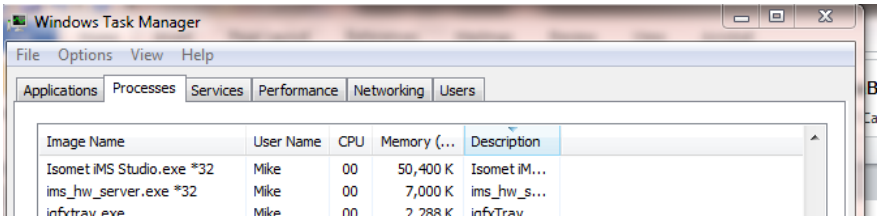
Tips for using the iMS4-L

1: Connection

It is recommended that USB is connected to the iMS4-L prior to power up.

Attempt software communication AFTER initialization is complete. This will take approximately 15 seconds. It is recommended to start the Isomet GUI after 15 seconds.

If the GUI is not closed correctly, crashes or will not open, then please use Windows Task Manager to delete the ***Isomet iMS Studio*** and ***ims_hw_server*** processes.



Ethernet is not available on the iMS4-L

2: Software

Download the latest software, SDK and Guides from the Support page:

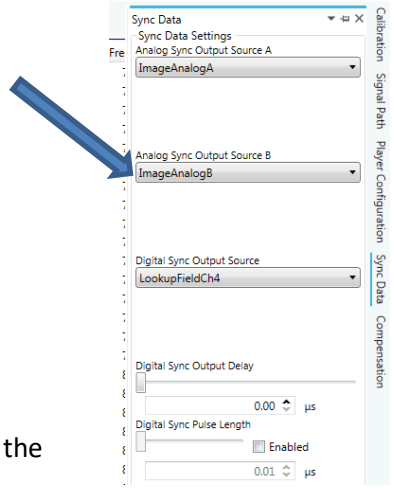
http://www.isomet.com/synth_home.html

3: Sync output on J7

The synchronous output on connector j7 of the iMS-L is derived from Sync Data field in the LUT file ONLY. The Sync data field in the Image file is ignored.

The source needs to be selected accordingly in the Isomet GUI

Select the ***Sync Data*** tab
From the pull down menu ***Digital Sync Output Source,*** select
LookupFieldCh1,
(Ch2, Ch3 or Ch4) is also valid.



A Sync output will be generated when there is an <u>exact</u> match of the frequency (or frequencies) in the LUT file and the Image.

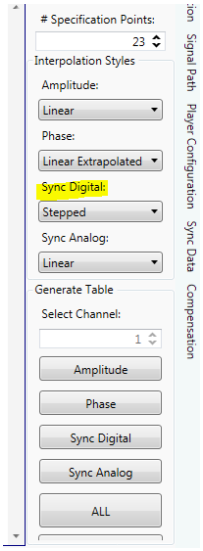
Tip: To force a match, select a Compensation frequency value in the Compensation (LUT) file generator that falls close to a value(s) in your image. Adjust the frequency to suit.

e.g. the LUT file value of 80.0000MHz is tweaked to 80.1515 (a value that is in the image file).

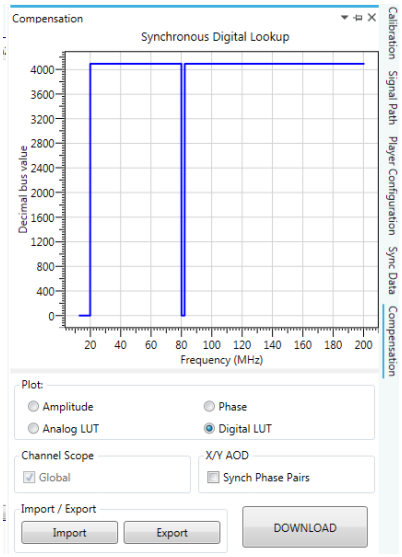
Compensation Freq...	Amplitude (%)	Phase (deg)	Sync Data (Dig)	Sync Data (Anlg)
40.0000	0.0000	69.9370	0x0FFF	0.000
57.5000	50.0000	69.9370	0x0FFF	0.000
59.7500	50.0000	65.4060	0x0FFF	0.000
62.0000	50.0000	60.3280	0x0FFF	0.000
64.2500	50.0000	54.7030	0x0FFF	0.000
66.5000	50.0000	48.5300	0x0FFF	0.000
68.7500	50.0000	41.8100	0x0FFF	0.000
71.0000	50.0000	34.5430	0x0FFF	0.000
73.2500	50.0000	26.7280	0x0FFF	0.000
75.5000	50.0000	18.3660	0x0FFF	0.000
77.7500	50.0000	9.4570	0x0FFF	0.000
80.1515	50.0000	0.0000	0x0000	0.000
82.2500	50.0000	-10.0040	0x0FFF	0.000
84.5000	50.0000	-20.5550	0x0FFF	0.000
86.7500	50.0000	-31.6540	0x0FFF	0.000
89.0000	50.0000	-43.3000	0x0FFF	0.000
91.2500	50.0000	-55.4930	0x0FFF	0.000
93.5000	50.0000	-68.2340	0x0FFF	0.000
95.7500	50.0000	-81.5220	0x0FFF	0.000
98.0000	50.0000	-95.3570	0x0FFF	0.000
100.2500	50.0000	-109.7400	0x0FFF	0.000
102.5000	50.0000	-124.6700	0x0FFF	0.000
160.0000	0.0000	-124.6700	0x0FFF	0.000

The opto-isolated outputs on J7 are inverted with respect to the programmed Sync data.
The 5V power for the optio isolators is input via J7 or linked internally. See test data sheet.

Selecting ***Stepped*** interpolation creates a logic low at the selected frequency and high across the remainder of the Compensation range 40-160MHz.

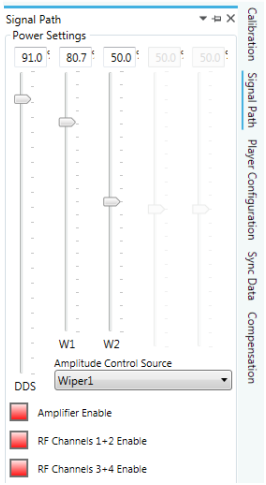


Compensation view, Digital LUT



4: Wiper / LUT file settings

With few exceptions, the iMS4-L models use rev-A or rev-B synthesizer hardware.
The Compensation LUT data and "Wiper" power level settings are common and apply to all four channels. This may not be explicit in all supporting documentation. In such cases, please adapt as follows:

Variable	**iMS4-L (revA, revB)**	**iMS4-P (revC, revD)**
Compensation LUT file (size)	Common, Global (57Kbyte)	Channel scoped (225Kbyte)
DDS Power	DDS Wiper (same)	DDS Wiper
Output Power Wiper1 (or Wiper 2) setting is equivalent to Ch1, Ch2, Ch3 & Ch4 all set to the same value.	Common, all output channels. Wiper 1 **OR** Wiper 2 	Independent Ch1, Ch2, Ch3, Ch4