ATT-TELCO-801-601-900

Common System: Alarm Standards Practice

Abstract:

AT&T Alarm Standards Practice, ATT-801-601-900, provides alarm descriptions and assignment procedures for the installation and turn-up for equipment in Central Offices, and remote locations in the 13 State Regions. This document is intended primarily for the Engineering, NMA Database, and Central Office personnel who will be responsible for provisioning and maintaining these products. ATT-801-601-900 is for use in the overall alarm process applied throughout all AT&T Regions. This document replaces the previous Alarm Standards Technical Manual, BSP 801-601-900MP.

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Reason For Current Issue

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INTRODUCTION

ATT-801-601-900 is published on behalf of the AT&T Alarm Standard Committee as a guide for the Engineering, NMA Database, and Central Office personnel, who will be responsible for provisioning, installation and maintenance of these systems or equipment. It is not intended to provide complete design specifications or parameters nor the assurance of the quality of performance of such equipment. ATT-801-601-900 provides alarm descriptions and assignment procedures for the installation and turn-up for equipment in the central office and remote locations.

The AT&T LEC reserves the right to revise this Technical Publication for any reason, including, but not limited to, conformity with criteria or standards promulgated by governmental or regulatory agencies; utilization of advances in the state of the technical arts; or to reflect changes in the design of equipment techniques or services described or referred to herein.

Section 3, Philosophy, and Section 4, Methodology, contained herein, are the root guidelines and in essence are the fundamental foundation of the AT&T Alarm Standards. Where conflicting information exists, ATT-801-601-900 shall prevail. This is a living document and, as such, is slated for periodic review and modification, as required, by the AT&T Alarm Standards Committee.

1. REASON FOR REISSUE

Issue	Date Modified	Brief Description of Changes	Author
Issue 5	05/01/2005	Original APEx Doc.	R.Derks
Issue 5	06/28/2005	Update Document Links	R.Derks
Issue 5	10/07/2005	Update and add new documents: 029,031,057,064,077 and 083	R.Derks
Issue 5	11/18/2005	Update and add new documents: 092,095,096,103,126,127,129,131 and 166	R.Derks
Issue 5	02/09/2006	Update and add new documents:208,215 and 220	R.Derks
Issue 5	03/31/2006	Update doc SBC to ATT	R.Derks
Issue 5	05/26/2006	Update hyperlinks to ATT and add docs 221 and 225	R.Derks
Issue 5	08/01/2006	Update and add new documents:231,233 and 234	R.Derks
Issue 5	08/25/2006	Update Links, added 241	R.Derks

Issue 5	11/17/2006	Update condition codes and add new documents: 242, 243	R.Derks
Issue 5	01/25/2007	Update condition codes and add new documents: 244, 245	R.Derks
Issue 5	10/17/2007	Update condition codes and add new documents: 247, 248, 249	R.Derks
Issue 5	05/29/2008	Update condition codes in document Remote Terminal Power and Environmental .163 and add new documents: 251, 252	R.Derks
Issue 5	06/20/08	Update: 127, 274	R.Derks
Issue 5	07/18/08	Update 307; Added: 253, 254	R.Derks
Issue 5	09/26/08	Added: 255, 257, 264	R.Derks
Issue 5	02/10/09	Added conditions for Regen and Classic T to .162 & .163	R.Derks

2. CREDO OF THE ALARM STANDARDS

PREFACE : As office conversions and high speed facilities bring Digital Technology to the forefront in the AT&T Local Exchange Carriers, the need for an equally effective alarm network has become evident. Recognizing that the AT&T Local Exchange Carriers were operating without uniform alarm standardization policies and procedures, a company wide committee was formed to address this need and create a plan to resolve any alarm deficiencies that may exist. Before any meaningful investigation could begin with regard to determining the actual state of our Alarm Network, a base from which to compare was necessary.

As a result of the committees efforts to establish a comparative base and standards, ATT-801-601-900 has been published. This document has been prepared as a standardization of all Central Office transmission, transport, loop, power and environmental equipment alarms. Extensive research was performed to ensure that 100% of all alarms possible from each piece of equipment were detailed and defined therein. This effort also included significant interpretation from the vendors nomenclature to our own.

The purpose of ATT-801-601-900 is to provide the appropriate organizations with information on how alarms should be provisioned and maintained in all locations within the Company. These standards are to be considered a working tool, and therefore, will require periodic reviews, corrections, and updates as the needs of the field, availability of equipment, and advancements in technology dictate.

This document will be supplemented as additions and / or changes are required. All requests for changes, additions, or deletions in this material, should be referred to the AT&T Alarm Standards Committee. As necessary, the Alarm Standards Committee will be assembled to review and approve any significant changes. This panel of subject matter experts is comprised of individuals from the Engineering, NMA, Operations, Maintenance, Planning, and Procurement organizations that have been selected for their knowledge of Central Office equipment and alarms.

3. PHILOSOPHY of ALARM STANDARDS

The following statements and directives represent the universal beliefs, concepts, and attitudes of the AT&T Local Exchange Carriers (LECs) Alarm Standards Committee. These thoughts address the underlying theory as well as specific processes and actions regarding the sphere of "alarm" activity. This is the philosophy of alarm application within the AT&T LECs to be adopted by each market area / business unit entity.

3.1. OPERATIONAL SUPPORT SYSTEM

3.1.1. SURVEILLANCE

Any currently approved surveillance system or operational support system (OSS) may be designated as the monitoring and control center for specific equipment / devices. These designated surveillance centers shall be responsible for the surveillance of the assigned equipment / devices on a 7 x 24 x 365 basis.

3.1.2. NMA

Presently, Network Monitoring and Analysis (NMA) shall be the primary OSS for *telemetry alarms*

NOTE: *Telemetry Alarms* are those alarms intended to be monitored at a remote surveillance site such as a NOC.

/ messages / events / controls for most transmission, transport, switch, loop, power and environmental equipment. Accordingly, all compatible equipment telemetry alarm / message sets shall be delivered to NMA. Telemetry alarm / message sets that are not currently supported by NMA, such as Simple Network Management Protocol (SNMP), shall be delivered to an appropriate surveillance system, as determined by a coordinated effort between the appropriate Project Manager, Network Operations, and OSS Planning.

3.1.3. NOC

Network Operations Centers (NOCs) may utilize Network Management Systems (NMSs), other than NMA, to monitor alarms and equipment status, when required by incompatibility issues.

3.1.4. NMS

NMSs, other than NMA, may function as primary alarm collection OSSs. Ultimately, the objective is to incorporate compatible interfaces between the other NMS and NMA.

3.2. NETWORK ELEMENTS

3.2.1. CENTRAL OFFICE

All *network elements (NE)*

NOTE: The term *"Network Element"* is used within this document to refer to any and all equipment other than switching equipment deployed in a CO or remote location. This would include, but is not limited to transport, conditioning, power and testing equipment as well as environmental and building operations sensors.

deployed in a Central Office (CO) environment shall have the capability of producing telemetry alarms and office alarms (audible and / or visual) for failed or threshold activities.

3.2.2. ALARM TERMINATION

All NEs installed in the Central Office (CO) and Remote environments must have the telemetry alarms, per the Alarm Standards Technical Practice (ASTP) sub-section, cross-connected and tested (per *ATT-TP-76300* and *ATT-TP-76900*) to the Alarm Collection System (ACS) prior to the completion and turn up of the equipment.

With the exception of Gateway Network Elements as defined in *Section 4.5.2* , all NEs shall report alarms independently from other NEs.

3.2.3. REMOTE

All NEs deployed in a remote location shall have the capability of producing telemetry alarms for failed or threshold activities.

3.2.4. ALARM / MESSAGE SETS

Standard alarm / message sets

NOTE: *Standard alarm / message sets* refers to the full description of an alarm as contained in Part 5.2 of the specific NE details document in the Alarm Standards ATT-801-601-900.XXX and include such things as the alarm name, severity, affect on service, condition type, etc.

for all NEs shall be determined during the Product Development Process

3.2.5. DEFINED

Standard alarm / message sets shall be defined by the Core Members and Local Representatives of the AT&T LEC Alarm Standards Committee.

3.2.6. RECORDS

Standard alarm / message sets shall be recorded in the ATT-801-601-900 prior to NE deployment.

3.2.7. RESPONSIBILITY

Organizational responsibility, for the engineering, interconnection, cross-connection, assignment, and testing of standard alarm / message sets associated with all newly deployed NEs, shall be in accordance within Sections *3.7* , *3.9* , *4.10* *and* *4.11* of this document. Delegation of the actual activities may result in some variation among the market areas / business units but the basic responsibility shall remain as defined herein.

3.3. STANDARD ALARM / MESSAGE SETS

3.3.1. CONSISTENCY

Consistent usage and assignment of standard alarm / message sets is required. On newly deployed NEs, NMA shall accept only standard telemetry alarm / message sets as defined by ATT-801-601-900. Alarm messages that deviate from the standard telemetry alarm / message set shall not be databased by NMA. The standard telemetry alarm / message set may be enhanced through the addition of "alarm notes", at the discretion of the local NMA / NOC.

3.3.2. PERFORMANCE MONITORING

Performance monitoring (PM) and other type indicators, commonly used in the maintenance of Power Plants (not to be confused with the defined standard alarm / message sets), may be used in conjunction with adjunct devices, such as the Lorain DGU, at the discretion of the AT&T LEC Equipment Engineer. However, these PM type indicators, which are supplemental to the defined standard alarm / message sets, are not to be reported to NMA or cross-connected into the AT&T Alarm Network.

3.4. TELEMETRY ALARM TYPES

3.4.1. SELECTION

The selection of the telemetry alarm type utilized in conjunction with the deployment of a NE shall be dependent upon the following criteria:

A. Adherence to the ATT-801-601-900.
B. The availability of an appropriate *Alarm Collection System (ACS)*

NOTE: *Alarm Collection System* is a generic term referring to the devices deployed in a CO that collect or monitor alarm activity, mediate the alarm inputs to an appropriate protocol and then report the alarm occurrence to NMA.

for the alarm type selected.
C. The availability of funding to secure or upgrade to an appropriate ACS for the alarm type selected.

