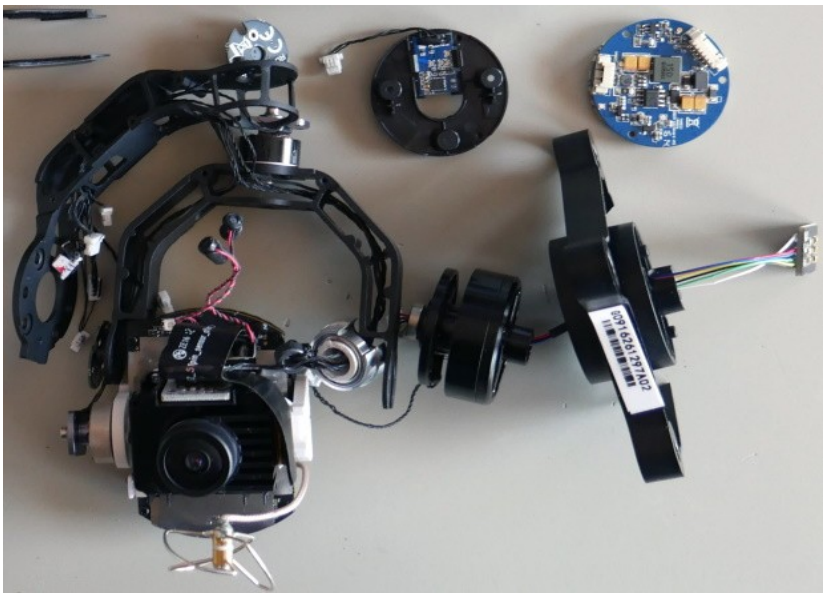
CGO3control user manual



Controlling Yuneec cameras CGO3(+) or CGO-ET
Version 1.0

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1 Introduction

This application belongs to the tool-set of Q500log2kml. It was exported from this to this extra tool in order to reduce complexity for usage. This application has two main functions:

- Control a CGO3, CGO3+ or CGO-ET camera,
- Geotagging of JPG-pictures from CGO3 camera.

Important note: Use this application on your own risk. There is no guaranty for correctness and/or completeness of the used data.

Because this all was done by own tests and private researches, the interpretation of the data may be wrong.

On the other hand, this application is freeware. Have fun…

The source code, binaries and documentation is available here:
https://github.com/h-elsner/CGO3control

Remark: Camera control will not work with Yuneec C23 or newer cameras.

1.1 Features (short description)

- **CGO3 control:** A simple GUI to control the camera by CGI commands via HTTP.
- **CGO3 test:** Test environment for commands to CGO3 via 5G WLAN connection.
- **GeoTagging:** Add coordinates and altitude from telemetry files to meta data of JPG-pictures from CGO3 that do not have this in EXIF meta. Assignment of data to pictures is based on time stamp.

1.2 Installation

No installation necessary, it is a portable application (only the binary needed). Simply unzip the downloaded file and store it to a directory where you have write access. This can also be a USB stick or a removable drive.

Download updates and user manual from my homepage.

To run the application, you might have to suppress Microsoft SmartScreen warnings: Click on "more info" and then "run anyway".

