340i Integrated Amplifier



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Power



The **MOON 340i** redefines the possibilites of what an integrated amplifier can be. Loaded with numerous convenient features and unbeatable sonic performance, the **340i** provides for unprecedented flexibility. Featuring an options package unheralded in the world of high-performance audio, which includes (I) an internal digital-to-analog converter (USB-2, S/PDIF & TosLink digital inputs), (2) an internal RIAA phono preamplifier (MM & MC) and (3) a balanced line-level input. All 3 of these options are available in any combination, either at the time of purchase or as a future upgrade.

Breathtaking analog reproduction combined with astounding flexibility



The **MOON 340**i combines over 30 years of experience in the design and manufacturing of award winning products with numerous unique technologies found in many of our other components. With a rated output of 100 watts/channel into 8 ohms (200 watts/channel into 4 ohms) the **340i** will be the heart and soul of your home-entertainent system for many many years.

Significant Design Features

RS-232 port for (i) full unsolicited bidirectional feedback and (ii) firmware updates; IR input for external control; 12 Volt trigger output for remote operations; **SimLink** controller port allows for 2-way communications between other compatible **MOON** components

Optional internal DAC circuit with USB, S/PDIF and TosLink inputs

Proprietary **MOON Bi-Polar** output transistors with unprecedented signal linearity and ultra-low noise characteristics (4 per channel)

A massive power supply using an _____ oversized custom toroidal transformer



Optional balanced differential line-level XLR input

Optional internal MM/MC phono stage with adjustments for gain level, as well as capacitance and resistance loading

Headphone output on _" TRS jack located on the front panel

Front-mounted line-level input on a 1/8" mini-jack for easy access

- One input which functions as a "pass-through", by passing the gain stage to accommodate a component such as a home-theater processor, whose own volume control is used instead.
- Class A output to 5 watts for greater efficiency

- 3/8" thick brushed/anodized aluminum faceplate and a top cover using counter sunk screws
- Low operating temperature to ensure a longer than normal life expectancy.
- Rigid chassis construction to minimize the effects of external vibrations



Simaudio Ltd. has been designing and manufacturing innovative, leading-edge audio and video products since 1980. MOON products have been globally recognized for their world-class performance, garnering numerous accolades for this outstanding achievement. Our products are engineered and built in Canada, utilizing advanced, efficient, "green" assembly techniques with strict quality control. Furthermore, our manufacturing processes are part of our philosophy, whereas the high quality and long-life of MOON products are the best way to preserve our environment, avoiding premature obsolesence. MOON products meet or exceed all international requirements for safety, performance and durability. At Simaudio, great music matters. However, great music for a lifetime matters most.

The transistors used in the MOON 340i's output stage perform what can be best described as electrical gain of the music signal. Higher quality transistors will yield an amplified signal with greater integrity. In addition, since each channel of an output stage uses numerous transistors, they must all be accurately matched to each other to maintain this integrity.

MOON amplifiers have always used bipolar transistors in their output stages for several significant reasons. When compared to other types of amplification transistors, bipolars offer:

- Wider bandwidth
- Lower distortion
- Excellent reliability and a longer life span
- High Efficiency
- High resistance to ESD (electrostatic discharge)

We have managed, at a great expense, to have bipolar transistors manufactured to our own exceedingly high standards and specific requirements. When compared to more readily available high quality bipolars for use in audio amplifiers, MOON Bipolars offer the following advantages:

- Unprecedented gain linearity
- A green component containing no lead
- Lower noise floor
- Even wider bandwidth
- Improved bass response
- Greater signal integrity
- Even greater reliability at higher output levels
- A more consistent hFE (the DC current gain of a transistor) which allows for more accurate and easier matching of multiple Bipolars.

The exceptional gain linearity of MOON Bipolars is very significant in the sense that it results in many of these aforementioned advantages. To illustrate the significant effect of this gain linearity when compared to a quality bipolar transistor found in a high-performance audio amplifier, refer to figure 1 below which shows the difference in DC current gain as a function of the transistor's output current:



Optimal sonic performance is always ach regardless of the amplifier's output lev

Technical information

Advanced Renaissance Circuitry was introduced in 1998 and can be found in all MOON amplifiers since. This circuit topology features a no overall feedback design also known as "Zero Global Feedback". By eliminating the need for signal correction, amplifier speed is greatly increased. MOON amplification designs allows for superb performance into difficult loads, which further improves sound quality.