3.4.2. PRIORITY

In general, the preferred selection of telemetry alarms / message sets will be as follows:

TL1 / TCP-IP	Most Preferred
TL1 (sync) X.25	Second Most Preferred
TL1 (async)	Third Most Preferred
Serial (TBOS)	Fourth Most Preferred
Discrete	Least Preferred

3.4.3. OPTIONAL

The use of Simple Network Management Protocol (SNMP) for message based alarm and status reporting shall only be considered when the alarms are being monitored at a specialized Enhanced Network Operations Center (ENOC) that utilizes a Network Management System other than NMA.

3.4.4. FUTURE

Although the long-term direction of AT&T, along with other Regional Bell Operating Companies, has been to encourage SONET vendors to provide standards based GDMO / CMISE NEs and Operations Systems management interfaces, it is recognized that there has been a lag in the market place in an overall acceptance, development, and implementation of GDMO / CMISE NEs and OSSs. For this reason, until the AT&T LECs can determine that a commitment exists, from the SONET NE and OSS vendor community to proceed with this interface development, the AT&T LECs do not plan to deploy CMISE NEs. It should be noted, however, that there is currently an effort generated by another non-AT&T Regional Company to complete the CMISE interface at NMA to close the gap between the TL-1 and OSI / CMISE interface in NMA.

3.5. LOCAL OFFICE ALARM SYSTEM

3.5.1. REQUIRED

A local office alarm system shall be required at each *manned CO* .

NOTE: *Manned CO* is one in which a technician is regularly scheduled during normal business hours, typically 8:00 AM - 5:00 PM, Monday - Friday.

Responsibility for the determination of the type of office alarm system utilized within each CO shall reside with the market areas. Refer to Sections *3.5.6 and 3.5.7* for additional discussion.

3.5.2. DEFINITION

Local Office Alarm systems provide audible and / or visual indications simultaneous with central office network element failures. These signals are intended to alert local (on site) maintenance forces that an alarm condition exists and to supplement both internal (on the bay / panel) equipment alarms and telemetry alarms. Visual indications categorize alarms by the use of several devices, including, but not limited to, colored lamps, LEDs, LCD displays, etched or engraved display panels, and / or CRT monitors. Some systems also make use of distinctive audible tones. Maintenance personnel are directed to a failure by the audible and / or visual indications on a local office alarm unit or by similar indications from a network of floor, main aisle and aisle units.

3.5.3. ACCEPTABLE TYPES

Typical embedded local office alarm systems may include the following: AT&T / Lucent NJ01046, NJ01207, NJ00508, CPAS; (Discontinued Availability) Dumb terminals and printers; Alarm Display Panels; Dantel Status Monitors-(Manufacturer Discontinued); TSI BR series Alarm Display Units (ADUs); Dantel Visionmaster.

3.5.4. APPLICABLE

Unless otherwise specifically defined as exempt, office alarms (audible and / or visual), as appropriate for the specific application and as defined by ATT-801-601-900, shall be engineered and assigned for all newly deployed NEs in a manned CO.

3.5.5. EXEMPTION

Any Intelligent Network Element (INE) that provides customer service and has established two-way message based communication to a surveillance Operations Support System (OSS) is exempt from local alarm requirements as defined in Section 3.5.4.

3.5.6. CAPPING LEGACY DEVICES

Because many of the local office alarm systems currently in use have become obsolete and are no longer supported by the manufacturer, it is strongly recommended that each market area begin to devise migration strategies for the capping, and eventual replacement, of said products with those currently rated as standard. The most common example of embedded, yet obsolete, local office alarm systems, is the AT&T / Lucent NJ series. All NJ type local office alarm systems are now rated Discontinued Availability (D.A.).

3.5.7. STATUS MONITOR

Currently, the Dantel Visionmaster is the recommended standard local office alarm product. The Visionmaster may be augmented with approved TSI ADUs, when deemed necessary

3.5.8. STANDARDS

ATT-801-601-900 shall be strictly adhered to as new NEs are deployed in a CO.

3.5.9. RETROFIT

The retrofit of a CO to meet the ATT-801-601-900 shall be addressed on a local basis.

3.6. ALARM COLLECTION SYSTEM PRODUCTS

3.6.1. SELECTION

The selection process for choosing the appropriate standard ACS for acquisition, conversion, compression, and / or transmission of alarm related information shall be based upon this document, Product Approval Notices (PANs), and documentation maintained by OSS Planning.

3.6.2. DEVICES

Currently, the standardized PRIMARY alarm collection products for E2A discrete / serial and TL1 applications are as follows:

ACS Device Table:

DANTEL	
DJ05512	14 Pos. Shelf. Slots for CPMs, Fuse Mod. Control Point only shelf. Primarily used in MIDWEST.
DJ05531	14 Pos. Shelf. Slots for ESA, Fuse Mod., -40 MAP, SMAC, Hub Mod. E2A Protocol output. Primarily used in MIDWEST.
DJ05532	14 Pos. Shelf. Slots for Aud. Alm. Mod., Hub Mod., Fuse Mod. Primarily used in MIDWEST.
DJ05607	14 Pos. Virtual Collocation Shelf. Primarily used in SOUTHWEST.
DJ05735	14 Pos. Shelf, Slots for SMACs, -40 / -41 MAPs, Hub Mods., TL1 GPP, Fuse Mod., TL1 Protocol output. Primarily used in SOUTHWEST (TX).
DJ05791	14 Pos. E2A small office shelf.
DJ51100	WebMon Edge SNMP ACS
B15-46132	RemoteMaster - Rack mount with 64 discrete, 8 TBOS ports, 16 Control outputs with DCP / F, TBOS or TL1 output protocol.
B15-46310	PointMaster Eagle- Frame block capable of terminating 64-256 discrete alarms, 4-32 Control outputs, with TBOS, DCM, DCP / F or TL1 output protocol.

ACS Device Table Continued:

WESTRONIC

WS1000	Frame block capable of terminating 64-128 discrete alarms, 8-16 Control outputs, with TBOS output protocol.
WS2000	Rack mount capable of 4-31 TBOS ports with E2A output protocol. Expander units required for discrete alarm collection or control outputs.

3.6.3. GROWTH

Growth of the AT&T / LUCENT products, such as E2A APR, E2A-DAS, E2A-SAC, CDO Satellite, etc. is no longer economically supportable. Utilization of existing capacities may continue until exhausted or as determined by local policies. However, it is strongly recommended that each market area embark upon a strategy to migrate from any embedded AT&T / LUCENT E2A products to the company standards of Dantel or Westronic in a phased approach.

3.6.4. BUILDING ENVIRONMENTAL

A "summary only" set of building / environmental alarms at each CO or remote location shall be delivered to NMA. Independent monitoring of detailed, comprehensive building alarms shall continue to be the responsibility of the Building Operating Center (BOC). Refer to Section 4.15 , and ATT-801-601-900.162, ATT-801-601-900.163 and ATT-801-601-900.164 for information regarding alarm details, termination methodology and organizational responsibilities associated with building alarms.

3.6.5. REMOTE

At remote locations not equipped with an ACS, the "overhead" capabilities of the in-place transmission equipment may be utilized to carry alarms to the CO prior to adding an ACS. However, the use of "overhead" or "housekeeping" points shall be limited to the amount available from a single network element. If more capability is needed an ACS shall be placed and all alarms shall be removed from the "overhead" to the ACS.

3.7. ALARM TESTING AND ACCEPTANCE

3.7.1. RESPONSIBILITIES

All telemetry alarms for provisioned NEs shall be validated by the NE Installation Vendor (or party as specified by local practices), from the NE through the alarm network to NMA, prior to job completion and acceptance. All the alarm testing requirements, as specified by this document, *ATT-TP-76300* and by *ATT-TP-76900* , shall be performed before turnover

of telecommunications equipment to the AT&T LEC. Refer to *Section 3.9.3* for alarm responsibilities associated with pre-provisioned NEs.

3.7.2. TEST RECORDS

By utilizing the Test Record, specified by *ATT-TP-76300* , the Installation Vendor (or party as specified by local practices) shall document that the required alarm testing has been performed for provisioned equipment.

3.7.2.1. RESULTS

Upon completion of testing, the Test Record shall be placed in the Yellow Wallet (Ref: *ATT-TP-76900*).

3.8. TELEMETRY ALARM POLLING

3.8.1. E2A POLLING

All appropriate *E2A*

NOTE: *E2A* is a binary, analog data, poll and respond alarm protocol. Each E2A device is assigned a polling address within NMA. When NMA polls the device across the network it will respond with alarm information / data based on its pre-set polling format. The E2A responses simply represent the a changes of state for specific alarm points, which in turn must be correlated within the NMA database to determine the equipment type, location, severity and meaning of the alarm.

telemetry alarm devices shall be *alarm polled*

NOTE: *Alarm Polling*, each alarm is reported a single time following a change of state. (e.g. A change of state would be from a no-alarm or idle condition to an alarmed condition, or, from an alarmed condition to an idle or no-alarm condition.) While this is the fastest form of polling due to the minimal amount of data being sent, there is a risk of missing a reported change of state.

from NMA. The revisit cycle time target for each station address is twelve (12) seconds or less.

3.8.2. LEGACY POLLING

Exceptions to this arrangement will be allowed in those instances where early vintage E2 / E2A telemetry alarm devices, such as the AT&T E2A-SAC, are currently deployed and in-service. These "early" devices cannot be alarm polled and must be *status polled* .

NOTE: *Status Polling,* each alarm is reported every time the device is polled. The absence of a reported alarm is assumed to equate to a cleared alarm. While this is the slowest form of polling due to the possible amount of data being sent, since each alarmed point is reported each polling cycle, the risk of missing an alarm is virtually eliminated.

Of the two polling modes, status polling is a much slower monitoring / reporting process. Thus, the target revisit time of twelve seconds cannot be met.

