

TENORI-ON

Yu Nishibori [†]

YAMAHA, Advanced System Development Center
Music & Human Interface Group

Toshio Iwai [‡]

Media Artist

1 Introduction

TENORI-ON (Figure 1) is made from the system that enables someone to create music visibly with some unique process, as pushing the buttons. Those buttons are the switches to generate sounds, which are scanned from left to right in a loop. It is also possible to make some figures as triangle and rectangular by pushing switches. You can turn around the figures clockwise or counterclockwise to change the timing to generate sound.

Below are the main features of TENORI-ON

- (1) Interface which anybody can play easily
 - When you push the switch, it emits the light, and it becomes the point to generate the sound.
- (2) Create Music with the various kinds of loops
 - When the scan bar moves one by one from left to right, it generates the sound at the point where the switches are pushed, and it loops.
 - Making some figures as triangle and rectangular by pushing switches, the light runs on the line of the figure and when it comes to the vertex, it generates the sound.
- (3) Session with another machine
 - When you connect your machine to another one, it synchronizes with another machine and it is possible to play the session with another person. It will become an experience you can never enjoy when playing by yourself.



Figure 1 : TENORI-ON

2 Exposition

This interface is an embedded system operated by the real-time OS called ITRON that mainly controls the sound

[†] email : nishibori@beat.yamaha.co.jp

[‡] email : iwai@gol.com

output, LEDs and the 256 switches. The core technology making this interface unique are the algorithm we developed to make music visibly with the 256 switches including LEDs inside.

Below are the main technical functions of TENORI-ON.

- Analyze how long a switch among 256 switches has been touched
- Analyze the direction of the finger touching the switches continuously
- Analyze the angle of the interface with the acceleration sensor embedded in the interface

Those elaborate and highly developed technology make it possible to give us many information simultaneously, which we can't get with our eyes, and we can expand the possibility of our expression by controlling the music and LED with those information.

3 Conclusion

We developed this work with a new point of view to music. And we'd like to keep on thinking the musical structure and music with a new point of view. When we develop some work with the idea and the image gotten from this method, and make the idea move, you can catch a new image of music, which you've never seen before. And if you control the motion of the new image, the interface should be brand new inevitably. Sometimes, you might have to develop some new basic technology at first to make it. In that case, you could develop a work which is mixed art with science exactly, and the possibility being a brand new work could be enhanced. We hope that people could get a new point of view to music and it could connect with the development and the expansion of the possibility of music by people using the interfaces like our work.

Finally we hope this work would make it possible for many people (including people who don't usually play any musical instruments) to experience the pleasure of music more than before. And when our work which has a new point of view to musical structure helps to expand the possibility of music and to develop music, we would like to think that it would be our goal.