

RF PC RF PC RF PC

PC

2.

PC
SQL Server

Fig. 1

80C196KC

가 RF (RATA-

10V)

PC

RF

2.1

A/D

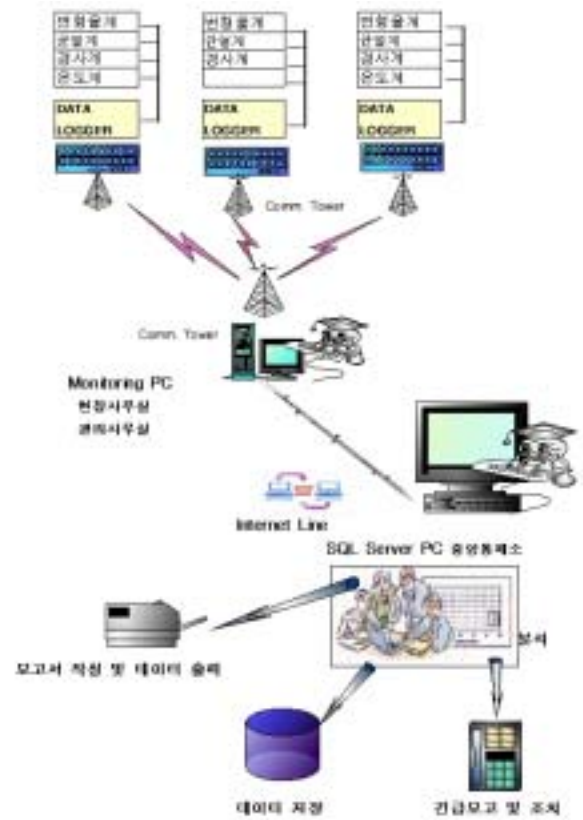


Fig. 1 Composition of developed system

Fig. 2

2.1.1

Table 1

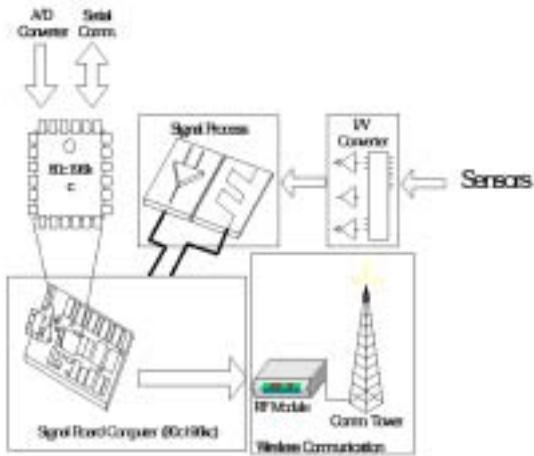


Fig. 2 Datalogger and communication system

4~20mA

0~5V
A/D

Table 1 Sensors and their purpose

2	
1	Sheet Pile
()	
가	가

2.1.2

Fig. 3

80C196KC

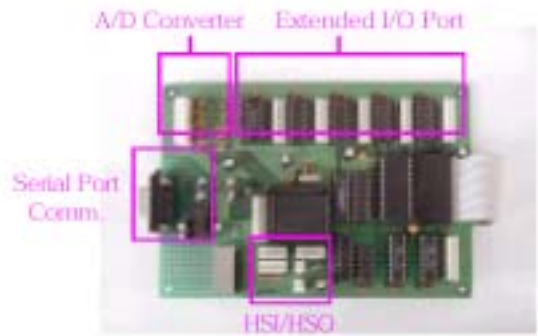


Fig. 3 80C196KC Board for datalogger

가 8 A/D 10 가
A/D
A/D 가 A/D
22μs가
/ A/D

(ASCII)
가
(2)
RAM 가 RF
, RF 가
1000 가
가
A/D
RAM
2.1.3
RF
RF 가
RF 가

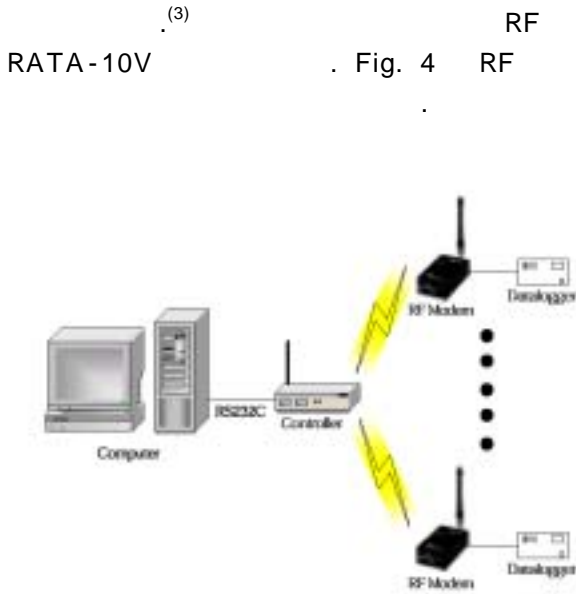


Fig. 4 Overview of wireless communication

Table 2 Specification of RF Module

Access Method	Poling / Contection
Frequency Range	(10mW) 219/224Mhz
Frequency Control	Quartz Crystal
Channel Capability	1CH TX/RX
RF Data Rates	9600 bps
Line Data Rates	2400 ~ 19200 bps
DTE Interface	RS-232C (Asynchronous)
Operating Temp	-10 ~ +50
Antenna Require	50 Unblanced (BNC Type)
Power Source	10mW-10V DC 300mA
Flow Control	X ON/OFF RTS/CTS
