Contents

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 high-speed, secure transmission of data over phone and network systems. Digital data communication is fast, 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.

UL Approval of Public Data Networks

In March of 2001, UL approved DMP panels for use with communication over public data networks, such as intranets and the Internet. UL states, "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."

In March of 2002, UL also approved communication over public networks for use in fire applications as required in UL 864 Control Units for Fire-Protective Signaling Systems.

The DMP XR200 Command Processor™ Panel, 462N Network Interface Card, SCS-1 or SCS-1R Receiver, and the iCOM or iCOM-E Internet Alarm Router are all listed by UL for Central Station, Police Connect, and Proprietary Burglary applications.

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 does not function over a digital network but instead requires a voice grade phone line. These panels cannot operate in supervised or polled environments 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.

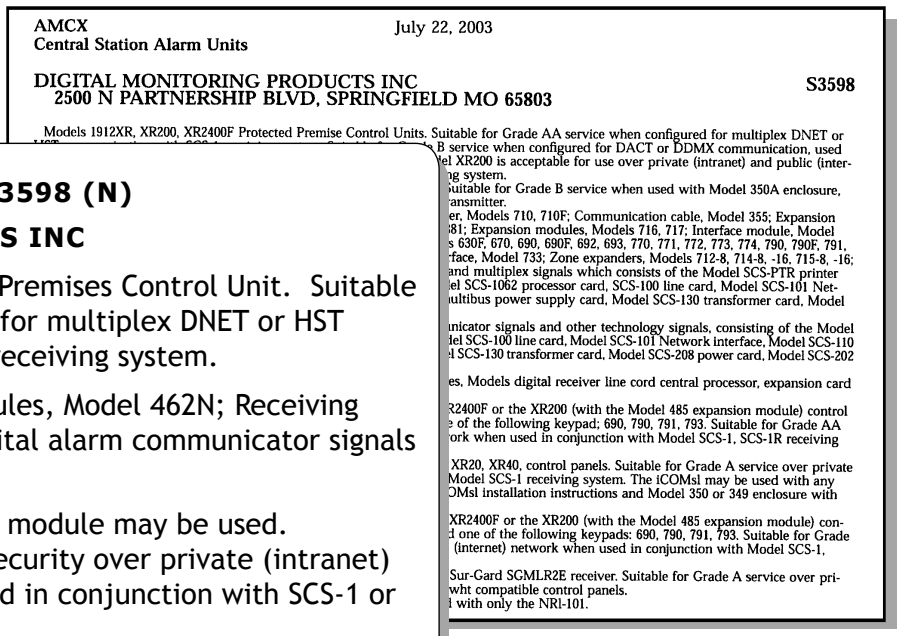
DMP DATA NETWORK CERTIFICATES APPLICATION NOTE

DMP network communication of today

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

AMCX Central Station Alarm Units


AMCX July 22, 2003
Central Station Alarm Units

DIGITAL MONITORING PRODUCTS INC S3598
2500 N PARTNERSHIP BLVD, SPRINGFIELD MO 65803

Models 1912XR, XR200, XR2400F Protected Premise Control Units. Suitable for Grade AA service when configured for multiplex DNET or
B service when configured for DACT or DDMX communication, used
el XR200 is acceptable for use over private (intranet) and public (inter-
g system.
uitable for Grade B service when used with Model 350A enclosure,
ansmitter.
er, Models 710, 710F; Communication cable, Model 355; Expansion
81; Expansion modules, Models 716, 717; Interface module, Model
s 630F, 670, 690, 690F, 692, 693, 770, 771, 772, 773, 774, 790, 790F, 791,
face, Model 733; Zone expanders, Models 712-8, 714-8, -16, 715-8, -16;
and multiplex signals which consists of the Model SCS-PTR printer
el SCS-1062 processor card, SCS-100 line card, Model SCS-101 Net-
ultibus power supply card, Model SCS-130 transformer card, Model

nicator signals and other technology signals, consisting of the Model
el SCS-100 line card, Model SCS-101 Network interface, Model SCS-110
l SCS-130 transformer card, Model SCS-208 power card, Model SCS-202

es, Models digital receiver line cord central processor, expansion card

R2400F or the XR200 (with the Model 485 expansion module) control
e of the following keypad; 690, 790, 791, 793. Suitable for Grade AA
ork when used in conjunction with Model SCS-1, SCS-1R receiving

XR20, XR40, control panels. Suitable for Grade A service over private
Model SCS-1 receiving system. The iCOMsl may be used with any
OMsl installation instructions and Model 350 or 349 enclosure with

XR2400F or the XR200 (with the Model 485 expansion module) con-
d one of the following keypads: 690, 790, 791, 793. Suitable for Grade
(internet) network when used in conjunction with Model SCS-1,

Sur-Gard SGMLR2E receiver. Suitable for Grade A service over pri-
wht compatible control panels.
l with only the NRI-101.