3.8.3. HYBRID POLLING

Where "early" devices are present, the use of *hybrid polling*

NOTE: *Hybrid Polling* is a combination of both "Alarm" and "Status" polling wherein each change of state is only reported during the next polling cycle, however, the device is periodically "status" polled to prevent any accidental loss of a change of state. This form of polling combines the benefits of all polling types.

techniques at the host computer (NMA) and / or a reduction in the number of status points monitored at the remote location can aid in reducing the revisit cycle time.

3.8.4. TL1

TL1

NOTE: *Transaction Language 1 (TL1)* is a message based alarm protocol that does not rely on polls and responses. The messages are formatted and autonomously sent at the time of the change of state occurrence.

alarm telemetry devices reporting to NMA will not require a pre-set polling mode.

3.9. ALARM ATTRIBUTES

3.9.1. ATTRIBUTES

The attributes that may be assigned to each scan point within a *display*

NOTE: *Display* is a specific group of 64 alarm points. Each display is assigned a number which is part of the overall addressing scheme used by NMA to determine the specific location, piece of equipment and alarm being reported.

are as follows:

Bipolar - (to send a "clear" change of state as well as a "fault" change of state); or Unipolar - (to send only the "fault" change of state); and

Alarm - (to recognize the input as a fault" or alarm condition); or Status - (to recognize the input as a non-alarm condition); and

Memory - (to capture "faults' that could "clear" between polls); or No Memory - (to "forget" faults that have cleared); and

Inverted - (non-alarm condition is "normally closed" or "1"); orNormal -(non-alarm condition is "normally open" or "O").

3.9.2. NMA PREFERRED

In most cases, the preferred attributes of a scan point used as an alarm indicator would be Bipolar, Alarm, Memory, and Normal.

3.9.3. INTELLIGENT NETWORK ELEMENTS

Alarm responsibilities, with regard to "pre-provisioned" INE elements, are as follows:

1. Infrastructure Planning will include the primary and secondary Gateway / NMA access office(s) for alarm collection on the transport document issued to Engineering.
2. After determination of Gateway locations, organizational responsibility shall be as follows:

    A. Engineering - Provide interconnect and assignment record of the NE telemetry alarms to the Equipment Terminal Block (Eqpt TB), Cable Concentrator, or Patch Panel, as appropriate.
    B. Engineering - Provide interconnect and assignment record of the NE local office alarms to the office alarm system in accordance with local policy.
    C. Engineering - Provide interconnect and assignment record of the ACS (input side) to the Assignment Terminal Block (Asgn TB), Cable Concentrator, or Patch Panel, as appropriate.
    D. Engineering - Provide interconnect and assignment record of the ACS (output side) to the Distributing Frame.

E. Engineering - Provide interconnect and assignment record of the data transport equipment (AI Switch, DSU / CSU, modem, etc.) to the Distributing Frame.
F. Installation Vendor - Validate interconnect continuity.
G. Local Operations / Market Area NMA - At the initial installation, validate the capability of the NE to deliver alarms to NMA.
H. Local Operations / Market Area NMA - After provisioning of a "gateway" NE, provide cross-connection (or patch) and record ACS assignment.
I. Local Operations / Market Area NMA - After provisioning of a "gateway" NE, just prior to service turn-up, test high speed and low speed alarms (TL1 and local).
J. Local Operations / Market Area NMA - During re-configuration of INE architecture or "gateways", test / validate all new alarms.

3.9.4. PRIMARY ACS

Transmission, transport, loop, power, environmental and other Central Office equipment capable of delivering telemetry alarms (message-based, *serial*

NOTE: *Telemetry Byte Oriented System (TBOS)* protocol is an example of "serial" alarms used within AT&T. This is a four-wire, analog data, poll and respond alarm protocol typically used by older asynchronous multiplexers. Up to eight (8) NEs can be combined in a bus arrangement on a single serial alarm port. Each NE is assigned a unique device address from 1-8 and will report one (1) or more display (64 points) worth of alarm data.

, or *discrete*

NOTE: *Discrete alarm,* also know as "parallel" alarms, are physical alarm points activated by relay contact closures within NEs and the resulting current flow is detected by the alarm collection equipment as a change of state for that alarm.

shall not be monitored via switch scan points as the PRIMARY Alarm Collection System, however, switch scan points may be utilized as a secondary, redundant alarm transport. Exceptions to this standard are noted in *Section 4.8* for Battery On Discharge and Fire alarms.

4. STANDARD INTERCONNECT METHODOLOGY

The methods of alarm interconnection represent the universal beliefs, concepts, and attitudes of the AT&T Local Exchange Carriers (LECs) Alarm Standards Committee.

4.1. TELEMETRY ALARM

4.1.1. SELECTION

Determination of the alarm type selected shall be in accordance with *Section 3.4* .

4.1.2. DISCRETE / SERIAL

When either a discrete or serial alarm set is selected for a NE, all the standard discrete or serial alarms (never both) for said NE, shall be cabled from the NE to a Distributing Frame (DF). Henceforth, for purposes of clarity within this document, the abbreviation "DF" shall be interpreted as Distributing Frame or an equivalent cross-connect point.

4.1.3. RESPONSIBILITY

Responsibility for the interconnection of the NE to the DF shall reside with Equipment Engineering. Refer to Section *4.18* .

4.2. DISCRETE ALARM WIRING OPTIONS

4.2.1. UNIQUE OUTPUTS

Separate alarm contacts for Audible, Visual and Remote Surveillance from the NE are the preferred alarm output attributes and these should be Normally Open / Dry Contact paired leads, i.e., SI and SIR, with the battery and ground supplied from the ACS.

4.2.2. PAIRED ALARM LEADS

Paired leads run in twisted pair type cable minimize cross-talk / signal distortion / EMI problems. Both the battery and ground from the ACS shall be wired as a complete loop from the ACS to the NE. The use of Central Office or frame / bay ground to complete the loop is in violation of Grounding and Bonding Requirements Telecommunications Equipment, Power Systems, Central Offices and Other Structures, BSP 802-001-180MP, and shall not be utilized.

4.2.3. VARIATIONS

Some equipment vendors have designed their parallel remote alarm connections without paired lead contacts, e.g., NEC 560 / 1.12 OLR, AT&T DDM-1000 and Rockwell 565 LT. In conjunction with these design parameters, i.e., when the NE discrete / parallel alarms are designed with one return for multiple alarm contacts, cable only the designated alarm leads and the common return lead to the cross-connect field (DF) for connection to the ACS.

4.3. DISCRETE TELEMETRY w / DIODE SPLITTER CIRCUIT

4.3.1. ISOLATION DIODE SPLITTER

When a situation arises wherein it is desirable to maintain mutually exclusive local office alarm and telemetry alarm systems and a NE to be deployed within said environment provides local office alarm connections (audible and visual), but does not provide a remote telemetry alarm interface, an isolation diode splitter circuit shall be used to create discrete telemetry alarms from the local alarms.

4.3.2. SPLITTING

Caution must be exercised when splitting the local alarms. Often NEs are equipped with an audible alarm cutoff (ACO) feature that may be activated, either locally or remotely, to disable the audible alarm circuit after it is initiated by a fault. This feature can be useful to the local craftsperson as a tool to help maintain an awareness of new local alarms, but can also create havoc in the telemetry alarm environment if the wrong local alarms are cabled to the splitter circuit.

4.3.3. VISUAL ALARM LEADS

In most circumstances, cable only the NE local visual alarm leads to the splitter circuit to create telemetry alarms. Never use the NE audible alarm leads as the interface to the splitter circuit when there is a possibility of disabling the alarm through an ACO switch. Visual alarms are not affected by the activation of an ACO switch and are therefore the logical choice for use in a splitter circuit.

4.3.3.1. ACO SWITCH

This interconnection standard will eliminate the possibility of inadvertently losing a telemetry alarm through the operation of an ACO switch.

4.4. SERIAL ALARM WIRING OPTIONS

4.4.1. CABLING

In accordance with Bellcores recommendation on shielding in high noise environments serial alarm cables shall be shielded and grounded as follows:

A. All interbay serial alarm interconnections, from the NE to the DF (Eqpt TB) and from the Alarm Collection System (ACS) to the DF (Asgn TB), shall utilize shielded pair cable. Refer *Section 4.17* . The one allowable exception to this standard, permitting the use of unshielded interbay cable, is applicable only when the NE manufacturer has certified that shielded cable is not required, e.g., Lucents DDM-1000.
B. Each interbay serial alarm cable pair sheath / shield shall be connected to ground at it's transmitting end, unless there is a documented exception by the manufacturer of the alarm collection equipment.
C. No shielding is required for intrabay cables, i.e., serial bus mult cables between NE's within the same bay, unless so specified by the NE manufacturer.
D. The serial alarm connection (typically TBOS) from the NE to the ACS consists of a two pair cable. There is no requirement that the two cable pairs be shielded from one another. Individually shielded pairs are typically utilized, but only because two pair / common shield cable is not generally available.

4.4.2. GUIDELINES

The following guidelines are intended to assist in matching NE and ACS serial alarm lead designations:

A. " T " (TIP), " A " and " P " (POSITIVE) lead designations are synonymous.
B. " R " (RING), " B " and " N " (NEGATIVE) lead designations are synonymous.
C. The transmit and receive pairs " roll " between the equipment and the ACS (transmit of equipment connects to receive of ACS). A and B leads do not roll within the pair.

4.4.3. WIRING COLOR CODE

The current standard for serial alarm cable color code is W / O for TRMT and W / BL for RCV. However, it should be noted that some circumstances may require the use of an equipment vendor's cable with the older Bell System color code of W / BL for TRMT and W / O for RCV.

4.5. TL-1 MESSAGE BASED ALARM WIRING OPTIONS

4.5.1. CABLING

When a TL-1 alarm set is selected for a NE, the message set cabling shall be connected from the NE to an intermediary interface device, such as a cabling concentrator (RS232 or RS422 brick assembly), Ethernet Hub or an appropriate patch panel.

