Connecting GPS Receivers to Case IH Yield Monitors

Prepared by CNH Technical Support Services

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Introduction

Case IH Advanced Farming Systems yield monitors offer industry-leading accuracy and reliability, with a proven history of collecting the data farmers and ranchers need to make informed decisions about their agricultural operations. Adding a Case IH DGPS receiver to an AFS yield monitor system allows the operator to record spatial data along with yield and moisture values.

This guide provides information about connecting DGPS receivers to all models of Case IH AFS yield monitors, from the venerable “black box” monitor to the cutting-edge AFS Pro600 color touchscreen display.

Case IH recommends setting up and testing GPS receiver connections prior to the start of field operations. This allows any issues to be resolved without causing downtime in the heat of the harvest season.

The Case IH AFS Customer Support Center is also available to answer technical questions regarding this document, DGPS receiver installations, in-field AFS performance, or any other aspect of the Case IH AFS yield monitor system. Contact the AFS Customer Support Center at 888-CASE-AFS (888-227-3237), or click the “Customer Support” link at our website:

http://www.caseih.com/afs
Connecting GPS Receivers

Case IH 1600 Series Combines
Connecting an AFS Receiver to an AFS Yield Monitor
-- 1600 Series Combine --

AFS Receiver
( representative image )

9-Pin to Flat-5 Adapter
#87302445
(or #249547A1)

AFS Display Configuration Settings:
Ensure that the display is configured to accept a GPS signal, per the display operator’s manual.

Distribution Cable
#224715A2*

Display Harness
#234482A1

YM2000 (Black Box)

* The Distribution Cable is located behind the right-hand service door.

AFS Receiver Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
Output rate: 1hz
Required NMEA strings: GGA and VTG

Standard Power/Data Cable
#277885A1

Power + Ground –

9-Pin Female

12-Pin Female

When installing a 162, or 252 / 262 receiver, use power/data cable #87298129. The #277885A1 cable is not used.

9-Pin Male

5-Pin Male

5-Pin Female

3-Pin Male (may be used to supply power to receiver)
Connecting an EZ-Guide® Plus / EZ-Guide® 250 / EZ-Guide® 500 Lightbar to an AFS Yield Monitor
-- 1600 Series Combine --

EZ-Guide® Plus, EZ-Guide® 250** or EZ-Guide® 500

** Requires RS232 # ZTN63076 or 'All Port' # ZTN64045 add-on cable.

* The Distribution Cable is located behind the right-hand service door.

YM2000 (Black Box)

Power Cable

9-Pin Female

Null Modem Cable #87297613 (or equivalent)

9-Pin Male

3-Pin Male (may be used to supply power to lightbar)

5-Pin Female

Distribution Cable #224715A2*

Lightbar Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
- Output rate: 1hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept a GPS signal per the display operator’s manual.

Remote Keypad #87301252

Optional Remote Keypad Connection

External Interface Cable #87301317

Antenna Cable #87302168

Antenna

To lightbar

To null modem cable

RS232 – ZTN63076
‘All-port’ – ZTN64045

EZ-Guide 250 add-on cable p/n’s:

To power
Connecting a Generic GPS Receiver to an AFS Yield Monitor
-- 1600 Series Combine --

**Receiver Configuration Settings:**
- Port A (to display): IRTCM 9600, O 8N1 NMEA 4800
- Output rate: 1hz
- Required NMEA strings: GGA and VTG

**AFS Display Configuration Settings:**
- Ensure that the display is configured to accept a GPS signal, per the display operator’s manual.

* The Distribution Cable is located behind the right-hand service door.
Connecting GPS Receivers

Case IH 2100/2300 Series Combines
Connecting an AFS Receiver to an AFS Yield Monitor
-- 2100 or 2300 Series Combine --

AFS Receiver
(representative image)

Standard Power/Data Cable
#277885A1

Power +

Ground –

3-Pin Male (may be used to supply power to receiver)

9-Pin Female

AFS Receiver Configuration Settings:
Port A (to display): 1 RTCM 9600, O 8N1 NMEA 4800*
Output rate: 1hz*
Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
Ensure that the display is configured to accept a GPS signal, per the display operator’s manual.

