CRM introduction on OS 7200 MCP/MP20

First of all, we prepared this document to inform you of the operation of the CRM daughter board on OS 7200 MCP and MP20.

As we informed you before, the old engine chip, STL7065 will be discontinued soon and replaced by new engine chip, STC9604. The old engine chip has been used on SCM, MFM and RCM (but not RCM2) but we are not going to develop those cards with new engine chip. Instead, we modified the software to work the CMR board in OS 7200 MCP and MP20.

The following are the details on OS7200 daughter boards.

OS 7200 Daughter boards

There are several daughter boards that can mount on the MCP/MP20. Depending on the installation requirements the daughter boards can be installed and provide the following:

- MISC :
  - Should be installed in Loc3.
  - 2 External music/audio inputs,
  - 1 external page output,
  - 1 Loud Bell audio output,
  - 3 relay contact closures (2 page relay, 1 common bell).
- MFM
  - Can be installed in Loc1 & Loc2.
  - Provides 12 DTMF Receivers
- RCM
  - Should be installed in Loc2.
  - Can be used as CID mode and R2MFC by DIP Switch settings and Provides below resources.
    a) CID : 14 CID Receivers
    b) R2MFC : 8 R2MFC Receivers
- RCM2
  - Should be installed in Loc2.
  - Can be used as one of CID, R2MFC and R2/CID mode by DIP Switch settings or MMC 828 and Provides below resources.
    a) CID : 14 CID Channels (Rx/Tx)
    b) R2MFC : 8 R2MFC Receivers
    c) R2/CID : 4 R2MFC Receivers / 6 CID Channels (Rx/Tx) – This can be set in MMC 828 for the countries where use R2MFC.

- CRM
  - Can be installed in both Loc1 & Loc2.
  - Can be set as only DTMFR like MFM when being installed in Loc1.
  - Can be set as one of below four modes (DTMFR, CID, R2MFC or R2/CID) in MMC 827 when being installed in Loc2 and each mode provides below resources:
    a) DTMFR : 12 (16*) DTMF Receivers
    b) CID : 14 CID Channels (Rx/Tx)
    c) R2MFC : 14 R2MFC Receivers
    d) R2/CID : 8 R2MFC/6CID Receivers

The following tables present locations and details per cards and software versions.

MCP Daughter board capabilities (~ V4.21b)		
Position	Types of Daughter board allowed per position	
MCP-Loc1	MFM	
MCP-Loc2	MFM, RCM, RCM2	
MCP-Loc3	MISC	

MCP Daughter board capabilities (from V4.21c)		
Position	Types of Daughter board allowed per position	Notes
MCP-Loc1	CRM, MFM,	• CRM can be set as only DTMFR mode. • A CRM provides 12 DTMF Receivers.
MCP-Loc2	CRM, MFM, RCM, RCM2	• CRM can be set as one of below four modes (DTMFR, CID, R2MFC or R2/CID) in MMC 827and each mode provides below resources. a) DTMFR : 12 DTMF Receivers b) CID : 14 CID Channels (Rx/Tx) c) R2MFC : 14 R2MFC Receivers d) R2/CID : 8 R2MFC / 6CID Receivers (Rx/Tx)
MCP-Loc3	MISC	

Notes)

1) In order for the CRM board with old Engine chip, STL 7065 to work properly, its CPLD version should be V02 (“crm_v10.jed”, checksum=0A1F). If its CPLD version is earlier than V02, it will not work properly. As you know well, the CRM with old Engine chip was discontinued at the end of 2007.

2) In order for the CRM board with new Engine chip, STC 9604 to work properly, its CPLD version
   - Should be V10 (“crm_v10.jed”, checksum=0A1F) for Smart Media type of MCP card.
   - Should be V10 (“crm_v10.jed”, checksum=0A1F) for MMC+ / SD card types of MCP card.
   - For your reference, CPLD V08 and V09 were applied to the mass production for new CRM
   - CPLD V10 (“crm_v10.jed”, checksum=0A1F) are going to be applied to mass production from Nov. 28th of 2008.

MP20 Daughter board capabilities (from V4.23b)		
Position	Types of Daughter board allowed per position	Notes
MCP-Loc1	Modem, CRM, MFM,	• Modem is mounted, do not install RCM2 in Loc2. Modem does not work. • CRM can be set as only DTMFR mode. • A CRM provides 12 DTMF Receivers.
MCP-Loc2	CRM, MFM, RCM, RCM2	• Do not install RCM2 in case you want to use modem. Modem does not work. • CRM can be set as one of below four modes (DTMFR, CID, R2MFC or R2/CID) in MMC 827and each mode provides below resources. a) DTMFR : 12 (16*) DTMF Receivers b) CID : 14 CID Channels (Rx/Tx) c) R2MFC : 14 R2MFC Receivers d) R2/CID : 8 R2MFC / 6CID Receivers (Rx/Tx)
MCP-Loc3	MISC	

* When no daughter board or Modem are installed on Loc1 and a CRM is installed on Loc2, the CRM provides additional 4 DTMF Receivers regardless of mode selection.

Notes)

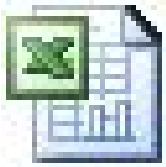
3) In order for the CRM board with old Engine chip, STL 7065 to work properly, its CPLD version should be V02 ("crm_v10.jed", checksum=0A1F). If its CPLD version is earlier than V02, it will not work properly. As you know well, the CRM with old Engine chip was discontinued at the end of 2007.

4) In order for the CRM board with new Engine chip, STC 9604 to work properly, its CPLD version
   - Should be V10 ("crm_v10.jed", checksum=0A1F) for Smart Media type of MCP card.
   - Should be V10 ("crm_v10.jed", checksum=0A1F) for MMC+ / SD card types of MCP card.
   - For your reference, CPLD V08 and V09 were applied to the mass production for new CRM
   - CPLD V10 ("crm_v10.jed", checksum=0A1F) are going to be applied to mass production from Nov.28th of 2008.

Compatibility table between MCP/MP20 card and CRM board.

		CRM board			
		CRM with STL7065 (old Engine)		CRM with STC9604 (New Engine)	
		CRM CPLD V01	CRM CPLD V02	CRM CPLD 08	CRM CPLD V09
MCP	Smart Media card type	NOT OK	**Working properly**	NOT OK	**Working properly**
	MMC+ card type SD card type	**Working properly**	**Working properly**	**Working properly**	**Working properly**

Appendix: Detailed resource table in OS 7200



OS7200
resources.xls