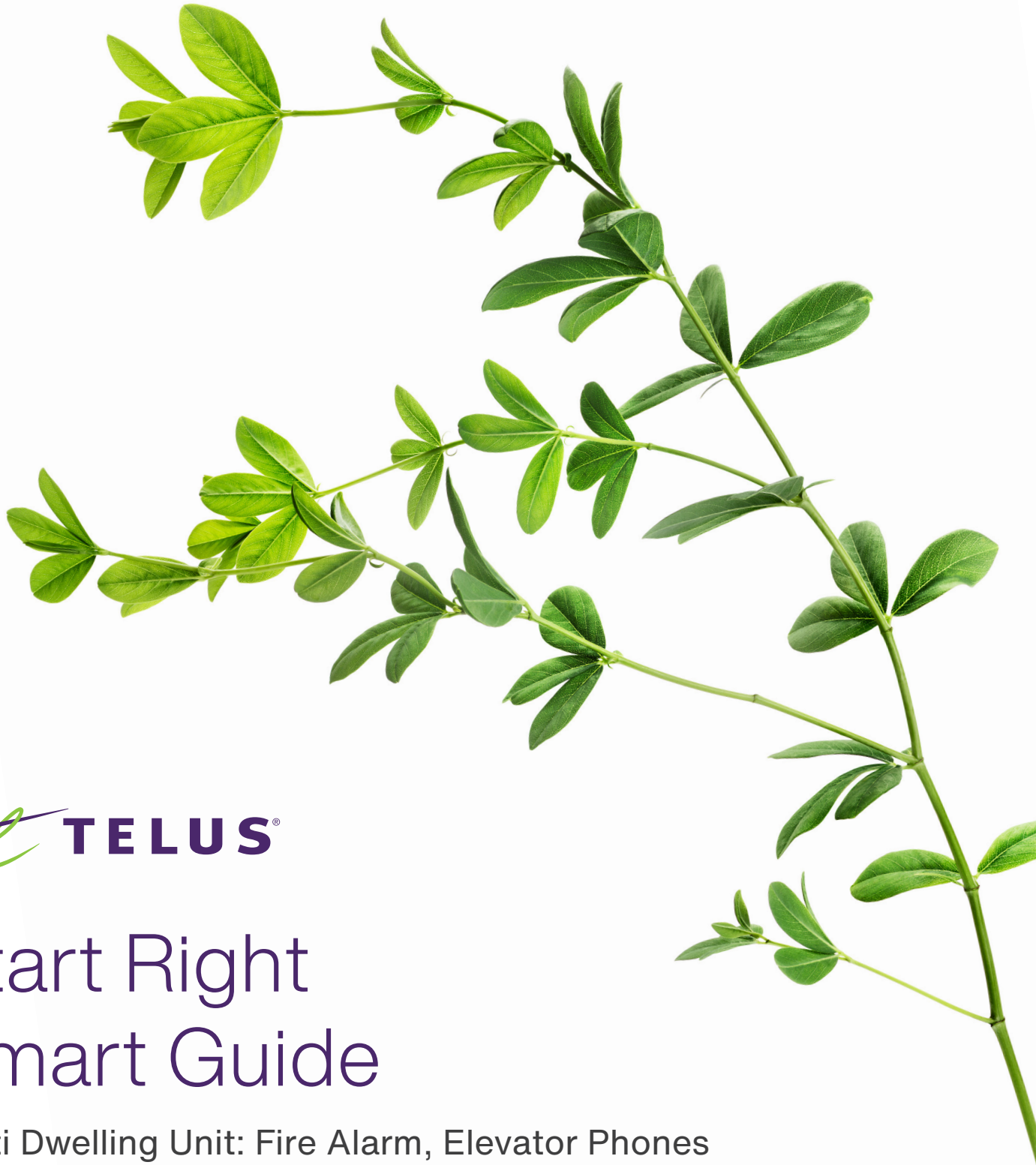


TELUS®

Start Right Smart Guide

Multi Dwelling Unit: Fire Alarm, Elevator Phones and Security Systems

telus.com/**Build**

Table of Contents

This document is written to provide information for owner/ developers, consultants and contractors on the TELUS Equipment and requirements for providing dial tone for Fire Alarm, Elevator Phone and Security Systems.

