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UNIVERGE[®] SV8300

SIP Trunking Service Configuration Guide for Skype

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Configuring NEC SV8300 with Skype SIP Trunking Service

SECTION 1 NEC SV8300 AND SKYPE SETUP GUIDE

1.1 This Guide and Related Documents

This guide was created to assist knowledgeable vendors with configuring the NEC SV8300 Communication Server with Skype's SIP Trunking service. It provides sample entries for the required fields. The actual data is provided by Skype when service is activated. Questions about software and hardware installation or other PBX configuration issues should be directed to NEC's National Technical Assistance Center (NTAC).

For complete details on using SIP trunks with the SV8300, refer to the SV8300 Networking Manual.

For complete details on using DID features, refer to the DID feature in the SV8300 Features and Specifications Manual.

For details about related hardware, refer to the SV8300 System Hardware Manual.

These manuals can be downloaded from NEC's National Technical Assistance Center (NTAC) web site. You must have a valid dealer ID to access the documents.

1.2 Skype Account

Contact your Skype representative.

1.3 SV8300 System Software

The SV8300 requires system software **R5 F2 4.02** or higher to use Skype service.

1.4 Requirements

With the SV8300, a VoIP gateway daughter board is required in addition to licensing for IP (SIP) trunks.

A minimum of four IP (SIP) trunks are required due to the NEC Communications Server infrastructure setup.

The system software for the NEC Communications Server should be version **R5 F2 4.02** or higher.

NEC recommends that the requirements and programming are completed with as much information as possible before scheduling an activation appointment with Skype.

1.5 Limitations

The following limitations apply:

- FAX over IP is not supported by Skype
- SIP diversion header – Call forwarding to 8xx numbers
- SIP Privacy – Cannot mark the calling party number as private or restricted
- 911 service is not supported by Skype
- Secondary SIP server for failover

SECTION 2 **NEC PBX CONFIGURATION**

This section provides information to NEC's solution providers and NEC Associates for configuring an NEC UNIVERGE SV8300 to connect to an Skype SIP Trunk service provider.

2.1 Prerequisites

Before you configure the UNIVERGE SV8300, you must have the following information available.

2.1.1 SIP Trunking Information from Skype

- ☐ Primary SIP Proxy Server IP Address
- ☐ Number Plan, if applicable for the Point-to-Point Connection
- ☐ Trunking DID(s)
The DID(s) are forwarded to the Public WAN IP address(s), DNS or DNS SRV records of the PBX.

2.1.2 NEC UNIVERGE SV8300

- ☐ SV8300 CPU software version **R5 F2 4.02** or higher
- ☐ IPLA-R UNIT (PZ-64IPLA or PZ-128IPLA)
- ☐ SIP Trunking Licenses
- ☐ Digital, IP and TDM Telephones

2.1.3 Installation Worksheet

Use the worksheet to record the information needed for setting up the SIP Trunking service.

Table 1 Installation Worksheet

WAN Side:	
Internet Access Type and Speed:	
WAN IP Address:	
WAN Subnet Mask:	
WAN Gateway IP Address:	

LAN Side:	
LAN IP Address for SV8300:	
LAN Subnet Mask for SV8300:	
LAN Default Gateway IP Address for SV8300:	
VLAN ID:	

PBX Information:	
Model:	
Firmware Version:	
Number of SIP Trunk Licenses:	
Add-on Software Applications:	
Number of Users:	
Number of Concurrent Calls:	

Notes:

SECTION 3 SV8300 PROGRAMMING

When using Skype as your SIP trunking service provider, the following programs must be changed for SIP trunking service.

3.1 System Version and License Check

Values shown are for example purposes only. Your actual IP values will be determined by your local LAN administrator.

After connecting, check the SV8300 software version.

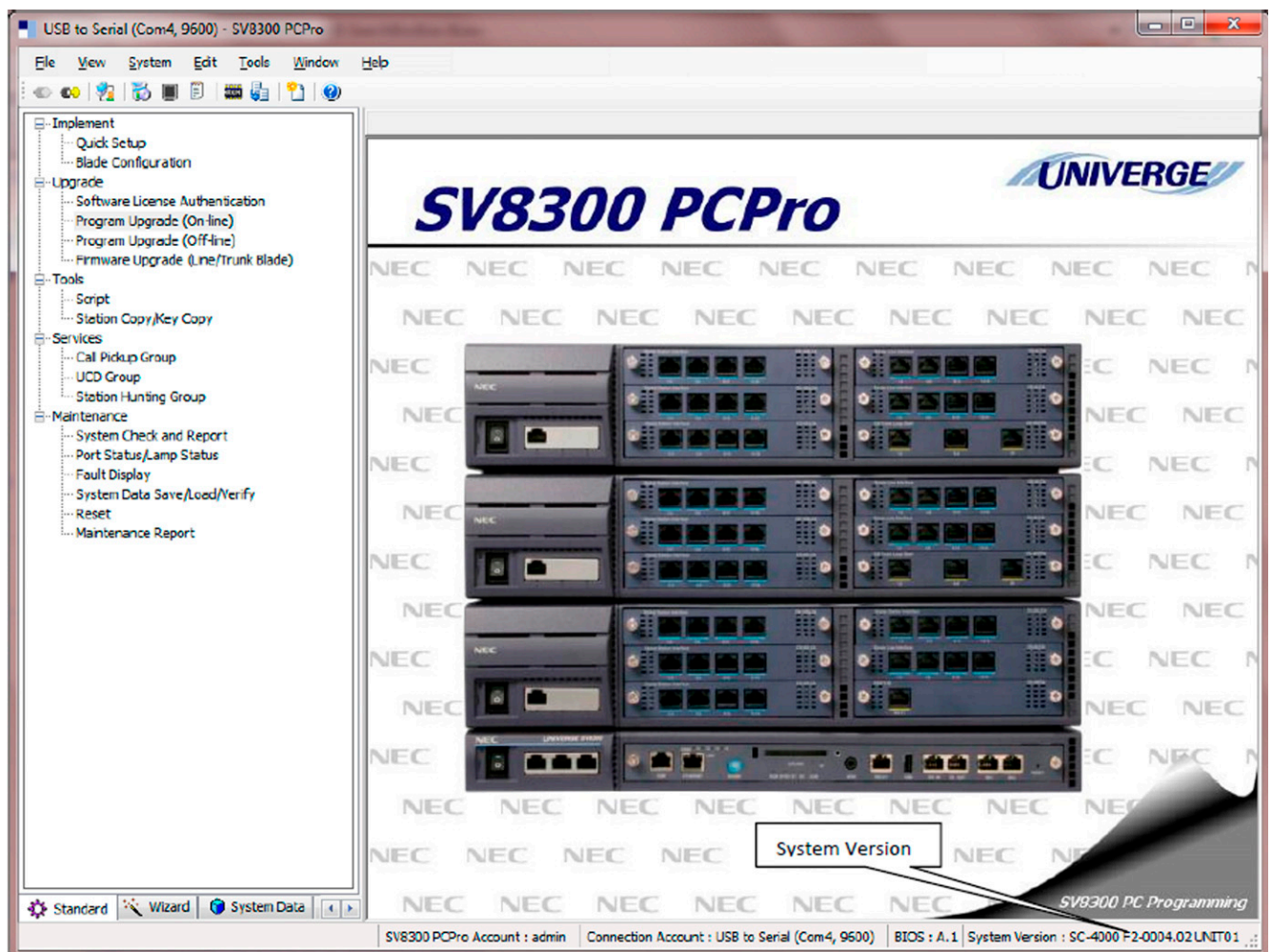


Figure 1 System Version

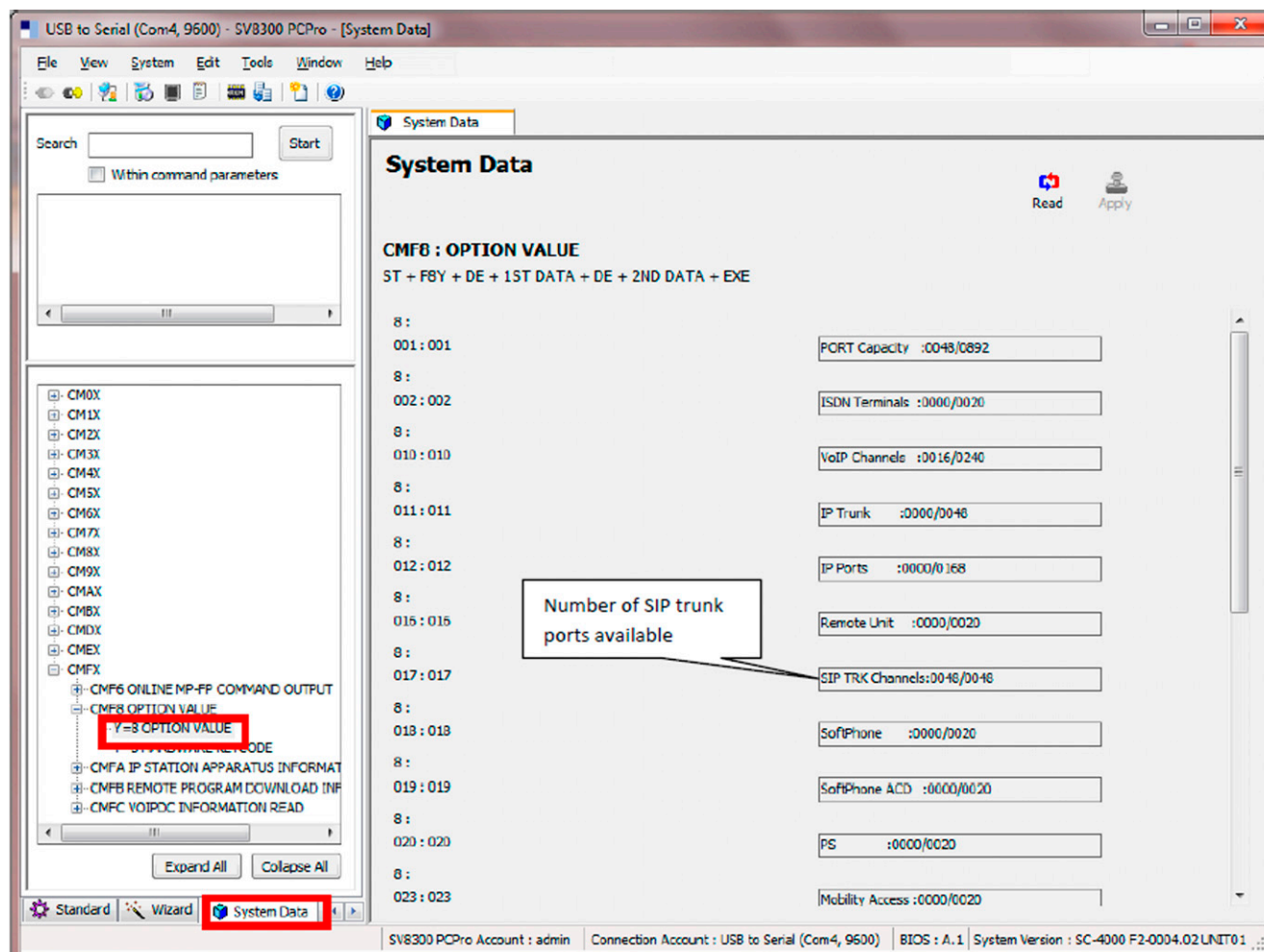


Figure 2 SIP Trunk License CM F8

3.2 CC-CP00 Network Setup CM 0B101

Values shown are for example purposes only. Your actual IP values will be determined by your local LAN administrator.

