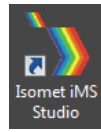


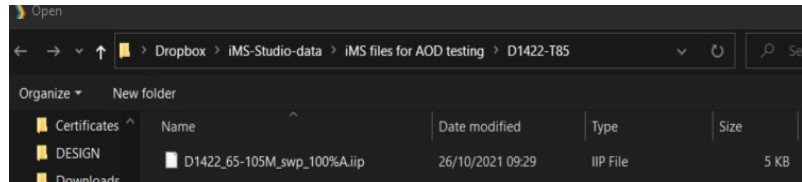
Running the example Isomet iMS Studio Projects

Run the Isomet iMS Studio, e.g. from the desktop icon



1. Load Example Project

Go to **Tool bar > File > Open**
 Select example project file *.ipp
 and open.



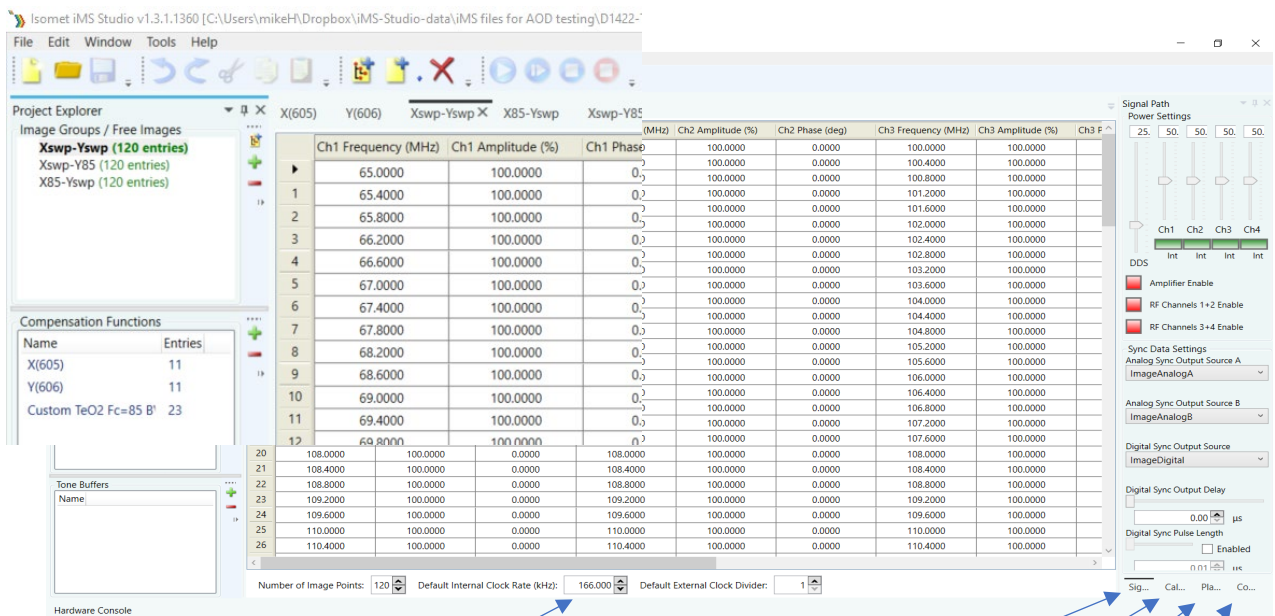
In this case we select the file; **D1422_65-105M_swp_100%A.ipp**
 This file contains three IMAGES that generate a linear frequency ramp followed by an OFF period.

- Xswp-Yswp** sweeps both X and Y axis simultaneously.
- Xswp-Y85** sweeps X axis, Y axis fixed at mid-scan location.
- X85-Yswp** sweeps y axis, X axis fixed at mid-scan location.

All three comprise of 120 image points with the same data on channel pairs. Points 1-100 are programmed with the 65-105MHz sweep at 100% amplitude or fixed 85MHz at 100% amplitude. Points 101-119 are at an arbitrary frequency (85MHz) and 0% amplitude.

