



# Revolution in Digital Music production

## First in history

Your high quality audio systems can only bring you the quality as much of music soft but not more. XRCD that offers clearer definition, more accurate and natural imaging, and higher music quality than any others. LISTEN and COMPARE!

### XRCD is revolutionary!

In challenging to untapped potential of conventional CD soft, a few engineers at JVC have painstakingly gone through every step of the mastering and manufacturing process with the goal of retaining the highest sonic purity of the original music source. This was accomplished not only by just measuring the results, but also by extensive listening tests to cable connections, AC power regulation, word clock distribution, mastering format, delivery system and compact disc materials, all being optimized to high extent levels.

The final result is a revolution in digital music production stored on XRCD. An extended resolution compact disc that offers eye-popping clarity, definition, more accurate imaging, and exquisite and by far better sound quality than all current available digital formats.

XRCD, this glorious achievement, has astonished experts throughout the world and was declared as a revolution in digital music production.

Regrettably, although XRCD was first introduced in 1996, it has not gained the recognition it deserves.

### How was XRCD achieved?

The XRCD process starts at the mastering level. The analog signal is taken directly from the mastering console (Console exclusively designed for XRCD mastering) and digitized using 20Bit or 24Bit K2 super coding. The K2 is a 20Bit, 128 times oversampling providing

a dynamic range of 108dB, -96dB THD, flat frequency response in the pass-band to within  $\pm 0.05$ dB, and the K2 24Bit, 128 time oversampling providing 1270dB, 108dB THD, flat frequency in the pass-band to within  $\pm 0.02$ dB substantial reduction of harmonic distortion for low level signals. The K2 super coding also provides a Bit down mode to convert 20Bit or 24Bit to 16Bit, and interface signal reshaping to eliminate time base jitter in the digital data stream. In general, the components used for the mastering provides lots of features for the convenience. However, components used for XRCD mastering were tested and removed unnecessary features and customized components to produce the highest sound quality possible to include to selection of purity wire, size of length and correction of wire direction. A variety of CD soft materials, including 24K gold-plated and pure copper discs were tested, and ultimately aluminum was selected upon after extensive listening tests.

The final result of this ceaseless testing effort contributed significantly in the creation of superior sound CD quality. That's XRCD!

### Ceaseless effort and extensive skill

Many audio connoisseurs around the world often say that the sound quality of the analog records made in the 1960's and 70's are exceptionally good. Why so?

The secret is that engineers involved in mastering and cutting in those days did not depend solely on the equipment alone. Instead, those engineers dedicated themselves in their crafts, making an unimaginable amount of effort in sharpening their skills, music aesthetic senses and gaining rich experiences themselves. They tirelessly brushed their skills in the severe competitions among engineers as well. All those immeasurable effort culminated in the creation of unparalleled music software with exceptional high sound quality.

### Differing approaches to mastering

In recent years, as advancement of IT progresses the method of mastering is greatly changing. Now it is possible for engineers to create music soft through the use of commercially available software without making much effort. Then, the trend of the quality criteria for music source is opt to number of bits alone, higher bit is better sound to be judged, contrary to the fact. The XRCD mastering team at Master Music includes Tohru Kotetsu who as cutting engineer created huge number of classic LP's and is now mastering engineer at JVC, Shizuo Nomiyama of N.T. Sound Works who was a master of Analog records cutting in 1970s, and he was a chief of mastering center of JVC and he is one of the creators of XRCD, Kazuo Kiuchi is a designer of Harmonix Resonance control devices and tuning master. The expertise and rich experience of these three specialists are applying to create XRCD in unparalleled sound quality.

## Mastering is an art!

### Strict selection of the original music source for mastering

What differentiates an XRCD produced by the XRCD mastering team at Master Music from all other compact disc formats?

Our principle rule for the mastering is to use the original recording source and not copy.

These original recordings must pass our stringent tests for the sound and recording quality.

### Limiting the recording time

XRCD surpass the standard CD and succeeds in faith-to original reproducing - its warmth, depth, and ambience, the acoustic and delicate nuances of musical instruments – even more dynamic than most of the analog records.

We limit the recording time to avoid possible “PIT INTERFERENCE”. The recording time for xrcd24 we produce is limited to maximum 64-minute to ensure superb sound quality and resolution in equal to that of original music source. While, in general, most of compact discs store as much longer time as possible intendedly to satisfy CD buyers as they may guess it saving and bargaining but truth to say that the sound quality is not good at all due to amount of pit interferences. .

### Utmost equipment control

All of our equipment used for the processes from mastering to cutting is customized for making XRCDs. Most of equipment supplied by manufacturer is designed with convenience and provide lots features, however, many of them are not importantly necessary for the XRCD mastering process. Mass of internal wires is net inside. We cut out unnecessary features and removed wires, correct wire direction and replace wires to high purity wires ( 98% of wire and cables selected is Harmonix )Furthermore, the press machine for XRCD is selected through our strict pressing machinery testing.

### Most clean power supply

The utmost effort we make is to cut out the noise flawlessly coming the surroundings and facility environment and to obtain most clean and stable power supply by completely turning off all the electrical equipment except for the equipment needed for mastering.

To attain the highest stability and clarity in the power source, we even turn off the air conditioning and work in the dark using flash lights.

### Rigorous quality control of the original master

Before the actual XRCD production starts, we press evaluation XRCD-samples and compare the quality with the original master disc. If there is deviation in the sound quality we will be mastering again until the sound quality is equal to that of the original master disc.

The excellent sound quality of XRCDs we produce is the result of meticulous control and management of each and every process of the production, which is regarded as the BLACK BOX (classified) of the industry.

Mastering is truly an Art and XRCD is revolutionary in digital music!

Note:

- ※ XRCD (Extended resolution compact disc).is a standard “Red-Book) CD and can be playback on any normal 16Bit CD players.
- ※ All XRCD shall be mastered and produced at JVC.

## xrcd24 production process from Mastering to pressing

