

PRIVATE LINE TELEPHONE SERVICE
SC2 SELECTIVE CONTROL SYSTEM
MONITOR STATION
MAINTENANCE

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1.00 INTRODUCTION

1.01 This section provides information for maintaining the monitor station which is designed to monitor the SC2 selective control system and to indicate the function of the system to an attendant, by means of lamps.

1.02 Since the signaling circuit is common to all components of the system, the information concerning it is contained in Section 310-435-303.

1.03 This section is being reissued to include changes in equipment arrangement, clearing reported troubles, and routine test procedure.

1.04 Due to extensive changes marginal arrows have been omitted.

2.00 GENERAL

2.01 The provision of a monitor on an SC2 system is optional. It is generally provided when more than one control system, consisting of a main station and several satellites, is furnished. In this case, the monitor circuit provides the connection for communicating with the main station in the succeeding system. The monitor does not need to be located in the immediate vicinity of a main station and, in fact, it does not have to be associated with the main station at all.

2.02 Plug-in equipment units facilitate maintenance and service restoration.

2.03 The power supply for the monitor circuit is derived from the main station power plant when the monitor is located adjacent to a main station. When remotely located, a separate 48-volt dc power plant with a standby 48-volt dc battery supply must be provided. This is usually of the 105D type or equivalent.

3.00 WORKING LIMITS

When associated with a main station but remotely located, the maximum external loop resistance for conductors between the main and monitor station shall not exceed 50 ohms.

4.00 FUNCTIONS

4.01 This circuit provides for:

- Receiving and registering information from the main station equipment.
- Registering information sent from a satellite to the main station.
- Transmitting information to the main station in response to inquiries.
- Transmitting a system signal to the main station of a succeeding section (optional feature).
- Registering mutilated or incomplete signals.

5.00 EQUIPMENT ARRANGEMENT

5.01 The relay circuits may be housed in two 7-foot cabinets per ED-91981-01 (LJ-1007AF and LJ-16007AG rated Mfr Disc.) or ED-91981-01 (J-1G007DA rated AT&TCO Standard). The common equipment is located in the first monitor cabinet as well as certain common plug-in units of equipment. The second cabinet contains the device indicator circuits which are plug-in.

5.02 The indicating lamps and control keys are mounted in a floor-mounted console per LJ-1G007AL or J-1G007AL. The console is in sections and each section has the keys and lamps associated with a satellite station. There is also a common section containing lamps and keys common to the monitor station. The key and lamp positions are assigned in accordance with job requirements and agree with the device indicator circuits.

5.03 Cross connections are applied as required so that the monitor may recognize the codes assigned to the system.

5.04 Relay units other than 1-, 2-, and 3-digit translators and the double transmission relays are demountable for replacement with like units. The relay units are terminated in plug-in type connectors accessible from the front of the relay cabinet.

5.05 An A. W. Haydon timer (P-6422) is used for various timing purposes and is part of the sending and alarm circuit. The timer is terminated in a plug-in type connector and is demountable as a unit.

6.00 TESTING EQUIPMENT

6.01 The minimum testing equipment recommended for field use is the following:

- 1 — No. 5 Timing Test Set per J24753A
- 1 — Dial Test Set per SD-1G-111-01
- 1 — Standard Electric Time Clock or equivalent device with an accuracy of ± 0.01 second for measuring time intervals. A stop watch may be used only to approximate timing when a more accurate timing device is not readily available.

6.02 The following test sets are mainly for shop use, to meet manufacturing testing requirements, and may be used, if desired, for testing spare equipment units concentrated at a central location.

- 1 — Test Pulse Generator per ES-1G065-01
- 1 — Pulse Length Code Generator per ES-1G064-01

7.00 TOOLS AND MATERIAL

7.01 Standard Bell System tools should be used when working on this equipment.

7.02 The following tools are for use on solderless-type terminals:

- KS-16363 Wrapping Tool
- KS-16492 Unwrapping Tool
- 635A Wrapping Tool (Connection must be soldered when using this tool)
- KS-16346 Soldering Iron (For soldering wrapped connections)

8.00 REFERENCES

8.01 Refer to appropriate Bell System Practices to cover wire spring relay:

- Maintenance
- Adjustment
- Blocking
- Insulating
- Test connections
- Contact cleaning
- Contact replacement
- Piece part data
- Piece part replacement
- Winding designations
- Spring designations
- Educational information

8.02 Refer also to appropriate Bell System Practices to cover the 105D power plant and No. 5 timing test set.

9.00 A. W. HAYDON TIMER

9.01 The A. W. Haydon timer used in the monitor station is coded P-6422 time delay relay. Fig. 1 shows the unit partially disassembled. The timer used at the monitor station has one

more Micro Switch than shown in Fig. 1. A simple schematic drawing of the timer is shown in Fig. 2.

9.02 The operating requirements for the timer are as follows:

- Time relay to be as per timing chart in Fig. 3 when operated on 40 to 56 volts dc.
- Maximum allowable variation in each time setting is to be ± 1.3 seconds.
- Clutch coil to operate directly on the above voltages.
- Switch ratings are 10 amps (inductive).

Operation

9.03 When power is applied to pins A and B, the clutch coil and electromagnet attract the clapper assembly downward. The operation tightens the connecting spring which pulls the alternate clutch spring tight around the hub of the release gear, locking the release gear in position. The motor pinion, mounted on the motor drive shaft, rotates the planetary gear and the pinion mounted on the delay arm assembly. The planetary pinion rides around the temporarily locked release gear, rotating the delay arm assembly and the cam until the Micro Switches are actuated.

9.04 When power to pins A and B is interrupted, the tension on the connecting spring is released. At the same time, the clapper assembly releases the tension of the clutch spring. When

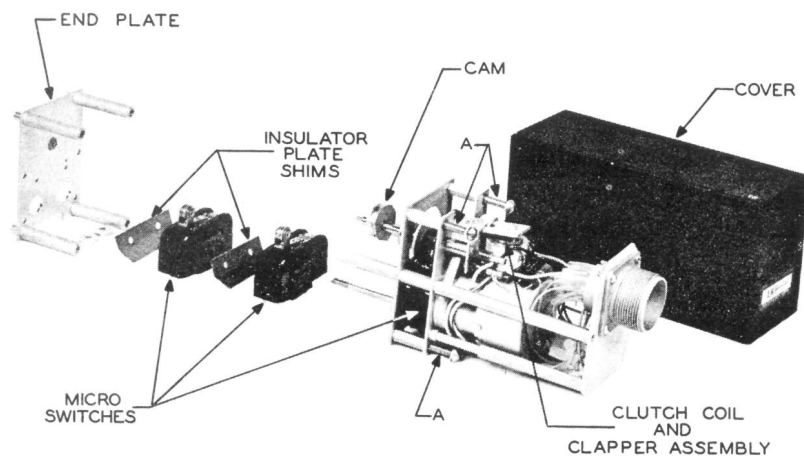


Fig. 1 – A. W. Haydon Timer

the clutch spring loses its tension, the clutch gear is released and the delay arm assembly and the cam are pulled back to their original setting by the delay arm return spring, allowing the Micro Switches to release. In this way, the timer resets automatically whenever the current is shut off.

