Control panels downloading over GPRS with LX20G-3C /LX20G-5C

Users manual addendum

1   INTRODUCTION

Proposed solution is shown on figure 1.

In traditional Control panel downloading, alarm system installer must be equipped with PSTN modem which is used to establish data call to control panel which is connected to PSTN network. Downloading is controlled using Control's Panel configuration application which is supplied by control panel manufacturer. In this approach, there must be PSTN network connected to the control panel on protected premises and alarm system installer needs gain access to PSTN line in order to make programming. In most cases, dedicated PSTN modem is needed to configure particular type of control panel due to fact, that Bell103/V.21 protocol isn't very common and it's usage vary between PSTN modems.

Thanks to LX20G-3C GPRS Transmitter/GSM Dialer/GSM Gateway it is possible to make downloading even, when PSTN network isn't connected to protected premises. Additionally no PSTN modem is needed at installer site. Data is transmitted over the GPRS network which reduces the cost of transmission. Installer must only have access to the LX20G-3C device via OSM server at monitoring station and have access to the network with incoming traffic from LX20G-3C enabled (public IP address or TCP port redirected in case of public APN or connection to corporate private APN).

Configuring control panel remotely using LX20G-3C is still performed using control's panel configuration application supplied by control panel manufacturer. Instead of connecting PSTN modem to it, ModemEMU application supplied by EBS is used which translates modem communication format to GPRS transmission with LX20G-3C transmitter. LX20G-3C decodes GPRS data and translates it to the Bell103/V.21 format used by control panel. It is possible to make remote downloading session with any control panel equipped with Bell103/V.21 modem.

Successful test has been performed with following control panels:

Manufacturer	Control panel	Software	Version
DSC	PC1626	DLS4	1.3.1207.22001
	PC1832		
	PC1864		
	PC4020	DLS2002	2.0.0.1747
Satel	CA5	Dload10	1.00.034
	CA10		
	Versa5	DloadX	1.09.000
	Inegra24		
Paradox	Evo-48	Winload	5.30 SP2
	Esprit 727 Ultra	Espload	3.44
	Esprit 738+		
Napco	Gemini P1632	Quickloader	6.0 build 20101230
Crow	Runner 4	Runner	1.04 build 1.04.51
Pyronix	Matrix6	MXUDL	3.9.52
	Matrix424		
Risco	GTi (WisDom 3)	UploadDownload	3.2.4.111
GE	NX-4	DL900	2.19
	NX-8		
IDS	X64	IDSwift	1.1.1.28
UTC	ATS1000A	ATS 8500	1.0.0.1472
	ATS2109H	Titan Advisor Master Management Software	ATS8118MR 04.02.02
Texecom	Premier 816	Wintex	5.5.7
Bosch	CC488 Solution Ultima 880	Alink	3.0
	ICP-CC488		
Honeywell	Vista-48	Compass	1.5.8.84
	Vista-12D	Compass	1.5.8.96L
Ademco	Vista 4140XMPT2	Compass	1.5.8.96L
Interlogix	NX-8E	DL900	3.04.4.19

Traditional downloading (over PSTN)
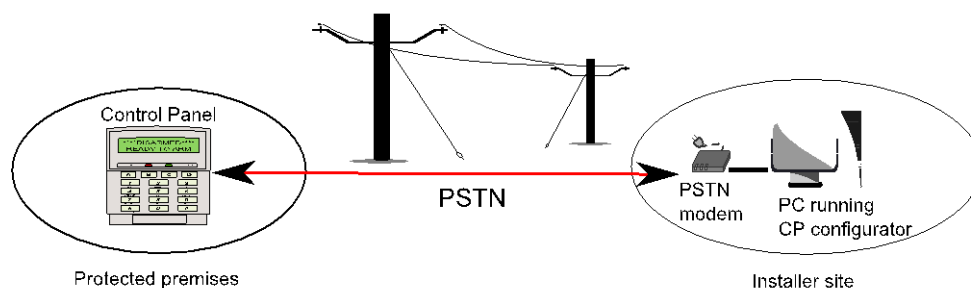
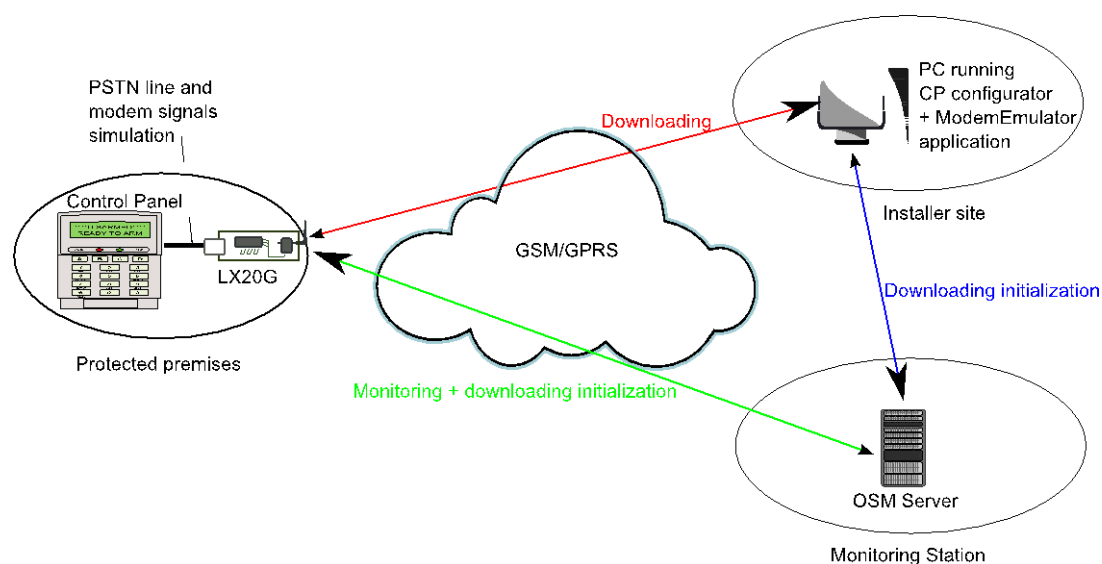# Downloading with EBS LX20G transmitter (over GPRS)

