



STR QwikBus™ 4 wire Black & White Video Intercom System



Installation, Programming, and User's Manual

STR QwikBus™ 4 wire B&W Video Intercom System

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The STR QwikBus™ takes advantage of the latest in digital technology to provide a high tech, high quality black & white video intercom system operating on a 4 common wire BUS.

QwikBus™ video monitor stations feature a crystal clear 4" video screen (measured diagonally) with handset as well as audio only stations that can be mixed and matched to suit your particular application all on the same 4 twisted wires.

QwikBUS™ COMPATIBLE INSIDE STATIONS



**VH3033-4
Black & White
MONITOR
W/HANDSET**

Available in White,
Titanium, and
Anthracite



**HT3033
AUDIO HANDSET**

(requires HT2DV adapter)

Available in White,
Titanium, and Anthracite

PLANNING THE INSTALLATION

Is this a Black & White Video installation?

This manual is written expressly for the QwikBus™ 4-wire Black and White system that will be using the Inside monitors listed on the previous page. If you are installing a Color system please refer to the QwikBus™ 2-wire Color System Manual.

How many apartments?

QwikBus™ can run up to 120 apartments and can exceed that number if specially designed. If you will be installing a larger system please contact Alpha Communications® for assistance.

How many apartments will need more than 1 monitor?

An apartment can have up to 5 monitors and or audio stations that will ring when the entry button is pressed.

How many Entrances?

QwikBus™ can have up to 8 Entrance panels. If you will be installing a larger number of entrances please contact Alpha Communications® for design assistance.

Modular Panel?

STR modular panels are available in White, Titanium, and Dark Brown and are usually used in small installations from a 1 button residential application up to multi-apartment configurations and feature beautiful contemporary looks, illuminated buttons, and outside weather resistance.

Stainless Steel or Brass Panel?

Alpha Communications can custom build flush and surface mount entry panels in Stainless Steel or Brass with all necessary apartment button numbering and address engraving.

How many observation cameras will be in the system?

Additional Cameras can be added in addition to the Entrance Cameras for a total of 8, enabling the apartment monitors to view the various feeds on demand.

What type of Inside stations will you use?

Although all the compatible stations connect the same way, each model does have certain capabilities and advantages depending on the needs of the tenant and can be exchanged for another unit at anytime if necessary by simply installing the 4 wires and reprogramming the system to recognize the unit.

Are you running new wire or using existing wire from a previous system?

Although digital systems are fairly forgiving in wiring requirements, they are still susceptible to EMI from electrical lines running nearby, or existing wiring that is not twisted, in poor condition, or not a suitable gauge. Please refer to the wiring thickness chart below to determine the minimum recommended wire gauge needed. If the existing wiring is more than 12 years old, has deteriorating insulation, questionable splice connections, corrosion, or is not configured as twisted pair wiring, it is highly recommended that new wire be run.

To reduce the risk of interference problems:

- Always use a single twisted pair wire for the two wire BUS line.
- Do NOT double wires to increase effective wire diameter. This will cause interference problems.
- Do NOT install any unused additional wires with open ends.
- Never connect the shield from a cable, or connect the shield from one cable to another.
- Use a separate cable to the door strike from the SP333.
- Only use a 12VAC door strike or 12VAC relay with less than 1 amp draw.
- If it is absolutely necessary to run the door strike wiring in the same cable as the BUS line, you must use a transient voltage suppressor at the door strike end.
- Loop resistance should be less than 20 ohms.

**Twisted pair is always recommended.
Cat5, Cat5E, Cat6, and the new Cat7 spec. wire is NOT recommended.**

WIRE GAUGE		VIDEO		AUDIO	
Metric (mm)	AWG Std	Meters	Feet	Meters	Feet
0.6	22	75	250	150	500
0.8	20	150	500	300	1100
1	18	225	750	450	1500
1.2	16	300	1100	600	2000
1.5	14	500	1640	1000	3300
2.5	10	1500	4900	3000	11,000