2 Detailed description of the features

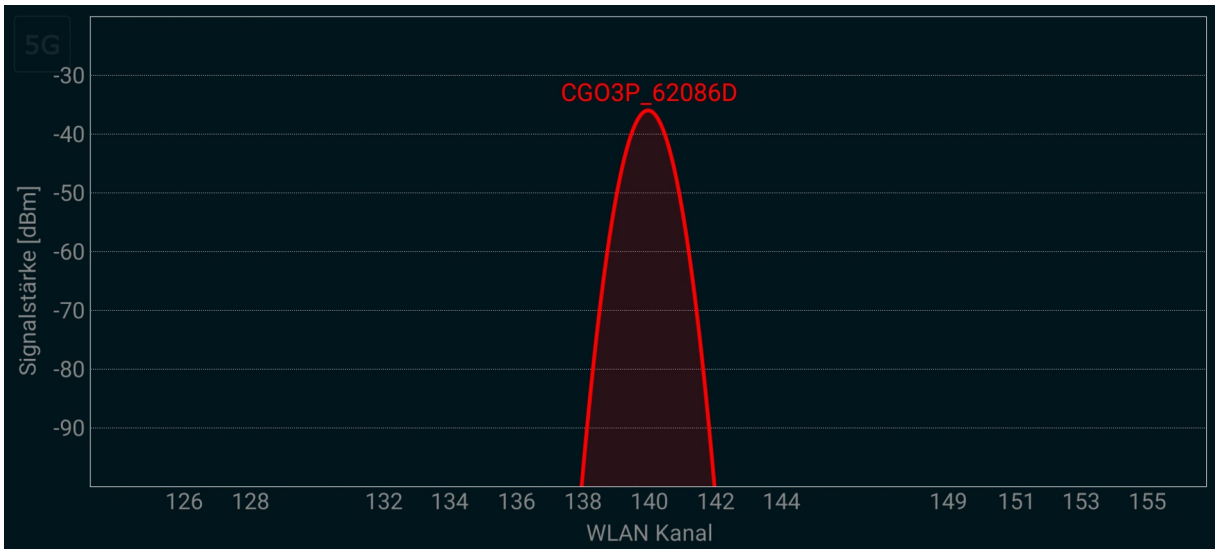
2.1 CGO3 control

This is for testing commands to CGO3 and a raw interface to control the camera. Of course, this is only possible if a WiFi connection on 5GHz is established.

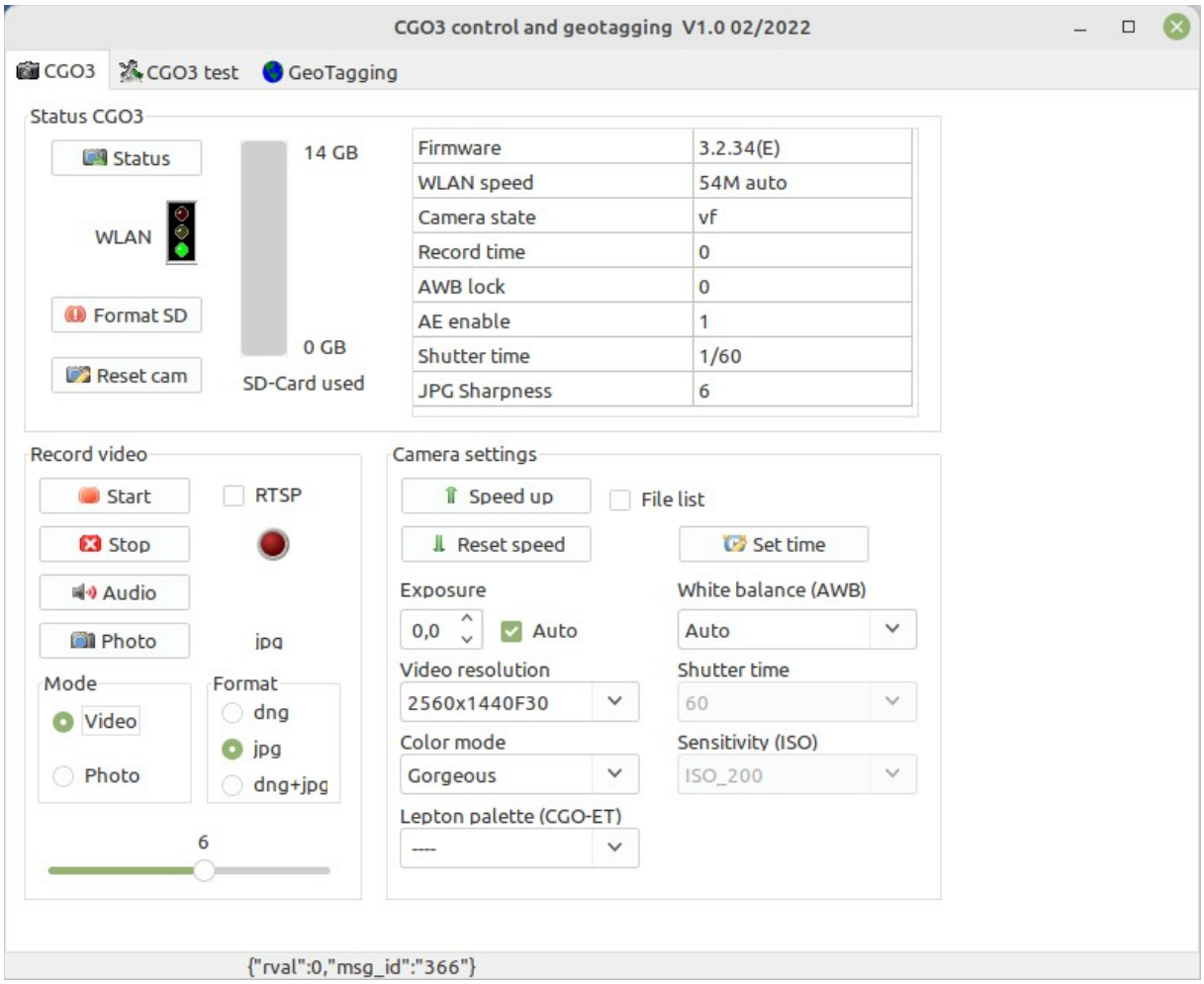
The camera creates a WiFi hot-spot. Any capable device can connect to this hot-spot. More devices increase the latency of the connection.
The SSID starts with CGO3_ or CGO3P_ (P for plus) followed by a unique number.

