

# iFi iPhono 2 – 4 Step Setup Guide

## Step 1: Select and Connect MM/MC Input.

The cartridge manual will tell you the output voltage of the cartridge. For example, the output voltage of the MC cartridge Denon DL-103R is 0.25mV; the output voltage of 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 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 determinate which input should be used.*

*Tip: Remember to connect the ground wire from the turntable to the iPhono. Use the small extension lead included for ease of connection if required.*



## Step 2: Select and Set Gain.

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

The iPhono 2 allows gains from 36dB (63 times) to 72dB (4,000 times) to be set allowing for cartridges with rated outputs from  $\leq 0.1\text{mV}$  to  $\geq 10\text{mV}$ , meaning your choice of cartridge is completely free and not limited by the capabilities of the iPhono2.

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

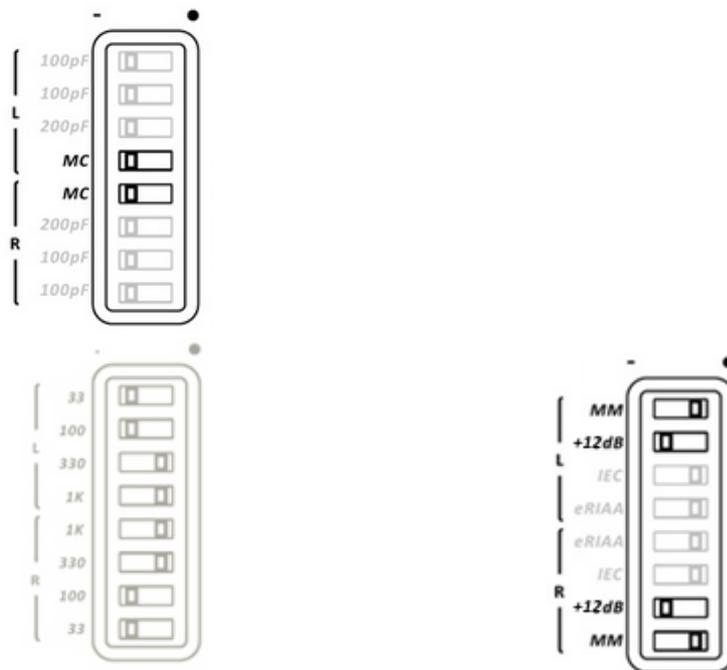
From the above table, Shure M97xE should use 40dB gain, and Denon DL-103R should use 66dB gain. As long as the right connection (MM/MC) is made as per “Step 1: Connect MM/MC Input”, there is no need to distinguish MM/MC cartridge anymore for the following steps.

Gain Settings:

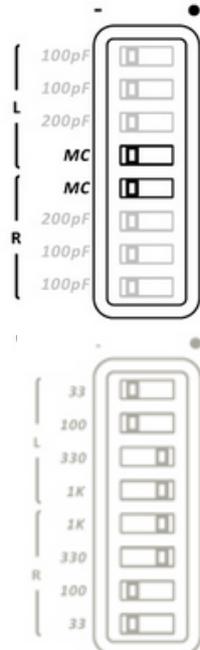
- (i) Please look at the output voltage of the cartridge;
- (ii) Connect the cable from the turntable to the correct input (Step 1)
- (iii) Determine the gain required (dB) from the table overleaf;
- (iv) Then set the micro switches exactly as follows, ignore the grayed out switches for now.

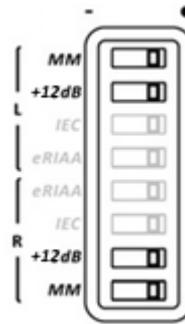
*Tip: If you are not sure which gain to set as your cartridge output is near the border line of recommendations, first choose the lower gain. Increase gain if you cannot get satisfactory volume levels at your desired volume control setting on your Amplifier/Preamplifier.*

**MM - 36dB Gain**

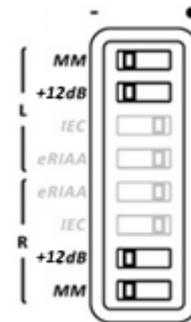
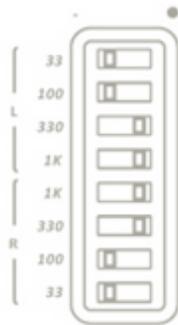
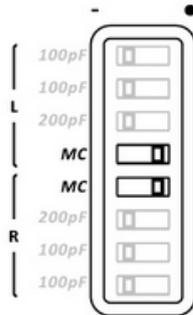


**MM - 48dB Gain**

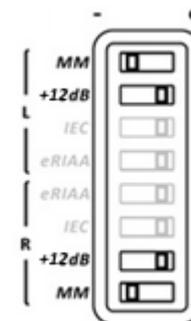
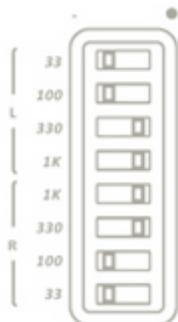
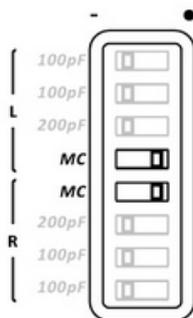




**MC - 60dB Gain**



**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 shall be stated in the cartridge manual. However, some of cartridges don't state this value and the stated value may not be always the best.

