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816 PLUS OVERVIEW

HARDWARE ENHANCEMENTS

- *Redesigned motherboard to incorporate the following hardware changes*

  1. Increased memory: ROM from 80 kb to 256 kb
     RAM from 16 kb to 64 kb
  2. Upgraded CPU from 280 to Motorola® 64180
  3. Upgraded clock chip from 58321 to 6242
  4. Added watchdog timer circuitry to eliminate power reset lockup
  5. Added circuitry for C.O. line disconnect signal
  6. New MOH jumper pin J11

- *Replaced SMDR card*

  The old SMDR card has been replaced with a two (2) port serial I/O (SIO) card. Each port has a specific purpose as outlined below:

  1. Port 1 for SMDR and customer data printout
  2. Port 2 for remote programming

- *Redesigned expansion boards for C.O. disconnect recognition*

  NOTES:
  1. New expansion boards will work in old system (without disconnect signal).
  2. Old expansion boards will work in new system (without disconnect signal).

- *New set of common relay contacts*

  Common relay contacts may be used for one of the following:

  1. Common bell with interrupted operation
  2. Common bell with continuous operation
  3. Music on Hold (MOH) on demand

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- *New keyset model 800 telephone (no microphone or display)*

  1. 12 programmable buttons with tri-colored lights
  2. Eight fixed function buttons
  3. Volume adjustment for ringing, speaker and handset

NEW OR ENHANCED FEATURES

- **ADDITIONAL AND MORE FLEXIBLE TOLL RESTRICTION CLASSES (6)**

  Toll restriction has been enhanced for 500 deny and 500 allow entries. Each station may be programmed for one of the six classes listed below.

  Class A   A fixed unrestricted class
  Class B   A limited dialing class defined by toll restriction programming
  Class C   A limited dialing class defined by toll restriction programming
  Class D   A limited dialing class defined by toll restriction programming
  Class E   A limited dialing class defined by toll restriction programming
  Class F   A fixed restricted class

  While class F is restricted to internal calls, it will be allowed to dial outside the system any number programmed in a new MMC #94 (Toll Restriction Override Table). This new feature has been added to allow restricted stations access to emergency type phone numbers (police, fire, etc.) when programmed.

  This feature reflects a change in the structure of the following MMCs:

  MMC #30 Station Toll Class
  MMC #33 Toll Deny Table
  MMC #34 Toll Deny Apply
  MMC #35 Toll Allow Table
  MMC #36 Toll Allow Apply

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- **ALLOW ALL (16) STATIONS TO RING**

  Ringing station assignments for each C.O. line has been increased from eight to 16 stations.

  This feature reflects a change in the structure of the following MMCs:

  MMC #61 Night Ring Assignment
  MMC #62 Day Ring Assignment

- **ALLOW C.O. FLASH PER LINE**

  Each C.O. line can be programmed to allow a flash when needed for operation behind a PABX or used with custom calling features provided by the local operating company.

  A new MMC #74 Assign C.O. Flash has been created for this feature.

- **ALLOW/DENY BACKGROUND MUSIC (BGM) PER STATION**

  Each station may be programmed to be allowed or denied background music (BGM).

  A new MMC #79 Background Music Allow/Deny has been created for this feature.

- **ALLOW/DENY MICROPHONE PER STATION**

  The microphone of an 816 keyset may be disabled via system programming.

  A new MMC #86 Microphone Allow/Deny has been created for this feature.

- **AMBER LIGHTS ON RECALLS**

  C.O. recalls will now light amber rather than red when assigned to a key with a red/green LED.

- **BACKGROUND MUSIC (BGM) OVER EXTERNAL PAGE**

  Background music may be sent to the voice pair of the external page connector. This will

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allow BGM to be sent over the customer-provided external paging system. BGM will be removed when the external page is accessed.

A new MMC #27 Background Music Over Page has been created for this feature.

- **CALL FORWARD BUSY**

  Call Forward Busy has been added.

  A new MMC #12 Call Forward Busy has been created for this feature.

- **C.O. LINE DISCONNECT SIGNAL DETECTION**

  When C. O. line disconnect signal is provided by the local central office, it will be passed on to the C.O. port.

- **C.O. TO C.O. CONFERENCE TIMER RESET**

  The trunk to trunk conference timer may reset by dialing Q when it is necessary to speak beyond the programmed trunk to trunk timer.

- **COMMON BELL CONTROL CONTACTS**

  A set of contacts have been provided to control a common bell type arrangement. These contacts can be programmed to operate on a line by line basis for new incoming calls. Door phones may also be assigned to the common bell.

