iFlex

MAP Series Audio Mixer
Installation Guide

IVIE

|	
Model:	**iFlex 620**
Firmware Rev:	**2.065**
IP Address:	**192.168.0.150**
Subnet Mask:	**256.256.256.0**
Serial Number:	**2051A306D2**
Date:	**5/12/2014**
Time:	**11:27:14**

IVIE

Front Panel Display

MAP series audio mixers incorporate a high resolution touch-screen display to provide information on system connection, setup, diagnostics, channel state, etc. To navigate through the display screens, swipe either left or right using the touch-screen**. The Ivie splash screen is the default screen on system boot-up. This is a low intensity display for low-light environments.
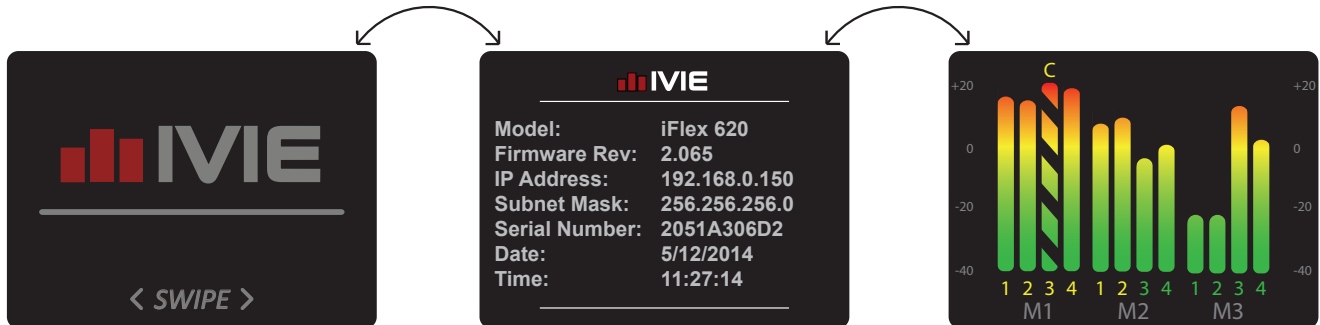
Sytem Information Screen

The system information screen is a single, right-to-left swipe of the touchscreen from the default boot-up splash screen. This screen shows information on the mixer model number, firmware revision, current IP address and subnet mask, serial number, date, and time.
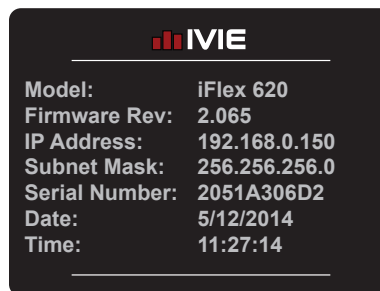
Channel Display

The channel display shows information on currently loaded hardware modules, channel levels, and clipping status. The levels are calibrated levels, and dynamically update to provide real-time level response for all audio input and output channels. Only audio channels are displayed. Channels are color coded to indicate type (input, output, echo-canceling, digital, FIR, etc.). Clipping is indicated by a hatched level, and a 'C' notation above the channel bar.
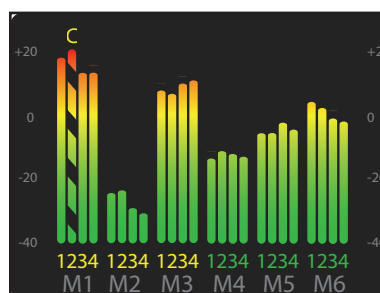
** Note - The touchscreen is resistive, and works best if the 'swipe' is done with a point-source, such as a fin-gernail, as opposed to the flat of the finger.