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.

Many people misunderstood this load value is the same of the cartridge internal impedance/resistance, however this is incorrect.

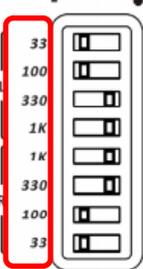
Cartridge		Impedance/Resistance	Correct Load
Shure M97xE ( MM )		1550 Ω	200-300pF + 47kΩ
Ortofon MC-3 Turbo ( High Output MC )		100 Ω	47kΩ < 500pF
Denon DL-103R ( MC )		14 Ω	Not Stated.

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.*

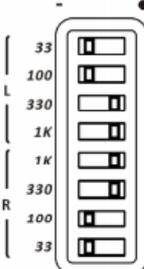
The upmost row of the load table is the name of the micro switches, corresponding to the actual micro switches on the left:

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	-	-	-	-

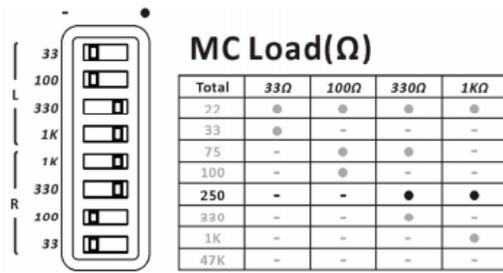


MC Load(Ω)

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

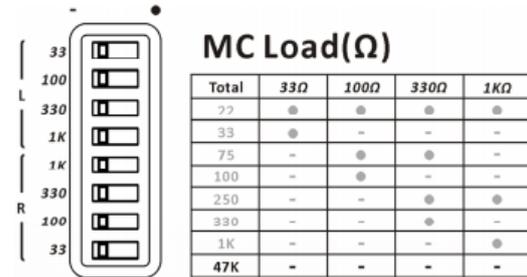
For example :

### 250Ω ( MC )



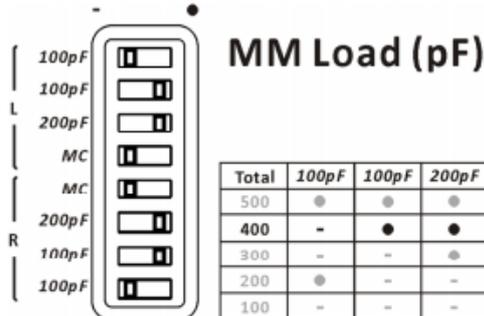
If the required load value is 250Ω, then the 4 micro switches 330 Ω and 1kΩ shall be in the “●” (right) position; other micro switches shall be in the “-” (left) position.

### 47kΩ ( MC )



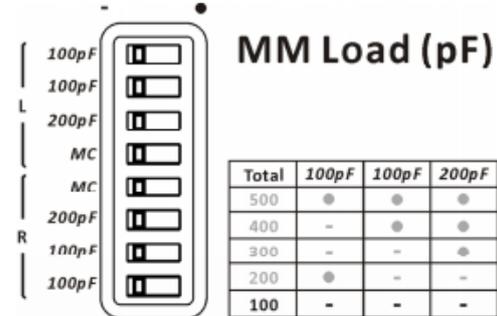
If the required load value is 47kΩ, all micro switches shall be in the “-”(left) position.

### 400pF ( MM )



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 )



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.*

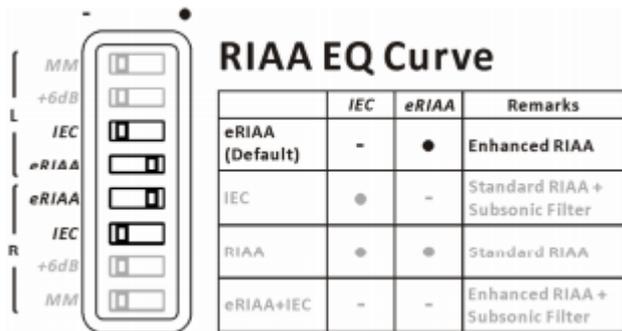
*Tip: Normally, MC cartridges have the best sound, MM cartridges are most economical, High output MC cartridges are somewhere in between.*

## 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 circumstance, one can just leave this in factory Default settings)



Two eRIAA micro switches shall be in “•” (right) position; two IEC micro switches shall be in “-” (left) position.