*For all color display software, the receiver baud rate can be up to 38400bps, and the output rate can be 1hz or 5hz.

YM2000 (Black Box)

Universal Display/Plus

AFS Pro600

** On ≤MY2000 combines, cable 87302445 will connect to the combine on the YMIU harness behind the right-hand service door. On ≥MY2000 combines, cable 87302445 connects to the combine inside the cab, in front of the fuse panel in the right-hand console.

Reviewed 8/03/09
Connecting an EZ-Guide® Plus / EZ-Guide® 250 / EZ-Guide® 500 Lightbar to an AFS Yield Monitor -- 2100 or 2300 Series Combine --

**EZ-Guide® Plus, EZ-Guide® 250*** or EZ-Guide® 500

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**Lightbar Configuration Settings:**
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800*
- Output rate: 1hz*
- Required NMEA strings: GGA and VTG

**AFS Display Configuration Settings:**
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

*For all color display software, the receiver baud rate can be up to 38400bps, and the output rate can be 1hz or 5hz.

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*** Requires RS232 # ZTN63076 or ‘All Port’ # ZTN64045 add-on cable.

---

**On <MY2000 combines and all black box yield monitor systems, cable 87302445 will connect to the combine behind the right-hand service door. On ≥MY2000 combines, cable 87302445 connects to the combine inside the cab, in front of the fuse panel in the right-hand console.**
Connecting a Generic GPS Receiver to an AFS Yield Monitor
-- 2100 or 2300 Series Combine --

Receiver
(representative image)

Receiver Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800*
Output rate: 1hz*
Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
Ensure that the display is configured to accept a GPS signal, per the display operator's manual.

*For all color display software, the receiver baud rate can be up to 38400bps, and the output rate can be 1hz or 5hz.

** On <MY2000 combines, cable 87302445 will connect to the combine on the YMIU harness behind the right-hand service door. On ≥MY2000 combines, cable 87302445 connects to the combine inside the cab, in front of the fuse panel in the right-hand console.
Connecting GPS Receivers

Case IH 2500 Series Combines
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor
-- 2500 Series Combine, CAN Installation --

AFS Receiver Configuration Settings:
No configuration is required for CAN installations

AFS Display Configuration Settings:
Ensure that the display is configured to accept a CAN GPS signal, per the display operator’s manual.

* To install a GPS receiver on the combine CAN bus, disconnect the YMIU harness #87383497 from the Active Terminators behind the right-hand service door. Locate the CAN OUT connector on the GPS harness #87382719, and connect it to the Active Terminators. Then connect the Active Terminator connector on the YMIU Harness #87383497 to the CAN IN connector on the GPS harness #87382719. Finally, connect the 2-pin Power/Ground connectors on each harness. Connect the GPS harness #87382719 to the receiver as shown to complete the installation.
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor
-- 2500 Series Combine, Serial (RS-232) Installation --

AFS Receiver

AFS Receiver Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
Output rate: 1hz or 5hz
Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
Ensure that the display is configured to accept a serial GPS signal, per the display operator's manual.

* The 5-pin GPS connector is located in the right-hand console.

When installing an AFS Receiver with the round, 12-pin style connector, use power/data cable #277885A1.

Power +
9-Pin Female
Ground –

Standard Power/Data Cable
#87298129

9 Pin to Flat 5 Adapter
#87302445
(or #249547A1)

3-Pin Male (may be used to supply power to receiver)
5-Pin Female

5-Pin Male

Display Harness
#87384930*

Gender Adapter #
87608385

AFS Pro600

Power +
9-Pin Female
Ground

* The 5-pin GPS connector is located in the right-hand console.

Reviewed 8/3/09

EZ-Guide® Plus, EZ-Guide® 250*** or EZ-Guide® 500

* The 5-pin GPS connector is located in the right-hand console.