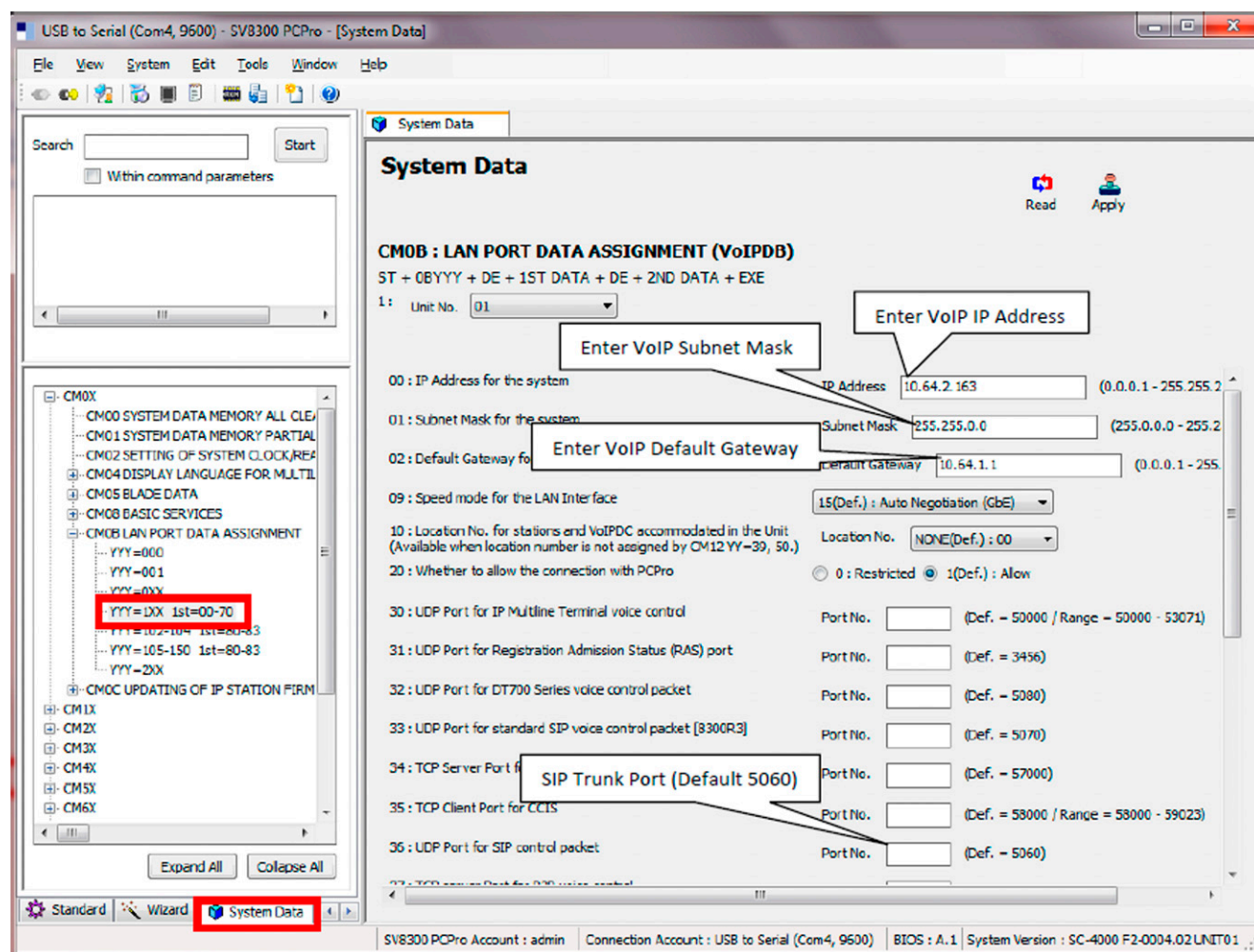


Figure 3 CC-CP00 Network Setup CM 0B101

The SV8300 must be reset in order for the change to take effect.

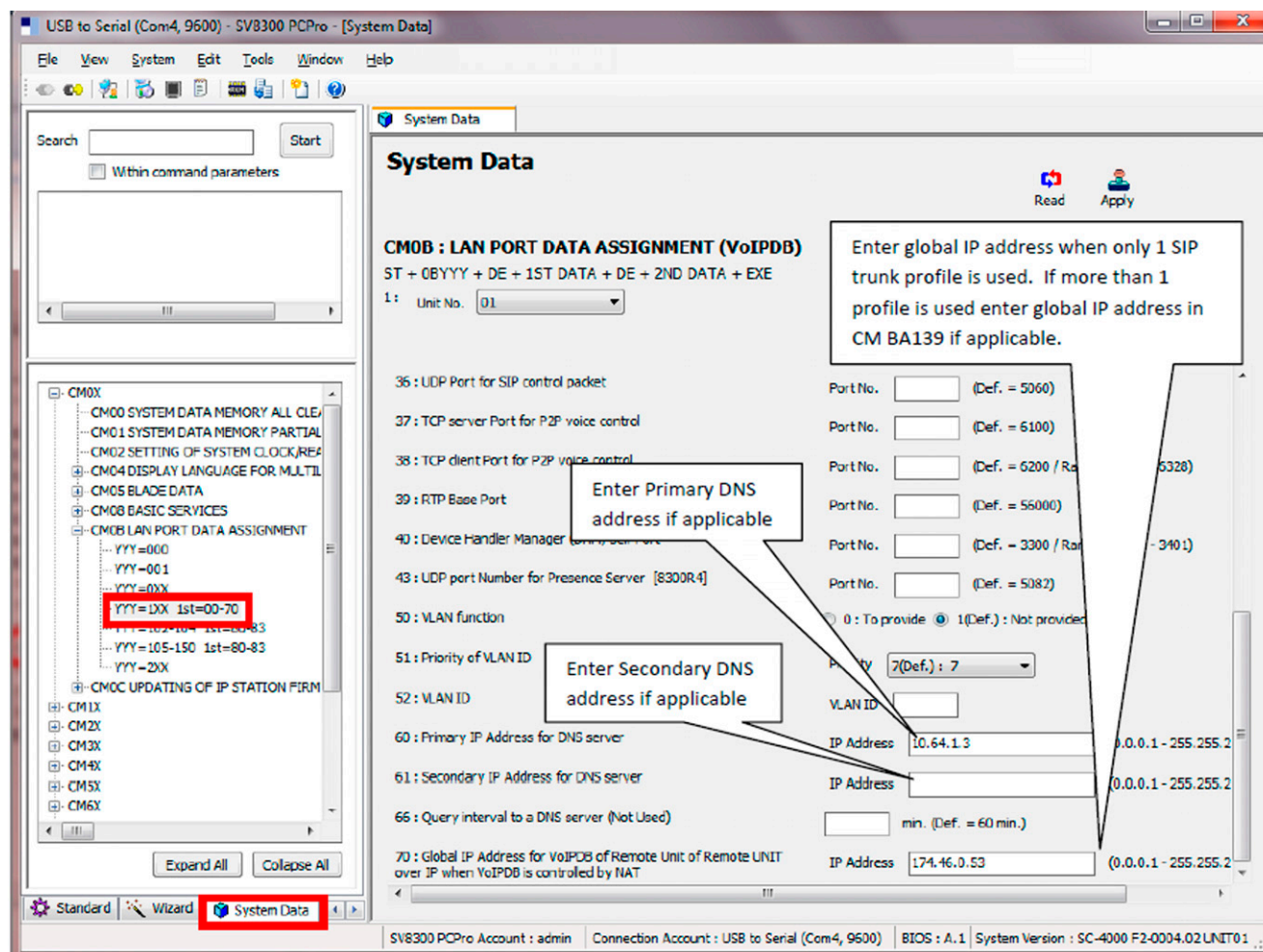


Figure 4 Network Setup CM 0B101 (continued)

The SV8300 must be reset in order for the change to take effect.

3.3 IP PAD Configuration CM 0B201

Values shown are for example purposes only. Actual IP values will be determined by your local LAN administrator.

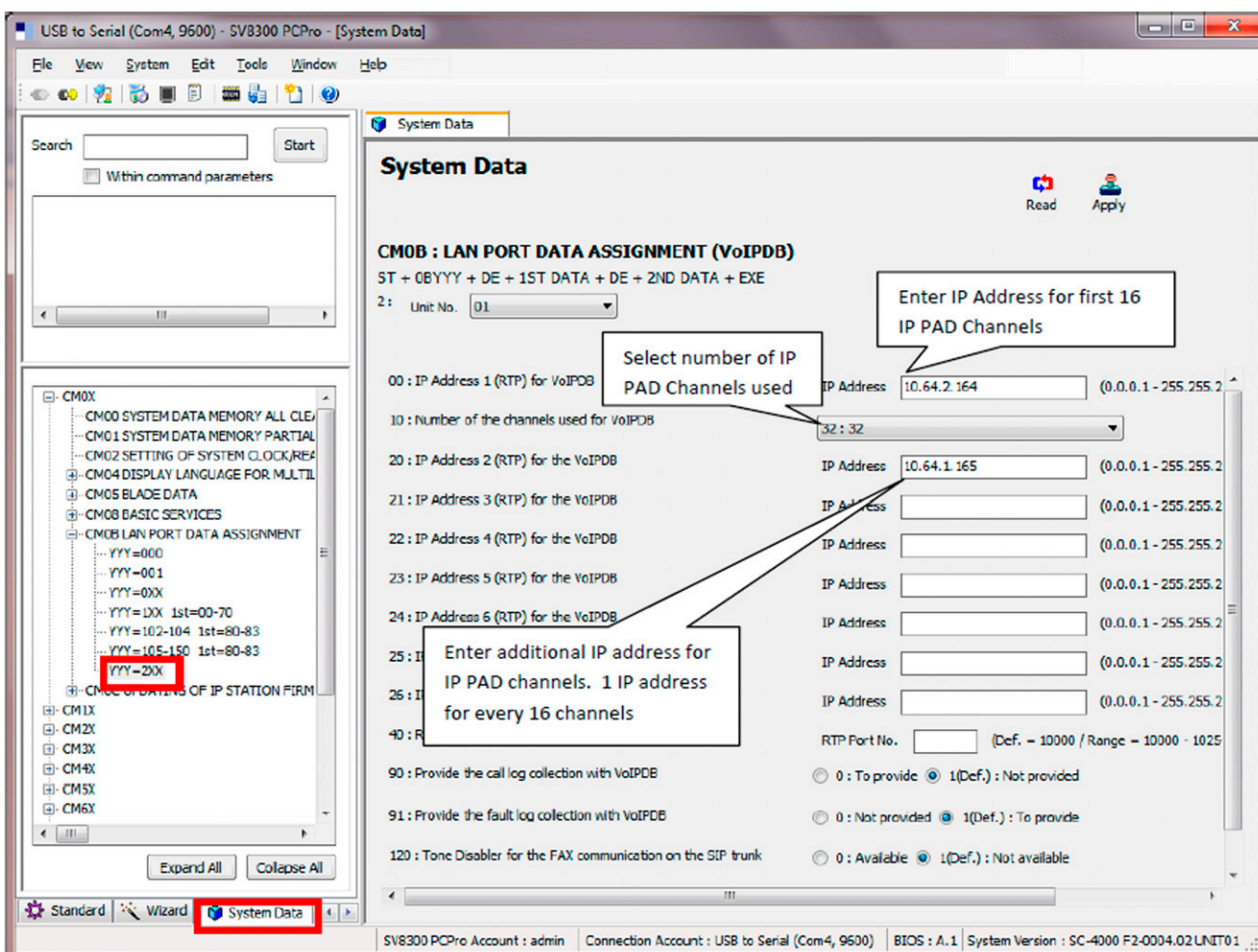


Figure 5 IP PAD Configuration CM 0B201

The SV8300 must be reset in order for the change to take effect.