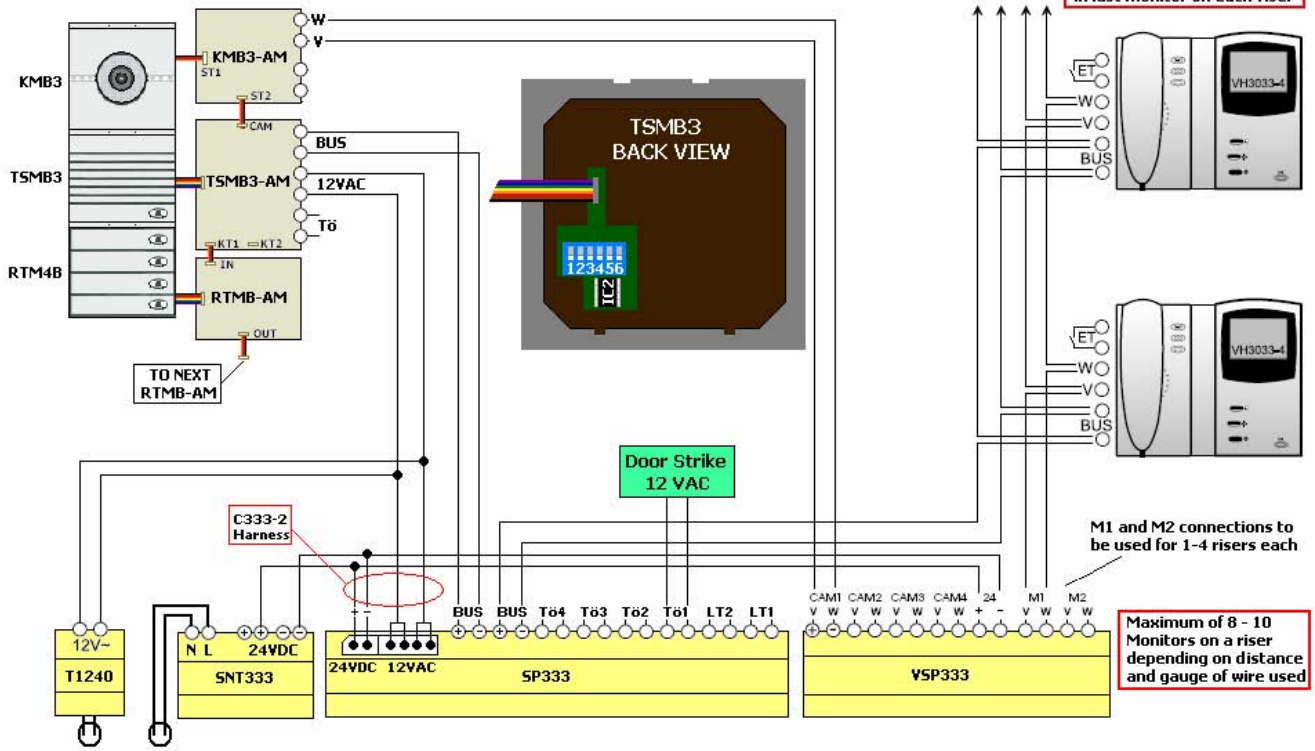
How many risers will you be using?

The recommended maximum number of monitors on a riser is 10 with each riser originating from the SP333 Control Unit, or from the EVB333 Amplified Splitter(s) if your system requires them.

For technical assistance and help determining equipment needed please call:
Alpha Communications® at **(800) 666-4800** Monday – Friday 8:30- 5:00 pm



4 WIRE B & W MODULAR ENTRY SYSTEM DIAGRAM



System Notes – 4 wire Black & White System with Single Modular Entry

A Single Entry Modular system requires the following dipswitch settings on the back of the TSMB3 unit:

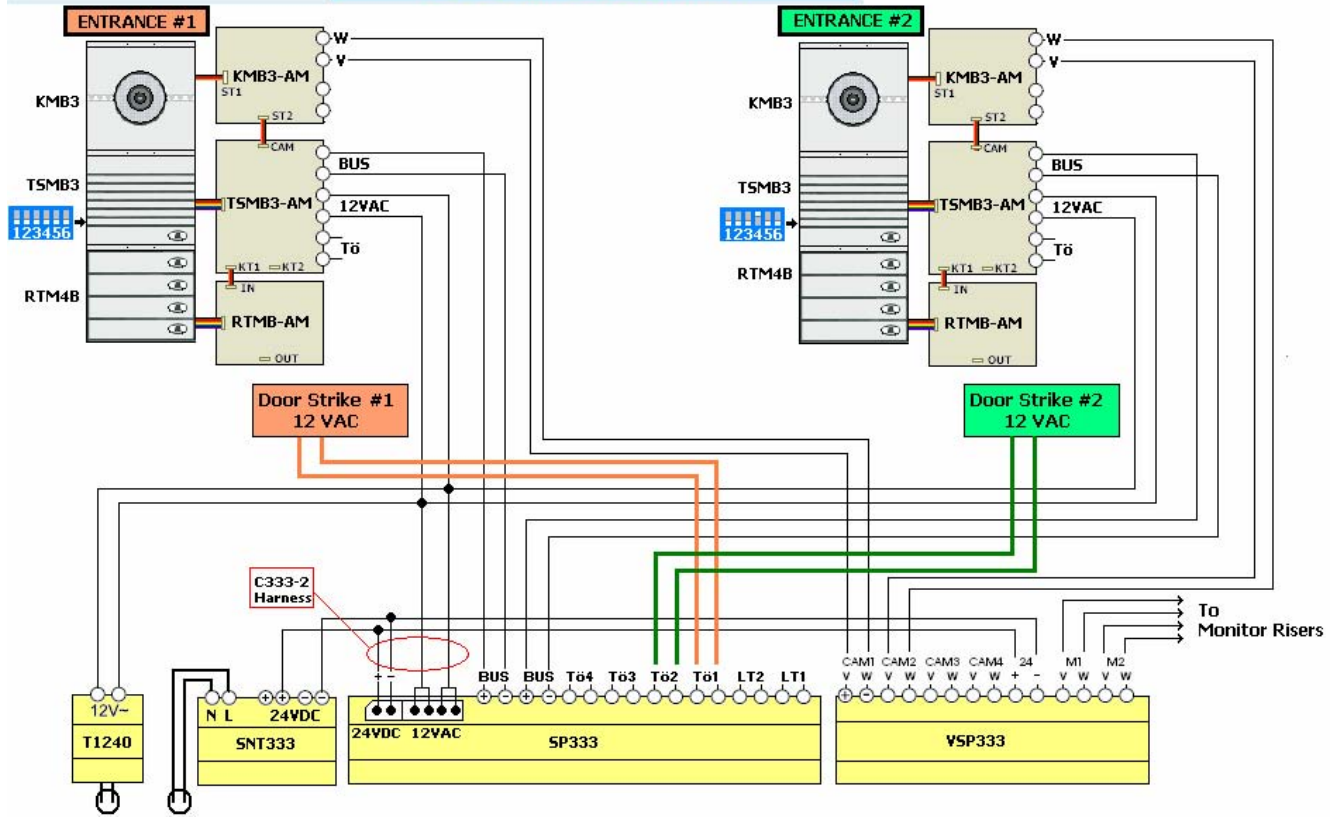
Switches 4, 5, & 6 identify the entrance number (all OFF = Entrance 1)

Switch 3 If the door strike is to be connected to the SP333 (Tö1) = OFF
If the door strike is to be connected to the TSMB3 (Tö) = ON

For more information refer to Page 8 Dipswitch Settings.

