RS-232C Interface Board

Model Name: R-9000RS

FEATURES

The R-9000RS is a RS-232C interface board for MITSUBISHI TIME LAPSE VCR series.

When R-9000RS is installed, you can remote control these VCRs using the personal computer equipped with the RS-232C connector.

The R-9000RS is applied to MITSUBISHI TIME LAPSE VCR HS-9000 series.

By connecting the VCRs installed R-9000RS in series, you can control up to 255VCRs.

TECHNICAL SPECIFICATIONS

Power source   5 .1 ± 0.2 DC   (Power is supplied from VCR)

Power consumption   45 mA DC

Data link
  Teletype Procedures
  Synchronizing system   Asynchronous system
  Transmission rate   1200/ 2400/ 4800/ 9600 bps
  Data bit length   8bits/ 7bits
  Stop bit length   1bit/ 2bits
  Parity bit   Nil/ Even / Odd
  X control   Nil
  S parameter   Nil
  CS-RS hand-shake   With
  Delimiter code for send   CR(0DH)/ CR(0DH)+LF(0AH)
  Delimiter code for receive   CR(0DH)/ CR(0DH)+LF(0AH)

Operating temperature   5°C to 40°C

Relative humidity   80% MAX.

Connectable model   HS-9424U,   HS-9424E,   HS-9424E(B)
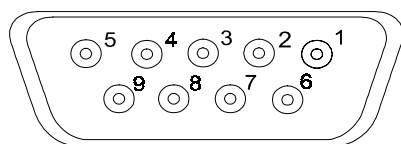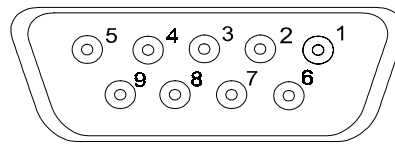   ('2000.Feb.)

Physical protocol of RS-232C

RS-232C INPUT and OUTPUT connectors of R-9000RS are D-SUB 9-pin male connector.

RS-IN

RS-OUT

Pin assign of RS-IN and RS-OUT
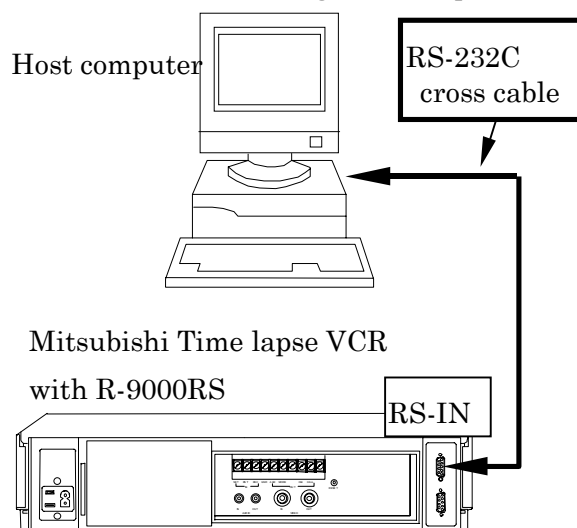
Pin No.	Signal line names	Meanings	Directions (from unit side)
2	RD	Received data	Input
3	SD	Transmitted data	Output
4	ER	Data terminal ready	Output
5	SG	Signal ground	-
6	DR	Data set ready	Input
7	RS	Request send	Output
8	CS	Clear to send	Input

Connections

When connecting with the personal computer.