3.4 SIP Trunk Numbers CM 1003

Values shown are for example purposes only. Your actual values will be determined by your implementation team.

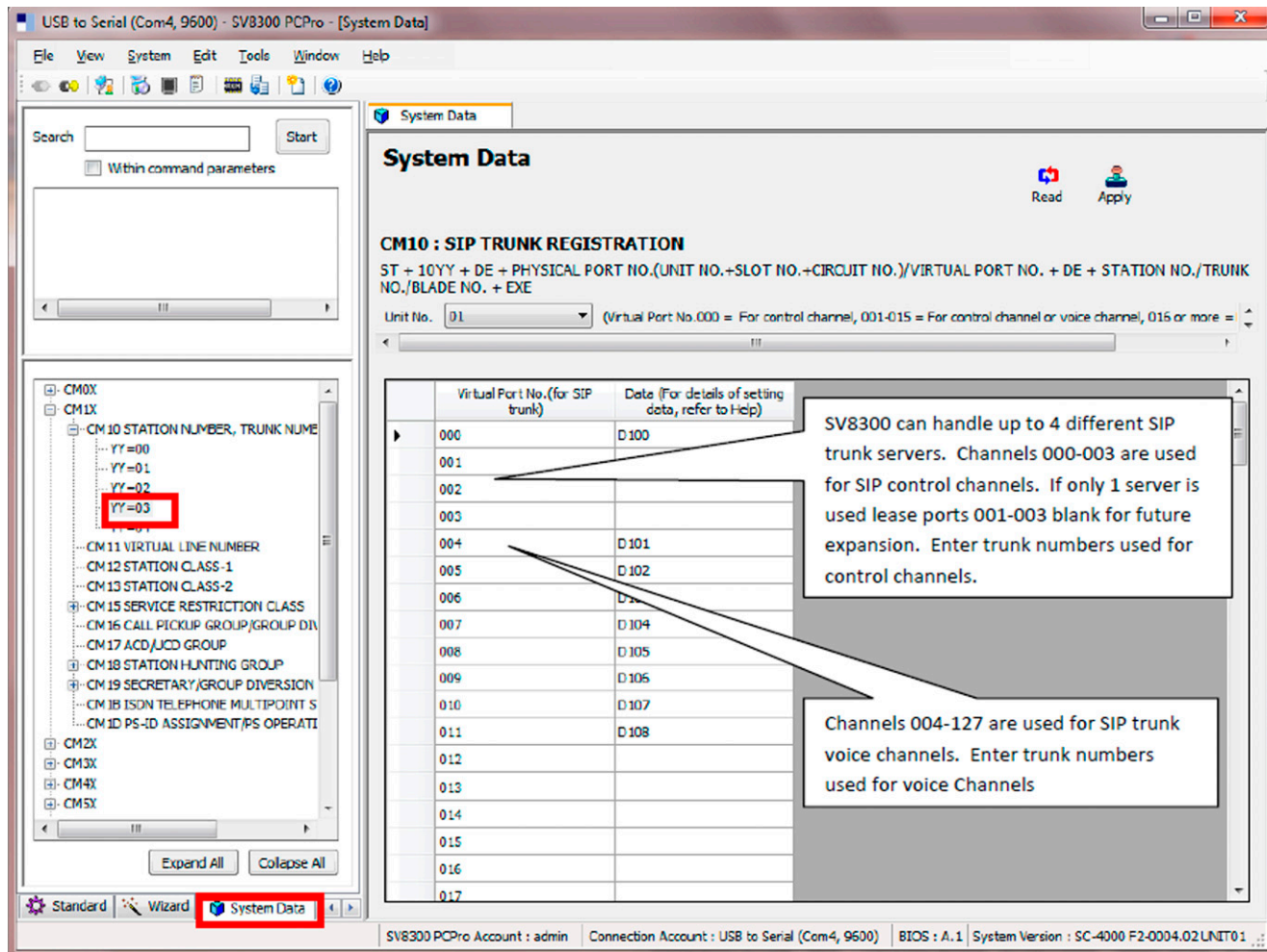


Figure 6 SIP Trunk Numbers CM 1003

3.5 Trunk Route and CIC to Each Voice Trunk CM 30

All values shown are for example purposes only. Your actual values will be determined by your implementation team.

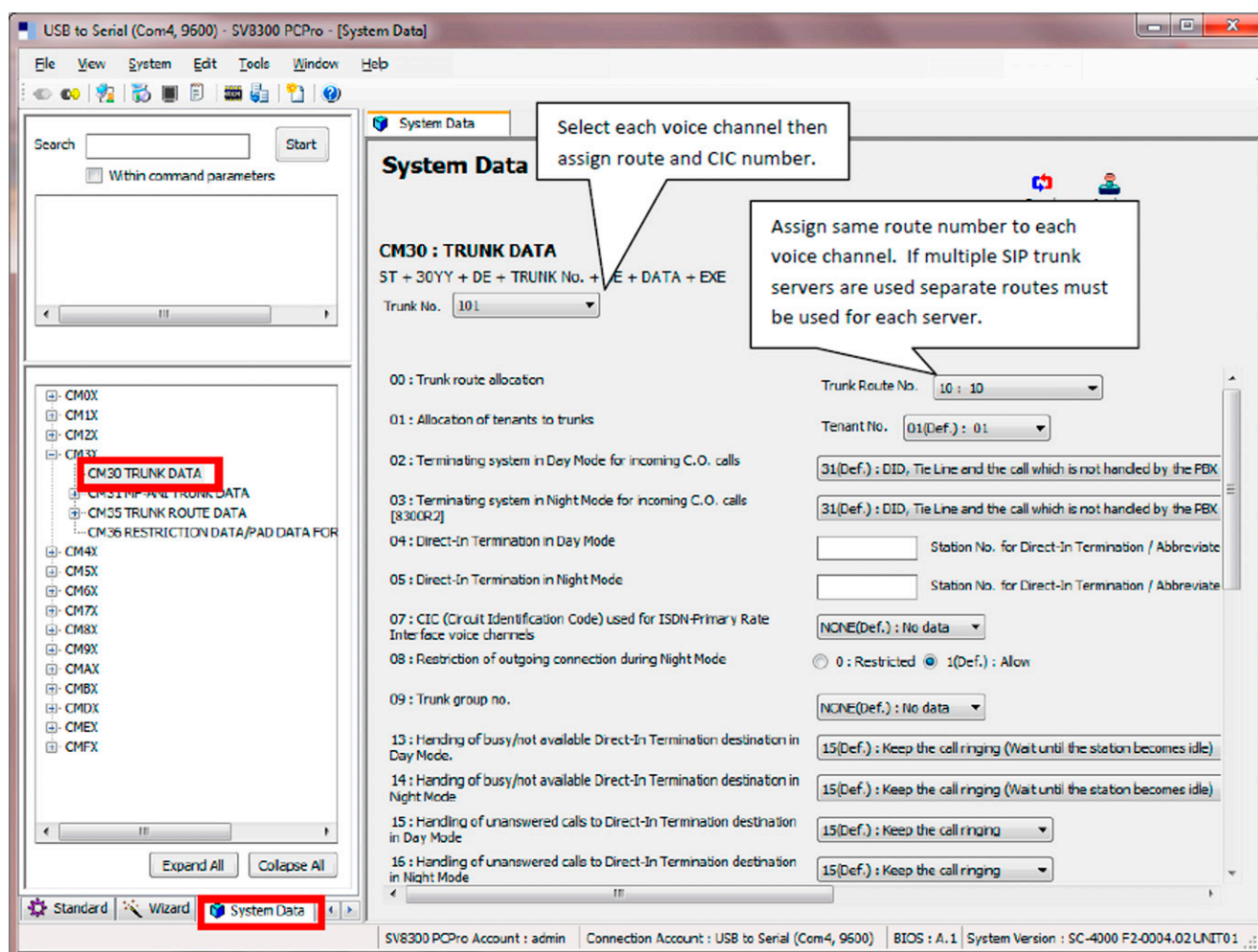


Figure 7 Trunk Route and CIC to Each Voice Trunk CM 30

 Do not assign a RT No. or a CIC to the control channel trunk.

