



AW100Rx AVIA

OEM Receiver User Manual

Version 1.1

Last Revised February 7, 2013

**All contents in this manual are copyrighted by ArWest Communications.
All rights reserved. The information contained herein may not be used, accessed, copied,
stored, displayed, sold, modified, published, or distributed, or otherwise reproduced without
express written consent from ArWest Communications.**

TABLE OF CONTENTS

Preface	5
Terms and Conditions.....	5
WEEE Directive	7
Technical Assistance	8
Return Material Authorization	8
Chapter 1. Product Features	9
1.1. Introduction	9
1.1.1. Management Tools	10
1.2. Physical Interfaces.....	10
1.2.1. Serial Data Interface	10
1.2.2. Power Interface	10
1.2.3. Power Consumption	10
1.2.4. Antenna	10
Chapter 2. General Description	11
2.1. Physical Interfaces.....	11
2.1.1. Serial Data Interface	11
2.1.2. Power Interface	11
2.1.3. Power Consumption	11
2.1.4. Antenna	12
Chapter 3. Command Line Interface	13
3.1. Command Line Interface Convention	13
3.1.1. Software Switching to Maintenance Mode	14
3.1.2. Hardware Switching to Maintenance Mode	14
3.1.3. Switching to Data Mode	15
3.2. Networking Commands.....	15
3.2.1. LINK	15
3.2.2. MAP	16
3.3. Serial Interfacing Commands	16
3.3.1. DPORT	16
3.3.2. BOOT	17
3.3.3. HELP.....	17

3.3.4. SAVE	17
3.4. Diagnostics and Identification Commands	17
3.4.1. INFO	17
3.4.2. STATE	18
Appendix A. Technical Specifications	19
A.1. Technical Specifications	19
A.1.1. Radio Receiver	19
A.1.2. Compliance	19
A.1.3. General	20
A.1.4. Mechanical Properties For End-product	21
A.2. External Connectors	22
A.2.1. Antenna Connector	22
A.2.2. Main Connector (J1)	22
Appendix B. Safety Warnings	23
B.1. General Warnings	24
Appendix C. Warranty Terms	25

PREFACE

Thank you for purchasing this product. The materials available in this Manual (the “Manual”) have been prepared by ArWest Communications (“ArWest Communications”) for owners of ArWest Communications products. It is designed to assist owners with the use of the AW100Rx AVIA OEM board and its use is subject to these terms and conditions (the “Terms and Conditions”).

Note: Please read these Terms and Conditions carefully.

Terms and Conditions

COPYRIGHT – All information contained in this Manual is the intellectual property of, and copyrighted material of ArWest Communications. All rights are reserved. You may not use, access, copy, store, display, create derivative works of, sell, modify, publish, distribute, or allow any third party access to, any graphics, content, information or data in this Manual without ArWest Communications’ express written consent and may only use such information for the care and operation of your board. The information and data in this Manual are a valuable asset of ArWest Communications and are developed by the expenditure of considerable work, time and money, and are the result of original selection, coordination and arrangement by ArWest Communications.

TRADEMARKS – ArWest, ArWest Communications[®] are trademarks or registered trademarks of ArWest Communications. Windows[®] is a registered trademark of Microsoft Corporation. Product and company names mentioned herein may be trademarks of their respective owners.

DISCLAIMER OF WARRANTY – EXCEPT FOR ANY WARRANTIES IN THIS MANUAL OR A WARRANTY CARD ACCOMPANYING THE PRODUCT, THIS MANUAL AND THE AW100Rx AVIA OEM board ARE PROVIDED “AS-IS.” THERE ARE NO OTHER WARRANTIES. ArWest Communications DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE. ARWEST COMMUNICATIONS AND ITS DISTRIBUTORS SHALL NOT BE LIABLE FOR TECHNICAL OR EDITORIAL ERRORS OR OMISSIONS CONTAINED HEREIN; NOR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE FURNISHING, PERFORMANCE OR USE OF THIS MATERIAL OR THE AW100Rx AVIA OEM board. SUCH DISCLAIMED DAMAGES INCLUDE BUT ARE NOT LIMITED TO LOSS OF TIME, LOSS OR DESTRUCTION OF DATA, LOSS OF PROFIT, SAVINGS OR REVENUE, OR LOSS OF THE PRODUCT'S USE. IN ADDITION, ARWEST COMMUNICATIONS IS NOT RESPONSIBLE OR LIABLE FOR DAMAGES OR COSTS INCURRED IN CONNECTION WITH OBTAINING SUBSTITUTE PRODUCTS OR SOFTWARE, CLAIMS BY OTHERS, INCONVENIENCE, OR ANY OTHER COSTS. IN ANY EVENT, ARWEST COMMUNICATIONS SHALL HAVE NO LIABILITY FOR DAMAGES OR OTHERWISE TO YOU

