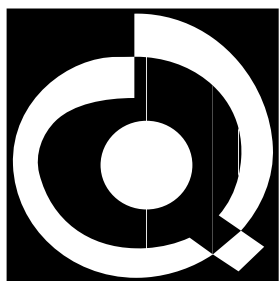


**QRT™**

PURE POWER THE PURIST WAY





# QRT™

## PURE POWER THE PURIST WAY

### Revolutionary Technology

We live in a world where radiated pollution, instability and interference undermine AC line quality, seriously affecting the performance of electronic systems. QRT provides a unique and uncompromised approach to the treatment of AC mains power in critical signal applications. Our proprietary, modular solution delivers proven, measurable results without the negative effects that limit the performance of more conventional approaches.

### The Problem

When we listen to music through a hi-fi system or watch a movie on a home theater, what we are actually hearing and seeing is the power supplies that drive that system, and on an even more fundamental level, the power that is fed to those supplies. It's a lesson the hi-fi industry has been slow to learn and even slower to deal with. Basic hardware like AC mains cords have only recently made it onto the hi-fi set-up agenda. Yet, the quality of the electricity reaching your system is critical to its performance, with EMF noise and waveform distortion all undermining the performance of those expensive hi-fi components you've invested in.

While conventional filters can limit the destructive impact of these problems, they impose their own associated performance costs, raising the source impedance and reducing the peak current capabilities of the AC line. These limitations cause their own readily audible or visible side effects, limiting musical dynamics and robbing images of depth and color.

### The Solution

There's an old saying – that prevention is better than cure: unfortunately, if the scale of the problem is simply too vast to deal with properly, then “curing” it can cause more damage than it prevents. QRT's modular approach treats the symptoms of poor AC line quality, rather than trying to correct what is a global situation – and it does it without limiting the voltage swing or altering the all-important source impedance of the AC supply. Which makes the job of your hi-fi's power supplies much, much easier – and that's what you hear from your system or see on your screen. Use QRT products and you'll experience a lower noise floor, greater clarity and separation and increased dynamic range, qualities that are just as apparent (and measurable) when it comes to the color, definition and detail on your AV display



**Do keep in mind that “Quantumizing” your reference system is not going to change the essential sonic character of your established front end or loudspeaker system. What a QBASE and Qx4 will offer, (like those exquisite Bronzono drawings), is a vital foundation, a scaffolding, that serves to not only make a reference system perform more coherently and intelligibly, but also to bring one closer to the illusion of hearing real Humans playing music on our favorite recordings. Once you have heard the benefits of these products at the foundation of your reference system, like the experience of viewing a Bronzono masterwork, your listening pleasure will be transported to another level of involvement and joy.**

*Nelson Brill, Stereo Times*

# Putting Numbers on Performance

Remember your high-school physics teacher? He's the guy who told you that gravity is a constant and that atoms are made up of protons, neutrons and electrons. Only it isn't and they aren't!

It's called keeping things simple – which is fine if you are trying to teach kids from first principles, but the real world isn't that straightforward and physics has come a long way since Sir Isaac did his stuff. Reality is a whole lot more complex (and actually, a whole lot smaller, but we'll get to that). Meanwhile, whole sectors of the audio community, confronted with inconvenient audible effects, choose to collectively ignore reality, applying what amounts to basic Newtonian physics in an attempt to dismiss anything this limited knowledge base can't explain...

What do you do if your science isn't up to the job of explaining the world around you? Well, on the one hand you can always excommunicate progressive thinkers – or, you can just develop better science!