Rear Panel
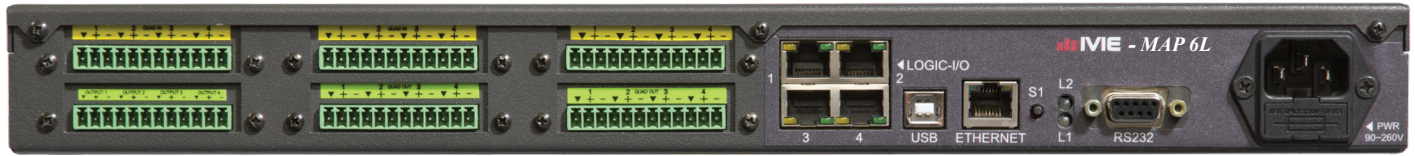
AC Mains

The AC Mains input is a switching power supply that will accept 100V to 240V, and 50/60Hz. Receptacle is fused with a 5X20MM, 1A 250VAC Slo-Blo fuse. Spare fuse included.

RS232

The serial port allows 3rd-party controllers to configure/control/monitor the MAP unit. This port also is also capable of sending data (in Decimal, Hexidecimal, ASCII, Binary, BYTES, etc.) to control 3rd-party devices. This provides control to nearly any 3rd-party device with a defined protocol.

L1/L2

L1 and L2 are LED indicators for system status. L1 indicates power, and L2 indicates processor main thread activity.

S1

The 'S1' switch is used at power-up to place the unit in 'safe-boot' mode. On boot up, when the 'L2' indicator is still blinking, briefly press the 'S1' button. The 'L2' indicator will stop blinking, indicating that the device is in 'safe boot' mode. If 'L2' continues to blink, then the button was pushed too late in the power-up process.

Ethernet

This connection is for TCPIP communications for programming, control, and network audio. This port can be used to send file layouts to and from the MAP unit, as well as monitor/control a unit layout in real-time using the Sonata™ software. This port is also used for sending ethernet commands (UDP or TCP, in Decimal, Hexadecimal, ASCII, Binary, BYTES, etc.), to control 3rd-party devices. This makes it possible to control nearly any 3rd-party device with a defined protocol.

Ethernet Audio Channels

iFlex units are able to send ethernet audio channels to other iFlex units over standard ethernet connections, switches, and routers. The MAP series is part of the iFlex family of products, and can share configuration, control, and ethernet audio channels with any other iFlex family product(s). This sharing can be through either UDP broadcast channels, or point-to-point TCP channels.

Note - A DANTE ethernet audio option will soon be available as an I/O module.

The MAP series has added a system clock coordination feature that will syncronize all MAP units in a system layout to the same frequency. This syncronization is performed automatically when any MAP units sees data from another MAP unit. This provides the highest quality audio between MAP sytem units.

IGMP Switching/Routing

When iFlex ethernet audio is switched/routed using IGMP capable switches and routers, and used in combination with the clock-sycronizing feature of the MAP units, high quality ethernet audio channels are routed only

between source and destination channels. Ethernet audio channels only go to those destination channels that request them, and the coordination of these sources and destinations is handled by the IGMP switch/router.

USB
Like the ethernet connection, the USB connection can be used to program, monitor, and control the MAP-6L (no USB connection available on a MAP-3 unit). This connection can be used to send and receive files from the MAP unit, as well as configure the unit, and control any system layout. Unlike the ethernet connection, there are no audio channels available via USB.

Logic I/O
The Logic I/O ports on the rear panel of a MAP unit are RS-485 communication ports for Ivie SmartControls©, as well as physical controls, such as potentiometers, contact closures, and LED outputs. Any Ivie SmartControl© that is plugged into this port will self-identify in the hardware programming screen for assignment to layout elements. Ivie SmartControls© use standard CAT-5E or better cables.

> *Note - Ivie SmartControls© require +24VDC power, which is supplied on pins 4 and 5 of the RJ45 connector. For consistency in iFlex installations, and assistance in technical support, Ivie uses the TIA/EIA 568B standard for RJ45 connector wiring. Care should be taken in the wiring of RJ45 connectors on the CAT-5e cable, as cross-wiring of the +24VDC can cause damage to the RS485 communications electronics inside the MAP unit.*
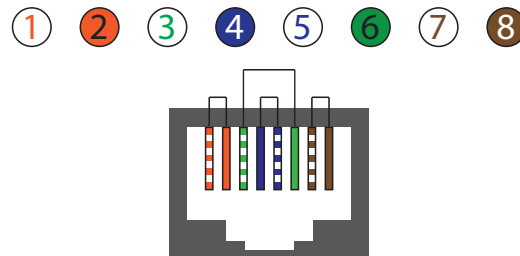
RJ45 JACK
TIA/EIA 568B STANDARD

The pinout for the Logic I/O ports is shown below.

