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# **DMP Data Network Certifications**

### Introduction

As early as 1984, while other security manufacturers were struggling within the confines of analog pulse communication formats, DMP was looking ahead to communication technologies of the future. That future consisted of digital communication as the basis for all highspeed, secure transmission of data over phone and network systems. Digital data communication is fast and virtually error free and allows DMP panels to send large amounts of information over computer networks and satellite links as well as standard voice grade telephone lines.

From those early days, DMP has seen the potential of data communication and has been using it as a standard communication format for all of its burglary/fire alarm control panels.

#### Analog communication of yesterday

Most formats still used by other panel manufacturers today send alarm reports to the central monitoring station receiver using one-way data with pulse tone acknowledgment. This method will not function over a digital network but instead requires a voice grade phone line. These panels cannot operate in supervised or polled environments such as that found on data networks.

Some examples of analog communication include Grade B Burglary using a standard telephone dialer, Grade AA Burglary using a dedicated multiplex phone line, and Central Station Fire using two dedicated dialer phone lines.

#### DMP network communication of today

The sending of alarm and system information to a central monitoring station over existing public data networks is not only superior to analog communication but it is also a communication method approved and accepted by Underwriters Laboratories (UL).

DMP panels output their data in RS-232 format and are completely compatible with communication over existing networks such as Ethernet, ISDN, and other Wide Area Networks. This is a powerful capability that offers our customers unbeatable cost savings and dependability over systems relying on older analog communication technologies.

### **UL Approval of Public Data Networks**

In September of 1996, UL approved DMP panels for use with communication over public data networks. UL states that: "This type of application is acceptable, provided that the protected premise and receiving units are Listed, complying with all applicable hardware and functional requirements in UL 1610 for Central Station Burglary, UL 365 Police Station Connect, and UL 1076 for Proprietary Burglary applications".

The DMP XR200 Command Processor<sup>™</sup> Panel, 462N Network Interface Card, and SCS-1 Receiver are all listed by UL for Central Station, Police Connect, and Proprietary Burglary applications.

#### AMCX Central Station Alarm Units



DIGITAL MONITORING PRODUCTS INC , SPRINGFIELD S3598 (N) MO 65802 (A card)

MO 65802 (A cerd) Model 1812 with suffix A, B, C, D or E, Protected Premise Control Unit, incorporating at least one of the Models 894-D, -D1, -D2, -D8, -X1, -X18, -X2 or -X28, digital alarm communicator transmitter module. Suitable for Grade C service. When incorporating an ADEMCO AB-12 Grade A Bell Housing and the AB-10-12 Bell suitable for Grade B service. When incorporating the Model 894-M -MB or "Premise Control Unit, Suitable for Grade A service when configured for th and Integral Dialer Suitable for Grade A service. Protected Premise Control Units. Suitable for Grade A service. Protected Premise Control Units. Suitable for Grade A service when tor MSC5-1 receiving system. Suitable for Grade A service when unit enclosure, It and Integral Dialer Suitable for Grade B service. Protected Premise Control Units. Suitable for Grade As service when tor MSC5-1 receiving system. Suitable for Grade A service when used 2 Grade A bell. Protected Premise Control Units. Suitable for Grade B service when used 7 h Ademco AB-12 Grade A Bell and integral digital alarm communicator

#### RING PRODUCTS INC

\$3598 (N)

S3598 (N) (B-cont. from A card) Ies, Models 367, 682N, 462P, 481, 862N, 882P, 881. Expansion mod-17. Keypads, Models 700, 740, 750 with or without suffix A, R. Models 771, 772, 773, 774, 790, 791, 793. Loop expanders, Models 704, 706, ceiving system, Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-11 or digital alarm communicator signals and onsists of the Model SCS-100 line card, Model SCS-110 odel SCS-1102 multibus power suppy card, Model SCS-130 transformer er cord and Model SCS-203 convenience panel.

AL DR

# **DIGITAL MONITORING PRODUCTS INC**

Central Station Alarm Units

Model XR200 Protected Premises Control Unit. Suitable for Grade AA service when configured for multiplex DNET or HST communication with SCS-1 receiving system. Accessories: Expansion interface modules, Model 462N Receiving system, Model SCS-1 for digital alarm communicator signals and multiplex signals.

