

World First ! Advanced orders accepted for the first network music player that uses the latest Robotic Technology.

ZMP New Strategy = Robots x consumer electronics

3 World Firsts ! Autonomous Motion, Practical remote operation with mobile phones, Multifunction Network Music Player



ZMP INC, a Japanese robotic company based in Tokyo, has developed the first Network music player equipped with the latest Robotics Technology (RT), with the name of **[Miuro]**.

【Background】

- Developers of commercial robots have concentrated until now in the appeal of form and movement- humanoids being an example- with not enough emphasis on the role these robots can play in humans' everyday life.
- In order to realize its foundational philosophy: [Creating a convenient life-style by enjoying Robotic Technology], our company ZMP has come with the idea to apply Robotic Technology (RT) to household electronic appliances.
- It is in this line that we present the next generation of home appliance that will mark a change in our life style.

【Concept】

- Music, with its universal appeal that is shared by almost all of us, represents a killer application.
- We have pointed at how much richer our lives become when we have music-listening devices that can almost become ubiquitous partners.

【Three Challenges】

- Design
 - Simple, Stylish and Ingenious
 - Collaboration with Mr. Shunichi Hara who has more than 20 years of graphic work experience with several important musicians.
 - Fusion of functionality and design
- Sound Quality
 - Compared with other appliances with the same speaker size, get a easily differentiable sound quality
 - High Sound Quality · Original Sound Reproduction、 Fresh Sound
 - Collaboration with Kenwood
- Robotic Functions
 - Thinking of movement cost performance we selected wheels as its means of locomotion, preserving however a high mobility and the element of surprise in its motions.
 - Applying Robotic Technology to get a pleasurable music-listening experience.

【Three World wide Firsts !】

- Equipping home appliances with Autonomous Movement Technology
 - It let us enjoy music by automatically moving itself to the place of our preference.
 - *The Ministry of Economy, Trade and Industry has designated in its Technology Strategy Map formulated in 2006 Robot Autonomous Motion Technology as one of its priorities.
- Remote operation through mobile phones
 - The current remote operation requires a permanent connection to control the robot, meaning that sudden breaks of communication would mean a sudden stop of the machine. With new technology the user just point at the place he wants to see and the robot will autonomously move to the target position and send a picture it takes of that place it as a sign of the completion of its task.
 - Besides checking on the state of the room, it allows to give the family at home the present of music.
 - Mobile phone interface developed in collaboration with HI INC.
- Multi-function Network Music Player
 - Network musical player that combines: iPod Reproduction x Net-Radio x Networked PC music library reproduction.
 - Works with most of the current Audio Formats (WAV, MP3, WMA, AAC, AIFF, LPCM)

Our company ZMP in its effort to find a refinement in enjoying music with its universal appeal, has concentrated its efforts in applying the latest robotic technology to produce a more

convenient, pleasurable and yet unknown way to enjoy it.

【The latest technology applied to get a pleasurable musical experience】

1. Autonomous Motion

The robot uses its camera, distance and touch sensors to build an internal map of the rooms in which the user wants to listen music and autonomously moves to them. With Miuro you can enjoy music wherever you want to.

2. Listening Point Optimization

- Sound field operation technology

When used on the floor, the user can press the [Floor mode] button and enjoy while sitting in a sofa of a direct sound. If put on a table, this sound can be enjoyed by pressing on the [Table mode] button. The tuning was performed using DiMAGIC Co Ltd ' s tool *uphony*.

- Frontal position self positioning

Although its sweet spot (the location with the best signal reception) is large, by pressing the [frontal position self positioning] button, Miuro can find the most suitable position that permits a better enjoyment of the music.

3. Staging dance and light that goes with the music.

The robot stages a dance using its LEDs and its peculiar two-wheeled high freedom twist movement that goes with the music using ZMP original algorithms that permit the user to experience a new way to enjoy music.