Testing

9.05 The following tools are required for testing the time delay relay:

- Stop watch for checking time setting.
- Continuity test lamps or equivalent.
- Volt-ohmmeter.
- 24-ounce spring balance for testing clutch mechanism.

9.06 To test continuity of Micro Switches, connect positive battery to the common terminal on the Micro Switch. Connect a continuity test lamp in series with the negative side of this battery and the normally closed terminal on the Micro Switch. The lamp should light. Depress the actuator arm on the switch and the light should be extinguished. If these results do not occur, replace the switch.

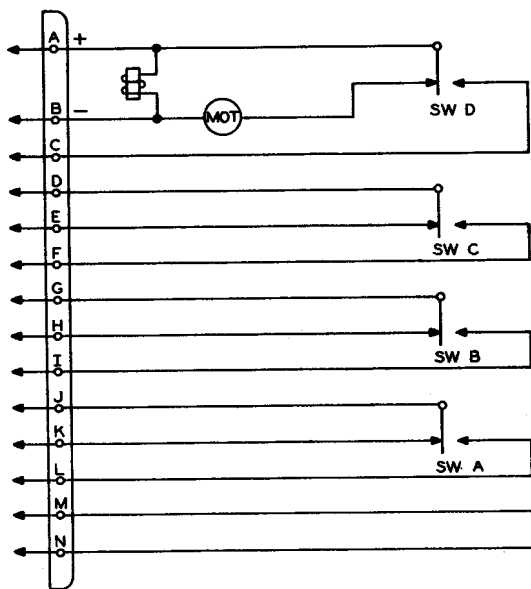


Fig. 2 — A. W. Haydon Timer, P-6421A-1 — Schematic Drawing

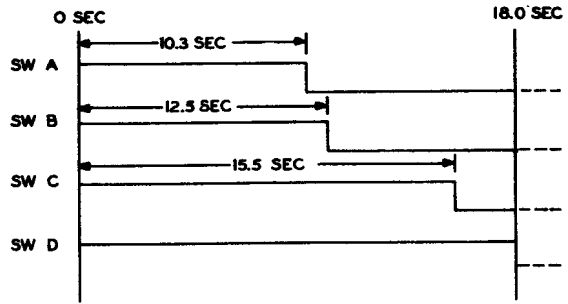


Fig. 3 — A. W. Haydon Timer, P-6421A-1 — Timing Chart

9.07 To test the over-all effectiveness of the clutch mechanism, hold the clapper assembly against the clutch coil, rotate the delay arm assembly until it touches the actuator arm of Micro Switch No. 1, hook a spring balance under the end of the delay arm, and exert an upward pull of 16 ounces, tending to pull the delay arm back toward the return stop. If the delay arm assembly moves, replace the connecting spring. After replacing the connecting spring, repeat the test. If the delay arm assembly again moves, the alternate clutch spring should be replaced.

9.08 Remove the spring balance and release the clapper assembly. Make certain that the delay arm assembly is resting against the return stop.

Caution: Do not exert more than a 16-ounce force in this test, or damage to clutch mechanism may result.

Repairs

9.09 In general, repair of the timer by the repairman should be limited to replacement of faulty Micro Switches. For all major repairs, return the unit to the A. W. Haydon Company, 232 North Elm St., Waterbury 20, Connecticut.

9.10 The timing cams are set at the factory and their set screws sealed. Do not loosen these set screws unless it becomes absolutely necessary to change the cam settings.

9.11 If a cam is reset, its set screw should be tightened securely. Glyptal cement (a General Electric Company product) should be used on the head of the screw as a sealer.

Caution: In no case should the glyptal cement be placed in the hole ahead of the screw, as it would probably then be impossible to loosen the set screw later.

9.12 To disassemble the unit, remove the two screws from the plug end of the unit. Then remove cover. (See Fig. 1.)

9.13 Remove the end plate adjacent to the Micro Switches by removing the two screws on the face of the plate plus the four screws marked A in Fig. 1.

9.14 Remove the two nuts holding the Micro Switches on their mounting shafts. Before the Micro Switches can be removed, the wires must be disconnected from the terminal of each switch.

9.15 When reassembling, make sure the insulator plate shims are installed properly.

9.16 No lubrication is required because the component parts are lubricated for life at time of manufacture.

10.00 CLEARING REPORTED TROUBLE

10.01 The monitor circuit is essentially a remote indicating device used to provide a visual display of the state of the devices on the system. It does not exercise control over any customer devices, but performs the important function of relaying a system signal from one section to another and replies to the preceding main station on a system signal, inquiry, and a system signal order. Therefore, telephone company employees shall obtain the customer's permission to perform work of any kind at the monitor station.

10.02 The principal reason for the plug-in feature for the major apparatus units is to expedite the clearing of reported trouble resulting in dispatching a maintenance man to the monitor location. Sufficient visual supervision is available on the SC2 system to aid the serving test room in sec-

tionizing the trouble on the basis of customer reports.

10.03 It is therefore expected that only obvious minor equipment failures on major units, consuming minimum time, be cleared with equipment in its normal working position.

10.04 Failure of the following major equipment components shall be considered a major failure of the monitor station.

Power plant, if separately provided
Substation set, if separately provided
Receiving circuit
Signaling circuit per SD-1G061-01
Sending and alarm circuit
A. W. Haydon timer

10.05 If the reported trouble is of a general nature, such as occasional failure to register the proper code, improper reply, etc. and signals to the monitor appear satisfactory as recorded in the serving test room, the following recommended trouble clearing procedure should be followed.

- (1) Check to see if any fuses have operated.
- (2) Check the voltage of the power supply. It should read between —45 and —50 volts.

10.06 When the monitor is equipped with dc telegraph signaling, the following additional tests should be made:

- (1) Check the local dc circuit to the signaling circuit. The current reading should be between 60 and 62.5 ma.
- (2) Remove the cover from the 255A (L) relay in the signaling circuit and observe whether the armature is resting against the No. 4 contact.
- (3) Replace the 255A (L) relay in the signaling circuit with one known to be in good condition.
- (4) Insert an open plug in the SET jack of the 63C1 switchboard and observe whether the armature moves toward the No. 5 contact.
- (5) Remove the open plug from the 63C1 switchboard SET jack.
- (6) Check the signaling circuit with the serving test room for transmission limits.

10.07 When the monitor is equipped for *E* and *M* lead signaling, check that the *PF* relay is normal.

10.08 When the entire network uses dc signaling, the telegraph circuit shall have no more than an over-all distortion of 25 per cent at 60-speed teletype signals between the main station and any other point on the network. Transmission to and from the test room should be checked using a 100A test distributor, 161A1 set, or portable transmission measuring set. When signals are sent with the 100A test distributor and measured in the test room with the 118 transmission measuring set, the received bias reading must be multiplied by 2.

10.09 If no further tests are to be made, proceed as in 11.36 through 11.40.

11.00 ROUTINE TEST PROCEDURE

11.01 If preliminary tests fail to locate the trouble condition, certain routine tests may be made to check the integrity of the internal circuit actions.

