Spectrum Enterprise SIP Trunking Service
NEC SV8300/9300
IP PBX Configuration Guide

About Spectrum Enterprise:

Spectrum Enterprise is a division of Charter Communications following a merger with Time Warner Cable and acquisition of Bright House Networks. Spectrum Enterprise is a national provider of scalable, fiber technology solutions. The Spectrum Enterprise portfolio includes networking and managed services solutions, including Internet access, Ethernet and Managed Network Services, Voice, TV and Cloud solutions. Our industry-leading team of experts works closely with clients to achieve greater business success.

About this document:

Spectrum Enterprise assures IP PBX compatibility by conducting interoperability testing to ensure any potential compatibility issues have been resolved prior to installation. Please review the IP PBX configuration instructions in this guide prior to your installation date.

Be advised that this document may contain references to Charter or Charter Business. All references to Charter should be read as Spectrum Enterprise.

Thank you,

Spectrum Enterprise

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NEC SV8300/9300 IP PBX Configuration Guide

Charter COMMUNICATIONS

1 Introduction

The document describes how to configure the NEC SV8300 IP PBX to interoperate within the Charter network. It does not provide any information on how to provision, configure or use the features of the IP PBX. Please refer to the documentation provided with the IP PBX or contact the vendor.

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2 SIP Trunk Configuration

2.1 Verifying SIP Trunk License

Follow the steps listed below to configure the SIP Trunk license verification.

Step	Action
1	In the System Data Navigate to **CM F88>017>xx:yy (xx=Channels Assigned/yy=Total SIP Trunks Available)**
2	Verify SIP Trunk license.
3	Procedure completed.

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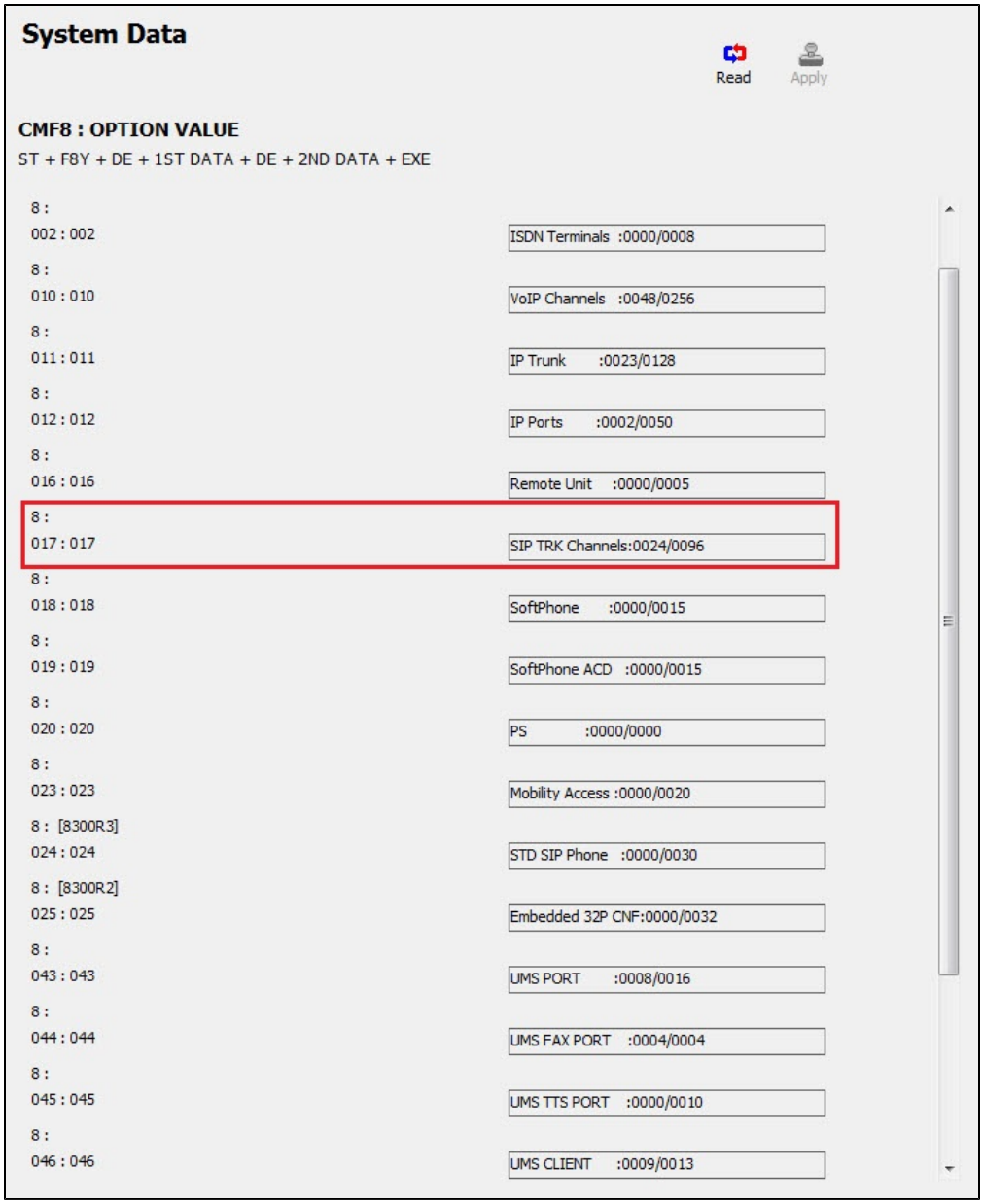

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2.2 Setting up Network

Follow the steps below to set up the network.

Step	Action
1	In the System Data Navigate to **CM 0B101>00>xxx.xxx.xxx.xxx.** Set system VoIP IP address.

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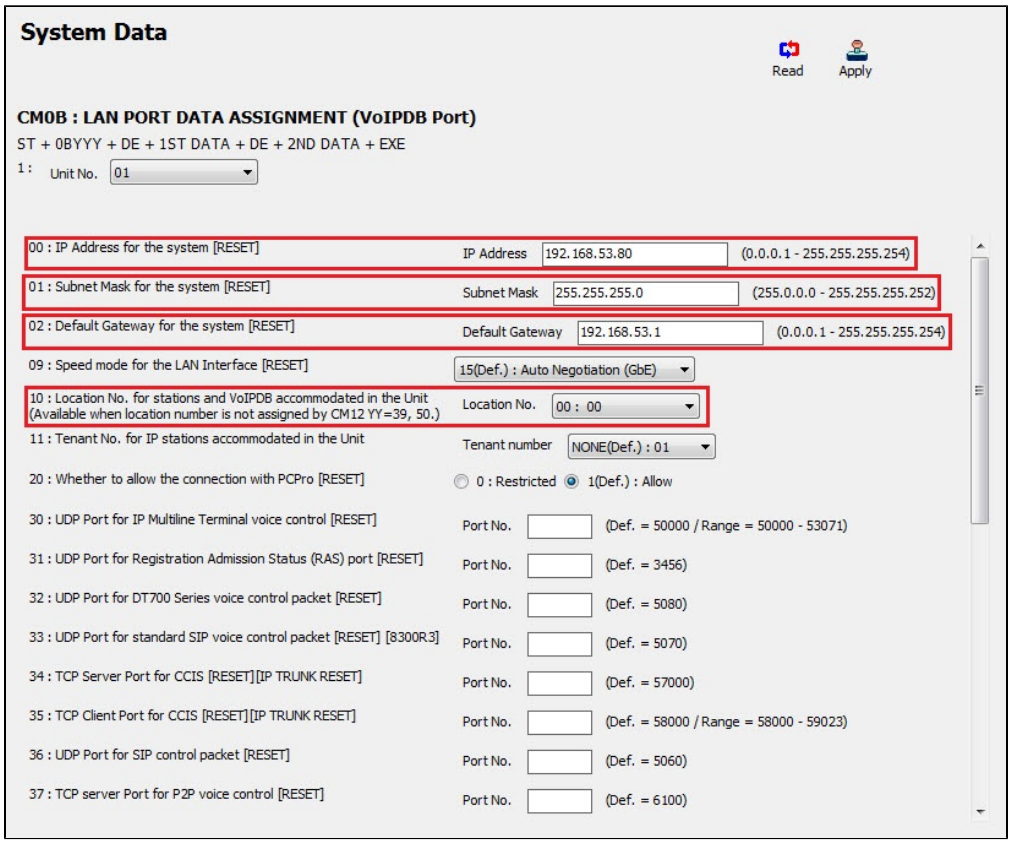
2	In the System Data Navigate to **CM 0B101>01>xxx.xxx.xxx.xxx.** Set system VoIP Subnet Mask.
3	In the System Data Navigate to **CM 0B101>02>xxx.xxx.xxx.xxx.** Set system VoIP Default Gateway
4	In the System Data Navigate to **CM 0B101>10>xx.** Set VoIP Location Number.
5	All the other values are set to default values.
6	SV8300 must be reset in order to for the changes to take effect.
7	Procedure completed.