The **Sync Data (Dig)** field, is programmed with 0x0001 expect for 5 points around the mid-scan frequency (85MHz). Use the L<-> R slider bar to display. The Sync Data outputs are inverted at the output J7. This data will give a logic high signal to indicate the mid-scan position

The GUI window should look similar to this:



Internal Clock rate

Tabs:

Signal Path

Player

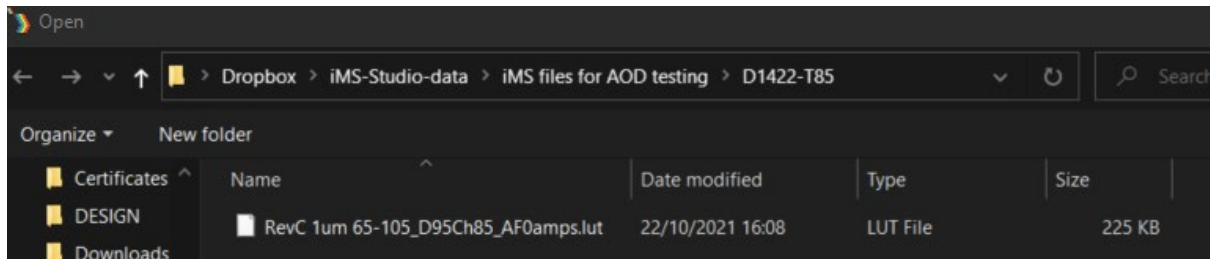
Calibration

Compensation

2. Select Compensation Tab

Click on Import Button

Open the required *.LUT files

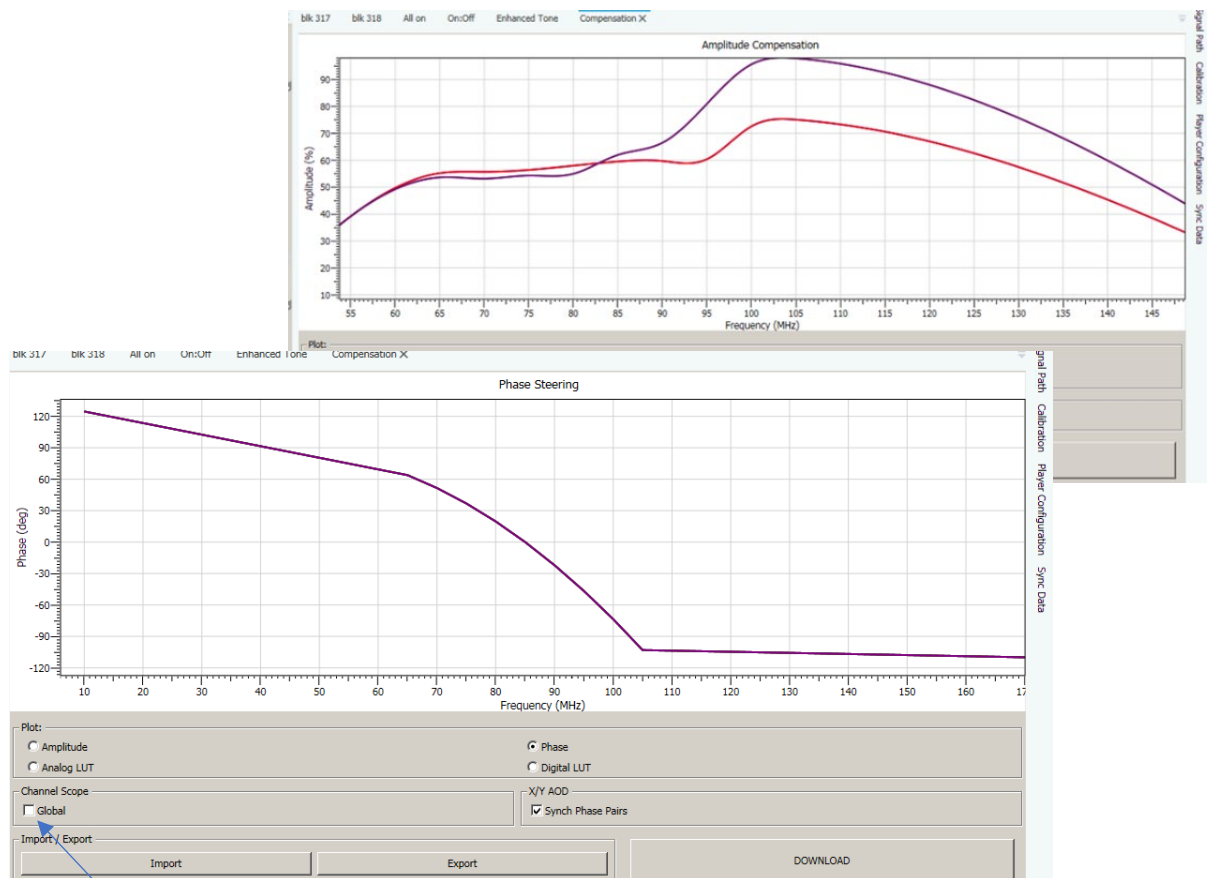


LUT file size = 225KB is a Channel scoped (channel specific) compensation file that can apply unique values to each channel. Global LUT files (57KB size) are not recommended for X-Y deflector use.

In this example we will open file: RevC 1um 65-105M_D95Ch85_AF0amps.LUT

This compensation file is generated for a D1422 at 1um, 65-105MHz freq' range using a AF0-85T-4 amplifiers. The iMS4 Power Settings are : DDS=95% , Ch(n)=85% (See Signal tab).

The graphics will show a plot of the compensation response, Amplitude or Phase as selected by the radio buttons



Make sure **Global** box is unchecked