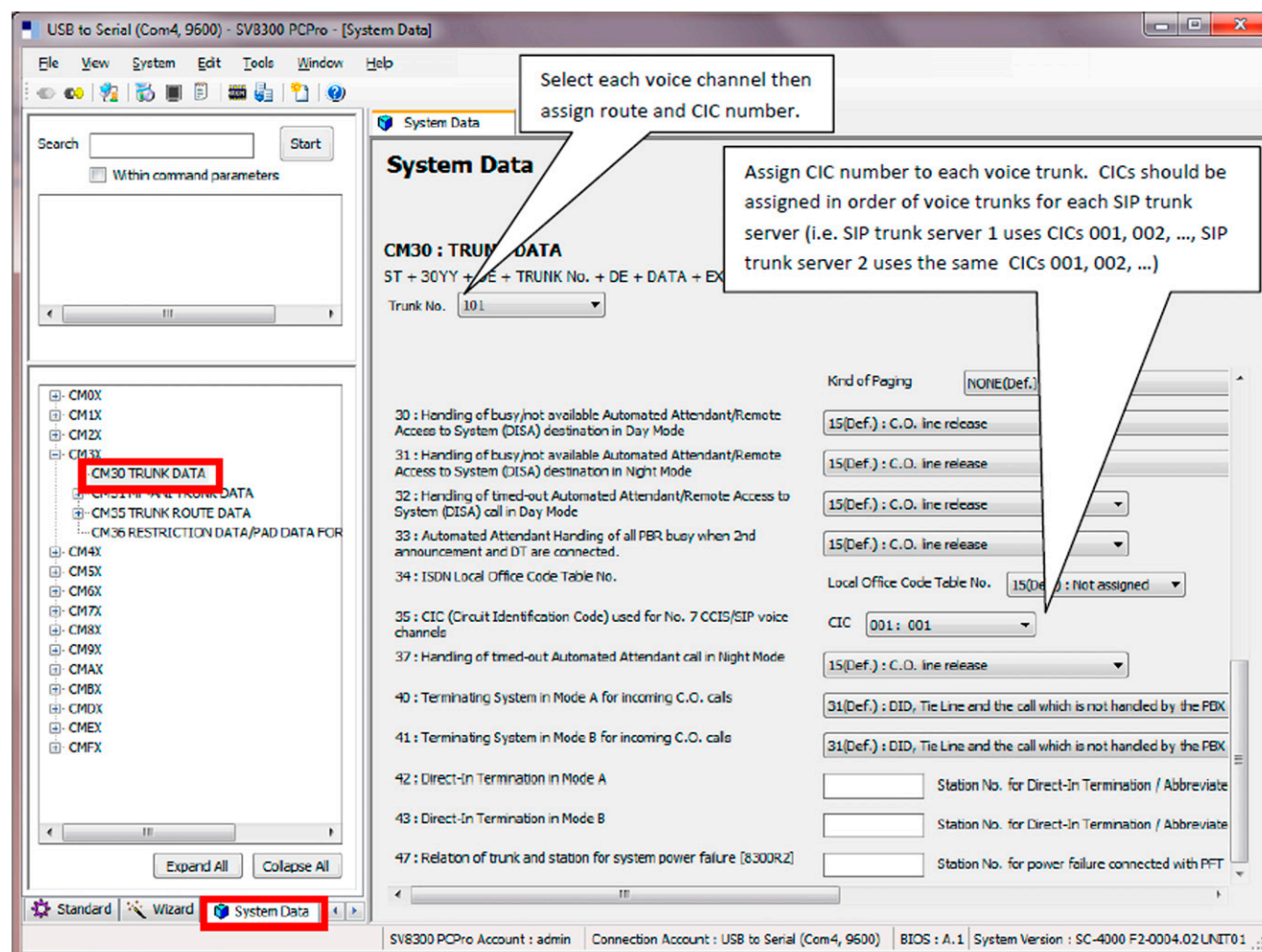


Figure 8 Trunk RT No. and CIC to Voice Trunks CM 30 (continued)

3.6 SIP Trunk Route Data CM 35

All values shown are for example purposes only. Your actual values will be determined by your implementation team.

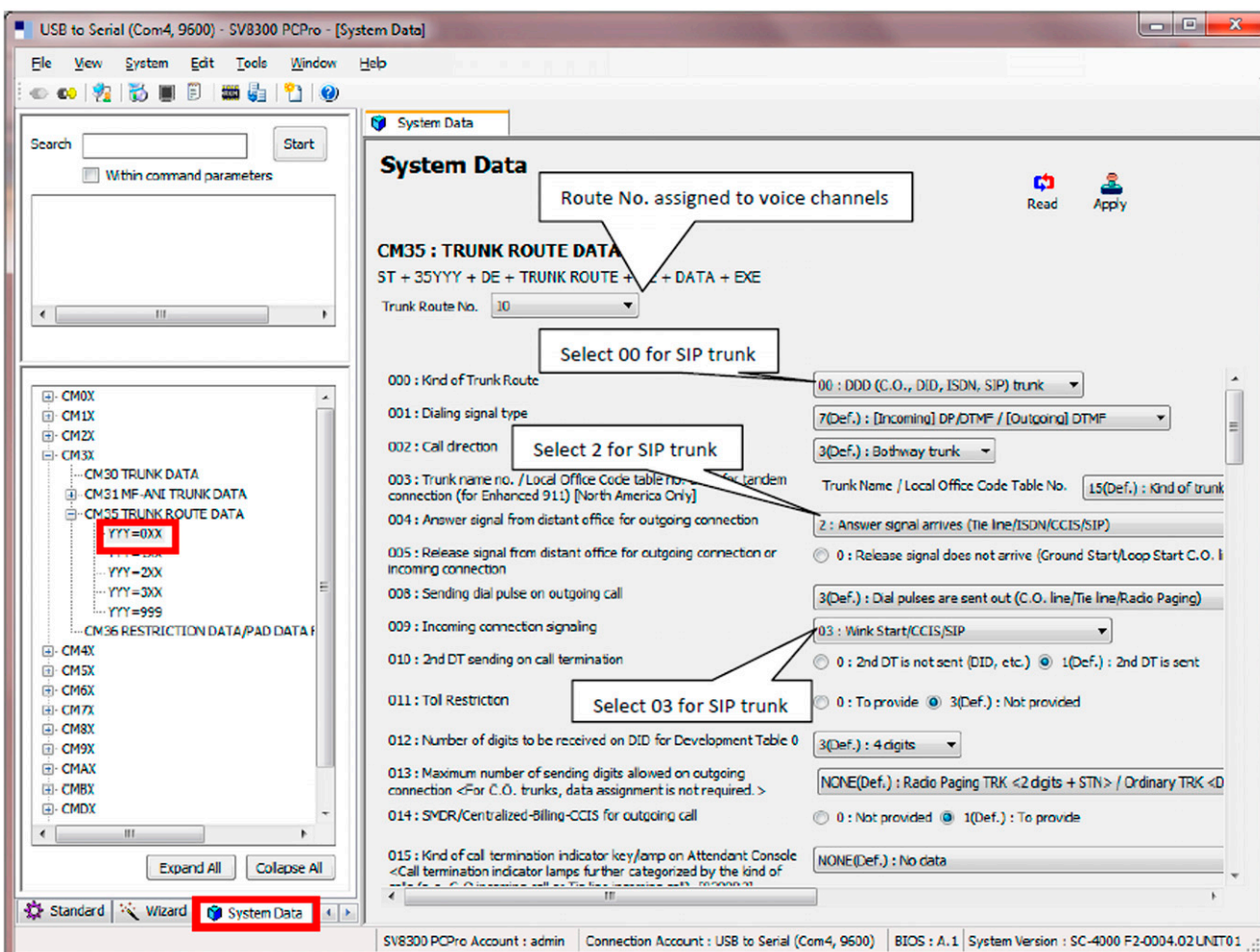


Figure 9 SIP Trunk Route Data CM 35

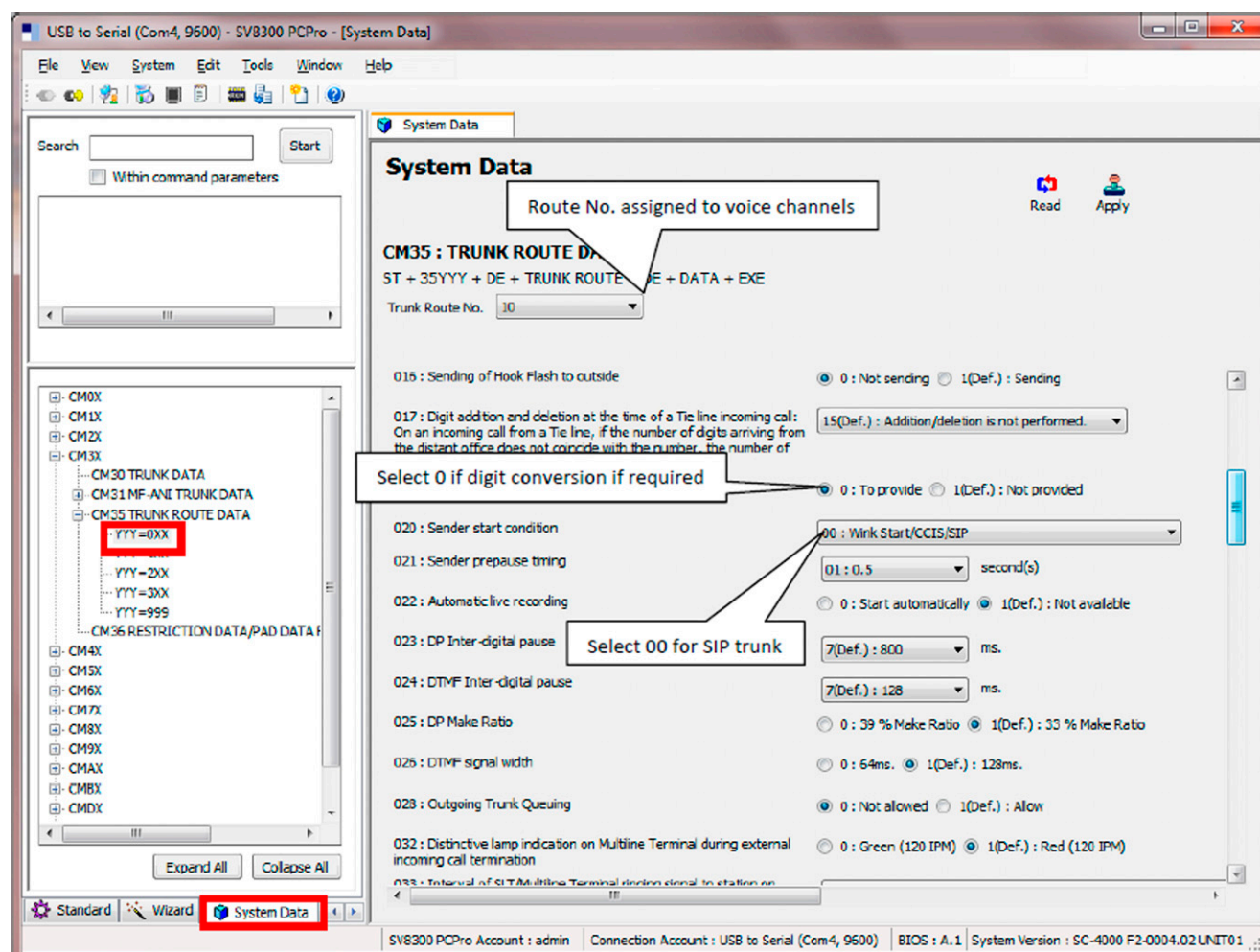


Figure 10 SIP Trunk Route Data CM 35 (continued)

