

SPD-500
KIOSK3 MODE Protocol

VER 1.0

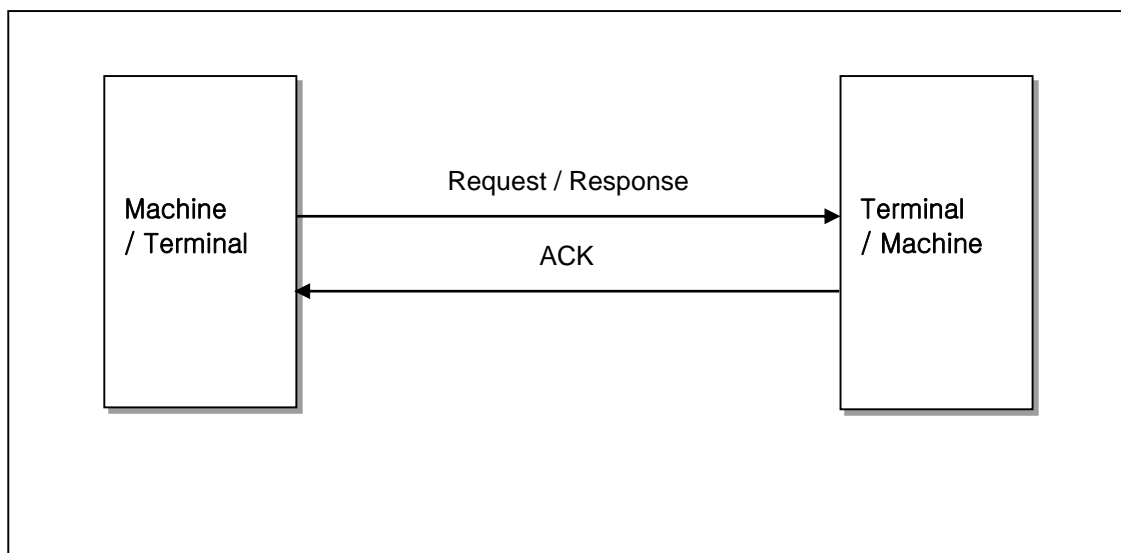
SCSpro Co.,LTD.