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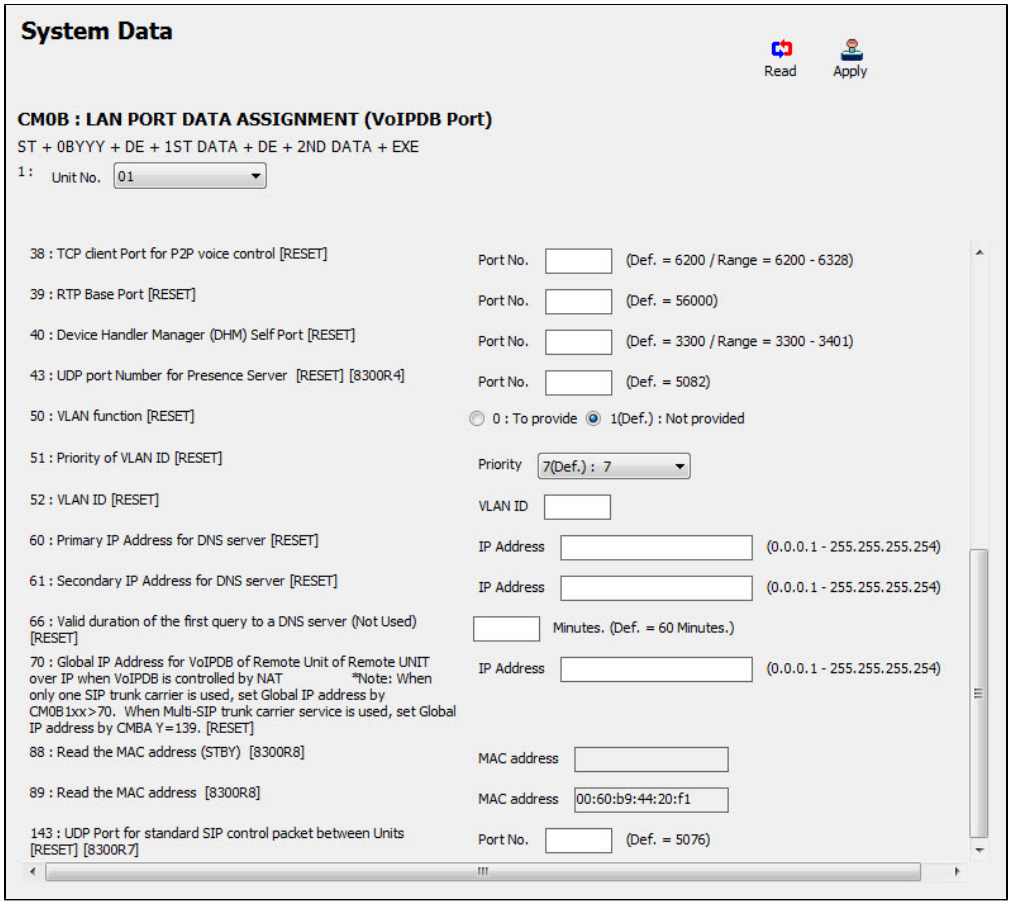

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2.3 Configuring IP PAD

Follow the steps listed below to configure the IP PAD.

NOTE 1: CM0B Y=2XX>20-26 (IP address 2-8) can be assigned only when using PZ-64IPLA/PZ-128IPLA. The settings of CM0B Y=2XX>20-26 (IP address 2-8) become ineffective when using PZ-64IPLC-A/PZ-128IPLC-A (effective only for the setting of CM0B Y=2XX>00 (IP address 1)).

NOTE 2: When using PZ-64IPLA/PZ-128IPLA, one IP address (RTP) is required for every 16 IPPAD voice channels of VoIPDB.

Step	Action
1	In the System Data Navigate to **CM 0B201>00>xxx.xxx.xxx.xxx.** Set IP address for first 16 IPPAD channels. If using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A one IP address is used for all IPPAD channels.
2	In the System Data Navigate to **CM 0B201>10>xx** (xx=number of IPPAD channels). Set the number of IPPAD channels to be used.
3	In the System Data Navigate to **CM 0B201>20>xxx.xxx.xxx.xxx.** Set IP address for second set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A.

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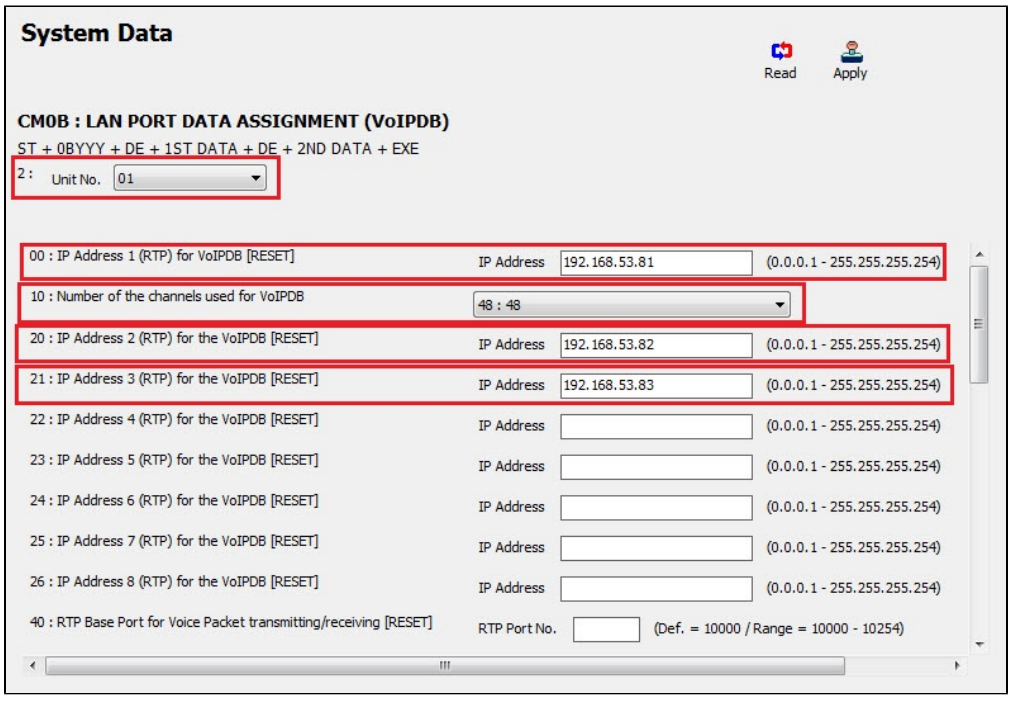
4	In the System Data Navigate to **CM 0B201>21>xxx.xxx.xxx.xxx.** Set IP address for third set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A.
5	In the System Data Navigate to **CM 0B201>22>xxx.xxx.xxx.xxx.** Set IP address for fourth set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A
6	In the System Data Navigate to **CM 0B201>23>xxx.xxx.xxx.xxx.** Set IP address for fifth set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A
7	In the System Data Navigate to **CM 0B201>24>xxx.xxx.xxx.xxx.** Set IP address for sixth set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A
8	In the System Data Navigate to **CM 0B201>25>xxx.xxx.xxx.xxx.** Set IP address for seventh set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A
9	In the System Data Navigate to **CM 0B201>26>xxx.xxx.xxx.xxx.** Set IP address for eighth set of 16 IPPAD channels if required. This command if ineffective when using VoIPDB PZ-64IPLC-A/PZ-128IPLC-A
10	All the other values are set to default values.
11	Click **Apply.**
12	SV8300 must be reset in order to for the changes to take effect.
13	Procedure completed.



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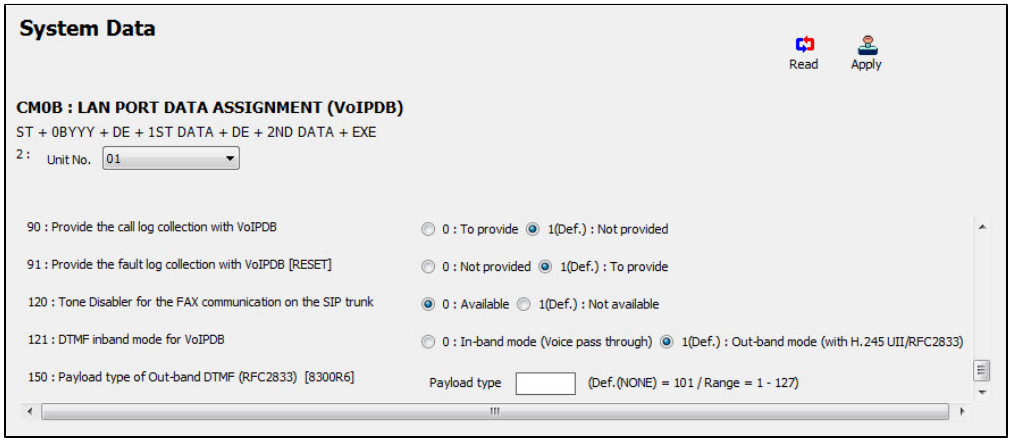

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2.4 Registering SIP Trunk Numbers

Follow the steps listed below to configure the SIP Trunk Numbers.