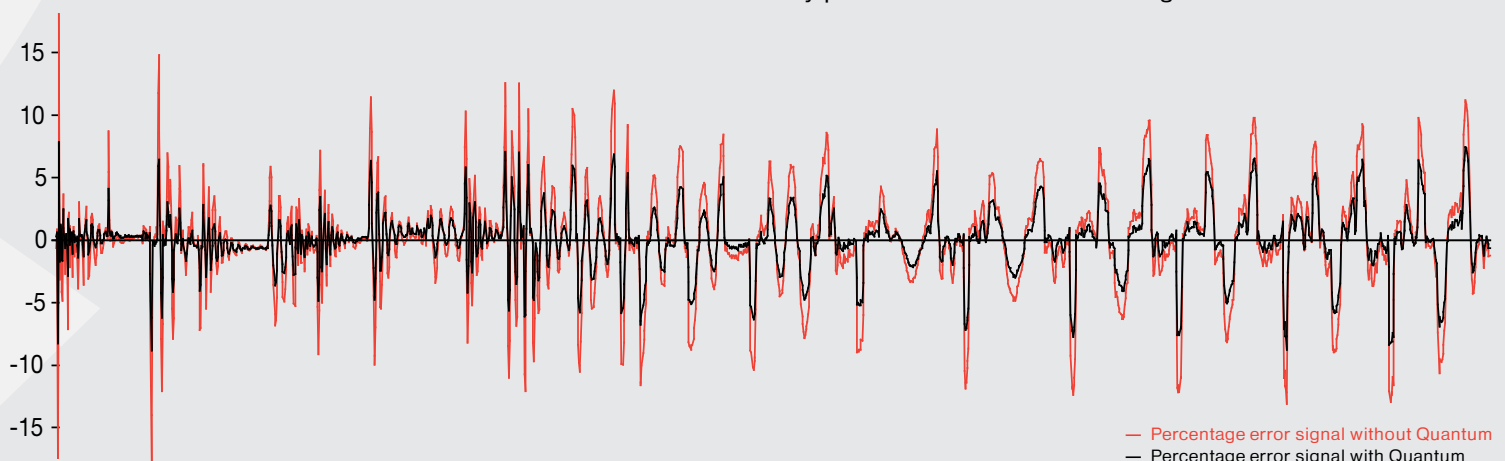
This is exactly the conundrum facing many hi-fi manufacturers today. We can clearly hear what products are doing, but we can't see them doing it using conventional measurement techniques. Frustrated by this situation, QRT joined forces with another cable and support manufacturer to commission a totally independent research program into the measureable impact of our products. We engaged an established, UK based defense research company called Acuity Products Ltd, who specialize in assessing signal intelligibility.

They have extensive experience in the development and testing of sonar, radar, ECM and signal processing algorithms, fields that attract, and demand the most sophisticated approaches and technology available. They devised a range of measurement protocols specifically to investigate the impact of QRT units (and other devices) arriving at an approach that is startling for its conceptual simplicity and elegance. Let's look at the most straightforward example.

First, they looked in detail at an excerpt of music from a CD, analysing it on a bit by bit basis and creating a graphical representation. Then they played the same piece of music in a well-regarded CD player (with a retail price of around £4000). Taking the analogue output they re-digitized it and then compared it in graphical form to the original signal on the disc. Although this sounds simple, it requires incredibly sophisticated mathematics to accurately align the two signals – but, once you've done so, you can subtract one from the other to create a sum and difference result, a result in this instance that demonstrated a gross error between signal and out output of around 10%!

What is more, this is not particularly unusual. The player wasn't chosen for its poor performance, or any particular technology, such as a valve output stage. In fact, in most conventional senses, it could be said to have an exemplary measured performance.

Now plug the same player into a Quantum Qx4 and play the test track again. The result is a reduction in total error to a little over 5% – or a 50% reduction in the error value! And the only possible source of this change is the Qx4.



This process has now been repeated many times and with many different set-ups, each time looking at the difference in performance made by superior AC supply topology, power cords, signal leads and equipment supports. But Acuity have also applied considerably more mathematics to the problem, allowing them to express those errors in integer terms – the actual samples that create the digital signal. Using a complete system and taking measurements at the CD and amplifier outputs, first with a basic set up, and then with a full suite of QRT products, power cords, supports and signal cables, the actual peak errors are shown below.

That represents a CD player missing the correct signal amplitude by  $\pm 140$  integers – an actual error of 1.27% - but an error that was reduced to  $\pm 65$  integers once the system was properly wired and supported. And these results are completely repeatable, finally demonstrating why products like QRT make the differences that they do. The whole process is described in far greater detail in the downloads section of the Nordost website ([www.nordost.com/downloads](http://www.nordost.com/downloads)) and makes fascinating reading, but the bottom line is simple: QRT works and the measured evidence demonstrates exactly why it works so well, reducing signal error and noise floor, improving dynamic range and temporal accuracy.