Dimension(mm)	60(W)×32(D)×160(H)
Service Area	10mW 1km

2.2

RF

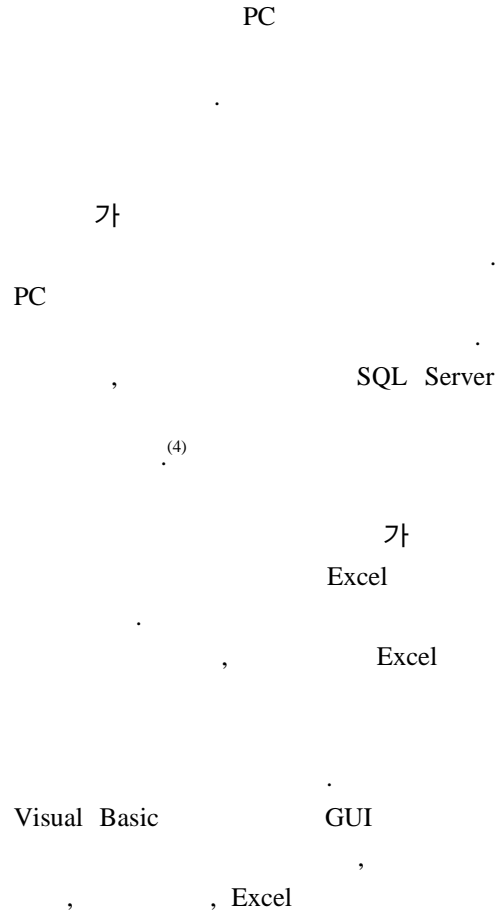


Fig. 5

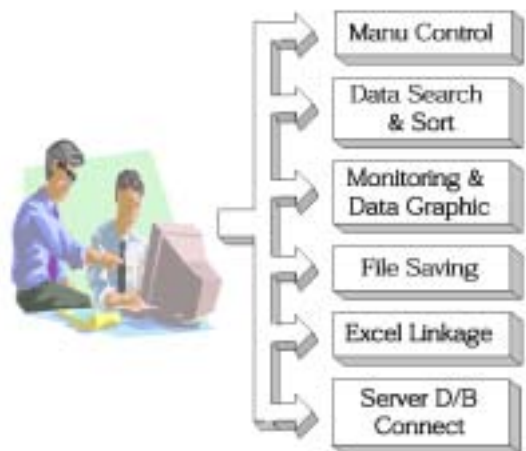


Fig. 5 Function of monitoring software

3.

Fig. 6

1, 2 , 가 , , ,



Fig. 6 Construction field and sensors

Fig. 7

11



Fig. 7 Developed datalogger

Fig. 8

PC

PC

가

가

가

PC
가
Excel
Excel 가



Fig. 8 Monitoring program

4.

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- (2) Kim, S. B., Kim, H. S., 1992, "An Application of ONE-CHIP Microprocessor in Mechanical System", *The Korean Society of Marine Engineers*, Vol. 16, No. 1, pp.8~17.
- (3) Heo, G. H., Choe, Y. M., 1999, "Health Monitoring System of Large Civil Structural System Based on Local Wireless Communication System", *The Korea Institute For Structural Maintenance Inspection*, Vol. 3, No. 4, pp.199~204.
- (4) Kim, S. Y., Park, S. J., Lee, Y. H., Kim, S. M., Kim, S. B., "Development of Realtime Integrated Monitoring System in Product Lines and Its Application", *ICCAS2001*, pp.2307~2310.