### **APAW Police Station Alarm Units**

#### APAW September 24, 1996

Police Station Alarm Units

S3598 (N)

**DIGITAL MONITORING PRODUCTS INC , SPRINGFIELD** S3598 (N) MO 65802 (A card)

Model 1812 with suffix A, B, C, D or E, protected premise control unit with Model 348A control unit enclosures and an ADEMCO AB-12 Grade A bell housing and the AB-10-12 bell and at least one of the Model 984-0, -0.1, -0.2, -0.8, -X.1, -X.18, -X.19, -X.19

the Model 348A). protected premise control units with the Model 349A attack resistant en-, Grade A bell housing and integral DACT, suitable for Grade A mercan-safe and vault with basic line security. remise control unit with the Model 349A attack resistant enclosure, ade A bell housing and integral DACT, suitable for Grade A mercantile a and vault with basic line security. When configured for multiplex com-Grade AA mercantile and Grade AA mercantile safe and vault with high mercantile sefe and vault service require Sentrol Model 5402 or Potter

(B-cont. from A card) protected premise control units with Model 349A attack resistance en-land Grade A bell housing. Suitable for Grade A mercantile and mercan-isic line security when configured for DACT or DDMX communication. DIRT or HST communication, suitable for Grade AA mercantile and and vault with high line security. All grades of mercantile sand and vault lel 5402 or Potter EVD vibration detector. The Model XR200 is also suit-tancing

t service. Iterface modules, Models 460, 462N, 462P, 481, 862N, 862P, 881. Ex-10, 716, 717. Keypads, Models 730, 740, 750 with or without suffix A, 893, 770, 771, 772, 773, 774, 790, 791, 793. Loop expanders, Models

stem, Model SCS-1 which includes the Model SCS-PTR printer and cab processor card, Model SCS-100 line card, Model SCS-110 modem po multibus power supply card, Model SCS-130 transformer card, Mod el SCS-203 convienience panel and Model SCS-CRT CRT keyboard ar

#### APAW

AMCX

**Police Station Alarm Units** 

#### DIGITAL MONITORING PRODUCTS INC

Model XR200 Protected Premises Control Unit. When configured for multiplex, DNET, or HST communication, suitable for Grade AA mercantile and Grade AA mercantile safe and vault with high line security. All grades of mercantile safe and vault service require Sentrol Model 5402 or Potter EVD vibration detector. The model XR200 is also suitable for bank safe and vault service. Accessories: Expansion interface modules, Model 462N.

Police station receiving system, Model SCS-1.

Digital Monitoring Products, Inc.

Data Networks

#### **APOU Proprietary Alarm Units** APOU Proprietary Alarm Units September 24, 1996 DIGITAL MONITORING PRODUCTS INC , SPRINGFIELD S3598 (N) (A ca A, B, C, D or E, Protected Premise Control Unit, incorporating at I 1, -X1, -X18, -X2 or -X28, digital alerm communicator transmitter is when incorporating an ADEMCO AB-12. Grade A Bell Housing hting the Model 984-M or 984-MB multiplex communicator modu APOU least one **Proprietary Alarm Units** S3598 (N) remise Control Unit with integral DACT, suitable for Grade A service. Suit-when configured for multiplex communication with SCS-1 receiving sys-DIGITAL MONITORING PRODUCTS INC Protected Premise Control Units. Suitable for Grade A service whe communication. Suitable for Grade AA service when configured i ication with SCS-1 receiving system. Protected Premise Control Units with integral DACT. Suitable for Grade Model XR200 Protected Premises Control Unit. Suitable for Grade AA service when configured for multiplex, DNET, ING PRODUCTS INC S3598 (N) (B-cont. from A card) lel 387. Battery harness, Model 318. Communication cable, Model 355. 5. Models 480, 482P, 481, 881, 882N, 882P. Expander modules, ypads, Models 730, 740, 750 with or without suffix A, F: Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 790, 791 or 793. Loop expanders, Models 670, 772, 773, 774, 790, 790, 791 or 793. Loop expanders, Models CS-170, 01 line card, SCS-110 modem power supply, Model SCS-120 multibus SCS-130 transformer card, Model SCS-208 power cord, Model SCS-203 lel SCS-VPT1 CHT keyboard and cable assembly. L DP S3598 (N) or HST communication with SCS-1 receiving system. Accessories: Expansion interface module, Model 462N Receiving system, Model SCS-1 for processing digital alarm communicator signals and multiplex signals. L DR FOR LISTING MARK ON PRODUCT Replaces S3598B dated July 12, 1996. Underwriters Laboratories Inc.® X11/0248114 883361002 572 Multiplex communication