4.5.2. GATEWAY ELEMENT

Cable the TL-1 circuit to an intermediary interface device, as per Section 4.5.1. However, the final termination and / or cross-connection of the TL-1 circuit may not be required if the NE is part of a SONET network configuration wherein the entire respective network configuration will be monitored by another node or nodes within the network architecture. Monitoring, of this nature, may be accomplished through utilization of the Data Communication Channel (DCC), which is part of the SONET overhead, and the "Gateway" features that are available on the SONET NEs.

4.5.3. RESPONSIBILITY

Responsibility for the TL-1 interconnection from the NE to an intermediary interface device, as identified in Section 4.5.1, shall reside with Equipment Engineering and NMA / Operations. Refer to *Section 4.18* .

4.5.4. INTERFACE CONNECTION

The interface for TL-1 interconnection may be Ethernet RJ45, DB25 or RS422 / 449 (37 pin)

4.6. OFFICE ALARMS

4.6.1. DETERMINATION

Because of the variety of office alarm systems and the diverse regional policies with regard to the office alarm arrangements, the method of providing and interconnecting the office alarms, generated by each NE, shall be determined on a local basis. However, office alarms must be provided in manned offices for each NE, as the NE is installed unless otherwise defined as exempt. Refer to *Section 3.5* for additional discussion of local office alarm systems and requirements.

4.6.2. INE

When a Dantel Status Monitor is used to provide local alarm indications and an INE, which provides customer service is being deployed that utilizes established two-way message based communications to a surveillance OSS for alarm collection, the following interconnect method is optional:

1. Connect the NE visual alarms (Critical, Major, Minor, as applicable) to the Dantel discrete interface (Smart Block, PointMaster or MAT card).
2. Provision the NE discrete alarms at the DCP GPP as no report (NR) to NMA, if reported via TL-1 interface. If reported via E2A telemetry, provision the point as an event in the NMA Scan Point Database.
3. Connect the TL-1 circuit per *Sections 4.5.1 and 4.5.2* above.
4. This interconnect method will deliver a comprehensive message-based alarm package to the designated OSS, typically NMA, for detailed analysis, as well as providing a less complex, non-duplicated bay level alarm indication at the Status Monitor for the local craftsperson.

4.6.3. RESPONSIBILITY

Responsibility for the provisioning of office alarms resides with Equipment Engineering.

4.6.4. GPP

Responsibility for the creation and maintenance of Dantel General Purpose Processors (GPPs) resides with Network Operations. Local policy will determine whether the installation vendor or LFO technicians will perform this function.

4.7. ALARM COLLECTION SYSTEM (ACS) CABLING

4.7.1. FRAME LOCATION

ACS / telemetry alarm devices that are configured for discrete and / or serial (TBOS) inputs / outputs will be fully cabled to a DF (Asgn TB), for the maximum number of discrete and serial inputs / outputs, based on standard configuration capacities. This will be accomplished at the time of the ACS installation. Refer to *Section 4.17* .

4.7.2. TL1 CABLING

Digital Communications Network (DCN) devices that are configured for TL-1 inputs / outputs and utilize an intermediary interface device, as identified in *Section 4.5.1* above, will be fully cabled to the intermediary interface device at the time of the DCN installation. Refer to *Section 4.17* .

4.7.3. RESPONSIBILITY

Responsibility for the interconnection from the DCN to the DF and / or to an intermediary interface device shall reside with Equipment Engineering. Refer to *Section 4.18* .

4.8. REDUNDANT ALARMS

4.8.1. BATTERY ON DISCHARGE (BOD)

"Battery On Discharge" alarms shall be provisioned through BOTH the ACS (normally Dantel) and the Office Switch for REDUNDANCY, using the Alarm Level Settings stipulated for each specific power plant. Switch scan points must be appropriately assigned and tested to the DF location in accordance with local practices. Ground plane standards must be adhered to.

4.8.2. FIRE

"Fire" alarms shall be provisioned through BOTH the ACS (normally Dantel) and the Office Switch for REDUNDANCY, using the summary output of the Building Alarm Unit. Switch scan points must be appropriately assigned and tested to the DF location in accordance with local practices. Ground plane standards must be adhered to.

4.9. DIODE MATRIX BLOCK

To facilitate redundancy a Diode Matrix Block has been developed and is available from Corning Cable Systems, P / N 139-R004. This is a passive MDF mounted block which uses a single alarm input and creates three diode isolated alarm outputs.

4.10. DISTRIBUTING FRAME OR EQUIVALENT CROSS-CONNECTING LOCATION LAYOUT

4.10.1. CABLING

Interconnect cables from the NEs and ACSs shall not be laid down on the same termination blocks (TB) on the DF. NE alarm input / output interconnection circuits and the ACS input / output interconnection circuits shall be segregated on separate TBs. Refer to *Section 4.17* .

4.10.2. CROSS-CONNECTING

Responsibility for the DF cross-connection between the NE block (Eqpt TB) and the ACS block (Asgn TB) shall reside with the regional NMA / Operations organizations. Refer to *Section 4.18* .

4.10.3. RESPONSIBILITY

Responsibility for the cross-connection between the NE and the ACS on any intermediary interface device shall reside with the regional NMA / Operations organizations. Refer to *Section 4.18* .

4.11. ALARM VALIDATION

Responsibility for the validation of all telemetry alarms (from NE to NMA) and office alarms, of any provisioned element being added to the network, shall reside with the NE installation vendor and the regional NMA / Operations organization as per *Sections 3.7 and 3.9.3* .

4.12. ALARM BUNDLING OR MULTIPLING

4.12.1. BUNDLING

Alarm bundling, often referred to as multing or multipling, of non-common discrete telemetry alarms is not acceptable, unless provided by the manufacturer's intrabay cabling.

4.12.2. MULTIPLES

All approved multiples of common discrete telemetry alarms shall occur on the DF, unless provided for by the manufacturers intrabay cabling and interconnect circuit drawing and then only if said cabling provides the mult as a bus arrangement.

4.12.3. SERIAL BUSES

In order to compress serial displays from different NEs onto the same ACS port, serial bus multing will be required. Unless required / allowed by a manufacturer's limitation / restriction, serial bus multing within a NE bay is not acceptable. Given this exception, all approved serial bus mults shall occur on the DF only.

4.12.4. TBOS PORTS

ACS serial ports allow up to eight (8) TBOS displays to be multipled on a single port, however, the ports are restricted such that the displays must be from like equipment. Unlike equipment cannot share the same serial TBOS port.

4.13. ASSIGNMENT RECORDS

4.13.1. INTERCONNECTION

Responsibility for recording all alarm interconnection assignments (NE-DF, NE-Patch Panel, ACS-DF, and ACS-Patch Panel) shall reside with Equipment / Maintenance Engineering.

4.13.2. CROSS-CONNECTS

Responsibility for initiating and recording all alarm cross-connects and the resultant alarm assignments shall reside with the regional NMA / Operations organizations.

4.13.3. ASSIGNMENT and RECORDS

It is recommended that all regions adopt the Transmission Assignment & Records System (TARS) as their tool for making alarm assignments and maintaining assignment records.

4.14. RESTRICTION ON ASSIGNMENT OF 64th STATUS POINT

4.14.1. EXPLANATION

E2A status points are arranged in groups of 64. Each group is called a display. The NE-display interface consists of 64 SI / SIR punching sets (for NE discrete alarms) or 64 internal status points (for NE serial alarms). All E2A compatible

ACSs use an internal serial alarm bus for processing serial displays. Some ACSs also make use of the serial bus for processing discrete displays. Processing via a serial bus does not allow for NE alarms on the 64th status point within a display. As an industry standard, NE serial alarm displays reserve the 64th status point for telemetry system usage. When assigning NE discrete alarms, consider the ACS discrete display processing method before making use of the 64th status point.

4.14.2. EXCEPTIONS

The following systems do not use the serial bus for discrete displays (OK to assign the 64th status point): Westronic WS2000; AT&T / Lucent J1P056A1 DAS, J1P057A1 ATP, J1P029A1 ARB.

4.14.3. RESERVE

The following systems use the serial bus for discrete displays (64th status point should not be assigned to NE alarm): Westronic WS1000; Dantel (All AT&T standard products). It is important to note that in order for NMA to generate a trouble ticket for a display failure alarm, the 64th scan point of that display must be built in the NMA database as a display failure.

4.15. BUILDING ALARMS

4.15.1. COLLECTION PANEL

Central office building alarms in summary format shall be terminated in a centrally located Building Alarm Terminal Strip Cabinet (BATSC).

4.15.2. CRE RESPONSIBILITY

Real Estate Management shall be responsible for the termination of the summary only building alarms within the BATSC. Provisioning and stenciling of the summary only building alarms within the BATSC shall be in accordance with ATT-801-601-900.162.

4.15.3. ENGINEERING RESPONSIBILITY

Network Engineering shall be responsible for extending the summary only building alarms from the BATSC to the distributing frame for termination.

4.15.4. SUMMARY ALARMS

"Summary only" alarms are a combination of like alarm inputs. i.e. several temperature sensors may be combined to form a single "summary only" temperature alarm output.

4.15.5. TERMINATION

Termination and cross connection of the summary only building alarms on the distributing frame shall be in accordance with *Sections* 4.8 , 4.17 *and* 4.18 .

