Interface Control Document

HSD1 Series Products

Linear Power Amplifier

HSD1 Power Amplifier

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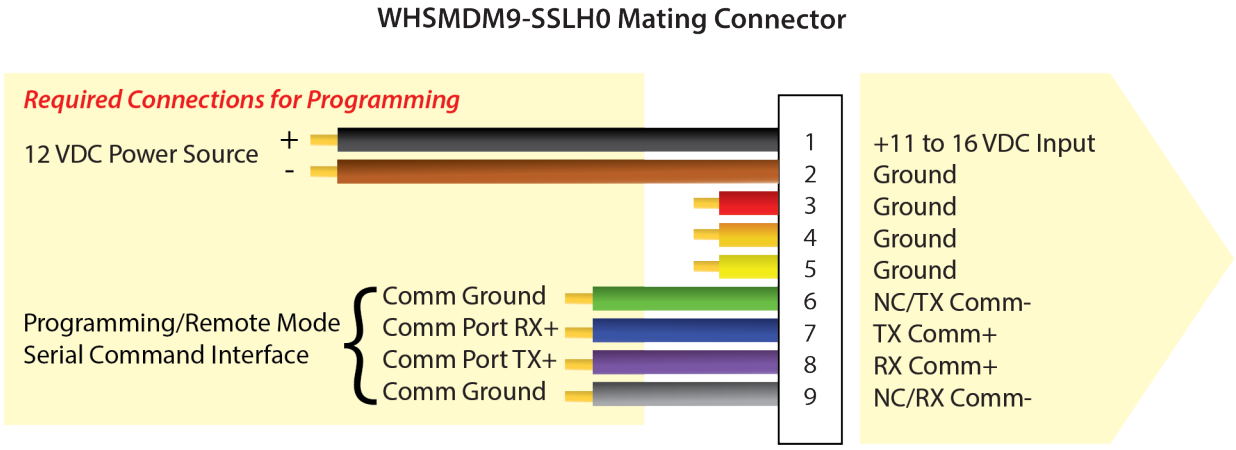
AMP HSD1-Series Interface Control Document

This document guides you through the steps to program your HSD1 power amplifier using a standard serial communications port interface. All information contained herein is applicable to the programming of the units at any of the available signalling levels, which may be RS232 (default), 5V TTL, 3.3V TTL, or RS422 as specified at time of purchase.

Step 1

Wire the power and comm (TX and RX) to the MDM-9P connector using the wiring guide below.



Step 2

Set up your terminal.