Preface

Terms and Conditions

OR ANY OTHER PERSON OR ENTITY IN EXCESS OF THE PURCHASE PRICE FOR THE AW100Rx AVIA OEM board.

LICENSE AGREEMENT – Use of any computer programs or software supplied by ArWest Communications or downloaded from a ArWest Communications website (the “Software”) in connection with the AW100Rx AVIA OEM board constitutes acceptance of these Terms and Conditions in this Manual and an agreement to abide by these Terms and Conditions. The user is granted a personal, non-exclusive, non-transferable license to use such Software under the terms stated herein and in any case only with a single AW100Rx AVIA OEM board or single computer. You may not assign or transfer the Software or this license without the express written consent of ArWest Communications. This license is effective until terminated. You may terminate the license at any time by destroying the Software and Manual. ArWest Communications may terminate the license if you fail to comply with any of the Terms or Conditions. You agree to destroy the Software and manual upon termination of your use of the AW100Rx AVIA OEM board. All ownership, copyright and other intellectual property rights in and to the Software belong to ArWest Communications. If these license terms are not acceptable, return any unused software and manual.

CONFIDENTIALITY – This Manual, its contents and the Software (collectively, the “Confidential Information”) are the confidential and proprietary information of ArWest Communications. You agree to treat ArWest Communications' Confidential Information with a degree of care no less stringent than the degree of care you would use in safeguarding your own most valuable trade secrets. Nothing in this paragraph shall restrict you from disclosing Confidential Information to your employees as may be necessary or appropriate to operate or care for the AW100Rx AVIA OEM board. Such employees must also keep the Confidentiality Information confidential. In the event you become legally compelled to disclose any of the Confidential Information, you shall give ArWest Communications immediate notice so that it may seek a protective order or other appropriate remedy.

WEBSITE; OTHER STATEMENTS – No statement contained at the ArWest Communications website (or any other website) or in any other advertisements or ArWest Communications literature or made by an employee or independent contractor of ArWest Communications modifies these Terms and Conditions (including the Software license, warranty and limitation of liability).

SAFETY – Improper use of the AW100Rx AVIA OEM board can lead to injury to persons or property and/or malfunction of the product. The AW100Rx AVIA OEM board should only be repaired by authorized ArWest Communications warranty service centers. Users should review and heed the safety warnings.

MISCELLANEOUS – The above Terms and Conditions may be amended, modified, superseded, or canceled, at any time by ArWest Communications. The above Terms and Conditions will be governed by, and construed in accordance with, the laws of the State of California, without reference to conflict of laws.

WEEE Directive

The following information is for EU-member states only:

The use of the symbol indicates that this product may not be treated as household waste. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about the take-back and recycling of this product, please contact your supplier where you purchased the product or consult.



Preface

Technical Assistance

Technical Assistance

If you have a problem and cannot find the information you need in the product documentation, contact your local dealer. Alternatively, request technical support using the ArWest Communications World Wide Web site at: www.arwestcom.com

Return Material Authorization

Initially, the customer contacts support to report a problem. Please refer to support: support@arwestcom.com

If support determines the problem cannot be resolved over e-mail/internet, it will authorize the return of the unit for repair or replacement, depending on the nature of the problem.