Step	Action
1	In the System Data Navigate to **CM 1003>000-003>Dxxx** (xxx=Trunk Number used for SIP Control Channel). **Note:** SV8300 can handle up to four different SIP trunk servers. Channels 000-003 are reserved for SIP control channels. If only one server is used leave ports 001-003 blank for future expansion.
2	In the System Data Navigate to **CM 1003>004-127>Dxxx (xxx=Trunk Numbers used for SIP Voice Channels).** Enter each trunk number used for voice channels. **Note:** Channels 004-127 are reserved for SIP voice channels.
3	Click **Apply**.
4	Procedure completed.

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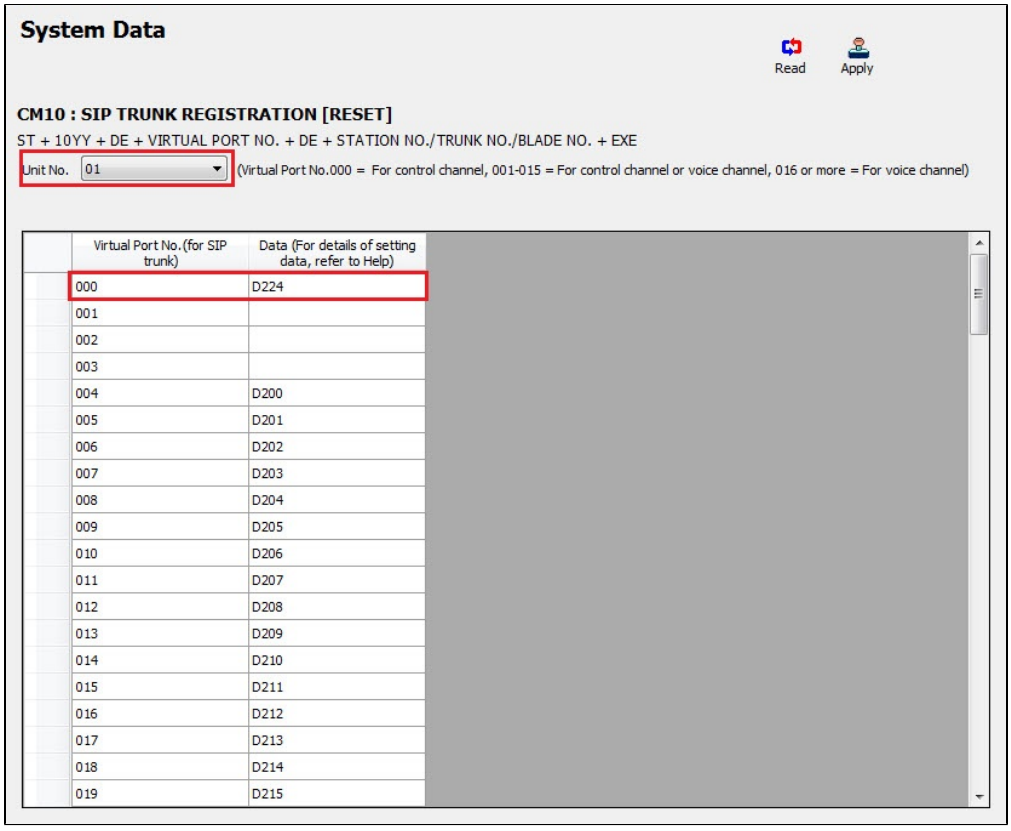

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2.5 Adding Trunk Route

Follow the steps listed below to add trunk route.

Step	Action
1	In the System Data Navigate to **CM 3000>Dxxx>yy** (xxx=SIP trunk voice channel, yy=Trunk Route Number). Enter the same route number to all SIP voice channels. Do **not** enter a route number to the SIP control channel.
2	In the System Data Navigate to **CM 3035>Dxxx>yyy** (xxx=SIP trunk voice channel, yyy=CIC Number)**.** Enter a CIC number to each voice channel. CICs should be assigned in order of voice channels for each SIP trunk server (i.e. SIP trunk server 1 uses CICs 001, 002, …, SIP trunk server 2 uses the same CICs 001, 002, …).
3	All the other values are set to default values.
4	Click **Apply.**
5	Procedure completed.

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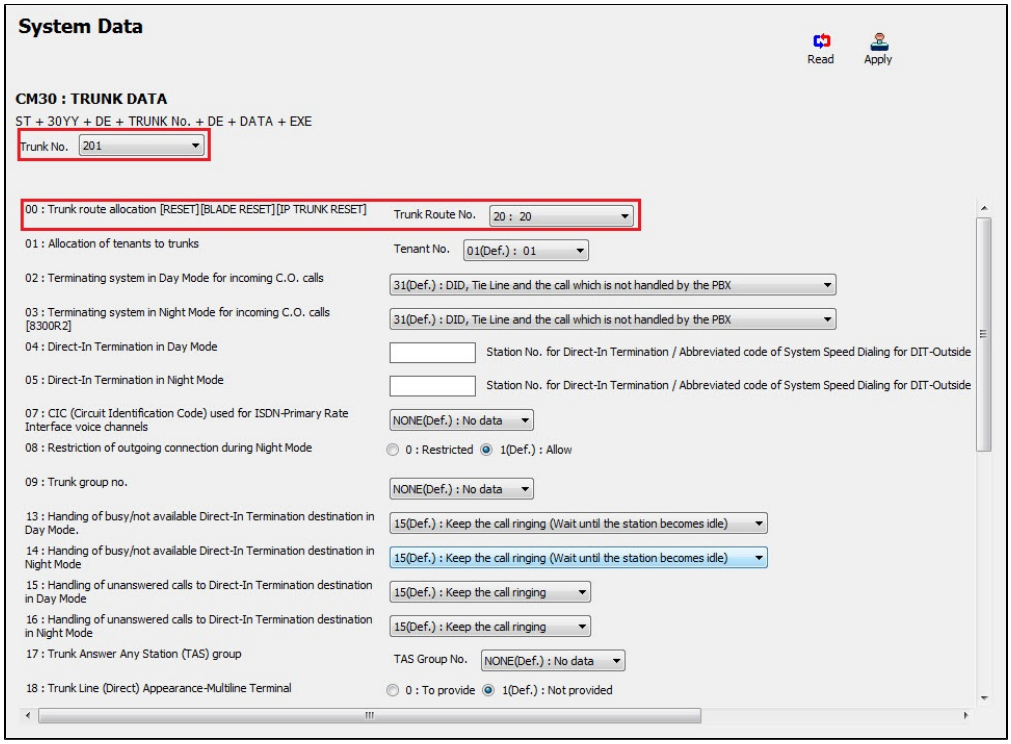

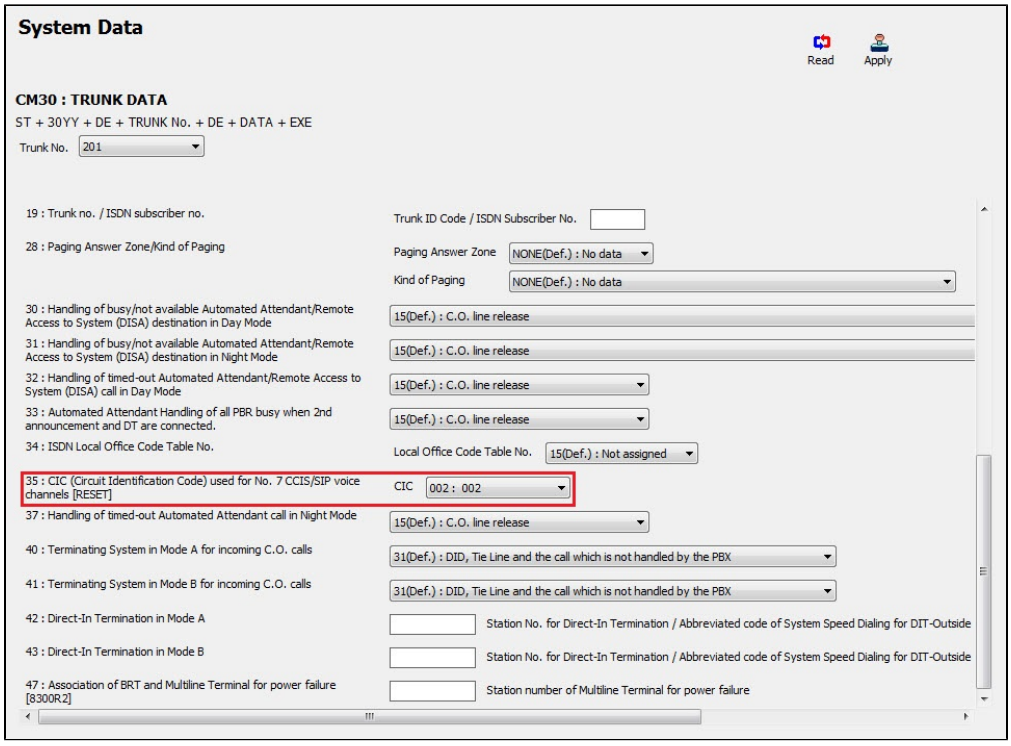

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2.6 Entering SIP Trunk Route Data

Follow the step below to enter SIP Trunk Data.