AMCX
Central Station Alarm Units S3598 (N)

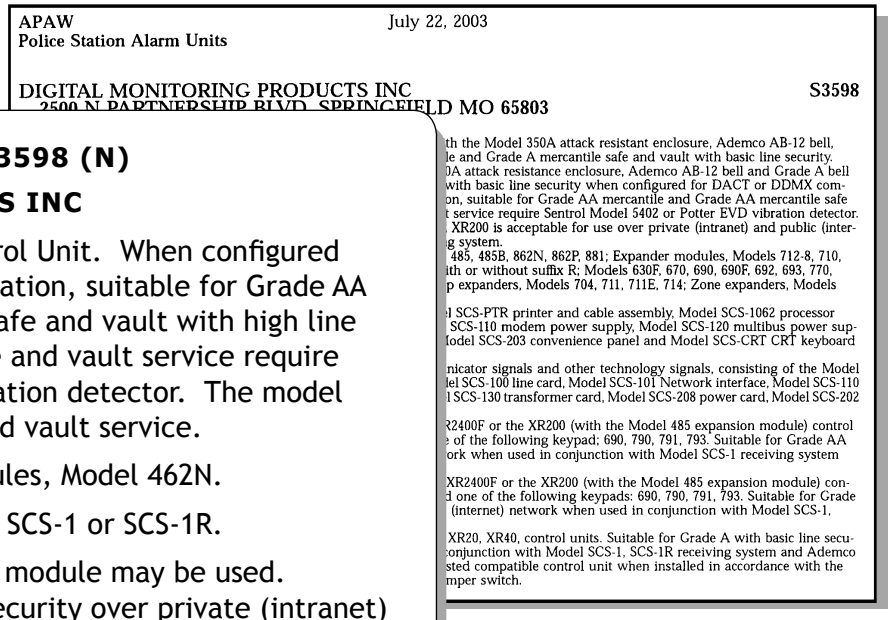
DIGITAL MONITORING PRODUCTS INC

Models XR200 and XR2400F Protected Premises Control Unit. Suitable for Grade AA service when configured for multiplex DNET or HST communication with SCS-1 or SCS-1R receiving system.

Accessories: Expansion interface modules, Model 462N; Receiving system, Model SCS-1 or SCS-1R for digital alarm communicator signals and multiplex signals.

Model iCOM or iCOM-E communication module may be used. Suitable for Grade AA with high line security over private (intranet) or public (Internet) network when used in conjunction with SCS-1 or SCS-1R receiving system.

APAW Police Station Alarm Units


APAW July 22, 2003
Police Station Alarm Units

DIGITAL MONITORING PRODUCTS INC S3598
2500 N PARTNERSHIP BLVD, SPRINGFIELD MO 65803

th the Model 350A attack resistant enclosure, Ademco AB-12 bell,
le and Grade A mercantile safe and vault with basic line security.
0A attack resistance enclosure, Ademco AB-12 bell and Grade A bell
with basic line security when configured for DACT or DDMX com-
on, suitable for Grade AA mercantile and Grade AA mercantile safe
t service require Sentrol Model 5402 or Potter EVD vibration detector.
XR200 is acceptable for use over private (intranet) and public (inter-
g system.
485, 485B, 862N, 862P, 881; Expander modules, Models 712-8, 710,
ith or without suffix R; Models 630F, 670, 690, 690F, 692, 693, 770,
p expanders, Models 704, 711, 711E, 714; Zone expanders, Models

l SCS-PTR printer and cable assembly, Model SCS-1062 processor
SCS-110 modem power supply, Model SCS-120 multibus power sup-
lodel SCS-203 convenience panel and Model SCS-CRT CRT keyboard

nicator signals and other technology signals, consisting of the Model
el SCS-100 line card, Model SCS-101 Network interface, Model SCS-110
l SCS-130 transformer card, Model SCS-208 power card, Model SCS-202

R2400F or the XR200 (with the Model 485 expansion module) control
e of the following keypad; 690, 790, 791, 793. Suitable for Grade AA
ork when used in conjunction with Model SCS-1 receiving system

XR2400F or the XR200 (with the Model 485 expansion module) con-
d one of the following keypads: 690, 790, 791, 793. Suitable for Grade
(internet) network when used in conjunction with Model SCS-1,

XR20, XR40, control units. Suitable for Grade A with basic line secu-
onjunction with Model SCS-1, SCS-1R receiving system and Ademco
sted compatible control unit when installed in accordance with the
mper switch.

