Aristel Networks

AV38

INSTALLATION GUIDE

Version number 1.0 issued March 2001

Aristel Networks Pty Ltd
Unit 3A, 100 Station Street
Nunawading VIC 3161
Telephone: 03 9837 2300
Facsimile: 03 9872 4433

CONTENTS

GENERAL DESCRIPTION

INTRODUCTION 1

SPECIFICATION 2

INTRODUCTION 3

SITE REQUIREMENT 3

PCB AND CABINET LAYOUT 4

SYSTEM INTER-CIRCUIT LAYOUT.....**4**

A6PWUA (POWER BOARD UNIT).....**6**

A6RGC RING GENERATOR CARD FOR A6SLU AND A6HYU CARDS.....**6**

■A6MBUB MOTHER BOARD UNIT.....**8**

■A6STU8 8 PORT KEY STATION CARD.....**10**

■A6HYU 2 KEY & 6 SLT PORT HYBRID STATION CARD.....**12**

■A6SLU 8 SINGLE LINE STATION PORTCARD.....**13**

■A6SLC 2 PORT SINGLE LINE STATION CARD,.....**14**

■A6ELC EXPANSION LINK CARD.....**14**

■A6TKU4 4 PORT TRUNK CARD.....**16**

■A6TKU4R 4 PORT TRUNKS CARD WITH REVERSAL & METERING.....**17**

■A6MDC12 12KHz METERING PULSE DETECTION CARD.....**19**

■A6VSC 2 CHANNEL VOICE SERVICE CARD.....**19**

■A6MFC MULTI FUNCTION CARD, 2 SENSORS + 2 RELAYS + 2 DOOR PHONES.....**21**

■A6RSC RS232 CARD - 1ST RS232 INTERFACE.....**22**

■A6RSCB 2ND RS232 INTERFACE CARD.....**24**

■A6RPC REMOTE PROGRAMMING CARD.....**24**

INSTALLATION AND WIRING*.....*26

■AC POWER AND BATTERY BACK-UP INSTALLATION.....**26**

■A6TKU4 AND A6TKU4R TRUNK CARD WIRING - CO LINES, FAX AND POWER FAIL TELEPHONE TERMINATIONS.....**27**

■METERING PULSE DETECTION CARD INSTALLATION ON A6TKU4R CARDS ONLY.....**29**

■TELEPHONE STATION WIRING.....**30**

■OHCA KEY STATION INSTALLATION ONLY AVAILABLE ON A6STU.....**34**

■A6MFC INSTALLATION OF THE DOOR PHONE, SENSOR AND SWITCH. **42**

■EXTERNAL PAGING ANDMUSIC ON HOLD WIRING.....**43**

■RS232 (SERIAL PRINTER OR PC) AND RPC INSTALLATION.....**44**

INTRODUCTION

ARISTEL AV-38 Telephone System minimum configuration of 4 CO Lines + 8 Stations can be readily expanded to 12 CO Lines + 26 Stations.

It is quite versatile and uses:

- IAPX8088 microprocessor for it's main processing unit.
- Unique ARISTEL ASCII Chip "A-SERIES$_{6A}$ F98250000" (200 pins).
- Additional Processor chips for tasking-sharing between the system and key telephone.
- Space Division Matrix for the network switching.

■ AV38 SYSTEM MODULES

MODEL	DESCRIPTION	REMARK
A6408K	**Main Service Uni**t, Basic configuration of 408	Basic Unit
A6TKU4	**Trunk Card (4 Ports)**, consisting of 4 CO Lines	Expansion Card
A6TKU4R	**Trunk Card (4 Ports)**, 4 CO Lines with Line Reversal + Metering Pulse Detection Facility	Expansion Card
A6STU8	**Key Station Card (8 Ports)**, 8 Key Stations	Expansion Card
A6HYU	**Hybrid Station Card**, 2 Key Stations + 6 Single Line Telephones	Expansion Card
A6SLU	**Single Line Station Card**, 8 Single Line Telephones	Expansion Card
A6SLC	**Single Line Station Card**, 2 Single Line Telephones	Expansion Card
A6RGC	**Ring Generator Card**, provides ring for single line telephones on A6HYU and A6SLU	Optional Card
A6ELC	**Expansion Intercom Link Card**, provides 8 additional intercom links	Optional Card
A6VSC	**Voice Service Card**, 2 60 second Voice Channels.	Optional Card
A6MFC	**Multi Function Card** 2 Door Stations + 2 Relays + 2 Sensors	Optional Card
A6RSC	**RS232 Card**, providing an RS232 serial port for local programming, SMDR and CND	Optional Card
A6RSCB	**RS232 Card**, providing 2nd RS232 serial port for SMDR and CND (Takes the place of the A6RPC)	Optional Card
A6RPC	**Remote Programming Card**, standard modem 2400 bps for remote programming	Optional Card

WARNINGS!

This equipment MUST be installed by a licensed installer and maintained by qualified service personnel.

The mains power lead MUST be connected before any other cabling or a hazardous condition may occur. When servicing, disconnect all cabling before removing the mains power lead or a hazardous condition may occur.

SPECIFICATIONS

■ GENERAL SPECIFICATION

CO Lines	4 ~ 12
DSS64 Consoles	1 max
Key Telephones	2 ~ 24
Single Line Telephones	2 ~ 26
Intercom Paths (Local)	1 ~ 9
Power Failure Transfer Phone (PFT)	Lines 1 and 2 of each Trunk Card
Door Phones	2
Relay Switches	2
Sensor Interfaces	2
Fax Monitor	Line 4 of each Trunk Card
Line Reversal	12 max
Metering Pulse Detection	12 max
RS232 for SMDR	1
Remote Programming	1
Speed Dial	700 sets

■ ELECTRICAL & OTHER SPECIFICATIONS

Input AC Voltage		230 VAC ± 15% (50/60 Hz)/0.42Amps
Power Consumption	System	60 W
	Key Telephone	2.0 W max.
	SLT	0.85 W
	Door Phone	0.5 W
System Power Back-Up Battery		1 ~ 2 Hour (24 VDC × 6.5AH)
Loop Resistance	Key Telephone	40 Ω max.
	Door Phone	40 Ω max.
	SLT	400 Ω max.
	External Paging	600 Ω max.
	CO Line	1.5K Ω max.
Dialing Signal	Outgoing Dialing	Tone / Pulse
	Intercom Dialing	Tone / Pulse / Digital
Relay Switch	Type	OSPDT
	Contact Rating	7A/230VAC
	Function	Door Switching, Paging, Music on Hold, …, etc.
System Dimension (mm, W×D×H)		364 × 90 × 425
Key Telephone Dimension (mm)		230L × 180W × 75H
Working Temperature		0 ^{0}C ~ 45 ^{0}C (32 ^{0}F ~ 113 ^{0}F)
Working Humidity		10% ~ 90% relative non-condensing
Switch Mode		Space Division Matrix (SDM)
Control Mode		8/16 bits CPU, Registered Program

INTRODUCTION

This manual provides the detailed procedures for installing the ARISTEL AV-38 Key Telephone System. Read this entire section before proceeding with the actual installation.

Prior to installation carefully inspect all packages for evidence of damage and compare the equipment received against equipment ordered to ensure ALL components have been received.

SITE REQUIREMENT

- The Key System Unit (KSU) should be installed in a clean, dry and secure location accessible only by authorized personnel. The location must have adequate ventilation and the temperature range within 0 ~ 45^{o} C with a 10 ~ 90% non-condensing relative humidity.

- The installation site should have sufficient room to mount the KSU on a wall, along with the necessary connecting blocks and ancillary equipment. The installation site should not be in areas subject to static electricity (eg. dry copiers, electric welders), or vibration (eg. heavy machinery).

- It is the customer's responsibility to provide a dedicated 240VAC/50Hz 10 Amp mains power outlet. Line Isolation Units (LIUs) must be provided if an external music source or optional external paging equipment is installed.

PCB AND CABINET LAYOUT

■ SYSTEM INTER-CIRCUIT LAYOUT

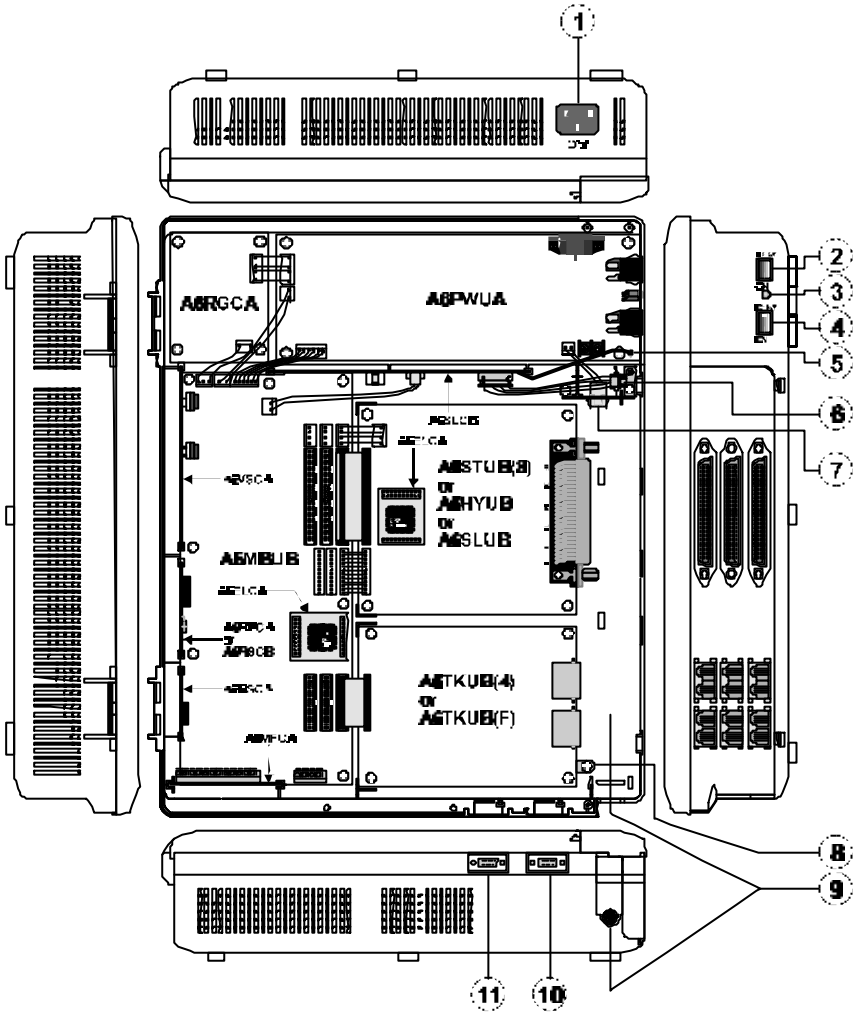


Figure 1. System Inter-Circuit Layout

1. **AC Power Inlet.**
2. **AC Power Switch.**
3. **Power Indicator (LED Type).**
4. **DC Power Switch.**

5. **AC Power Ground (F.G.).**
6. **RJ11 for SLT Connection to A6SLC.**
7. **2-Wire Female Connector. (For External Battery Box Connection)**
8. **Earth Ground (For Lightning Protection Ground) provided by M.E.N..**
9. **Wiring Area and the Cable Outlet.**
10. **RS232-1 (Female DB9) for the connection to the 1st RS232 (A6RSC).**
11. **RS232-2 (Female DB9) for the connection to the 2nd RS232 (A6RSCB)**

■ A6PWUA (POWER BOARD UNIT)