Configuration	Integer value error - CD output	Integer value error - amp output	Approximate musical excursion value of test track	Percentage error - CD output	Percentage error - amp output
Basic system	+/- 140	+/- 150	+/- 11,000	1.27%	1.36%
Full Accessories	+/- 65	+/- 85	+/- 11,000	0.59%	0.77%
Reduction	+/- 75 (53%)	+/- 65 (43%)	-		

The result: cleaner, clearer and much more natural sound that puts you far closer to the original performers, far closer to their performance – because QRT puts your system closer to the original signal.



as they are in the context of a really great stereo set up. The result? Greater overall musical and visual coherence, more stable perspectives, greater realism.

We achieve these results by recognizing that the problem of AC supply quality must be handled as a two-stage process:

The first challenge is to make the most of the AC supply you already have, a function that we term Delivery. That means connecting your AC line to your system as directly as possible, without interfering with its source impedance or peak current capability. But it also means optimizing the distribution topology and grounding.

The second stage involves Treatment of the AC line to reduce the effects of inaccuracies in the waveform and EMF/RFI interference. To achieve this without compromising the platform you've already established requires that any action be non-intrusive in nature. Placing any sort of device directly in the AC line will always do more harm than good.

By making the QRT system truly modular, with fully complementary elements, we also ensure that whichever unit you start with, and wherever you start in your system, nothing will ever become redundant and, making QRT even more cost effective, the units can be used in multiple arrays,



**...the Qb8 is the rock upon which the other improvements are founded. I started with a great song, ill-served by an audio system and ended up with a real performance... a massive leap.**

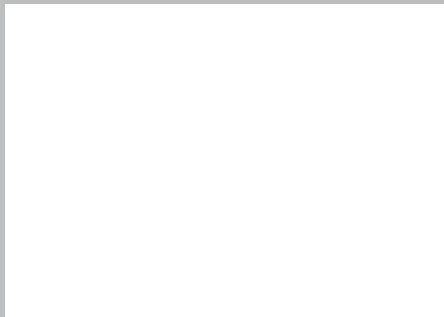
**The QBASE Qb8 is something of a bargain... system building from the mains socket not only works but is I believe, fundamental and a really worthwhile musical asset to systems of all levels.**

*Chris Thomas, Hi-Fi+ magazine*

the whole becoming even greater than the sum of the parts. You can read more about that in the individual product details, but it's nice to know that a QRT rig will not just grow with your system, every bit of it will continue to contribute to the overall performance.

Finally, it is essential to recognize that the AC supply is only one part of the foundation on which your system's performance rests. The best power distribution set up in the world still won't deliver optimum audio or video performance unless you pay the same attention to the power and signal cabling as well as the physical support of your system components. All QRT casework is mechanically tuned to help prevent vibration influencing the system's performance, while all internal wiring employs Nordost Micro Mono-Filament power conductors. For that reason, and although QRT units will work with any good quality power cords, we recommend the use of a matched set of Nordost power cables in order to achieve the very best results.

**QRT – the future for critical signal transfer systems.**



# QRT™

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Nordost Corporation USA

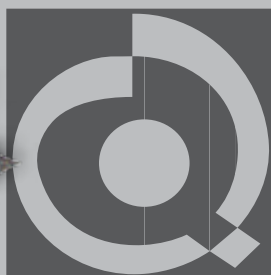
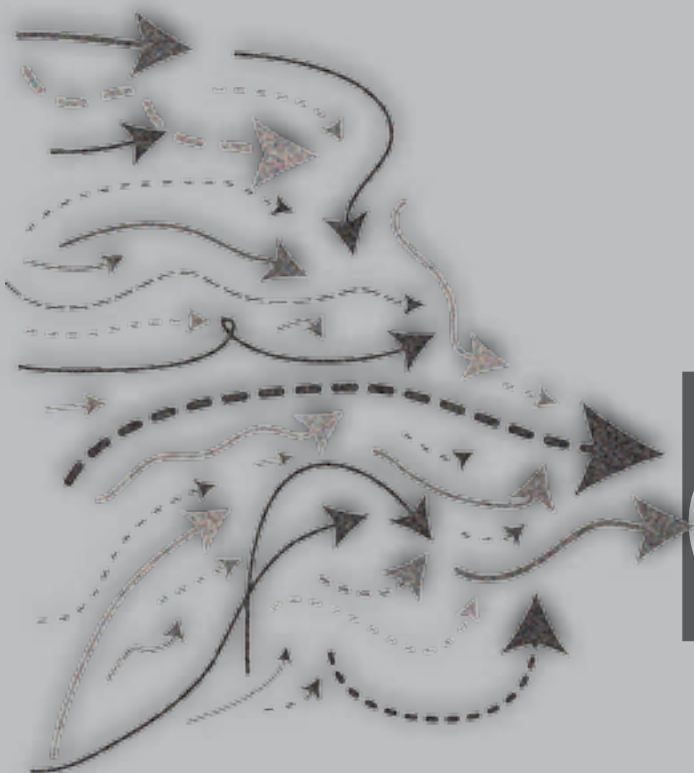
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## Qv2 AC Line Harmonizer