Pin	Assignment
1	Switch in (RS-485 Data A)
2	Pot wiper (RS-485 Data B)
3	Remote + (10 VDC)
4	+24 VDC
5	+24 VDC
6	LED out (RS-485 Reset)
7	Ground
8	Ground

Control Inputs

Each control port can support either RS485 smart controls, or 1 analog switch, 1 analog potentiometer, and 1 logic output. The number of analog controls, and logic outputs can be dramatically increased by the use of an RMPC I/O expander. RMPC expanders allow a 4, 8, or 12 fold expansion of the number of analog controls, and logic outputs, and combine them into a smart control with a single CAT5E or better cable back to the MAP device control port.

Switches

Switches inputs are internally 'pulled up' to +5VDC via 1kOhm resistor. No external voltage source is necessary to create contact closure to ground. Switches are wired from pin 1 to pin 7 or pin 8 of the RJ45 connector.

RJ45 JACK
TIA/EIA 568B STANDARD
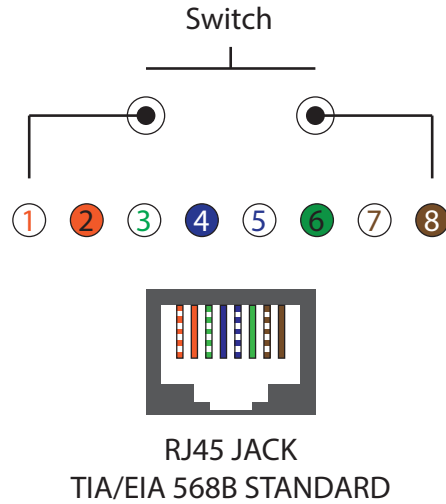
Potentiometers

Potentiometers are wired with reference +10V on pin 3, a wiper on pin 2, and a ground on pin 7, or pin 8. High performance pots with track resistance between 10kOhms and 100kOhms are recommended.

RJ45 JACK
TIA/EIA 568B STANDARD
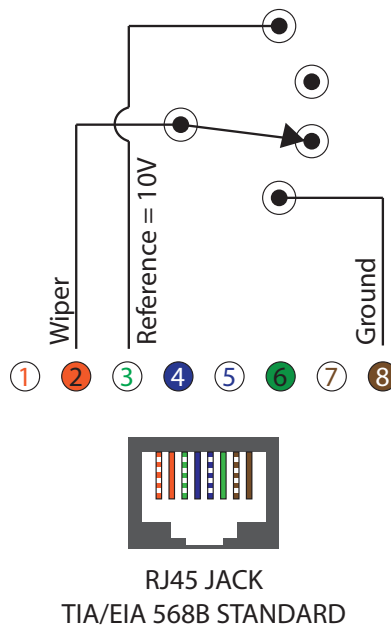
Selectors

Analog selector controls are wired with pin 3 being the reference voltage (+10V), pin 2 being the wiper, and pin 7 or 8 being the ground. A resistance ladder is added with the value of the resistors being recommended at 2.2kOhms.

RJ45 JACK
TIA/EIA 568B STANDARD
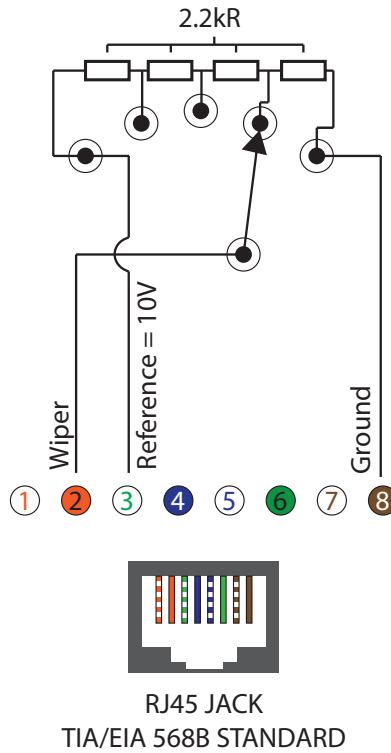
Logic Onputs