PRODUCT FEATURES

1.1. Introduction

AW100Rx AVIA is the DSP based OEM radio receiver with built-in wireless link monitoring and management tools in a compact form factor. AW100Rx AVIA is designed for mobile applications such as airborne and guidance for unmanned vehicles. The AW100Rx AVIA OEM board features high-performance function with advanced technology and sophisticated technology running on a powerful board. The advanced technology provides uninterrupted reception. The unmatched features of AW100Rx AVIA include:

- Data Speed over the air 10500 symbols per second at 25 kHz
- Advanced Forward Error Correction (FEC)
- RS-232 serial interface with RTS/CTS flow control support
- Data Speed over the serial port 9600 to 115200 bps

AW100Rx AVIA supports D8PSK modulation technique. It also includes an error correction, which improves the functioning of the radio modem under interference.

AW100Rx AVIA supports two separate Application Data and Maintenance modes of single RS-232 serial port. The built-in firmware tools provide the wireless link testing, unit's status and error statistics monitoring as well as unit's settings change over the air. The firmware of the AW100Rx AVIA radio resides in a flash memory. The updating of the radio modem programs is entirely software-based. The flash memory is re-programmable through an RS-232 interface.

AW100Rx AVIA OEM board is designed for using in VHF Data Broadcast (VDB) Receiver subsystem according RTCA/DO-253A requirements.



Figure 1-1. AW100Rx AVIA OEM board

Product Features

Physical Interfaces
Management Tools

1.1.1. Management Tools

The built-in management tools along with AWLaunch (configuration and monitoring software application) will provide the following benefits:

1. Easy user's interface for system configuration and monitoring using well developed CLI or intuitive GUI.
2. An ability to monitor status, alarms and radio performance through the intuitive GUI.
3. Software upgrades and improvements can be downloaded from AWLaunch to the units connected with PC/PDA.

1.2. Physical Interfaces

1.2.1. Serial Data Interface

The serial asynchronous interface allows connection to external serial devices. It is shared between user data and unit's command/status information.

1.2.2. Power Interface

The power interface allows connection to an unregulated DC power source. The DC power source (third-party or user supplied) must provide DC power of +7 +18 VDC.

1.2.3. Power Consumption

Power consumption of the AW100Rx AVIA at receiving mode is 1400 mW.

Table 1-1. Power Consumption

Operating Mode / Description	Consumption
Maximum for Rx Full Operation Mode	1400 mW
Sleep Mode	300 mW
Standby Mode, ordered by SLEEP input pin	500 μ W

1.2.4. Antenna

The AW100Rx AVIA OEM board should be used with any 108-117.975 MHz antenna.

GENERAL DESCRIPTION

2.1. Physical Interfaces

2.1.1. Serial Data Interface

The serial asynchronous interface allows connection to external serial devices. It is shared between user data and unit's command/status information.

2.1.2. Power Interface

The power interface allows connection to an unregulated DC power source. The DC power source (third-party or user supplied) must provide DC power of +7 +18 \pm 5% DC.

2.1.3. Power Consumption

Power consumption of the AW100Rx AVIA at receiving mode is 1400 mW (refer to Table 2-1 for details).

Table 2-1. Power Consumption

Operating Mode / Description	Consumption
Maximum for Rx Full Operation Mode	1400 mW
Sleep Mode	300 mW
Standby Mode, ordered by SLEEP input pin	500 μ W

General Description

Physical Interfaces

Antenna

2.1.4. Antenna

The AW100Rx AVIA OEM board should be used with any 108-117.975 MHz antenna with following parameters:

- LNA Gain P30 dB
- LNA Noise Figure 1.5 dB

COMMAND LINE INTERFACE

The built-in user-friendly Command Line Interface (CLI) allows user to perform a full configuration of the unit and read the statistics and alarm status. It is the most powerful tool to configure the unit. It makes changes to all possible settings that system will not be able to determine automatically.

The CLI commands allow user to configure and reconfigure the unit's settings. The user configuration parameters that could be changed through the CLI are:

- Data Port Settings
 - Baud Rate
 - Flow control (None or RTS/CTS)
- Radio Operation Modes

Note: The unit's configuration that is set or modified through the CLI will be lost after unit's reboot, unless the saving operation is used to store a new setting in the unit's configuration file.

The CLI commands also provide filing operations, which include:

- Downloading
 - Unit's Configuration files
 - Software Images
- Uploading Unit's Configuration files
- Saving into the configuration files the configuration parameters modified through the CLI.