Be sure that the **End of Line Jumpers** are used on the camera circuit board and in the last monitor on each riser. If the last unit on a riser is an audio only unit, the End of Line Jumper would still be used on the last monitor on that riser. This is important for best picture quality. (refer to Page 10) End of Line Jumper Locations.

When connecting C333-2 harness between SP333 and SNT333, ALWAYS observe 24VDC Polarity.



System Notes – 4 wire Black & White System with Multiple Modular Entries

Multiple Entry Modular systems require the following dipswitch settings on the back of the TSMB3 unit:

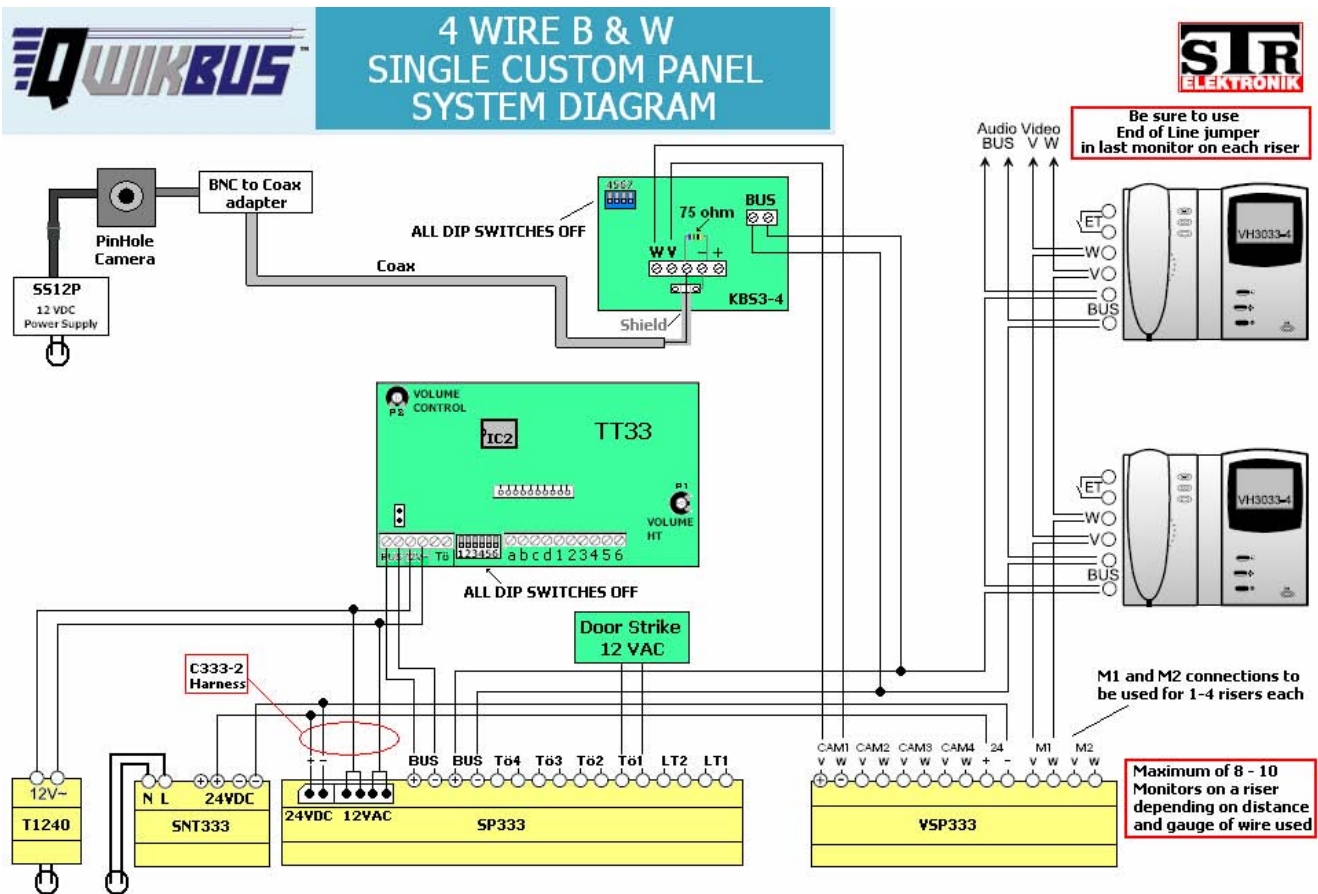
Switches 4,5, &6 identify the entrance number. In the above example:
 Entrance #1 = 4 OFF/ 5 OFF/ 6 OFF Entrance #2 = 4 ON / 5 OFF/ 6 OFF

Switch 3 If the door strike is connected to the SP333 (Tö1, Tö2, ...) = OFF (as shown)
 If the door strike is connected to the TSMB3 (Tö) = ON

For more information refer to Page 8 Dipswitch Settings.