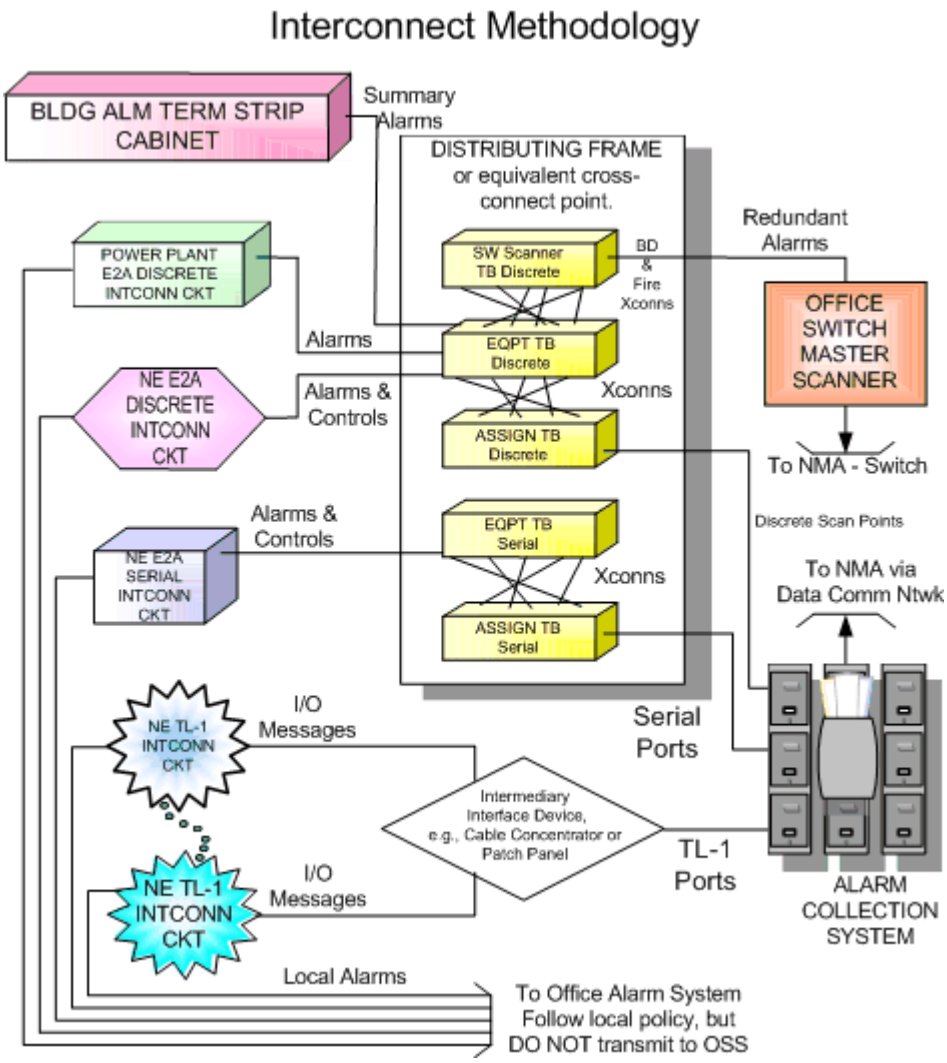
4.15.6. LEGACY ALARMS

This instruction shall be applied on a going-forward basis. Retrofits of existing CO building alarm arrangements are to be addressed on a local basis. Refer *Section 3.6.4* for information regarding the philosophy of building alarms and the delivery of same to Operations Support Systems (OSSs).

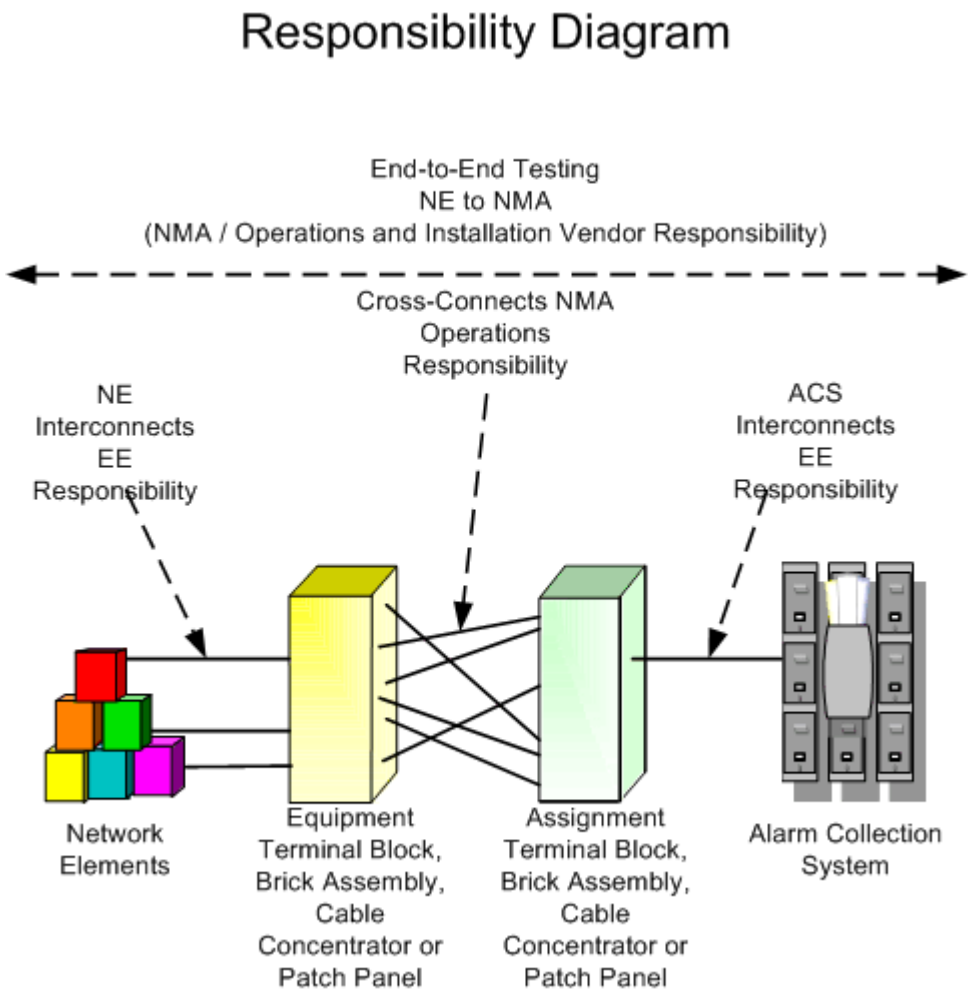
4.16. POWERING THE ACS

It has been determined that the ACS products are considered part of the backbone services in our telecommunications network. As such, ACS products shall be powered from an Alarm Battery Supply (ABS) primary distribution source, such as a Power Board.

4.17. DIAGRAM 1. INTERCONNECT METHODOLOGY



4.18. DIAGRAM 2. RESPONSIBILITY DIAGRAM



5. INDEX AND LINK TO SUB DOCUMENTS

This table contains a list and the link to all of the ATT-801-601-900.XXX sub documents. Click ONCE on the Hyperlink Title of the document you wish to view.

5.1. ATT-801-601-900 Sub Tending Documents

CAUTION: Click only once on the Hyperlink title

Technical Practice Number	Technical Practice Description
ATT-801-601-900.010	Lucent DDM-1000 Fiber Multiplexers
ATT-801-601-900.011	Alcatel/Rockwell DML-3X50 Fiber Multiplexers
ATT-801-601-900.012	NEC FD-1840 Fiber Multiplexers
ATT-801-601-900.013	NEC FD-30002 Fiber Multiplexers
ATT-801-601-900.014	NEC FD-3030 Fiber Multiplexers
ATT-801-601-900.015	NEC FD-3040 Fiber Multiplexers
ATT-801-601-900.016	NEC FD-3050 Fiber Multiplexers
ATT-801-601-900.017	NEC FD-31201 Fiber Multiplexers
ATT-801-601-900.018	NEC FD-31212 Fiber Multiplexers
ATT-801-601-900.019	NEC FD-32401 Fiber Multiplexers
ATT-801-601-900.020	NEC FD-32412 Fiber Multiplexers
ATT-801-601-900.021	NEC FD-33001 Fiber Multiplexers
ATT-801-601-900.022	NEC FD-39001 Fiber Multiplexers
ATT-801-601-900.023	Alcatel/Rockwell LTS-3139 Fiber Multiplexers
ATT-801-601-900.024	NEC RC28 C / C1 Fiber Multiplexers
ATT-801-601-900.025	NEC RC28 D / D1 / DH / DP Fiber Multiplexers
ATT-801-601-900.026	Telco Systems Fox T-Hub Fiber Multiplexers
ATT-801-601-900.027	Lucent DDM-2000 Fiber Multiplexers
ATT-801-601-900.028	Fujitsu FLM-150ADM Fiber Multiplexers
ATT-801-601-900.029	Adtran Total Access (TA)1124 ERDSL
ATT-801-601-900.030	Fujitsu FLM-600 ADM Fiber Multiplexers
ATT-801-601-900.031	Alcatel 7300 LP-UD Remote ASAM
ATT-801-601-900.032	Fujitsu FLM-2400 ADM Fiber Multiplexers
ATT-801-601-900.033	Fujitsu FLM-2400 Fan Auxilary Shelf for Fiber Multiplexers
ATT-801-601-900.034	Fujitsu FLM-6 Fiber Multiplexers
ATT-801-601-900.035	Fujitsu FLASH-192 Fiber Multiplexers
ATT-801-601-900.036	NEC - FD-3601A Fiber Multiplexers

