1.

*Note – Google My Maps is an excellent tool to manage camera location. My Maps uses aerial photos and allows you to place pins where cameras are located and measure the distance between cameras. Use your web browser and search for **Google My Maps** for more information.*

We have tested transmission to nearly ½ mile in heavy forest and to over 2 miles in open terrain. Trees, foliage, elevation, terrain, hills, etc. all effect transmission range. You will need to experiment and use your GPS, maps, and the CL LEVEL to determine optimum deployment.

Generally, the higher the camera is off the ground the better it will receive and transmit images. Using Genius mounts to place the camera high and aim it down is a good way to increase transmission range.

SD CARD – HOME

The HOME node will save the CuddeLink images in the folder 400CUDDY. Within the 400CUDDY folder the images will be sorted into subfolders for each remote camera by the camera's CL LOC number (this is the second reason we suggest you set unique CL LOCs for each remote).

100CUDDY – the home node will save the images it records in this folder

400CUDDY – this is the folder where CuddeLink remote images are saved. Within this folder are subfolders for each remote camera.

LOC__000 – this is where images will reside for REMOTES that do not have a CL LOC set.

LOC__001 – images from remote with CL LOC 001

LOC__002 – images from remote with CL LOC 002

And so on for each camera on your CuddeLink network.

Status.html – All remote camera sends status data to the home camera. These reports are displayed in the Status.html file. Click this file to view it with your web browser.

Status Folder –This folder contains the status report from each camera. You only need to view these status images if your web browser cannot display the status.html.

Images – Images are identified with the prefix T_ which indicates this is a low resolution image. The corresponding full size image is retained on the remotes camera's SD card.

SD CARD – REMOTE

Images transmitted from the REMOTE cameras will be reduced in size and quality. This is required due to the limitations of the wireless technology. However, the full size image are saved on the REMOTE camera SD card in the DCIM 100CUDDY folder. This also means that if you delete the CuddeLink images you will still have the original hi-resolution images on the remote camera's SD card.

TROPHY ROOM

We strongly recommend you use Trophy Room to manage your CuddeLink images. Trophy Room is a free Windows program that is designed to manage trail camera images from all brands of trail cameras. It includes advanced features for managing CuddeLink images.

If you are not a PC users, we recommend you consider purchasing a low cost Windows tablet for CuddeLink image management. Visit www.cuddeback.com/TrophyRoom for details.

Trophy Room has a wealth of features to manage trail camera images, which are explained on the website and the Trophy Room manual. Here is a brief description of how Trophy Room functions with CuddeLink images.

1. CuddeLink images are downsized to 50KB to maximize network performance. Trophy Room will display the images as if they were full size.
2. CuddeLink images saved on the SD card are sorted by camera ID, viewing and manually copying the images requires special care. Trophy Room handles this for you.
    a. Allows viewing the CuddeLink images on the SD card
    b. Allows easy copying the CuddeLink images from the SD card to the PC.

3. Trophy Room can automatically transfer the images from the HOME PLUS product to the PC. If the PC is connected to the Internet the images can be accessed from most Internet connected PC, tablet, or phone (see next section HOME PLUS).
4. Trophy Room has a wealth of training documents and videos to aid you in learning to use CuddeLink and Cuddeback cameras. Plus, as new documents are released they will be automatically downloaded to Trophy Room.

REMOTE ACCESS

A great benefit of CuddeLink is that it allows the images to be accessed via the Internet. A few things are required to do this:

1. CuddeLink HOME PLUS product
2. Windows PC, Notebook, or Windows 10 Tablet
3. Cuddeback's Trophy Room PC program (free download)**
4. A Microsoft account (free from Microsoft)***
5. A Microsoft OneDrive account (free from Microsoft)***
6. An Internet connection, either DSL, Cable, or Cell Modem.
7. A USB cable to connect the CuddeLink HOME PLUS to the PC**
8. A AC power adapter to power the CuddeLink HOME PLUS**

**Cuddeback can supply the required USB cable and AC adapter. www.com

***Visit www.com for information on Microsoft account and OneDrive.

To setup the CuddeLink HOME PLUS

1. Install Trophy Room on your PC or tablet
2. Assure the CuddeLink HOME PLUS camera has connection to the REMOTE cameras. Most likely the HOME camera is inside a building, which may limit transmission. If this

happens you can install a REPEATER outside the building which will relay the images from the REMOTES to HOME PLUS inside the house.