The QRT Qv2 is the latest addition to the QRT range, a family of modular, non-intrusive products that deliver an innovative, measurable and sonically effective solution to the issues of AC quality and audio/video performance. In keeping with that approach, the Qv2's benefits are complementary, adding to and building on the proven musical advantages already delivered by the established, multi-award winning Qb distribution units and Qx field generators. Only this time the Qv2 applies QRT technology directly to the AC line, introducing a carefully calculated range of harmonic frequencies to your system's AC supply, clocked from the line frequency itself. Simply plug it into a spare socket on your distribution block (or the same power line that your system's connected to) and you'll hear your music or view your movies with a new sense of space and immediacy, clarity and presence. It really is that simple.

Equally effective on audio or AV systems, you can use Qv2 as a first step towards better performance, or as an upgrade on an existing Qb or Qx installation. Either way you'll hear an obvious improvement in the natural flow and harmonic warmth, the sense of life and expression from your music and movies. That's quite a claim for a unit that's so compact as well as so affordable. On that basis, what (you might well wonder) could be better than a Qv2? That's just as simple: Two Qv2s! Just like the Qx2 and Qx4, the sonic impact of the Qv2 is cumulative, meaning that two used in



- Improves sound and picture quality.
- Increases the depth and realism of the musical performance.
- Lower perceived background noise.
- Deeper, more dimensional and more vibrant picture on AV systems.

tandem sounds more than twice as good as a single unit on its own, while four... Well, perhaps we'd better leave that to your imagination, but you get the picture.

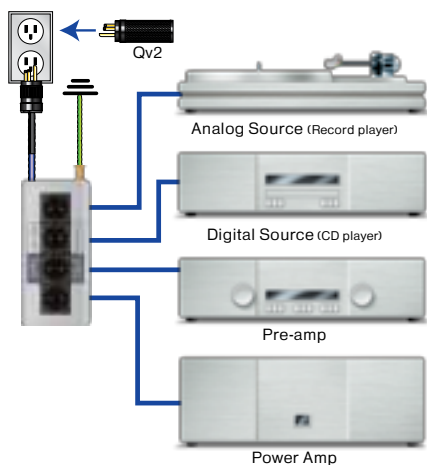
### **The QRT Qv2 – one upgrade that's literally plug and play!**

The Qv2 is housed in a high-quality, mechanically tuned, carbon-fiber body and equipped with either a US (NEMA) or Eu (Schuko) connection. It is simply inserted into a spare socket adjacent to the system and on the same AC line (a spare socket on your Qbase is ideal). It is compatible with voltages from 110V to 240V, can be used with an adaptor if required and carries a two-year warranty.

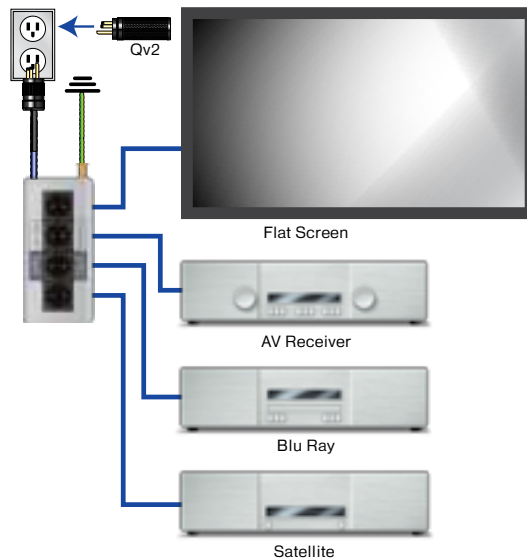


Instructions included and also available from:  
[www.nordost.com](http://www.nordost.com)

