

Short description of the wireless function named “ SmartFile “

Our “SmartFile “ function operates as follows .

***Writing method**

This method is done when we bring the “ SmartFile Finder “ near the video cassette with “ SmartFile Label “ .

The circuit of “Smart File “are on P.W.BORD B (401RRC-218-01R) (refer to the block diagram) .

The data (the title of recording program , recording time or so) comes to IC001 from IC002 through the synchronous serial bus .

Then the data is coded in Manchester method and the carrier (13.56 MHz oscillated in IC001) will be modulated by the data in ASK modulated method in IC001 .

Then the modulated carrier will be carried to the transmitter block (on P.W.BOARD B / 401RRC-218-01R) and radiated from the antenna (on P.W.BOARD C / 401RRC-219-01R) .

The radiated data and the carrier is caught by the antenna of “Smart File Label” (attached onto the video cassette tape) by electromagnetic mutual coupling .

The Logic IC on the “Smart File Label” will be powered by rectifying the received carrier .

And the IC starts to write the received data into the EEPROM on the label

***Reading method**

This method is done when we bring the “ SmartFile Finder “ near the video cassette with “ SmartFile Label “ .

When the “Smart File Label” is placed near the antenna (on P.W.BOARD C / 401RRC-219-01R) in the “SmartFile Finder” and push the “READ” button on the “SmartFile Finder” , the antenna on the label will be electromagnetic mutual coupled with the antenna in the “SmartFile Finder” . And the carrier (13.56 MHz) will be caught by the antenna on the label . The Logic IC on the “Smart File Label” will be powered by rectifying the received carrier .

And the IC starts to read the data stored in the EEPROM on the “Smart File Label” and if the data exists , its causes the impedance change of the antenna on the label . And the change of the impedance causes the voltage and current change on the antenna in the “SmartFile Finder” through the electromagnetic mutual coupling .

The change on the antenna will received as an ASK modulated carrier. And it will be detected by IC006 and the Manchester coded data will be gotten .

Then the data is fed to IC001 and decoded in IC001 .

Then the decoded data will be sent from IC001 to IC002 through the synchronous serial bus . And then IC002 controls the LCD block to display the contents of the data .

So finally we can know the contents of the tape on the LCD display equipped in the “SmartFile Finder” .