The default password for CGO3 WLAN is **1234567890**. To get connection, a SD card must be in the camera because the password is saved there in a file "MISC\wireless.conf".

To test if WiFi hot-spot of the camera works and check the signal strength a WiFi analyzer app is a good tool.



To initialize and check the connection to the camera hit button Status on CGO3 page first. Traffic light has to go green.



Status CGO3: Status will initialize the camera and starts a query to get status of the CGO3. Some results are in the table on the right side. Status query needs to be done first to enable the functions. The traffic light shows the status of the WLAN connection if the Status button was clicked.

Format SD is doing a formatting of the SD card in the CGO3. It deletes all files and recreates the needed directories. Also, a new configuration file will be created with standard password for WLAN connection (1234567890).

Reset cam resets all settings of the CGO3 to factory default values.

Record video: Start / Stop controls video recording. If 'RTSP' is checked the command 'rtsp://192.168.42.1/live' will be sent to local browser. The internet browser must be able to play the RTSP stream. The protocol RSTP must be registered in the browser to make this happen (best is to redirect to VLC player).

Audio: With Audio button, you can toggle between Audio on and off.

Photo: Take a shot with Photo button.

Mode: You can switch between video and photo mode of the camera. For photo, it is recommended to switch to photo mode. Take a photo in video mode results in bad quality and only jpg.

Format: Select output format of the pictures: .dng is raw format, .jpg is compressed format. With the slider below, the sharpness for picture post processing to jpg format can be set between 1 and 10 (default is 6).

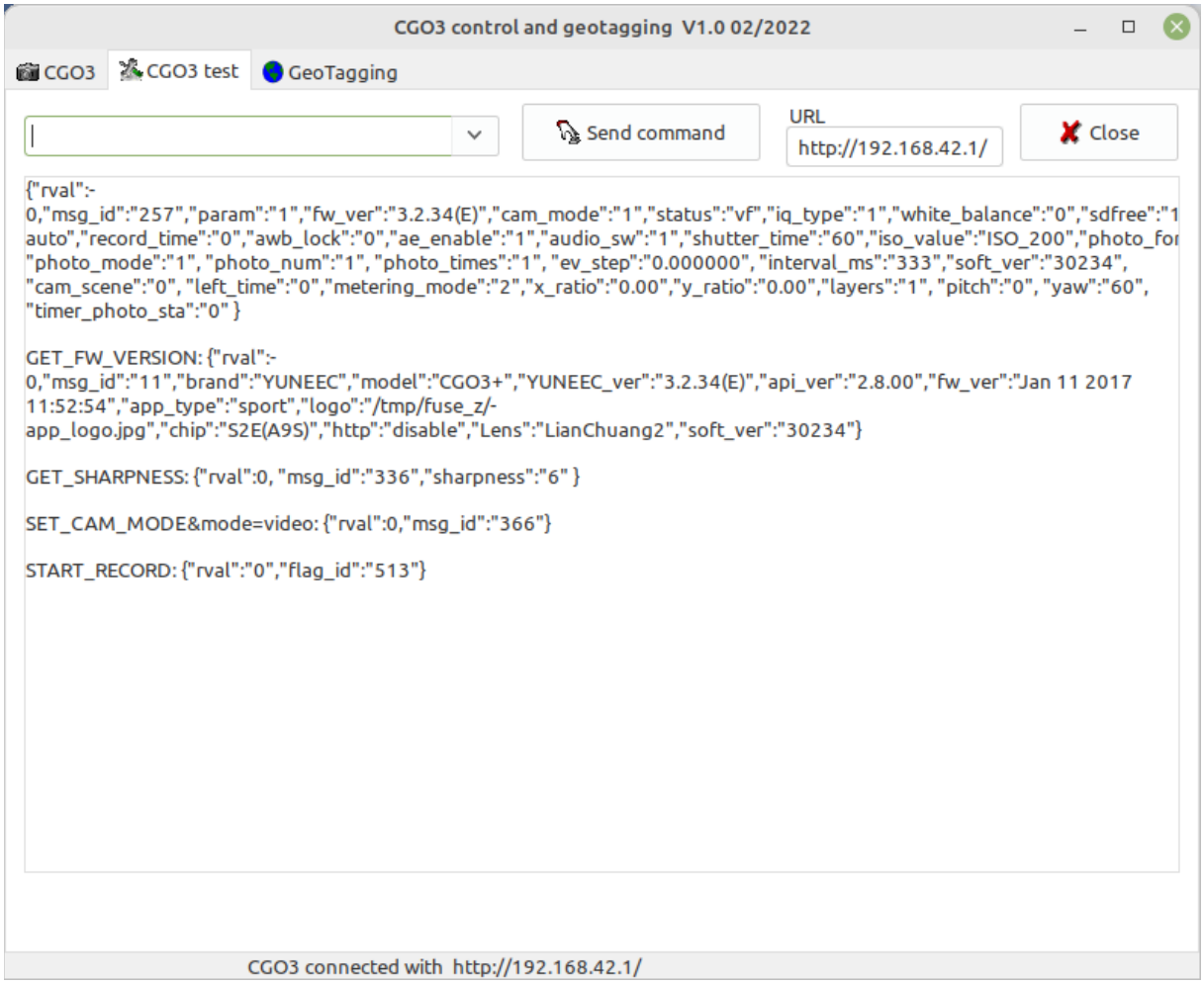
Other settings: To increase the WLAN speed to 56MBit/s, use Speed up. This useful if you want to download or check pictures from the CGO3. Large videos take too long to download via WLAN. If 'File list' is checked then the file system in browser will be opened, offer the possibility to browse and download files from SD card. After those action, it is recommended to set the default WiFi speed by Reset speed. This will set the WLAN speed to default 6MBit/s.
Set time: This will send a command to the camera to set camera internal time to current time.