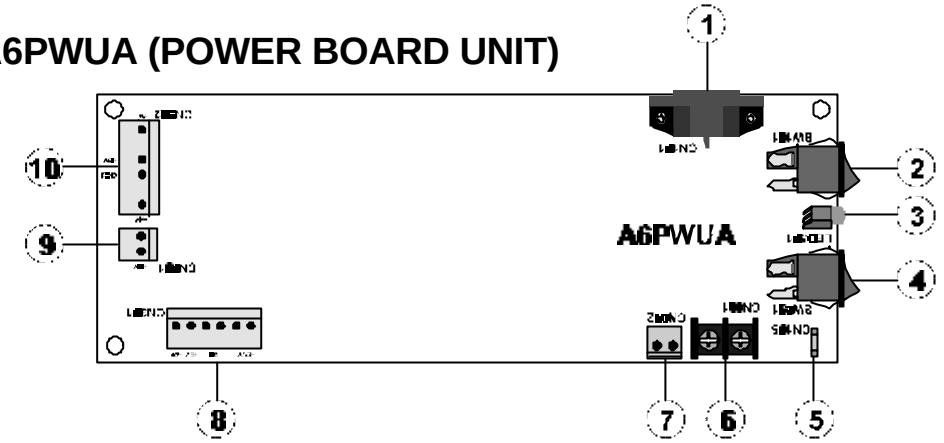
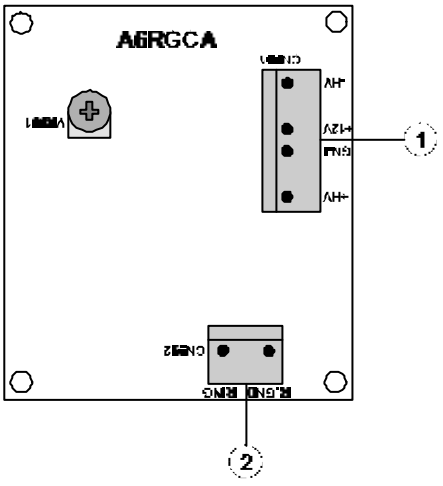


Figure 2. A6PWUA (Power Board Unit)

1. **CN101** **:** AC Power Inlet.
2. **SW101** **:** AC Power Switch.
3. **LED501** **:** Power Indicator.
4. **SW401** **:** DC Power Switch.
5. **CN105** **:** AC Power Earth Grounding Connection Point.
6. **CN401** **:** 24VDC Connection Points; Left Side is (+), Right Side is (-).
7. **CN402** **:** Backup Battery Connector.
8. **CN301** **:** Connect to **[POWER]** position on **A6MBUB** by the cable.
9. **CN801** **:** Connect to **[SPWR]** position on **A6MBUB** by the cable.
10. **CN802** **:** Connect to **[CN901]** position on **A6RGC** by the cable.

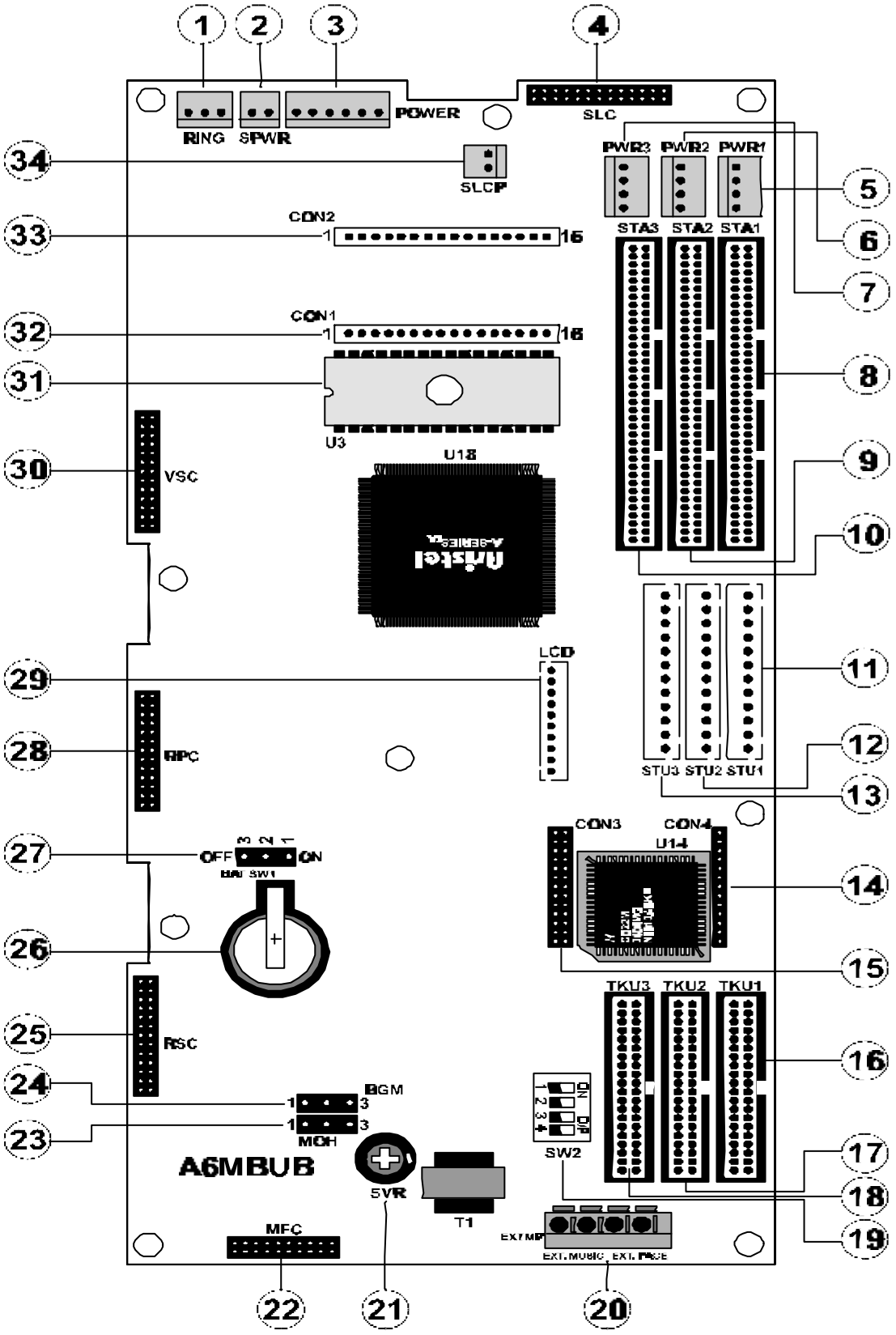
■ A6RGC RING GENERATOR CARD FOR A6SLU and A6HYU CARDS



1. **CN901 :** 4-Wire Connector. Connect to **[CN802]** on the **A6PWUA**.
2. **CN902 :** 2-Wire Connector. Connect to **[RING]** the **A6MBUB**.

Figure 3. A6RGC (Ring Generator Card)

■ A6MBUB MOTHER BOARD UNIT



1. **RING** : 2-Wire Connector. Connect to **[CN902]** position on **A6RGC**.
2. **SPWR** : 2-Wire Connector. Connect to **[CN801]** position on **A6PWUA**.
3. **POWER** : 6-Wire Connector. Connect to **[CN301]** position on **A6PWUA**.
4. **SLC** : Connector for the **A6SLC** Card.
5. **PWR1** : 4-Wire Connector for the **FIRST** Station Unit to be connected. Connect to **[PWR]** position on **A6STU8** or **A6HYU** or **A6SLU**.
6. **PWR2** : Same as **[PWR1]** but it is used for the **SECOND** Station Card.
7. **PWR3** : Same as **[PWR1]** but it is used for the **THIRD** Station Card.

Figure 4. A6MBUB (Mother Board Unit)

8. **STA1** : Connector Slot for the **FIRST** Station Card to be connected. Connect to **[STA]** position on **A6STU8** or **A6HYU** or **A6SLU**.
9. **STA2** : Same as **[STA1]** but it is used for the **SECOND** Station Card.
10. **STA3** : Same as **[STA1]** but it is used for the **THIRD** Station Card.
11. **STU1** : Connector Slot for the **FIRST** Station Unit to be connected. Connect to **[STU]** position on **A6STU8** or **A6HYU** or **A6SLU**.
12. **STU2** : Same as **[STU1]** but it is used for the **SECOND** Station Card.
13. **STU3** : Same as **[STU1]** but it is used for the **THIRD** Station Card.
14. **CON4** : Connect to **[CON4]** position on **A6ELC**. Required when the **THIRD** Trunk Unit is installed in the system.
15. **CON3** : Same as **[CON4]**, but connect to **[CON3]** position on **A6ELC**.
16. **TKU1** : Connector Slot for the **FIRST** Trunk Card. Connect to **[TKU]** position on **A6TKU4** or **A6TKU4R**.
17. **TKU2** : Same as **[TKU1]**, but it is used for the **SECOND** Trunk card.
18. **TKU3** : Same as **[TKU1]**, but it is used for the **THIRD** Trunk Card.
19. **SW2** : Audio signal level control for both intercom and external paths. If the **THIRD** Trunk Card is installed, then switches **"1, 2, 3 & 4"** must be **SWITCHED OFF**. (Default should be **ALL ON**)

20. EXTMP **:** External Page and External Music Source connection.

21. SVR **:** Volume adjustment for the External Music Source.

22. MFC **:** Connector for the **A6MFC** Card.

23. MOH **:** Music Source selection for Music On Hold.

24. BGM **:** Music Source selection for Back Ground Music. (The jumper settings for internal and external selection are the same as the Music Source).

25. RSC **:** Connector for the **A6RSC** Card as the **FIRST** RS232

26. BAT **: 3 VDC, 180 mA/H** Li-Battery to back-up the system programming data during AC power Off. SW1 must be ON for the battery to retain memory during power fail.

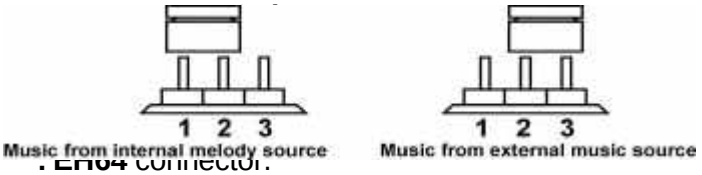
27. SW1 **:** To turn the memory backup Battery **ON** or **OFF**.

28. RPC **:** Connector for the **A6RPC** Card

29. LCD

30. VSC

31. U3

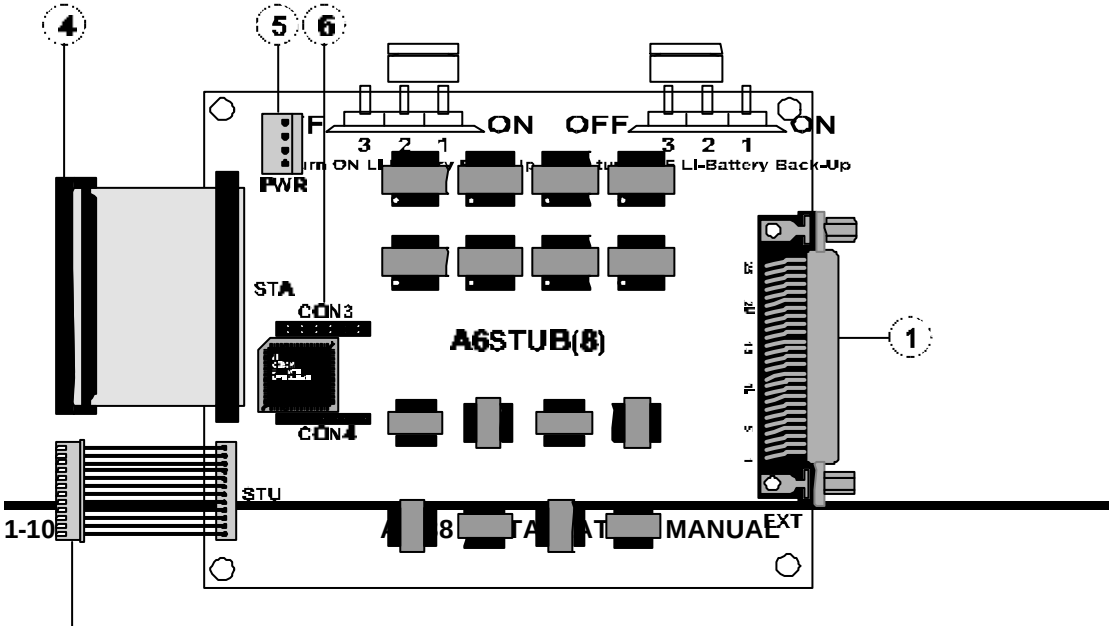


32. CON1 **:** **EH64** connector.

33. CON2 **:** Same as **[CON1]**.

34. SLCP **:** Power connector for SLC card.

■ A6STU8 8 PORT KEY STATION CARD



1. **EXT** **:** Amp Connector for Key Station Wiring
2. **CON4** **:** Connector for the **A6ELC** when the **THIRD** Trunk Unit is installed.
3. **STU** **:** 12-Wire Connector Cable. Connect to **[STU]** position on **A6MBUB**.
4. **STA** **:** 62-Wire Connector Cable. Connect to **[STA]** position on **A6MBUB**.
5. **PWR** **:** 4-Wire Connector to **[PWR]** position on **A6MBUB**.
6. **CON3** **:** Same as **[CON4]**, but connect to **[CON3]** position on **A6ELC**.