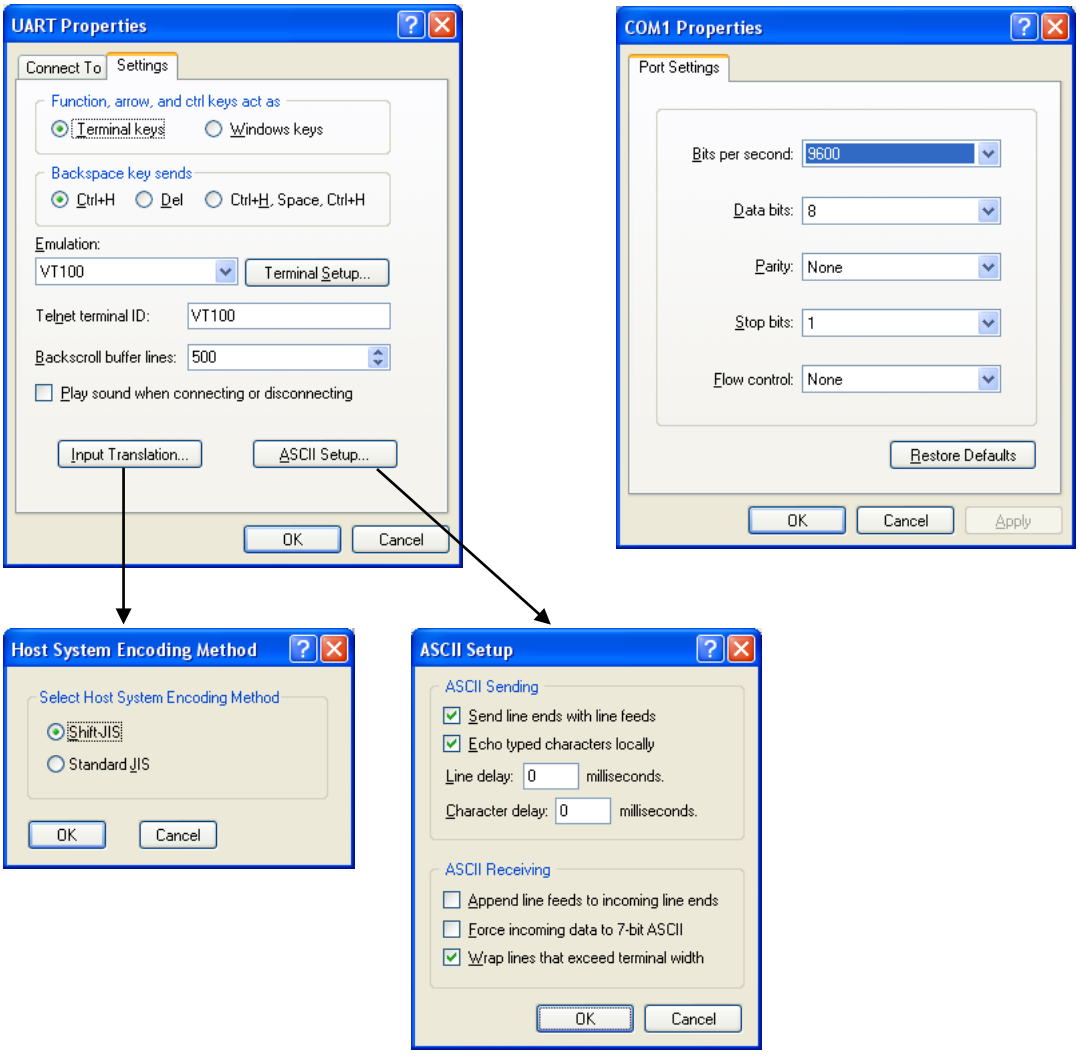
Hardware Parameters

UART/RS-232

Baud Rate	9600
Data Bits	8
Stop Bits	1
Parity	None
Handshake	None

Terminal Setup

When using a terminal program such as HyperTerminal or equivalent to interface with the HSD1, the following settings are recommended.



Step 3

Establish communication and send commands to your unit. Some commands may not be applicable depending on your product configuration.

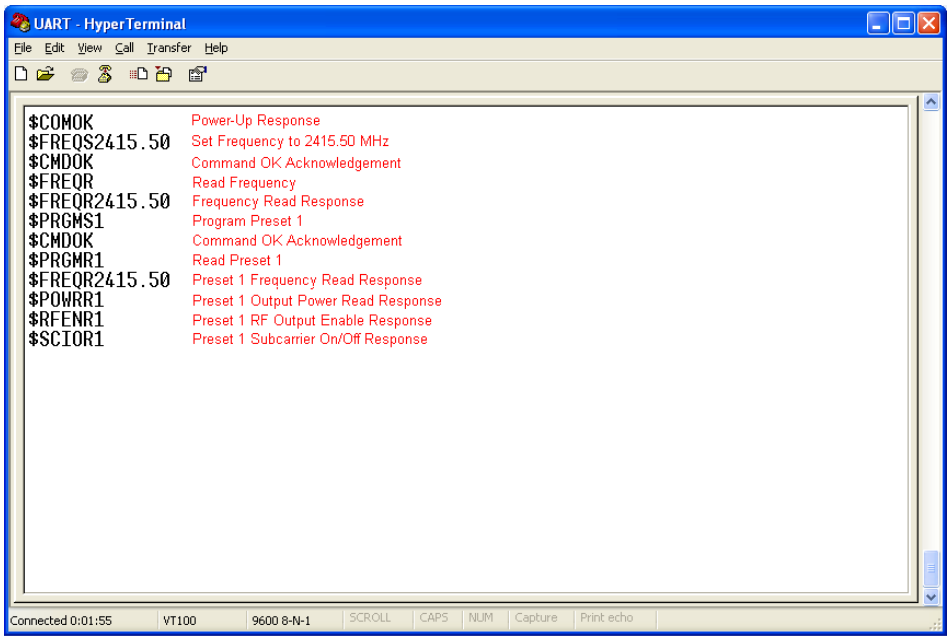
Power Up/Reset

All configurable parameters are stored in non-volatile flash memory internal to unit. After a power reset or fluctuation, the unit runs an initialization routine and restores itself to its last commanded state within 1 second. Once the unit is initialized and ready to receive commands, it will transmit the Communications OK string, $COMOK[CR][LF].