Figure 1.

2   REQUIREMENTS

Minimum requirements for computer system at installer site:

Hardware:
- Processor Pentium II 400 Mhz,
- 64 MB RAM
- 1 GB HD
- Colour monitor (minimum 15inch, min 800x600 resolution)
- Keyboard
- Mouse

Software:
- Operating system: Windows 2000, Windows XP, Windows Vista or Windows 7
- .NET Framework 2.0

Network:
- Access to corporate OSM.2007 server in monitoring station
- Incoming network traffic from LX20G transmitter enabled

Other:
- System administrator privileges

3   MODEMEMU – MODEM EMULATION APPLICATION

ModemEmu is application used to simulate PSTN modem to Control panel's configuration application. It must be installed to do downloading via GPRS with LX20G transmitter. Installation is performed in usual way by running installation program.

When ModemEmu is first time launched, it will install virtual Com port drivers (if it isn't installed yet). You must have system administrator privileges to do it. Each time ModemEmu is launched, application tries to detect it's own public IP address. It can fail when computer on which application is installed doesn't have access to Internet (this can be the case when using private APN).

ModemEmu window is shown on figure 2. User must fill required parameters and click Start button. After that ModemEmu is minimized to the icon tray, and downloading session with control panel's configuration application can be started. To terminate ModemEmu application, Exit button must be clicked.
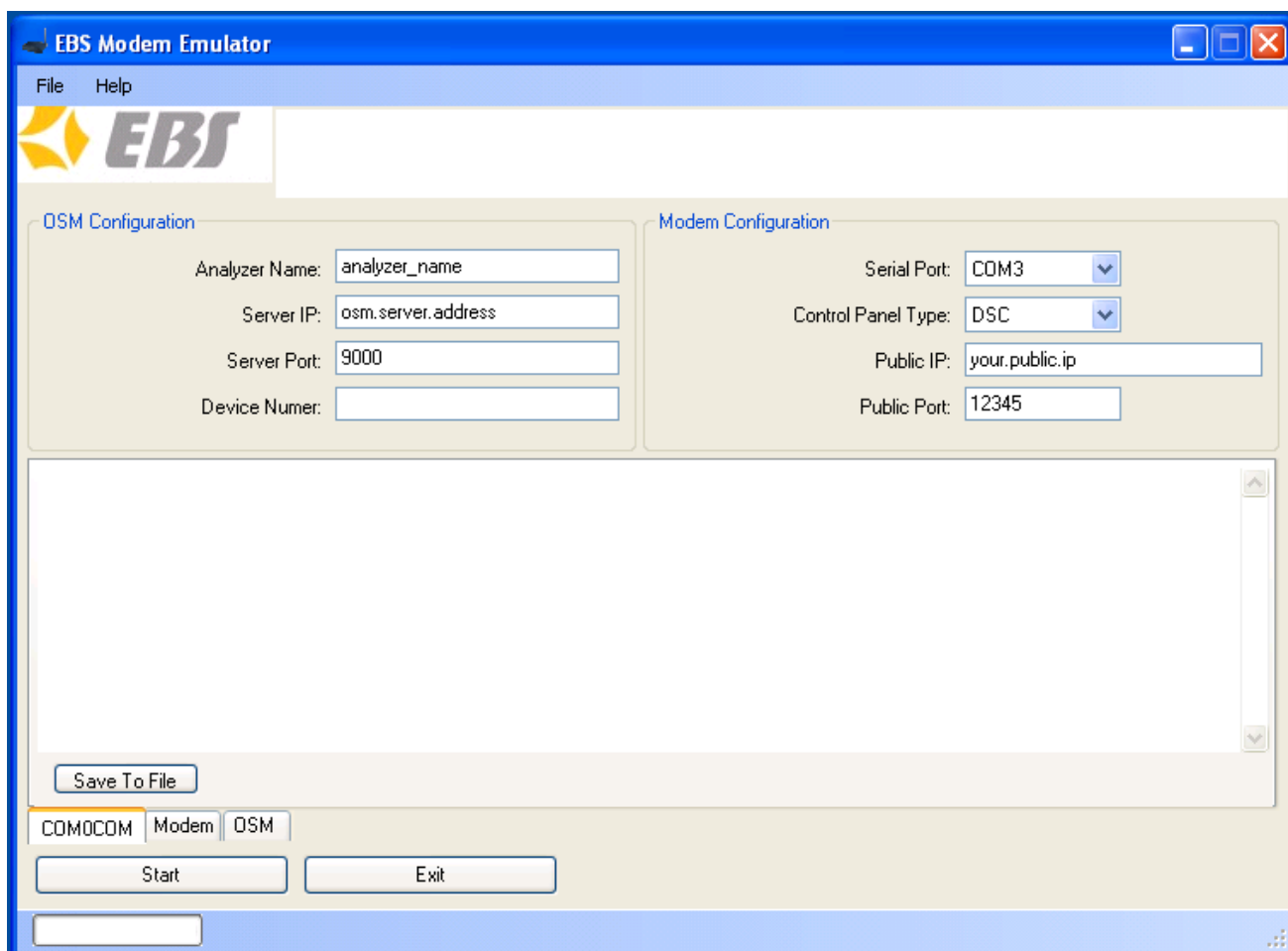
Figure 2.