Be sure that the **End of Line Jumpers** are used on the camera circuit board and in the last monitor on each riser. If the last unit on a riser is an audio only unit, the End of Line Jumper would still be used on the last monitor on that riser. This is important for best picture quality. (refer to Page 10) End of Line Jumper Locations.

When connecting C333-2 harness between SP333 and SNT333, ALWAYS observe 24VDC Polarity.



System Notes – 4 wire Black & White System with Single Custom Panel Entry

The TT33 SPEAKER/MICROPHONE/ CONTROLLER allows you to use QwikBus™ with a custom panel or existing dry contact type entry panel by converting the button presses to a digital signal through an electronic matrix. This matrix is discussed in detail on Page 11.

A Single Panel Entry system requires the following dipswitch settings on the TT33 unit:

Switches 4, 5, & 6 identify the entrance number (all OFF = Entrance 1)

Switch 3 If the door strike is to be connected to the SP333 (Tö1) = OFF
 If the door strike is to be connected to the TT33 (Tö) = ON

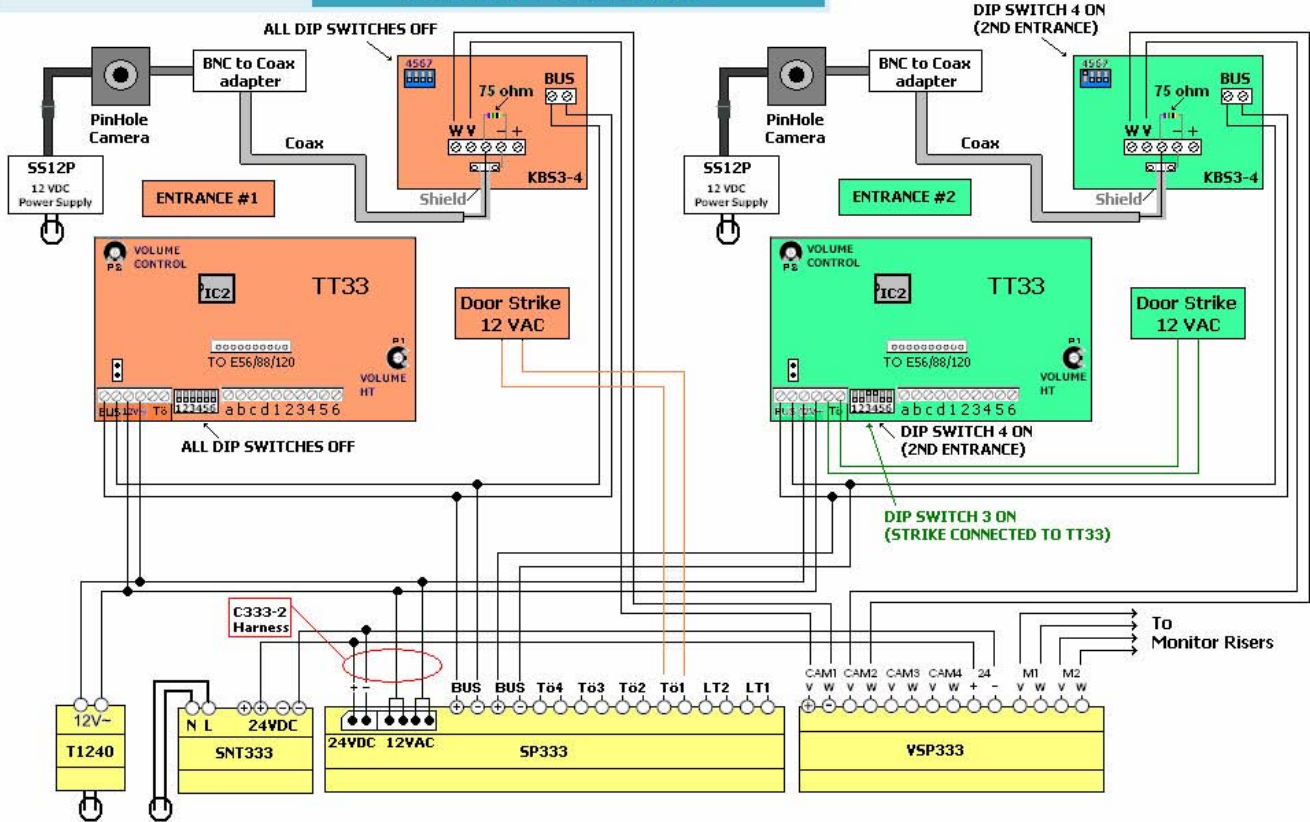
Switches 4,5, &6 on the KMS3-4 should be set the same as the corresponding Entry.

For more information refer to Page 8 Dipswitch Settings.

Be sure that the **End of Line Jumpers** are used on the camera circuit board and in the last monitor on each riser. If the last unit on a riser is an audio only unit, the End of Line Jumper would still be used on the last monitor on that riser. This is important for best picture quality. (refer to Page 10) End of Line Jumper Locations.

NOTE: When using a Coaxial cable into a KMS3-4, **ALWAYS** connect a 75Ω (for RG-59) or 50 Ω (for RG-6) End-of-Line resistor between the coax center lead terminal and the (-) terminal on the KMS3-4. Failure to do this may cause degradation of the video signal.

When connecting C333-2 harness between SP333 and SNT333, ALWAYS observe 24VDC Polarity.