11.02 In these tests the dial test set is connected to the monitor equipment so that it simulates the external loop. Dial pulses are transmitted from the test set to the monitor. Verification is made by observing relays or by means of lamps located on the equipment and dial test set. See Fig. 4 for the schematic diagram of the dial test set.

11.03 When making these tests, the monitor will be disconnected from the system; therefore, the normal procedure for taking equipment out of service must be followed.

Preparation

11.04 Insert an open plug into the 63C1 switch-board set jack. This action removes the external loop from the monitor equipment.

11.05 With a P3E cord, connect 48-volt battery and ground to the *BG* jack on test set.

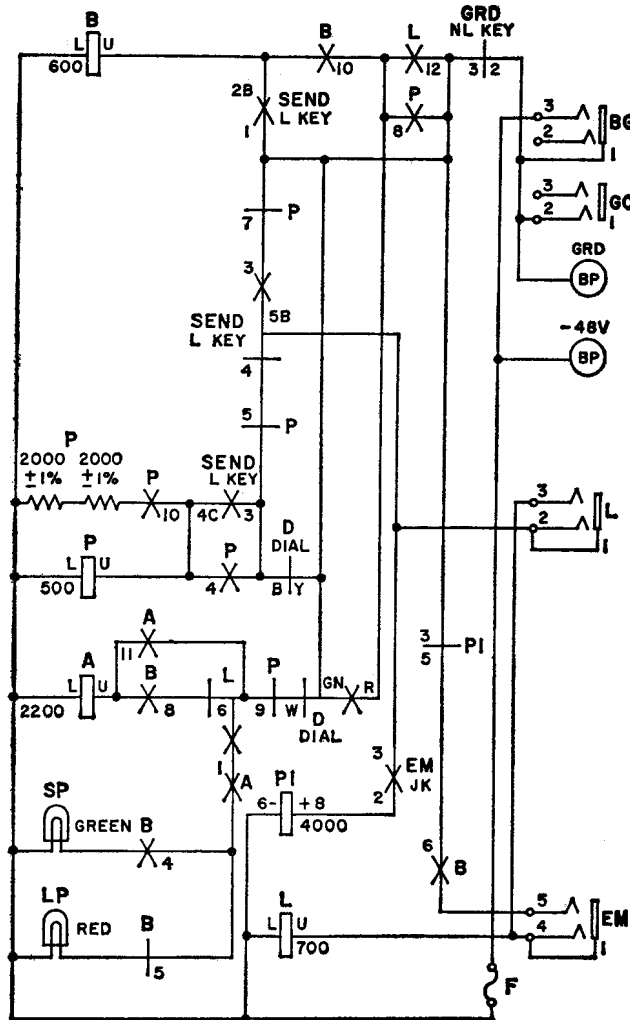


Fig. 4 — Dial Test Set — Schematic Diagram

11.06 With a 2W17C cord, equipped with a 360B and 360C tool, connect the *L* jack on test set to the monitor as follows:

- White lead to terminal 6+ on relay *L*
- Black lead to connect 5 on relay *S*

11.07 Block relay *WT* operated.

11.08 Remove the *L* relay cover and check that the armature is operated to its No. 4 contact. This checks for proper polarity.

Method

11.09 To test for the proper operation of the counting, registering, translation, alarm, and sending circuits, complete preparations as outlined in 11.04 through 11.08. Dial the proper

codes for a particular installation per Tables A or B. Table A covers 3-digit codes and Table B covers the 2-digit codes. To dial a double transmission code, it is necessary to repeat the dialing sequence within 2 seconds.

11.10 When dialing the various codes, observe the positions of the relays in the proper circuit as the dialing progresses. The short pulses will step the *P* relays in the counting chain, and the long pulses will position the registering relays. The progress of the code may thus be observed after each digit is dialed.

11.11 Due to the characteristics of the dial test set, do not attempt to use the set when testing from the central office.

11.12 To receive an uninvited pulse on the test set:

- Operate key.

- Release key.
- Dial digit 1.

11.13 To send a short pulse from the dial test set, dial digit 1 (60-millisecond pulse).

11.14 To send a long pulse from the dial test set:

- Operate key.
- Release key.
- Dial digit 1 after one second.

11.15 Further tests may be made to verify various other equipment functions.

11.16 The following series of five tests check the integrity of the device indicator circuit. Lamp indications are on the console unless otherwise specified.

| STEP | ACTION | VERIFICATION |
|-------------------|-------------------------------------|--------------------------------------|
| Test No. 1 | | |
| 1 | | Assume GD lamp lighted |
| 2 | Dial trip code | WD lamp lighted |
| 3 | Dial short pulse immediately | WD lamp extinguished |
| 4 | | GR lamp lighted momentarily |
| 5 | | GD lamp—no change |
| Test No. 2 | | |
| 1 | | GD lamp lighted (from previous test) |
| 2 | Dial closure code | WD lamp lighted |
| 3 | Dial long pulse immediately | WD lamp extinguished |
| 4 | | RR lamp lighted momentarily |
| 5 | | GD lamp extinguished |
| 6 | | RD lamp flashes |
| 7 | | Buzzer sounds |
| 8 | Operate retire flash key on console | RD lamp steady |
| 9 | Operate retire aud key on console | Buzzer silent |

| STEP | ACTION | VERIFICATION |
|-------------------|-------------------------------------|---|
| Test No. 3 | | |
| 1 | | <i>RD</i> lamp lighted (from previous test) |
| 2 | Dial trip code | <i>WD</i> lamp lighted |
| 3 | Dial short pulse immediately | <i>WD</i> lamp extinguished |
| 4 | | <i>GR</i> lamp lighted momentarily |
| 5 | | <i>RD</i> lamp extinguished |
| 6 | | <i>GD</i> lamp flashes |
| 7 | | Buzzer sounds |
| 8 | Operate RETIRE FLASH key on console | <i>GD</i> lamp steady |
| 9 | Operate RETIRE AUD key on console | Buzzer silent |

Test No. 4

| | | |
|---|----------------|--|
| 1 | | <i>GD</i> lamp lighted (from previous test) |
| 2 | Dial trip code | <i>WD</i> lamp lighted |
| 3 | | <i>GD</i> and <i>WD</i> lamps extinguished after 6 seconds |

Test No. 5

| | | |
|---|------------------------------|------------------------|
| 1 | Dial trip code | <i>WD</i> lamp lighted |
| 2 | Dial short pulse immediately | <i>GR</i> lamp lighted |
| 3 | | <i>GD</i> lamp lighted |

- 11.17** The following series of tests check the monitor for system signal operation (optional feature).
- 11.18** The dial test set should be prepared for receiving a pulse by dialing a long pulse.
- 11.19** Insulate *EMB4* contacts on the signal order relay.
- 11.20** Ground *EMB10* contact on the signal inquiry relay.
- 11.21** Ground *M2* contact on the *AL* relay. The *LP* lamp on test set should light after 18 seconds.

| STEP | ACTION | VERIFICATION |
|-------------------|-------------------------------------|-------------------------------------|
| Test No. 1 | | |
| 1 | Dial system signal inquiry | <i>LP</i> lamp extinguished |
| 2 | | <i>LP</i> lamp relights immediately |
| Test No. 2 | | |
| 1 | Dial system signal code | <i>SP</i> lamp lighted on test set |
| 2 | | SIGNAL ORDER lamp flashes |
| 3 | | Buzzer sounds |
| 4 | Operate RETIRE FLASH key on console | SIGNAL ORDER lamp extinguished |
| 5 | Operate RETIRE AUD key on console | Buzzer silent |