APAW
Police Station Alarm Units S3598 (N)

DIGITAL MONITORING PRODUCTS INC

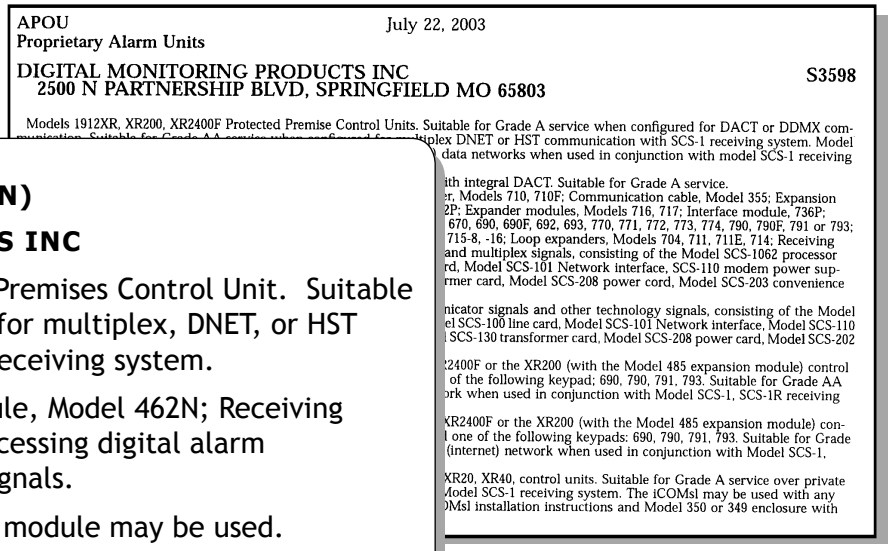
Model XR200 Protected Premises Control Unit. When configured for multiplex, DNET, or HST communication, suitable for Grade AA mercantile and Grade AA mercantile safe and vault with high line security. All grades of mercantile safe and vault service require Sentrol Model 5402 or Potter EVD vibration detector. 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 or SCS-1R.

Model iCOM or iCOM-E communication module may be used. Suitable for Grade AA with high line security over private (intranet) or public (Internet) network when used in conjunction with SCS-1 or SCS-1R receiving system.

APOU Proprietary Alarm Units



APOU July 22, 2003
Proprietary Alarm Units

DIGITAL MONITORING PRODUCTS INC S3598
2500 N PARTNERSHIP BLVD, SPRINGFIELD MO 65803

Models 1912XR, XR200, XR2400F Protected Premise Control Units. Suitable for Grade A service when configured for DACT or DDMX communication. Suitable for Grade AA service when configured for multiplex DNET or HST communication with SCS-1 receiving system. Model ... data networks when used in conjunction with model SCS-1 receiving ...ith integral DACT. Suitable for Grade A service. ...r, Models 710, 710F; Communication cable, Model 355; Expansion ...2P; Expander modules, Models 716, 717; Interface module, 736P; ...670, 690, 690F, 692, 693, 770, 771, 772, 773, 774, 790, 790F, 791 or 793; ...715-8, -16; Loop expanders, Models 704, 711, 711E, 714; Receiving ...and multiplex signals, consisting of the Model SCS-1062 processor ...rd, Model SCS-101 Network interface, SCS-110 modem power sup... ...rmer card, Model SCS-208 power cord, Model SCS-203 convenience ...nicator signals and other technology signals, consisting of the Model ...el SCS-100 line card, Model SCS-101 Network interface, Model SCS-110 ...l SCS-130 transformer card, Model SCS-208 power card, Model SCS-202 ...2400F or the XR200 (with the Model 485 expansion module) control ... of the following keypad; 690, 790, 791, 793. Suitable for Grade AA ...ork when used in conjunction with Model SCS-1, SCS-1R receiving ...XR2400F or the XR200 (with the Model 485 expansion module) con...l one of the following keypads: 690, 790, 791, 793. Suitable for Grade ...(internet) network when used in conjunction with Model SCS-1, ...XR20, XR40, control units. Suitable for Grade A service over private ...Model SCS-1 receiving system. The iCOMsl may be used with any ...OMsl installation instructions and Model 350 or 349 enclosure with

APOU
Proprietary Alarm Units S3598 (N)

DIGITAL MONITORING PRODUCTS INC

Models XR200 and XR2400F Protected Premises Control Unit. Suitable for Grade AA service when configured for multiplex, DNET, or HST communication with SCS-1 or SCS-1R receiving system.