System Notes – 4 wire Black & White system with Multiple Custom Panel Entries

Multiple Custom Panel Entry systems require the following dipswitch settings on the back of the TT33 units:

Switch 3 If the door strike is connected to the SP333 (Tö1) = OFF (as shown at Entrance 1)
If the door strike is connected to the TT33 (Tö) = ON (as shown at Entrance 2)

Switches 4,5, &6 identify the entrance number. In the above example:
Entrance #1 = 4 OFF/ 5 OFF/ 6 OFF Entrance #2 = 4 ON / 5 OFF/ 6 OFF

Switches 4,5, &6 on the KMB3-4 should be set the same as the corresponding Entry.

For more information refer to Page 8 Dipswitch Settings.

Be sure that the **End of Line Jumpers** are used on the camera circuit board and in the last monitor on each riser. If the last unit on a riser is an audio only unit, the End of Line Jumper would still be used on the last monitor on that riser. This is important for best picture quality. (refer to Page 10) End of Line Jumper Locations.

NOTE: When using a Coaxial cable into a KBS3-4, **ALWAYS** connect a 75Ω (for RG-59) or 50 Ω (for RG-6) End-of-Line resistor between the coax center lead terminal and the (-) terminal on the KBS3-4. Failure to do this may cause degradation of the video signal.

When connecting C333-2 harness between SP333 and SNT333, ALWAYS observe 24VDC Polarity.

Dipswitch Settings – Entries & Door Strikes

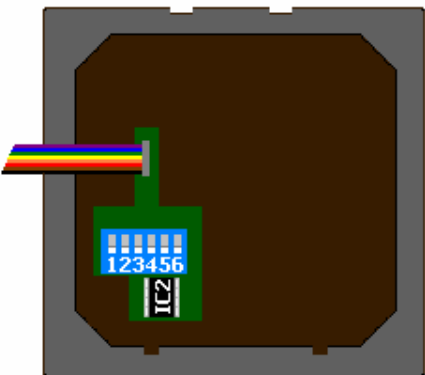
The QwikBus™ system uses dipswitches for identification of Entry stations, additional cameras, and to enter “Programming Mode”.

Entrance Panels must have a unique code so the system knows where the call is coming from and which door to open. Dipswitches 4, 5, & 6 on the back of the Speaker/Microphone Unit (**TSMB3** (Modular style) or **TT33** (Custom style)) assign this code as shown in the chart below.

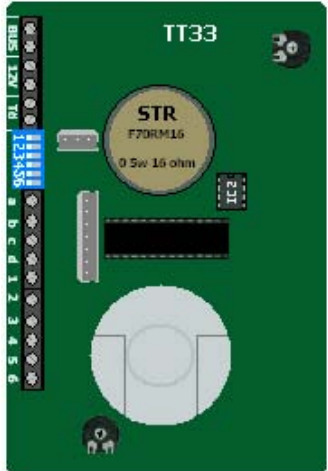
When a Door Strike is used, It can be connected locally to the **TSMB3** (Modular style panels) or **TT33** (Custom style Panels) **Tö** terminals, or connected to the **SP333** Controller at the **Tö1, Tö2, Tö3, or Tö4** terminals (number is related to the entry number). You must let the system know which connection you will use by the position of the #3 dipswitch for each entry. Dipswitch #3 = OFF (**SP333**) or ON (**TSMB3** or **TT33**). The entries DO NOT have to be set alike.

ENTRANCE PANEL DIP SWITCH SETTINGS

OFF		ON																																					
1	REGULAR MODE	1	PROGRAMMING MODE																																				
2	REGULAR MODE	2	MULTI UNIT PROGRAMMING																																				
3	DOORSTRIKE CONNECTED TO SP333	3	DOORSTRIKE CONNECTED LOCALLY																																				
4	Set the Entry number with these three switches. Use the chart to the right.	4	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e0ffff;"> <th style="text-align: center;">ENTRY</th> <th style="text-align: center;">Switch 4</th> <th style="text-align: center;">Switch 5</th> <th style="text-align: center;">Switch 6</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">1</td><td style="text-align: center;">OFF</td><td style="text-align: center;">OFF</td><td style="text-align: center;">OFF</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">ON</td><td style="text-align: center;">OFF</td><td style="text-align: center;">OFF</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">OFF</td><td style="text-align: center;">ON</td><td style="text-align: center;">OFF</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">ON</td><td style="text-align: center;">ON</td><td style="text-align: center;">OFF</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">OFF</td><td style="text-align: center;">OFF</td><td style="text-align: center;">ON</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">ON</td><td style="text-align: center;">OFF</td><td style="text-align: center;">ON</td></tr> <tr><td style="text-align: center;">7</td><td style="text-align: center;">OFF</td><td style="text-align: center;">ON</td><td style="text-align: center;">ON</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">ON</td><td style="text-align: center;">ON</td><td style="text-align: center;">ON</td></tr> </tbody> </table>	ENTRY	Switch 4	Switch 5	Switch 6	1	OFF	OFF	OFF	2	ON	OFF	OFF	3	OFF	ON	OFF	4	ON	ON	OFF	5	OFF	OFF	ON	6	ON	OFF	ON	7	OFF	ON	ON	8	ON	ON	ON
ENTRY		Switch 4		Switch 5	Switch 6																																		
1		OFF		OFF	OFF																																		
2	ON	OFF		OFF																																			
3	OFF	ON		OFF																																			
4	ON	ON		OFF																																			
5	OFF	OFF		ON																																			
6	ON	OFF		ON																																			
7	OFF	ON	ON																																				
8	ON	ON	ON																																				
5	5																																						
6	6																																						