- 11.22** Prepare test set to receive a pulse by dialing a long pulse.
- 11.23** Remove insulator and grounds from equipment. *SP* light on test will light.
- 11.24** The following test checks the monitor for attention signal (optional feature).

| STEP | ACTION | VERIFICATION |
|------|-------------------------------------|------------------------------------|
| 1 | Dial call monitor code | <i>LP</i> lamp lighted on test set |
| 2 | | Bell rings intermittently |
| 3 | | MAIN STA lamp flashes |
| 4 | Operate RETIRE FLASH key on console | MAIN STA lamp extinguished |
| 5 | Operate RETIRE AUD key on console | Bell silent |

11.25 The following tests check the monitor for miscellaneous features.

| STEP | ACTION | VERIFICATION |
|------------------------------------|------------------------------------|-------------------------------|
| Test No. 1 – Mutilated Code | | |
| 1 | Dial any code omitting third digit | MUT SIG ALM lamp lighted |
| 2 | | Buzzer sounds |
| 3 | Operate MUT SIG ALM key on console | MUT SIG ALM lamp extinguished |
| 4 | | Buzzer silent |

11.26 Prepare test set to receive a pulse by dialing a long pulse.

| STEP | ACTION | VERIFICATION |
|-------------------------------|--|--|
| Test No. 2 – Roll Call | | |
| 1 | Operate ROLL CALL START key on console | ROLL CALL START lamp lighted |
| 2 | | LP lamp lighted on test set after 18 seconds |
| 3 | | ROLL CALL START lamp extinguished |

11.27 Remove blocking tool from relay WT and remove dial test set from equipment.

11.28 Remove the plug from the 63C1 switch-board set, if the monitor is arranged for dc telegraph signaling.

11.29 Notify the serving test room that the trouble has been cleared or that tests have been completed.

11.30 Generally, the commercial department will have prepared customer operating practices which outline a procedure to be followed during trouble conditions. The responsibility of the maintenance people should therefore end with notifying the test room and the customer that the trouble condition has been cleared.

11.31 The repairman should not leave the station until dismissed by the serving test room.

12.00 RELAY TIMING REQUIREMENTS

12.01 If the trouble diagnosis indicates improper timing of a relay, the relay should be tested with the No. 5 timing test set. This may be done with the equipment either in or out of the cabinet.

12.02 See the circuit requirement tables for connecting the test set and for timing requirements.

Note: Under no circumstances should timing limits be adjusted without the use of the No. 5 timing test set.

12.03 As a general rule, if a relay meets the mechanical and electrical requirements, it should also meet the timing requirements.

13.00 MAINTENANCE OF SPARE PARTS

The stocking of spare equipment such as A. W. Haydon timers, plug-in relay units, etc, should be determined by the telephone company involved.

TABLE A
3-DIGIT CODES

| Code | Dial Number as Follows* | Code | Dial Number as Follows | Code | Dial Number as Follows |
|-------------|------------------------------------|-------------|-----------------------------------|-------------|-----------------------------------|
| 000 | K414141R1 | 040 | K411351R1 | 080 | K412341R1 |
| 001 | K414111R4 | 041 | K411321R4 | 081 | K412311R4 |
| 002 | K414112R3 | 042 | K411322R3 | 082 | K412312R3 |
| 003 | K414121R3 | 043 | K411331R3 | 083 | K412321R3 |
| 004 | K414113R2 | 044 | K411323R2 | 084 | K412313R2 |
| 005 | K414122R2 | 045 | K411332R2 | 085 | K412322R2 |
| 006 | K414131R2 | 046 | K411341R2 | 086 | K412331R2 |
| 007 | K414114R1 | 047 | K411324R1 | 087 | K412314R1 |
| 008 | K414123R1 | 048 | K411333R1 | 088 | K412323R1 |
| 009 | K414132R1 | 049 | K411342R1 | 089 | K412332R1 |
| 010 | K411171R1 | 050 | K412251R1 | 090 | K413241R1 |
| 011 | K411141R4 | 051 | K412221R4 | 091 | K413211R4 |
| 012 | K411142R3 | 052 | K412222R3 | 092 | K413212R3 |
| 013 | K411151R3 | 053 | K412231R3 | 093 | K413221R3 |
| 014 | K411143R2 | 054 | K412223R2 | 094 | K413213R2 |
| 015 | K411152R2 | 055 | K412232R2 | 095 | K413222R2 |
| 016 | K411161R2 | 056 | K412241R2 | 096 | K413231R2 |
| 017 | K411144R1 | 057 | K412224R1 | 097 | K413214R1 |
| 018 | K411153R1 | 058 | K412233R1 | 098 | K413223R1 |
| 019 | K411162R1 | 059 | K412242R1 | 099 | K413232R1 |
| 020 | K411261R1 | 060 | K413151R1 | 100 | K117141R1 |
| 021 | K411231R4 | 061 | K413121R4 | 101 | K117111R4 |
| 022 | K411232R3 | 062 | K413122R3 | 102 | K117112R3 |
| 023 | K411241R3 | 063 | K413131R3 | 103 | K117121R3 |
| 024 | K411233R2 | 064 | K413123R2 | 104 | K117113R2 |
| 025 | K411242R2 | 065 | K413132R2 | 105 | K117122R2 |
| 026 | K411251R2 | 066 | K413141R2 | 106 | K117131R2 |
| 027 | K411234R1 | 067 | K413124R1 | 107 | K117114R1 |
| 028 | K411243R1 | 068 | K413133R1 | 108 | K117123R1 |
| 029 | K411252R1 | 069 | K413142R1 | 109 | K117132R1 |
| 030 | K412161R1 | 070 | K411441R1 | 110 | K114171R1 |
| 031 | K412131R4 | 071 | K411411R4 | 111 | K114141R4 |
| 032 | K412132R3 | 072 | K411412R3 | 112 | K114142R3 |
| 033 | K412141R3 | 073 | K411421R3 | 113 | K114151R3 |
| 034 | K412133R2 | 074 | K411413R2 | 114 | K114143R2 |
| 035 | K412142R2 | 075 | K411422R2 | 115 | K114152R2 |
| 036 | K412151R2 | 076 | K411431R2 | 116 | K114161R2 |
| 037 | K412134R1 | 077 | K411414R1 | 117 | K114144R1 |
| 038 | K412143R1 | 078 | K411423R1 | 118 | K114153R1 |
| 039 | K412152R1 | 079 | K411432R1 | 119 | K114162R1 |