Additionally, UL requires "the system meet the requirements for multiplex type communication". In meeting these requirements, UL has tested and listed the DMP XR200 Command Processor<sup>™</sup> Panel, 462N Network Interface Card, and SCS-1 Receiver to meet the Multiplex Compromise Test as specified in UL 1610, section 70.2 exceptions a, b, c, and d - dated 12/6/94. Equipment meeting strict multiplex operation criteria as defined by UL is allowed to be certified as AA, the highest rating by UL. This includes testing for line security, equipment substitution, dual channel signal transmission, and line supervision.

#### **Transient protection**

UL also requires that "the circuitry complies with the Input/Output Circuit Transient Tests." The DMP 462N and SCS-1 Receiver have been tested by UL and meet the Input/Output Circuit Transient Tests as defined by UL 1610 section 43.4 - dated 5/25/94. This testing helps ensure that transient voltages that may occur on wiring within the network will not adversely affect the DMP panel or receiver.

#### Fire and shock hazard

UL also requires that "network equipment must be UL Listed for fire and shock hazards". The DMP Ether-Com<sup>™</sup> Ethernet Interface is UL Listed for fire and shock hazard under the Information Technology Equipment standard. See below for a copy of the NWGQ UL Listing card. When using other network interface devices, the device must be listed for UL Fire and Shock Hazards.

	NWGQ August 29, 1996 Information Technology Equipment Including Electrical Business		
NWGQ Information Technology Equipment Including Business E17	Electrical 50008 (N)	ING PRODUCTS INC , E1	<u>E175008</u> (N)
DIGITAL MONITORING PRODUCTS INC		FOR LISTING MARK ON PRODUCT	
Micro serial server, Model ETHER-COM.			

#### **UL AA Certificated Burglary Applications**

When the network requirements above are met, the DMP XR200 Command Processor Panel and 462N Network Interface Card can be installed and certified UL AA. Specific installation and programming instructions are defined in section 18 of the XR200 Installation Guide (LT-0197). This includes the use of one 893 phone line module to monitor the backup dialer line and choosing the HST communication programming option as AA.

The AA option causes the XR200 panel to regularly check in with the SCS-1 Receiver meeting the strict UL standards for line security. This AA operation meets the requirements for multiplex type communication as defined in UL 1610, section 70.2 - exceptions a, b, c, and d, dated 12/6/94. Should any alarms occur, both the data network and backup dialer line are used to transmit the alarm.

#### **Combination Burglary/Fire Systems**

For combined burglary and fire alarm systems, UL has an established set of requirements that specify certain hardware redundancies and communication protocols to ensure that indications of a fire or burglary are properly transmitted at the time of their occurrence.

Typically in a combined system, two dialer phone lines are dedicated to the alarm. This limits the interruption of normal business phone traffic caused by supervisory communication requirements of the alarm system. With the DMP system communicating over a data network however, this interruption of business phones is avoided by the panel's ability to send its traffic at any time directly over the network. The business phone lines are then used only to send a nightly Recall Test report or the report of an actual alarm to the central monitoring station. This eliminates the monthly expense of two phone lines.

The DMP products meeting the UL requirements include the listed Model 893 Dual Phone Line Module used in supervising two separate analog phone lines and the Model 462N Network Interface Card listed as a supplementary signaling device for commercial fire systems.

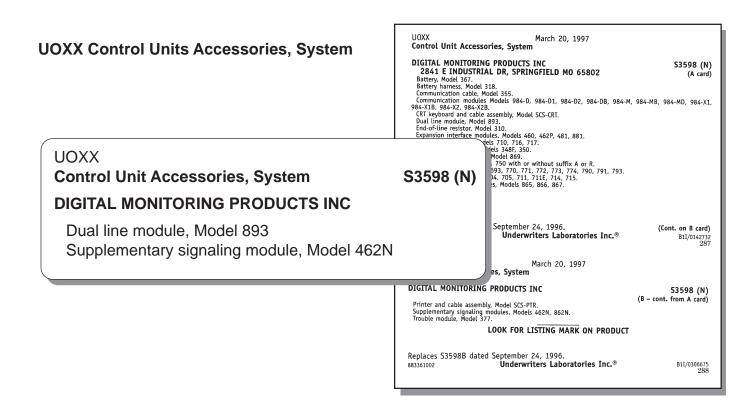
If the requirement for the two dedicated phone lines is made by the local AHJ for the purpose of avoiding situations where the burglary/fire alarm system is incapable of communicating, the DMP panels have a built-in ability to seize the phone line and interrupt any call in progress as required by NFPA and UL. Instructions to the system installer for correctly wiring of the telephone jacks is also included in all DMP installation guides as an added measure of ensuring the system's communicating ability.