Figure 5. A6STU8 8 Port Key Station Card

■ A6HYU 2 KEY & 6 SLT PORT HYBRID STATION CARD

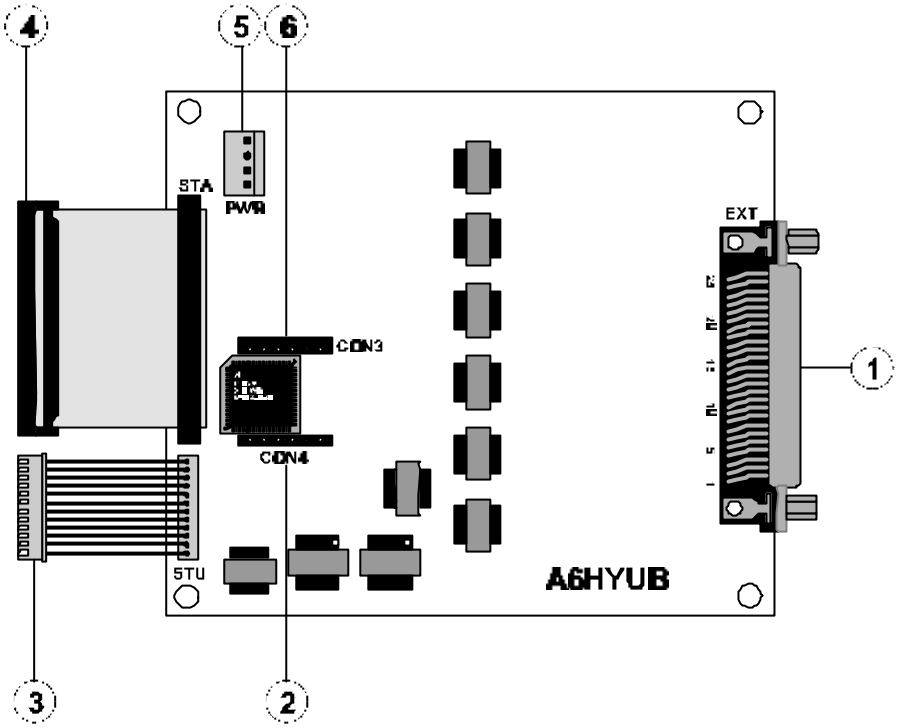


Figure 6. A6HYU 2 Key & 6 SLT Station Port Hybrid Station Card

1. **EXT** **:** 25-Pairs Amp connector used for Key Station and SLT wiring.
2. **CON4** **:** Connector for the **A6ELC** when the **THIRD** Trunk Unit is installed.
3. **STU** **:** 12-Wire Connector Cable. Connect to **[STU]** position on **A6MBUB**.
4. **STA** **:** 62-Wire Connector Cable. Connect to **[STA]** position on **A6MBUB**.
5. **PWR** **:** 4-Wire Connector to **[PWR]** position on **A6MBUB**.
6. **CON3** **:** Same as **[CON4]**, but connect to **[CON3]** position on **A6ELC**.

■ A6SLU 8 SINGLE LINE STATION PORTCARD

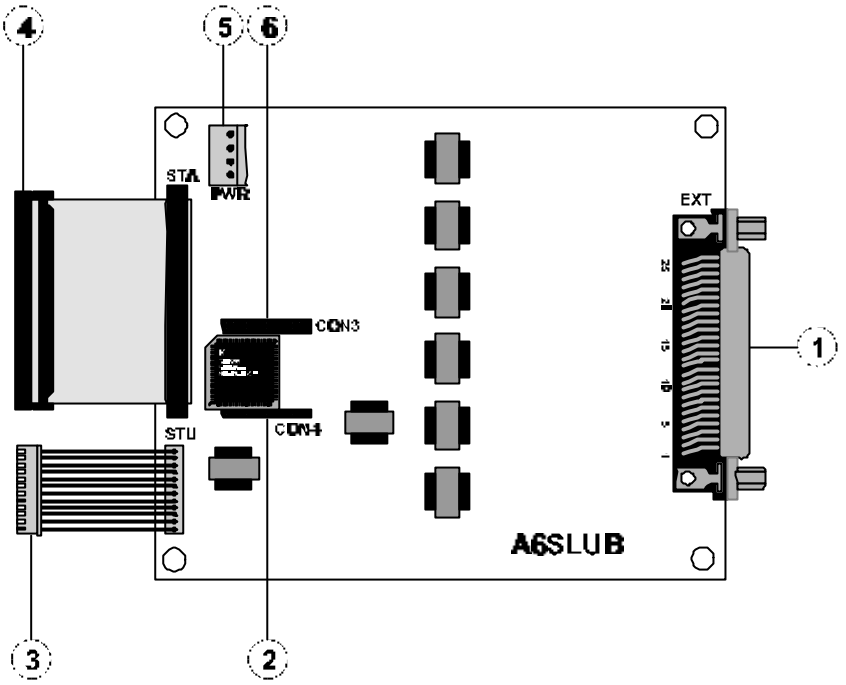


Figure 7. A6SLU 8 Port Single Line Station Card

1. **EXT** : 25-Pairs Amp connector used for SLT wiring.
2. **CON4** : Connector for the **A6ELC** when the **THIRD** Trunk Unit is installed.
3. **STU** : 12-Wire Connector Cable. Connect to **[STU]** position on **A6MBUB**.
4. **STA** : 62-Wire Connector Cable. Connect to **[STA]** position on **A6MBUB**.
5. **PWR** : 4-Wire Connector to **[PWR]** position on **A6MBUB**.
6. **CON3** : Same as **[CON4]**, but connect to **[CON3]** position on **A6ELC**.

■ A6SLC 2 PORT SINGLE LINE STATION CARD,

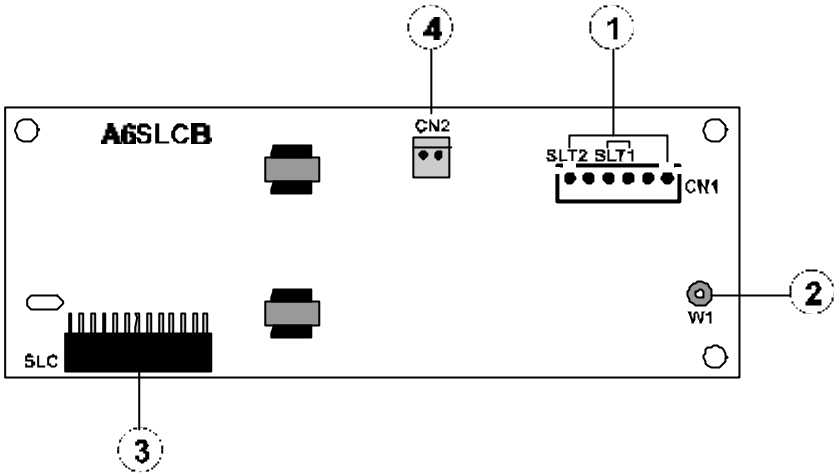


Figure 8. A6SLC 2 Port Single Line Station Card

1. **CN1** **:** Connector for the installation of the RJ11socke.
   SLT1 : The 1st Single Line Station Port. Pins 3&4 of RJ11 socket.
   SLT2 : The 2nd Single Line Station Port. Pins 1&6 of RJ11 socket.
2. **W1** **:** Earth Grounding Connection Point. Connect to **[CN105]** position on **A6PWUA**.
3. **SLC** **:** Connect to **[SLC]** position on **A6MBUB**.
4. **CN2** **:** Connect to **[SLCP]** position on **A6MBUB**.

■ A6ELC EXPANSION LINK

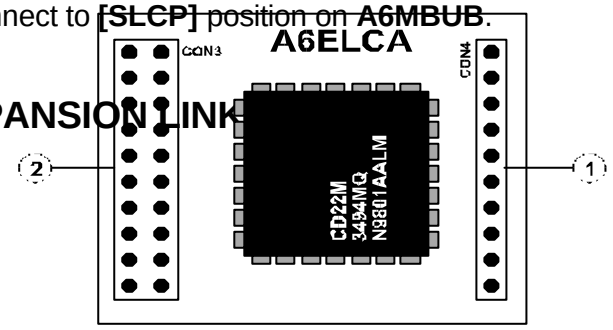


Figure 9. A6ELC Expansion Link Card

1. **CON4 :** 10-Pin Connector on **A6MBUB, A6STU8, A6HYU** and **A6SLU** when the **THIRD** Trunk Card is installed.
2. **CON3 :** 20-Pin Connector on **A6MBUB, A6STUB8, A6HYU** and **A6SLU** when the **THIRD** Trunk Card is installed.

NOTE:

A6ELC CARDS MUST BE INSTALLED ON ALL 8 PORT STATION CARDS AND THE A6MBUB WHEN THE THIRD TRUNK CARD IS INSTALLED. ALSO, ALL 4 SWITCHES (SW2) ON THE A6MBUB MUST BE TURNED OFF.

■ A6TKU4 4 PORT TRUNK CARD

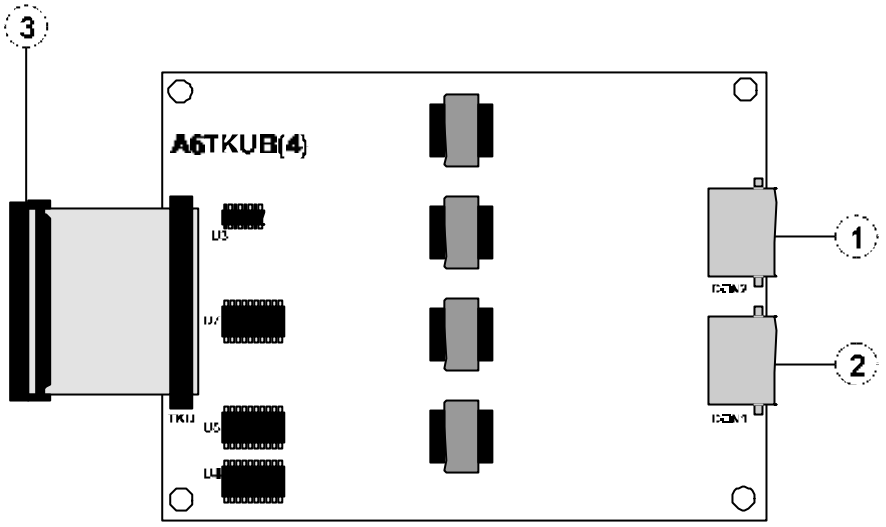


Figure 10. A6TKU4 4 Port Trunk Card

1. **CON2** : Dual RJ11-6P6C Connector. For the connection of FAX Machine and Power Failure Transfer Phones (PFT).
   - **FAXM :** For the FAX Machine Connection, it is paralleled with the 4th CO Line Port and worked as FAX MONITOR function.
   - **PFT1 :** For the 1st Power Failure Telephone Connection of **[CO1]** Pins 3&4.
   - **PFT2 :** For the 2nd Power Failure Telephone Connection of **[CO2]** Pins 1&6.
2. **CON1** : Dual RJ11-6P6C Connector. For the connection of CO Lines **(POTS Lines)**.
   - **CO1 :** For the 1st CO Line Connection. Pins 3&4.
   - **CO2 :** For the 2nd CO Line Connection. Pins 1&6.
   - **CO3 :** For the 3rd CO Line Connection. Pins 3&4.
   - **CO4 :** For the 4th CO Line Connection. Pins 1&6.
3. **TKU** : 50-Wire Flat Cable. Connect to **[TKU]** position on **A6MBUB**.