* K = Operate (K) Key
R = Release (K) Key

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 120 | K114261R1 | 160 | K116151R1 | 200 | K126141R1 |
| 121 | K114231R4 | 161 | K116121R4 | 201 | K126111R4 |
| 122 | K114232R3 | 162 | K116122R3 | 202 | K126112R3 |
| 123 | K114241R3 | 163 | K116131R3 | 203 | K126121R3 |
| 124 | K114233R2 | 164 | K116123R2 | 204 | K126113R2 |
| 125 | K114242R2 | 165 | K116132R2 | 205 | K126122R2 |
| 126 | K114251R2 | 166 | K116141R2 | 206 | K126131R2 |
| 127 | K114234R1 | 167 | K116124R1 | 207 | K126114R1 |
| 128 | K114243R1 | 168 | K116133R1 | 208 | K126123R1 |
| 129 | K114252R1 | 169 | K116142R1 | 209 | K126132R1 |
| 130 | K115161R1 | 170 | K114441R1 | 210 | K123171R1 |
| 131 | K115131R4 | 171 | K114411R4 | 211 | K123141R4 |
| 132 | K115132R3 | 172 | K114412R3 | 212 | K123142R3 |
| 133 | K115141R3 | 173 | K114421R3 | 213 | K123151R3 |
| 134 | K115133R2 | 174 | K114413R2 | 214 | K123143R2 |
| 135 | K115142R2 | 175 | K114422R2 | 215 | K123152R2 |
| 136 | K115151R2 | 176 | K114431R2 | 216 | K123161R2 |
| 137 | K115134R1 | 177 | K114414R1 | 217 | K123144R1 |
| 138 | K115143R1 | 178 | K114423R1 | 218 | K123153R1 |
| 139 | K115152R1 | 179 | K114432R1 | 219 | K123162R1 |
| 140 | K114351R1 | 180 | K115341R1 | 220 | K123261R1 |
| 141 | K114321R4 | 181 | K115311R4 | 221 | K123231R4 |
| 142 | K114322R3 | 182 | K115312R3 | 222 | K123232R3 |
| 143 | K114331R3 | 183 | K115321R3 | 223 | K123241R3 |
| 144 | K114323R2 | 184 | K115313R2 | 224 | K123233R2 |
| 145 | K114332R2 | 185 | K115322R2 | 225 | K123242R2 |
| 146 | K114341R2 | 186 | K115331R2 | 226 | K123251R2 |
| 147 | K114324R1 | 187 | K115334R1 | 227 | K123234R1 |
| 148 | K114333R1 | 188 | K115323R1 | 228 | K123243R1 |
| 149 | K114342R1 | 189 | K115332R1 | 229 | K123252R1 |
| 150 | K115251R1 | 190 | K116241R1 | 230 | K124161R1 |
| 151 | K115221R4 | 191 | K116211R4 | 231 | K124131R4 |
| 152 | K115222R3 | 192 | K116212R3 | 232 | K124132R3 |
| 153 | K115231R3 | 193 | K116221R3 | 233 | K124141R3 |
| 154 | K115223R2 | 194 | K116213R2 | 234 | K124133R2 |
| 155 | K115232R2 | 195 | K116222R2 | 235 | K124142R2 |
| 156 | K115241R2 | 196 | K116231R2 | 236 | K124151R2 |
| 157 | K115224R1 | 197 | K116214R1 | 237 | K124134R1 |
| 158 | K115233R1 | 198 | K116223R1 | 238 | K124143R1 |
| 159 | K115242R1 | 199 | K116232R1 | 239 | K124152R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 240 | K123351R1 | 280 | K124341R1 | 320 | K213261R1 |
| 241 | K123321R4 | 281 | K124311R4 | 321 | K213231R4 |
| 242 | K123322R3 | 282 | K124312R3 | 322 | K213232R3 |
| 243 | K123331R3 | 283 | K124321R3 | 323 | K213241R3 |
| 244 | K123323R2 | 284 | K124313R2 | 324 | K213233R2 |
| 245 | K123332R2 | 285 | K124322R2 | 325 | K213242R2 |
| 246 | K123341R2 | 286 | K124331R2 | 326 | K213251R2 |
| 247 | K123324R1 | 287 | K124314R1 | 327 | K213234R1 |
| 248 | K123333R1 | 288 | K124323R1 | 328 | K213243R1 |
| 249 | K123342R1 | 289 | K124332R1 | 329 | K213252R1 |
| 250 | K124251R1 | 290 | K125241R1 | 330 | K214161R1 |
| 251 | K124221R4 | 291 | K125211R4 | 331 | K214131R4 |
| 252 | K124222R3 | 292 | K125212R3 | 332 | K214132R3 |
| 253 | K124231R3 | 293 | K125221R3 | 333 | K214141R3 |
| 254 | K124223R2 | 294 | K125213R2 | 334 | K214133R2 |
| 255 | K124232R2 | 295 | K125222R2 | 335 | K214142R2 |
| 256 | K124241R2 | 296 | K125231R2 | 336 | K214151R2 |
| 257 | K124224R1 | 297 | K125214R1 | 337 | K214134R1 |
| 258 | K124233R1 | 298 | K125223R1 | 338 | K214143R1 |
| 259 | K124242R1 | 299 | K125232R1 | 339 | K214152R1 |
| 260 | K125151R1 | 300 | K216141R1 | 340 | K213351R1 |
| 261 | K125121R4 | 301 | K216111R4 | 341 | K213321R4 |
| 262 | K125122R3 | 302 | K216112R3 | 342 | K213322R3 |
| 263 | K125131R3 | 303 | K216121R3 | 343 | K213331R3 |
| 264 | K125123R2 | 304 | K216113R2 | 344 | K213323R2 |
| 265 | K125132R2 | 305 | K216122R2 | 345 | K213332R2 |
| 266 | K125141R2 | 306 | K216131R2 | 346 | K213341R2 |
| 267 | K125124R1 | 307 | K216114R1 | 347 | K213324R1 |
| 268 | K125133R1 | 308 | K216123R1 | 348 | K213333R1 |
| 269 | K125142R1 | 309 | K216132R1 | 349 | K213342R1 |
| 270 | K123441R1 | 310 | K213171R1 | 350 | K214251R1 |
| 271 | K123411R4 | 311 | K212141R4 | 351 | K214221R4 |
| 272 | K123412R3 | 312 | K213142R3 | 352 | K214222R3 |
| 273 | K123421R3 | 313 | K213151R3 | 353 | K214231R3 |
| 274 | K123413R2 | 314 | K213143R2 | 354 | K214223R2 |
| 275 | K123422R2 | 315 | K213152R2 | 355 | K214232R2 |
| 276 | K123431R2 | 316 | K213161R2 | 356 | K214241R2 |
| 277 | K123414R1 | 317 | K213144R1 | 357 | K214224R1 |
| 278 | K123423R1 | 318 | K213153R1 | 358 | K214233R1 |
| 279 | K123432R1 | 319 | K213162R1 | 359 | K214242R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 360 | K215151R1 | 400 | K135141R1 | 440 | K132351R1 |
| 361 | K215121R4 | 401 | K135111R4 | 441 | K132321R4 |
| 362 | K215122R3 | 402 | K135112R3 | 442 | K132322R3 |
| 363 | K215131R3 | 403 | K135121R3 | 443 | K132331R3 |
| 364 | K215123R2 | 404 | K135113R2 | 444 | K132323R2 |
| 365 | K215132R2 | 405 | K135122R2 | 445 | K132332R2 |
| 366 | K215141R2 | 406 | K135131R2 | 446 | K132341R2 |
| 367 | K215124R1 | 407 | K135114R1 | 447 | K132324R1 |
| 368 | K215133R1 | 408 | K135123R1 | 448 | K132333R1 |
| 369 | K215142R1 | 409 | K135132R1 | 449 | K132342R1 |
| 370 | K213441R1 | 410 | K132171R1 | 450 | K133251R1 |
| 371 | K213411R4 | 411 | K132141R4 | 451 | K133221R4 |
| 372 | K213412R3 | 412 | K132142R3 | 452 | K133222R3 |