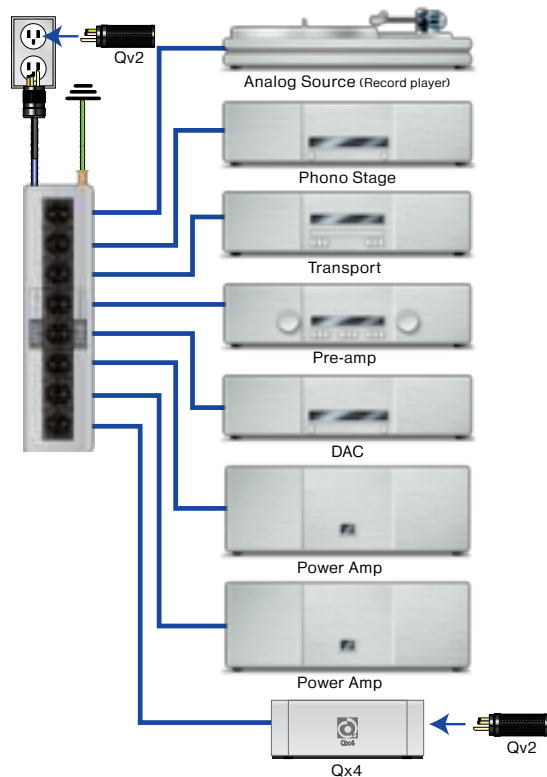
# Using The Qv2



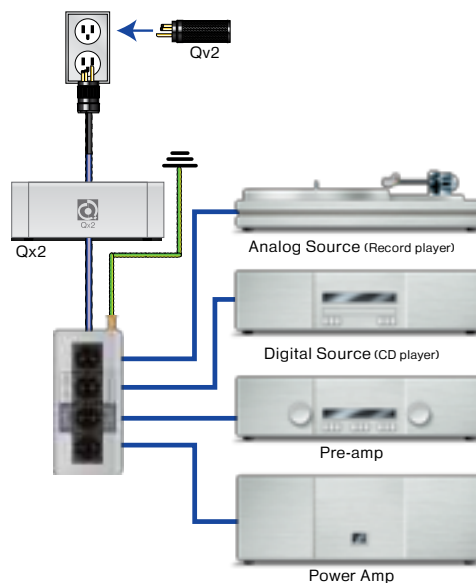
A single Qv2 in a basic two-channel system



A single Qv2 in a basic AV system



A pair of Qv2s in addition to a Qx4 in a complex two-channel system



A Qv2 used with a Qx4 in a simple two-channel system

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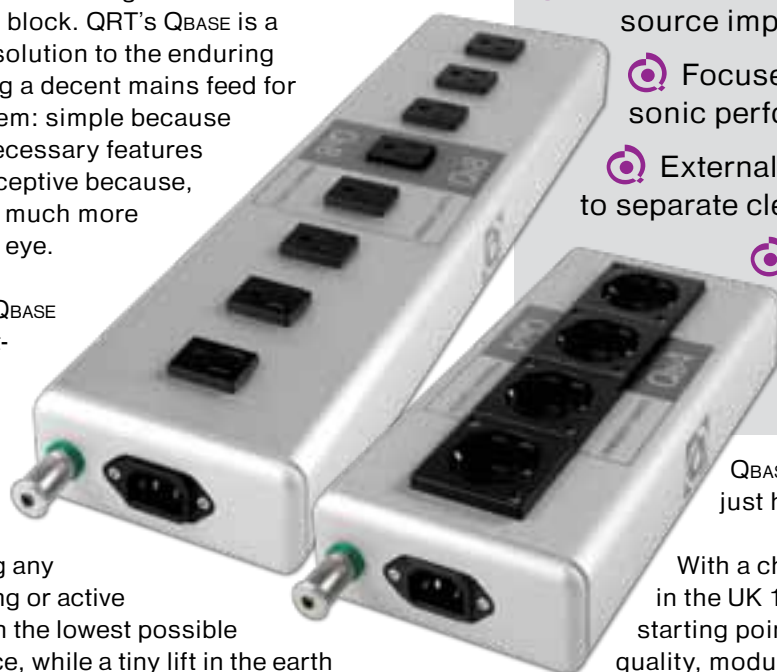


# QBASE Audiophile AC Distribution Unit

The heart of any high-quality AC supply is solid grounding – and the best way of achieving that is with a star-earthed distribution block. QRT's QBASE is a deceptively simple solution to the enduring problem of achieving a decent mains feed for your hi-fi or AV system: simple because it's shorn of all unnecessary features or complication, deceptive because, despite that, there's much more here than meets the eye.