■ A6TKU4R 4 PORT TRUNK CARD WITH REVERSAL AND METERING

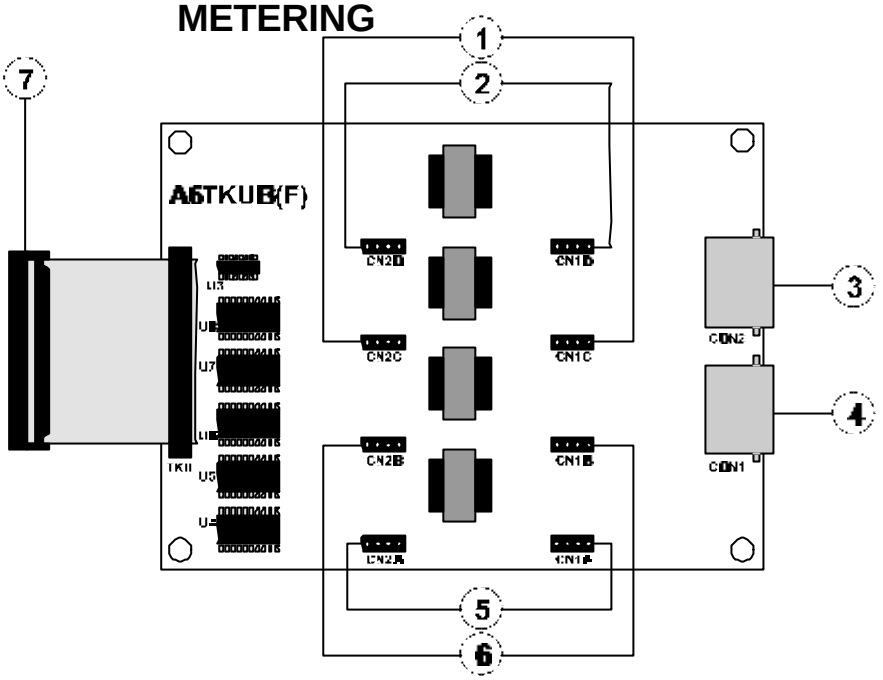


Figure 11. A6TKU4R 4 PORT TRUNK CARD WITH REVERSAL AND METERING

1. **CN1C** : Connect to **[CN1]** position on **A6MDC12** for **[CO3]**.
   CN2C : Connect to **[CN2]** position on **A6MDC12** for **[CO3]**.
2. **CN1D** : Connect to **[CN1]** position on **A6MDC12** for **[CO4]**.
   CN2D : Connect to **[CN2]** position on **A6MDC12** for **[CO4]**.
3. **CON2** : Dual RJ11-6P6C Connector. For the connection of FAX Machine and Power Failure Transfer Phones (PFT).
   FAXM : For the FAX Machine Connection, it is paralleled with the 4th CO Line Port and worked as FAX MONITOR function.
   PFT1: For the 1st Power Fail Telephone Connection of **[CO1]** Pins 3&4.
   PFT2: For the 2nd Power Fail Telephone Connection of **[CO2]** Pins 1&6.
4. **CON1** : Dual RJ11-6P6C Connector. For the connection of CO Lines **(PSTN)**.
   CO1 : For the 1st CO Line Connection. Pins 3&4.
   CO2 : For the 2nd CO Line Connection. Pins 1&6.
   CO3 : For the 3rd CO Line Connection. Pins 3&4.
   CO4 : For the 4th CO Line Connection. Pins 1&6.
5. **CN1A** : Connect to **[CN1]** position on **A6MDC12** for **[CO1]**.

CN2A **:** Connect to **[CN2]** position on **A6MDC12** for **[CO1]**.

6. **CN1B** **:** Connect to **[CN1]** position on **A6MDC12** for **[CO2]**.

CN2B **:** Connect to **[CN2]** position on **A6MDC12** for **[CO2]**.

7. **TKU** **:** Connect to **[TKU]** position on **A6MBUB**.

■ A6MDC12 12KHz METERING PULSE DETECTION CARD

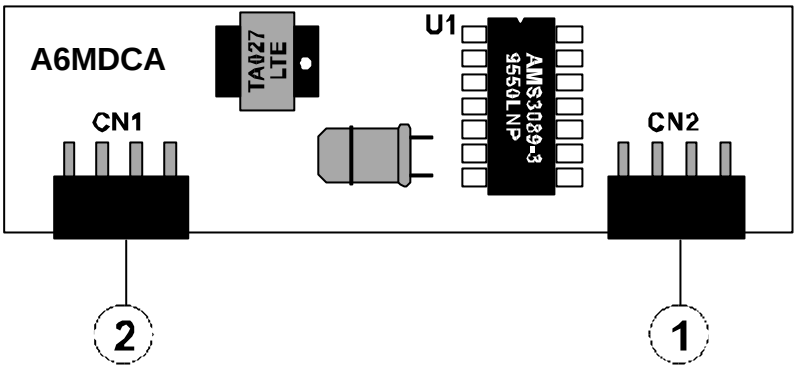
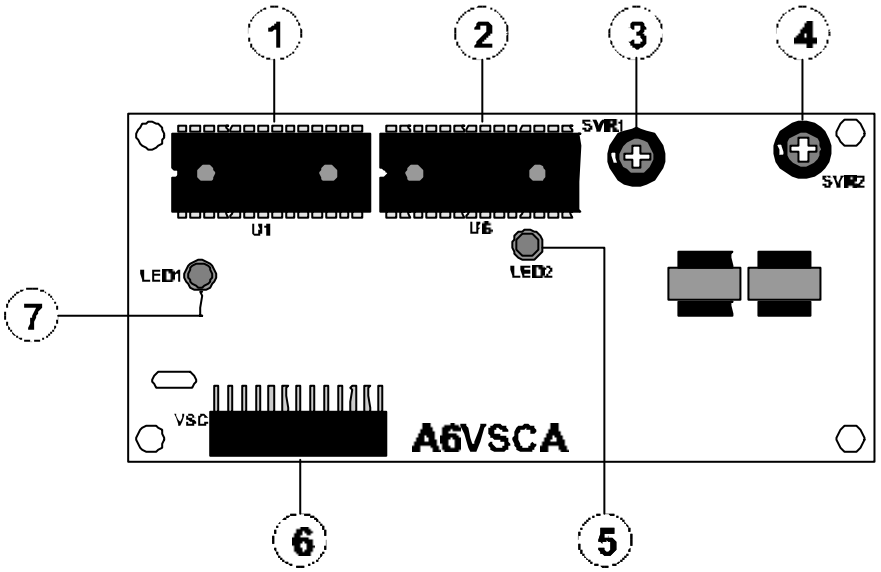


Figure 12. A6MDC12 12KHz Metering Pulse Detection Card

1. **CN2** **:** Connect to **[CN2 (A~D)]** position on **A6TKU4R**.
2. **CN1** **:** Connect to **[CN1 (A~D)]** position on **A6TKU4R**.

■ A6VSC 2 CHANNEL VOICE SERVICE CARD



1. **U1** : 60 Seconds Voice Chip (Flash Memory) for the 1st Voice Channel.
2. **U2** : 60 Seconds Voice Chip (Flash Memory) for the 2nd Voice Channel.
3. **SVR1** : To adjust the Playing Voice Volume for the 1st Voice Channel.
4. **SVR2** : To adjust the Playing Voice Volume for the 2nd Voice Channel.
5. **LED2** : LED Indicator will be **ON** while the 2nd Voice Channel is operation.
6. **VSC** : Connect to **[VSC]** position on **A6MBUB**.
7. **LED1** : LED Indicator will be **ON** while the 1st Voice Channel is operation.

Figure 13. A6VSC 2 Channel Voice Service Card

■ A6MFC MULTI FUNCTION CARD, 2 SENSORS + 2 RELAYS + 2 DOOR PHONES

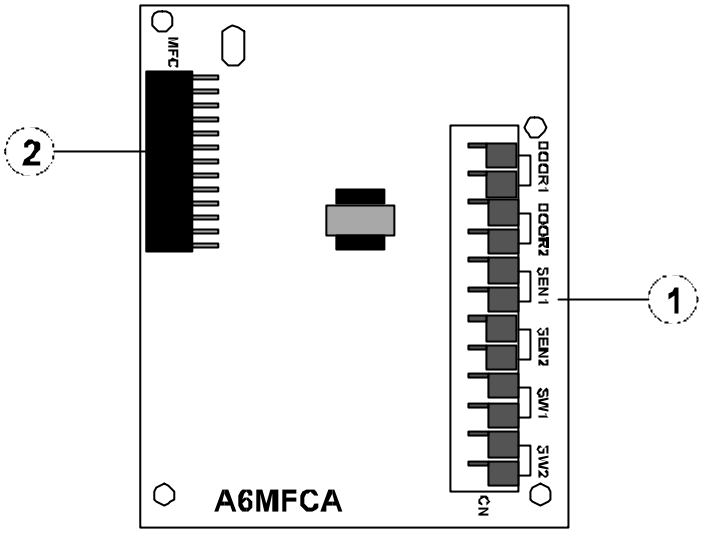


Figure 14. A6MFC Multi Function Card, 2 Sensors+2 Relays+2 Door Phones

1. **SW1 & 2** **:** Connectors for the relays.
   SEN1 & 2 **:** Connectors for the sensors.
   DOOR1 & 2 **:** Connectors for the door stations.
2. **MFC** **:** Connect to **[MFC]** position on **A6MBUA**.

■ A6RSC RS232 CARD - 1ST RS232 INTERFACE

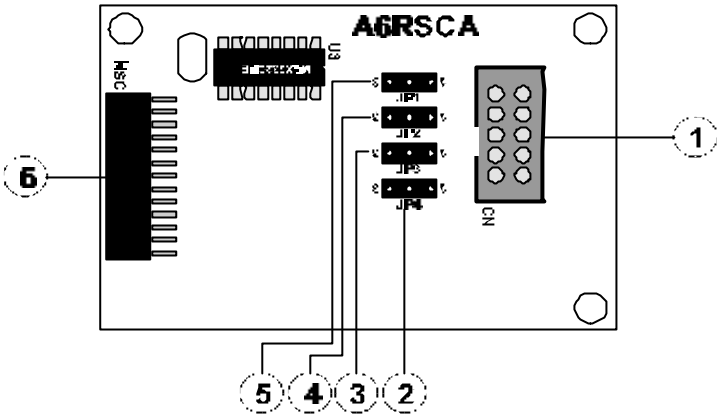


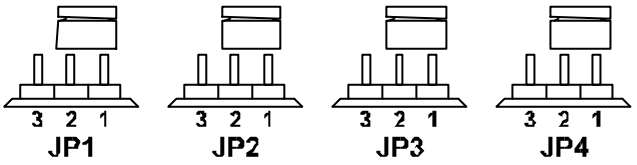
Figure 15. A6RSC RS232 Card

1. CN : Connector for the cable and DB9 socket to the main equipment housing.

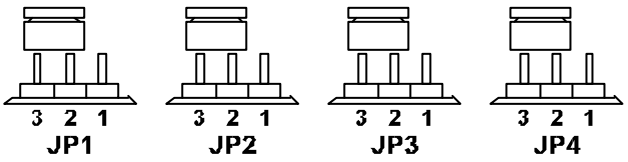
		PC Connected	Printer Connected
2.	JP4	**Tx -** to **PC**	**Rx -** from **Printer**
3.	JP3	**Rx -** from **PC**	**Tx -** to **Printer**
4.	JP2	**DXR -** from **PC**	**DTR -** to **Printer**
5.	JP1	**DTR -** to **PC**	**DXR -** From **Printer**

CAUTION!

A. If the system's RS232 is connected to a PC, ALL jumpers 1-4 MUST have PIN1 and PIN2 SHORTED.



B. If the system's RS232 is connected to Serial Printer, ALL Jumpers 1-4 must have PIN2 and PIN3 SHORTED.



6. RSC : Connect to **[RSC]** position on **A6MBUB**.

NOTE

RS232 output must be set to send SMDR to correct RS232 port (Default RS232 1)

■ A6RSCB 2ND RS232 INTERFACE CARD

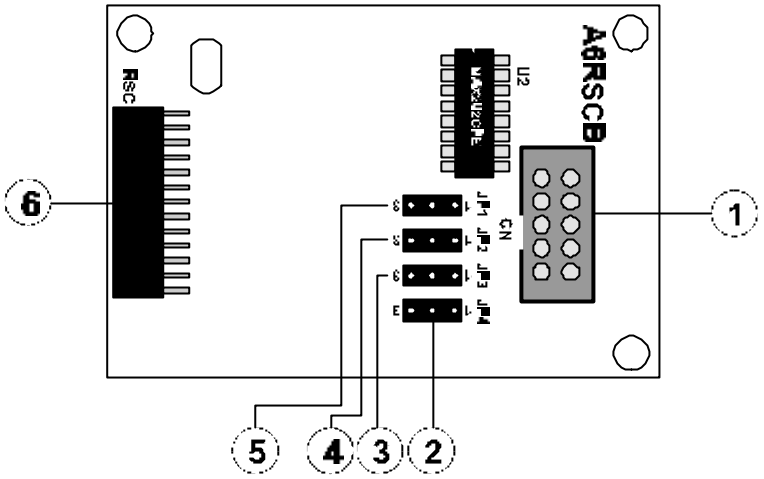


Figure 16. A6RSCB 2nd RS232 Interface Card

1. CN : Connector for the cable and DB9 socket to the main equipment housing. Same as **[CN]** on **A6RSC** but uses the second cutout on the housing

2~5. JP4~JP1 : Same as **[JP4] ~ [JP1]** on **A6RSC**.

