

Interfacing with Avitech Protocol UMDs

The Image Video TSI1000 implements an interface for the serial protocol specified in the Avitech MCC-8000 Series ASCII Guide revised December 2005. The use of this serial interface is described in this document.

Licensing Requirement

To license the use of the Avitech Protocol UMD serial interface, contact Image Video with the total number of UMDs to be updated by the TSI1000(s), and the serial number(s) of TSI1000(s). The TSI1000 Avitech Protocol UMD serial interface will not function without the proper license keys installed.

Umd Serial Numbers

The serial number for Avitech Protocol UMDs (hereafter referred to as “Avitech UMDs”) must contain exactly six digits. The serial number format is:

<2-Digit Group 1-99><2-Digit Module 1-15><2-Digit UMD 1-4>

The six digits relate to parameters in the Avitech system configuration as follows:

The first two digits of the serial number, taken together, must have a value between 1 and 99. They enumerate a module group within the Avitech system to which the UMD belongs.

The second and third digits of the serial number, taken together, must have a value between 1 and 15. They enumerate a module within the Avitech system group to which the UMD belongs.

The fourth and fifth digits of the serial number, taken together, must have a value between 1 and 4. They enumerate a single UMD within an Avitech module.

Interface Details

The default baud rate for the Avitech UMD interface is 57600 bits per second. The serial character format is 8 data bits, no parity and 1 stop bit. Note that ports COM11 and COM12 may not be used for Avitech UMD ports at a baud rate of 57600.

The Avitech UMD interface protocol is transmit-only and therefore wiring is required only for transmit from the TSI1000 to the Avitech UMDs.

In the case of the Avitech MCC-8000 display the interface port is RS-232. This port can be directly interfaced to the TSI1000 COM2 port using a three-wire RS-232 Null Modem connection.

Changing Serial Comm Parameters

In some cases it may be necessary to set a different baud rate value for the Avitech UMD port. To do this, set Global Message _SYSVAR_COMM_FORMAT with contents <port minus 1>,<baud rate>/8/n/1, where <port minus> is the COM port number less one.

For example if the Avitech UMD frame is connected to TSI1000 port COM9, then set the _SYSVAR_COMM_FORMAT “Contents” field to “8,57600/8/n/1” (no quotes).

Configuring an Avitech UMD

To add an Avitech UMD to the Tally System Console configuration.

1. Click on “Display Unit” => “Configure”.
2. Click “Add”.
3. Enter a “Name” and “Serial Number” for the UMD, in accordance with the serial number format described above.
4. Set the “Type” to “Avitech MCC-8000 display”.
5. Click “Port” and set the appropriate port number. “Interface” is usually “2”.
6. Click “Details” and enter the UMD control string.
7. Repeat steps 2-7 to enter other UMDs.
8. Click “Close”.

NOTE: Do not enter display types other than Avitech MCC-8000 on a TSI1000 port assigned for use with the Avitech UMDs. Doing so will cause port configuration conflicts that may affect the baud rate setting of the serial port.

The “Configure Display Units” dialog box keeps the last-used setting as defaults when adding a new unit. Therefore when switching from entry of one UMD type to another (say from Image Video RDU1500 to an Avitech UMD), take extra care to set all the parameters correctly for the first unit of the new UMD type.

Avitech UMD Attribute Control

To control various UMD attributes the following embedded functions are used when programming the content of the Avitech UMDs.

Function	Purpose	Parameters	Parameter Values
AC(n)	Tally Control	n = colour code	<p>“n” is a decimal value where the first three bits of the binary value of the number have the following meanings:</p> <p>Bit 2: 1 = tally on, 0 = tally off</p> <p>Bit 1 and 0 are 00: Tally 1 is controlled by bit 2.</p> <p>Bit 1 and 0 are 01: Tally 2 is controlled by bit 2.</p> <p>Bit 1 and 0 are 10: Tally 3 is controlled by bit 2.</p>
RGB(R,G,B)	Text Colour	R,G,B are value between 0 and 255 to set the level of red, green and blue colour components respectively	<p>R=255,G=0,B=0: Text is red</p> <p>R=0,G=255,B=0: Text is green</p> <p>R=0,G=0,B=255: Text is blue</p>
RGB(R,G,B,0)	Text Colour	Same as RGB(R,G,B)	Same as RGB(R,G,B)
RGB(R,G,B,1)	Label Background Colour	Same as RGB(R,G,B)	<p>R=255,G=0,B=0: Label is red</p> <p>R=0,G=255,B=0: Label is green</p> <p>R=0,G=0,B=255: Label is blue</p>
RGB(R,G,B,2)	Border Colour	Same as RGB(R,G,B)	<p>R=255,G=0,B=0: Border is red</p> <p>R=0,G=255,B=0: Border is green</p> <p>R=0,G=0,B=255: Border is blue</p>
RGB(R,G,B,3)	Clock Background Colour	Same as RGB(R,G,B)	<p>R=255,G=0,B=0: Clock Background is red</p> <p>R=0,G=255,B=0: Clock Background is green</p> <p>R=0,G=0,B=255: Clock Background is blue</p>

Example	Explanation
AC(0)AC(1)AC(2)	Tallies 1, 2 and 3 are respectively off.
AC(4)AC(5)AC(6)	Tallies 1, 2 and 3 are respectively on.
RGB(255,0,0)	UMD Text is red
RGB(255,0,1)	Label background is red
RGB(0,0,0,2)	Border is black
RGB(255,0,0,2)	Border is red
tss(DA::CAM01,A,ac(4)ac(1),ac(0)ac(5),ac(0)ac(1))	Source name is displayed. Tally 1 is on when the source is on program. Tally 2 is on when the source is on preset and not on program. Both tallies are off when the source is neither on program nor on preset.
tss(DA::CAM01,A,ac(4),ac(5))	Same as above.

UMD interface Wiring

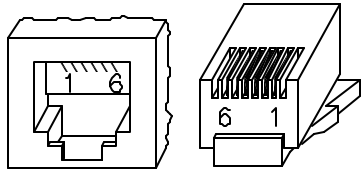
1. The serial communications parameters for the TSI1000's Avitech UMDs port is 57600, 8 data bits, no parity, one stop bit. This is set up automatically by the TSI1000 when it finds type "Avitech MCC-8000 display" UMDS assigned to the serial port.
2. The protocol is one-way only so only the TSI1000 transmit and the Avitech UMDs receive lines need be connected.
3. The serial pinouts for the COM8-COM10 DB-9 sockets are:

3 - TX+
8 - TX-
4 - TX gnd
7 - RX+
2 - RX-
6 - RX gnd
1 - Chassis gnd
9 - Chassis gnd

Therefore pins 3 and 8 would be connected to the Avitech UMDs.

4. The serial pinouts for the COM3-COM6 RJ-11 sockets are:

Pin	Function
1	Rx-
2	Gnd
3	Tx+
4	Tx-
5	Not used
6	Rx+



RJ-12 JACK RJ-12 PLUG

5. Do not use COM11 or COM12 for the Avitech UMDs port, unless the baud rate is changed as per the section above on "Changing Serial Comm Parameters".
6. Configure all UMDs on an Avitech port as Avitech MCC-8000 display types in order to prevent a baud rate setup conflict. The baud rate of the port is set in accordance with the type of the first UMD configured on the port.