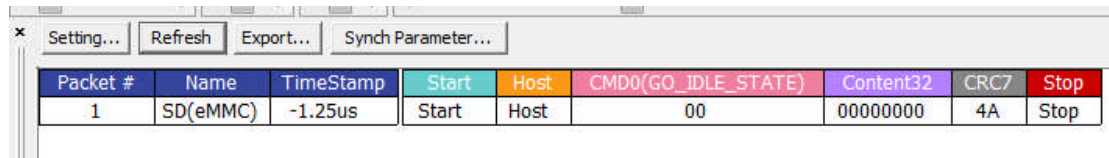


eMMC : Kingston KE4CN3H5A , 8GB , www.kingston.com

Protocol analyzer data for function :

```
static _mqx_int _esdhc_get_card_type
/* CMD0 - Go to idle - reset card */
command.COMMAND = ESDHC_CREATE_CMD(0, ESDHC_COMMAND_TYPE_NORMAL,
ESDHC_COMMAND_RESPONSE_NO, ESDHC_COMMAND_NONE_FLAG);
command.ARGUMENT = 0;
command.BLOCKS = 0;
if (_esdhc_send_command(esdhc_device_ptr, &command, NULL))
{
return ESDHC_ERROR_INIT_FAILED;
}
```

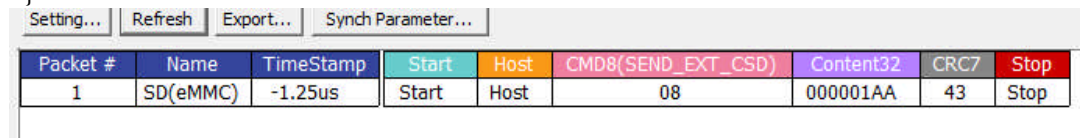


| Packet # | Name | TimeStamp | Start | Host | CMD0(GO_IDLE_STATE) | Content32 | CRC7 | Stop |
|----------|----------|-----------|-------|------|---------------------|-----------|------|------|
| 1 | SD(eMMC) | -1.25us | Start | Host | 00 | 00000000 | 4A | Stop |

```
/* CMD8 - Send interface condition - check HC support */
command.COMMAND = ESDHC_CREATE_CMD(8, ESDHC_COMMAND_TYPE_NORMAL,
ESDHC_COMMAND_RESPONSE_R1, ESDHC_COMMAND_NONE_FLAG);
command.ARGUMENT = 0x000001AA; // Voltage supply 2.7-3.6V 0x100 + 0xAA check pattern
command.BLOCKS = 0;

val = _esdhc_send_command(esdhc_device_ptr, &command, NULL);

if (val == 0)
{
if (command.RESPONSE[0] != command.ARGUMENT)
{
return ESDHC_ERROR_INIT_FAILED;
}
card_type |= CARD_HC_MASK;
}
else if (val != ESDHC_ERROR_COMMAND_TIMEOUT) // This command should not be supported by
old card
{
return ESDHC_ERROR_INIT_FAILED;
}
```



| Packet # | Name | TimeStamp | Start | Host | CMD8(SEND_EXT_CSD) | Content32 | CRC7 | Stop |
|----------|----------|-----------|-------|------|--------------------|-----------|------|------|
| 1 | SD(eMMC) | -1.25us | Start | Host | 08 | 000001AA | 43 | Stop |

```

/* CMD5 - Send operating conditions - test IO */
command.COMMAND = ESDHC_CREATE_CMD(5, ESDHC_COMMAND_TYPE_NORMAL,
ESDHC_COMMAND_RESPONSE_R4, ESDHC_COMMAND_NONE_FLAG);
command.ARGUMENT = 0;
command.BLOCKS = 0;
val = _esdhc_send_command(esdhc_device_ptr, &command, NULL);