Document History

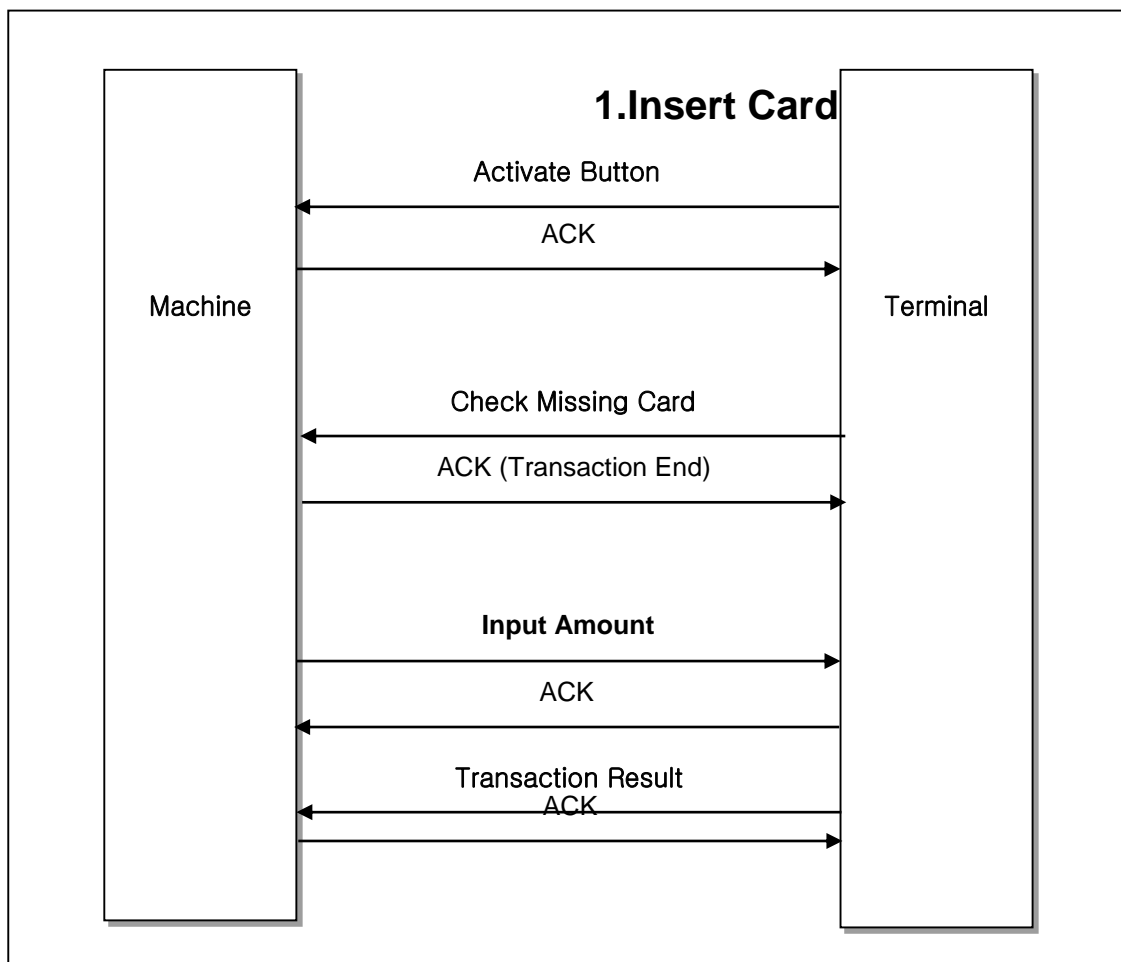
| <i>2020.03.11</i> | <i>JUN</i> | <i>1.0</i> | <i>Initial creation (ENG ver)</i> |
|-------------------|------------|------------|-----------------------------------|

1. Communication FLOW

1.1. Request & Response FLOW



1.2. KIOSK3 transaction FLOW



2. Protocol Packet

2.1. Protocol spec

| Index | Item | Len | Message Contents |
|-------|---------|-----|---|
| 1 | STX | 1 | 0x02 Start of Transmission |
| 2 | LEN | 2 | Send packet Length (LEN to DATA) |
| 3 | CNT | 1 | Packet Counter. - Whenever Terminal send one packet then increase count(+1) - If packet counter exceed 255, init to 1. (Client use this CNT value) |
| 4 | CMD | 1 | Command |
| 5 | SUB CMD | 1 | Sub Command |
| 6 | DATA | Var | Protocol content |
| 7 | ETX | 1 | 0x03 End of Transmission |
| 8 | CRC | 2 | CRC16 checksum value calculated by using all data except STX. (index 2 ~ 7) $G(x) = x^{16} + x^{15} + x^2 + 1$ |

2.2.Special Packet

2.2.1.ACK packet

Success to receive data

| | | | |
|------|------|------|------|
| 0x06 | 0x06 | 0x06 | 0x06 |
|------|------|------|------|

2.2.2.NAK packet

Fail to receive data

| | | | |
|------|------|------|------|
| 0x15 | 0x15 | 0x15 | 0x15 |
|------|------|------|------|

Caution

- It must send an protocol and receive an ACK/NAK packet within 2 sec.