6. RSC : Connect to **[RPC]** position on **A6MBUB**.

NOTES:

1. This card uses the position of the Remote Programming Card but is NOT suitable for remote programming.

2. RS232 output must be set to send SMDR to correct RS232 port (Default RS232 1)

■ A6RPC REMOTE PROGRAMMING CARD

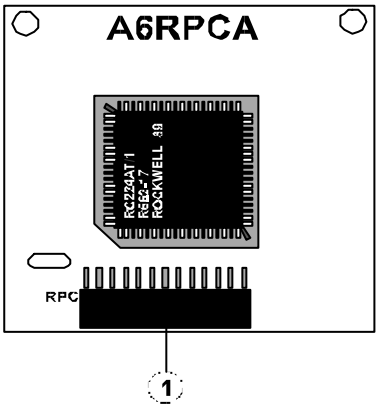


Figure 17. A6RPC Remote Programming Card

1. RPC : Connect to **[RPC]** position on **A6MBUB**.

INSTALLATION AND WIRING

■ AC POWER AND BATTERY BACK-UP INSTALLATION

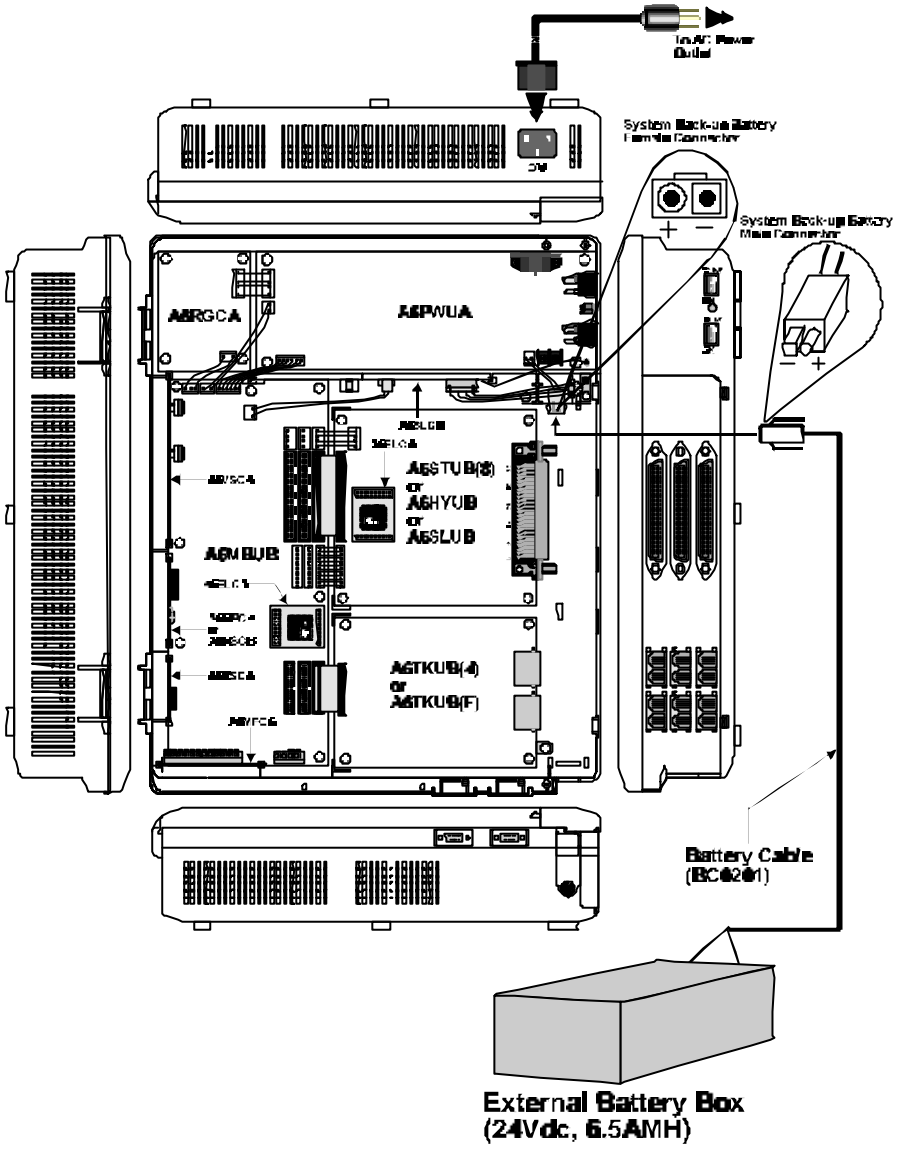


Figure 18. AC Power and DC Battery Back-Up Installation

CAUTION

There are Hazardous voltages present in the Power Supply.
We recommend that the Power be switched off before opening any covers.

■ A6TKU4 and A6TKU4R TRUNK CARD WIRING - CO LINES, FAX AND POWER FAIL TELEPHONE TERMINATIONS

There are 4 CO Line Ports that can be connected to PSTN Lines on A6TKU4 & A6TKU4R

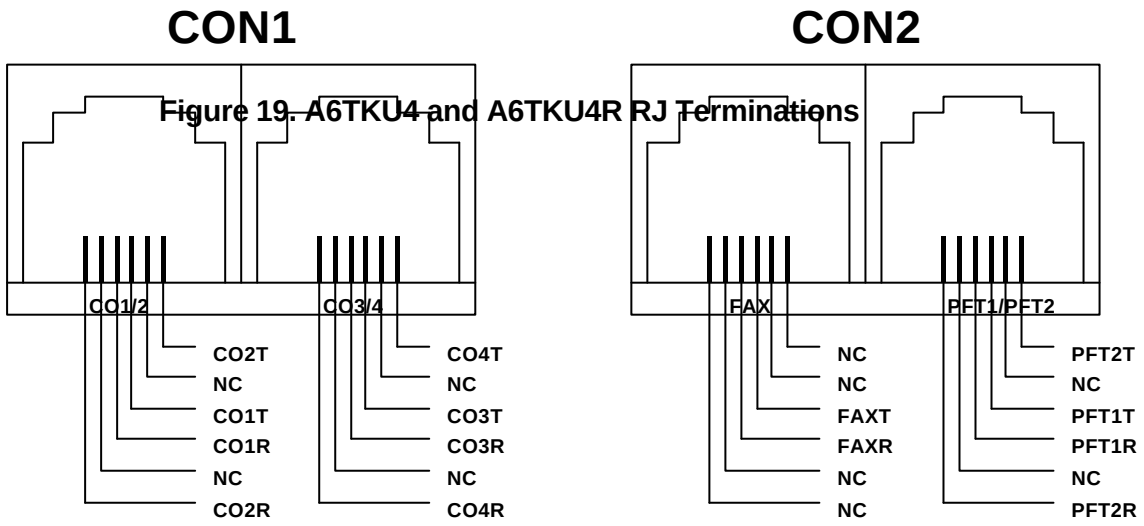


Figure 19. A6TKU4 and A6TKU4R RJ Terminations

cards.

The following table lists the trunk terminations for the three trunk cards that can be installed.

A6TKU4 or A6TKU4R	Position CO1	Position CO2	Position CO3	Position CO4	Position FAXM	Position PFT1	Position PFT2
Card 1 (STD)	CO1	CO2	CO3	CO4	CO4	CO1	CO2
Card 2	CO5	CO6	CO7	CO8	CO8	CO5	CO6
Card 3	CO9	CO10	CO11	CO12	CO12	CO9	CO10

1. **PFT1** and **PFT2** can be wired as Power Failure Transfer Phones across CO1 & CO2 of each A6TKU4 and A6TKU4R card.
2. Power Failure Transfer Phone MUST be analogue Single Line Telephones.