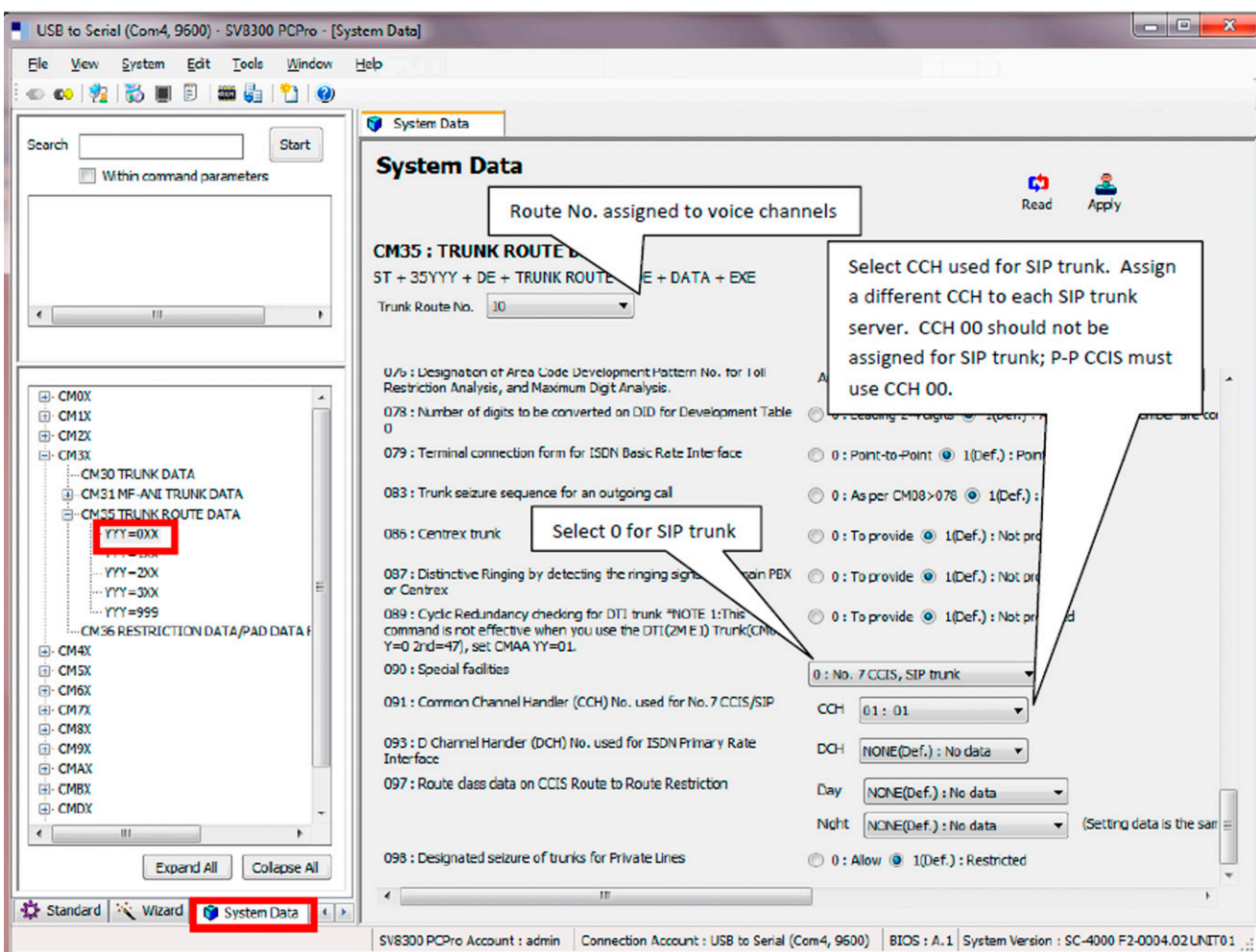


Figure 11 SIP Trunk Route Data CM 35 (continued)

3.7 SIP Control Channel Data Settings CM A7

All values shown are for example purposes only. Your actual values will be determined by your implementation team.

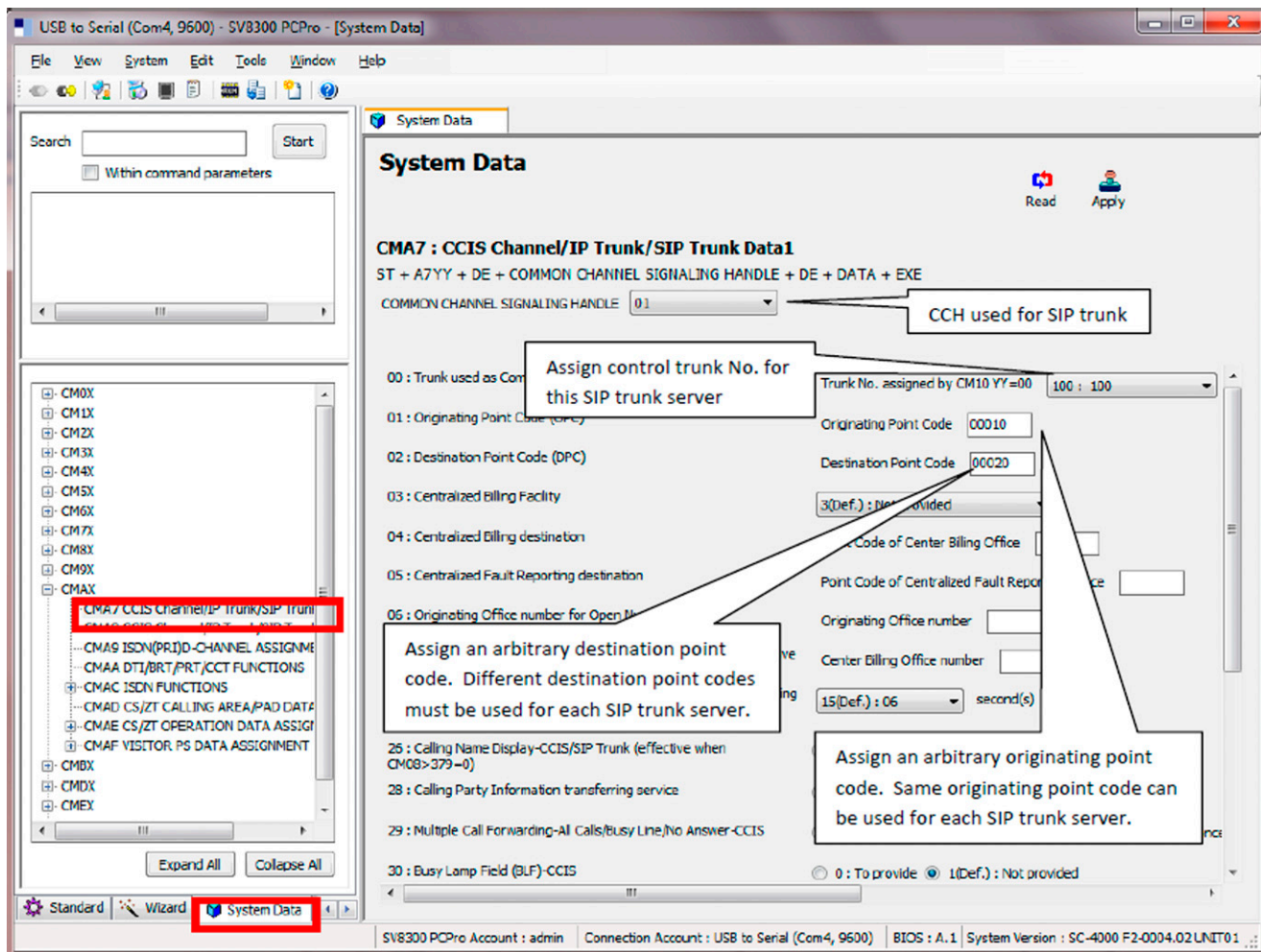


Figure 12 SIP Control Channel Data Settings CM A7

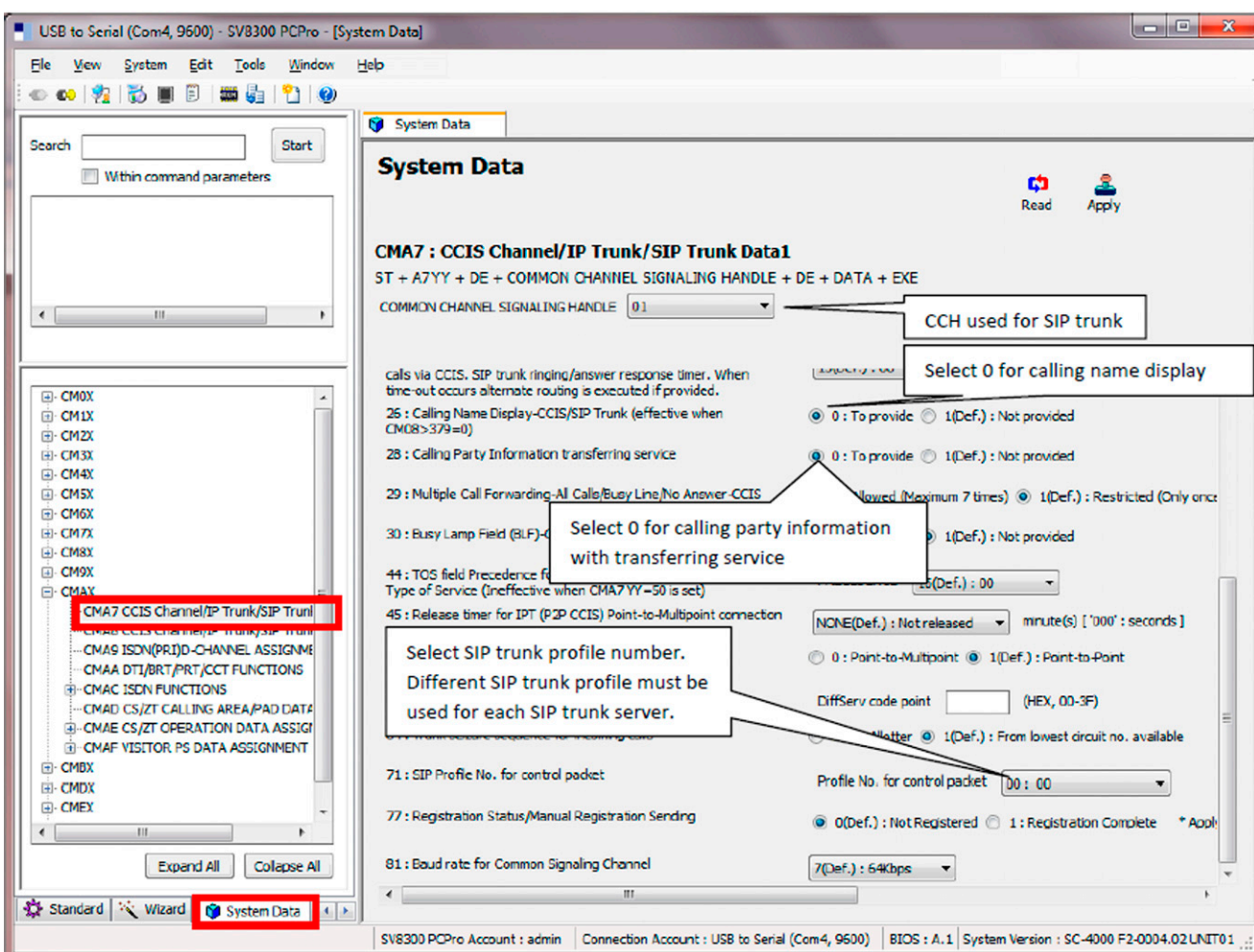


Figure 13 SIP Control Channel Data Settings CM A7 (continued)

3.8 SIP Control Data 2 Settings CM A8

All values shown are for example purposes only. Your actual values will be determined by your implementation team.

