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**White Paper**

## **Transmitter Flash Instruction**

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# 1 Introduction

This document details procedure taken to flash Sultan Amplifier with firmware provided. Sultan unit should have proper firmware installed to facilitate functions provided. Only user has medium access priority or above is able to do flashing via GosHawkII.

## 2 Instruction of Flashing Amplifier

### 2.1 Change Sultan Protocol to Modbus

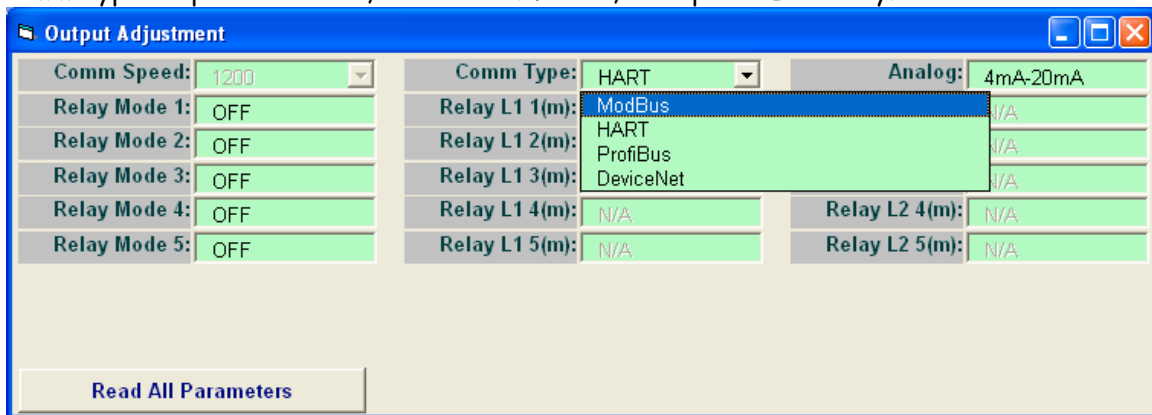
GosHawkII can only flash Sultan unit when Modbus protocol is selected in Output Adjustment menu. Protocol can be changed either via Sultan keypad or via GosHawkII.

#### 1.1.1 Change Sultan Protocol to Modbus via Keypad

1. Press Cal button twice to get into menu.
2. Press ↓ button and OutputAd menu is shown.
3. Press Cal button, then press ↓ button until CommType is shown.
4. Press Cal button, then press ↓ button until Modbus is selected.
5. Press Cal button to confirm selection.
6. Press ↓ button and BaudRate is shown. Remember what the BaudRate is.
7. Go to step 2.2 to change protocol used in GosHawkII.

#### 1.1.2 Change Sultan Protocol to Modbus via GosHawkII

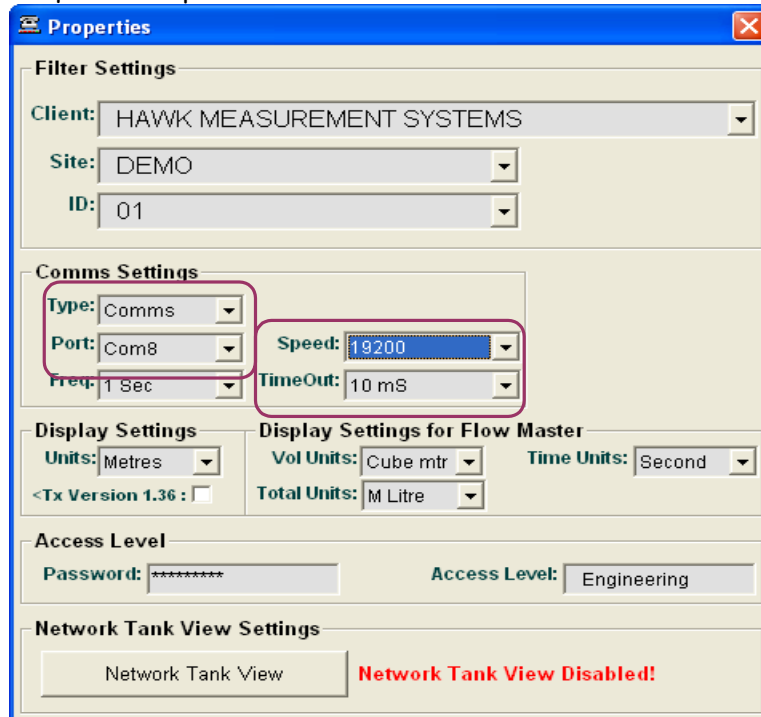
1. Open GosHawkII, click Connect button, make sure connection establishes successfully.
2. Click dropdown arrow on Setup button right side and select Output Adjust to open Output Adjustment form.
3. Click Comm Type drop down button, and select Modbus, then press Enter key.



4. GosHawkII changes communication type to Comms in Properties form. Open the Properties form and check settings being set, make sure Comms is selected, and TimeOut should be  $\geq 300$ ms if Speed is = 1200.
5. Click Cross button on right topside to close the form.

## 2.2 Change Protocol Used in GosHawkII

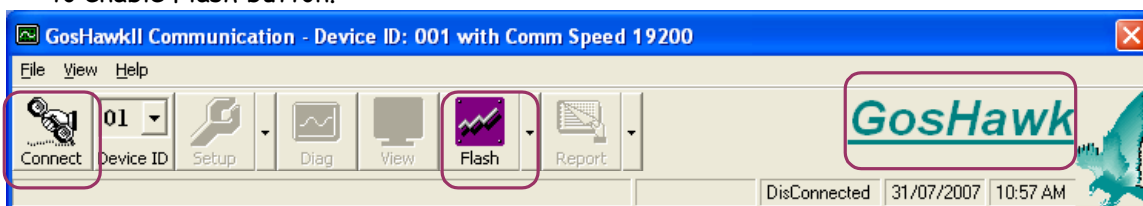
1. Open GosHawkII, go to View -> Options... to open Properties form.
2. Change Type in Comms Settings section to Comms, and select Speed that must be the same as BaudRate set in Sultan OutputAd menu.
3. Make sure correct comm Port is selected which must be the same as shown in Windows Device Manager.
4. Change TimeOut to match Speed selected, normally, 300ms or greater are required if Speed is = 1200, 100ms or greater are required if Speed is = 4800.