Click **Download**

3. Select Player Tab

This example will use the **Internal** clock source and **No Trigger** with repeated image play (**Repeat Forever**). Internal clock rate is set on the lower tool bar, main window

For external signals, check **External** buttons and apply:

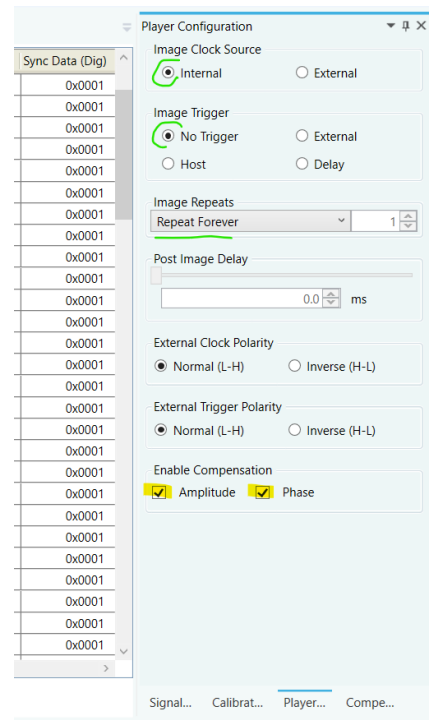
- Trigger input to J10
- Clock input to J11

And when using with an RF amplifier with control through J5 connector of the iMS4 apply:

- Gate input to J9

Note: If you do not want to use a compensation *.LUT file (see previous section) , then uncheck the highlighted boxes to disable compensation.

The RF output will be zero unless a *.LUT file is downloaded into the iMS4 or these boxes are unchecked.



4. Select Signal Tab

Two **Power Settings** control the RF output level:

- **DDS** is common to all four outputs.
- **Ch1, Ch2, Ch3, Ch4** sliders set the power for each output channel independently.

Typical settings when used with AF0-85T-4 are:

- DDS = 90 - 95%
- Ch1 = Ch2 = 80% - 85%
- Ch3 = Ch4 = 80% - 85%

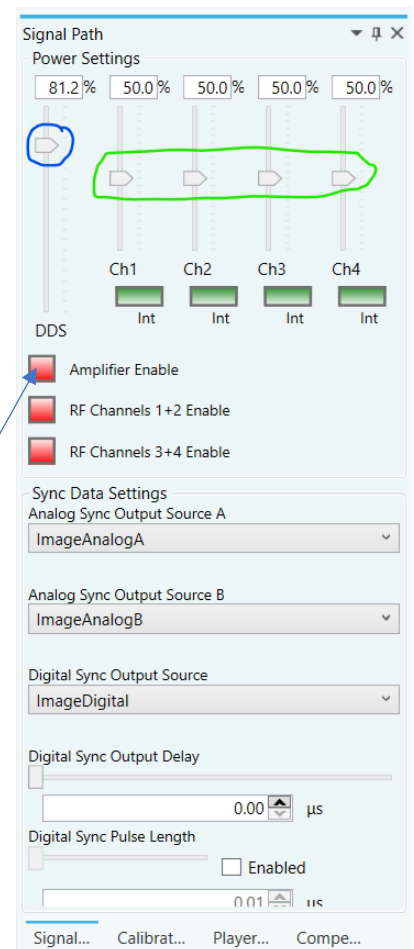
For XY AOD applications, Ch1 = Ch2 and Ch3 = Ch4

iMS4 RF output connectors.