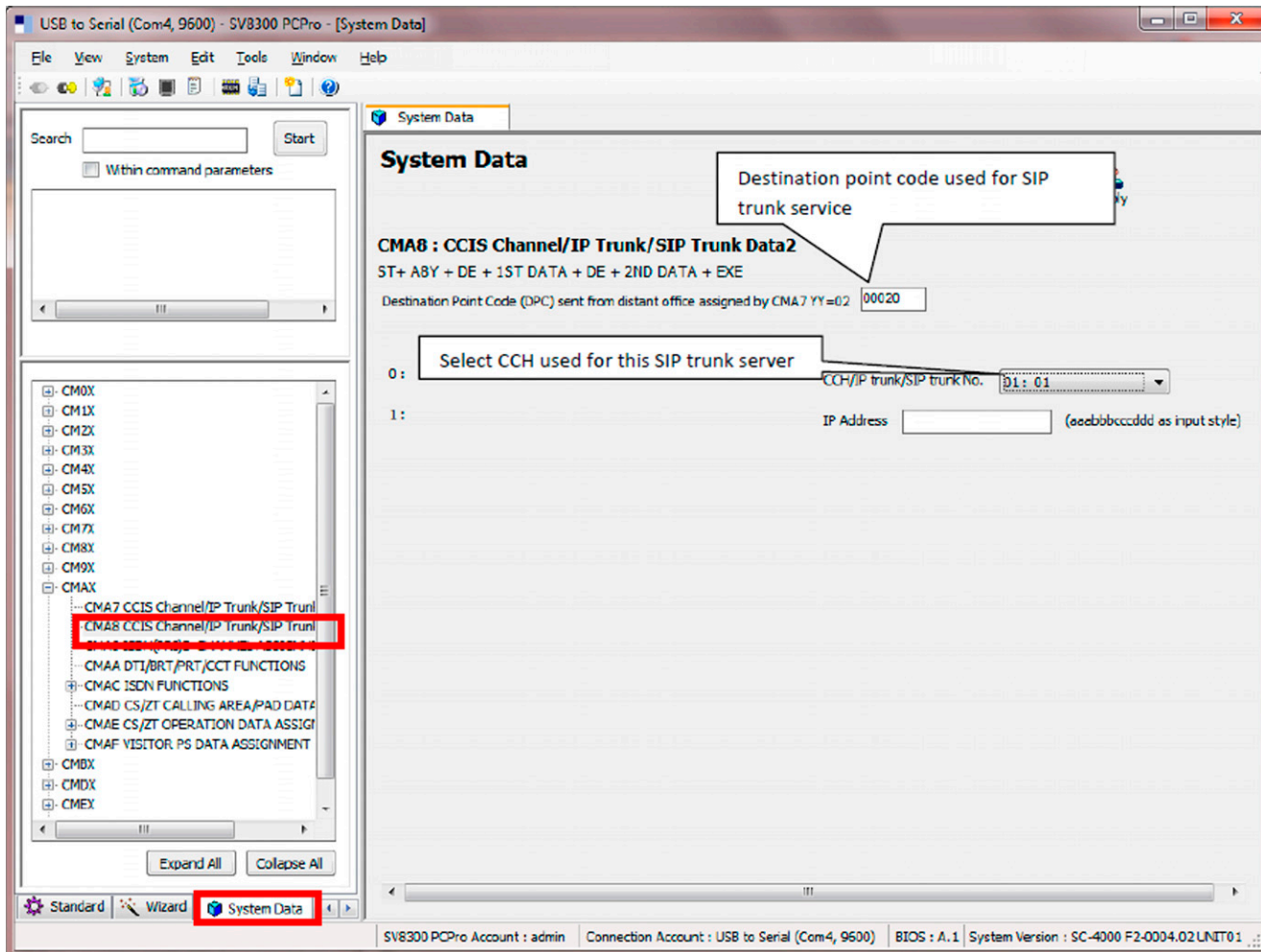


Figure 14 SIP Control Channel Data Settings CM A8

3.9 SIP Profile Settings CM BA

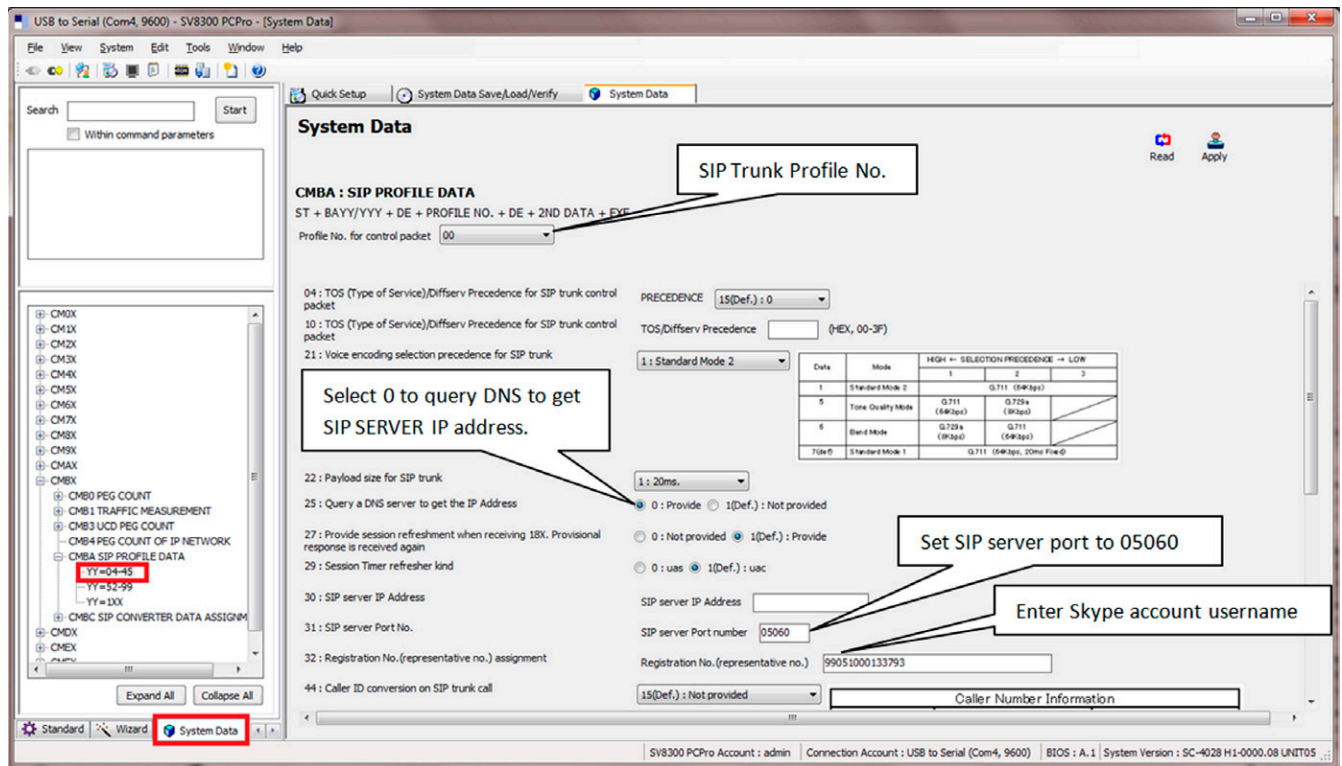


Figure 15 SIP Profile Settings CM BA

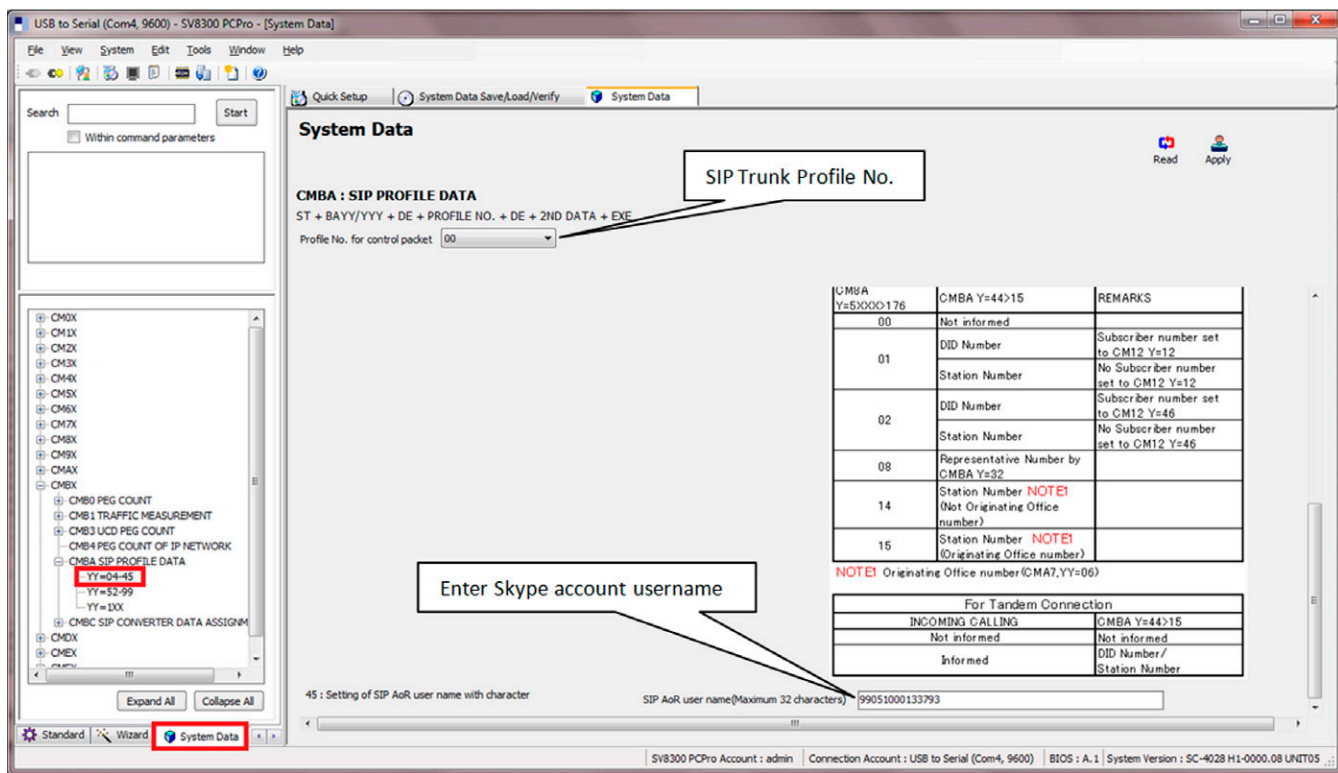


Figure 16 SIP Profile Settings CM BA (continued)