ATT-801-601-900.037	Symmetricom/Telecom Solutions Secure 7 ADM Fiber Multiplexers
ATT-801-601-900.038	Alcatel DMX-3003 Fiber Multiplexers
ATT-801-601-900.039	Alcatel LTS-1565 Fiber Multiplexers
ATT-801-601-900.040	Alcatel LTS-1565D Fiber Multiplexers
ATT-801-601-900.041	Alcatel LTS-21130 Fiber Multiplexers
ATT-801-601-900.042	Alcatel LTS-21130D Fiber Multiplexers
ATT-801-601-900.043	(Nortel) Northern Telecom FD-135 Fiber Multiplexers
ATT-801-601-900.044	(Nortel) Northern Telecom FD-565 Fiber Multiplexers
ATT-801-601-900.045	(Nortel) Northern Telecom FMT-150B Fiber Multiplexers
ATT-801-601-900.046	(Nortel) Northern Telecom FMT-150C Fiber Multiplexers
ATT-801-601-900.047	(Nortel) Northern Telecom FMT-150D Fiber Multiplexers
ATT-801-601-900.048	(Nortel) Northern Telecom FMT-150 Fan Shelf for Fiber Multiplexers
ATT-801-601-900.049	(Nortel) Northern Telecom DMT-300 Digital Fiber Multiplexers
ATT-801-601-900.050	Lucent M13 Fiber Multiplexers
ATT-801-601-900.051	Lucent M1C/M1C-A Fiber Multiplexers
ATT-801-601-900.052	Lucent FT-2000 OC-48 Fiber Multiplexers
ATT-801-601-900.053	A/catel/Rockwell DML-45 Fiber Multiplexers
ATT-801-601-900.054	Rockwell / Collins / Alcatel DMX-2003 Multiplexer Fiber Multiplexers
ATT-801-601-900.055	Lucent DDM Plus Fiber Multiplexers
ATT-801-601-900.056	ADC Soneplex Broadband Fiber Multiplexers
ATT-801-601-900.057	Nortel OPTera 3100 Metro
ATT-801-601-900.058	Kestrel Talon MX Fiber Multiplexers
ATT-801-601-900.059	Nortel S/DMS AccessNode - Remote Fiber Terminal (RFT); NT4K02BB, NT4K03BB Fiber Multiplexers
ATT-801-601-900.060	Nortel S/DMS Transport Node OC-3 Express Fiber Multiplexers
ATT-801-601-900.061	Nortel S/DMS TransportNode OC-12 Fiber Multiplexers
ATT-801-601-900.062	Nortel S/DMS TransportNode OC-48 Fiber Multiplexers
ATT-801-601-900.063	Nortel S/DMS TransportNode OC-192 Fiber Multiplexers
ATT-801-601-900.064	Applied Innovations AI-110

ATT-801-601-900.065	Fujitsu Flashwave 4500 Fiber Multiplexers
ATT-801-601-900.066	JDS Gigabit Extender Model 1280 Fiber Multiplexers
ATT-801-601-900.067	JDS GigaMAN Repeater Fiber Multiplexers
ATT-801-601-900.068	Fujitsu Flashwave 7100 (Flashwave Metro) Fiber Multiplexers
ATT-801-601-900.069	Lucent 5A Range Extender with Gain(97716 REG)
ATT-801-601-900.070	Lucent 5A Range Extender with Gain(97722 REG)
ATT-801-601-900.071	Lucent Office Repeater Bay (ORB)
ATT-801-601-900.072	Lucent/Pulsecom D4 Channel Bank (3C304)/(IN1217)
ATT-801-601-900.073	Lucent/Pulsecom D4 Channel Bank w/Smas (7C102)/(IN1450)
ATT-801-601-900.074	Lucent D3 Channel Bank (3C104)
ATT-801-601-900.075	Lucent D4 Maintenance Bank (3C290)
ATT-801-601-900.076	Lucent Type F Signaling Bay
ATT-801-601-900.077	Emerson 1231V2 spec. 582125000
ATT-801-601-900.078	Lucent LM-23
ATT-801-601-900.079	Lynch DLC
ATT-801-601-900.080	Fujitsu DLC
ATT-801-601-900.081	Conklin C8000 +4 SDLC Models 8121, 8122,8127 & 8128
ATT-801-601-900.082	Lucent Metallic Facility Terminal (J99386; J99343 MFT)
ATT-801-601-900.083	Fujitsu Flashwave 7500
ATT-801-601-900.084	Lucent Office Channel Unit (OCU)
ATT-801-601-900.085	Lucent Series 5 Subscriber Loop Carrier(SLC Series 5)
ATT-801-601-900.086	Lucent Subscriber Loop Carrier (SLC-96)
ATT-801-601-900.087	Lucent SLC-96 Order Wire & Fault Locate Panel
ATT-801-601-900.088	Lucent SLIM
ATT-801-601-900.089	Lucent T1 Digital Multiplexer (T1DM)
ATT-801-601-900.090	Lucent T1 Out State Repeater Bay (T1/OS)
ATT-801-601-900.091	Reltec Dig Loop Carr, Central Office Terminal (DISC*S COT)
ATT-801-601-900.092	Tellabs Titan 5500 NGX-S/NGX-MX

ATT-801-601-900.093	Reltec Digital Loop Carrier, Supervisory System (DISC*S 1 S/S)
ATT-801-601-900.094	Reltec Dig Loop Carr, SONET Cent Ofc Term DISC*S Snt COT
ATT-801-601-900.095	Symmetricom TimeCesium 4500
ATT-801-601-900.096	Engine Power Switch Gear
ATT-801-601-900.097	McData ESCON Multiport Repeater, LinkMaster 9191
ATT-801-601-900.098	Symmetricom/Telecom Solutions Integrated Digital Services Terminal (IDST)
ATT-801-601-900.099	Racal-DataCom Native LAN, PremNet 5000
ATT-801-601-900.100	Lucent (Ascend) CBX 500 ATM Switch
ATT-801-601-900.101	Lucent (Ascend) GX 550 ATM Switch
ATT-801-601-900.102	Lucent Digital Loop Carrier, Cent Ofc Term (SLC-2000 COT)
ATT-801-601-900.103	Alcatel 7750 Service Router
ATT-801-601-900.104	VideoServer Multipoint Conference Server (Series 2000 MCS)
ATT-801-601-900.105	Securicor Telesciences Sterling 500 Data Server
ATT-801-601-900.106	Alcatel/Rockwell Digital Switch Terminal (DST-2300)
ATT-801-601-900.107	Newbridge 36150 ATM
ATT-801-601-900.108	Newbridge MainStreetExpress 36170
ATT-801-601-900.109	Newbridge MainStreetExpress 36177 Multiservcie Plan
ATT-801-601-900.110	Newbridge MainStreetExpress 360606 MSU (Modular LAN Service Unit)
ATT-801-601-900.111	(Nortel) Northern Telecom DMS Urban
ATT-801-601-900.112	(Nortel) Northern Telecom DMS Rural
ATT-801-601-900.113	Synchronous Communications Fiber Transmitter (EMS-1550)
ATT-801-601-900.114	Synchronous Communications Fiber Amplifier (EDFA-1550)
ATT-801-601-900.115	Sync Comm AMRX Return Path Optical Sys (chassis)
ATT-801-601-900.116	Sync Comm CS-CH Sys chassis, Constellation Series
ATT-801-601-900.117	Adtran BR1/10 2X
ATT-801-601-900.118	E/O Networks Fiber Distribution Shelf FDS-1
ATT-801-601-900.119	ADC T-Term 220 ORB
ATT-801-601-900.120	ADC M1544-254 / -256 T1 Repeater

ATT-801-601-900.121	ADC DS3/STS-1 PRS (Protected Repeater System)
ATT-801-601-900.122	Wescom 3192-T1 Repeater
ATT-801-601-900.123	Nortel Passport 160
ATT-801-601-900.124	Nortel Passport 6400
ATT-801-601-900.125	AFC UMC-1000 Digital Loop Carrier
ATT-801-601-900.126	Alcatel 7450 Ethernet Service Switch
ATT-801-601-900.127	Emerson LMS 1000 Power Monitor
ATT-801-601-900.128	DSC Litespan 2000 (IDLC) COT
ATT-801-601-900.129	Adtran Total Access TA1148 ERDSL
ATT-801-601-900.130	DSC Litespan 2012 COT
ATT-801-601-900.131	ADC Digivance LRCS 800MHz and 1900MHZ Systems
ATT-801-601-900.132	Alcatel 1000 ADSL (Asymmetric Digital Subscriber Line)
ATT-801-601-900.133	Digital 56KB/s Repeater Unit
ATT-801-601-900.134	Nortel CVX 1800 Access Switch
ATT-801-601-900.135	ECI DIGILOOP PCM2U (One Tier Shelf) (DAML)
ATT-801-601-900.136	ECI SPC 2 / 4 (Two Tier Shelf) (DAML)
ATT-801-601-900.137	Charles Industries / Wescom Digital Dualine Plus (DDL201) (DAML)
ATT-801-601-900.138	Charles Industries / Wescom Digital Dualine Plus (DDL301) (DAML)
ATT-801-601-900.139	Pair Gain Pairspan-2Q v2
ATT-801-601-900.140	Pair Gain PG-Plus PCS719 (DAML)
ATT-801-601-900.141	Pair Gain PG-Flex FLC-701 (DAML)
ATT-801-601-900.142	Raychem Corp. Mini-Plex (DAML)
ATT-801-601-900.143	CISCO 6400
ATT-801-601-900.144	Paceon ADS2000/ AONT-B200
ATT-801-601-900.145	ARTEL MegaLink 1290
ATT-801-601-900.146	Adtran Total Access 3000
ATT-801-601-900.147	Adtran Total Access 1500
ATT-801-601-900.148	Nortel OPTera Metro 5200

ATT-801-601-900.149	NEC DMR3000 SDH Radio
ATT-801-601-900.150	NORTEL OPTera Metro 3500
ATT-801-601-900.151	Nortel OPTera Connect DX (OC-192)
ATT-801-601-900.152	Nortel OPTera Metro 33/3400
ATT-801-601-900.153	DigiLink 8000
ATT-801-601-900.154	ADC M1544-340 T1 Bridging Repeater
ATT-801-601-900.155	Conklin Model 8701
ATT-801-601-900.156	NEC ISC-303 Intelligent Subscriber Carrier System
ATT-801-601-900.157	Alcatel 1680 OGX
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ATT-801-601-900.159	Alcatel MDR-8000
ATT-801-601-900.160	CISCO ONS 15454
ATT-801-601-900.161	CISCO 7609 Internet Router
ATT-801-601-900.162	Building & Environmental - Telco and Classic T Central Office
ATT-801-601-900.163	Power & Environmental - Remote Terminal and Regen Sites
ATT-801-601-900.164	*Deleted Document* Power & Environmental - Cabinet or Customer Premise
ATT-801-601-900.165	Joslyn Electronics Lightning Surge Protector
ATT-801-601-900.166	Tyco CPS6000 Power Plant
ATT-801-601-900.167	Cable Maintenance systems
ATT-801-601-900.168	Tekelec Eagle STP
ATT-801-601-900.169	Symmetricom/Telecom Solutions/Telcom Solutions Digital Clock Distributor (DCD-400)
ATT-801-601-900.170	Symmetricom/Telecom Solutions/Telcom Solutions Dig Clock Distributor Stratum 2 (DCD-ST2)
ATT-801-601-900.171	Symmetricom/Telecom Solutions/Telcom Solutions Dig Clock Distributor Master Shelf (DCD-520)
ATT-801-601-900.172	Marconi Mesa Sport NT Cabinet
ATT-801-601-900.173	Interrupter
ATT-801-601-900.174	Miscellaneous equipment types
ATT-801-601-900.175	Lucent Mechanized Loop Testing System (MLT-2P033)

