

iFi iPhono 2 – Quick Cartridge Setup Guide

Step 1: Select and Connect MM/MC Input.

The cartridge manual will tell you the output voltage of the cartridge.

Eg The output voltage of a the MC cartridge Denon DL-103R is 0.25mV;
The output voltage of a the MM cartridge Shure M97xE is 4mV.



Cartridge output	iPhono 2 input connection
< 1.2 mV	MC
≥ 1.2 mV	MM

Thus the Shure M97xE (4mV) should be connected to the MM input of the iPhono; the Denon DL-103R (0.25mV) should be connected to the MC input of the iPhono.

Note: MM and MC inputs should not be connected simultaneously.

Tip: For a High Output MC cartridge like the Ortofon MC-3 Turbo, its output is 3.3mV , so it should be connected to the MM input of the iPhono. The actual output voltage determinates which input should be used.

Tip: Remember to connect the ground wire from the turntable to the iPhono2. If required, use the small extension lead included for ease of connection.



Step 2: Select and Set Gain.

Most phono pre-amplifiers have gain adjustment levels. Different cartridges require different gain levels. MM cartridges require lower gain and MC cartridge require higher gain.

Normally gain is expressed in decibel (dB); 36dB means 63 times gain.

The iPhono 2 allows gain levels from 36dB (63 times) to 72dB (4,000 times) to be set allowing for Cartridges with rated outputs from <= 0.1mV to >= 10mV. Meaning your choice of cartridge is completely free and not limited by the iPhono 2.

Cartridge Output	Gain Required	Input & Switch Settings
> 4.8mV	36dB	MM
1.2 mV – 4.8 mV	48dB	MM & +12dB
0.3 - 1.2 mV	60dB	MC
< 0.3 mV	72dB	MC & +12dB

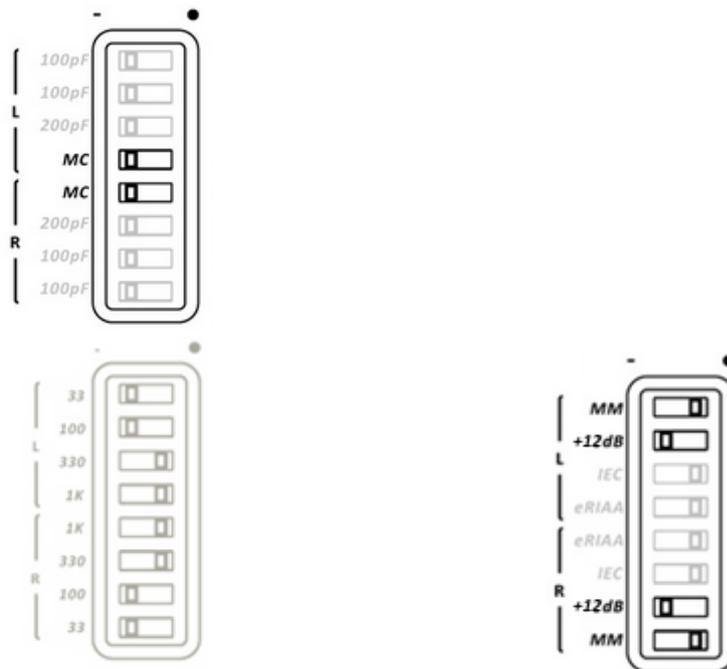
From the previous table, the Shure M97xE should use 40dB gain, and Denon DL-103R should use 66dB gain. As long as the right connection (MM/MC) is made as per 'Step 1: Connect MM/MC Input,' there is no need to distinguish MM/MC cartridge anymore for the following steps.

Steps to set gain

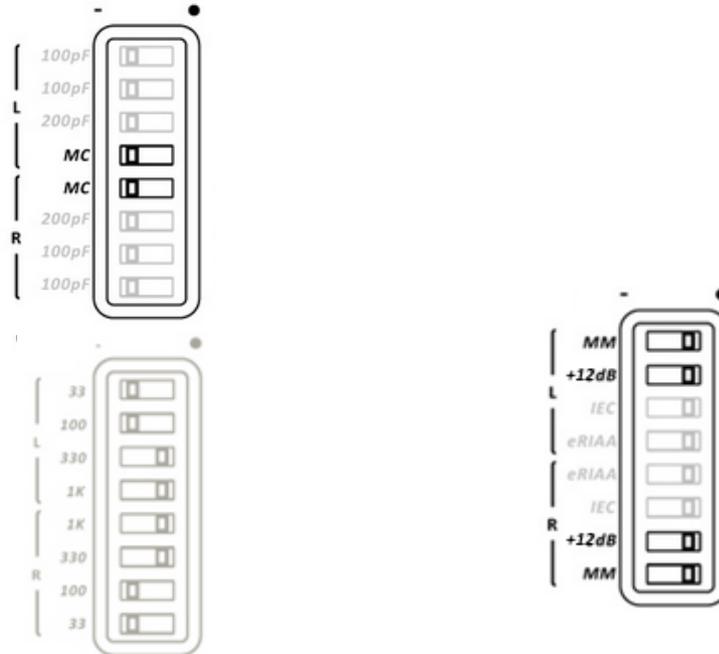
- (i) Please look at the output voltage of the cartridge;
- (ii) Connect the cable from the turntable to the correct input (Step 1)
- (iii) Determinate the gain required (dB) from the table overleaf;
- (iv) Set the micro switches exactly as follows, ignore the grayed out switches for now.

