- Application Note for W3150A -

How to use Multicasting

Document History

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IP Multicasting

IP Multicasting provides delivery to multiple destinations with having same multicast group address. Therefore for using IP multicasting, we know multicast group address, multicast group port number. **Multicast group addresses are in the range 224.0.0.0 through 239.255.255.255.**

And multicast hardware(Ethernet MAC) address corresponding to IP multicasting are in the range 01:00:5e:00:00:00 through 01:00:5e:7f:ff:ff. This allocation allows for 23 bits in the Ethernet MAC to correspond to the IP multicast group address. The mapping places **the low-order 23 bits of the multicast group address into these 23 bits of the Ethernet MAC**. For example, assume that multicast group address is 224.1.1.11 and multicast group port number is 3000. In this case, multicast Hardware address is 01:00:5e:01:01:0b.

Phase 0. IGMP socket initialization
Before set the OPEN command, **write the multicast hardware address, group address and port number to S0_DHAR(Destination Hardware Address Register), S0_DIPR(Destination IP Register), S0_DPORT(Destination Port Number Register)**.

```
{
    /* set UDP & Multicasting on socket 0 mode register */
    S0_MR = 0x02 | 0x80;
    /* set multicast hardware address, group address and port number. */
    S0_DHAR = 0x01005e01010B; // e.g., 01.00.5e.01.01.0b
    S0_DIPR = 0xE001010B; // e.g., 224.1.1.11
    S0_DPORT = 0x0BB8; // e.g., 3000
    /* set OPEN command */
    S0_CR = OPEN;
}
```

Phase 1. Data communication
The process of receiving is same to UDP receiving.
The process of receiving is same to TCP sending, because remote address and remote port number is already fixed as multicast group address and multicast group port number.