2.3.CRC Check Source

```
static const unsigned short crctab[256] = {
    0x0000, 0xc0c1, 0xc181, 0x0140, 0xc301, 0x03c0, 0x0280, 0xc241,
    0xc601, 0x06c0, 0x0780, 0xc741, 0x0500, 0xc5c1, 0xc481, 0x0440,
    0xcc01, 0x0cc0, 0x0d80, 0xcd41, 0x0f00, 0xcfc1, 0xce81, 0x0e40,
    0x0a00, 0xcac1, 0xcb81, 0x0b40, 0xc901, 0x09c0, 0x0880, 0xc841,
    0xd801, 0x18c0, 0x1980, 0xd941, 0x1b00, 0xdbc1, 0xda81, 0x1a40,
    0x1e00, 0xdec1, 0xdf81, 0x1f40, 0xdd01, 0x1dc0, 0x1c80, 0xdc41,
    0x1400, 0xd4c1, 0xd581, 0x1540, 0xd701, 0x17c0, 0x1680, 0xd641,
    0xd201, 0x12c0, 0x1380, 0xd341, 0x1100, 0xd1c1, 0xd081, 0x1040,
    0xf001, 0x30c0, 0x3180, 0xf141, 0x3300, 0xf3c1, 0xf281, 0x3240,
    0x3600, 0xf6c1, 0xf781, 0x3740, 0xf501, 0x35c0, 0x3480, 0xf441,
    0x3c00, 0xfcc1, 0xfd81, 0x3d40, 0xff01, 0x3fc0, 0x3e80, 0xfe41,
    0xfa01, 0x3ac0, 0x3b80, 0xfb41, 0x3900, 0xf9c1, 0xf881, 0x3840,
    0x2800, 0xe8c1, 0xe981, 0x2940, 0xeb01, 0x2bc0, 0x2a80, 0xea41,
    0xee01, 0x2ec0, 0x2f80, 0xef41, 0x2d00, 0xedc1, 0xec81, 0x2c40,
    0xe401, 0x24c0, 0x2580, 0xe541, 0x2700, 0xe7c1, 0xe681, 0x2640,
    0x2200, 0xe2c1, 0xe381, 0x2340, 0xe101, 0x21c0, 0x2080, 0xe041,
    0xa001, 0x60c0, 0x6180, 0xa141, 0x6300, 0xa3c1, 0xa281, 0x6240,
    0x6600, 0xa6c1, 0xa781, 0x6740, 0xa501, 0x65c0, 0x6480, 0xa441,
    0x6c00, 0xacc1, 0xad81, 0x6d40, 0xaf01, 0x6fc0, 0x6e80, 0xae41,
    0xaa01, 0x6ac0, 0x6b80, 0xab41, 0x6900, 0xa9c1, 0xa881, 0x6840,
    0x7800, 0xb8c1, 0xb981, 0x7940, 0xbb01, 0x7bc0, 0x7a80, 0xba41,
    0xbe01, 0x7ec0, 0x7f80, 0xbf41, 0x7d00, 0xbdc1, 0xbc81, 0x7c40,
    0xb401, 0x74c0, 0x7580, 0xb541, 0x7700, 0xb7c1, 0xb681, 0x7640,
    0x7200, 0xb2c1, 0xb381, 0x7340, 0xb101, 0x71c0, 0x7080, 0xb041,
    0x5000, 0x90c1, 0x9181, 0x5140, 0x9301, 0x53c0, 0x5280, 0x9241,
    0x9601, 0x56c0, 0x5780, 0x9741, 0x5500, 0x55c1, 0x9481, 0x5440,
    0x9c01, 0x5cc0, 0x5d80, 0x9d41, 0x5f00, 0x5fc1, 0x9e81, 0x5e40,
    0x5a00, 0x9ac1, 0x9b81, 0x5b40, 0x9901, 0x59c0, 0x5880, 0x9841,
    0x8801, 0x48c0, 0x4980, 0x8941, 0x4b00, 0x8bc1, 0x8a81, 0x4a40,
    0x4e00, 0x8ec1, 0x8f81, 0x4f40, 0x8d01, 0x4dc0, 0x4c80, 0x8c41,
    0x4400, 0x84c1, 0x8581, 0x4540, 0x8701, 0x47c0, 0x4680, 0x8641,
    0x8201, 0x42c0, 0x4380, 0x8341, 0x4100, 0x81c1, 0x8081, 0x4040
};

unsigned short CalcCRC(unsigned char * icp, int icnt)
{
    int cnt = icnt;
    unsigned short icrc = 0;
    unsigned char * cp = icp;
    while(cnt--)
        icrc = ((icrc >> 8) & 0xff) ^ crctab[(icrc & 0xff) ^ *cp++];
    return(icrc);
}
```

3. Command Infomation

3.1. Command

| CODE | DESC |
|------|------------------|
| 0x10 | Terminal setting |
| 0x20 | transaction |