Tip: If you are not sure which gain level to set as your cartridge output is near the borderline of recommendations, first choose the lower gain. Increase gain if you cannot get satisfactory volume levels at your desired volume control setting on your Amplifier/Preamplifier.

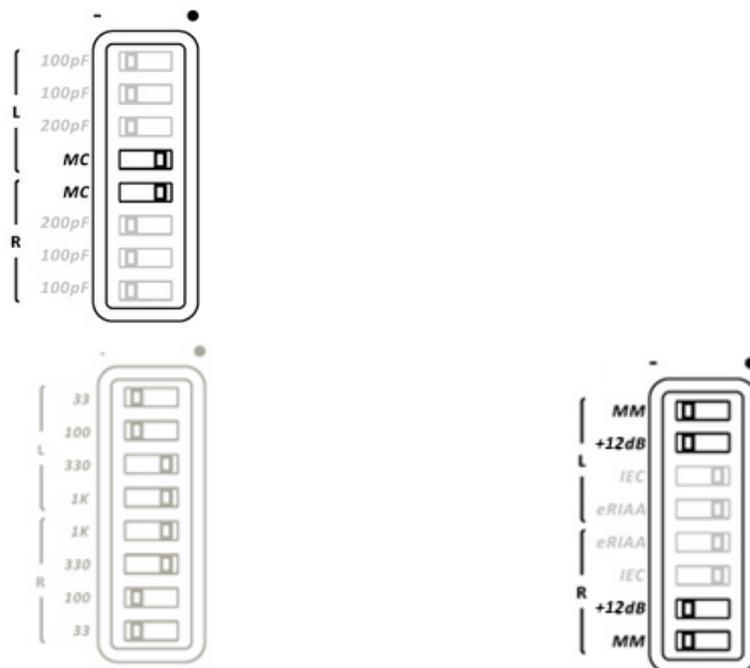
MM - 36dB Gain



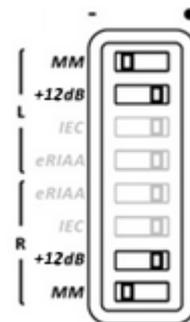
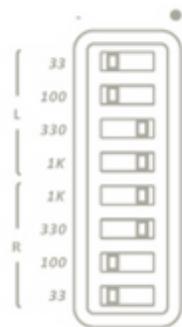
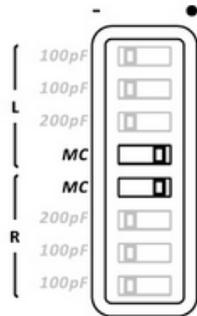
MM - 48dB Gain



MC - 60dB Gain



MC - 72dB Gain



Step 3: Select and Set Load.

Each and every cartridge requires a correct load to sound the best. MM cartridges require a specific capacitive load (pF) with a fixed 47kΩ resistive load (IEC (CEI) 6-1938 Standard) for correct high frequency response, MC cartridges require resistive load (Ω/Ω) for correct damping.

Generally speaking, the correct load value is stated in the cartridge manual. However some cartridges don't state this value and the stated value may not be always the best.

Tip: Some reviews that categorically state Cartridge XX must be loaded with load YY or that all cartridges must be loaded only 47k. Such statements originate within the specific system and personal preferences of the reviewer and may or more often may not work for you.

It is a common misconception that load value is the same as the cartridge internal impedance/resistance - however this is incorrect.

Cartridge	Impedance/Resistance	Correct Load
Shure M97xE (MM) 	1550 Ω	200-300pF + 47kΩ
Ortofon MC-3 Turbo (High Output MC) 	100 Ω	47kΩ < 500pF
Denon DL-103R (MC) 	14 Ω	Not Stated.

For cartridges that have no load value stated in the manual, the only way to find out the correct load value is by listening. Which load value provides the most natural sound, then it is the right value. For example, the correct load for Denon DL-103R is around 1kΩ.

Tip: If the sound is too dull, try increasing the pF(MM) or Ω/Ω(MC) value ; if the sound is too bright, try lowering the pF(MM) or Ω/Ω(MC) value.