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Step	Action
1	In the System Data Navigate to **CM 35000>xx>00** (xx=Trunk route number of SIP voice channels). Enter the kind of trunk route to **00** (DDD (C.O., DID, ISDN, SIP) Trunk).
2	In the System Data Navigate to **CM 35004>xx>2** (xx=Trunk route number of SIP voice channels). Enter answer signal from distant office for outgoing connection to **2** (Answer signal arrives (Tie Line/ISDN/CCIS/SIP).
3	In the System Data Navigate to **CM 35009>xx>03** (xx=Trunk route number of SIP voice channels). Enter incoming connection signaling to **03** (Wink Start/CCIS/SIP).
4	In the System Data Navigate to **CM 35018>xx>0** (xx=Trunk route number of SIP voice channels)**.** Enter digit conversion on DID call to **0** if required. If digit conversion is not required leave default.
5	In the System Data Navigate to **CM 35020>xx>00** (xx=Trunk route number of SIP voice channels)**.** Enter sender start condition to **00** (Wink Start/CCIS/SIP).
6	In the System Data Navigate to **CM 35049>xx>00** (xx=Trunk route number of SIP voice channels)**.** Enter SMDR for incomming to **To provide**.
7	In the System Data Navigate to **CM 35059>xx>00** (xx=Trunk route number of SIP voice channels)**.** Enter Call waiting for DID call to **Allow**.
8	In the System Data Navigate to **CM 35090>xx>0** (xx=Trunk route number of SIP voice channels)**.** Enter special facilites to **0** (No.7 CCIS, SIP Trunk).
9	In the System Data Navigate to **CM 35091>xx>yy** (xx=Trunk route number of SIP voice channels, yy=CCH number used for SIP trunk)**.** **Note:** CCH 00 should not be assigned for SIP trunk interface; P-P CCIS must use CCH 00. Assign a different CCH to each SIP trunk server.
10	All the other options are set to default values.
11	Click **Apply**.
12	Procedure completed.

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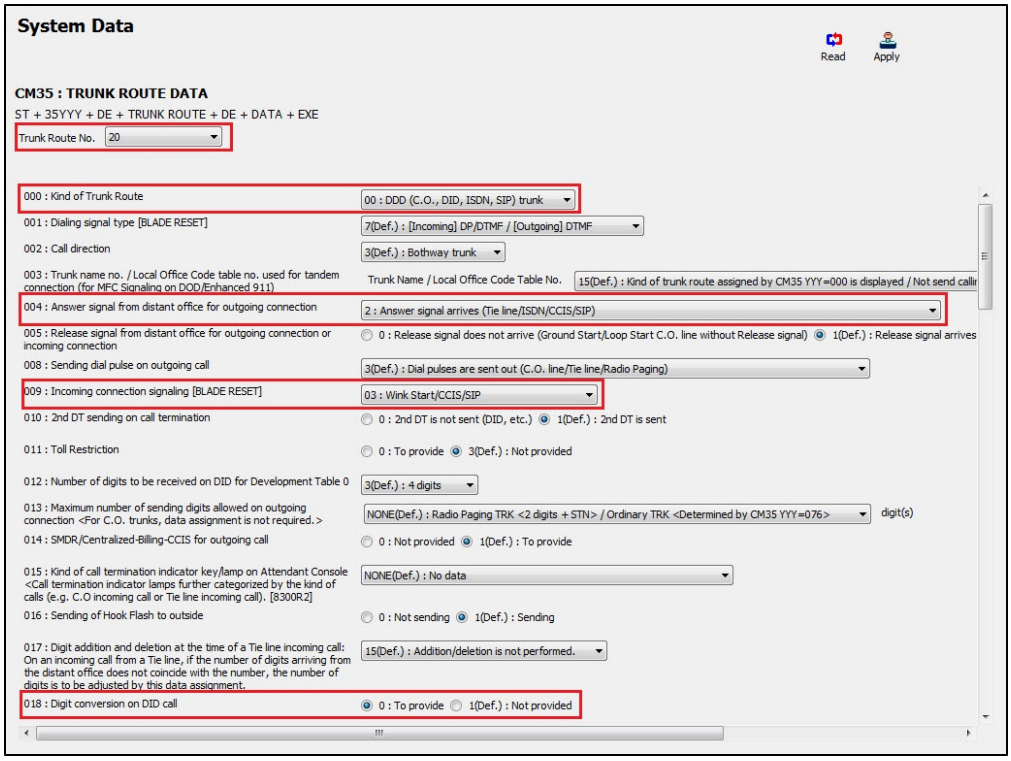