AFS Pro600

Display Harness #87384930*

Lightbar Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

** The 87517434 harness is wired in a null modem configuration, so a separate null modem cable is NOT required.

*** Requires RS232 # ZTN63076 or ‘All Port’ # ZTN64045 add-on cable.

Reviewed 8/3/09
Connecting a Generic GPS Receiver to an AFS Pro600 Yield Monitor
-- 2500 Series Combine --

Receiver Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept a serial GPS signal, per the display operator's manual.

* The 5-pin GPS connector is located in the right-hand console.
Connecting GPS Receivers

Case IH 88 Series Combines
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor
-- 5088/6088/7088 Combine, CAN Installation --

AFS Receiver
(representative image)

AFS CAN GPS Install Harness
#87550514

Right hand side chassis harness (C167)

AFS Pro600

AFS Receiver Configuration Settings:
No configuration is required for CAN installations

AFS Display Configuration Settings:
Ensure that the display is configured to accept a CAN GPS signal, per the display operator's manual.

When installing an AFS receiver with a 12-pin round style connector, adapter harness #87383158 is required.

EZ-Guide® Plus, EZ-Guide® 250** or EZ-Guide® 500

AFS Pro600

Power Cable

Antenna

Cab Harness

26-Pin Female

10-Pin Female

10-Pin Male

AFS Pro600 Serial GPS Install Harness

#87382742*

Optional Remote Keypad Connection

Remote Keypad

#87301252

External Interface Cable

#87301317

To lightbar

Antenna Cable

#87301268

To lightbar

AFS Display Configuration Settings:
Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

Lightbar Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
Output rate: 1hz or 5hz
Required NMEA strings: GGA and VTG

* The 87382742 harness is wired in a null modem configuration, so a separate null modem cable is NOT required.

** Requires RS232 # ZTN63076 or ‘All Port’ # ZTN64045 add-on

Reviewed 8/3/09
Connecting a Generic GPS Receiver to an AFS Pro600 Yield Monitor -- 5088 / 6088 / 7088 Combine --

Receiver Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator's manual.

** The 87382742 harness is wired in a null modem configuration. This means that pins 2 and 3 are crosslinked (reversed). Pin 2 is Receiver Receive (Rx) and Pin 3 is Receiver Transmit (Tx).

If the 87382742 harness is used with a receiver that outputs data in a standard serial format (Pin 2 is Receiver Tx and Pin 3 is Receiver Rx), a null modem cable or adapter is required to reverse the null in the 87382742 harness, creating the equivalent of a standard serial cable.

If the 87382742 harness is used with a receiver that outputs data in a null modem format, the null modem adapter is not used.

Receiver Power/Data Cable (source from receiver manufacturer or retailer)

Receiver (representative image)

AFS Pro600 Serial GPS Install Harness #87382742

9-Pin Female

10-Pin Female (Not Used)

10-Pin Male

9-Pin NULL MODEM Gender Adapter (Male/Female)

Required if the receiver outputs in a standard serial format**

Cab Harness #84167359*

10-Pin Female

10-Pin Female

* The 10-pin Metripack GPS connector is located in the fuse / relay panel.

Reviewed 8/3/09
Connecting GPS Receivers

Case IH AFX8010 Combines
Connecting an AFS Receiver to a Monochrome AFS Yield Monitor
-- AFX8010 Combine PIN HAJ105105 – HAJ105179, CAN Installation --

AFS Receiver
(代表性的图示)

Universal Display Plus

GPS Cable
#87109277

Main Frame Harness
4-Pin Male
4-Pin Female

There is no option to install a 162 / 252 / 262 receiver on the AFX8010 combine CAN bus.

AFS Receiver Configuration Settings:
No configuration is required for CAN installations

AFS Display Configuration Settings:
Ensure that the display is configured to accept a CAN GPS signal, per the display operator’s manual.

* The 4-pin Deutsch GPS connector is located on the inside front wall of the grain tank.
Connecting an AFS Receiver to a Monochrome AFS Yield Monitor
-- AFX8010 Combine PIN HAJ105180 - HAJ109999, CAN Installation --

AFS Receiver Configuration Settings:
No configuration is required for CAN installations

AFS Display Configuration Settings:
Ensure that the display is configured to accept a CAN GPS signal, per the display operator’s manual.