TSMB3 Dipswitch Location



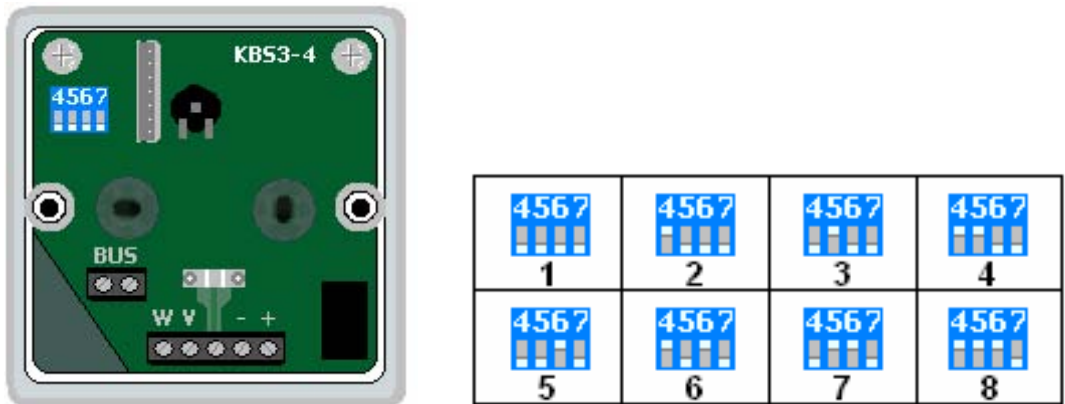
TT33 Dipswitch Location

Dipswitch Settings – Cameras using the KMB3-4 Video Converter

When using a Modular system, The Modular Camera (**KMB3**) is automatically identified by being connected directly to the **TSMB3** and takes the same Entrance number (1-8) of the **TSMB3**.

When using any other camera(s) the **KBS3-4** module must be used. This module has two functions:

1. Converts the analog camera video signal to a digital signal that can be used by the QwikBus™ system. The analog signal is fed into this module from any pinhole or CCTV type camera by a standard RG59 coax and sends the converted to digital signal out through the BUS connections to the system.
2. Establishes a Camera number for identification. If this camera is used in conjunction with Entry # 1 for example, This **KBS3-4** would be set to #1 using the dipswitches 4,5,&6 (7 is not used). The 8 combinations are shown below.



Using an analog camera with a Custom Panel

When using a Custom Panel with a **TT33** Speaker/Microphone/Controller, You must use either a pinhole or CCTV type analog camera with it's own power supply for system video input. This camera will connect by coax to the **KBS3-4** and the dipswitches must be set the same as the corresponding Entry panel dipswitches.

Using an analog camera as an add on observation camera to the system.

You can add CCTV type cameras to the system using the **KBS3-4** that are not related to an Entrance panel to allow for observation of other areas.

As an example you could have 2 Entries to the building using Camera #1 & #2 and use 3 observation cameras set as camera #3, #4, & #5. When a visitor rings from Entrance #1, camera #1 will come on the monitor to display the visitor, but the resident can also cycle through all five cameras by pressing the On button on the lower right of the monitor.

End-of-Line Resistors – Jumper Locations

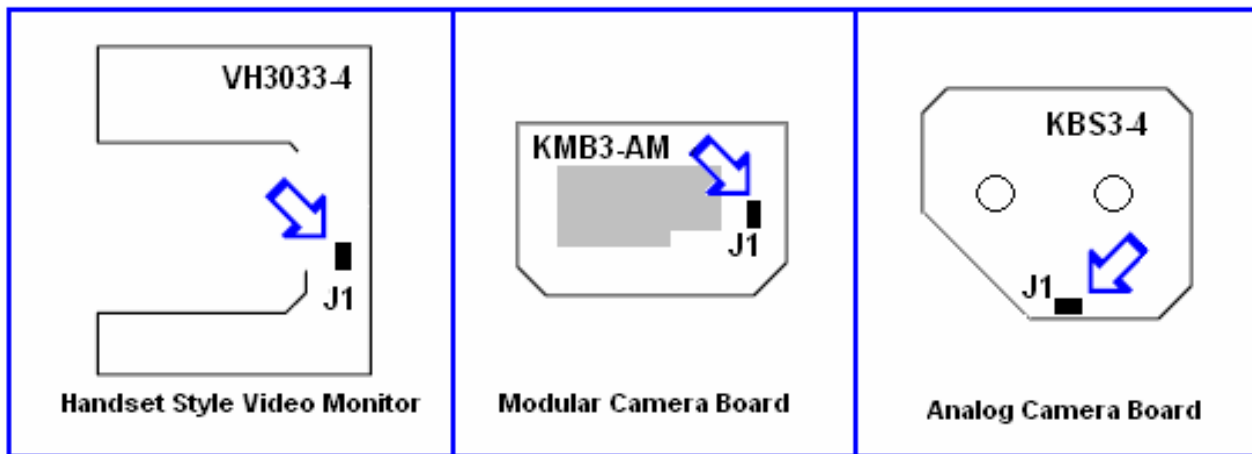
For proper system operation, the last video monitor on a riser as well as the last camera on a run **must** have End-of-Line Resistors.

These resistors are built in to the printed circuit boards and can be connected by installing the jumper on the two pins labeled **J1**.

Usually these jumpers are supplied on all the monitors and camera boards and must be removed if the unit is not the last camera or monitor.

If there is only one camera used or one monitor used, the End-of-Line resistors must still be used.

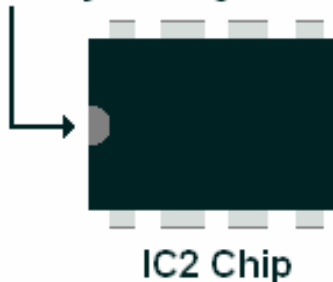
The Chart to below shows the locations of the J1 pins on the different circuit boards.