Power amplifiers employing feedback require additional circuitry (feedback loop in red) which takes a sample of the audio signal from the amplifier's output stage, applying it as negative feedback to the gain stage of the amplifier. The sole purpose being to reduce the amount of Total Harmonic Distortion (THD) the more feedback used, the greater the reduction in the amount of measurable distortion.

Benefits resulting from Advanced Renaissance circuitry:

- Real-time amplification
- More accurate musical reproduction with respect to tonality (i.e. no sonic colorations)
- Non-existent intermodulation distortion (IMD)
- The elimination of common phase errors
- With this circuit topology, the speaker cannot send back its counter-reaction. to the amplifier, after a musical impulse which normally leads to a reduction in clarity of the music, a lack of tonal accuracy and the feeling of the live performance being lost
- Improved dynamic range
- More dynamic and at ease with virtually any known speaker load, short signal paths, very little signal resistance and degradation
- An amplifier which is much less affected by a loudspeaker's non-linear electro-mechanical properties

When using an unbalanced interconnect, the audio signal runs through both the center wire and the shield/ground wire. Any noise picked up by this interconnect (ie. nearby magnetic fields such as an AC power cord) will be reproduced by an integrated amplifier, then heard through the loudspeakers. Conversely, a **balanced** interconnect has three separate conductors; one for the ground and two for the actual signal. These two signals are identical except that one is 180 degrees out of phase with the other.



For example, when one conductor is carrying a signal of +2 Volts, the other will be carrying a signal of –2 Volts. When these two inverted signals on a balanced line are input to the MOON 340i, any noise picked up by the interconnect will be eliminated since a differential circuit amplifies only the difference between these two signals: Noise on a **balanced** interconnect will be equal on both conductors and therefore, not be processed.



MOON 340i Specifications

Configuration	Single-ended / 2-channel
Class of Operation	A/AB
Single-ended Inputs (RCA)	4 pairs
Balanced Inputs (XLR)	1 pair - Optional
Mini-jack Input	1 (1/8")
Input Sensitivity	400mV – 3.0V RMS
Input Impedance	22,000Ω
Tape Output (fixed level)	1 pair
Preamplifier Output (variable level)	1 pair
Output Power @ 8 Ω / @ 4 Ω	100 watts/ch. / 200 watts/ch.
Output Impedance	0.04Ω
Damping Factor	> 200
Gain	> 37dB
Signal-to-noise Ratio	110dB @ full power
Maximum Output Voltage	30 Volts
Slew Rate	20V/µs
Maximum Current	22 amperes
Frequency Response	2Hz - 90kHz (+0/-3dB)
Crosstalk @ 1kHz	< -88dB
Intermodulation Distortion (IMD)	< 0.03%
THD (20Hz - 20kHz @ 1 watt / @ 100 watts)	< 0.03% / < 0.05%
Remote Control	Full-Function (CRM-2)
Power Consumption @ idle	45 Watts
AC Power Requirements	120V/60Hz or 240V/50Hz
Shipping Weight	28 lbs / 13 Kgs
Dimensions (W x H x D, inches)	16.9 x 3.5 x 14.8

Optional Phono Section:				
Input Impedance	Adjustable - 100 Ω and 47K Ω			
Input Capacitance	Adjustable - 0pF and 100pF			
Gain - Adjustable	40dB and 60dB			
Input overload @ 40dB gain	58mV RMS			
Input overload @ 60dB gain	3mV RMS			
Signal-to-noise Ratio (full scale @ 40dB gain)	107dBr			
Signal-to-noise Ratio (full scale @ 60dB gain)	85dBr			
Frequency Response	20Hz - 20kHz (±0.5dB)			
Crosstalk @ 1kHz	-97dB			
IMD	< 0.009%			
THD (20Hz - 20kHz)	< 0.001%			

Optional Digital-to-Analog Converter:

Digital Input Types	S/PDIF (RCA) x 2 • USB x 1 • TosLink x 1
DAC / Digital Filter	BurrBrown PCM1793
Bit-depth range	16 - 24 bits
Sampling Frequency Rates	44.1, 48, 88.2, 96, 176.4 & 192kHz
Frequency Response	2Hz - 72kHz +0/-3dB
THD @ 1kHz, 0dBFS (A-weighted)	< 0.001 %
IMD	< 0.004 %
Dynamic Range	> 116dB
Signal-to-noise ratio	> 115dB @ full output
Channel Separation	> 115dB
Intrinsic Jitter	< 25 picoseconds RMS

Specifications subject to change without notice









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