NOTE: The ULC (Underwriters Laboratories of Canada) have only just recently (June 15, 2017) approved the use of fibre to the building as a medium to support elevator phones and alarm panels as per CERTIFICATION BULLETIN 2017-02 (see Appendix at the end of this document). Prior to this approval, property developers and some municipalities 'demanded' copper loops for alarm purposes, and until the industry becomes fully aware of the ULC approval, there still may be a request for copper services. Nonetheless, TELUS is not responsible to provide copper for elevator phones and alarm panels, and copper will not be provided or used unless as prescribed in this document.

TELUS®

TELUS Internal Design Requirements

These design requirements are guidelines to TELUS Access Engineering to ensure the most cost-effective solution is chosen for the consumer.

1.1 Where a building is serviced within fibre facilities service area only, provide elevator phones, fire alarm (FA) and security alarms using GPON (Business Voice over Fibre).

1.2 Where a building is serviced with fibre facilities only and it is within an existing copper serviced area, provide elevator phones, FA and security alarms using GPON (Business Voice over Fibre). A copper service entrance cable will not be installed to provide elevator phones, fire alarm and security alarms on this building.

1.3 **Exception:** Where a building has existing copper facilities within the building, the elevator phones, FA and security alarms would have been already provisioned with existing copper facilities, therefore, no provisioning of elevator phones or FA circuit over fibre facilities will be required. However, this should not be interpreted as a commitment to providing these services on copper forever. Future developments may cause TELUS to move to like services provided on fiber at any time and in any place!

Fire Alarm Monitoring Equipment

2.1 TELUS does not specify what equipment the owner/developer uses to interface with the dial tone provided on Business Voice over Fibre. It is up to the owner/developer to install a fire alarm monitoring installation compliant with ULC S559/561 that uses TELUS services over GPON.

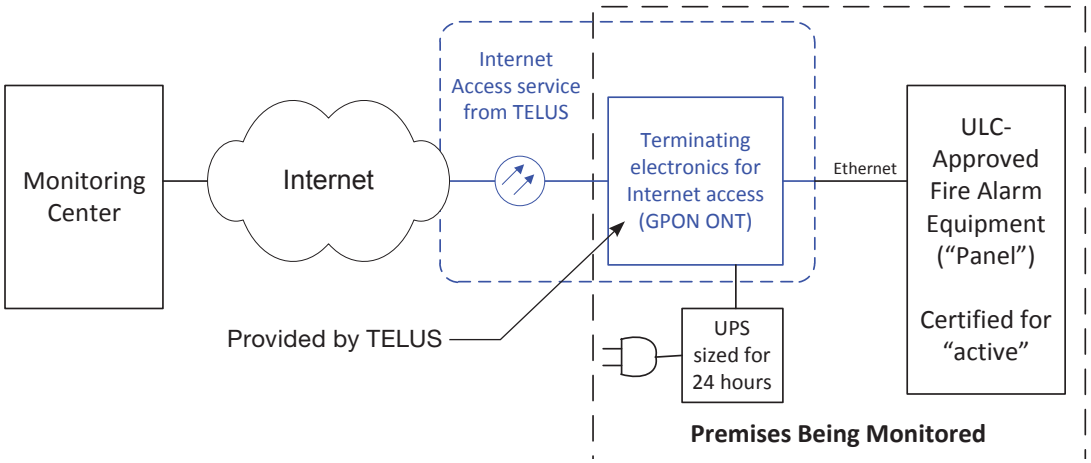
2.2 There are two categories of monitoring as defined by CAN/ULC-S561, active or passive. The owner/developer can either provide an active or passive alarm monitoring system

Active Monitoring

2.3 The active alarm monitoring consists of communication channels which are actively supervised by the monitoring company (i.e., the equipment frequently sends signals over it testing to make sure the channel is functional). The following configuration shows an acceptable ULC S559/561 compliant fire alarm monitoring that will operate with TELUS High Speed Internet service carried over GPON.

Items in blue are provided by TELUS for the service; other equipment at the premises being monitored, are provided by the owner/developer.

Figure 1: Fire Alarm ACTIVE Monitoring Diagram



The equipment consists of:

- Fire alarm equipment certified (tested and passed by ULC) under S559 for the “active” configuration.
- A single Internet access service from TELUS with on-premises terminating equipment using an ONT (Optical Network Terminal).
- At least 24 hours of backup power. This backup can be provided by the owner/developer using a UPS with the appropriate Canadian electrical certifications mark (considered Approved Equipment by the Authority Having Jurisdiction). Note that this is not a special ULC fire alarm certification, only the normal Canadian electrical equipment certification.