The essence of the QBASE concept is a straight-line AC distribution path, combined with a star-grounded topology for connection to a clean ground spike. By eliminating any form of in-line filtering or active circuitry we maintain the lowest possible AC supply impedance, while a tiny lift in the earth impedance of all but one of the output sockets routes the signal grounds directly to the center of the star and the clean ground terminal. Clearly identified on the casework, this Primary Earth socket is at the center of your system's performance, literally and metaphorically. It defines both the order in which you connect your components and also, their listening priority in your musical enjoyment, allowing you to further optimize the performance of your primary sources.

The sockets themselves are mounted on a solidly constructed aluminum extrusion with machined end-caps that deliver a reassuring sense of substance. But the casework has far greater significance than that, the metal pieces and internal PCB (deliberately preferred to hard-wiring) constituting a single, mechanically tuned construction, designed specifically to enhance performance. Compare the musical performance of the



- ⌚ Straight-line, low loss design maintains low source impedance of AC supply.
- ⌚ Focused star ground for superior sonic performance
- ⌚ External ground post for connection to separate clean ground
- ⌚ Mechanical tuned casework
- ⌚ First step in Quantum QRT's modular approach to AC supply quality

QBASE to the competition and you'll hear just how effective this is.

With a choice of four or eight AC sockets (six in the UK 13A version), the QBASE is the perfect starting point in the construction of a high-quality, modular AC supply for your system, while its compact dimensions mean that it can be easily combined with one or more Qx power purifiers or Qv AC Line Harmonizers as funds allow.

## QBASE – delivering the performance you've already bought

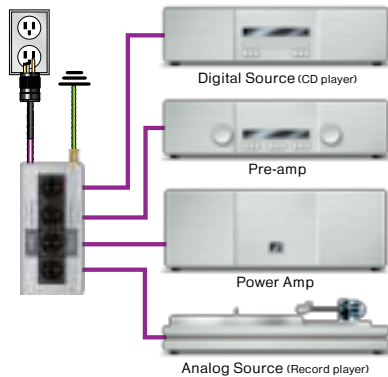
QRT QBASE units are available fitted with US (NEMA), Eu (Schuko) or Australian outlets and in four and eight socket versions. The UK 13A model is only available in a six-outlet configuration, due to the size of the sockets. All QRT units carry a two-year warranty.



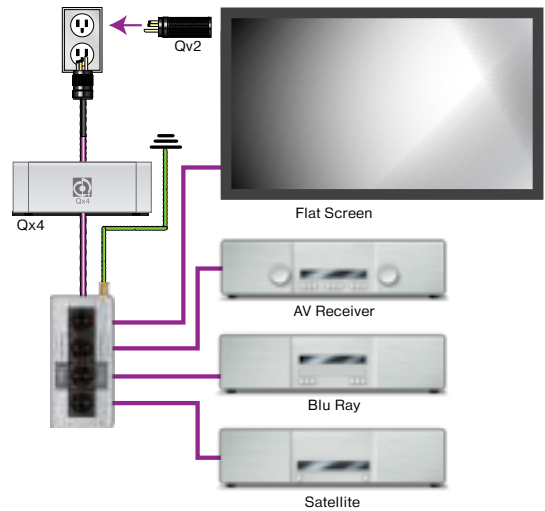
Instructions included and also available from:

[www.nordost.com](http://www.nordost.com)