If exposure is set to automatic (check box ‘Auto’ checked), then the exposure can be corrected from -2.0 to +2.0 in 0.5 steps.
If exposure is set to manual, then it is possible to select ISO sensitivity and shutter time using related drop down boxes.
You can also select video resolution from full HD, 2K up to 4K, the white balance and color mode (color mode only for jpg pictures).

2.2 CGO3 test

This is a test environment for commands to CGO3, CGO3+ or CGO-ET. Enter only the body of the command (i.e. 'GET_PHOTO_FORMAT'). Prefix 'http://192.168.42.1/cgi-bin/cgi?CMD=' will be automatically added. Below is the field for the return value. "rval":0 means, command checked and executed successful. By double click on this output field, the return value will be copied to the clipboard.

To initialize and check the connection to the camera hit button Status on CGO3 page first. Traffic light has to go green. Button Send command will be enabled.

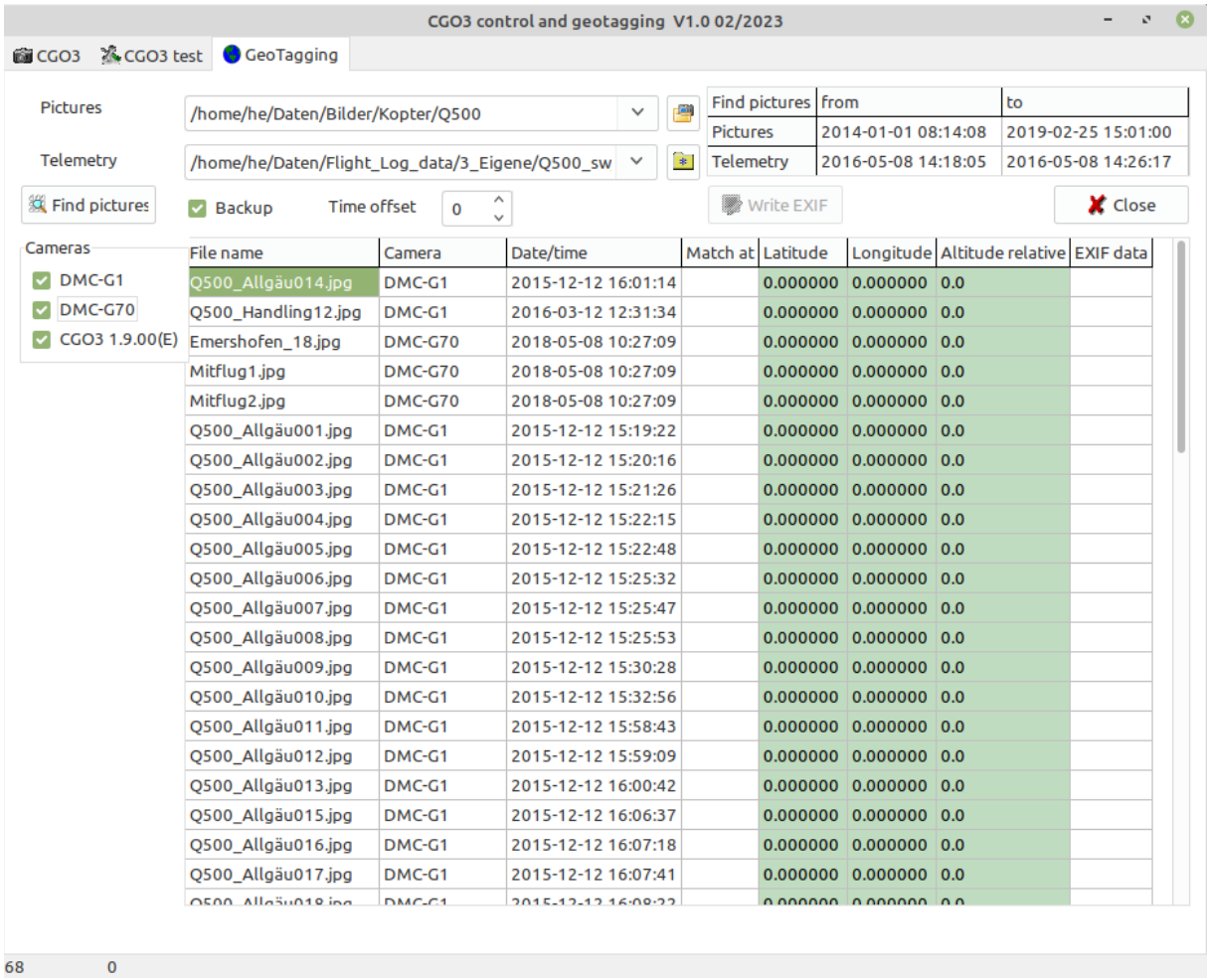


Send command will send the given command to the camera. Result will be shown in the text field.

CGO3 Standard URL: IP-address of CGO3 **with trailing slash** (default: http://192.168.42.1/). This address is used to send CGI- commands via HTTP protocol to CGO3 and receive results.