Each logic output can control an LED or low power relay. Pin 6 of the RJ45 jack has a 50k Ohm 'pull-up' to 12V DC when not asserted. When asserted, it will sink 25mA at 0.6V DC. Maximum asserted external voltage is 30V DC. For logic outputs that will drive LED's directly (without any other source), see the RMPC line of I/O expander modules. See also the 'Relay' module of the MAP series module list for power relay options.

I/O Modules

All MAP modules are color coded for ease of identification. Modules are labeled with these colors in 2 places - the back panel, and the front panel display. On the back panel the modules have color-coded labels. On the front panel display, audio channel numbers are displayed in the different colors. The list of modules and their colors is listed below.

Module	Color
Quad-In	Yellow
Quad-Out	Green
Dual-I/O	Yellow&Green
Quad-AEC	Orange
Quad-FIR	Blue
Quad-AES-In	Black
Quad-AES-Out	White
Quad-Tel	Red
Relay	Gray
Tri-Control	Purple

Audio cable connections are made via euro-block (or Phoenix) pluggable connectors (supplied with the MAP unit). Inputs can be either 2 or 3 wire connections as shown below. Unbalanced inputs (2 wire) should have a jumper installed between the sheild pin and the negative pin of the connector to reduce noise. Balanced outputs (3 wire) should not connect the shield at the receiving device. To prevent ground loop issues between devices, the shield pin is only connected at the sending device.
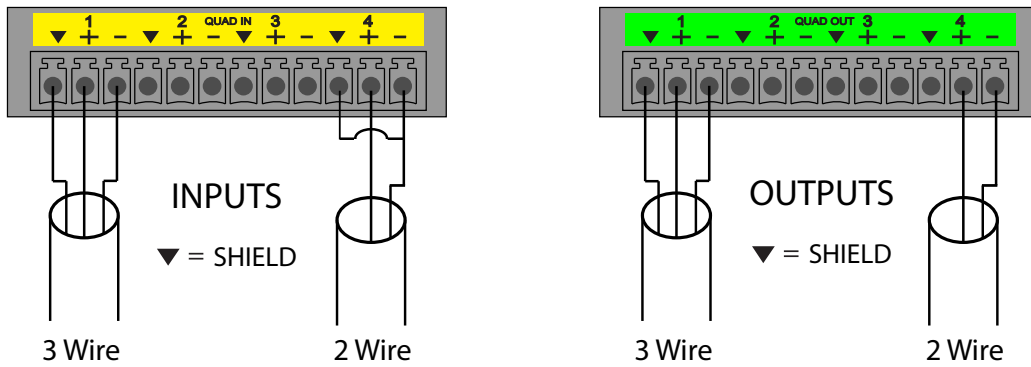
Technical Specifications:

Frequency response(20 Hz - 20 KHz)	+0/- 0.25dB
THD+N (20 Hz - 20KHz)	.01%@10dBV Output
Equivalent Input Noise (20 Hz - 20 KHz)	< -125dBu
Dynamic Range (20Hz - 20KHz, 0dB)	> 108dB
Crosstalk (channel to channel @ 1 KHz)	
Line level	< -75dB
Mic level	< -75dB
Input Impedance	
Line (balanced)	30 KOhms
Mic (balanced)	2 KOhms
Maximum Input	+24dBu
Input Gain Range (6 dB steps)	0 - 60 dB
Output Impedance (balanced)	200 Ohms
Maximum Output (balanced)	+24dBu
Sampling Rate	48 KHz
A/D - D/A Convertors (bit rate)	24-bit
Phantom Power	48V open circuit
	14mA short circuit
Control Network(s):	Ethernet, USB
Connectors:	RJ45