3.2. Sub Command

3.2.1.KIOSK3 transaction (0x20)

| CODE | DESC |
|------|-----------------|
| 0x01 | Activate Button |
| 0x02 | Input Amount |
| 0x03 | Missing Card |

4. Terminal Protocol

(1) Request Protocol

| | | | | | | | |
|-----|-----|-----|-----|---------|------|-----|-----|
| STX | LEN | CNT | CMD | SUB CMD | DATA | ETX | CRC |
|-----|-----|-----|-----|---------|------|-----|-----|

(2) Response Protocol

| | | | | | | | | |
|-----|-----|-----|-----|---------|-----------|------|-----|-----|
| STX | LEN | CNT | CMD | SUB CMD | Resp code | DATA | ETX | CRC |
|-----|-----|-----|-----|---------|-----------|------|-----|-----|

- Resp code

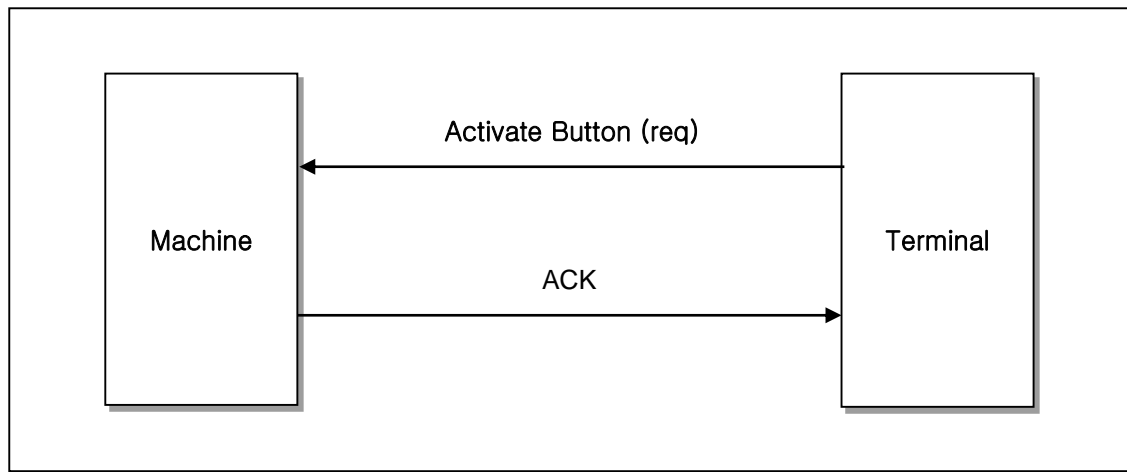
| No | Contents | Type | Len | Value |
|----|------------|------|-----|----------------|
| 1 | RC_SUCCESS | HEX | 1 | 0x00 (success) |
| 2 | RC_FAILURE | HEX | 1 | 0xFF (Fail) |

4.1.KIOSK3 transaction (0x20)

Add "Missing Card" Protocol

- Check the IC Card is removed during transaction

4.1.1.Activate Button (0x20, 0x01)