2.3 Geotagging

ToDo: Coming soon



3 Appendix

3.1 Sources and additional information

An older description of the commands is here:
https://github.com/racerxdl/CGO/blob/master/Docs/commands.md

See also:
https://bitbucket.org/denis_loh/cgocameralibrary/wiki/Home

3.2 IP addresses for video streams

CGO2+/CGO3/CGO3+
Media files: http://192.168.42.1/DCIM/100MEDIA/
Live stream: rtsp://192.168.42.1/live

CGO-ET
Natural live stream: rtsp://192.168.42.1:554/live
Thermal stream: rtsp://192.168.42.1:8554/live

MK58/GoPro
Live stream: rtsp://192.168.110.1/cam1/h264

Lumix/GCO4
Live stream: rtsp://192.168.73.254:8557/PSIA/Streaming/channels/2?videoCodecType=H.264

3.3 Format CGI commands

IP address and prefix **Command** **Parameter values**

Examples for CGI commands:
http://192.168.42.1/cgi-bin/cgi?CMD=INDEX_PAGE
http://192.168.42.1/cgi-bin/cgi?CMD=SET_WIFI_SPEED&rate=9

Result starts with return value **rval**. This indicates if the command was successful or not.

In case the CGI command was received and accepted rval is 0 and message ID is > 0.
Example: *{"rval":0, "msg_id":1, …}*

rval < 0 are error codes,
msg_id:0 means unknown message – check if all was proper written, no wrong spaces and so on.
Not all commands will be accepted by your camera.