Passive Monitoring

2.4 Passive alarm monitoring relies on alarm equipment to check with Alarm Monitoring Company at a pre-determined time to acknowledge the presence of their system on the network. It is required that “Passive” monitoring should include two (2) forms of communication channels such as:

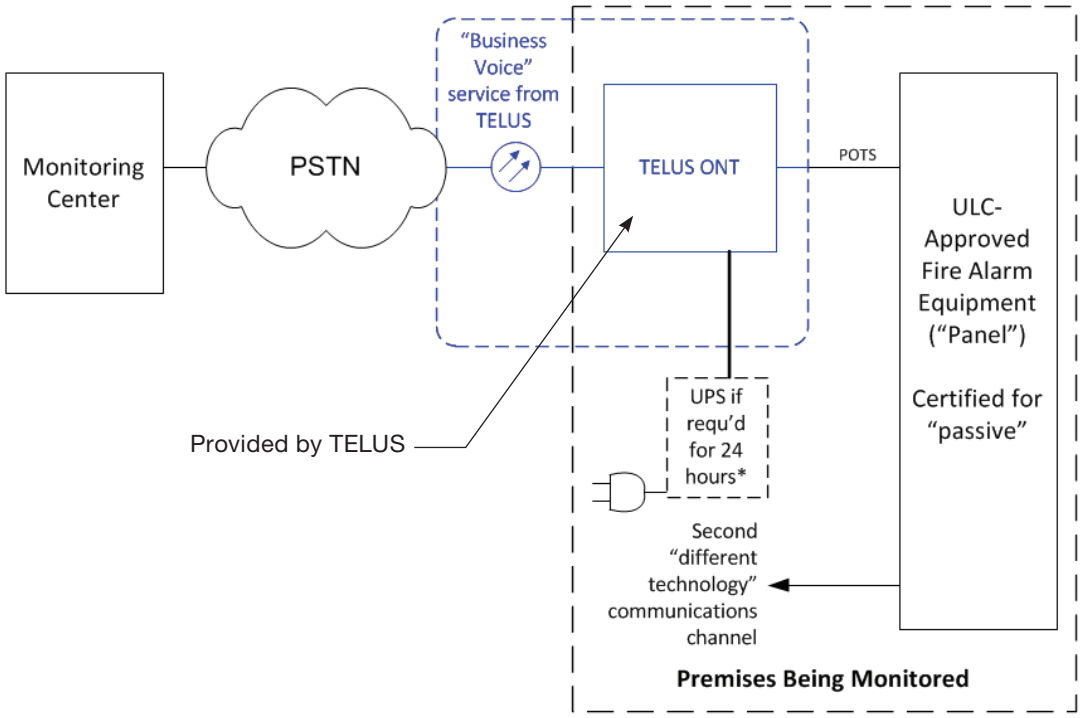
- Cellular, and
- Business Voice service from TELUS

When provided over GPON, TELUS Business Voice service terminates on an ONT. This unit in turn has a voice port, providing the same POTS interface as TELUS Business Voice provided over other technologies.

The following diagram shows a potential “passive” installation provided using TELUS Business Voice. It would be the responsibility of the developer/owner, like any other “passive” installation, to arrange for the second communications channel using, per the standard, a “different technology”.

Items in blue are provided by TELUS for the service; other equipment at the premises being monitored are provided by the owner/developer.

Figure 2: Fire Alarm PASSIVE Monitoring Diagram



2.5 See Figure 3 in the Appendix section for the typical wiring schematic of TELUS Business Voice over Fibre used for Fire Alarm monitoring.

2.6 The owner/developer should review the following ULC standards:

2.6.1 CAN/ULC-S559-13, Standard for Equipment for Fire Signal Receiving Centres and Systems, and

2.6.2 CAN/ULC-S561-13, Installation and Services for Fire Signal Receiving Centres and Systems

for information on the requirements for fire signal receiving centres and systems, which include transmitting and receiving equipment, proprietary fire receiving centre equipment and control unit accessories.

2.7 ULC have issued a bulletin, Certification Bulletin 2017-02 – Managed Facilities-Based Voice Network (MFVN) Services that confirms that MFVN services forms part of the Public Switched Telephone Networks (PSTN). TELUS Business Voice delivered over fiber is an acceptable form of a Managed Facilities-Based Voice Network Services. It also clarifies that power backup times much shorter than 24 hours are acceptable, if alarm equipment testing time are done more frequently.

Elevator Phones

3.1 For buildings which require a dial tone for elevator phones, TELUS will provide GPON ONT complete with an RJ 11 jack for connection by the owner/developer. The owner/developer shall provide a UPS system for the GPON ONT to ensure that their elevator phones are operational during a power outage. It is the responsibility of the owner/developer to maintain the customer owned UPS system.