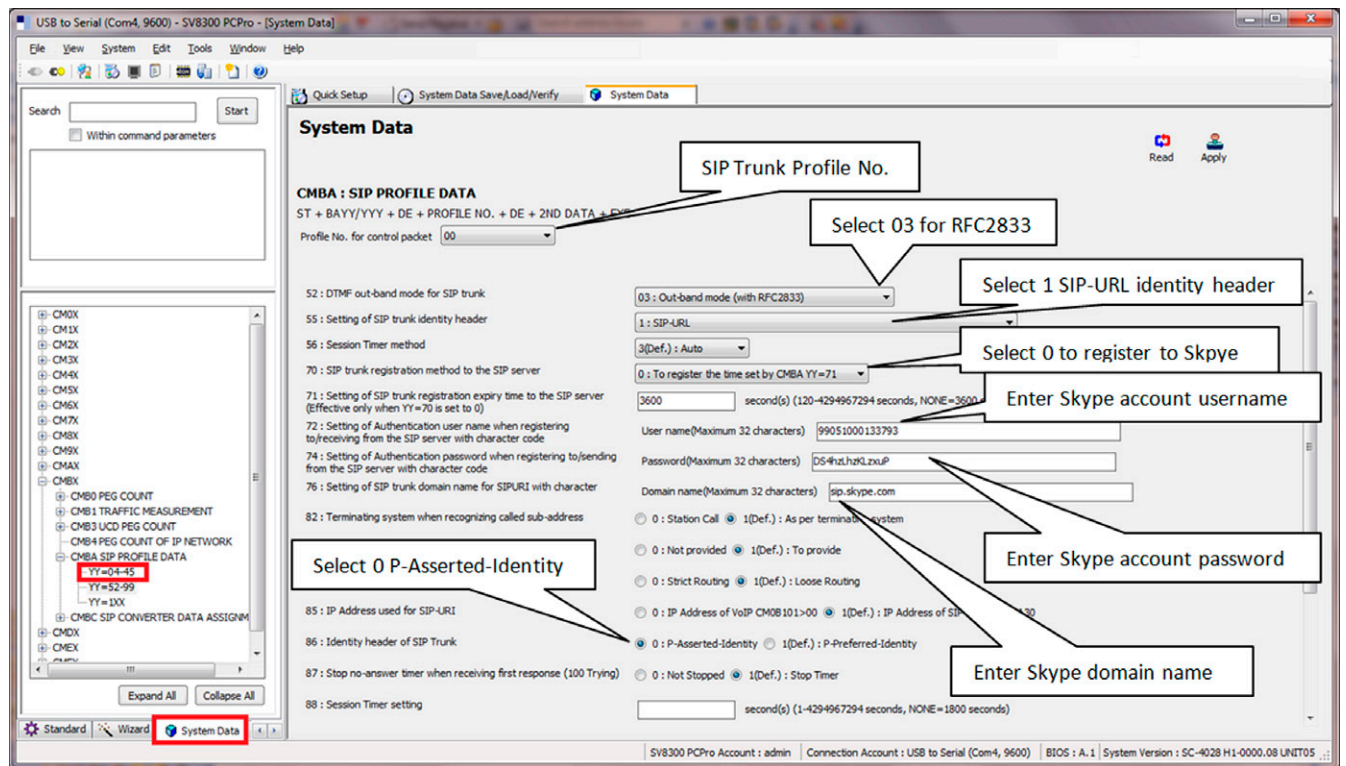


Figure 17 SIP Profile Settings CM BA (continued)



When using SV8300 PCPro R5 or below, the password must be manually entered with Command Line (CM BA YY=74).

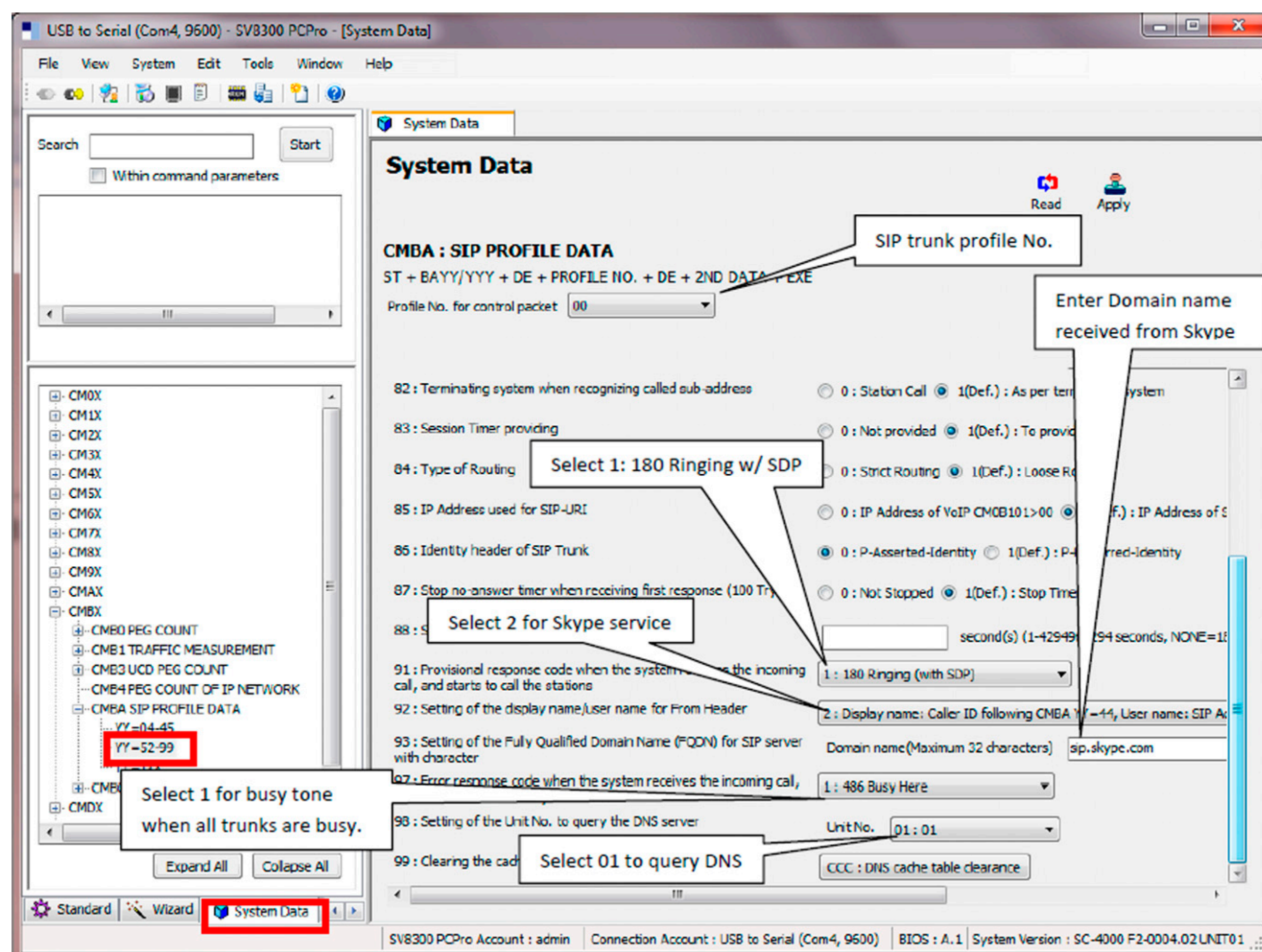


Figure 18 SIP Profile Settings CM BA (continued)

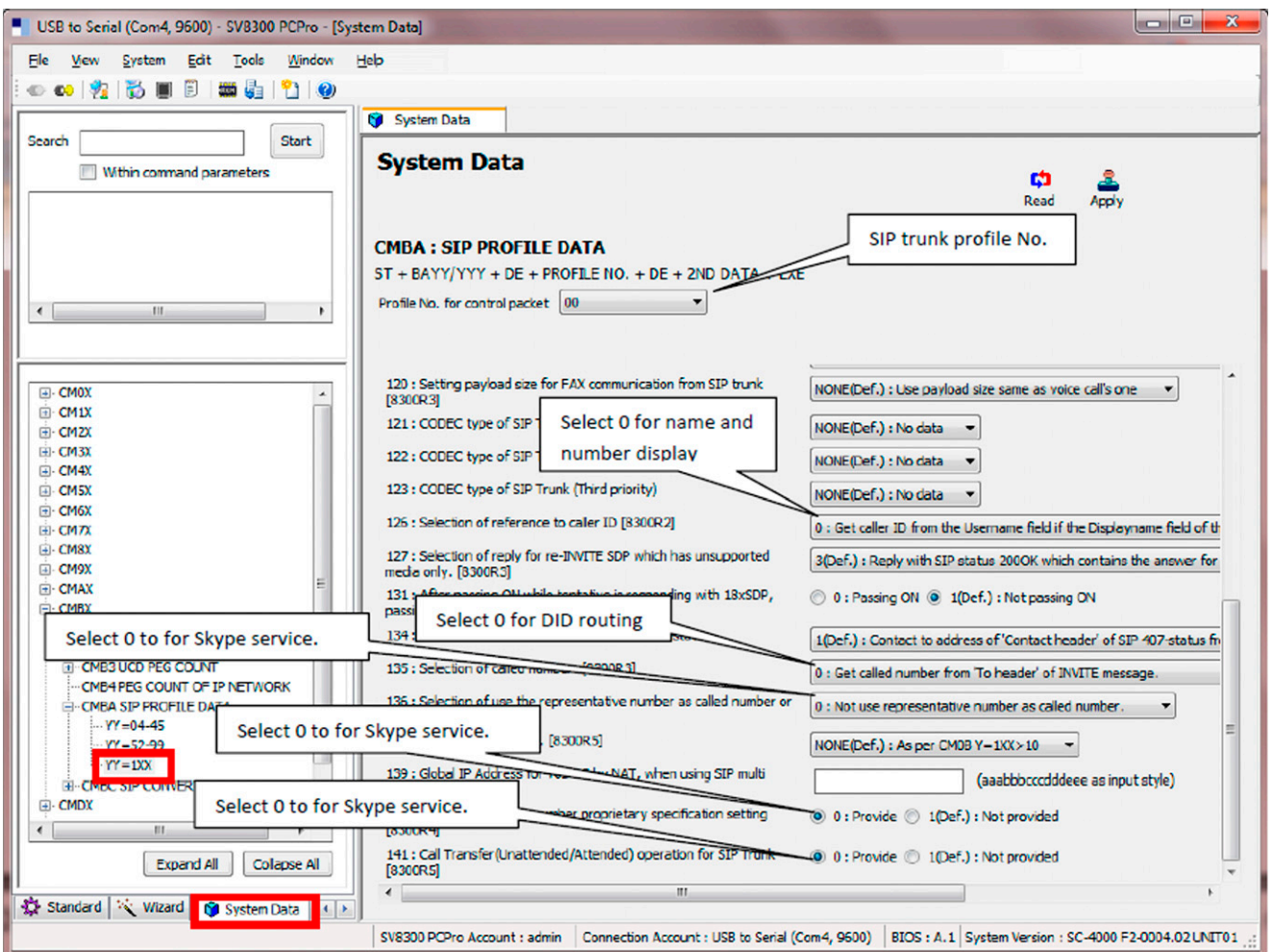


Figure 19 SIP Profile Settings CM BA (continued)

Command BA140>XX must be set to 0 to receive CPN. (XX = SIP Profile Number).