	Description	Remarks
<b>eRIAA ( Default )</b>	Enhanced RIAA EQ curve	Extended High Frequency Response
<b>IEC</b>	Subsonic filter	For warped records
<b>RIAA</b>	Standard RIAA EQ curve	-
<b>eRIAA + IEC</b>	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 curve. 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 actually 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 iPhono2 incorporates the major "alternate" EQ options 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
  	<b>COLUMBIA(Up)</b>
	<b>RIAA(Middle)</b>
      	<b>DECCA(Down)</b>

Note: For EMI records issued in Europe, many of them were using the DECCA EQ curve. For EMI records issued in the USA, many of them were using 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 are using the standard RIAA EQ curve.

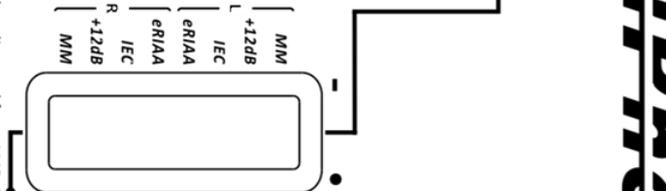
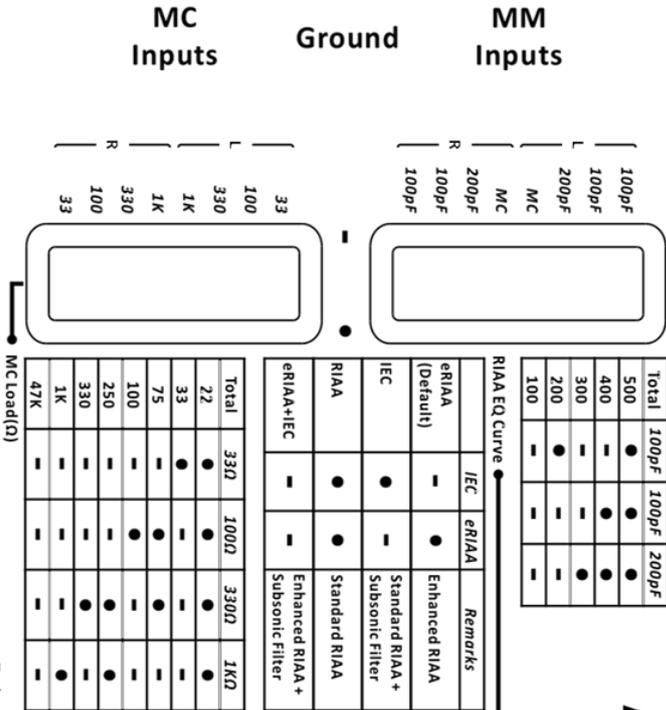
If in doubt try listening first using RIAA EQ and if you find the sound seems “off” a true tone, try the Decca and Columbia EQ and see if this gives a more “true” tone. You may then use small colored dot stickers to mark record sleeves for what you found to be the correct EQ.

# ipho22

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

RIAA EQ Curve

	IEC	eRIAA	Remarks
eRIAA (Default)	-	●	Enhanced RIAA
IEC	●	-	Standard RIAA + Subsonic Filter
RIAA	●	●	Standard RIAA
eRIAA+IEC	-	-	Enhanced RIAA + Subsonic Filter



## Technologies

- Dedicated low-noise MC input (suitable for MC cartridges <math>< 0.25\text{mV}</math>)
- Dedicated high-quality MM input (also suitable for MC cartridges > 1mV)
- 6 x EQ curves: RIAA/eRIAA/IEC/eRIAA+IEC/Decca/Columbia
- Ultra-wide gain options: 36-72dB
- Ultra-wide MC load options: 22Ω - 47kΩ
- Ultra-wide MM load options: 100pF - 500pF
- Direct-coupled, servoless Class A TubeState® amplifier

## EQ curves (side switch position):

**Columbia\***: most Columbia/CBS, Epic, EMI (records originally issued under Columbia) etc.

**RIAA**: standard EQ curve for all records issued after 1980s and some after 1950's.

**Decca\***: most Decca, London, Deutsche Grammophon (DG), (bottom) Archiv, EMI, Argo, NAB etc.

\*For pre-1980s records

Cartridge Output	Gain	MC	MM	+12dB
>4mV(MM)	36dB	-	●	-
1mV-4mV(MM)	48dB	-	●	●
0.25mV-1mV(MC)	60dB	●	-	-
<0.25mV(MC)	72dB	●	-	●

Technology licensed from AMR-Audio, UK Assembled in China



ifi-audio.com

15VDC  
Equalisation  
Curves

Outputs