3. Power the CuddeLink HOME PLUS from the AC Power Adapter and the internal batteries. HOME PLUS will use the house AC for power, and the batteries when the AC is not available.
4. Attach the USB cable to the HOME PLUS nodes USB port and the PC's USB port.
5. Configure the HOME PLUS node as required: Channel, PIN, & CL LOC. Verify the HOME PLUS is connected to the REMOTE cameras using the CL INFO menu.
6. ARM the HOME PLUS node.
7. Start Trophy Room. Click TOOLS, then PREFERENCES, then set CUDDELINK to ON.
8. Click TEST to verify that everything is setup correctly. This test will verify that the PC can communicate with the CuddeLink HOME PLUS node and that Microsoft OneDrive is available.
9. Set the time preferences in Trophy Room. This setting will determine how often the images are transferred from the HOME PLUS node to the PC, and hence to the Internet. If you do not require instant awareness of activity, we recommend a 12 hour setting.
10. DONE – that is all you need to do. You can close Trophy Room, but you must leave the PC powered on. The HOME PLUS node must be powered on and ARMed.

Viewing the Images

CuddeLink images will automatically be copied from the HOME PLUS node to the PC and saved in the PC user's OneDrive folder. A special folder called CuddeLink was created to store the images. The best way to view these images is with Trophy Room. When the CuddeLink mode is enabled Trophy Room will display the folders in the Navigator.

Managing the Images

Trophy Room has access to 2 locations on your PC for saving images:

D:\Cuddeback\ - Trophy Room image archive

C:\Users\<user_name>\OneDrive\CuddeLink - CuddeLink image archive

CuddeLink images are reduced in size to about 50KB. This is required to maximize network performance. The full resolution images remain on the camera's SD card which you can retrieve when you visit the camera. For this reason we recommend that the CuddeLink images are only used for viewing and not copied into the Trophy Room Cuddeback folder. We also do not allow the full set of Trophy Room tools to operate on the CuddeLink images, as these tools can only be used on the full size images. However, if you want to use the full Trophy Room tools you can copy the CuddeLink folders to the Trophy Room Cuddeback folder. Click FOLDER OPTIONS then click COPY TO TROPHY ROOM. Once the images are in the Cuddeback Trophy Room folder you can work with them using the full set of Trophy Room tools.

REPEATER

Throughout this manual we mentioned using a Repeater to extend transmission range. There are 2 options for deploying a repeater.

1. Use a CuddeLink camera in Repeater Mode. Set CL MODE to REPEATER
2. Use the CuddeLink HOME PLUS in the repeater mode. The advantage of this is that it is less cost than using a camera.

TIPS

- All CuddeLink cameras are compatible with Cuddeback's CuddePower battery booster, which can greatly extend battery life.
- To improve transmission range try to keep the cameras in high ground and avoid low areas if possible. In other words, hills are better than valleys. CuddeLink will function perfectly in low terrain but transmission range may be reduced. If you do put a camera in a valley you can deploy a REPEATER on a nearby hill to extend the transmission range.
- To improve transmission range mount that camera high in the tree and aim it down.
- Don't get greedy trying to get all REMOTE images sent to the HOME node, doing so can overload the network and shorten battery life, which defeats the purpose of the CuddeLink network. Use the CL DELAY wisely to get the images you need from each camera. On the

other hand, don't be afraid to use a short CL DELAY as required, like on a trail, where activity is reduced.

- Deploy REPEATERS on your property that establish a highway-type network that your CuddeLink cameras connect to. Doing so will allow you to move cameras at will without having to worry about connection.
- Use a GPS and topographical maps to help design a deployment strategy.
- Multiple networks can be used to localize cameras. For example, say you have a large piece of property which would require too many cameras to connect end to end. Break the property into smaller areas and deploy a network in each area. You will be required to check multiple cameras, but far less than if you had to check all the cameras.
- With CuddeLink cameras you will not be visiting your cameras often. Grass and weeds can quickly grow tall and block the camera's view. Consider spraying the area directly in front of the camera with grass killer. This will not permanently kill the growth, but will slow the growth so you do not have to maintain cutting.

Appendix A – Cuddeback File and Folder Names on Cuddeback camera SD card

Folders on the SD Card

DCIM – the root folder on the SD card. All images and videos reside in this folder.

100CUDDY – (Image Folder). Still images reside in this folder.

200CUDDY – (Time-Lapse Folder). Images taken in time-lapse mode reside in this folder.

MM_DD_YY - Date subdirectory for time-lapse folder, where MM is month, DD is date, and YY is year. Each day a new folder is created to hold the day's time-lapse images.

300CUDDY – (Video Folder). Video files reside in this folder.

400CUDDY – (CuddeLink Folder) CuddeLink thumbnails are stored in this folder.

LOC__### – Folders for CuddeLink images received from REMOTE cameras. Where ### is the CL LOC 3 digit number for the Remote camera.

STATUS – Folder that holds status images from each remote camera.

Images and Video Files on the SD Card

I__12345.jpg – Image when burst mode is off

I_12345a.jpg – Image when burst mode is on, where a is a,b,c,d,e to represent the image in the burst sequence

V__12345.m4v – Video file

L__12345.jpg – Time-Lapse image

T__12345.jpg – Thumbnail image