3.1. Command Line Interface Convention

The following convention is implemented in AW100Rx AVIA OEM board Command Line Interface (CLI):

- The Carriage Return/Line Feed (CR/LF, 0x0D/0x0A) is a command delimiter.
- The Carriage Return/Line Feed (CR/LF, 0x0D/0x0A) is a reply delimiter followed by the "CLI>" prompt if Echo option is On.
- The Carriage Return/Line Feed (CR/LF, 0x0D/0x0A) is a reply delimiter if Echo option is Off (default option).
- The 2-digit number followed by "@" in the unit's reply indicates the error code (refer to Table 3-1 for description).
- A successfully performed command is replied by @00 code for both Echo ON and OFF modes.
- A command with the certain [*Parameter Name*] and blank [*Parameter List*] displays the current settings for a given parameter.

Command Line Interface

Command Line Interface Convention
Software Switching to Maintenance Mode

- To set the mode ordered by CLI commands as permanent User Setting (the setting automatically selected for the boot-up unit) the SAVE command must be asserted.
- [/?] orders to show the help information for the given command.
- Commands are not key sensitive; small, none capital characters can be used to enter CLI commands.

Table 3-1. Command Line Interface Error Codes

Error Code	Short Description
0x01	Command Syntax Error. A command followed by “/?” displays a command usage.
0x02	The parameter has a format error. A command with the certain [Parameter Name] followed by “/?” displays the format and range of the variable.
0x03	The parameter is out of allowed range. A command with the certain [Parameter Name] followed by “/?” displays the format and range of the variable.
0x04	The command is not valid for specific radio model. To display the list of available commands, the HELP command must be used (see “Software Switching to Maintenance Mode”).
0x05	Unspecified Error

3.1.1. Software Switching to Maintenance Mode

To switch to Maintenance mode the special byte-sequences with special meanings are used:

- Escape-Sequence: “+++” with 20 ms guard time before and after the command characters
- Escape-Acknowledge: “@00<CR><LF>” 20 ms toggling on CTS control line needed to acknowledge switching from Data to Maintenance mode and vice versa. In Maintenance mode, the unit’s serial port must keep CTS line always active.

Happy Flow

1. In data-mode the unit starts looking for the Escape-sequence if there is no data from DTE for more than 20 ms (Start Guard Time).
2. If the unit detects the Escape-Sequence, the Receiver immediately stops forwarding to DTE the data received over the air and buffers it instead.
3. The radio unit waits for 20 ms and then sends Escape-Acknowledge to DTE if there is no data from DTE during 20 ms of Stop Guard Time.
4. The unit goes to Maintenance mode and discards Escape-Sequence from input buffer. The modem is immediately ready to receive commands. At the same time it continues buffering the data received over the air since step 2.

3.1.2. Hardware Switching to Maintenance Mode

As alternative to Software Switching, the switching through the MP/DP control line can be used (this control line can be also used as Data Terminal Ready, DTR). To set Maintenance mode, the DTE must

assert DTR signal active (0v level). By falling edge of DTR signal the unit goes to Maintenance mode and then sends Escape-Acknowledge to DTE („@00<CR><LF>“).

20 ms toggling on CTS control line followed by Escape-Acknowledge response is needed to acknowledge switching from Data to Maintenance mode and vice versa. In Maintenance Mode, the unit’s serial port must keep Clear to Send (CTS) line always active (see also “BOOT” on page 17).

Note: The powered up radio modem always goes to data mode.

3.1.3. Switching to Data Mode

- DTE sends the CLI command „DATAMODE<CR><LF>“ to the unit.
- Unit immediately goes to data mode without Escape Acknowledge.
- If no valid CLI commands received from DTE within 1 minute, the unit will automatically switch back to data-mode.

Note: The data received over the air could be lost due to Rx buffer overflow if the unit stays in Maintenance mode longer than 15 seconds.

3.2. Networking Commands

3.2.1. LINK

The LINK command is responsible for configuring radio’s operation mode.

LINK [*Parameter Name*] [*Parameters List*] [/?]