| 373 | K213421R3 | 413 | K132151R3 | 453 | K133231R3 |
| 374 | K213413R2 | 414 | K132143R2 | 454 | K133223R2 |
| 375 | K213422R2 | 415 | K132152R2 | 455 | K133232R2 |
| 376 | K213431R2 | 416 | K132161R2 | 456 | K133241R2 |
| 377 | K213414R1 | 417 | K132144R1 | 457 | K133224R1 |
| 378 | K213423R1 | 418 | K132153R1 | 458 | K133233R1 |
| 379 | K213432R1 | 419 | K132162R1 | 459 | K133242R1 |
| 380 | K214341R1 | 420 | K132261R1 | 460 | K134151R1 |
| 381 | K214311R4 | 421 | K132231R4 | 461 | K134121R4 |
| 382 | K214312R3 | 422 | K132232R3 | 462 | K134122R3 |
| 383 | K214321R3 | 423 | K132241R3 | 463 | K134131R3 |
| 384 | K214313R2 | 424 | K132233R2 | 464 | K134123R2 |
| 385 | K214322R2 | 425 | K132242R2 | 465 | K134132R2 |
| 386 | K214331R2 | 426 | K132251R2 | 466 | K134141R2 |
| 387 | K214314R1 | 427 | K132234R1 | 467 | K134124R1 |
| 388 | K214323R1 | 428 | K132243R1 | 468 | K134133R1 |
| 389 | K214332R1 | 429 | K132252R1 | 469 | K134142R1 |
| 390 | K215241R1 | 430 | K133161R1 | 470 | K132441R1 |
| 391 | K215211R4 | 431 | K133131R4 | 471 | K132411R4 |
| 392 | K215212R3 | 432 | K133132R3 | 472 | K132412R3 |
| 393 | K215221R3 | 433 | K133141R3 | 473 | K132421R3 |
| 394 | K215213R2 | 434 | K133133R2 | 474 | K132413R2 |
| 395 | K215222R2 | 435 | K133142R2 | 475 | K132422R2 |
| 396 | K215231R2 | 436 | K133151R2 | 476 | K132431R2 |
| 397 | K215214R1 | 437 | K133134R1 | 477 | K132414R1 |
| 398 | K215223R1 | 438 | K133143R1 | 478 | K132423R1 |
| 399 | K215232R1 | 439 | K133152R1 | 479 | K132432R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 480 | K133341R1 | 520 | K222261R1 | 560 | K224151R1 |
| 481 | K133311R4 | 521 | K222231R4 | 561 | K224121R4 |
| 482 | K133312R3 | 522 | K222232R3 | 562 | K224122R3 |
| 483 | K133321R3 | 523 | K222241R3 | 563 | K224131R3 |
| 484 | K133313R2 | 524 | K222233R2 | 564 | K224123R2 |
| 485 | K133322R2 | 525 | K222242R2 | 565 | K224132R2 |
| 486 | K133331R2 | 526 | K222251R2 | 566 | K224141R2 |
| 487 | K133314R1 | 527 | K222234R1 | 567 | K224124R1 |
| 488 | K133323R1 | 528 | K222243R1 | 568 | K224133R1 |
| 489 | K133332R1 | 529 | K222252R1 | 569 | K224142R1 |
| 490 | K134241R1 | 530 | K223161R1 | 570 | K222441R1 |
| 491 | K134211R4 | 531 | K223131R4 | 571 | K222411R4 |
| 492 | K134212R3 | 532 | K223132R3 | 572 | K222412R3 |
| 493 | K134221R3 | 533 | K223141R3 | 573 | K222421R3 |
| 494 | K134213R2 | 534 | K223133R2 | 574 | K222413R2 |
| 495 | K134222R2 | 535 | K223142R2 | 575 | K222422R2 |
| 496 | K134231R2 | 536 | K223151R2 | 576 | K222431R2 |
| 497 | K134214R1 | 537 | K223134R1 | 577 | K222414R1 |
| 498 | K134223R1 | 538 | K223143R1 | 578 | K222423R1 |
| 499 | K134232R1 | 539 | K223152R1 | 579 | K222432R1 |
| 500 | K225141R1 | 540 | K222351R1 | 580 | K223341R1 |
| 501 | K225111R4 | 541 | K222321R4 | 581 | K223311R4 |
| 502 | K225112R3 | 542 | K222322R3 | 582 | K223312R3 |
| 503 | K225121R3 | 543 | K222331R3 | 583 | K223321R3 |
| 504 | K225113R2 | 544 | K222323R2 | 584 | K223313R2 |
| 505 | K225122R2 | 545 | K222332R2 | 585 | K223322R2 |
| 506 | K225131R2 | 546 | K222341R2 | 586 | K223331R2 |
| 507 | K225114R1 | 547 | K222324R1 | 587 | K223314R1 |
| 508 | K225123R1 | 548 | K222333R1 | 588 | K223323R1 |
| 509 | K225132R1 | 549 | K222342R1 | 589 | K223332R1 |
| 510 | K222171R1 | 550 | K223251R1 | 590 | K224241R1 |
| 511 | K222141R4 | 551 | K223221R4 | 591 | K224211R4 |
| 512 | K222142R3 | 552 | K223222R3 | 592 | K224212R3 |
| 513 | K222151R3 | 553 | K223231R3 | 593 | K224221R3 |
| 514 | K222143R2 | 554 | K223223R2 | 594 | K224213R2 |
| 515 | K222152R2 | 555 | K223232R2 | 595 | K224222R2 |
| 516 | K222161R2 | 556 | K223241R2 | 596 | K224231R2 |
| 517 | K222144R1 | 557 | K223224R1 | 597 | K224214R1 |
| 518 | K222153R1 | 558 | K223233R1 | 598 | K224223R1 |
| 519 | K222162R1 | 559 | K223242R1 | 599 | K224232R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 600 | K315141R1 | 640 | K312351R1 | 680 | K313341R1 |
| 601 | K315111R4 | 641 | K312321R4 | 681 | K313311R4 |
| 602 | K315112R3 | 642 | K312322R3 | 682 | K313312R3 |
| 603 | K315121R3 | 643 | K312331R3 | 683 | K313321R3 |
| 604 | K315113R2 | 644 | K312323R2 | 684 | K313313R2 |
| 605 | K315122R2 | 645 | K312332R2 | 685 | K313322R2 |
| 606 | K315131R2 | 646 | K312341R2 | 686 | K313331R2 |
| 607 | K315114R1 | 647 | K312324R1 | 687 | K313314R1 |
| 608 | K315123R1 | 648 | K312333R1 | 688 | K313323R1 |
| 609 | K315132R1 | 649 | K312342R1 | 689 | K313332R1 |
| 610 | K312171R1 | 650 | K313251R1 | 690 | K314241R1 |
| 611 | K312141R4 | 651 | K313221R4 | 691 | K314211R4 |
| 612 | K312142R3 | 652 | K313222R3 | 692 | K314212R3 |
| 613 | K312151R3 | 653 | K313231R3 | 693 | K314221R3 |
| 614 | K312143R2 | 654 | K313223R2 | 694 | K314213R2 |
| 615 | K312152R2 | 655 | K313232R2 | 695 | K314222R2 |
| 616 | K312161R2 | 656 | K313241R2 | 696 | K314231R2 |
| 617 | K312144R1 | 657 | K313224R1 | 697 | K314214R1 |
| 618 | K312153R1 | 658 | K313233R1 | 698 | K314223R1 |
| 619 | K312162R1 | 659 | K313242R1 | 699 | K314232R1 |
| 620 | K312261R1 | 660 | K314151R1 | 700 | K144141R1 |
| 621 | K312231R4 | 661 | K314121R4 | 701 | K144111R4 |
| 622 | K312232R3 | 662 | K314122R3 | 702 | K144112R3 |
| 623 | K312241R3 | 663 | K314131R3 | 703 | K144121R3 |
| 624 | K312233R2 | 664 | K314123R2 | 704 | K144113R2 |
| 625 | K312242R2 | 665 | K314132R2 | 705 | K144122R2 |
| 626 | K312251R2 | 666 | K314141R2 | 706 | K144131R2 |