【Design Challenges】

The Design has been made with the collaboration of musical graphic producer Hara Shinichi. To put emphasis on the mobility of the robot, the design include big-size wheels which become the most recognizable characteristic of the robot. Using the big space of the wheels we have encased there the speakers making the cover also the music enclosure. To enlarge the size of the sweet spot, we have selected both extremes of the wheels for the location of the middle speakers. And to assure the uniformity of the sound quality we selected a spherical shape.

The robot emblematic wheels and its musical enclosure brings a better quality of music enjoyment as well as a beautiful spherical shape. We have strived to get the best combination of functionality and design with the right amount of a futuristic feel and a cuteness that brings out a motherly instinct of the female users!

【High Quality Sound fine tuning by Kenwood Sound Meisters 】

The mainstream speakers sacrifice the clarity of the medium tones in order to reinforce the low tones while reducing the extension of the sweet spot. Miuro on the other hand balances low, medium and high tones ensuring a clear register even in the presence of lows. In order to make this possible, ZMP has collaborated with Kenwood under the direction of its Sound Meister responsible for the high quality of that company characterized by Original Sound

reproduction.

Both sides' omni-directional woofers carry the medium-low tones and both sides' soft dome type tweeters carry the high tones in a way that their combination sound natural and pleasing to the ear. By separating the tweeters and woofers, the design permits an independent stereo sound with a high realistic sensation. To avoid oscillation and reverberation the enclosure has a 2-layer shell, permitting a rich and ample sound, and eliminating resonance and noise. Due to its airtight structure, the low frequency zone sounds get strengthen in its enclosure, and through the use of a fine tuning tubular structure a High Quality Acoustic Design was accomplished.

【Specification and Usage】

Weight 5kg, Length 34cm, Battery operation time approx 3~4 hours (Optional High Capacity Battery= 6~8 Hours) .

iPod can be connected to Miuro and operated with a remote control. Other players can also be connected but have to be manually controlled.

Playable formats include the current audio formats (WAV, MP3, WMA, AAC, AIFF, LPCM)

The robot is operated with a remote control, can play iPod and plays Net Radio connected through wireless LAN(802.11b/g).

When connected to a PC, additional functions include autonomous movement and landmark pointing through remote control.

【Sales】

Advanced orders available from *Miuro* Homepage (<http://Miuro.com>) .

First Shipments scheduled for December. 500~1000 units first-come-first-served for advanced orders. From next year a monthly production of 1000 units. We expect to sell more than ten thousand units in the first year.

The prices are structured in the following way.

- Main unit price 108,800 Yen
 - Network Audio Function
 - Remote control Motion Function
 - Dancing & Illumination
 - Sweet Spot (Frontal Position) Self Positioning Function
- Option
 - Autonomous Motion Package 19,800 Yen
 - Remote Communication Package 15,800 Yen
 - High Capacity Battery 12,800 Yen
 - Clear Top Cover 2,800 Yen

(Complement)

Miuro source : MUSIC INNOVATION based on utility robot technology

Introducing a new way of enjoying music through the use of the latest robotic technology.

Company Outline

ZMP INC Headquarters : Meguro ward in Tokyo CEO : Hisashi Taniguchi

Formed in the year 2001, as an innovative company with the objective to bring to the market the well-liked robotic technology. By taking the lead in the production of humanoid walking robots and participating in events to promote them our company gained recognition in and outside Japan. It played its part in the popularization of humanoids by also licensing the robots ' image as characters and participating in commercials and campaigns so as to bring people closer to robots.

ZMP started commercializing the humanoid robot PINO, originally a research result of a JST founded project, to universities and laboratories for research purposes. Since 2004 it opened new markets in technical colleges and high schools with the e-nuvo robot totally developed in the company for educational purposes selling around 300 units at an approximate price of US\$ 7,000. In 2005 it started selling nuvo, a humanoid robot for the home. This year on July, it introduced the [ZMP e-nuvo Series] and on August the [PINO ver. 3] which consolidates its reputation as the Education & Entertainment Robot Company.

Inquiries and orders to

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