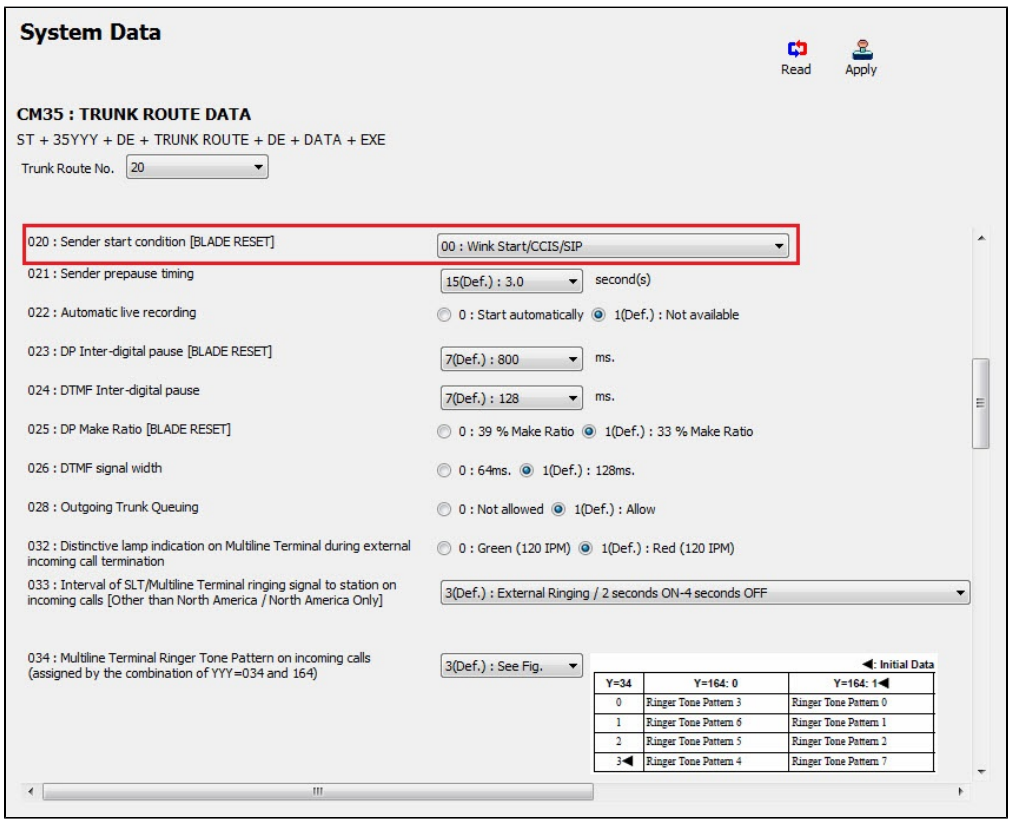

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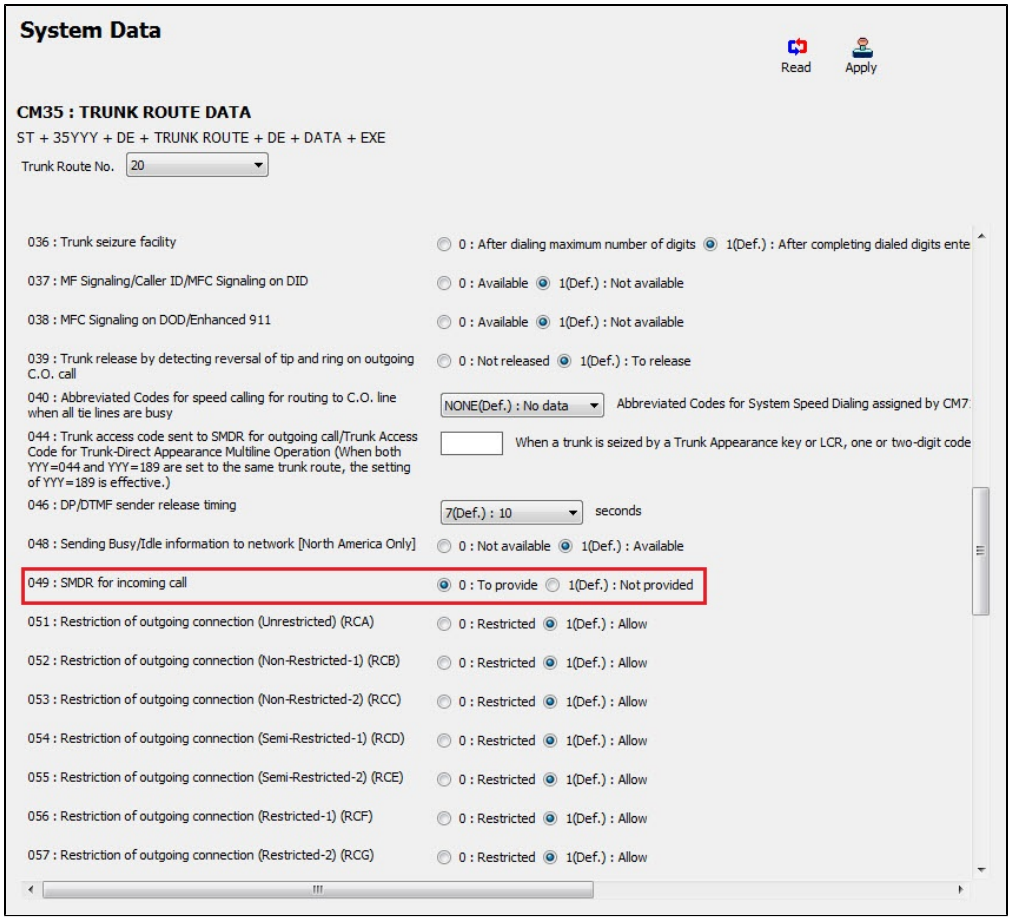

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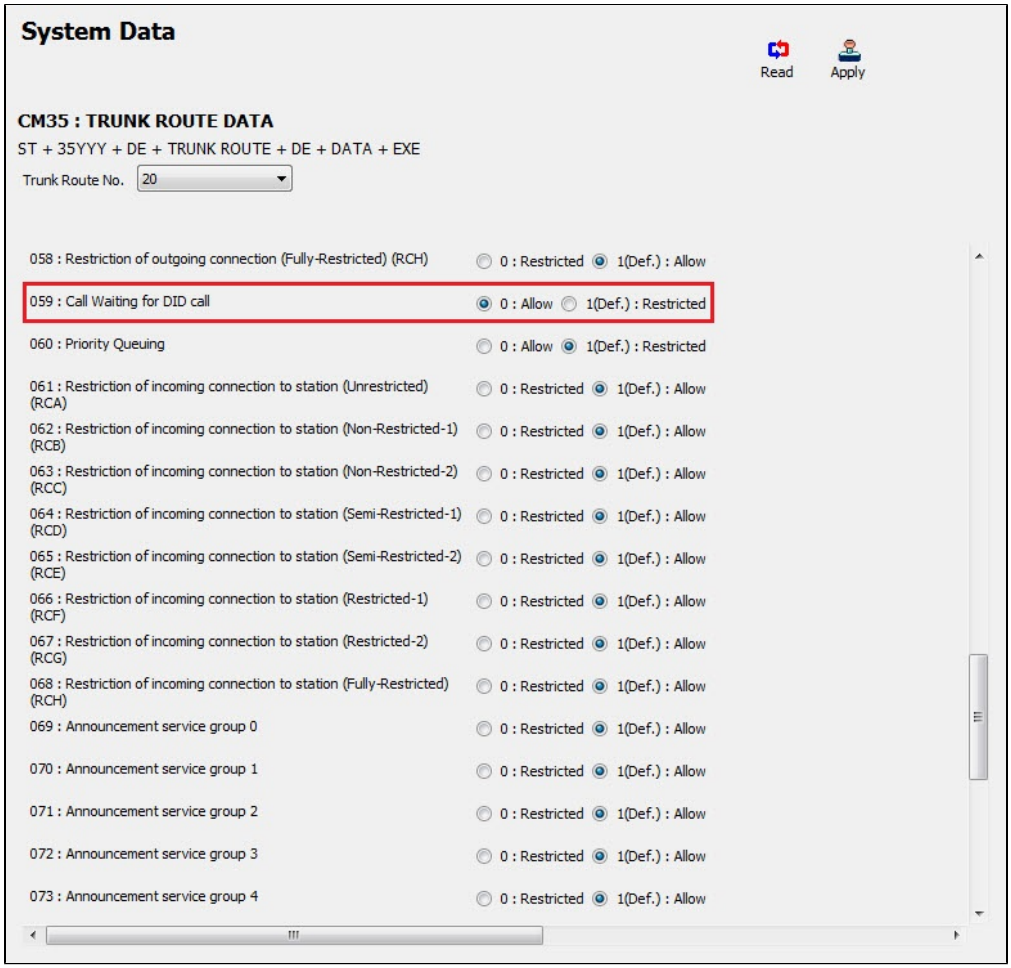

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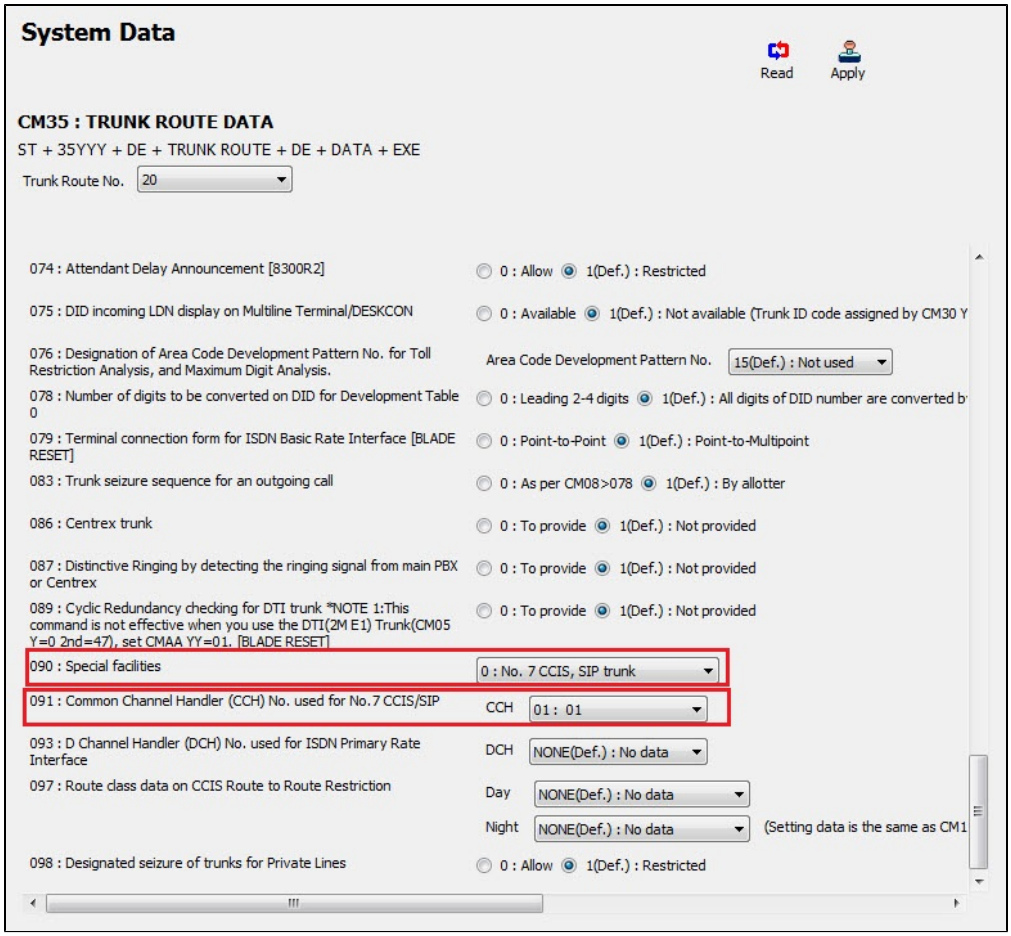

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2.7 Setting SIP Control Channel Data

Follow the steps below to enter SIP Control Channel Data.