ATT-801-601-900.176	Lucent Mechanized Loop Testing System (MLT-2P076)
ATT-801-601-900.177	Lucent NJ Office Alarm System
ATT-801-601-900.178	TELLABS 3228 Data Set Xmit/Rcv Module
ATT-801-601-900.179	Lucent Signaling Range Extender
ATT-801-601-900.180	Lucent Synchronization Distribution Expander (SDE)
ATT-801-601-900.181	Lucent Switched Maintenance Access System Mtce Conn (SMAS)
ATT-801-601-900.182	Lucent Remote Test System 5A (RTS 5A)
ATT-801-601-900.183	Symmetricom/Telecom Solutions/Telcom Solutions Dig Clk Dist Master/Slave Shelf (DCD-523)
ATT-801-601-900.184	Symmetricom/Telecom Solutions/Telcom Solutions Dig Clk Dist Expansion Shelf (DCD-523)
ATT-801-601-900.185	Symmetricom/Telecom Solutions/Telcom Solutions Dig Clk Dist Local Primary Ref (DCD-LPR)
ATT-801-601-900.186	Dantel 48001 Fuse Module for 460 Alarm System
ATT-801-601-900.187	Dantel 46062-24 General Purpose Processor (GPP)
ATT-801-601-900.188	Larse T1 Service Performance Monitor (TSPM)
ATT-801-601-900.189	Tellabs T1 Echo Canceller System
ATT-801-601-900.190	Lucent Pair Gain Tst Controller/Ext Tst Cntrlr (PGTC, XTC)
ATT-801-601-900.191	Applied Digital Access T3AS Remote Module
ATT-801-601-900.192	Applied Digital Access T3AS Test & Perf Monitoring System
ATT-801-601-900.193	Telesync Digital Loopback Test Line (TSI-1564)
ATT-801-601-900.194	105A ROTL Remote Office Test Line (ROTL)
ATT-801-601-900.195	Spirent/Hekimian Digital Remote Test Unit (DRTU 6703)
ATT-801-601-900.196	Spirent/Hekimian Broadband Remote Test Unit (BRTU 6705)
ATT-801-601-900.197	Spirent/Hekimian 3129 A / B MARTS MetallicAccess Remote Test System
ATT-801-601-900.198	Spirent/Hekimian 3570 SOITS and 3570-98 SOITS Expansion Shelf
ATT-801-601-900.199	Spirent/Hekimian Mini-eDTAU 3204-95
ATT-801-601-900.200	Spirent/Hekimian 6351A Protocol Vital Sign (PVS) Test System
ATT-801-601-900.201	Spirent/Hekimian 3204-96 eDTAU MAU or ACCESS Shelf

ATT-801-601-900.202	Spirent/Hekimian Model 3578 / 3572 Coppermax Test Access/Expansion Shelf; 3577
ATT-801-601-900.203	Adtran MX2810 M13
ATT-801-601-900.204	Wiltron Digital Access Test System (DATS+ 9620)
ATT-801-601-900.205	Photon Kinetics FiberCheck 5000
ATT-801-601-900.206	Nortel/ Magellan DPN-100
ATT-801-601-900.207	Applied Innovations DataSwitch (AI Switch 180) and Fan Unit
ATT-801-601-900.208	Tyco Alphatran Inverter
ATT-801-601-900.209	Applied Innovations (AI Switch 130)
ATT-801-601-900.210	Hewlett Packard acceSS7 Signaling Monitoring System (acceSS7)
ATT-801-601-900.211	Westell SmartLink Automatic Protection System (APS)
ATT-801-601-900.212	Fiber Systems Redundant Fiber Optics Sw Sys (OSW-2000)
ATT-801-601-900.213	General Data Comm (GDC) USS-2 Universal Shelf System
ATT-801-601-900.214	General Data Comm (GDC) TriPak
ATT-801-601-900.215	Emerson LIS48A1 Inverter
ATT-801-601-900.216	General Data Comm (GDC) SpectraComm-5000/UAS-7000 Shelf & Enclosure
ATT-801-601-900.217	General Data Comm (GDC) SpectraComm 2000
ATT-801-601-900.218	DVACS BX19-lx, DMA-200 DDS8-Lx, GW8-X.25-Lx
ATT-801-601-900.219	DVACS Fan Unit
ATT-801-601-900.220	Tyco/Lucent Lineage 2000 Galaxy Power Plant
ATT-801-601-900.221	Fujitsu 4100 ES (Expansion Shelf)
ATT-801-601-900.222	Austron PRS-50 Primary Reference Source Cesium Clock
ATT-801-601-900.223	Austron Datum NetSync Plus TSG-3800
ATT-801-601-900.224	Lucent AnyMedia Access System
ATT-801-601-900.225	Adtran OPTI-6100
ATT-801-601-900.226	SUMA FOUR VCO Series / 80
ATT-801-601-900.227	Conklin CSU/DSU Model 5061 or Model 5063 e/w Model 505 module
ATT-801-601-900.228	Lucent T1C/T1 QRSS Quasi-Random Signal Source
ATT-801-601-900.229	TERADYNE TESTNET 2000 MMS

ATT-801-601-900.230	Lucent SMART LGX
ATT-801-601-900.231	Alcatel 7330 ISAM FTTN
ATT-801-601-900.232	CBM Multi-Mode Optical Isolator
ATT-801-601-900.233	Spectracom TEK-150
ATT-801-601-900.234	Avestor LMP Battery
ATT-801-601-900.235	Spirent/Hekimian Model 6750 BRTU
ATT-801-601-900.236	Spirent 9724B STAC
ATT-801-601-900.237	Tollgrade DigiTest DMN System
ATT-801-601-900.238	Symmetricom TimeSource 3500
ATT-801-601-900.239	ADC UMA-319 Universal Management Aggregator
ATT-801-601-900.240	Tyco/Lucent 111A Battery Power Plants
ATT-801-601-900.241	Conklin FlexAccess 9000
ATT-801-601-900.242	JDSU BrightJack 200 Optical Link Monitoring System
ATT-801-601-900.243	Tollgrade DigiTest HUB
ATT-801-601-900.244	Tollgrade Micro-Bank
ATT-801-601-900.245	PECO II 129F Modular Power Plant
ATT-801-601-900.246	Tyco/Lucent 132A/B and 133A/B Battery Power Plants
ATT-801-601-900.247	Symmetricom TimeProvider 1100
ATT-801-601-900.248	FEI US5G Timing Supply Shelf
ATT-801-601-900.249	Tyco CPS6000 M2 Power Plant w/Millennium II Controler
ATT-801-601-900.250	Tyco/Lucent 150B, 151B, 152A, 153A, 154A, and 155A Battery Power Plants
ATT-801-601-900.251	Adtran Total Access TA5000
ATT-801-601-900.252	Adtran Total Access TA838
ATT-801-601-900.253	Ceragon 1500P Digital Radio
ATT-801-601-900.254	CTI/GoDigital XCel-8 Digital Loop Carrier
ATT-801-601-900.255	Juniper M320 Router
ATT-801-601-900.256	Tyco/Lucent 302A/B Battery Power Plants
ATT-801-601-900.257	Juniper T640 Router

ATT-801-601-900.258	Tyco/Lucent 303A Battery Power Plant
ATT-801-601-900.259	Tyco/Lucent 326A/B Battery Power Plants
ATT-801-601-900.261	Tyco/Lucent 411A/B, 412A/B Battery Power Plants
ATT-801-601-900.264	Universal Battery Cells
ATT-801-601-900.265	Tyco/Lucent 702C Battery Power Plant
ATT-801-601-900.266	Tyco/Lucent 708A Battery Power Plant
ATT-801-601-900.267	Marconi (Reltec)/Lorain S.M.A.R.T. SMU System Managing Unit
ATT-801-601-900.268	Peco II BDFB Battery Distribution Fuse Board
ATT-801-601-900.269	Marconi (Reltec)/Lorain BDFB Battery Distribution Fuse Board
ATT-801-601-900.270	Tyco/Lucent Lineage 2000 Conventional Control System (CCS) Power Plant
ATT-801-601-900.271	Tyco/Lucent Lineage 2000 Evolutionary Control System (ECS) Power Plant
ATT-801-601-900.272	Tyco/Lucent Lineage 2000 Microprocessor Control System (MCS) Power Plant
ATT-801-601-900.273	Tyco/Lucent Lineage 2000 Expandable Control-led System (XCS) Power Plant
ATT-801-601-900.274	ADC Power Distribution Panels (Fuse Panel)
ATT-801-601-900.275	Tyco/Lucent Galaxy Power Plant System 4812 (GPS 4812)
ATT-801-601-900.276	Tyco/Lucent Galaxy Power Plant System 4848 (GPS 4848)
ATT-801-601-900.277	Marconi (Reltec) Lorain 1231 Plant w/S.M.A.R.T. Power System Control Panel (Touch Screen)
ATT-801-601-900.278	Marconi (Reltec) Lorain 1231 Plant w/S.M.A.R.T. Reporter
ATT-801-601-900.279	Marconi (Reltec) Lorain 1231 S.M.A.R.T. DGU w/LCD Screen
ATT-801-601-900.280	Marconi (Reltec) Lorain 1231 Plant w/Microprocessor Controlled Meter Panel
ATT-801-601-900.281	Marconi (Reltec) Lorain 1231 A2 Modular Battery Plant
ATT-801-601-900.282	Hendry Power Distribution Panels (Fuse Panel)
ATT-801-601-900.283	Marconi (Reltec) Lorain S.M.A.R.T. Data Gathering Unit (DGU)
ATT-801-601-900.284	Marconi (Reltec) 1231 V2 Vortex Power System (VPS)
ATT-801-601-900.285	TYCO CPS-4000 (Lucent CPS 4048) Power Plant
ATT-801-601-900.286	Marconi (Reltec) Lorain VMS75 Cabinet Power System
ATT-801-601-900.287	Marconi (Reltec) 1231 V1 Vortex Power System (VPS)
ATT-801-601-900.288	Tyco (Lucent) 600 DC-DC 130V Converter