Parameter Name	Parameter List
PROT	1 – “Simplex Receiver” a default setting
MOD	3 – D8PSK, a default setting
CHAN	Selects the frequency channel, CN = (20001 - 39999) $F(\text{MHz}) = 108.000 + ((N - 20000) \text{mod} 411) * 0,025$ (Ref. RTCA/DO-253A) CN = -4 - the frequency was set by MAP Fxxxxxxx command
SPACE	Sets channel spacing: 0 – 25 kHz, a default setting

Example: LINK CHAN command is used to set the frequency by channel number
 LINK CHAN 20001 (sets frequency 108.025 MHz)
 LINK CHAN 21001 (sets frequency 112.475 MHz)

To set the frequency in Hz the MAP F command is used
 MAP F114375000 (sets frequency 114.375 MHz)
 MAP SAVE



Command Line Interface

Serial Interfacing Commands

MAP

3.2.2. MAP

The MAP command is used to create, modify and save the channel map of the receiver.

MAP [C<Parameter>][F<Parameter>][SAVE]

Parameter Name	Description
C	Channel number (1- 32).
F	Carrier frequency in Hz.
SAVE	Saves the channel map.

The MAP command without parameters displays the channel map of the receiver.:

Example: MAP c1 f108000000 - sets the 108 MHz frequency to channel1

MAP SAVE - saves the channel map.

MAP f113475000 - sets the 113.475 MHz frequency



3.3. Serial Interfacing Commands

3.3.1. DPORT

The DPORT is an object that responsible for data port interface configurations like Bit Rate, Flow Control, etc.

DPORT [*Parameter Name*] [*Parameters List*] [/?]

Parameter Name	Parameter List
RATE	1 - 1200 baud rate 2 - 2400 baud rate 3 - 4800 baud rate 4 - 9600 baud rate 5 - 14400 baud rate 6 - 19200 baud rate 7 - 38400 baud rate 8 - 57600 baud rate 9 - 115200 baud rate
BITS	Set number of bits in one byte (8 or 7) 8 is a default setting
PARITY	0 – None, a default setting 1 – Odd 2 – Even
FLOW	0 – No flow control 2 – Hardware flow control is on

3.3.2. BOOT

The BOOT command is intended to reboot the unit using selected user settings.

3.3.3. HELP

The HELP command types the list of all available commands:

```

HELP      - Display this usage
BOOT      - Reboot the unit
LINK      - RF Link Operation Mode
DPORT     - Data Port Configuration
STATE     - Display Status and Statistics
SAVE      - Save Current Configuration into Configuration File
INFO      - Display Product ID along with Hardware/Software Versions
MAP       - Operates with Channel Map
DATAMODE  - Exit Maintenance Mode
[COMMAND] /? - Display Command Usage

```

3.3.4. SAVE

The SAVE command is intended to store the unit’s currently used configuration into the User Configuration file. The configuration stored in the User Configuration file is activated by automatically after unit’s reboot.

3.4. Diagnostics and Identification Commands

3.4.1. INFO

The INFO command is used to retrieve the Radio ID along with its Hardware version, the loaded real-time software version/revision and BootLoader’s version/revision.

INFO [*Parameter Name*] [*Parameters List*] [/?]

Parameter Name	Parameter List
ID	Retrieves the device identifier
SN	Retrieves the serial number of the modem (unique for each unit)
HW	Retrieves the version string of the hardware 1.0 – hardware version in numeric “Major.Minor” format
SW	Retrieves the version string of the current firmware Ver. 1.0 Rev. A – displays software’s version in numeric “Major.Minor” format and revision in numeric format (range from 01 to 99) for engineering releases and alphabetic format (A to Z) for manufacturing releases

Command Line Interface

Diagnostics and Identification Commands

STATE

Parameter Name	Parameter List
BL	Retrieves the version string of the BootLoader Ver. 1.0 Rev. A – displays BootLoader’s version in numeric “Major.Minor”format and revision in numeric format (range from 01 to 99) for engineering releases and alphabetic format (A to Z) for manufacturing releases

The INFO command without Parameter Name indicates all values:

```
LMR100AVIA VHF Radio Modem, Javad GNSS
Product ID =32
S/N =000000011051
Hardware =Ver. 1.0
Software =Ver. 1.6 Rev 01 B14
BootLoader =Ver. 3.0 Rev 01
```

3.4.2. STATE

The STATE command is used to check the wireless link state of the receiver. Refer to LINK SAR command for receiver setting.