Step	Action
1	In the System Data Navigate to **CM A700>xx>yyy** (xx=CCH used for SIP trunk, yyy=Control trunk number). Set control trunk number assigned by CM 1003.
2	In the System Data Navigate to **CM A701>xx>yyyyy (xx=CCH used for SIP trunk, yyyyy=Originating Point Code).** This is an arbitrary originating point code. The same originating point code can be used for each SIP trunk server.
3	In the System Data Navigate to **CM A702>xx>yyyyy** (xx=CCH used for SIP trunk, yyyyy=Destination Point Code)**.** This is an arbitrary destination point code. Different destination point codes must be used for each SIP trunk server.

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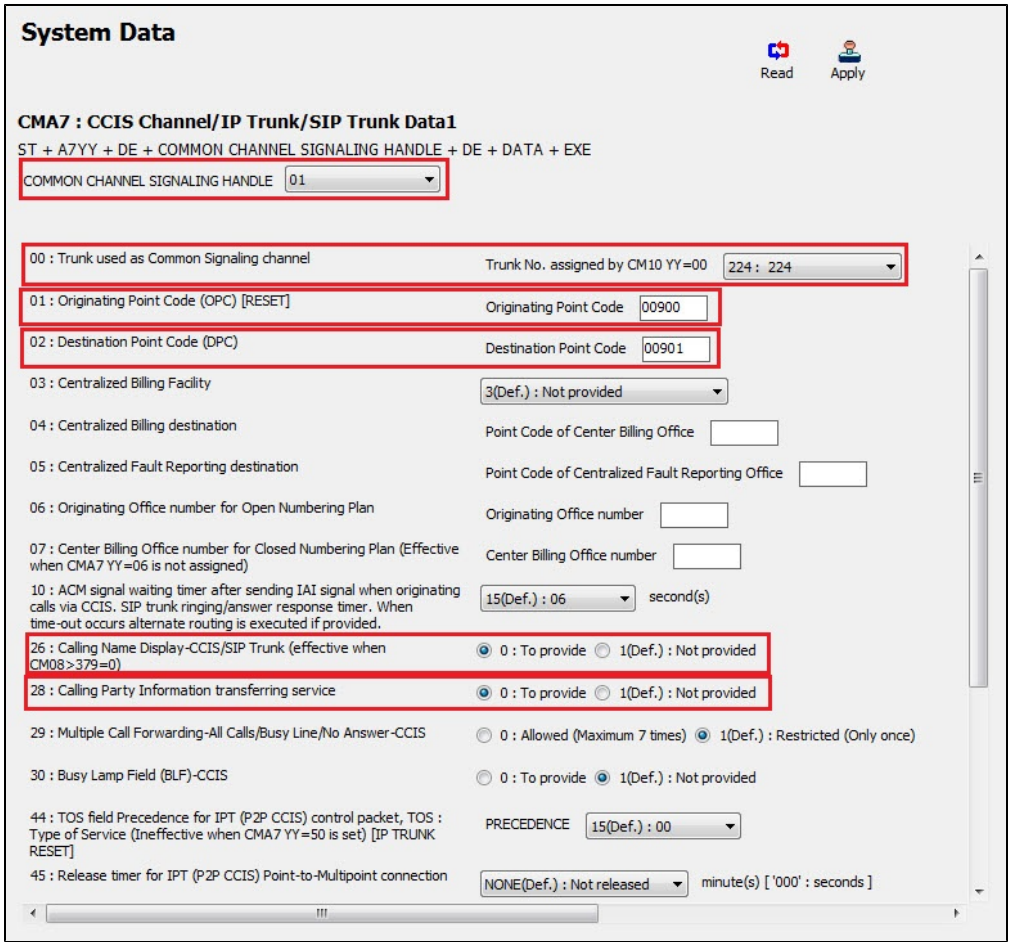
4	In the System Data Navigate to **CM A726>xx>0** (xx=CCH used for SIP trunk)**.** Enter calling name display-CCIS/SIP trunk to **0** (To provide).
5	In the System Data Navigate to **CM A728>xx>0** (xx=CCH used for SIP trunk)**.** Enter calling party information transferring service to **0** (To provide).
6	In the System Data Navigate to **CM A771>xx>yy** (xx=CCH used for SIP trunk, yy=SIP profile number for contrl packet)
7	All the other options are set to default value.
8	Click **Apply**.
9	Procedure completed.



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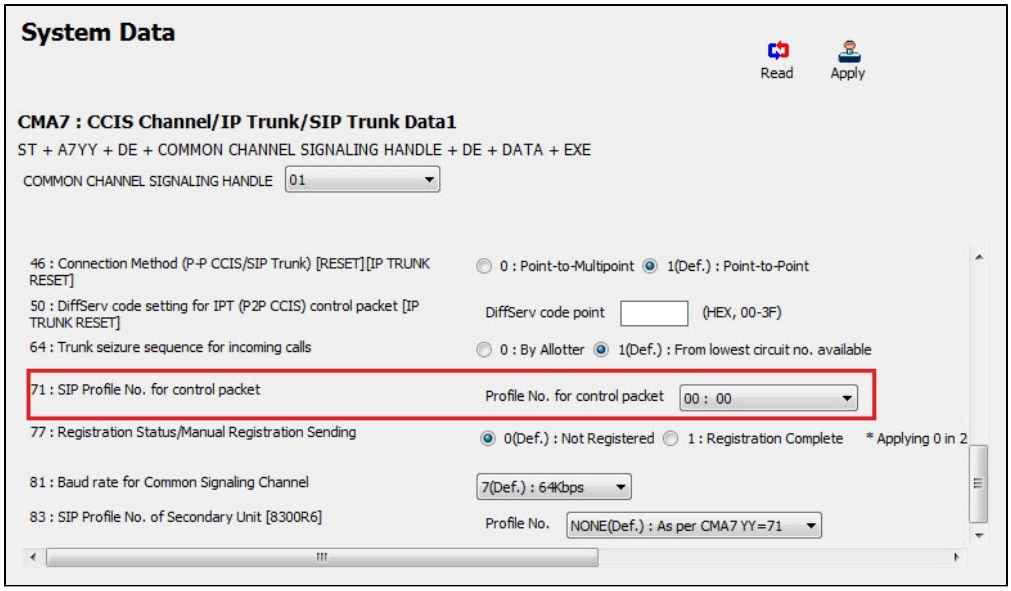

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2.8 Setting SIP Profile

Follow the listed steps below to set the SIP Profile.

Step	Action
1	In the System Data Navigate to **CM BA10>xx>1C** (xx=SIP profile number)**.** Enter diffserv precedence for SIP trunk control to **1C**.
2	In the System Data Navigate to **CM BA21>xx>y** (xx=SIP profile number, y=Voice RTP codec list)**.** Enter the customer's required codec list.
3	In the System Data Navigate to **CM BA30>xx>yyyyyyyyyyyy** (xx=SIP profile number, yyyyyyyyyyyy=Static LAN IP address of Acme Packet E-SBC). **Note:** Use the actual e-SBC LAN IP for your network.
4	In the System Data Navigate to **CM BA31>xx>05060** (xx=SIP profile number)**.** Enter SIP server port number to **05060.**
5	In the System Data Navigate to **CM BA32>xx>'User Account Number'** (xx=SIP profile number)**.** Enter the registration number received from Acme Packet e-SBC.
6	In the System Data Navigate to **CM BA44>xx>01** (xx=SIP profile number)**.** Enter the caller ID conversion on SIP trunk call to 01 (Caller ID conversion mode 1 and refer to the table in the figure for sending caller ID options).