Accessories: Expansion interface module, Model 462N; Receiving system, Model SCS-1 or SCS-1R for processing digital alarm communicator signals and multiplex signals.

Model iCOM or iCOM-E communication module may be used. Suitable for Grade AA with high line security over private (intranet) or public (Internet) network when used in conjunction with SCS-1 or SCS-1R receiving system.

Multiplex communication

Additionally, UL requires that "the system meet the requirements for multiplex type communication." In meeting these requirements, UL has tested and listed the DMP XR200 Command Processor™ Panel, 462N Network Interface Card, and SCS-1 or SCS-1R 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.

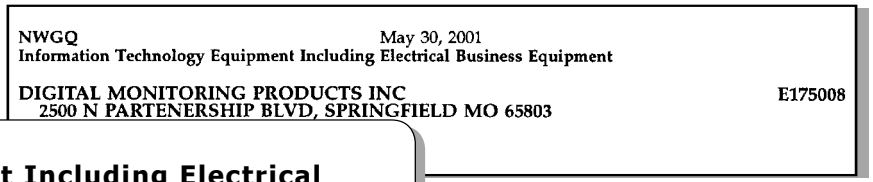
Transient protection

UL also requires that "the circuitry complies with the Input/Output Circuit Transient Tests." The DMP 462N and SCS-1 or SCS-1R 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™ and Ether-Com XR Ethernet, iCOM™ Internet Alarm Router, and iCOM-E™ Network Internet Router Interfaces are 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 Information Technology Equipment Including Electrical Business



NWGQ May 30, 2001
Information Technology Equipment Including Electrical Business Equipment

DIGITAL MONITORING PRODUCTS INC E175008
2500 N PARTENERSHIP BLVD, SPRINGFIELD MO 65803

NWGQ
Information Technology Equipment Including Electrical Business E1750008 (N)

DIGITAL MONITORING PRODUCTS INC

Micro serial server, Models ETHER-COM, Ether-Com XR, iCOM and iCOM-E.

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 using an 893 Dual 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 or SCS-1R 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 alarm system supervisory communication requirements. 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.

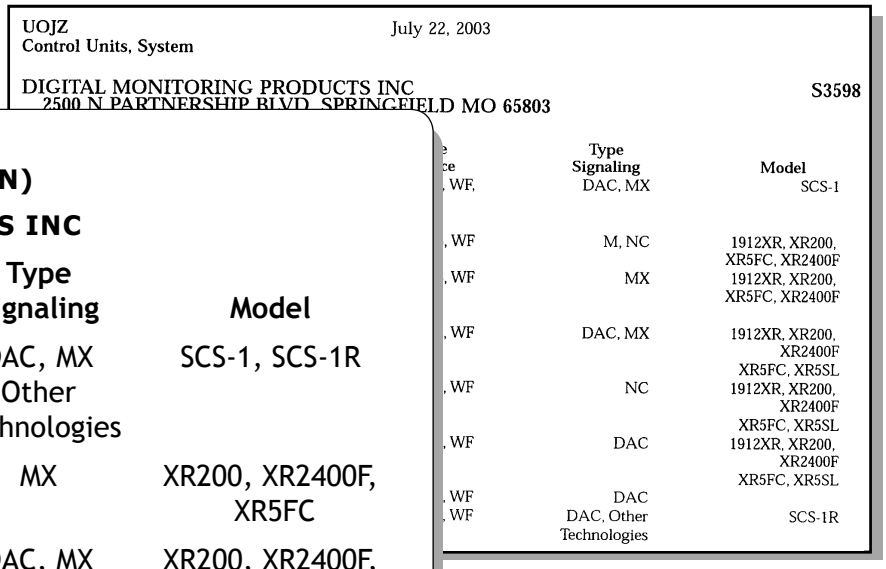
The DMP products meeting the UL requirements include the listed Model 893 Dual Phone Line Module used in supervising two separate analog phone lines and the Model 462N Network Interface Card listed as a supplementary signaling device for commercial fire systems.

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 the telephone jacks are also included in all DMP installation guides as an added measure to ensure the system communication 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.

