Atlas Sound VARIZONE
DIGITAL PUBLIC ADDRESS SYSTEM

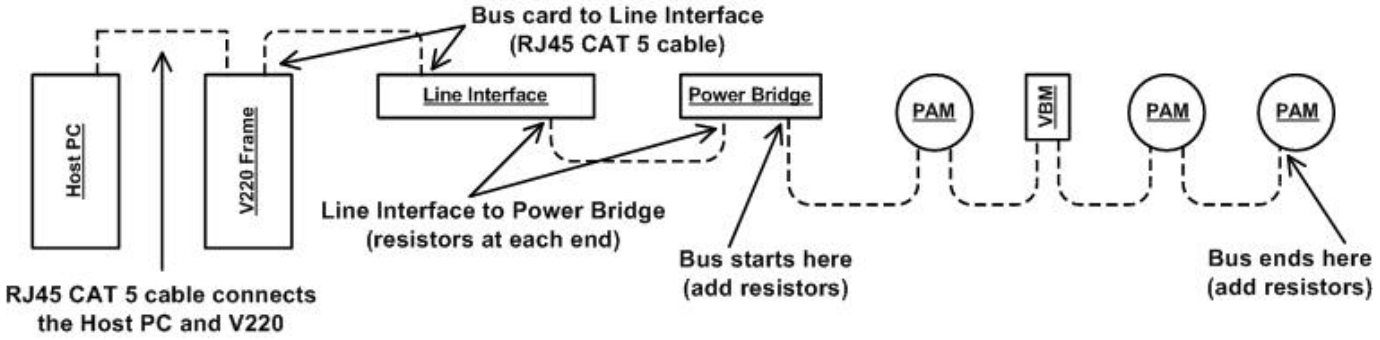
TECHNICAL BULLETIN

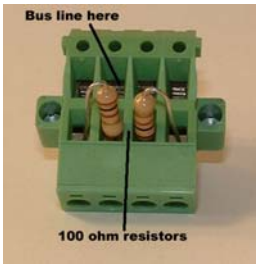
SUBJECT: DSS BUS WIRING

BULLETIN #1 **REV 0** **DATE 7/12/04**

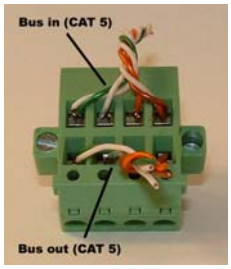
Note: *This guide should be referenced whenever installing DSS bus wiring for the Varizone system. It is extremely important these instructions are followed and a good quality of CAT 5 cable is used. Failure to do so make result in unreliable communications between Varizone components.*

CAT 5 with four twisted pairs of wire will be needed – and a good quality CAT 5 cable should be used. For connectors, use "T-type" configuration Phoenix connectors (part number 1853120). This type of connector allows for easy installation of the necessary resistor network, as seen below. They also allow for easy in and out wiring and since all three connections are connected internally, if a connector is disconnected from a PAM, VBM, or other device, the line is not interrupted.



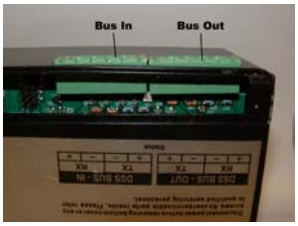


At the beginning and end of each bus line, as well as both connections between the Line Interface and Power Bridge, terminating resistors will be required. The value depends on the type of cable used. For CAT 5, the value is 100 ohms. Look at the illustration above and make note of how the resistors are installed. Cut the terminator leads as short as possible and ensure that they do not touch each other. This is extremely important.

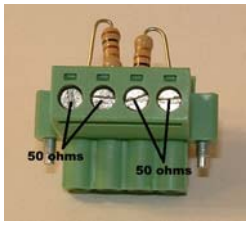


The above illustration shows the bus line coming in one side and continuing out on the other with no interruptions. On the bottom side is the connection for a PAM or other device to the bus. Continue

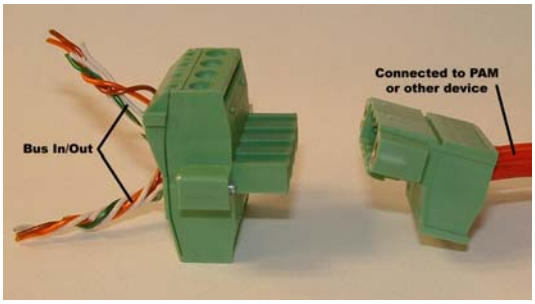
constructing the bus by installing the connectors where needed and running cable to the next location/connector until you reach a Power Bridge location.



Every Power Bridge has an in and an out. Even though this is a separate physical connection the bus is still a "daisy chain" of all devices on that particular bus. (See picture above.)



When you reach the end of the bus line, you will need to install the resistors as you did at the beginning. And now the integrity of the bus can be checked. With no devices attached to the bus, measure the line at the points indicated above and you should have a reading of approximately 50 ohms. You should measure for short circuits from one side (pair) to the opposite two terminals. The value should be infinity, i.e. open circuit. In other words, if they are numbered 1 through 4, left to right, then you would measure 1 to 3 and 1 to 4. Do the same between 2 to 3 and 2 to 4. If there is no continuity and the resistor lines measured 50 ohms, then the bus is wired properely.



The above picture illustrates the two types of connectors and how they will look before connection of a device to the bus. On the left is the bus in/out line and on the right is the device line, like on a PAM or VBM.

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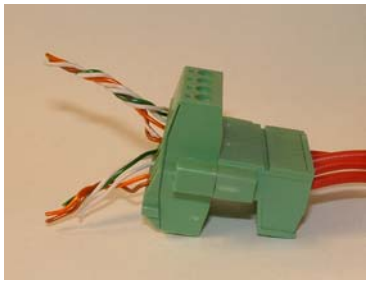

This is how they look when they have been correctly connected. There is a screw on each side, locking the connection. Make sure this screw is tightened down. Once all units have been attached check the system status in the VARIZONE window of the software to see that all devices on the various busses are green.

Important - Remember:

1. Terminating resistors should be at each end of a bus line, and at both ends of the connection between the Line Interface and the first Power Bridge.
2. You must use the same CAT 5 cable for entire system for complete stability and integrity. Mixing CAT5 and CAT5E is not acceptable. Also, make sure a good quality of CAT5 cable is used.
3. Use the Phoenix 1853120 connector for all bus connections.
4. Everything must check out as described above. If there is a large impedance difference then you will need to re-check all of your wiring connections for loose or broken wiring.
5. Keep the resistor leads as short as possible to reduce the risk of them touching and shorting out.

For a list of approved cabling, refer either the product or installation brochures, available from Atlas Sound.