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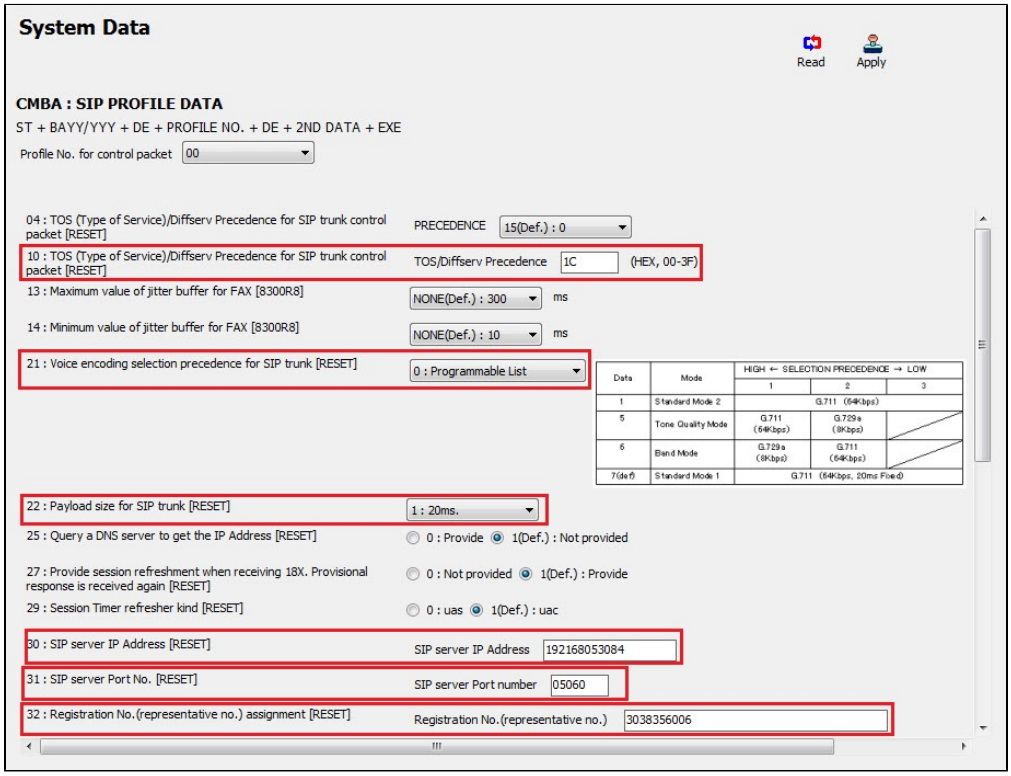
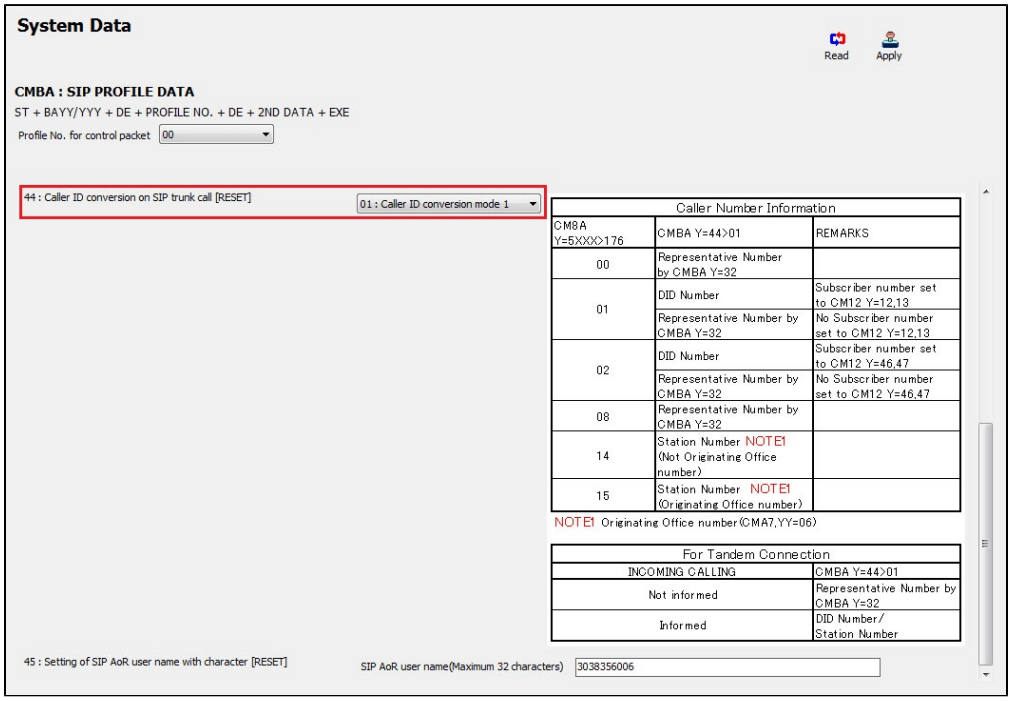
7	All the other options are set to default value.
8	Click **Apply**.
9	Go to the next table.





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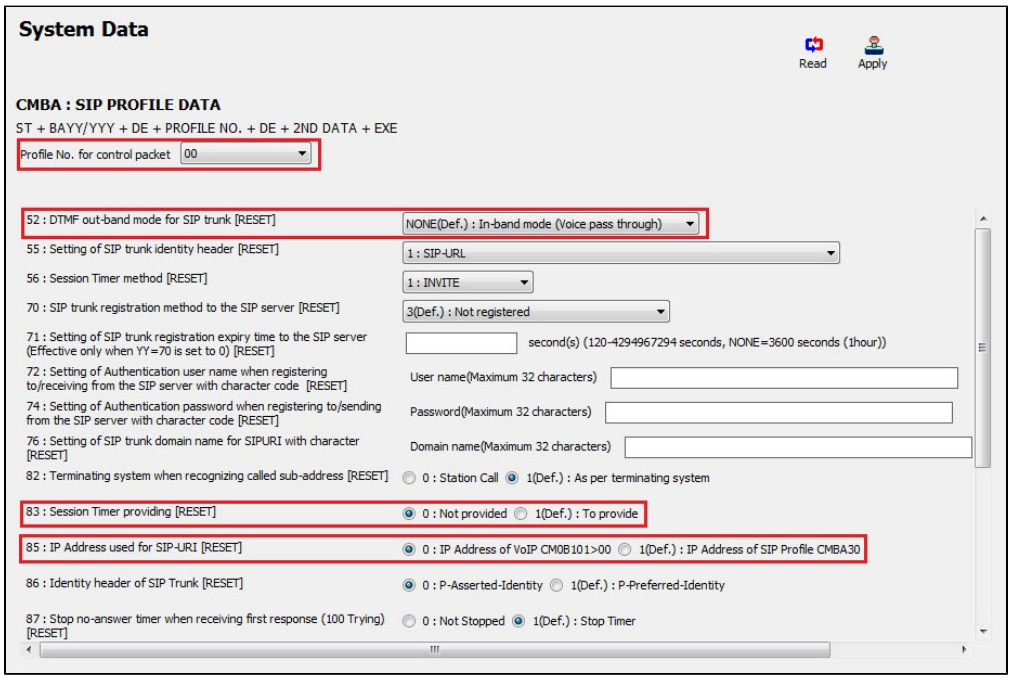
Step	Action
1	In the System Data Navigate to **CM BA53>xx>03** (xx=SIP profile number)**.** Enter DTMF out-band mode for SIP trunk to **03** (Out-band mode (with RFC2833)).
2	In the System Data Navigate to **CM BA83>xx>0** (xx=SIP profile number)**.** Enter session timer providing to **0** (Not provided).
3	In the System Data Navigate to **CM BA85>xx>0** (xx=SIP profile number)**.** Enter IP address used for SIP-URI to **0** (IP address of VoIP CM 0B101>00).
4	In the System Data Navigate to **CM BA90>xx>02** (xx=SIP profile number**).** Enter timer of response waiting for calling (INVITE transaction time-out) to **02** (3-4 seconds).
5	In the System Data Navigate to **CM BA91>xx>1** (xx=SIP profile number)**.** Enter provisional response code when receiving incoming calls to **1** (180 Ringing (with SDP)).
6	In the System Data Navigate to **CM BA97>xx>1** (xx=SIP profile number)**.** Enter error response when receiving incoming call when all trunks are busy to **1** (486 Busy Here).
7	All the other options are set to default values.
8	Click **Apply**.
9	Go to the next table.



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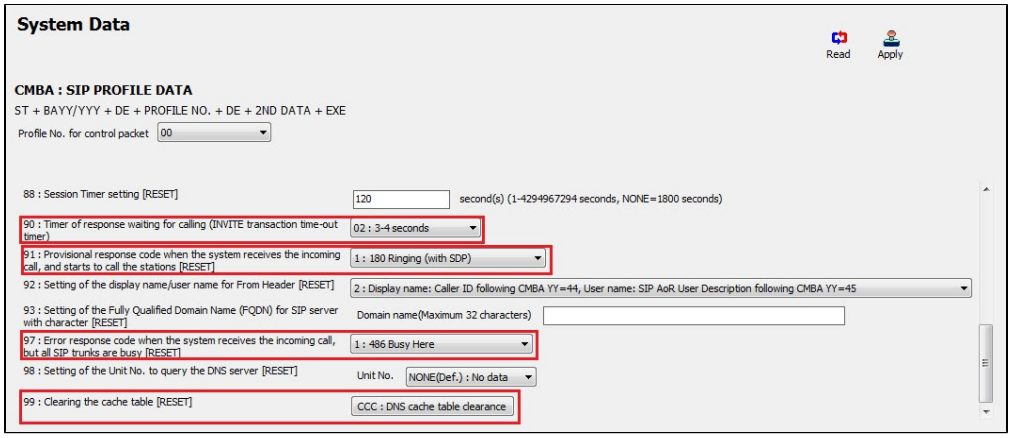

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Step	Action
1	In the System Data Navigate to **CM BA119>xx>yy** (xx=SIP profile number, yy=Codec type for SIP trunk)**.** Enter customer's required codec type for SIP trunk fax calls.
2	In the System Data Navigate to **CM BA126>xx>0** (xx=SIP profile number). Enter selection of reference to caller ID to **0** (Get caller ID from the Username field if the Display name field of the From header of initial INVITE message is blank.
3	In the System Data Navigate to **CM BA141>xx>0** (xx=SIP profile number). Enter call transfer (unattended/Attended) operation for SIP trunk to **0** (Provide).
4	All the other options are set to default values.
5	Click **Apply**.
6	Procedure completed.