Host computer

RS-232C cross cable

Mitsubishi Time lapse VCR
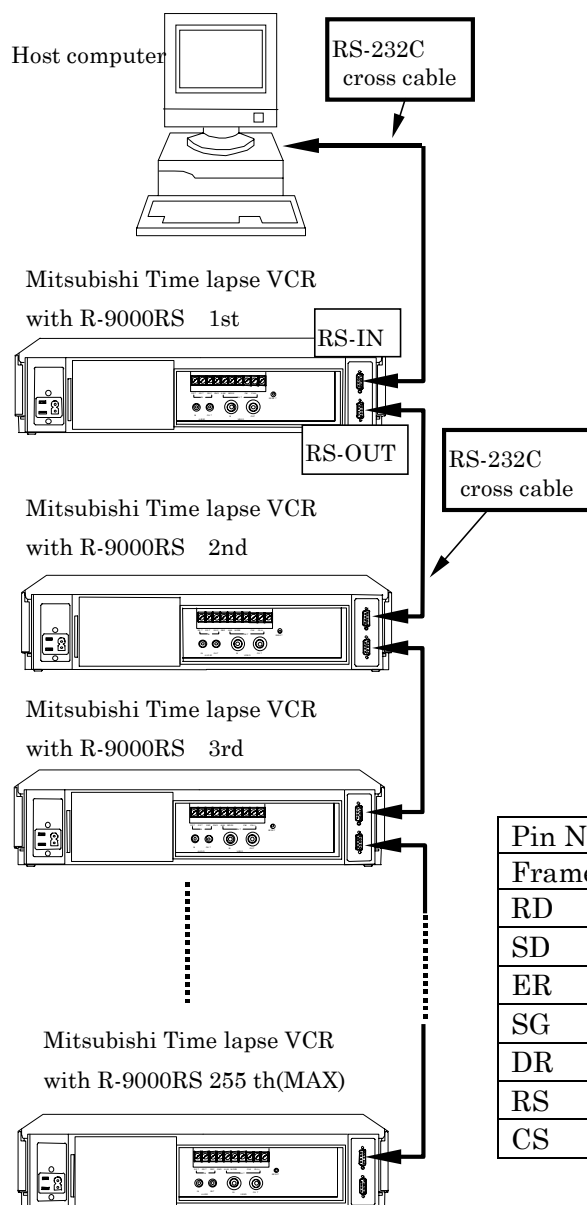
with R-9000RS

RS-IN

1. Connect the RS-232C cross cable to the RS-232C terminal on the personal computer.

2. Connect the other end of RS-IN terminal on the VCR installed R-9000RS.

When connecting the personal computer with two or more VCRs.

Host computer

RS-232C
cross cable

Mitsubishi Time lapse VCR
with R-9000RS   1st

RS-IN

RS-OUT

RS-232C
cross cable

Mitsubishi Time lapse VCR
with R-9000RS   2nd

Mitsubishi Time lapse VCR
with R-9000RS   3rd

Mitsubishi Time lapse VCR
with R-9000RS 255 th(MAX)

By connecting the VCRs installed R-9000RS in series, you can remote control up to 255VCRs.
  Each VCR has ID number, you can control each one.

1. Connect the RS-232C cross cable to the RS-232C terminal on the personal computer.

2. Connect the other end of   RS-IN terminal on the VCR installed R-9000RS.

3. Connect the RS-232C cross cable to the RS-IN terminal and the other end of RS-OUT terminal on the VCR installed R-9000RS.

For connection, use RS-232C cross cable as shown below.

Pin No.	Connection.	Pin No.
Frame		Frame
RD		RD
SD		SD
ER		ER
SG		SG
DR		DR
RS		RS
CS		CS

Format of command and status

(1)Command: Commanding codes from outside to the R-9000RS

Format | ID number | , | Command Codes | Parameter 1 | , | Parameter 2 | , | ......

...... | , | Parameter n | delimitter <receive>
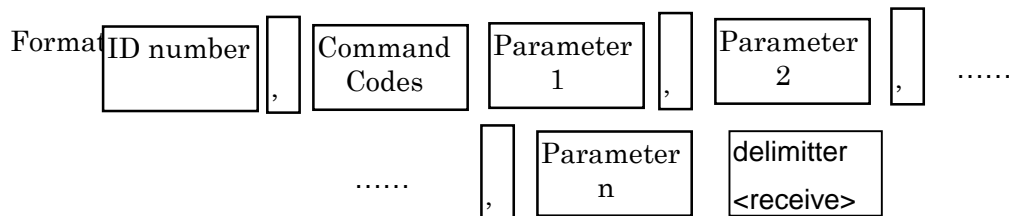
There are also commanding codes which do not accompany any parameter.

(2)Status: Response codes from the R-9000RS to outside.

Format | ID number | , | Status | Parameter 1 | , | Parameter 2 | , | ......

...... | , | Parameter n | delimitter <send>
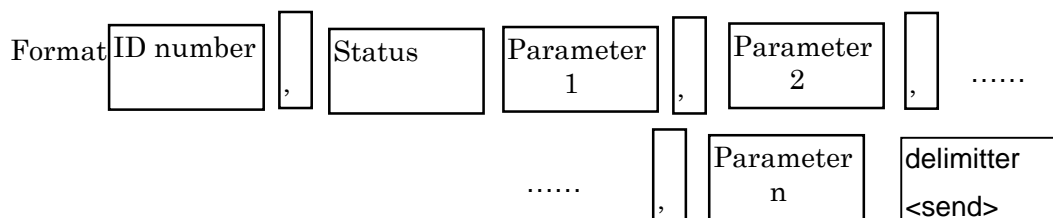
There are also statuses which do not accompany any parameter.

[Example 1] Switch ON VCR whose ID number is VCR001.

Command	Status	Meaning
VCR001,PW1*1		Power ON command for VCR001
	VCR001,RC*2	VCR001 received Power on command.
	VCR001,EX*2	VCR001 carried out the command.

*1 means delimmiter for send.   *2 means delimmiter for receive.

[Example 2] Recording was attempted by VCR whose ID number is VCR002, but could not because the tape tab was broken.

Command	Status	Meaning
VCR002,RC*1		Recording command for VCR002
	VCR002,RC*2	VCR002 received Recording command.
	VCR002,ER02 *2	Failed recording due to broken tape tab.