UOJZ Control Units, System



UOJZ
Control Units, System
July 22, 2003

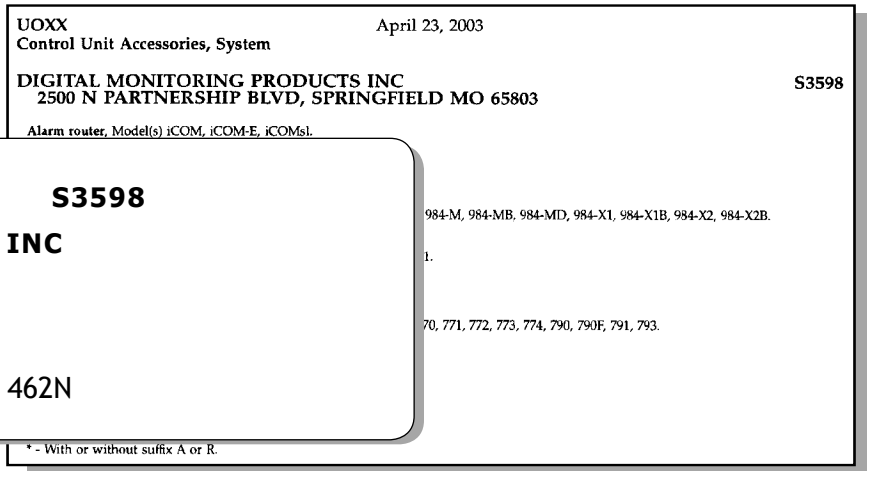
DIGITAL MONITORING PRODUCTS INC
2500 N PARTNERSHIP BLVD, SPRINGFIELD MO 65803
S3598

	Type Signaling	Model
, WF,	DAC, MX	SCS-1
, WF	M, NC	1912XR, XR200, XR5FC, XR2400F
, WF	MX	1912XR, XR200, XR5FC, XR2400F
, WF	DAC, MX	1912XR, XR200, XR2400F XR5FC, XR5SL
, WF	NC	1912XR, XR200, XR2400F XR5FC, XR5SL
, WF	DAC	1912XR, XR200, XR2400F XR5FC, XR5SL
, WF	DAC	
, WF	DAC, Other Technologies	SCS-1R

UOJZ
Control Units, System S3598 (N)
DIGITAL MONITORING PRODUCTS INC

Type	Type Service	Type Signaling	Model
CS (receiving), RS (receiving), P (receiving)	A, M, SS, WF	DAC, MX Other Technologies	SCS-1, SCS-1R
P (protected premises)	A, M, SS, WF	MX	XR200, XR2400F, XR5FC
CS (protected premises)	A, M, SS, WF	DAC, MX	XR200, XR2400F, XR5FC, XR5SL
RS (protected premises)	A, M, WF	NC	XR200, XR2400F, XR5FC, XR5SL
RS (protected premises)	A, M, SS, WF	DAC	XR200, XR2400F, XR5FC, XR5SL

UOXX Control Units Accessories, System



UOXX
Control Unit Accessories, System
April 23, 2003

DIGITAL MONITORING PRODUCTS INC
2500 N PARTNERSHIP BLVD, SPRINGFIELD MO 65803
S3598

Alarm router, Model(s) iCOM, iCOM-E, iCOMsl.

984-M, 984-MB, 984-MD, 984-X1, 984-X1B, 984-X2, 984-X2B.

1.

70, 771, 772, 773, 774, 790, 790F, 791, 793.

* - With or without suffix A or R.

UOXX
Control Unit Accessories, System S3598
DIGITAL MONITORING PRODUCTS INC

Alarm Router, Model iCOM or iCOM-E

Dual line module, Model 893

Supplementary signaling module, Model 462N

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 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 with the iCOM™ Internet Alarm Router or iCOM-E™ Network Alarm Router, and communicating to the UL Listed SCS-1 or SCS-1R Receiver are currently the only alarm system components approved for this application. Thus only DMP 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.

Listing Table

Category	Products	File #
AMCX Central Station	XR200, 462N, SCS-1, SCS-1R, iCOM, iCOM-E	S3598
APAW Police Connect	XR200, 462N, SCS-1, SCS-1R, iCOM, iCOM-E	S3598
APOU Proprietary Alarm	XR200, XR2400F, 462N, SCS-1, SCS-1R, iCOM, iCOM-E	S3598
UOJZ Central Station	XR200, XR2400F, 462N, SCS-1, SCS-1R, iCOM, iCOM-E	S3598
UOXX Control Unit Accessories	iCOM, iCOM-E, 462N, 893	S3598
NWGQ Information Technology Equipment	Ether-Com™, Ether-Com XR, iCOM, iCOM-E	E175008

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