The IC2 Database Chip

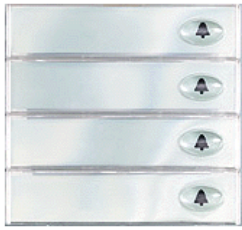
The QwikBus™ system has 8 pin nonvolatile IC chips located on the back of each **TSMB3** Speaker Microphone Module (in the Modular style Entry Panels) or **TT33** Speaker Microphone Module (in the Custom style Entry Panels). Each unit has this chip which maintains the programming for that specific entry.

Polarity Indicating Mark



If you have to replace a **TSMB3** or **TT33** unit, you can remove the IC2 from the old unit and install it into the new unit so you do not have to reprogram that entrance. When doing this replacement, be sure to install it in the correct polarity indicated by the mark on the chip.

The Matrix – Wiring Pushbuttons to the TT33



When using an STR Modular Button assembly, the system can read which switch is being pressed by electronics built into the switches.

In the case of a Custom Panel, these electronics are built into the TT33 and you must run wires to assign each button to a position in a matrix.

Modular Button Assy.



Close up of TT33 Matrix Connections

The matrix consists of Common Connections **a,b,c, & d** and numbers **1** through **6**.

Apartment	Connections	
101	A	1
102	A	2
103	A	3
104	A	4
201	A	5
202	A	6
203	B	1
204	B	2
301	B	3
302	B	4
303	B	5
304	B	6
PH1	C	1
PH2	C	2
PH3	C	3

The chart to the left shows an example of how a 15 button panel could be connected using combinations of letters and numbers to give each button a unique identification in the electronic matrix.

As long as each button is connected to a unique combination of one letter and one number then the system will be able to assign addresses to each button.

Using the matrix on the TT33 module, you can get 4x6 (24) unique combinations. One of these combinations (D6) is reserved for special functions, so you can have up to a total of 23 apartments using the TT33 alone. If your system has more apartments you may add the following parts (one for each entry) which will extend the matrix by giving you more numeric connections. Please refer to the chart below.

# of Apartments	Additional Components
1 – 23	---
24 – 55	E56
56 – 87	E88
88 – 119	E120

For systems larger than 119 apartments, contact Alpha Communications for assistance.

Opening and Closing the VHC3033-4 Inside Stations



Bus Adapter for the HT3033 Audio Handset Inside Stations

The **HT3033** is designed to work with either the 2 wire color system or the 4 wire B&W system. When installing an **HT3033** handset in a 4 wire system, an **HT2DV** adaptor must be used between the BUS connections on the handset and the BUS wires from the system. The V&W wires are not required on the handsets.

PROGRAMMING SECTION

NOTE: Depending on your choice of Entry Panel, you will either be using a **TT33** or **TSMB3** Module. The **TT33** and the **TSMB3** will both be referred to in this section as the **Speaker/Microphone**

Programming the QwikBus™ System – Handset Style (VHC3033-4 / HT3033)

Programming the system is easily done with two installers. One to move from apartment to apartment working with the monitors, and one to be at the entry panel pressing the corresponding buttons.

1. Move Dipswitch 1 at Speaker/Microphone to **ON** position (*Enter Programming Mode*).
2. Lift Handset of Apartment Station to be programmed. (*Opens communication to the Entry Panel, Installers will be able to talk to each other*).
3. Press the Entry Button to be assigned to the Apartment Station (*4 beeps at the Speaker/Microphone will indicate successful programming*).
4. Hang up Handset of Apartment Station.
5. Repeat Steps 2 through 4 for all apartments. When Programming is completed move Dipswitch 1 at Speaker/Microphone to **OFF** position (*Normal Operating Mode*).

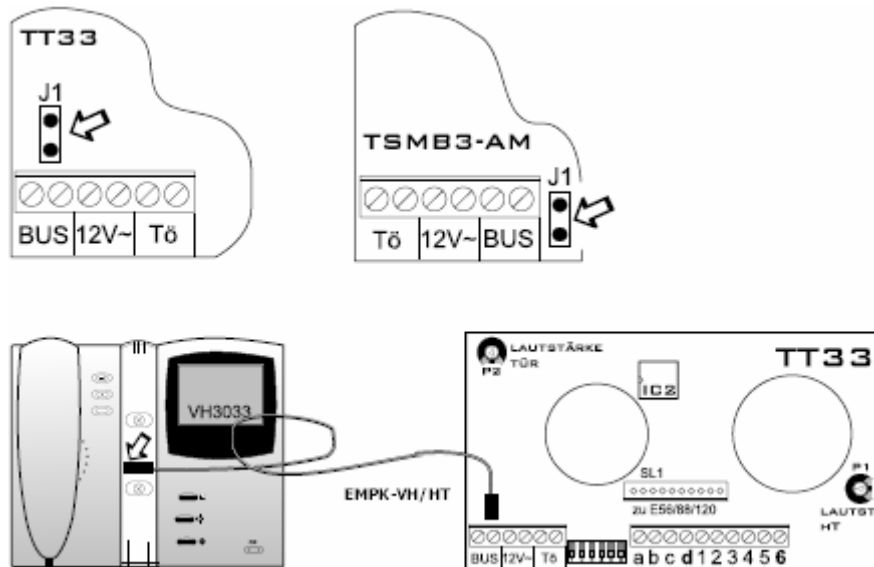
Programming Indoor Stations for Parallel Operation


You can program up to 4 stations to ring with each pushbutton (either for a residential system or multiple stations in an apartment).). Up to 8 stations can be programmed to ring with the special **TSMB3-8** module.