* The 4-pin Deutsch GPS connector is located on the inside front wall of the grain tank.

Reviewed 8/3/09
Connecting an AFS Receiver to a Monochrome AFS Yield Monitor
-- AFX8010 (≤MY06) Combine, RS-232 Installation --

AFS Receiver Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
- Output rate: 1hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

AFS Receiver (representative image)

Universal Display Plus

Standard Power/Data Cable
#27785A1

AFS Receiver Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
- Output rate: 1hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

AFS Receiver (representative image)

AFS Receiver Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
- Output rate: 1hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.
Connecting an EZ-Guide® Plus / EZ-Guide® 250 / EZ-Guide® 500 Lightbar to an AFS Yield Monitor (AFX8010 (≤MY06) Combine with Monochrome Touchscreen)

**EZ-Guide® Plus, EZ-Guide® 250**, or **EZ-Guide® 500**

Universal Display Plus

- **Power Cable**
- **Optional Remote Keypad Connection**
- **Antenna**
- **Antenna Cable** #87302168
- **External Interface Cable** #87301317

**Universal Receiver Transfer Kit** #84083373

- **9-Pin Male**
- **5-Pin Female**
- **3-Pin Male** (may be used to supply power to lightbar)
- **9-Pin Female**

**Lightbar Configuration Settings:**
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
- Output rate: 1hz
- Required NMEA strings: GGA and VTG

**AFS Display Configuration Settings:**
Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

**To Combine CAN bus**

**To power**

**To null modem cable**

**To lightbar**

**Null Modem Cable** #87297613 (or equivalent)

**9-Pin to Flat 5 Adapter** #87302445 (or #249547A1)

**Antenna Cable** #87302168

**Remote Keypad** #87301252

Reviewed 8/3/09
Connecting a Generic Receiver to a Monochrome AFS Yield Monitor
-- AFX8010 (≤MY06) Combine --

Receiver (representative image)

Receiver Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800
Output rate: 1hz
Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
Ensure that the display is configured to accept an RS-232 GPS signal per the display operator's manual.

Universal Display Plus

Universal Receiver Transfer Kit #84083373

Receiver Power/Data Cable (source from receiver manufacturer or retailer)

To Combine CAN bus

Ground

Power +
Connecting GPS Receivers

Case IH Axial-Flow 7010/8010 Combines
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor
-- AFX8010 (≤MY06) and Axial-Flow (≥MY07) 7010/8010 Combine, CAN Installation --

AFS Receiver
(representative image)

AFS Pro600 CAN GPS Install Harness
#87382741

Display Harness*

AFS Pro600

AFS Receiver Configuration Settings:
No configuration is required for CAN installations

AFS Display Configuration Settings:
Ensure that the display is configured to accept a CAN GPS signal, per the display operator’s manual.

When installing an AFS receiver with a 12-pin round connector, use adapter harness #87383158.

* The 10-pin Metripack GPS connector is located at the rear of the right-hand console. The connector should be routed through a hole in the bottom of the console, so that it hangs below the console.
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor
-- AFX8010 (≤MY06) and Axial-Flow (≥MY07) 7010/8010 Combine, RS-232 Installation --

AFS Receiver Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
Output rate: 1hz or 5hz
Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

* The 10-pin Metripack GPS connector is located at the rear of the right-hand console. The connector should be routed through a hole in the bottom of the console, so that it hangs below the console.
Connecting an EZ-Guide® Plus / EZ-Guide® 250 / EZ-Guide® 500 Lightbar to an AFS Pro600 -- AFX8010 (≤MY06) and Axial-Flow (≥MY07) 7010/8010 Combine --

**EZ-Guide® Plus, EZ-Guide® 250**

or EZ-Guide® 500

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**AFS Pro600**

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**Display Harness**

#87579738

---

**Power Cable**

---

**To power**

---

**Antenna**

---

**Antenna Cable**

#87301268

---

**AFS Pro600 Serial GPS Install Harness**

#87382742*

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**Optional Remote Keypad Connection**

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**External Interface Cable**

#87301317

---

**Remote Keypad**

#87301252

---

Lightbar Configuration Settings:

- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:

- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

* The 87382742 harness is wired in a null modem configuration, so a separate null modem cable is NOT required.