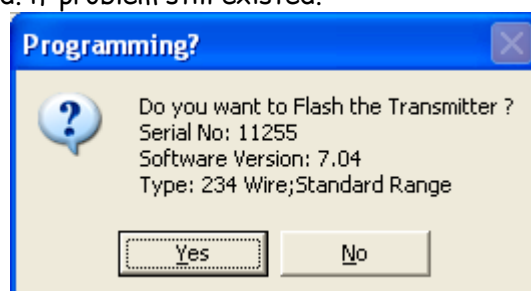
5. Click Cross button on right topside to close the form.

## 2.3 Flash Sultan Amplifier with Latest Firmware

- Ensure Sultan is in Cal mode, and Connect button in GosHawkII hasn't been click. Double click GosHawk text to enable Flash button.

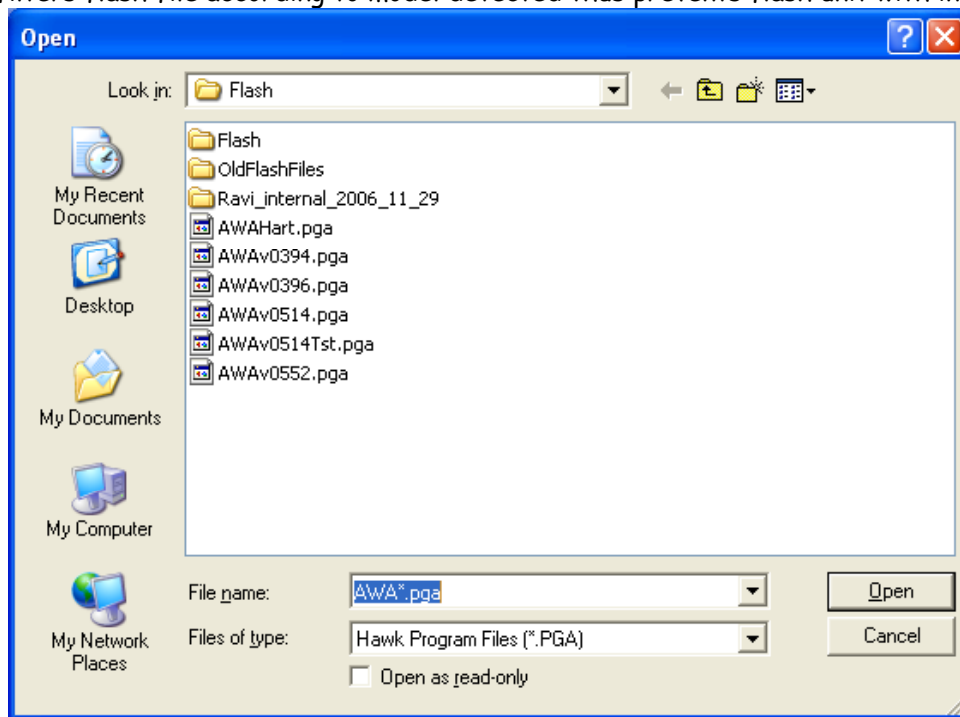


- Click drop down arrow on Flash button left side and select Transmitter (Amp). GosHawkII displays Sultan serial number, software version and type detected and prompt for flashing. Select No to exit flashing procedure, and select Yes to continue to next step.  
Note, if there is connection problem and system cannot detect Sultan information, then select No to stop flashing, then refer to step 2.2.1 and 2.2 to make sure Modbus is selected, and Speed set in GosHawkII matches BaudRate set in Sultan unit, and sufficient TimeOut is given, then re-try flashing. Inform Hawk Measurement Systems Pty. Ltd. if problem still existed.

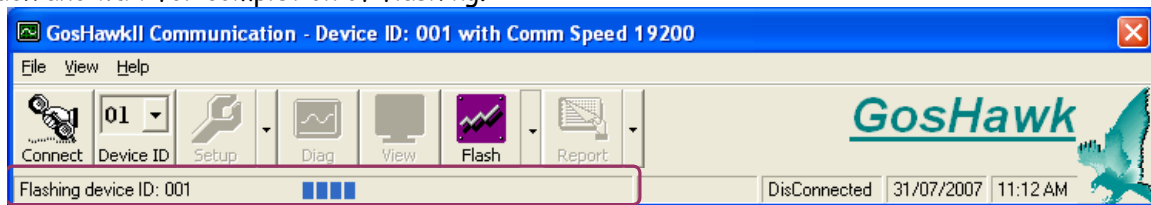


System prompts for selection of firmware for flashing. Note this firmware must have pga as its extension name. Select proper firmware file then press open button to continue to next step, or press Cancel button to exit flashing procedure.

GosHawkII filters flash file according to model detected thus prevents flash unit with incorrect firmware.



- Sit back and wait for completion of flashing.



- GosHawkII prompts for completion of flashing and shows serial number, software version flashed, and unit type detected. Click OK button to complete flashing.  
Note, Sultan self-restarts after flashing successfully, therefore user should hear transducer pulsing after Sultan self-starting.