| 627 | K312234R1 | 667 | K314124R1 | 707 | K144114R1 |
| 628 | K312243R1 | 668 | K314133R1 | 708 | K144123R1 |
| 629 | K312252R1 | 669 | K314142R1 | 709 | K144132R1 |
| 630 | K313161R1 | 670 | K312441R1 | 710 | K141171R1 |
| 631 | K313131R4 | 671 | K312411R4 | 711 | K141141R4 |
| 632 | K313132R3 | 672 | K312412R3 | 712 | K141142R3 |
| 633 | K313141R3 | 673 | K312421R3 | 713 | K141151R3 |
| 634 | K313133R2 | 674 | K312413R2 | 714 | K141143R2 |
| 635 | K313142R2 | 675 | K312422R2 | 715 | K141152R2 |
| 636 | K313151R2 | 676 | K312431R2 | 716 | K141161R2 |
| 637 | K313134R1 | 677 | K312414R1 | 717 | K141144R1 |
| 638 | K313143R1 | 678 | K312423R1 | 718 | K141153R1 |
| 639 | K313152R1 | 679 | K312432R1 | 719 | K141162R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 720 | K141261R1 | 760 | K143151R1 | 800 | K234141R1 |
| 721 | K141231R4 | 761 | K143121R4 | 801 | K234111R4 |
| 722 | K141232R3 | 762 | K143122R3 | 802 | K234112R3 |
| 723 | K141241R3 | 763 | K143131R3 | 803 | K234121R3 |
| 724 | K141233R2 | 764 | K143123R2 | 804 | K234113R2 |
| 725 | K141242R2 | 765 | K143132R2 | 805 | K234122R2 |
| 726 | K141251R2 | 766 | K143141R2 | 806 | K234131R2 |
| 727 | K141234R1 | 767 | K143124R1 | 807 | K234114R1 |
| 728 | K141243R1 | 768 | K143133R1 | 808 | K234123R1 |
| 729 | K141252R1 | 769 | K143142R1 | 809 | K234132R1 |
| 730 | K142161R1 | 770 | K141441R1 | 810 | K231171R1 |
| 731 | K142131R4 | 771 | K141411R4 | 811 | K231141R4 |
| 732 | K142132R3 | 772 | K141412R3 | 812 | K231142R3 |
| 733 | K142141R3 | 773 | K141421R3 | 813 | K231151R3 |
| 734 | K142133R2 | 774 | K141413R2 | 814 | K231143R2 |
| 735 | K142142R2 | 775 | K141422R2 | 815 | K231152R2 |
| 736 | K142151R2 | 776 | K141431R2 | 816 | K231161R2 |
| 737 | K142134R1 | 777 | K141414R1 | 817 | K231144R1 |
| 738 | K142143R1 | 778 | K141423R1 | 818 | K231153R1 |
| 739 | K142152R1 | 779 | K141432R1 | 819 | K231162R1 |
| 740 | K141351R1 | 780 | K142341R1 | 820 | K231261R1 |
| 741 | K141321R4 | 781 | K142311R4 | 821 | K231231R4 |
| 742 | K141322R3 | 782 | K142312R3 | 822 | K231232R3 |
| 743 | K141331R3 | 783 | K142321R3 | 823 | K231241R3 |
| 744 | K141323R2 | 784 | K142313R2 | 824 | K231233R2 |
| 745 | K141332R2 | 785 | K142322R2 | 825 | K231242R2 |
| 746 | K141341R2 | 786 | K142331R2 | 826 | K231251R2 |
| 747 | K141324R1 | 787 | K142314R1 | 827 | K231234R1 |
| 748 | K141333R1 | 788 | K142323R1 | 828 | K231243R1 |
| 749 | K141342R1 | 789 | K142332R1 | 829 | K231252R1 |
| 750 | K142251R1 | 790 | K143241R1 | 830 | K232161R1 |
| 751 | K142221R4 | 791 | K143211R4 | 831 | K232131R4 |
| 752 | K142222R3 | 792 | K143212R3 | 832 | K232132R3 |
| 753 | K142231R3 | 793 | K143221R3 | 833 | K232141R3 |
| 754 | K142223R2 | 794 | K143213R2 | 834 | K232133R2 |
| 755 | K142232R2 | 795 | K143222R2 | 835 | K232142R2 |
| 756 | K142241R2 | 796 | K143231R2 | 836 | K232151R2 |
| 757 | K142224R1 | 797 | K143214R1 | 837 | K232134R1 |
| 758 | K142233R1 | 798 | K143223R1 | 838 | K232143R1 |
| 759 | K142242R1 | 799 | K143232R1 | 839 | K232152R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|---------------------------|------|---------------------------|------|---------------------------|
| 840 | K231351R1 | 880 | K232341R1 | 920 | K321261R1 |
| 841 | K231321R4 | 881 | K232311R4 | 921 | K321231R4 |
| 842 | K231322R3 | 882 | K232312R3 | 922 | K321232R3 |
| 843 | K231331R3 | 883 | K232321R3 | 923 | K321241R3 |
| 844 | K231323R2 | 884 | K232313R2 | 924 | K321233R2 |
| 845 | K231332R2 | 885 | K232322R2 | 925 | K321242R2 |
| 846 | K231341R2 | 886 | K232331R2 | 926 | K321251R2 |
| 847 | K231324R1 | 887 | K232314R1 | 927 | K321234R1 |
| 848 | K231333R1 | 888 | K232323R1 | 928 | K321243R1 |
| 849 | K231342R1 | 889 | K232332R1 | 929 | K321252R1 |
| 850 | K232251R1 | 890 | K233241R1 | 930 | K322161R1 |
| 851 | K232221R4 | 891 | K233211R4 | 931 | K322131R4 |
| 852 | K232222R3 | 892 | K233212R3 | 932 | K322132R3 |
| 853 | K232231R3 | 893 | K233221R3 | 933 | K322141R3 |
| 854 | K232223R2 | 894 | K233213R2 | 934 | K322133R2 |
| 855 | K232232R2 | 895 | K233222R2 | 935 | K322142R2 |
| 856 | K232241R2 | 896 | K233231R2 | 936 | K322151R2 |
| 857 | K232224R1 | 897 | K233214R1 | 937 | K322134R1 |
| 858 | K232233R1 | 898 | K233223R1 | 938 | K322143R1 |
| 859 | K232242R1 | 899 | K233232R1 | 939 | K322152R1 |
| 860 | K233151R1 | 900 | K324141R1 | 940 | K321351R1 |
| 861 | K233121R4 | 901 | K324111R4 | 941 | K321321R4 |
| 862 | K233122R3 | 902 | K324112R3 | 942 | K321322R3 |
| 863 | K233131R3 | 903 | K324121R3 | 943 | K321331R3 |
| 864 | K233123R2 | 904 | K324113R2 | 944 | K321323R2 |
| 865 | K233132R2 | 905 | K324122R2 | 945 | K321332R2 |
| 866 | K233141R2 | 906 | K324131R2 | 946 | K321341R2 |
| 867 | K233124R1 | 907 | K324114R1 | 947 | K321324R1 |
| 868 | K233133R1 | 908 | K324123R1 | 948 | K321333R1 |
| 869 | K233142R1 | 909 | K324132R1 | 949 | K321342R1 |
| 870 | K231441R1 | 910 | K321171R1 | 950 | K322251R1 |
| 871 | K231411R4 | 911 | K321141R4 | 951 | K322221R4 |
| 872 | K231412R3 | 912 | K321142R3 | 952 | K322222R3 |
| 873 | K231421R3 | 913 | K321151R3 | 953 | K322231R3 |
| 874 | K231413R2 | 914 | K321143R2 | 954 | K322223R2 |
| 875 | K231422R2 | 915 | K321152R2 | 955 | K322232R2 |
| 876 | K231431R2 | 916 | K321161R2 | 956 | K322241R2 |
| 877 | K231414R1 | 917 | K321144R1 | 957 | K322224R1 |
| 878 | K231423R1 | 918 | K321153R1 | 958 | K322233R1 |
| 879 | K231432R1 | 919 | K321162R1 | 959 | K322242R1 |