** Requires RS232 # ZTN63076 or ‘All Port’ # ZTN64045 add-on

Reviewed 8/3/09
Connecting a Generic GPS Receiver to an AFS Pro600 Yield Monitor
-- AFX8010 (≤MY06) and Axial-Flow (≥MY07) 7010/8010 Combine --

**Receiver Configuration Settings:**
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

**AFS Display Configuration Settings:**
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

**AFS Pro600 Serial GPS Install Harness #87382742**
- Power +
- Ground
- 9-Pin Male
- 9-Pin Female
- 10-Pin Male
- 10-Pin Female (Not Used)
- 9-Pin NULL MODEM Gender Adapter (Male/Female)

**Required if the receiver outputs in a standard serial format**

**Display Harness #87579738**
- 10-Pin Female

* The 10-pin Metripack GPS connector is located at the rear of the right-hand console. The connector should be routed through a hole in the bottom of the console, so that it hangs below the console.

* The 87382742 harness is wired in a null modem configuration. This means that pins 2 and 3 are crosslinked (reversed). Pin 2 is Receiver Receive (Rx) and Pin 3 is Receiver Transmit (Tx).

If the 87382742 harness is used with a receiver that outputs data in a standard serial format (Pin 2 is Receiver Tx and Pin 3 is Receiver Rx), a null modem cable or adapter is required to reverse the null in the 87382742 harness, creating the equivalent of a standard serial cable.

If the 87382742 harness is used with a receiver that outputs data in a null modem format, the null modem adapter is **not used**.
Connecting GPS Receivers

Case IH Axial-Flow 20 Series Combines
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor -- Axial-Flow 7120 / 8120 / 9120 Combine, CAN Installation --

**AFS Receiver** (representative image)

**AFS Pro600 CAN GPS Install Harness**

*87382741*

**Display Harness***

**AFS Pro600**

**AFS Receiver Configuration Settings:**
No configuration is required for CAN installations

**AFS Display Configuration Settings:**
Ensure that the display is configured to accept a CAN GPS signal, per the display operator's manual.

* The 10-pin Metripack GPS connector is located at the rear of the right-hand console. The connector should be routed through a hole in the bottom of the console, so that it hangs below the console.

When installing an AFS receiver with a 12-pin round connector, use adapter harness #87383158.
Connecting an AFS Receiver to an AFS Pro600 Yield Monitor
-- Axial-Flow 7120 / 8120 / 9120 Combine, RS-232 Installation --

AFS Receiver Configuration Settings:
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator’s manual.

* The 10-pin Metripack GPS connector is located at the rear of the right-hand console. The connector should be routed through a hole in the bottom of the console, so that it hangs below the console.

**EZ-Guide® Plus,**
**EZ-Guide® 250**
**or EZ-Guide® 500**

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**AFS Pro600**

<table>
<thead>
<tr>
<th>Power Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-Pin Female</td>
</tr>
<tr>
<td>10-Pin Female</td>
</tr>
<tr>
<td>10-Pin Male</td>
</tr>
<tr>
<td>9-Pin Female</td>
</tr>
</tbody>
</table>

**Display Harness**

#87579738

**AFS Pro600 Serial GPS Install Harness**

#87382742*

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**Antenna**

<table>
<thead>
<tr>
<th>Antenna Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-Pin Male/Male Straight-through Gender Adapter</td>
</tr>
<tr>
<td>10-Pin Female (Not Used)</td>
</tr>
</tbody>
</table>

**External Interface Cable**

#87301317

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**Optional Remote Keypad Connection**

**Remote Keypad**

#87301252

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**Lightbar Configuration Settings:**
- Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4
- Output rate: 1hz or 5hz
- Required NMEA strings: GGA and VTG

* The 87382742 harness is wired in a null modem configuration, so a separate null modem cable is NOT required.

**AFS Display Configuration Settings:**
- Ensure that the display is configured to accept an RS-232 GPS signal per the display operator's manual.