#### Non-Certificated Burglary/Fire Systems

If the installed system is being used as the required fire alarm panel, and UL AA Burglary certificates are not being issued, then network communication is strictly supplementary and no UL listing is required for the network equipment. Communication of alarm and system events can occur over private data networks without the requirement that all devices be UL Listed for this particular application.

Data Networks

JOJZ August 14, 1996 Control Units, System				l	JOJZ Contro	l Units, Syste
IGITAL MONIT MO 65802	ORING PRODUCTS I	NC , SPRINGFIELD	S3598 (N) (A card)			
<b>Type</b> S (receiving), RS (receiving),	Service Sig	ype naling N DAC, MX	odels SCS-1			
(receiving)	A, M, SS, WF		812-A, -B, -C, -D, -E,			
(protected	A, M, SS, WF	MX	2XR, XR200, XR5FC 181 <u>2-ABCD. E.</u>			
oremises) S (protected premises)	A, M, SS, WF	1912, 191 AC, MX 191				
RS (protected premises)	A, M. WF	NC 191		System		S3598 (N)
			DIGITAL MONI	TORING PRODU	ICTS INC	
3361002 H2100	Underwriters Labo	oratories Inc.®	Туре	Type Service	Type Signaling	Models
UOJZ Control Unit	Augus ts, System	14, 1996	CS (receiving)	A, M, SS, WF	DAC, MX	SCS-1
DIGITAL MO	ONITORING PRODUC	TS INC	RS (receiving)			
RS (protected premises)	A, M, SS, WF	DAC	P (receiving)			
2841 E IND	USTRIAL DR LOOK FOR LISTING	MARK ON PROD	P (protected premises)	A, M, SS, WF	MX	XR200
	8A and B (two cards) re	place S3598 dated	CS (protected	A, M, SS, WF	DAC, MX	XR200
Cards S3598 883361002	N2100 Underwriters	Laboratories Inc.º	premises)			



#### Summary

The preceding sections of this Application Note have been designed to detail the UL requirements for communicating burglar and fire alarm information over public and other data networks and the specific manner in which DMP control panels and accessory devices meet those requirements. To ensure communication integrity, UL requires all equipment used in these applications to be listed under existing classifications and meet a rigid set of operating conditions to ensure their ability to communicate to the central monitoring station.

The XR200 Command Processor Panel, used in conjunction with the 893 Dual Phone Line Module and/or the 462N Network Interface Card, and communicating to the UL Listed SCS-1 Receiver are currently the only alarm system components approved for this application and thus alone can offer an immediate end to dependence on outdated and expensive analog communication technologies.

#### **Glossary of Terms**

The following terms are accompanied by definitions compatible with their use in this application note.

**Analog** - The transmission of information over a dial up phone line using voice or tones.

**Data** - A stream of binary digits representing alarm and system information sent from a burglary/fire alarm control panel to an alarm receiver.

**Dialer** - The communicating components of a burglary/fire alarm system that use the public switched telephone network to send alarm and system information to a central monitoring station.

**Digital** - The transmission of electronic data as bits or digits to a central monitoring station through a computer link instead of analog tones.

**Ethernet** - A Local Area Network (LAN) cabling system originally developed by Xerox, Intel, and Digital. Ethernet has a bandwidth of 10 Mbps and uses the CSMA/CD access method.

**Pulse Tones -** A method of counting analog tones to communicate alarm information to a central station instead of computer data.

	Category	Products	File #
AMCX	Central Station	XR200, 462N, SCS-1	S3598
APAW	Police Connect	XR200, 462N, SCS-1	S3598
APOU	Proprietary Alarm	XR200, 462N, SCS-1	S3598
UOJZ	Central Station	XR200, SCS-1	S3598
UOXX	Control Unit Access., Suppl.	462N, 893	S3598
NWGQ	Information Technology Equip.	Ether-Com™	EI75008

### **Listing Table**

Digital Monitoring Products, Inc.

Data Networks