STATE [*Parameter Name*] [*Parameters List*] [/?]

Parameter Name	Parameter List
RSSI	Retrieves the calculated received signal level of the receiver in dBm.
BER	1.0E-6 to 9.9E-3 – Indicates the BER level
FREQ	Retrieves the current channel frequency of receiver in Hz
CHAN	Current frequency channel number
TEMP	-30°C to +100°C retrieves the temperature inside enclosure
SYNC	Indicates the synchronization status of receiver (0 - no synchronization, 1 - synchronization established)

The STATE command without Parameter Name indicates all values:

```
RSSI =-138 dBm
BER =0E-0
FREQ =113.475000 MHz
CHAN =-4
TEMP =42
SYNC =0
```

Note: The indicated receive signal strength (RSSI) is equal to -138 dBm if there is no signal received from transmitter.

TECHNICAL SPECIFICATIONS

A.1. Technical Specifications

A.1.1. Radio Receiver

Table A-1. Radio Transceiver Specifications

Component	Details
Frequency Range	108-117.975 MHz
Channel Spacing	25 kHz
Carrier Frequency Stability	±1 ppm
Modulation	D8PSK
Communication Mode	Receiver
Receiver Sensitivity for D8PSK (BER 1×10^{-4})	-110 dBm
Receiver Dynamic Range	-105dBm to +10dBm
Interface	RS-232 (serial port)
Interface Connector	16-lead Connector
Data Speed of Serial Interface	9600 - 115200 bps
Data Rate Radio Interface	31500 bps
Forward Error Correction (FEC)	Reed-Solomon Error Correction

A.1.2. Compliance

Component	Details
RTCA	DO-253A

Technical Specifications

Technical Specifications

General

A.1.3. General

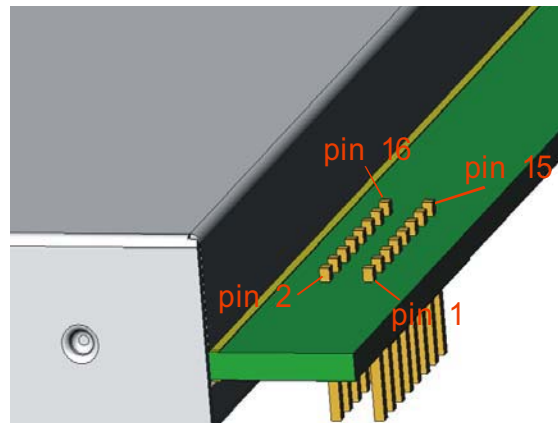
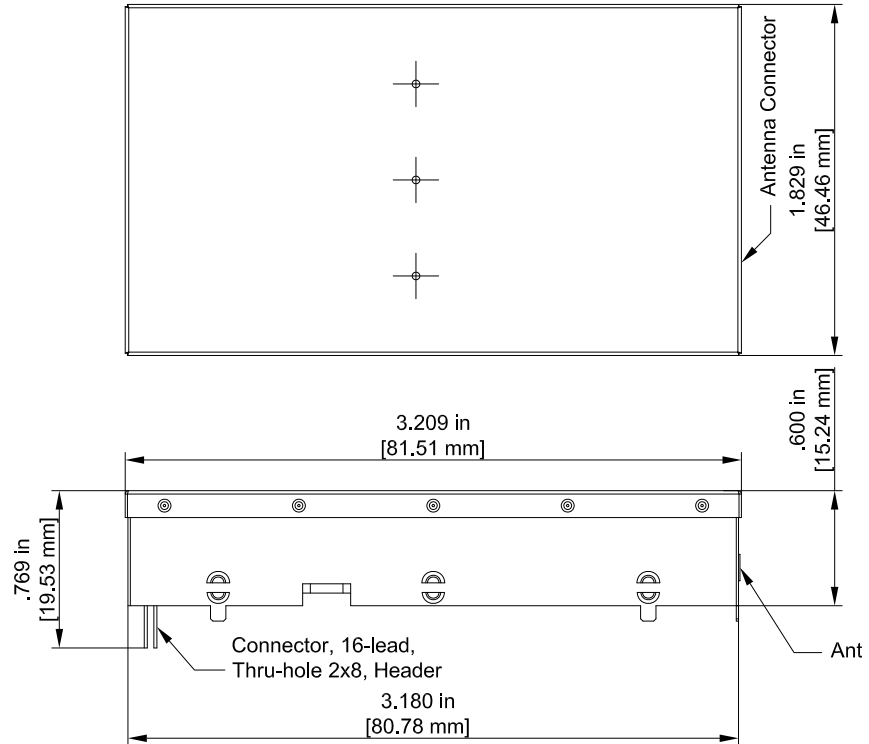
Component	Details
Input Voltage	7 - 18 V \pm 5%
Power Consumption (max)	1.4 W
Operation Temperature	-40°C - +80°C
Storage Temperature	-45°C - +85°C
Dimensions	L: 81,5 mm x W: 46.5 mm x H: 15.24/19.5 mm
Weight	45 g