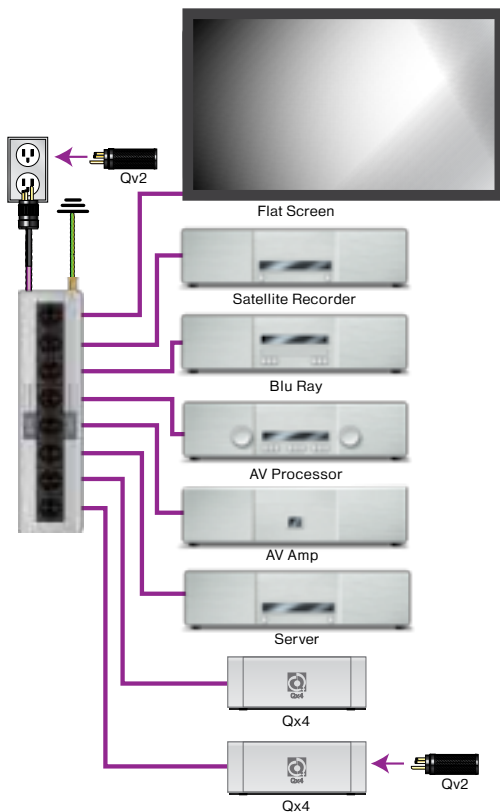
# Using The QBASE



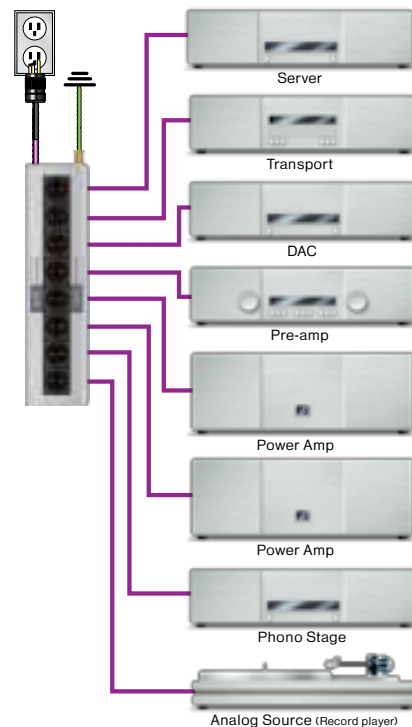
**QB4 used to power a simple two-channel system**



**QB4 used along with a Qx4 and Qv2, to power a simple AV system**



**QB8 used with two Qx4s and two Qv2s in a high-quality AV system**



**Basic QB8 installation in a complex, two-channel set-up**

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## Qx Power Purifiers

The problem facing every hi-fi system in the world is the quality of the power it receives. The problem facing their owners is what exactly to do about it – especially when there are so many products offering “answers”. The trouble is, that all too often those answers throw out the baby with the bathwater, causing more problems than they solve. Why?

Because when it comes to your AC supply, low source impedance, unimpeded peak current and an uninterrupted ground path are all critical. Yet heavy-handed attempts to cure waveform inaccuracies and fluctuations in voltage levels impact on exactly those key areas.

QRT's proprietary technology delivers a unique, non-intrusive solution to the problems associated with AC power supply quality. Because it operates in parallel to the power line, it doesn't compromise either the peak current capabilities of your power supply, or the integrity of your grounding. Nor does it compromise the source impedance.

Each Qx unit contains an array of QRT field generators (two in the Qx2, four in the twice as powerful Qx4) that act to alleviate the impact of poor quality mains power on your sensitive electronics, limiting RFI and timing errors associated with the AC line. Place a Qx2 or Qx4 unit at the heart of your system and you'll hear a lower noise floor, greater dynamic range, more fluid musical expression and greater space and ambience. Or, to put it another way, Quantum's Qx technology will move you closer, much closer, to the performances recorded on your discs: Results that you can hear, results that can be measured.



- Unique QRT field-generation technology
- Non-intrusive design maintains AC source impedance and peak current capability
- Cost effective modular system topology
- Equally effective on audio and AV/picture quality
- Measurable impact on system performance

Together with the QBASE distribution unit, QRT's Qx field generators offer a powerful and uniquely effective, modular solution to the problems of poor AC quality: one with real, readily audible sonic and musical benefits. And the best bit that we've left for last? The more Qx units you use, the greater the benefit, meaning no more obsolete products, no more losses on your investment, no more costly trade ins. Just add more QRT as and when you can...