TABLE A (Cont)

3-DIGIT CODES

| Code | Dial Number as Follows |
|------|---------------------------|
| 960 | K323151R1 |
| 961 | K323121R4 |
| 962 | K323122R3 |
| 963 | K323131R3 |
| 964 | K323123R2 |
| 965 | K323132R2 |
| 966 | K323141R2 |
| 967 | K323124R1 |
| 968 | K323133R1 |
| 969 | K323142R1 |
| 970 | K321441R1 |
| 971 | K321411R4 |
| 972 | K321412R3 |
| 973 | K321421R3 |
| 974 | K321413R2 |
| 975 | K321422R2 |
| 976 | K321431R2 |
| 977 | K321414R1 |
| 978 | K321423R1 |
| 979 | K321432R1 |
| 980 | K322341R1 |
| 981 | K322311R4 |
| 982 | K322312R3 |
| 983 | K322321R3 |
| 984 | K322313R2 |
| 985 | K322322R2 |
| 986 | K322331R2 |
| 987 | K322314R1 |
| 988 | K322323R1 |
| 989 | K322332R1 |
| 990 | K323241R1 |
| 991 | K323211R4 |
| 992 | K323212R3 |
| 993 | K323221R3 |
| 994 | K323213R2 |
| 995 | K323222R2 |
| 996 | K323231R2 |
| 997 | K323214R1 |
| 998 | K323223R1 |
| 999 | K323232R1 |

TABLE B
2-DIGIT CODES

| Code | Dial Number as Follows* | Code | Dial Number as Follows | Code | Dial Number as Follows |
|------|----------------------------|------|---------------------------|------|---------------------------|
| 00 | K4141R1 | 40 | K1351R1 | 80 | K2341R1 |
| 01 | K4111R4 | 41 | K1321R4 | 81 | K2311R4 |
| 02 | K4112R3 | 42 | K1322R3 | 82 | K2312R3 |
| 03 | K4121R3 | 43 | K1331R3 | 83 | K2321R3 |
| 04 | K4113R2 | 44 | K1323R2 | 84 | K2313R2 |
| 05 | K4122R2 | 45 | K1332R2 | 85 | K2322R2 |
| 06 | K4131R2 | 46 | K1341R2 | 86 | K2331R2 |
| 07 | K4114R1 | 47 | K1324R1 | 87 | K2314R1 |
| 08 | K4123R1 | 48 | K1333R1 | 88 | K2323R1 |
| 09 | K4132R1 | 49 | K1342R1 | 89 | K2332R1 |
| 10 | K1171R1 | 50 | K2251R1 | 90 | K3241R1 |
| 11 | K1141R4 | 51 | K2221R4 | 91 | K3211R4 |
| 12 | K1142R3 | 52 | K2222R3 | 92 | K3212R3 |
| 13 | K1151R3 | 53 | K2231R3 | 93 | K3221R3 |
| 14 | K1143R2 | 54 | K2223R2 | 94 | K3213R2 |
| 15 | K1152R2 | 55 | K2232R2 | 95 | K3222R2 |
| 16 | K1161R2 | 56 | K2241R2 | 96 | K3231R2 |
| 17 | K1144R1 | 57 | K2224R1 | 97 | K3214R1 |
| 18 | K1153R1 | 58 | K2233R1 | 98 | K3223R1 |
| 19 | K1162R1 | 59 | K2242R1 | 99 | K3232R1 |
| 20 | K1261R1 | 60 | K3151R1 | | |
| 21 | K1231R4 | 61 | K3121R4 | | |
| 22 | K1232R3 | 62 | K3122R3 | | |
| 23 | K1241R3 | 63 | K3131R3 | | |
| 24 | K1233R2 | 64 | K3123R2 | | |
| 25 | K1242R2 | 65 | K3132R2 | | |
| 26 | K1251R2 | 66 | K3141R2 | | |
| 27 | K1234R1 | 67 | K3124R1 | | |
| 28 | K1243R1 | 68 | K3133R1 | | |
| 29 | K1252R1 | 69 | K3142R1 | | |
| 30 | K2161R1 | 70 | K1441R1 | | |
| 31 | K2131R4 | 71 | K1411R4 | | |
| 32 | K2132R3 | 72 | K1412R3 | | |
| 33 | K2141R3 | 73 | K1421R3 | | |
| 34 | K2133R2 | 74 | K1413R2 | | |
| 35 | K2142R2 | 75 | K1422R2 | | |
| 36 | K2151R2 | 76 | K1431R2 | | |
| 37 | K2134R1 | 77 | K1414R1 | | |
| 38 | K2143R1 | 78 | K1423R1 | | |
| 39 | K2152R1 | 79 | K1432R1 | | |

* K = Operate (K) Key
R = Release (K) Key