If the switches are set to zero (0), once the unit is initialized and ready to receive commands, it will transmit the Communications OK string, $COMOK[CR][LF]. If the unit is running and connected to a terminal when the switches are set to zero (0), the unit will transmit the Communications OK string, $COMOK[CR][LF], indicating that it is ready to receive commands.

Example Terminal Session

Descriptions are overlaid in red.



Custom Serial Interface Considerations

When interfacing to a custom serial interface, the hardware parameters listed earlier in this document must be used. The following information may also be helpful for the interface programmer.

ASCII Character	Description	Hex Value	C Code Mnemonic
[LF]	Line Feed, New Line	A	\n
[CR]	Carriage Return	D	\r

Remote Commands

Command	Description	Applicable To HSD1
$CTEST	Communications Test Read	X
$DFLTS	Reset Unit to Factory Defaults	X
$PAENR	PA Enable State Read	X
$PAENS	PA Enable State Set	X
$POWRR	RF Power Level Read	X
$POWRS	RF Power Level Set	X
$TEMPR	Temperature Read	X

Command Definitions

$CTEST[CR][LF]
When the Communications Test query $CTEST[CR][LF] is sent the unit performs a self test including verification of on board peripherals and external communications. If the self test is successful, the unit responds with $COMOK[CR][LF]. If the self test is unsuccessful, the unit will not respond. A successful response will be received within 100ms of the query.

$DFLTS[CR][LF]
$DFLTS[CR][LF] is sent to the unit to Reset Unit to Factory Default settings. After the $DFLTS[CR][LF] command has been sent, the unit will respond with $CMDOK[CR][LF].

$PAENR[CR][LF]
$PAENR[CR][LF] is sent to the unit to query the PA Output Enable status. The unit will respond with $PAENR* where * = 0 or 1 (0 = Disabled, 1 = Enabled).

$PAENS*[CR][LF]
$PAENS*[CR][LF] is sent to the unit to set the PA Output Enable. * represents RF enable setting (0 = Disabled, 1 = Enabled).

$POWRR[CR][LF]
$POWRR[CR][LF] is sent to the unit to query the RF Power Level setting. The unit will respond with $POWRR**[CR][LF] where ** = Output in dBm. The available range is 17-33 dBm.

$POWRS[CR][LF]**
$POWRS**[CR][LF] is sent to the unit to set the desired RF Power Level. ** = 17 – 33, representing the output power in dBm.

$TEMPR[CR][LF]
$TEMPR[CR][LF] is sent to the unit to query the current Temperature of the unit. The unit will respond with $TEMPR*##[CR][LF] where * indicates the sign of the temperature and ## represents the temperature in degrees Celsius.

Command Quick Reference

Command	Command Description	Data	Response	Response Description
$CTEST	Communications Test Read		$COMOK	Unit Communications OK
$DFLTS	Reset Unit to Factory Defaults		$CMDOK	Command OK Response
$PAENR	Power Amplifier Enable/Disable State Read		$PAENR*	* = 0 or 1, 0 = Disabled, 1 = Enabled
$PAENS*	Power Amplifier Enable/Disable State Set	* = 0 or 1 (0 = Disable, 1 = Enable)	$CMDOK	Command OK Response
$POWRR	RF Power Level Read		$POWRR**	** = 17 - 33, Displays output in dBm
$POWRS**	RF Power Level Set	** = 17 - 33, Set output in dBm	$CMDOK	Command OK Response
$TEMPR	Temperature Read		$TEMPR*##	* = + or – and ## = degrees Celsius

Technical Support Information

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