3.4 Possible commands (not all can/should be used!)

CGO camera CGI commands	Parameter
INDEX_PAGE	
GET_TIME	
SET_TIME	time=(%Y-%m-%d_%H:%M:%S)
QUERY_SD_FIRMWARE	
DECOMPRESS_UPLOADED_FILE	
GET_DECOMPRESS_PROGESS	FW Update
SET_UPDATE_FILE_TYPE	FW Update
UPGRADE_PKG	FW Update
GET_UPGRADE_PROGESS	FW Update
DEL_ALL_FIRMWARE	FW Update
DEL_MEDIA_FILE	
rtsp	
GET_FW_VERSION	
START_RECORD	
STOP_RECORD	
TAKE_PHOTO	
STOP_SHUTTER	
GET_SHUTTER_STATE	
SET_PHOTOMODE_BURST	photonum=
GET_PHOTOMODE	
SET_PHOTOMODE_TIMELAPSE	
SET_PHOTOMODE_PANORAMA	type=
SET_PHOTOMODE_SINGLE	
GET_STATUS	
DETECT_CARD	
FORMAT_CARD	
GET_REC_TIME	
REST_VF	
STOP_VF	
SET_PHOTO_SIZE	MODE=
GET_PHOTO_SIZE	
GET_BATTERY_LEVEL	
SET_SETTING	resolution=
GET_SETTING	
SET_VIDEO_STANDARD	PARAM=
GET_VIDEO_STANDARD	
SET_FOV	PARAM=
GET_FOV	
DETECT_CARD	
GET_SPACE	
GET_SPACE_FREE	
GET_TOTAL_SPACE	
GET_CARD_FORMAT	
SET_PHOTO_MODE	MODE=
GET_PHOTO_MODE	
RESET_DEFAULT	
SET_AUDIO_SW	mode= (0: on, 1: off)

GET_AUDIO_SW	
SET_PHOTO_FORMAT	format= (dng, raw, jpg, dng+jpg, jpg+dng, jpg+raw)
GET_PHOTO_FORMAT	
SET_AE_ENABLE	mode=
GET_AE_ENABLE	
SET_SH_TM_ISO	time= &value=
GET_SH_TM_ISO	
SET_IQ_TYPE	mode=
GET_IQ_TYPE	
SET_WHITEBLANCE_MODE	mode=
GET_WHITEBLANCE_MODE	
SET_EXPOSURE_VALUE	mode=
GET_EXPOSURE_VALUE	
SET_VIDEO_MODE	video_mode=
GET_VIDEO_MODE	
SET_CAM_MODE	Mode= (0..4) 0..Center 1..Spot 2..Partial 3..Evalnative 4..Average
GET_CAM_MODE	
GET_CAM_SCENE	
SET_CAM_SCENE	
RESET_STATUS	
request_bind	client_mac_address=
get_bind_state	
SET_RTSP_VID	Resolution=
GET_RTSP_VID	
GET_METERING_MODE	
SET_METERING_MODE	Mode= (0..2) 0 Spot Metering 1 Center Metering 2 Average Metering
SET_SPOT_METER_COORDS	x= &y=
GET_PANORAMA_STATUS	
GET_CAM_SCENE	
GET_CAMERA_PKG_SOFT_VERSION	
SET_FTP_INFO	
GET_FTP_STATUS	
SET_WIFI_SPEED	speed_rate= (1..9)
GET_WIFI_SPEED	
SET_SHARPNESS	value= (1..10, 6: default)
GET_SHARPNESS	

Additional commands for CGO-ET

CGO camera CGI commands	Parameter
GET_FREE_SPACE	
GET_LEPTON_COMM_STATE	
GET_LEPTON_SYS_STATUS	
GET_LEPTON_CAMERA_SERIAL_NUM	
GET_LEPTON_UP_TIME	
GET_LEPTON_FPA_T	
GET_LEPTON_SHUTDOWN_COUNT	
GET_LEPTON_FRAME_NUM	
SET_LEPTON_PALETTE_TYPE	val= (0..10) FUSION(0) RAINBOW(1) GLOBOW(2) ICE_FIRE(3) IRONBLACK(4) MAPLIN(5) MAPLOG(6) GRAYFUSION(7) PCOLOR(8) NoName9 (9) NoName10 (10)
GET_LEPTON_PALETTE_TYPE	
GET_LEPTON_LOCK_RANGE_STATE	
SET_LEPTON_LOCK_RANGE_STATE	val= (1, 0)
SET_LEPTON_TAKE_PHOTO_TIME	val=
GET_LEPTON_TIMING_TAKE_PHOTO_INFO	
STOP_TAKE_PHOTO	
RUN_LEP_FCC_MAINED	
SET_LEPTON_AUTO_RUN_FCC_ENABLE	val=
SET_AIR_PARAMS	enable= (1, 0) value1= (rateOfLaunch) value2= (tOfAir) value3= (tempOfAir)
SET_TEMP_PARAMS	enable= (1, 0) max_temp= min_temp=