  A new common bell entry has been permitted in the following MMCs:

  MMC #61 Night Ring Assignment
  MMC #62 Day Ring Assignment
  MMC #63 Door Phone Ring Assignment

- **COMMON BELL RELAY INTERRUPTED OR CONTINUOUS**

  The common bell relay contacts may be programmed for interrupted or continuous operation. A new MMC #28 Common Bell Relay has been created for this feature.

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- **DATA SECURE AND CAMP-ON**

  Single line station ports can now receive a camp-on tone when a second call is waiting. When needed, a single line port can be programmed as a data secure port to prevent a camp-on tone from being sent. This will prevent erroneous data from being sent or received when a single line is used as a modem or FAX line.

  A new MMC #29 Data Secure has been created for this feature.

- **DEFAULT ATTENDANT STATION**

  The new default attendant station is now extension 21 rather than extension 24.

- **DISA LINE PROGRAMMABLE AS NONE, DAY ONLY, NIGHT ONLY OR BOTH**

  Each C.O. line may be programmed for DISA access in the day mode only, the night mode only or both day and night.

  This feature reflects a change in the structure of MMC #48 Assign DISA Lines Day/Night.

- **EXTENSION/TRUNK USE PER STATION**

  Each station may be programmed for one of the four types of access listed below on a per-line basis:

No Access:	A station CANNOT directly access this line.
Answer Only:	A station can answer incoming calls directly.
Dial Only:	A station can dial out on this line directly.
Answer And Dial:	A station can dial and answer on this line directly.

  This feature reflects a change in the structure of MMC #31 Extension/Trunk Use.

- **FOLLOW OR BYPASS TOLL RESTRICTION PER C.O. LINE**

  Each C.O. line may be programmed to follow or bypass toll restriction.

  This feature reflects a change in the structure of MMC #41 C.O. Follow Toll Restriction.

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- **GROUP LISTEN IN HEADSET MODE**

  Group Listen may now be activated in the headset mode.

- **HEADSET CONTROL BY STATION USER**

  Headset or handset operation has been changed so that it is controlled by the individual station user.

  A new MMC #09 Headset Operation On/Off has been created for this feature.

- **HOT LINE/PRIME LINE PICKUP**

  Each station may be programmed with the hot line/prime line feature. The hot line/prime line may be a specific C.O. line, a C.O. line group, an individual station, a station group or a system speed dial number.

  A new MMC #83 Hot Line/Prime Line has been created for this feature.

- **LOOP DISCONNECT FOR SELECTED SINGLE LINE PORTS**

  Ports 7 and 8 (set as single lines) on the baseboard and circuits 1 and 2 on a single line expansion board will provide a programmable loop open to the tip and ring. This will en-sure a true disconnect when these single line ports are connected to such devices as answering machines, FAX machines, etc.

  A new MMC #91 Disconnect Signal To Single Line Port has been created for this feature.

- **PRINT DATABASE**

  A hard copy (printout) of all customer data may be printed for record-keeping.

- **PROGRAMMABLE OFF-HOOK DISPLAY "HAVE A NICE DAY"**

  A programmable off-hook display is now available so "HAVE A NICE DAY!!" can be changed.

  A new MMC #87 Off-Hook Display has been created for this feature.

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DATE: NOVEMBER 16, 1994

ISSUED BY: PRODUCT DEPARTMENT

- **REMOTE PROGRAMMING**

  When a modem is connected to the SIO card, programming of system data may be allowed from a remote site.

  Two new MMCs have been created for this feature and are listed below:

  MMC #92 Change Baud Rate
  MMC #93 Assign Remote Port

- **RING OVER PAGE ON PER-LINE BASIS**

  C.O. line ring over page may be programmed on a line by line basis.

  This feature reflects a change in the structure of MMC #64 Ring Over External Page.

- **SMDR FORMAT INCREASED**

  The SMDR format has been increased to allow up to 12 digits for account codes and up to 23 digits for dialed numbers.

- **TRUE KEYSET TONE FOR RING OVER PAGE**

  Ring Over Page now has the same tone as a ringing keyset.

- **TWO DOOR PHONE PORTS**

  A second door phone has been added. Music on Hold will be heard at the door phone instead of ringback tone when a call is placed from the door phone. Door phones do not use a station or line port; therefore, station and line capacity are not decreased.

- **VOICE MAIL ENHANCEMENTS**

  Station group 3 (73) has some special new attributes to enhance the operation of the 816 PLUS with voice mail. While these enhancements have been specifically added to work with the Samsung proprietary Starmail voice mail system, they may also be applied to

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other voice mail systems. The following features have been added to group 3:

1. Turn on/off message lights
2. New incoming calls wait in queue and can overflow
3. Transfer recalls may be sent to this group

Two new MMCs have been created for this feature and are listed below:

MMC #37 Queue Timer Before Overflow
MMC #90 Transfer Recall Destination