3.10 DID Digit Conversion CM 76

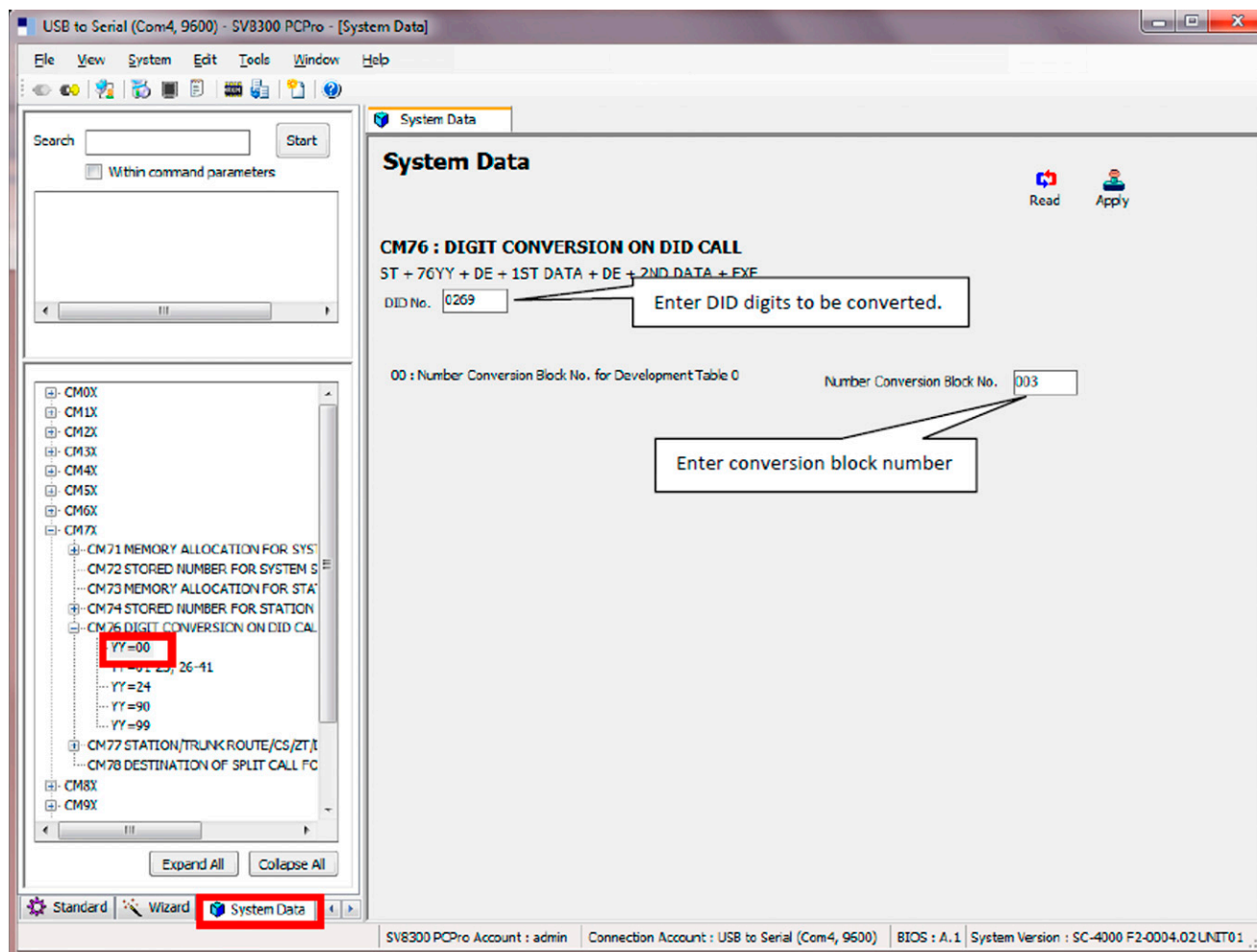


Figure 20 DID Digit Conversion CM 76

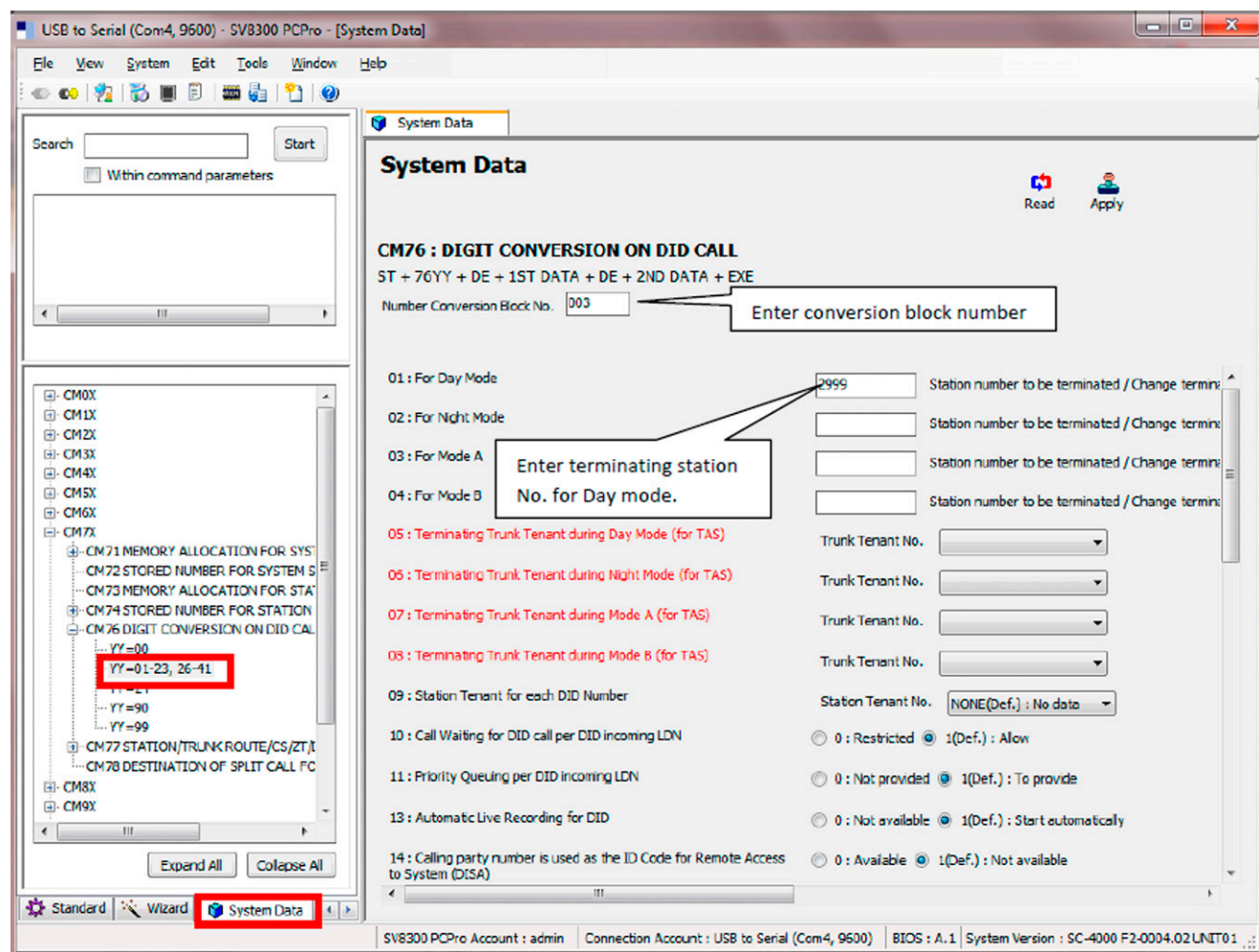



Figure 21 DID Digit Conversion CM 76 (continued)

SECTION 4 INITIAL TESTING AND TROUBLESHOOTING

To confirm that the system is correctly set, perform the following tests:

 *If you run into an issue with any of these tests, refer to [Table 2 Troubleshooting Guide](#).
Test an outgoing call to a local number. Check for ringback, 2-way audio and quality.*

1. Test an outgoing call to a long distance number. Check for ringback, 2-way audio and quality.
2. Test an outgoing call to an international number. Check for ringback, 2-way audio and quality.
3. Test an outgoing call lasting more than 15 minutes.
4. Test multiple call concurrences on outgoing calls. Setup multiple calls to PSTN.
5. Test an outgoing call to an Operator '0'.
6. Test an outgoing call to directory assistance '411'.
7. Test an incoming call to an internal DID. Check for ringback, 2-way audio and quality.
8. Test an incoming call to an auto-attendant. Check DTMF and audio quality.
9. Test transferring calls off-site.
10. Test an outgoing call to an auto-attendant and verify DTMF.

Table 2 Troubleshooting Guide

Issue	Cause	Remedy
No Calls IN/Out	○ Router Configuration	○ Check Router Configuration
	○ NEC Configuration	○ Check NEC Configuration
	○ Unqualified IP Address	○ Note WAN IP Address and Contact Provider
No Calls Out	○ NEC Configuration	○ Check NEC Configuration
	○ Unqualified IP Address	○ Note WAN IP Address and Contact Provider
No Calls In	○ NEC Configuration	○ Check NEC Configuration
	○ Unqualified IP Address	○ Note WAN IP Address and Contact Provider
One-Way Audio	○ NEC Configuration	○ Check NEC Configuration
Echo	○ Excessive Delay	○ Check LAN and WAN for high latency
	○ Echo Cancellation Issue	○ Check Echo settings and/or consult Skype
Call Dropping	○ Internet Access Issues	○ Call Internet Access Provider
	○ Extreme Latency on LAN	○ Check Latency on LAN
	○ SIP issue	○ Contact Provider
Static or HUM on Phones	○ Power issue	○ Check power if using AC, should not be issue in PoE
Missing Parts of Words	○ Packet Loss or Latency on LAN	○ Check LAN
	○ Packet Loss or Latency on WAN	○ Check with Internet Access Provider
	○ Jitter Buffer Configuration	○ Check with NEC

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