4 Ecological Products

Examples of Environment-Friendly Products

1 Optical transmission equipment for cellular phones (Chitose factory)

This optical transmission equipment was developed especially for indoor use as part of the infrastructure for the cellular phone system. It performs batch transmission of PDC and IMT-2000 signals from a master station to substations via optical fibers. This equipment helps to reduce resource consumption and protect the environment because it smaller and lighter than previous equipment and also because it can be operated using existing optical fibers and power lines.

Conventional equipment

Developed equipment

Item No.	Environment item		Conventional equipment	Newly developed equipment	Effect
1	Function improvement		Conforms to PDC (800 MHz and 1.5 GHz)	Conforms to PDC (800 MHz and 1.5 GHz) + IMT-2000	
2	Low power consumption		316 W (including feed loss)	344 W (including feed loss)	27% reduction per band
3	Resource saving	Weight	9.1 kg	6.8 kg	25% reduction
		Size	508(W)X470(D)X200(H) mm	508(W)X420(D)X98(H) mm	56% reduction

2 Middle-wave digital broadcasting equipment (Hamura factory)

This product is digital broadcasting equipment designed for middle-wave radio broadcast services. Unlike the conventional equipment, which uses analog amplitude modulation, this equipment uses a new fully digital amplitude modulation method to achieve a high power efficiency, a compact and lightweight design, and improved operational stability.

Item No.	Item	Environment item	Conventional equipment	Newly developed equipment	Effect
1	Low power consumption	Energy saving	963 W	782 W	17% reduction
2	Small size/light weight	Volume reduction	695 liters 250 kg	514 liters 180 kg	26% reduction 28% reduction
3	High stability	Extension of operating life	FET voltage derating of 60%	FET voltage derating of 25%	

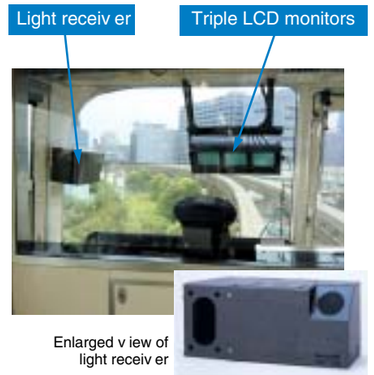
3 Ground-based digital broadcasting equipment (Koganei factory)

This equipment is designed for the digital terrestrial broadcasting that will be initiated in fiscal 2003 under the guidance of the Ministry of Public Management, Home Affairs, Posts and Telecommunications. The purpose of this project is to use the allocated bandwidth efficiently, improve the picture quality, and enhance the viewers' convenience. The design of this equipment is focused on compactness, energy saving, and cost reduction.

Item No.	Environment item		Conventional equipment (analog)	Newly developed equipment (digital)	Effect
1	Function improvement		SDTV (1 channel)	HDTV (1 channel) or SDTV (3 channels)	
2	Low power consumption		30kW	8kW	75% reduction
3	Environmental improvement (noise)		65dB	45dB	20 dB reduction
4	Resource saving	Weight	4,000 kg	1,500kg	62.5% reduction
		Floor area	7.5 m^2	4.3 m^2	42.5% reduction

4 Free space optical transmission system from wayside to train (Omiya factory)

This system transmits a real-time view of a train platform by optical free space transmission from cameras on the platform to the train driver's cab to support single-person operation of trains.
This system is small and light enough to be easily installed in both a standard operator's cab and in the operator's cab of an advanced train.



Enlarged view of light receiver

Item No.	Environment item		Conventional equipment	Newly developed equipment	Effect
1	Resource saving	Weight	22 kg	3.8 kg	82% reduction
2		Volume	14.7 liters	6.6 liters	55% reduction
3	Low power consumption		25W	13W	48% reduction

5 Single Wafer Oxidation/CVD System (Toyama factory)

With the spread of QTAT, more and more emphasis is being placed on the Single Wafer Oxidation/CVD System for semiconductor manufacturing. We have improved the throughput of the wafer processing and reduced its power consumption to contribute to energy conservation in semiconductor manufacturing lines.

Item No.	Environment item		Conventional equipment (ZESTONE-VII [A])	Newly developed equipment (ZESTONE-VII [C])	Effect
1	Function improvement (improvement of wafer processing throughput)		20 (wafers/hour)	40 (wafers/hour)	50% reduction of processing time
2	Low power consumption	Power consumption by furnace heater	100 (index)	73	27% reduction
		Power consumption by pumping and control	100 (index)	80	20% reduction