■ METERING PULSE DETECTION CARD INSTALLATION ON A6TKU4R CARDS ONLY

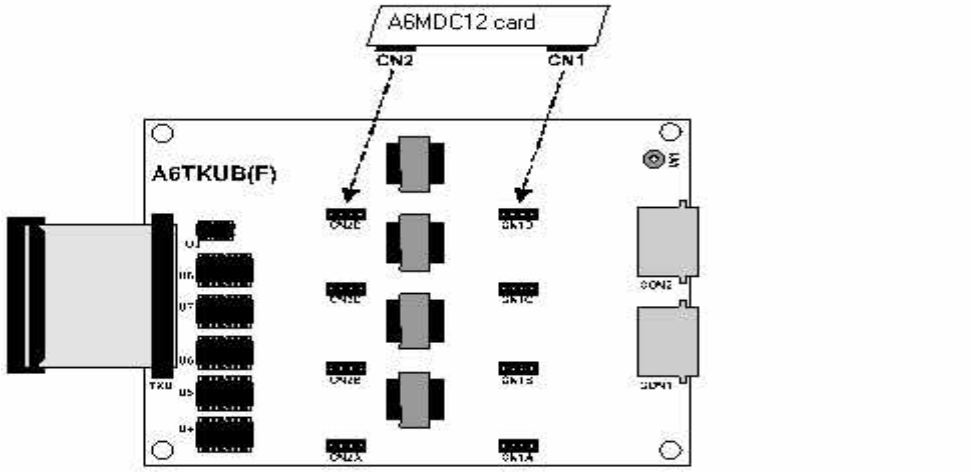


Figure 20. Metering Pulse Detection Card Installation

1. Up to four A6MDC12 cards can be installed in each A6TKU4R card.

2. One A6MDC12 card is required for each CO Line provided with meter pulses.

■ TELEPHONE STATION WIRING

A. ON A6STU

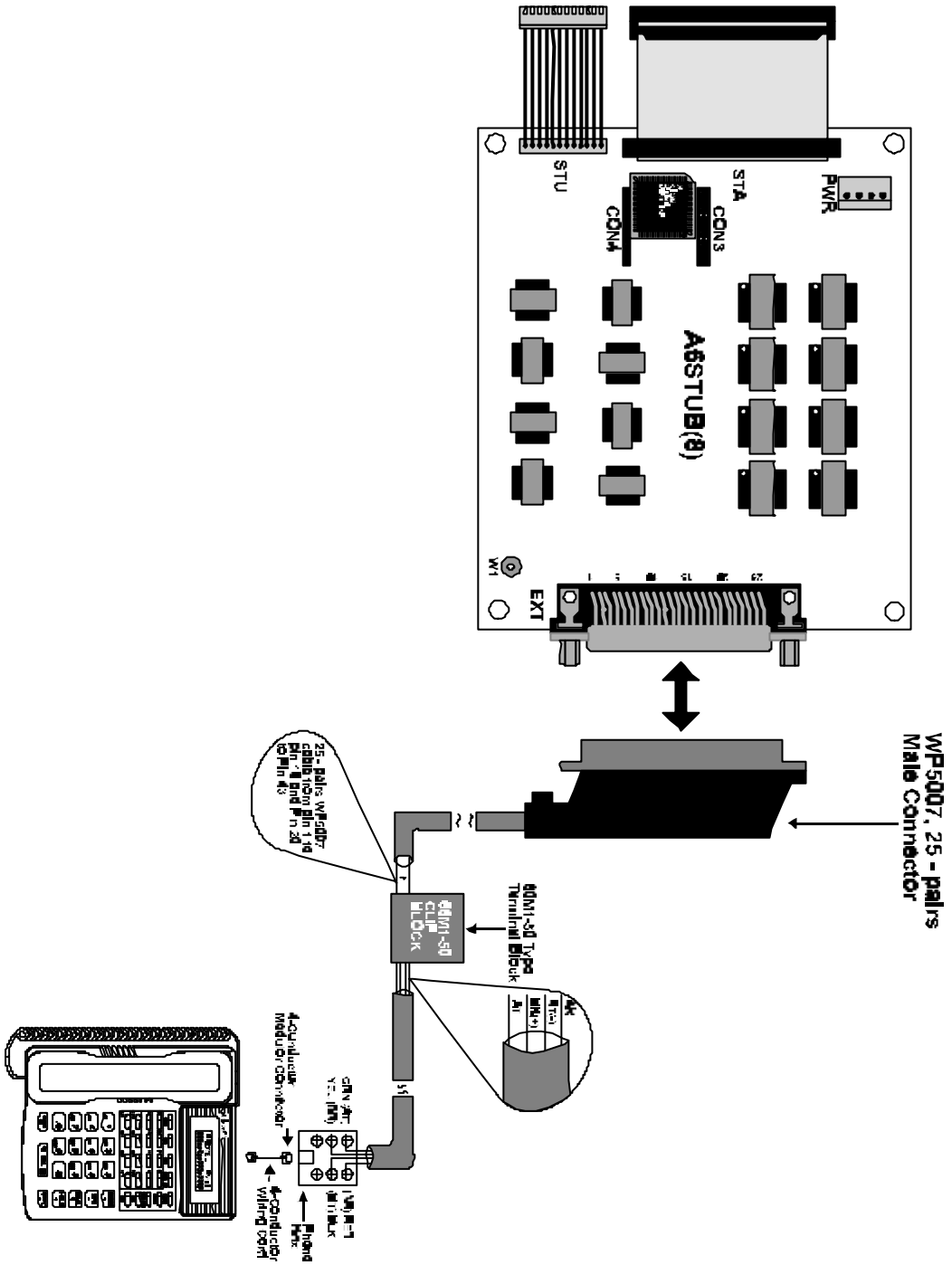


Figure 21. Key Station Wiring on A6STU

1. AT/AR is the audio pair; AT = Transmission (Green Color), AR = Receiving (Red Color).
2. BT/BR is the Data/Power pair; BT = (-) Pole and Data Receiving (Black Color), BR = (+) Pole and Data Transmission (Yellow Color).

Wiring Table of 25-Pairs Amphonel Cable

Pin No.	Status	Function	ST Port	Pin No.	Status	Function	ST Port
P1	AT1	Audio Pair	**KP ST1**	**P11**	AT5	Audio Pair	**KP ST5**
P26	AR1			**P36**	AR5		
P2	BT1 ( )	Data Pair (Power)		**P12**	BT5 ( )	Data Pair (Power)	
P27	BR1 ( )			**P37**	BR5 ( )		
P3	AT2	Audio Pair	**KP ST2**	**P13**	AT6	Audio Pair	**KP ST6**
P28	AR2			**P38**	AR6		
P4	BT2 ( )	Data Pair (Power)		**P14**	BT6 ( )	Data Pair (Power)	
P29	BR2 ( )			**P39**	BR6 ( )		
P5	NC	NC	**NC**	**P15**	AT7	Audio Pair	**KP ST7**
P30				**P40**	AR7		
P6				**P16**	BT7 ( )	Data Pair (Power)	
P31				**P41**	BR7 ( )		
P7	AT3	Audio Pair	**KP ST3**	**P17**	AT8	Audio Pair	**KP ST8**
P32	AR3			**P42**	AR8		
P8	BT3 ( )	Data Pair (Power)		**P18**	BT8 ( )	Data Pair (Power)	
P33	BR3 ( )			**P43**	BR8 ( )		
P9	AT4	Audio Pair	**KP ST4**	**Other Pins**	NC	NC	**NC**
P34	AR4						
P10	BT4 ( )	Data Pair (Power)					
P35	BR4 ( )						

KP ST1 - 8 - Key Telephones

25 Pair AMP Distribution

IDF Pairs 21- 30

Y - B	**Y - O**	**Y - G**	**Y - bn**	**Y - S**	**NC**	**NC**	**NC**	**NC**	**NC**
NC	**NC**	**NC**	**NC**	**NC**					

IDF Pairs 11- 20

W - O/W	**W - O/G**	**W - O/bn**	**W - O/S**	**W - G/W**	**W - G/bn**	**W - G/S**	**W - bn/W**	**W - bn/S**	**W - S/W**
AT5 AR5	**BT5 BR5**	**AT6 AR6**	**BT6 BR6**	**AT7 AR7**	**BT7 BR7**	**AT8 AR8**	**BT8 BR8**	**NC**	**NC**

IDF Pairs 1- 10

W - B	**W - O**	**W - G**	**W - bn**	**W - S**	**W - B/W**	**W - B/O**	**W - B/G**	**W - B/bn**	**W - B/S**
AT1 AR1	**BT1 BR1**	**AT2 AR2**	**BT2 BR2**	**NC**	**NC**	**AT3 AR3**	**BT3 BR3**	**AT4 AR4**	**BT4 BR4**

B. ON A6HYU

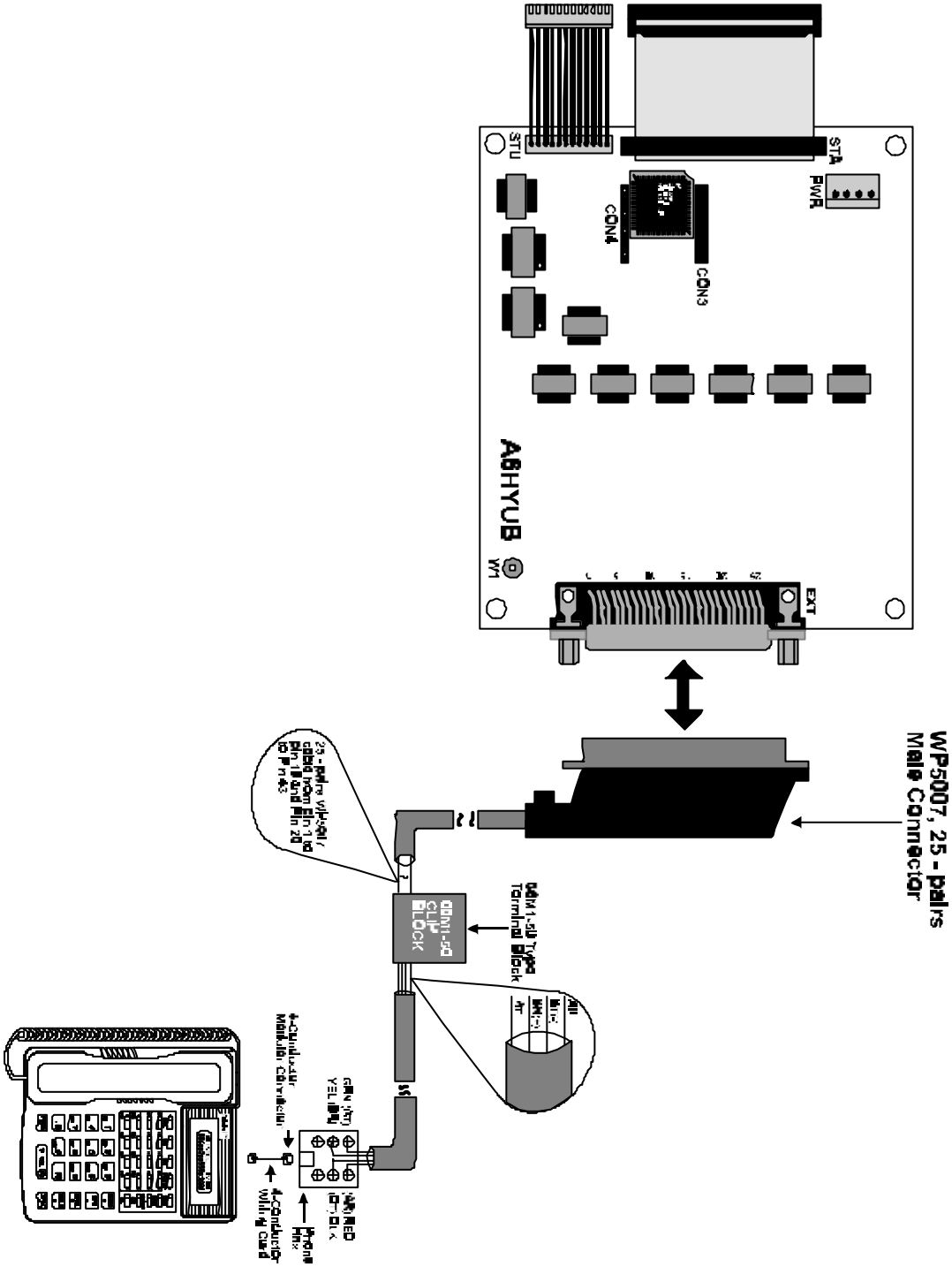

STU
STA
PWR
CON4
CON3
A6HYUB
W1
EXT
WP5007, 25 - pairs
Male Connector

Figure 22. Key Station Wiring on A6HYU

1. Only the **FIRST TWO** Station Ports on A6HYU can be connected with Key Telephone.
2. AT/AR is the audio pair; AT = Transmission (Green Color), AR = Receiving (Red Color).
3. BT/BR is the Data/Power pair; BT = (-) Pole and Data Receiving (Black Color), BR = (+) Pole and Data Transmission (Yellow Color).

Wiring Table of 25-Pairs Amphonel Cable

Pin No.	Status	Function	ST Port	Pin No.	Status	Function	ST Port
P1	AT1	Audio Pair	**KP ST1**	**P11**	AT5	Audio Pair	**SLT ST5**
P26	AR1			**P36**	AR5		
P2	BT1 ( )	Data Pair (Power)		**P12**	NC	NC	**NC**
P27	BR1 ( )			**P37**			
P3	AT2	Audio Pair	**KP ST2**	**P13**	AT6	Audio Pair	**SLT ST6**
P28	AR2			**P38**	AR6		
P4	BT2 ( )	Data Pair (Power)		**P14**	NC	NC	**NC**
P29	BR2 ( )			**P39**			
P5	NC	NC	**NC**	**P15**	AT7	Audio Pair	**SLT ST7**
P30				**P40**	AR7		
P6				**P16**	NC	NC	**NC**
P31				**P41**			
P7	AT3	Audio Pair	**SLT ST3**	**P17**	AT8	Audio Pair	**SLT ST8**
P32	AR3			**P42**	AR8		
P8	NC	NC	**NC**	**P18**	NC	NC	**NC**
P33				**P43**			
P9	AT4	Audio Pair	**SLT ST4**	**Other**	NC	NC	**NC**

P34	AR4			**Pins**			
P10	NC	NC	**NC**				
P35							

KP ST1 - 2 - Key Telephones

25 Pair AMP Distribution

IDF Pairs 21- 30

Y - B	**Y - O**	**Y - G**	**Y - bn**	**Y - S**	**NC**	**NC**	**NC**	**NC**	**NC**
NC	**NC**	**NC**	**NC**	**NC**					

IDF Pairs 11- 20

W - O/W	**W - O/G**	**W - O/bn**	**W - O/S**	**W - G/W**	**W - G/bn**	**W - G/S**	**W - bn/W**	**W - bn/S**	**W - S/W**
AT5 AR5		**AT6 AR6**		**AT7 AR7**		**AT8 AR8**		**NC**	**NC**

IDF Pairs 1- 10

W - B	**W - O**	**W - G**	**W - bn**	**W - S**	**W - B/W**	**W - B/O**	**W - B/G**	**W - B/bn**	**W - B/S**
AT1 AR1	**BT1 BR1**	**AT2 AR2**	**BT2 BR2**	**NC**	**NC**	**AT3 AR3**		**AT4 AR4**	