Features

- DSP-Modem
- Zero-IF Technologies
- 108 – 117.975 MHz Frequency Range
- Up to 115200 bps Data Rate
- Embedded Firmware Compensation for Operation at Extremely
- Low and High Temperatures
- Compact Design

A.1.4. Mechanical Properties For End-product

Dimensions for PCB Mounted Enclosure:



Technical Specifications

External Connectors

Antenna Connector

A.2. External Connectors

A.2.1. Antenna Connector

J2 is Antenna Input Connector: MMCX RIGHT ANGLE PCB JACK, EMERSON JOHNSON P/N 135-3701-311

A.2.2. Main Connector (J1)

16-Lead Header Connector, COMM CON INC. P/N 3913-16G2.

PIN #	Signal Designator	I/O	Comments
1	GND	-	Signal and Chassis Ground
2	RX	I	Receive Data, serial data input.
3	TX	O	Transmit Data, serial data output.
4	DSR	I	Data Set Ready
5	RTS	O	Request to Send. This signal is asserted (logic '0', positive voltage) to prepare the DCE device for accepting transmitted data from the DTE device. When the DCE is ready, it acknowledges by asserting Clear to Send.
6	TTLI1	I	Sleeps/wakes Radio. In sleep mode, all radio functions are disabled consuming less than 100uA. At wake up, any user programmed configuration settings are refreshed from flash memory, clearing any temporary settings that may have been set: <ul style="list-style-type: none">• (3.3v) = Sleep Radio• (0v) = Wake Radio An internal 10K pull-down enables Wake Radio if this signal is left unconnected.
7	DCD	O	Data Carrier Detect
8	CTS	I	Clear to Send This signal is asserted (logic '0', positive voltage) by the DCE device to inform the DTE device that transmission may begin
9	DTR	O	Data Terminal Ready
10	RES CONT	I	Resets the radio (Active Low = 0v)
11	TTLO1	O	TTL Output Line 1 (LED)
12	TTLO2	O	TTL Output Line 2 (LED)
13	GND	-	Signal and Chassis Ground
14	Not used	-	
15	PWR_IN	I	+7 to +18 VDC Power Input
16	PWR_IN	I	+7 to +18 VDC Power Input

SAFETY WARNINGS

Read these instructions.

- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Clean only with a damp cloth.
- Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, or has been dropped.
- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, shall be placed on the apparatus.

Safety Warnings

General Warnings

B.1. General Warnings

This product should never be used:

- Without the user thoroughly understanding operator's manual.
- After disabling safety systems or altering the product.
- With unauthorized accessories.
- Contrary to applicable laws, rules, and regulations.

DANGER: THE AW100Rx AVIA OEM BOARD SHOULD NEVER BE USED IN DANGEROUS ENVIRONMENTS.