Terminate onto a 50ohm input or load.

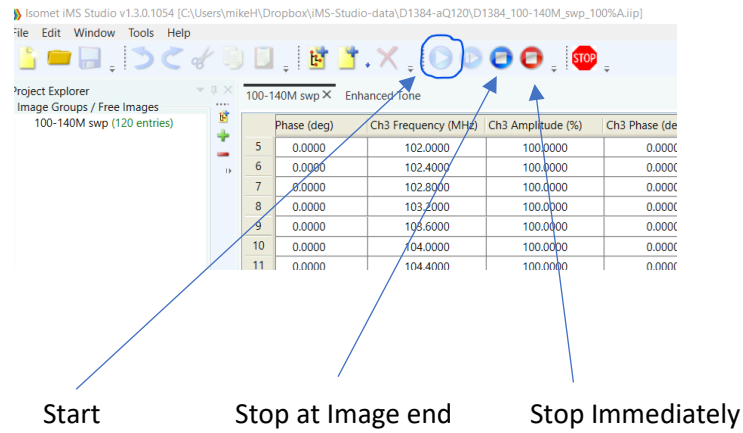
J1 = Ch1, J2 = Ch2, J3 = Ch3, J4 = Ch4

NOT NECESSARY FOR AF0-85T-4



5. Start Image Play

Click the **Play Button** to start Image play.
(It will 'grey' out).

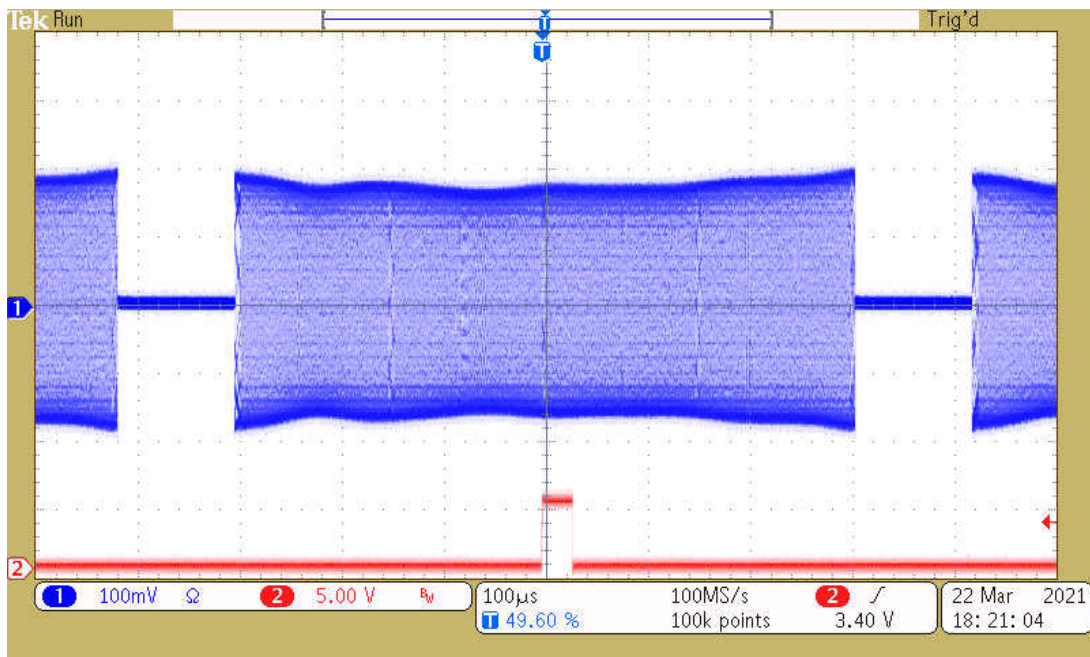


Typical output waveforms on oscilloscope for the files and signal levels described above.

