

Changes through Firmware 5.5 (Type C)

0x13a2f0 - I'm hooking a function call to 0x13b4b0 that set up the input buffer address (either the read or write location)

Hook code is between 0x1fc1a0 and 0x1fc240

0x1a9ff8 - this used to be a call to print the last error message ("set 1sok to end file..") on an encoder crash, now it calls my shutdown code at 0x1fc540. The shutdown code is super crude, sends 0xffs to 0xb0260000 - 0xb0267fff, this freaks the unit out enough to turn off the motors.

0x1b804c - Used to be a jump to 0x1b3bbc, now it is a hooked call to 0x1fc420 (my rate control part 2), which still calls 0x1b3bbc.

0x1b813c - Used to print "[%d]stillBlock = %d" as a warning that bitrate might be too high, now it is a call to 0x1fc350(my rate control part 1).

0x1ef984-6 - Used to set 20fps, not 18fps. Sample rate for 54000 (new) vs 60000 (old). 24 fps will require more code, as the correct change is a 16-bit value, need to set 32 bit for 72000.

0x1fbdb4 to 0x1fc8f0 All the new code is replacing legacy audio functions.

0x239934 - zeroed out a jump to print and unneeded console message ("ERR:GxImg_MapToISEScaleMethod()")

0x239980 - zeroed out a jump to print and unneeded console message ("WRN:GxImg_MapToISEScaleMethod() Not Support")

0x23fe00 - used to be a call to 0x241be4, now it is a hooked call to 0x1fc280 (sets and prints to initial Qp value), which still calls 0x241be4.

0x2a173c to 0x2a1758 - this mute the error message "CFA need to be R", saying the Bayer phase was wrong, and the color was bizarre. Instead this prevents a jump to calculate the offset, and directly sets \$v0 to 0x200. I do not know why this works.

0x2b7e44-60 - replaced auto white balance with hard coded RGB Gains.

0x2b7e44 Red = 0x1c0

0x2b7e48 Grn = 0x100

0x2b7e4C Blu = 0x100

0x2be8cc - Muted the error message "CA VIG Setting not ready" - my guess this is a lens shading error, as the FOV was changed and the resolution increased, it doesn't have the shading correction for this lens at that FOV (or the new lens). Lens vignetting is not a big issue (I see no issues.)

0x2bf928 - removed a function call to 0x27aee4 and set the return \$v0 to 0x0. Which would check and print "convert 2 sen id fail". Not sure why I needed this, might now be unnecessary. This change is harmless.

0x2bf908-a84 this function was altered to create space for a jump to 0x1fb6b0 (New Preview Res), which computes the frame size for the large FOV, and prints out the size changes.
corner:902 472 (initial size data)
size:840 632
corner:522 188 (output size data)
size:1600 1200

The current size calculations:
new_width = (old_width-440)*4;
new_height = ((new_width/2 + new_width/4)>>2)<<2; // 3/4 width and divisible by 4.
new_x_offset = abs(old_x_offset + old_width/2 - new_width/2);
new_y_offset = abs(old_y_offset + old_height/2 - new_height/2);

0x2bfe74-98 replace error msg: "ERR:%s() error act size (%d %d) < crop Size(%d %d), with a jump to 0x1fbf10 (New Capture Res.) Does the same math as the preview, but with no print out. Calculation code is between 0x1fbf10 and 0x1fc000.

0x2eab6c - I'm hooking a function call to 0x2ea95c that set up the input buffer address (either the read or write location)
Hook code is between 0x1fc0f0 and 0x1fc190

0x2eae08 - I'm hooking another function call to 0x2ea95c that set up the input buffer address (either the read or write location)
Hook code is between 0x1fc040 and 0x1fc1b00.

0x333f28-0x3376c0 Replaced boot JPG image
0x3376c8-0x33ae70 Replaced shutdown JPG image

0x3301c4 and 0xdb12b7 I changed the folder name from "Filescanner" to "Filescan5.5". I needed a way to easily compare and track firmware versions.

0xdbd910-990 All the strings used for formatting messages.

Suppress random errors:
0x24c710/24b728/24b83c/24ce50 - 00da8790 "^RERR:%s() setFolderPath id error %d!\r\n"
0x24c940/278598 - 00db14d0 "^RERR:%s() IPL_SetDZoom fail (Current Mode = %d)\r\n"
0x278568 - 00db1504 "^RERR:%s() IPL_SetDZoom fail (cur:%d max:%d)\r\n"
0x22a840 - 00da3dc4 "^RERR:%s() This Handle is not created(%d)\r\n"
0x01d438/0x01dc20 - 0001c004 "^RERR:%s() Horizontal Scaling down ratio over 2! \r\n"

0x01d450/0x01dc38 - 0001c03c "^RERR:%s() Vertical Scaling down ratio over 2! \r\n"
 0x1c6c0c - 00d94a6c "^RERR:%s() wnd not created\r\n"
 0x2c7ce8 - 00dbdd7c "^RERR:%s() SIEclk = %d\r\n"
 0x30156c - 00dcb5f8 "^RERR:%s() ChgMode_AR0330 to %d...\r\n"
 0x301a34 - 00dcb688 "^RERR:%s() Chip version is 0x%04x\r\n"
 0x2fcb6c - 00dcad18 ERR:ramdisk_setParam() No Implement! uiEvt 1
 0x0eee64 - 000ee27c ERR:System_OnStrgInit_FWS() Init failed!
 0x276198 - 00db1258 "^RERR:%s() -E- Cmd fail %d\r\n"
 0x301b38 - 00dcb620 ERR:Init_AR0330() ^GOTPM v5
 0x2eb66c - 00dc64b8 "^RERR:%s() PLL6 selected but not enabled...\r\n"
 0x2b99a4 - 00dbd148 "^RERR:%s() ^G3DNR on..\r\n"
 0x2b8fd4 - 00dbd054 "^RERR:%s() ^GIPL_FCB_AlgWDR = %d..\r\n"
 0x2b966c - 00dbd114 "^RERR:%s() ^GWDR ON..\r\n"
 0x2b9644 - 00dbd12c "^RERR:%s() ^GWDR OFF..\r\n"
 0x02ec84/2ec10/2f2f4 - 0002e9b4 "^RERR:%s() pwm_pwmEnable(), not opened yet!\r\n"
 0x02b4e94 - 00dbb834 "^RERR:%s() #Entered AF_Tsk\r\n"

In Memory (I create)

0x85bf0000 - the number of frames encoded

0x85bf0004 - the number of solid grey frames

In Memory (I've found)

0x80f82158 - Luma (Y) average for 0 to 0xfff

0x80f8214c - Maybe a frame counter at 25Hz (frames since boot.)

0x80deb17c - Maybe last Luma average 0 to 0xfff