KP ST3 - 8 - SLT Telephones

■ OHCA KEY STATION INSTALLATION ONLY AVAILABLE ON A6STU

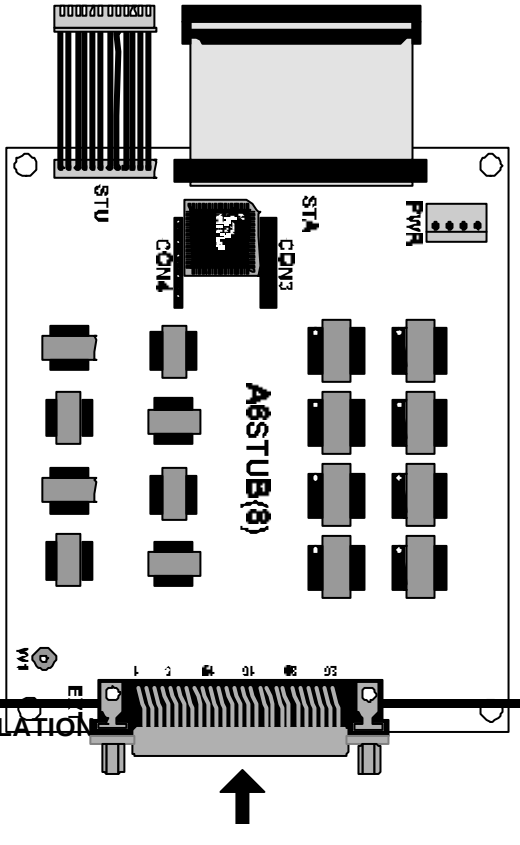


Figure 23. OHCA Key Telephone Wiring on A6STU

1. The Key Telephone for OHCA application must contain a **HANDSFREE** card.
2. OHCA installation is only available on **A6STU**.
3. The **EIGHTH** Key Station Port as **[KP ST8]** MUST be sacrificed to release its **Audio Path** for the OHCA application on other Key Station Ports.
4. Any one of **[KP ST1] ~ [KP ST7]** can be an OHCA Key Station.
5. AT/AR is the audio pair; AT = Transmission (Green Color), AR = Receiving (Red Color).
6. BT/BR is the Data/Power pair; BT = (-) Pole and Data Receiving (Black Color), BR = (+) Pole and Data Transmission (Yellow Color).
7. OT/OR is the audio pair of OHCA; AT = Transmission (Blue Color), AR = Receiving (White Color). It is always come from the audio pair of **[KP ST8]**.
8. For a station to operate as an OHCA station it must be programmed on Zone 502.

Wiring Table of 25-Pairs Amphonel Cable

Pin No.	Status	Function	ST Port	Pin No.	Status	Function	ST Port
P1	AT1	Audio Pair	**KP ST1**	**P11**	AT5	Audio Pair	**KP ST5**
P26	AR1			**P36**	AR5		
P2	BT1 ( )	Data Pair (Power)		**P12**	BT5 ( )	Data Pair (Power)	
P27	BR1 ( )			**P37**	BR5 ( )		
P3	AT2	Audio Pair	**KP ST2**	**P13**	AT6	Audio Pair	**KP ST6**
P28	AR2			**P38**	AR6		
P4	BT2 ( )	Data Pair (Power)		**P14**	BT6 ( )	Data Pair (Power)	
P29	BR2 ( )			**P39**	BR6 ( )		
P5	NC	NC	**NC**	**P15**	AT7	Audio Pair	**KP ST7**
P30				**P40**	AR7		
P6				**P16**	BT7 ( )	Data Pair (Power)	
P31				**P41**	BR7 ( )		
P7	AT3	Audio Pair	**KP ST3**	**P17**	AT8	Audio Pair	**KP ST8**
P32	AR3			**P42**	AR8		
P8	BT3 ( )	Data Pair (Power)		**P18**	BT8 ( )	Data Pair (Power)	
P33	BR3 ( )			**P43**	BR8 ( )		
P9	AT4	Audio Pair	**KP ST4**	**Other Pins**	NC	NC	**NC**
P34	AR4						
P10	BT4 ( )	Data Pair (Power)					
P35	BR4 ( )						

KP ST8 - Do not connect a Key Telephone to this port. The audio path is used by the OHCA Key Telephone in any one of Key Station Ports as **[KP ST1] ~ [KP ST7]**.

C. ON A6SLU

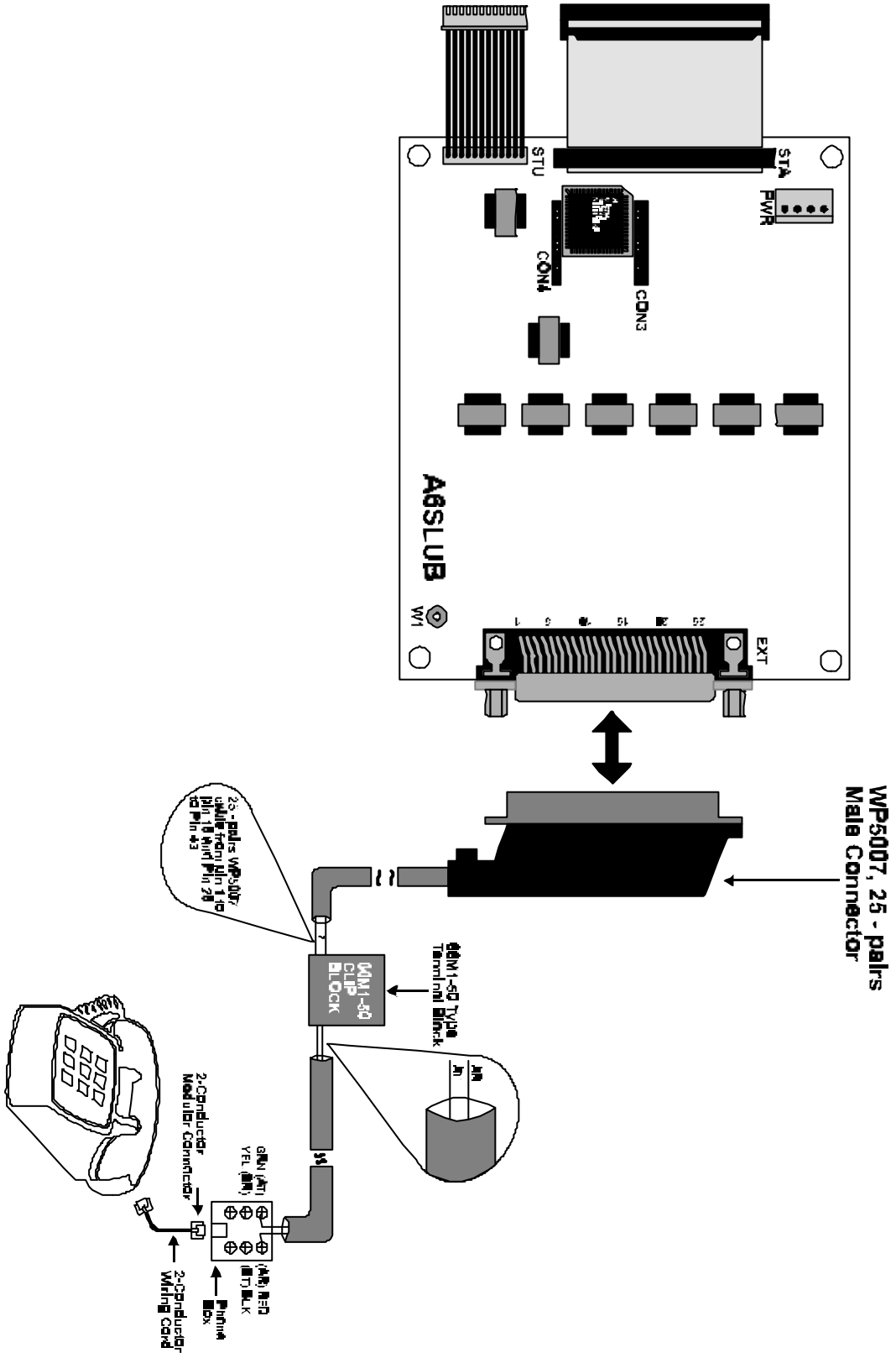

STU
STA
PWR
CON4
CON3
A6SLUB
W1
EXT
WP5007, 25 - pairs
Male Connector
25-pairs WP5007
cable from Pin 1 to
Pin 13 and Pin 26
to Pin 14
66M1-50
CLIP
BLOCK
66M1-50 Type
Terminal Block
2-Conductor
Modular Connector
2-Conductor
Wiring Card
Phone
Box

Figure 24. SLT Station Wiring on A6SLU

1. [SLT ST1] ~ [SLT ST8] can connect with Single Line Telephone.

Wiring Table of 25-Pairs Amphonel Cable

Pin No.	Status	Function	ST Port	Pin No.	Status	Function	ST Port
P1	AT1	Audio Pair	**SLT ST1**	**P11**	AT5	Audio Pair	**SLT ST5**
P26	AR1			**P36**	AR5		
P2	NC	NC	**NC**	**P12**	NC	NC	**NC**
P27				**P37**			
P3	AT2	Audio Pair	**SLT ST2**	**P13**	AT6	Audio Pair	**SLT ST6**
P28	AR2			**P38**	AR6		
P4	NC	NC	**NC**	**P14**	NC	NC	**NC**
P29				**P39**			
P5	NC	NC	**NC**	**P15**	AT7	Audio Pair	**SLT ST7**
P30				**P40**	AR7		
P6				**P16**	NC	NC	**NC**
P31				**P41**			
P7	AT3	Audio Pair	**SLT ST3**	**P17**	AT8	Audio Pair	**SLT ST8**
P32	AR3			**P42**	AR8		
P8	NC	NC	**NC**	**P18**	NC	NC	**NC**
P33				**P43**			
P9	AT4	Audio Pair	**SLT ST4**	**Other Pins**	NC	NC	**NC**
P34	AR4						
P10	NC	NC	**NC**				
P35							

SLT ST1 - 8 - Single Line Telephones

25 Pair AMP Distribution

IDF Pairs 21- 30

Y - B	**Y - O**	**Y - G**	**Y - bn**	**Y - S**	**NC**	**NC**	**NC**	**NC**	**NC**
NC	**NC**	**NC**	**NC**	**NC**					

IDF Pairs 11- 20

W - O/W	**W - O/G**	**W - O/bn**	**W - O/S**	**W - G/W**	**W - G/bn**	**W - G/S**	**W - bn/W**	**W - bn/S**	**W - S/W**
AT5 AR5	**NC**	**AT6 AR6**	**NC**	**AT7 AR7**	**NC**	**AT8 AR8**	**NC**	**NC**	**NC**

IDF Pairs 1- 10

W - B	**W - O**	**W - G**	**W - bn**	**W - S**	**W - B/W**	**W - B/O**	**W - B/G**	**W - B/bn**	**W - B/S**
AT1 AR1	**NC**	**AT2 AR2**	**NC**	**NC**	**NC**	**AT3 AR3**	**NC**	**AT4 AR4**	**NC**