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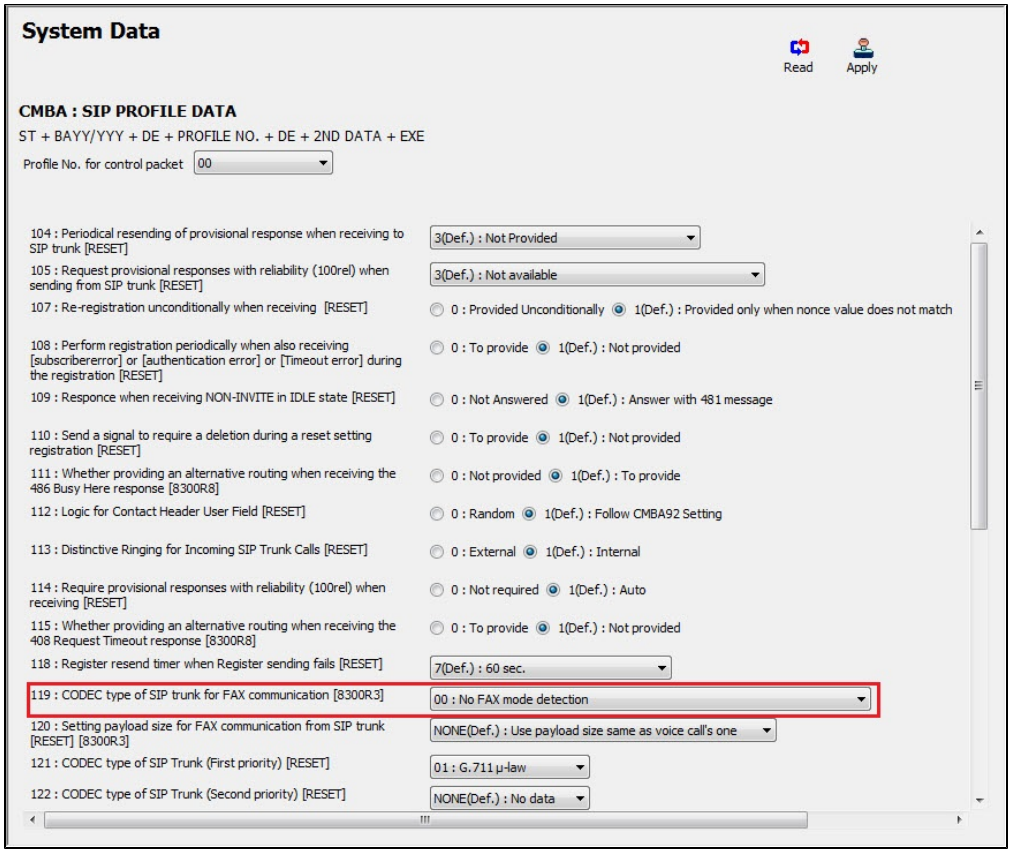

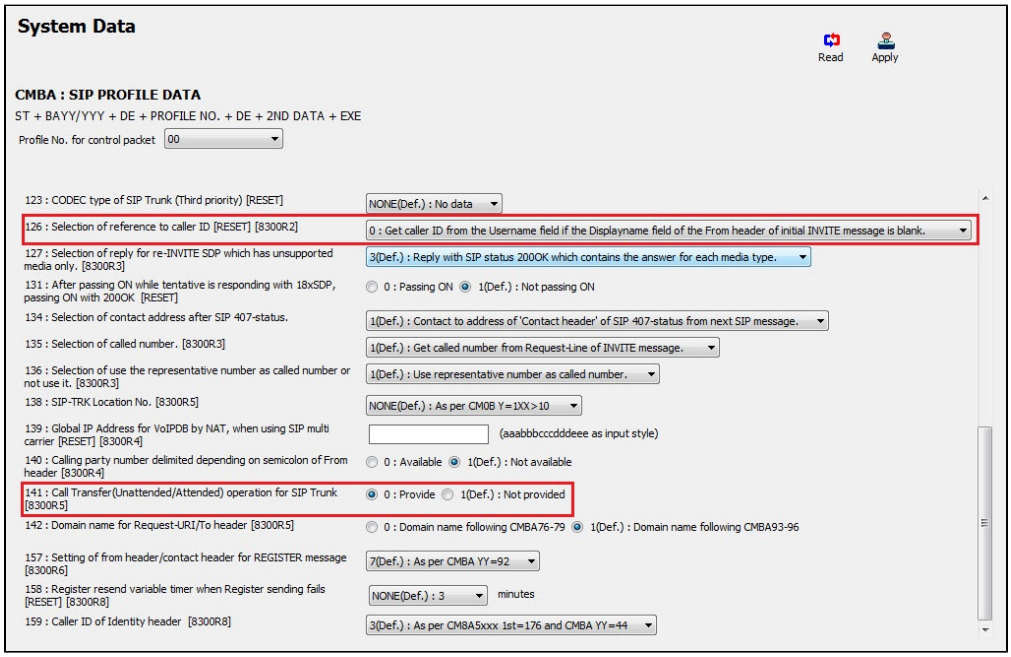

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2.9 Converting DID Digit

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Follow the steps listed below for DID digit conversion.

Step	Action
1	In the System Data Navigate to **CM 7600>xxxx>yyy** (xxxx=Incoming DID number, yyy=Conversion block number). Enter incoming DID numbing to a conversion block (000-999).
2	Click **Apply**.
3	Go to next table.

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Step	Action
1	In the System Data Navigate to **CM 7601>xxx>yyyy** (xxx=Conversion block number, yyyy=Day mode destnation). Enter incoming DID destination for day mode. Enter additional modes if required.
2	Click **Apply**.
3	Procedure completed.

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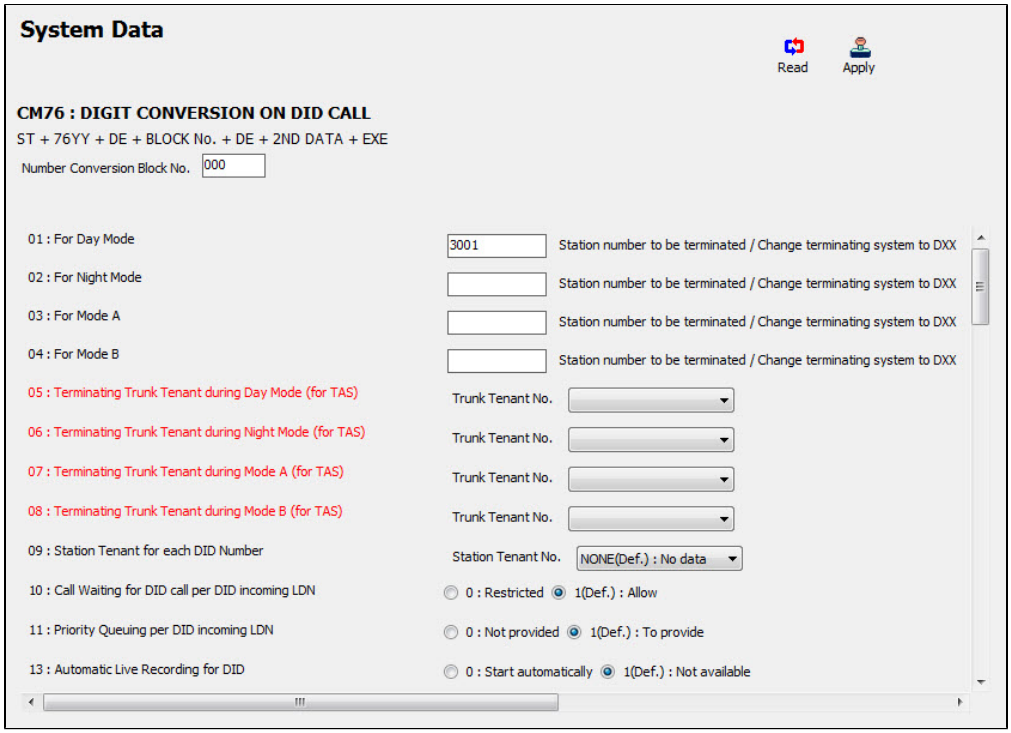

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