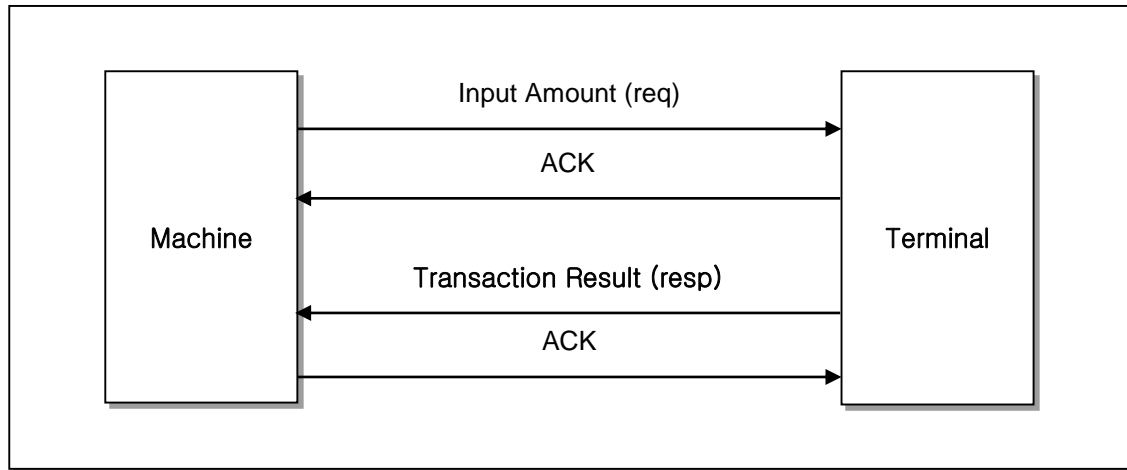


(1) Request Protocol

| | | | | | | | |
|-----|-----|-----|------|------|------|-----|-----|
| STX | LEN | CNT | 0x20 | 0x01 | none | ETX | CRC |
|-----|-----|-----|------|------|------|-----|-----|

(2) none

4.1.2. Input Amount (0x20, 0x02)



(1) Request Protocol

| STX | LEN | CNT | 0x20 | 0x02 | Req data | ETX | CRC |
|-----|-----|-----|------|------|----------|-----|-----|
|-----|-----|-----|------|------|----------|-----|-----|

- Req data

| No | Contents | Type | Len | Contents |
|----|----------|------|-----|---|
| 1 | Amount | HEX | 3 | Ex) 100won 00 01 00 2500won 00 25 00 |

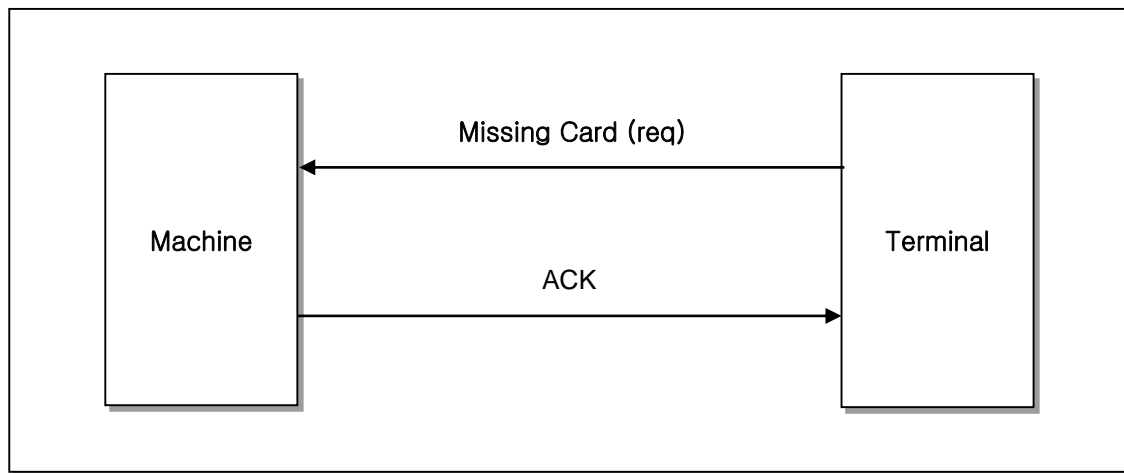
(2) Response Protocol

| STX | LEN | CNT | 0x20 | 0x02 | resp data | ETX | CRC |
|-----|-----|-----|------|------|-----------|-----|-----|
|-----|-----|-----|------|------|-----------|-----|-----|

- resp data

| No | Contents | Type | Len | Contents |
|----|--------------------|------|-----|--------------------------------------|
| 1 | Transaction Result | HEX | 1 | OK : RC_SUCCESS Fail : RC_FAILURE |

4.1.3.Missing Card (0x20, 0x03)



(1) Request Protocol

| | | | | | | | |
|-----|-----|-----|------|------|------|-----|-----|
| STX | LEN | CNT | 0x20 | 0x03 | none | ETX | CRC |
|-----|-----|-----|------|------|------|-----|-----|

(2) none