### QRT Qx2 and Qx4 - Bringing music home

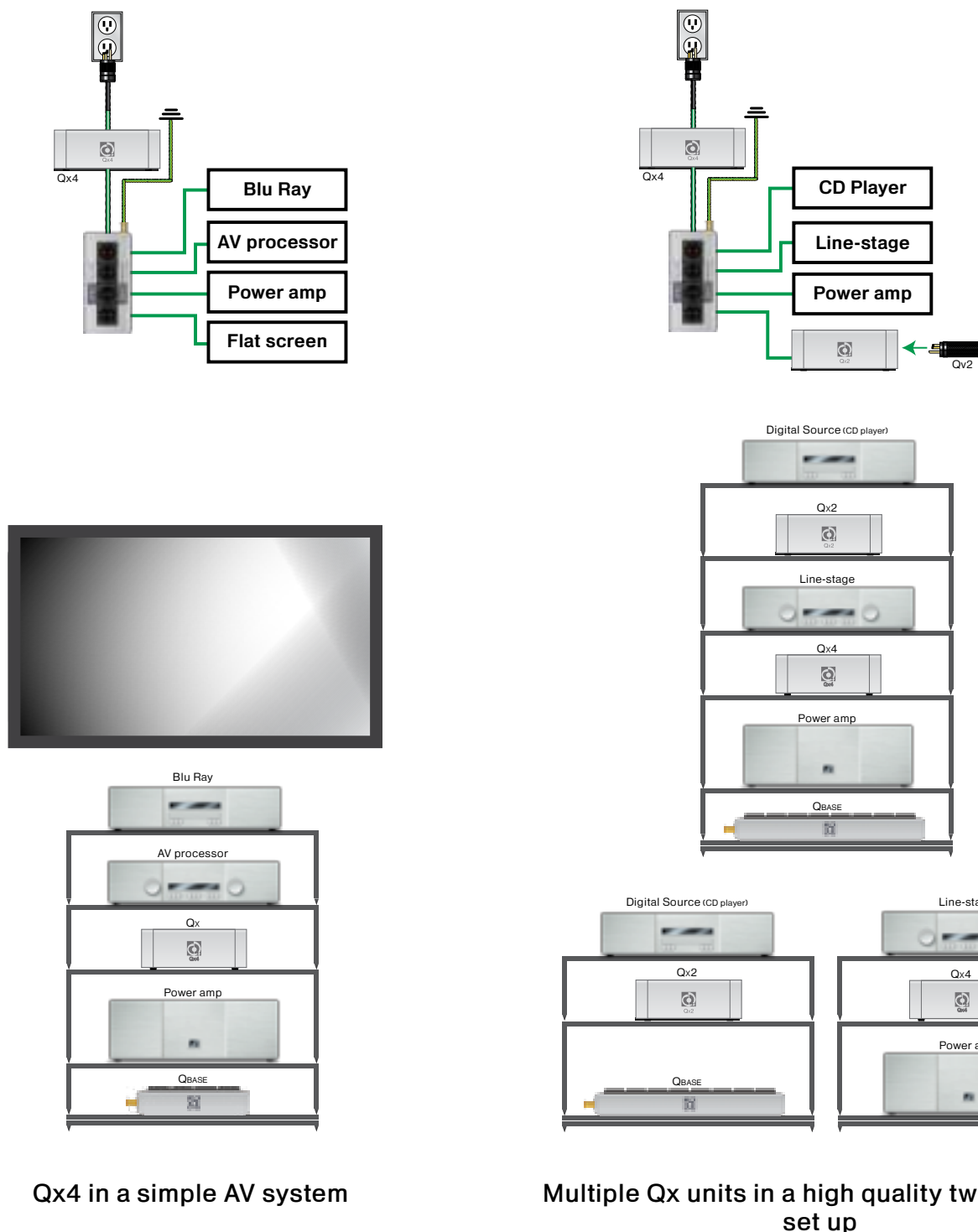
QRT Qx units are available fitted with a US (NEMA), Eu (Schuko), UK (13A) or Australian outlet and in either 110V/60Hz or 230V/50Hz models as appropriate. The heavy gauge aluminum casework is mechanically tuned to reduce vibrational affects while each unit carries a two-year warranty.



Instructions included and also available from:

[www.nordost.com](http://www.nordost.com)

# Installing and Positioning The Qx Unit



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