WARRANTY TERMS

ArWest Communications Corp., Inc. (“Company”) warrants, to the end-user only, that the Narrow Band Radio Modems (“Radios”) purchased (a) conforms to the Company’s published specifications for the model purchased, and (b) is free from defects in material or workmanship. The duration of this warranty is twelve (12) months¹ from date of purchase and any claim for breach of warranty must be brought to the Company’s attention within such twelve (12) month period and the Receiver must be returned for action on any such claim within twelve (12) months from the date of purchase. Within a reasonable period of time after a claim, the Company will correct any failure of the Radio to conform to specifications or any defect in materials or workmanship, or replace the Radio, or, at its option, provide a full refund of the purchase price. A repaired or replaced product is warranted for 90 days from the date of return shipment to the buyer, or for the balance of the original warranty period, whichever is longer. These remedies are the buyer’s exclusive remedies for breach of warranty.

To obtain warranty service, the buyer must return the Radio, postage-paid, with proof of the date of original purchase and the buyer's return address to the Company or an authorized service center. The Company will not be responsible for any loss or damage to the product incurred while it is in transit or is being shipped for repair. It is the buyer's responsibility to arrange for insurance, if the buyer so desires.

The Company does not warrant (a) any product, components or parts not manufactured by the Company, (b) defects caused by failure to provide a suitable installation environment for the Radio, (c) damage caused by disasters such as fire, flood, wind, and lightning, (e) damage caused by unauthorized attachments or modification, (f) damage during shipment, (g) any other abuse or misuse by the buyer, (h) that the Radio will be free from any claim for infringement of any patent, trademark, copyright or other proprietary right, including trade secrets.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND IF APPLICABLE, IMPLIED WARRANTIES UNDER ARTICLE 35 OF THE UNITED NATIONS CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS.

IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING DIRECTLY OR INDIRECTLY OUT OF THE OWNERSHIP, USE OR OPERATION OF THE RADIO REGARDLESS OF WHETHER SUCH DAMAGES ARE PREDICATED OR BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY. SUCH DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF PROFITS, LOSS OF SAVINGS OR REVENUE, LOSS OF USE OF THE RADIO OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF ANY SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES, THE CLAIMS

1. The warranty against defects in ArWest adapter, antenna, battery, charger, or cable is 90 days.

Warranty Terms

OF THIRD PARTIES, INCLUDING CUSTOMERS AND INJURY TO PROPERTY. THIS LIMITATION DOES NOT APPLY TO CLAIMS FOR PERSONAL INJURY. SOME STATES DO NOT ALLOW LIMITS ON WARRANTIES, OR ON REMEDIES FOR BREACH IN CERTAIN TRANSACTIONS. IN SUCH STATES, THE LIMITS IN THIS PARAGRAPH AND THE PRECEDING PARAGRAPH MAY NOT APPLY.

No employee of the Company, or any other party, is authorized to make any warranty in addition to those made in this document. This warranty allocates the risks of product failure between the Company and the buyer. This allocation is recognized by both parties and is reflected in the price of the goods. The buyer acknowledges that it has read this warranty, understands it, and is bound by its terms. This limited warranty is governed by the laws of the State of California, without reference to its conflict of law provisions or the U.N. Convention on Contracts for the International Sale of Goods.

READER COMMENT FORM

We appreciate your comments and suggestions for improving this publication.

I use the following ArWest product _____
for _____

Please circle a response for each of the statements below:

1 = Strongly Agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly Disagree

The manual is well organized.	1	2	3	4	5
I can find the information I want.	1	2	3	4	5
The information in the manual is accurate.	1	2	3	4	5
I can easily understand the instructions.	1	2	3	4	5
The manual contains enough examples.	1	2	3	4	5
The examples are appropriate and helpful.	1	2	3	4	5
The layout and format are attractive and useful.	1	2	3	4	5
The illustrations are clear and helpful.	1	2	3	4	5
The manual is:	too long just right too short				

Please answer the following questions:

Which sections do you use the most? _____

What do you like best about the manual? _____

What do you like least about the manual? _____

Optional

Name _____

Company _____

Address _____

Telephone _____ Fax _____

Please mail to the ArWest local office listed on the back cover. All comments and suggestions become the property of ArWest Communications.



900 Rock Avenue, San Jose, CA 95131 USA

Tel: + 1(408) 770-1790

Fax: + 1(408) 770-1799

www.arwestcom.com

Copyright © ArWest Communications, 2012
All rights reserved. No unauthorized duplication.