Security Systems

4.1 For buildings which will have a security system that requires a static IP, TELUS will provide GPON ONT that will provide Business HSIA with static IP capability. The owner/developer shall provide a UPS system for the GPON ONT and Gateway (modem) to ensure that their security system is operational during a power outage. It is the responsibility of the owner/developer to maintain the customer owned UPS system.

Power Supply and Back-up Power Supply

5.1 TELUS will provide the GPON ONT equipment that is plugged in to a 120v receptacle. The owner/developer shall provide a receptacle near the GPON ONT connected to a maintained power panel (uninterruptible circuit, i.e., generator, UPS, etc.) in the building.

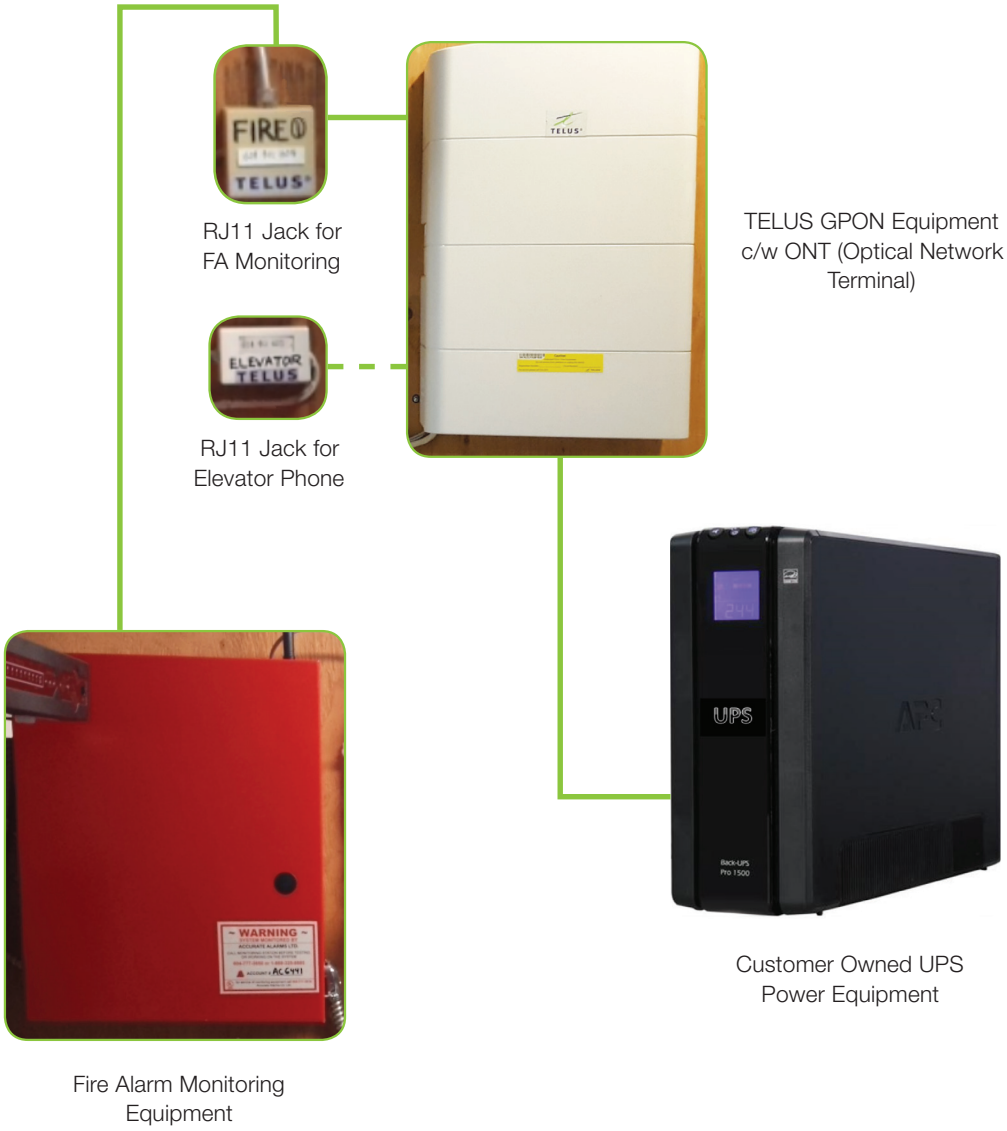
5.2 For TELUS Business Voice service provided over fibre for Fire Alarm system monitoring (passive installations), the current practice is a requirement for 24 hours of battery backup whereas the normal TELUS battery backup unit is for about 8 hours (dependent on the load). Therefore, at this time **the owner/developer shall provide a DC UPS (DC Power Supply/Battery Back-up Unit)** which will be mounted beside the TELUS (GPON) ONT equipment.