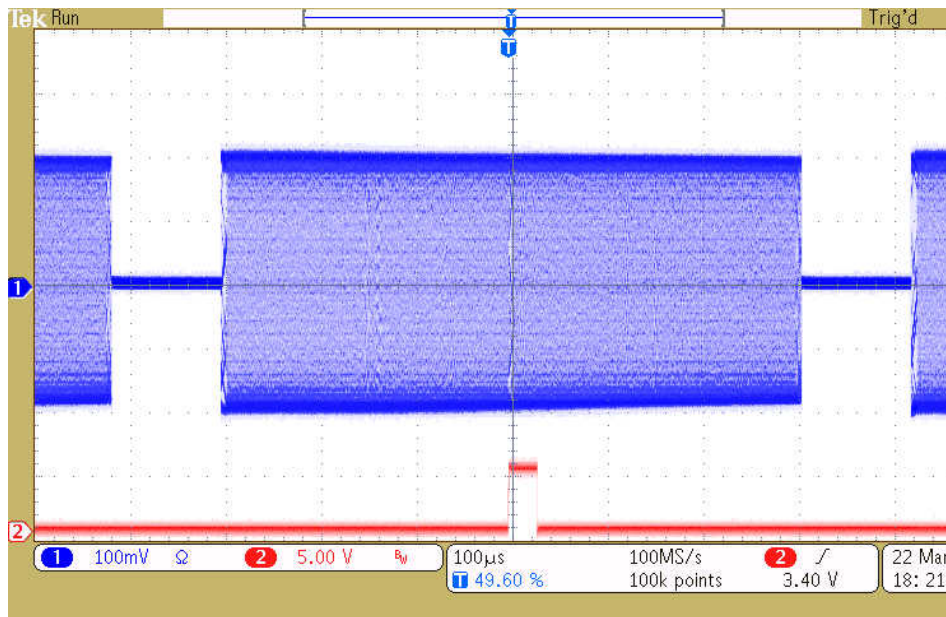
Internal Clock rate 166KHz

Trace 1 = RF output (50ohm terminated); J1, J2

Trace 2 = SDIO-0; J7 pin 33, (rtn pin 26)



The same settings and Image files with **Compensation Disabled**



Player Configuration

Image Clock Source
 Internal External

Image Trigger
 No Trigger External
 Host Delay

Image Repeats
 Repeat Forever 1

Post Image Delay
 0.0 ms

External Clock Polarity
 Normal (L+) Inverse (H-L)

External Trigger Polarity
 Normal (L+) Inverse (H-L)

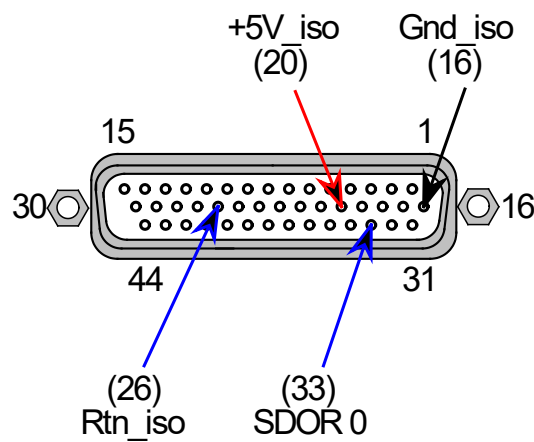
Enable Compensation
 Amplitude Phase

Sig... Cal... Pla... Co...

6: Connection for SDIO-0 signal and return

View into iMS4 connector J7

SDIO outputs are opto- isolated and require a separate +5V supply to operate



7: Does my iMS4 work ?

Single Tone mode provides a basic functional and communication check with the Host PC. This will generate a constant RF signal on the output channels, J1...J4
There is no SDIO sync output in this mode.

Select Calibration Tab

Select the **DISABLED** button. It will change to **ENABLED** and the RF outputs will be active. Adjust the Frequency and Amplitude sliders as required.

Note: This mode will prevent Image Play. Return to **DISABLED** when finished.

At 100 % amplitude, the RF output on J1, J2, J3 or J4 will be 100-650mV peak to peak into 50 ohms, depending on the power level settings in the **Signal tab** (See Section 4 above).