D. ON A6SLC

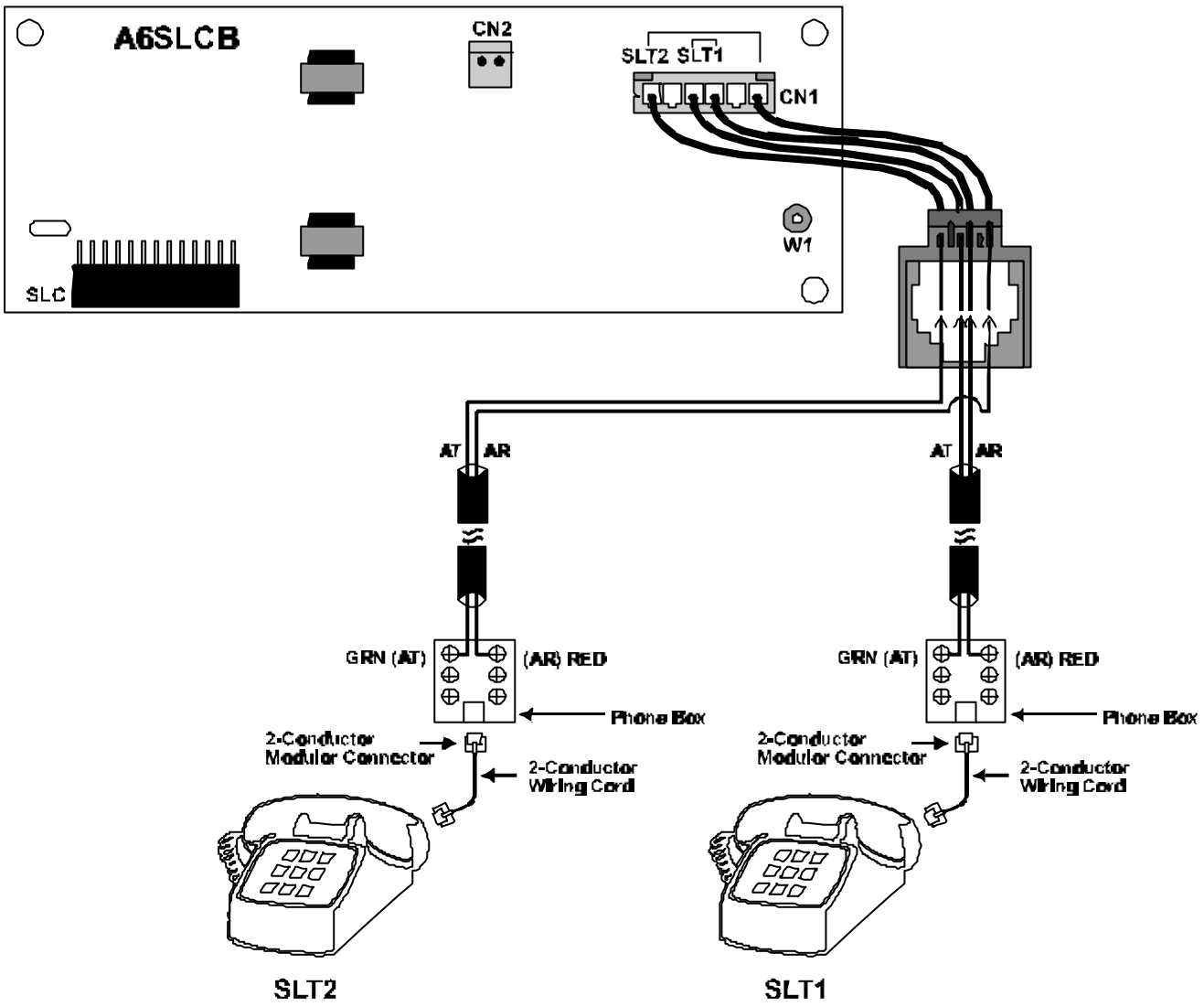

A6SLCB
CN2
SLT2 SLT1
CN1
W1
SLC
AT
AR
AT
AR
GRN (AT)
(AR) RED
Phone Box
2-Conductor
Modular Connector
2-Conductor
Wiring Cord
GRN (AT)
(AR) RED
Phone Box
2-Conductor
Modular Connector
2-Conductor
Wiring Cord
SLT2
SLT1

Figure 25. SLT Station Wiring on A6SLC

1. Install A6SLC on A6MBUB.
2. Connect SLC cable from **[CN1]** position on **A6SLC** to the **System Case**.
3. There are two SLT ports.
4. **A6SLC** provides two SLT ports. **SLT1** (Pins 3&4) and **SLT2** (Pin 1&6) can be connected with Single Line Telephones.

■ A6MFC Installation of the DOOR PHONE, SENSOR and SWITCH wiring.

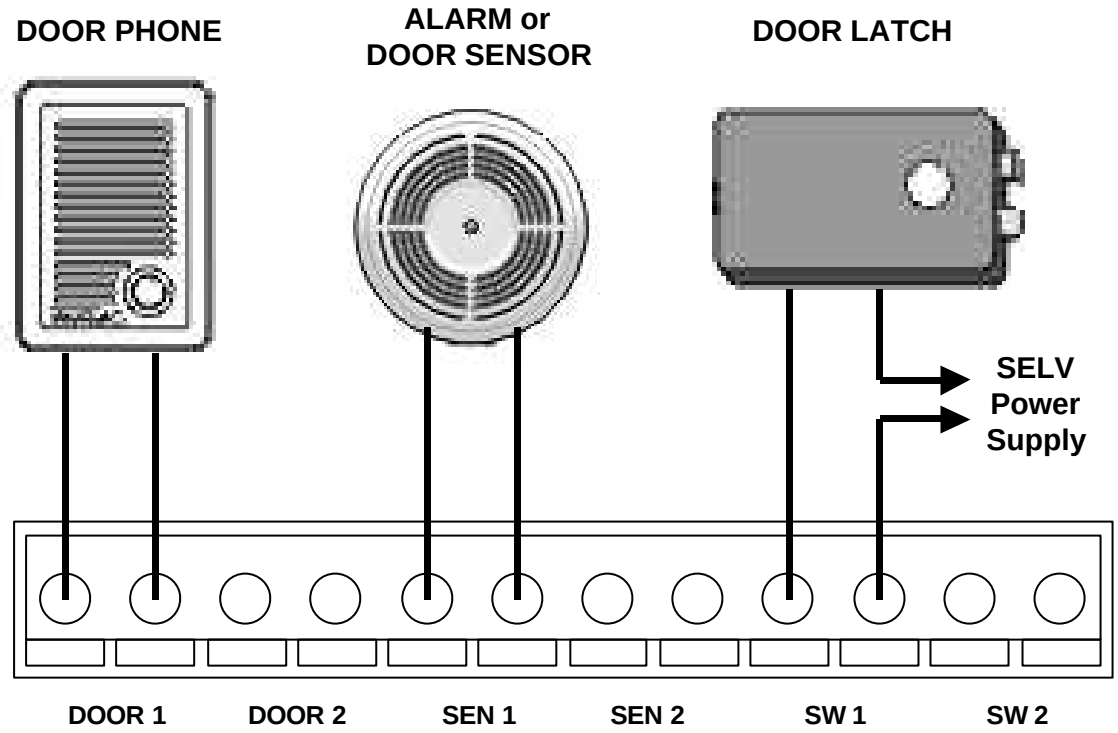


Figure 26. 2-Wire Door Phone Connection on A6MFC

1. **A6MFC** provides two connections of Door Phone Device, two sensors contacts and can operate two door latches or relays.
2. Connection of the 2nd Door Phone is the same as **[DOOR 1]** but connect to **[DOOR 2]**.
3. Connection of the 2nd Sensor is the same as **[SEN 1]** but connect to **[SEN 2]**.
4. Connection of the 2nd Door Switch is the same as **[SW 1]** but connect to **[SW 2]**.

■ EXTERNAL PAGING and MUSIC ON HOLD WIRING

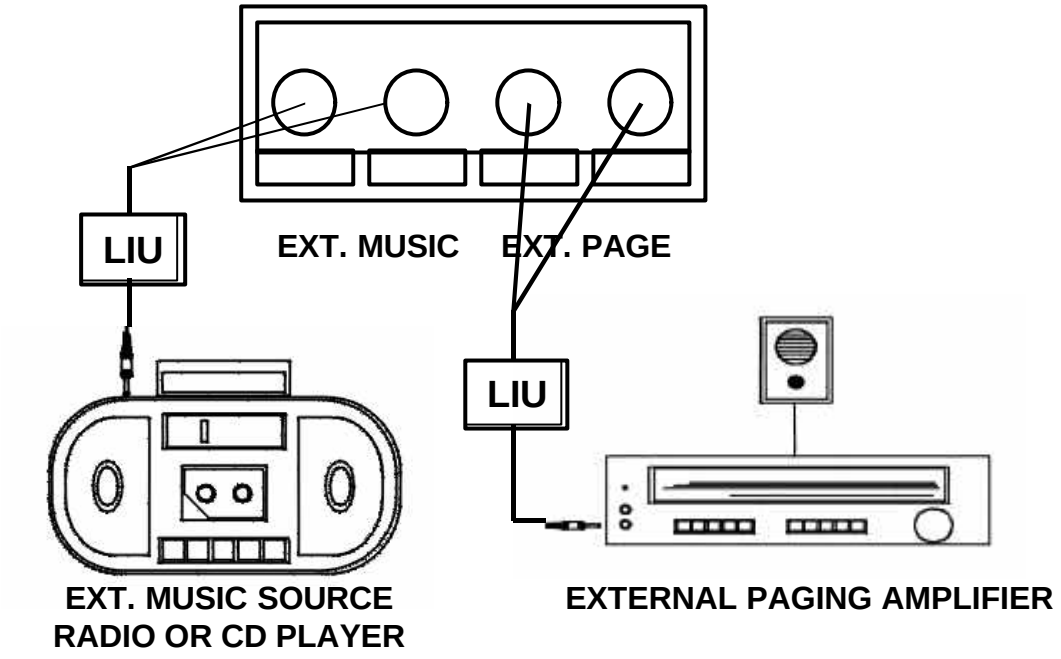


Figure 27. External Paging Equipment Wiring on A6MBUB

External Music on Hold

1. Connect 2-conductor wiring cord from External Music Source to **[EXT. MUSIC]** on **A6MBUB** using an approved Line Isolation Unit (LIU).
2. After External Music Source has been installed, it is necessary to select the external melody is for Back Ground Music and/or Music On Hold by Jumper Selection on **A6MBUB**.

External Paging

3. Connect 2-conductor wiring cord from External Paging Equipment to **[EXT. PAGE]** on **A6MBUB** using an approved Line Isolation Unit (LIU).

■ RS232 (SERIAL PRINTER OR PC) and RPC INSTALLATION

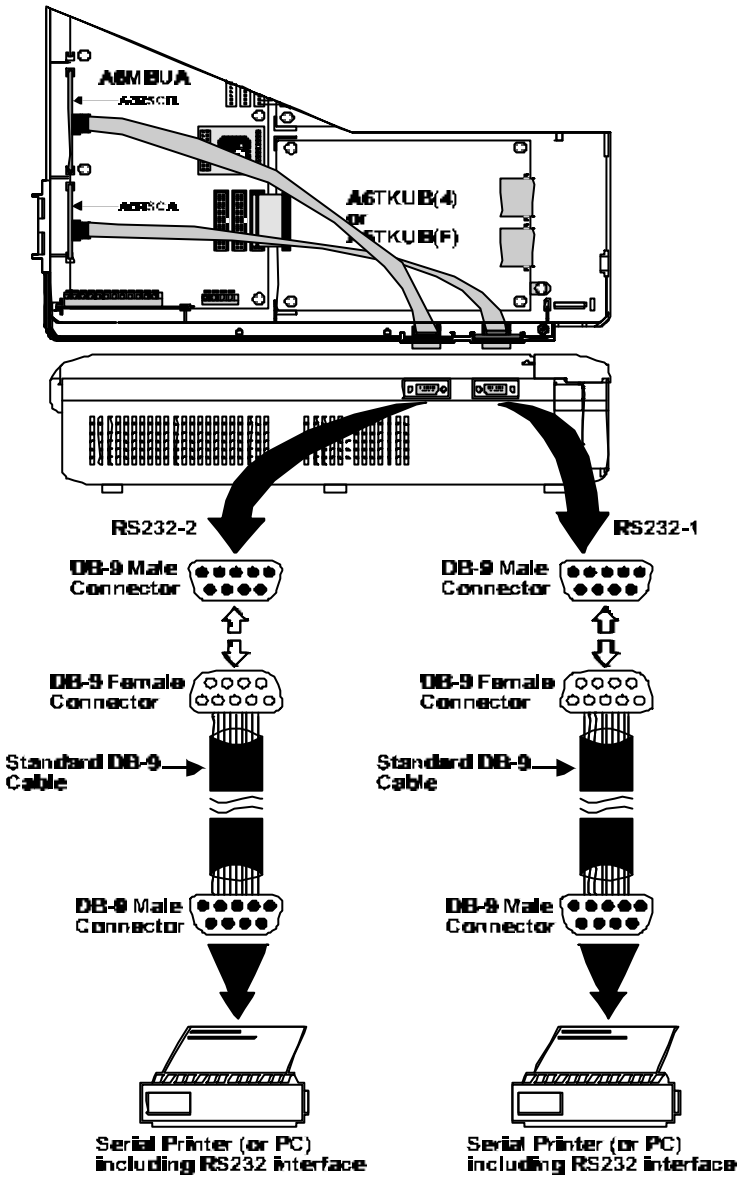


Figure 28. RS232 and RPC connection

LOCAL RSC CARDS

1. Install A6RSCA to **[RSC]** position on **A6MBUB** as the **FIRST** RS232 interface.
2. Install A6RSCB to **[RPC]** position on **A6MBUB** as the **SECOND** RS232 interface.
3. Connect the cable from **[CN]** position on **A6RSCA (or A6RSCB)** to the **System Case**. Setup the Jumper Selection on A6RSC (or A6RSCB) according to the connection terminal is either PC or Serial Printer.

REMOTE PROGRAMMING CARD

1. install A6RPC to **[RPC]** position on **A6MBUB**