5.3 The power draw of the TELUS equipment is 6W for a GPON ONT alone (Business Voice over Fibre), or 20W for a GPON ONT plus Gateway or Modem (Business HSIA with static IP capability).

It is the responsibility of the owner/developer to maintain the UPS systems, such as replacement of UPS batteries.

APPENDIX

Figure 3: Typical Wiring Schematic of Business Voice over Fibre for Fire Alarm Monitoring



REFERENCE

Acronym Definitions			
DC	Direct Current	**ONT**	Optical Network Terminal
GPON	Gigabit Passive Optical Network	**POTS**	Plain Old Telephone Service
HSIA	High Speed Internet Access	**ULC**	Underwriters Laboratories of Canada
IP	Internet Protocol	**UPS**	Uninterruptible Power Supply

APPENDIX

Figure 4: Certification Bulletin 2017-02

File: ULC Subject S301, S302, S304, S559 & S561
G.5.2, CCF 7

June 15, 2017

CERTIFICATION BULLETIN 2017-02

Managed Facilities-Based Voice Network (MFVN) Services

To: Members of the ULC Advisory Committee
Listees of Burglary Protection Service Certificate Programs (CPVXC, CPWFC, CRXXC & CRYHC)
Listees of S304 (AMCXC)
Listees of Protective Signaling Service Certificate Program (DAYIC & DAYYC)
Listees of S559 (DAYRC)
Others Interested

ULC periodically reviews its programs and services. As a result of comments received from our Technical Committees and applicable industry interests regarding the subject item, the ULC Fire and Security Systems Group has determined a need for the following changes in the Intrusion Alarm Systems and Protective Signaling Systems Certificate Services Programs.

Effective immediately, based on the recommendations of the ULC – MFVN Technical Task Group Meeting of September 27, 2016, the ULC Fire and Security Systems Group is accepting the use of MFVN digital telephone services for connection of digital dialer transmitters ULC listed to be connected to the public switched telephone network communication system.

The ULC Fire And Security Systems Group has accepted the ULC – MFVN Technical Task Group's recommended definitions for MFVN and PSTN as follows:

MFVN Definition:
Managed Facilities-Based Voice Network (MFVN). A physical facilities-based network capable of transmitting real time signals with formats unchanged that is managed, operated, and maintained by the service provider to ensure service quality and reliability from the subscriber location to public switched telephone network (PSTN) interconnection points or other MFVN peer networks.

PSTN Definition:
Public Switched Telephone Network (PSTN). An assembly of communications equipment and telephone service providers that utilize managed facilities-based voice networks (MFVN) to provide the general public with the ability to establish communications channels via discrete dialing codes.

The above clearly confirm that the MFVN services form part of the PSTN.

Additionally, in that the MFVN communication channel technologies available are not provided with 24 hour standby power on the equipment and facilities used between the premises and the signal receiving center, it is required that for passive communication channels used in monitored protective signaling system installations, that the testing time of the passive communication channels should be reduced from the current **24 hours** to **6 hours** to better ensure that the system and communication channels are operating in their intended manner to reduce the life safety risk.

A change in testing frequency for intrusion alarm systems is not being required due to the many different levels of line security options available for these system types, which should be applied based on communication supervision needs for each installation.

Underwriters Laboratories of Canada Inc.
7 Underwriters Road, Toronto, ON M1R 3A9, Canada
T: 416.757.3611 / F: 416.757.9540 / W:ULC.ca

Figure 4: Certification Bulletin 2017-02

These program changes will become effective immediately.

For additional information please contact Alan Cavers of the ULC Fire & Security Systems Group. Al can be reached at Tel: (416) 757-5250 Ext.61207 or e-mail: trt.certificate@ul.com.

Sincerely,

Underwriters Laboratories of Canada Inc.

Gunsimar Paintal
Regional Manager – Accreditations & Quality
ULC Mark Program Owner

Underwriters Laboratories of Canada Inc.
7 Underwriters Road, Toronto, ON M1R 3A9, Canada
T: 416.757.3611 / F: 416.757.9540 / W:ULC.ca

For more information please call **310-4DEV (4438)**
or email **4dev@telus.com**

telus.com/**Build**

TELUS