The uppermost row of the load table is the name of the micro switches, corresponding to the actual micro switches on the left:

The left most column of the load table is the actual load value:

MC Load(Ω)

Total	33Ω	100Ω	330Ω	1KΩ
22	●	●		
33	●			
75	-	●	●	
100	-	●		
250	-	-	●	●
330	-	-	●	
1K	-	-		●
47K	-	-	-	

MC Load(Ω)

Total	33Ω	100Ω	330Ω	1KΩ
22	●	●		
33	●			
75	-	●	●	
100	-	●		
250	-	-	●	●
330	-	-	●	
1K	-	-		●
47K	-	-	-	

For example :

250Ω (MC)

MC Load(Ω)				
Total	33Ω	100Ω	330Ω	1KΩ
22	●	●	●	●
33	●	-	-	-
75	-	●	●	-
100	-	●	-	-
250	-	-	●	●
330	-	-	●	-
1K	-	-	-	●
47K	-	-	-	-

If the required load value is 250Ω, then the 4 micro switches 330Ω and 1kΩ shall be in the '●' (right) position; other micro switches shall be in the '-' (left) position.

47kΩ (MC)

MC Load(Ω)				
Total	33Ω	100Ω	330Ω	1KΩ
22	●	●	●	●
33	●	-	-	-
75	-	●	●	-
100	-	●	-	-
250	-	-	●	●
330	-	-	●	-
1K	-	-	-	●
47K	-	-	-	-

If the required load value is 47kΩ, all micro switches shall be in the '-' (left) position.

400pF (MM)

MM Load (pF)			
Total	100pF	100pF	200pF
500	●	●	●
400	-	●	●
300	-	-	●
200	●	-	-
100	-	-	-

If the required load value is 400pF , then the 4 micro switches 100pF and 200pF shall be in the '●' (right) position; other micro switches shall be in the '-' (left) position.

100pF (MM)

MM Load (pF)			
Total	100pF	100pF	200pF
500	●	●	●
400	-	●	●
300	-	-	●
200	●	-	-
100	-	-	-

If the required load value is 100pF, all micro switches shall be in the '-' (left) position.

Note: For high output MC cartridge, please use the MM cartridge (pF) settings, usually the maximum setting (500pF) works best.

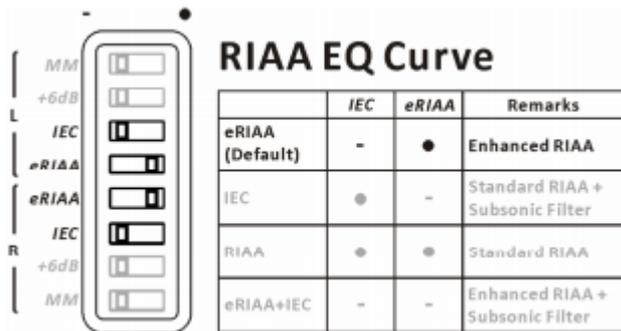
Tip: Normally, MC cartridges have the best sound, MM cartridges are most economical, High output MC cartridges are somewhere in between.

Step 4: Select and Set EQ curve.

For the correct playback of each and every record, the correct EQ curve must be used. There are two small steps to set this correctly.

1 : RIAA/eRIAA/IEC

(Under normal circumstances, one can just leave this in factory Default settings)



Two eRIAA micro switches should be in '●' (right) position; two IEC micro switches should be in '-' (left) position.

	Description	Remarks
eRIAA (Default)	Enhanced RIAA EQ curve	Extended High Frequency Response
IEC	Subsonic filter	For warped records
RIAA	Standard RIAA EQ curve	-
eRIAA + IEC	Enhanced RIAA EQ curve + Subsonic filter	Extended High Frequency + For warped records

2: DECCA/RIAA/COLUMBIA

At the beginning, there used to be many different kinds of EQ curves. In 1954, Record labels in the USA that belonged to the RIAA Industry Association agreed to use a single EQ curve for all records. Over the following years the RIAA EQ curve was slowly adopted all over the world. However, the reality is that only after around 1980 we can reliably expect that all records are truly using RIAA EQ curves (just think, how easy to reach a single agreement on a global scale?)



If the wrong EQ curve is used, the record will not sound quite right. For example: Deutsche Grammophon’s classical records released before around 1980 often sound dry and flat, the reason is because those were manufactured using the DECCA EQ curve, not the RIAA EQ curve, so playback via RIAA EQ produces an overly present treble and upper midrange.

The iPhono 2 incorporates the major ‘alternate’ EQ option for stereo microgroove Records (commonly called LP), namely RIAA, Columbia (USA) and Decca (UK/Europe). Mono LP’s and 78 RPM records require other and more varied EQ and their dedicated Phono preamplifier.

Record released before 1980:

Record Labels	iPhono 2 front EQ switch
	COLUMBIA(Up)
	RIAA(Middle)
	DECCA(Down)

Note: For EMI records issued in Europe, many of them used the DECCA EQ curve. For EMI records issued in the USA, many of them used the COLUMBIA EQ curve, especially the ones which were originally produced by COLUMBIA/CBS but issued under the EMI label after the merger.

For records issued after 1980, most of them used the standard RIAA EQ curve.

If in doubt try listening first using RIAA EQ and if you find the sound seems 'off' a true tone, try the Decca and Columbia EQ and see if this gives a more 'true' tone. We suggest small colored dot stickers to mark record sleeves for what you found to be the correct EQ.



Any questions – please just open a support ticket here:

<http://support.ifi-audio.com/>



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