**Requires RS232 # ZTN63076 or ‘All Port’ # ZTN64045 add-on**

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Reviewed 8/3/09
Connecting a Generic GPS Receiver to an AFS Pro600 Yield Monitor  
-- Axial-Flow 7120 / 8120 / 9120 Combine --

Receiver Configuration Settings:
Port A (to display): I RTCM 9600, O 8N1 NMEA 4800 - 38k4  
Output rate: 1hz or 5hz  
Required NMEA strings: GGA and VTG

AFS Display Configuration Settings:
Ensure that the display is configured to accept an RS-232  
GPS signal per the display operator's manual.

AFS Pro600 Serial GPS Install Harness  
#87382742

Display Harness  
#87579738*

Receiver Power/Data Cable  
(source from receiver manufacturer or retailer)

Required if the receiver outputs in a standard serial format**

* The 10-pin Metripack GPS connector is located at the rear of the right-hand console. The connector should be routed through a hole in the bottom of the console, so that it hangs below the console.

** The 87382742 harness is wired in a null modem configuration. This means that pins 2 and 3 are crosslinked (reversed). Pin 2 is Receiver Receive (Rx) and Pin 3 is Receiver Transmit (Tx).

If the 87382742 harness is used with a receiver that outputs data in a standard serial format (Pin 2 is Receiver Tx and Pin 3 is Receiver Rx), a null modem cable or adapter is required to reverse the null in the 87382742 harness, creating the equivalent of a standard serial cable.

If the 87382742 harness is used with a receiver that outputs data in a null modem format, the null modem adapter is not used.
Appendix

1. Female/Female 5-pin Gender Adapter for 2500 Series Combines
2. Color Display, 26-pin Tyco Connector Pinout
3. Universal Display (Plus), 12-pin Deutsch Connector (black) Pinout
4. AFS GPS Adapter Cable (87302445/249547A1) Pinout
5. Trimble Receivers, 12-pin Round Connector Pinout
6. Axial-Flow 7010/8010 Combine, 10-pin Metripack GPS Connector Pinout
7. 1600, 2100, and 2300 series combines, 5-pin Female Metripack
8. 2500 series combines, 5-pin Male Metripack
9. AFS 162/252/262 Pinout
Background:

The flat 5-pin Metripack (Packard) GPS connector in the right-hand console on MY2007 2500 series combines, is a male connector (female connector body, with pins). This is different from the GPS connector on 2100 and 2300 series combines; the Metripack connector on these machines was female (male connector body, with sockets).

To allow existing GPS installation cables, with male Metripack connectors, to be used on 2500 series combines, an adapter must be used to mate the two male connectors. The diagram below shows the correct pinouts and component part numbers required to assemble this adapter. Note that pins B and D are crosslinked (reversed).

REQUARED COMPONENTS

<table>
<thead>
<tr>
<th>Quantity Required</th>
<th>CNH Part Number (Metripack Part Number)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>182081A1 (12084891)</td>
<td>female connector plug</td>
</tr>
<tr>
<td>2</td>
<td>182082A1 (15300017)</td>
<td>TPA clips</td>
</tr>
<tr>
<td>10</td>
<td>182149A1 (12077411)</td>
<td>MAS socket terminal</td>
</tr>
</tbody>
</table>

You will also need appropriate lengths of 18ga stranded wire.
Color Display Connector Pinouts

26-pin Male Tyco (AMP) Connector (all color displays)

1 – CAN 1 HI
2 – CAN 1 LO
3 – Rotary Knob 1 (softkey only)
4 – Rotary Knob 2 (softkey only)
5 – CAN 2 HI
6 – CAN 2 LO
7 – not used
8 – not used
9 – RS232 TX (Disp)
10 – RS232 RX (Disp)
11 – not used
12 – not used
13 – Unswitched B+
14 – Clean Ground
15 – Switched B+
16 – not used
17 – Home Switch (softkey only)
18 – Esc Switch (softkey only)
19 – Enter Switch (softkey only)
20 – 5v supply output
21 – USB 5v B+ (softkey only)
22 – USB + (softkey only)
23 – USB - (softkey only)
24 – USB Ground (softkey only)
25 – not used
26 – not used