In order to establish downloading session which is equivalent with establishing modem data call when downloading in usual way (with PSTN modem), connection to corporate OSM server is needed. This can be configured at OSM Configuration area. You must configure Analyzer Name, Server IP and Server Port. This parameters depends on Your OSM server configuration – You can obtain it from OSM server administrator.

Device Number parameter specifies LX20G transmitter's serial number which will be involved in downloading process. Indeed it is the serial number of LX20G which is connected to configured control panel. If this parameter will be omitted, the telephone number dialed by the panel's configuration application will be the serial number of LX20G. On beginning of downloading session, ModemEmu application will send special command to selected LX20G devices using configured OSM.2007 server to initiate incoming data call to control panel.

In order to make downloading, in control panel's configuration application serial port to which PSTN modem is connected must be selected. ModemEmu creates virtual serial port which will be used for this purpose. You can select desired COM port number using Serial Port combo box. ModemEmu application, can create virtual ports in range

of COM1 to COM8. Keep in mind, that if those serial ports are available in the system, no virtual serial ports will be created (Serial ports list in combo box will be empty). If this problem happens, user must change the name of one of the existing serial port in order to proceed.

Due to vast diversity in Bell103 implementations, control panel type must be selected using Control Panel Type combo box to select the best communication options in ModemEMU application to make downloading smooth and without errors. Please keep in mind, that control panel's data is sent over GPRS network using TCP/IP protocol. If there is huge network traffic, or poor GSM quality in location where LX20G transmitter is installed which will be observed as long RTT (Round Trip Time), downloading session will terminate with communication error in most cases.

Control panel's programming data is exchanged using TCP/IP connection which is established from LX20G transmitter to ModemEmu application. Listening port, and IP address at which ModemEmu is visible to LX20G transmitter must be provided. This can be configured with Public IP and Public Port parameters. Once downloading session is started, LX20G transmitter is only involved in control panel data transmission, no monitoring works (even using SMS channel) and LX20G device is disconnected from OSM.2007 server. When downloading session is closed, LX20G connects again to its configured OSM.2007 server.

4   CHANGELOG

Date	Description
28.01.2013	Adding support: Paradox 728 ULTRA and Paradox Esprit 738+. Available for ModemEMU 1.0.19.003 or higher. Updated information about DSC control panels
13.08.2013	Adding support: Bosch CC488 Solution Ultima 880 and Bosch ICP-CC488. ModemEMU: 1.0.26.4 or higher. Firmware LX20G: 1.11RC67 or higher.
23.09.2014	Adding support: Honeywell Vista-48 ModemEMU: 1.0.39.1 or higher. Firmware LX20G: 1.13.0 or higher.
27.03.2015	Adding support: Interlogix NX-8E ModemEMU: 1.0.39.1 or higher. Firmware LX20G: 1.13.0 or higher.
06.07.2015	Adding support: Honeywell Vista-12D, Ademco Vista 4140XMPT2 ModemEMU: 1.0.49.1 or higher. Firmware LX20G: 1.15.0 or higher.