ATT-801-601-900.289	Tyco (Lucent) 660 DC-DC 130V Converter
ATT-801-601-900.290	Marconi (Reltec) Lorain 1284A2 DC-DC 130V Converter
ATT-801-601-900.291	Tyco/Lucent Lineage 2000 Remote Access System (RAS)
ATT-801-601-900.292	Marconi (Reltec) Lorain S.M.A.R.T. Monitor
ATT-801-601-900.293	Float Charge Current Probe (FCCP M-5601 or M-5602)
ATT-801-601-900.294	Medtronic Battery Conductance Monitor
ATT-801-601-900.295	CEP Model 3500-115 Ringing, Tone Plant
ATT-801-601-900.296	CEP Model 3500-112 Ringing, Tone Plant
ATT-801-601-900.297	CEP Model 3500-79R Ringing Plant
ATT-801-601-900.298	CEP Model 3500-120R Ringing Plant
ATT-801-601-900.299	Marconi/Reltec/Lorain Residual Ringing Plant with Precise Tones (1891P)
ATT-801-601-900.300	Marconi/Reltec/Lorain Ringing, Tone and Cadence Power Plant (1891R)
ATT-801-601-900.301	Ascom Warren 23RP50 Ringing Plant
ATT-801-601-900.302	Marconi/Reltec/Lorain Inverter (WAA502B) 5KVA
ATT-801-601-900.303	Marconi/Reltec/Lorain Inverter (WAA102B) 1KVA
ATT-801-601-900.304	Tyco/Lucent WP-91652 Inverter
ATT-801-601-900.305	Tyco/Lucent KS24007 Inverter Bay
ATT-801-601-900.306	LorTec Inverter D-153-CRB
ATT-801-601-900.307	Telect Power Distribution Panel (Fuse Panel)
ATT-801-601-900.308	MGE Uninterruptible Power Supply (EPS-6000)
ATT-801-601-900.309	MGE Uninterruptible Power Supply (Comet/EPS3000))
ATT-801-601-900.310	Universal Battery Distribution Fuse Board (BDFB)
ATT-801-601-900.311	Universal Power Distribution Panel (Fuse Panel)
ATT-801-601-900.312	Alarm Battery Supply (ABS)
ATT-801-601-900.313	Tyco/Lucent Lineage 2000 Battery Distribution Fuse Bay (BDFB) J85568C-1/D-1 and E-1 MiniBDFB
ATT-801-601-900.314	Power Conversion Product (PCP) TwinPak Plus and DC Plus
ATT-801-601-900.315	Fuel Tank Monitoring Systems
ATT-801-601-900.316	Universal Power Plants 600 Amps and Smaller

ATT-801-601-900.317	Universal Power Plants 601 Amps to 1200 Amps
ATT-801-601-900.318	Universal Power Plants 1201 Amps and Larger
ATT-801-601-900.319	Universal Converter Plants +/- 24/48/130
ATT-801-601-900.320	Universal Ring Tone Plants
ATT-801-601-900.321	Universal Inverter Plant
ATT-801-601-900.322	Universal Uninterrupted Power System
ATT-801-601-900.323	Universal Engine/Alternator Alarm Guide
ATT-801-601-900.324	Tyco/Lucent CPS-2000
ATT-801-601-900.325	PECO II 1400 Ring and Tone System
ATT-801-601-900.326	Tyco Galaxy Power System 2424 (GPS 2424)
ATT-801-601-900.327	MGE Topaz S2 Inverter
ATT-801-601-900.328	Tyco Galaxy 415B Power Plant
ATT-801-601-900.329	PECO PEC-163 Power Distribution System
ATT-801-601-900.330	PECO 127NH Power Plant
ATT-801-601-900.331	Tyco Spectra Inverter
ATT-801-601-900.332	PECO II 827 Inverter
ATT-801-601-900.333	Cummins BTPC Transfer Switch
ATT-801-601-900.334	Wescom DCS Digitel Switch
ATT-801-601-900.335	ATT DCS Digitel Switch
ATT-801-601-900.336	ATT Sub Rate DCS Digitel Switch
ATT-801-601-900.337	ATT D5 Bank
ATT-801-601-900.338	530 TCS Digitel Switch
ATT-801-601-900.339	Alcatel 1631 SX Digitel Switch
ATT-801-601-900.340	Alcatel 1633 SX Digitel Switch
ATT-801-601-900.341	Alcatel / DSC DEXCS Digitel Switch
ATT-801-601-900.342	Tellabs TITAN 5500S Digitel Switch
ATT-801-601-900.343	Tellabs TITAN 5320 Digitel Switch
ATT-801-601-900.344	Tellabs TITAN 5320L Digitel Switch

ATT-801-601-900.345	Lucent DACS II Digitel Switch
ATT-801-601-900.346	Lucent DACS III Digitel Switch
ATT-801-601-900.347	Lucent DACS IV Digitel Switch
ATT-801-601-900.348	Valere Power Plant Systems
ATT-801-601-900.349	ADC OptEnet 12000
ATT-801-601-900.350	WaveSmith DNs
ATT-801-601-900.351	ADC PGTC Conditioner Unit (PCU-796)
ATT-801-601-900.352	Peco II CIPP AB Distribution Fuse Panel
ATT-801-601-900.353	Liebert 600T UPS 65-750 kVA, 60Hz
ATT-801-601-900.354	Fujitsu Flashwave 4300
ATT-801-601-900.355	Fujitsu HA15B-0001-BXXX Circuit Breaker Panel (CBP)
ATT-801-601-900.356	Fujitsu Flashwave 4100
ATT-801-601-900.357	Symmetricom TimeHub 5500
ATT-801-601-900.358	Adtran Total Access 850 (TA 850)
ATT-801-601-900.359	Applied Innovation AIvortex 140 and 620
ATT-801-601-900.360	Nortel OC48 Lite, 48 Port
ATT-801-601-900.361	Nortel NT7E56CA Breaker Interface Panel (BIP)
ATT-801-601-900.362	Lucent ClientCare Interactive Multimedia Response Unit (IMRU)
ATT-801-601-900.363	Pulsecom O3D3 Miniature Sonet Multiplexer
ATT-801-601-900.364	Fujitsu Flashwave 4100 Mini-IWM (Indoor Wall Mount) Cabinet
ATT-801-601-900.365	Fujitsu Flashwave 4010
ATT-801-601-900.366	Alcatel MDR 7000 Radio
ATT-801-601-900.367	NEC DMR 2600 SDH Radio
ATT-801-601-900.368	Alcatel 7340 FTTU
ATT-801-601-900.369	General Bandwidth G6 FTTU
ATT-801-601-900.370	Alcatel 1648 SM
ATT-801-601-900.371	
ATT-801-601-900.372	Artel DigiLink 1220

ATT-801-601-900.373	C-COR DV6000 Digital Video Transmission System
ATT-801-601-900.374	C-COR DV6300 Digital Video Transmission System
ATT-801-601-900.375	Video Products Group TV-1 Plus
ATT-801-601-900.376	Video Products Group Ventura
ATT-801-601-900.377	Lucent Lambda Unite
ATT-801-601-900.378	LorTec ContinuAC UPS 303CRK
ATT-801-601-900.379	LorTec ContinuAC UPS 124CRK
ATT-801-601-900.380	LorTec ContinuAC UPS 603CRK
ATT-801-601-900.381	Eaton Power UPS LE3050
ATT-801-601-900.382	Eaton Power UPS LE3100
ATT-801-601-900.383	Eaton Power UPS LE3150

6. RELATED DOCUMENTS

Documents related to ATT-801-601-900 are *ATT-TP-76300* Installation Guidelines, ATT-TP-76400 Engineering Guidelines and *ATT-TP-76900* Test and Acceptance Guidelines.

7. ACKNOWLEDGEMENTS

8. CONTACT LIST

Possible entries include Regional Contacts, or web page references for contact names.

Optional: Author may add links to separate document or contact list.

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Revision Log

Issue Number	Date	Description	Author
20	02/10/09		rd4137

Acronyms

A.1. DOCUMENT SPECIFIC ACRONYMS AND TERMINOLOGY

LEC - Local Exchange Carriers

NE - Network Element

OSS - Operational Support System

ACS - Alarm Collection System

CO - Central Office.

NMA - Network Operations Center

SNMP - Simple Network Management Protocol

NMS - Network management System

PM - Proformance Monitoring

SIM - Standard Interconnect Methodology

ADU - Alarm Display Unit

TBOS - Telemetry Byte Oriented System

INE - Intelligent Network Element

PAN - Product Approval Notice

BOC - Building Operation Center

TB - Terminal Block

DF - Distribution Frame

MDF - Main Distribution Frame

ACO - Alarm CutOff

TRMT - Transmit

RCV - Receive

BATSC - Building Alarm Terminal Strip Cabinet

A.2. NETWORK ACRONYMS DICTIONARY

Refer to ATT-000-000-020, Network Acronyms Dictionary.