```

| Packet # | Name | TimeStamp | Start | Host | CMD5(SLEEP_AWAKE) | Content32 | CRC7 | Stop |
|----------|----------|-----------|-------|------|-------------------|-----------|------|------|
| 1 | SD(eMMC) | -1.255us | Start | Host | 05 | 00000000 | 2D | Stop |

```

/* CMD55 - Application specific command - check MMC */
command.COMMAND = ESDHC_CREATE_CMD(55, ESDHC_COMMAND_TYPE_NORMAL,
ESDHC_COMMAND_RESPONSE_R1, ESDHC_COMMAND_NONE_FLAG);
command.ARGUMENT = 0;
command.BLOCKS = 0;
val = _esdhc_send_command(esdhc_device_ptr, &command, NULL);

```

| Packet # | Name | TimeStamp | Start | Host | CMD55(APP_CMD) | Content32 | CRC7 | Stop |
|----------|----------|-----------|-------|------|----------------|-----------|------|------|
| 1 | SD(eMMC) | -1.25us | Start | Host | 37 | 00000000 | 32 | Stop |

Note : CMD55 , timeout

```

if ((val > 0) && (val != ESDHC_ERROR_COMMAND_TIMEOUT))
{
    return ESDHC_ERROR_INIT_FAILED;
}

if ((val < 0) || (val == ESDHC_ERROR_COMMAND_TIMEOUT))
{
    /* MMC or CE-ATA */
    card_type &= ~(CARD_IO_MASK | CARD_MEM_MASK | CARD_HC_MASK);

    /* CMD1 - Send operating conditions - check HC */
    command.COMMAND = ESDHC_CREATE_CMD(1, ESDHC_COMMAND_TYPE_NORMAL,
ESDHC_COMMAND_RESPONSE_NO, ESDHC_COMMAND_NONE_FLAG);
    command.ARGUMENT = 0x40300000;
    command.BLOCKS = 0;
    if (_esdhc_send_command(esdhc_device_ptr, &command, NULL))
    {
        return ESDHC_ERROR_INIT_FAILED;
    }
}

```

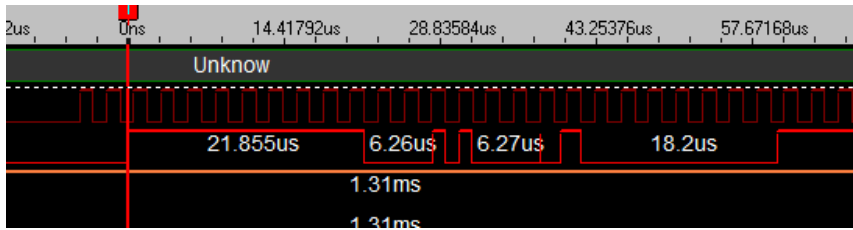
| Packet # | Name | TimeStamp | Start | Host | CMD1(SEND_OP_COND) | Content32 | CRC7 | Stop |
|----------|----------|-----------|-------|--------|--------------------|-----------|-------------------|------|
| 1 | SD(eMMC) | -1.255us | Start | Host | 01 | 40300000 | 5B | Stop |
| Packet # | Name | TimeStamp | Start | Device | CheckBitR3 | Busy[31] | AccessMode[30:29] | |
| 2 | SD(eMMC) | 131.455us | Start | Device | 3F | 0 | 0 | |

Note : Kingston eMMC responds to the Host with Busy[31] = 0.

```

/* CMD39 - Fast IO - check CE-ATA signature CE */
command.COMMAND = ESDHC_CREATE_CMD(39, ESDHC_COMMAND_TYPE_NORMAL,
ESDHC_COMMAND_RESPONSE_R4, ESDHC_COMMAND_NONE_FLAG);
command.ARGUMENT = 0x0C00;
command.BLOCKS = 0;
int32_t res = _esdhc_send_command(esdhc_device_ptr, &command, NULL);

```



Note : Zeroplus Protocol Analyzer cannot decode the command.