1. Move Dipswitch 1 at Speaker/Microphone to **ON** position (*Enter Programming Mode*). Check that Dipswitch 2 is in the **OFF** position.
2. Lift Handset of Apartment Station to be programmed. (*Opens communication to the Entry Panel, Installers will be able to talk to each other*).
3. Press the Entry Button to be assigned to the Apartment Station (*4 beeps will sound at the Speaker/Microphone*). Hang up Handset of Apartment Station.
4. Move Dipswitch 2 at Speaker/Microphone to **ON** position.
5. Lift Handset of Apartment Station to be programmed. (*Opens communication to the Entry Panel, Installers will be able to talk to each other*).
6. **(TSMB3)** Hold down the “Light Button” while pressing the Entry Button used in Step 3. **OR (TT33)** Press the same Entry Button used in Step 3.
7. Press ON/OFF Button of Apartment Station.
8. Repeat Steps 5 through 7 for each additional parallel station.
9. Move Dipswitches 1 & 2 to **OFF** position.

One Man Bench Programming -- Handset Style (VHC3033-4 / HT3033)

If you prefer, the system can be preprogrammed on the bench to minimize your on-site time and eliminate the necessity of a second installer. To do this the inside stations can be connected separately one after another to the Speaker/ Microphone Module (either the **TSMB3** or the **TT33**) using the special programming cable (Part # **EMPK-VH/HT**), or just using 2 wires between the BUS terminals of both. Below is a step by step procedure for this method.



1. Connect the **TT33** or **TSMB3** Speaker/Mic unit to BUS power and plug in programming cable to the J1 terminals indicated by the blue arrow.
2. Move Dipswitch 1 to **ON** (programming mode).
3. Plug in other end of the cable to one indoor station as shown.
4. On the inside station, hold down the light button  until you hear a single tone (approx. 3 sec.)
5. Push the corresponding entry pushbutton. If the programming is successful you will hear 4 tones at the Speaker/Mic unit.
6. Unplug the indoor station and mark it with the corresponding pushbutton to avoid a mix-up.
7. Plug in the next indoor station and repeat steps 4 through 6 for the remaining units.
8. When programming is completed, Move Dipswitch #1 back to **OFF** (Normal mode)

USER Operation of the VHC3033-4 Black & White Handset

General Operation

After a visitor has rung the bell at the entrance, the monitor will turn on automatically. You can lift the handle and talk with the visitor. You are also able to activate the door opener. When hanging up the handset, the communication will end and the monitor will turn off automatically. Up can switch on the monitor at any time by pressing the ON button located at the bottom right of the monitor. To switch off the monitor hold the ON button for approx. 3 seconds.

Manually switching Multiple Cameras (if equipped)

Turn on the monitor by pressing the ON button. Pushing this button again will cycle through all available cameras on the system.

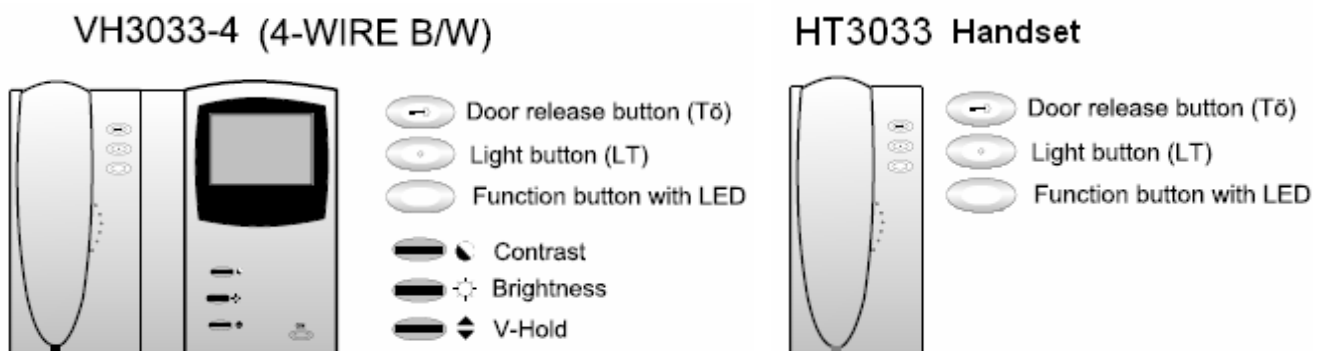
Changing the Ring sound of your inside station

You can select one of eight different doorbell signals for each indoor station by the following method:

1. Lift the handset and wait until the red LED and busy tone stop. (*make sure the handset hasn't been called shortly before, otherwise lift handset and hang up again to stop communication*).
2. Now you can listen to all the different ringtones one after the other by keeping the function button depressed until the next tone starts. The last ringtone heard will be stored automatically. When finished hang up the handset.
3. The ringtone sent by the optional door bell button (connected at E & T) cannot be changed.
4. In systems with more than one entrance there is a differentiation between the ringtone automatically.

Adjusting the Volume of the Ringtone

1. Keep the Function Button depressed with the handset hung up and volume will decrease slowly to mute and then increase to full volume.
2. Release the button at the desired volume level. (*make sure the handset hasn't been called shortly before, otherwise lift handset and hang up again to stop communication*).



Replacing an Indoor Station

The new station must be programmed into the system (See programming Instructions Page 13)