Seal Side of the HARNESS CONNECTOR
(Pin Side of the DISPLAY CONNECTOR)

Harness connector part number: 87410948
Female terminal (socket) part number (.8mm²): 87410950
Plug part number (for unused cavities): 87452847

9-pin (DE9) Male Connector (color touchscreen displays only)

(female connector body with male terminals (pins))
1 – not used
2 – RS232 Tx (Rcvr)
3 – RS232 Rx (Rcvr)
4 – not used
5 – not used
6 – not used
7 – not used
8 – not used
9 – not used

Pin Side of the DISPLAY CONNECTOR
12-pin Male Deutsch Connector used for GPS input on all monochrome touchscreen displays

(female connector body with male terminals (pins))
1 – not used
2 – RS232 Tx (Disp)
3 – RS232 Rx (Disp)
4 – RS232 Ground
5 – not used
6 – not used
7 – not used
8 – not used
9 – not used
10 – not used
11 – not used
12 – not used

Pin Side of the DISPLAY CONNECTOR
(Seal Side of the HARNESS CONNECTOR)
87302445 (249547A1)
9-pin to flat 5-pin AFS GPS adapter cable

(female connector body with male terminals (pins))
A – Switched B+
B – RS232 Rx (Rcvr)
C – RS232 Gnd
D – RS232 Tx (Rcvr)
E – Clean Gnd

(female connector body with male terminals (pins))
A – Switched B+
B – Unused (plug)
C – Clean Gnd

(female connector body with male terminals (pins))
1 – not used
2 – RS232 Tx (Rcvr)
3 – RS232 Rx (Rcvr)
4 – not used
5 – RS232 Ground
6 – not used
7 – not used
8 – not used
9 – not used

Pin side (looking at the pins)
Trimble/AFS Receiver Pinouts
Many Trimble and Case IH GPS receivers are equipped with one or two round 12-pin connectors. Pinouts for these connectors are below.

View from socket side on the harness connector (front side, looking at the terminals)

View from solder cup side on the harness connector (back side, looking at the rubber overmold)

1 – Event In
2 – RS232 Tx (Rcvr)
3 – RS232 Rx (Rcvr)
4 – Chg Ctrl
5 – RS232 Ground
6 – DSR
7 – Power On
8 – CTS
9 – Charge
10 – B+ In
11 – Ground
12 – PPS
10-pin Female Metripack Connector
GPS input on MY2007+ Axial-Flow 7010/8010 Combines
RS232-A input on MY2009+ 88 Series Combines

Terminal Side of the COMBINE CONNECTOR

(male connector body with female terminals (sockets))
A – Switched B+
B – Clean Ground
C – CAN2 HI
D – CAN2 LO
E – RS232 Tx (Rcvr)
F – RS232 Rx (Rcvr)
G – PPS out
H – RS232 Ground
J – CAN1 HI
K – CAN1 LO

Terminal Side of the GPS RECEIVER HARNESS CONNECTOR

(key comparison)
K  J  H  G  F
A  B  C  D  E

Locking Tab
5-pin Female Metripack Connector
Used for GPS input on 1600, 2100, and 2300 series combines

A – Power
B – RS232 Rx (Disp)
C – Signal Gnd
D – RS232 Tx (Disp)
E – Clean Gnd

To GPS receiver cable
5-pin Male Metripack Connector
Used for GPS input on 2500 series combines

A – Power
B – RS232 Rx (Disp)
C – Signal Gnd
D – RS232 Tx (Disp)
E – Clean Gnd

To GPS receiver
The AFS 162 receiver is equipped with one rectangular Deutsch connector. The AFS252/262 receiver is equipped with two rectangular Deutsch connectors.

(female connector body with male terminals (pins))
1 – CAN HI
2 – RS232 Tx (Rcvr)
3 – RS232 Rx (Rcvr)
4 – PPS out
5 – RS232 Ground
6 – RTS
7 – not used
8 – CTS
9 – not used
10 – Switched B+ (12v)
11 – Clean ground
12 – CAN LO
END OF DOCUMENT