User Manual

The AdvanceMobile

ADVANCETEC INDUSTRIES INC

www.advancetec.com

The AdvanceMobile™ consists of:

1. Part # AT8254A ..... Junction Box
2. Part # AT8233A ..... Speaker
3. Part # AT8230A ..... Visor Microphone (Visor Mic.)
4. Part # AT8232A ..... Power cable
5. Part # AT8422A ..... Antenna Magnet Mount GSM/CDMA
6. Part # AT3512A ..... AdvanceMobile Control Module

Optional Extras

1. Part #AT7107A ..... Privacy Handset with cradle
3. Part #AT9298A ..... Emergency PTT
4. Part # AT8408A ..... Antenna GPS

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▪ NOTE

A properly installed AdvanceMobile™ will minimize service calls and equipment downtime. Because of the wide variations in vehicle design, these instructions should be modified to suit each particular installation.

Before beginning the installation process, determine the locations for the mounting of the Visor Microphone, Speaker and Junction Box, and Magnetic Mount Antenna.

Consider the following guidelines when planning the installation:

- **DO** use all mounting hardware provided.
- **DO** ensure that cables are not placed under stress.
- **DO** follow proper + and – connections.
- **DO** crimp connectors securely.
- **DO NOT** attach components to any part of the vehicle that is not rigid or is subject to excessive vibration.
- **DO NOT** install components in areas where rain or snow can easily get into them, such as next to a vehicle window, which may be left open.
- **DO NOT** dress cables over sharp edges that could cause wear or tearing of cable insulation.
- **DO NOT** install components in locations where they might interfere with the vehicle operator or operating controls.
- **DO NOT** install the PTT where it will be difficult for the operator to reach.

VEHICLES EQUIPPED WITH AIR BAGS

An air bag inflates with great force. DO NOT place objects, including communications equipment, in the area over the air bag or in the air bag deployment area. If the communication equipment is improperly installed and the air bag inflates, this could cause serious injury.

It is recommended that the installation of the vehicle communication equipment be performed by a professional installer/technician trained in the requirements for such installations. An air bag's size, shape and deployment area can vary by vehicle make, model, and front compartment configuration (for example, bench seat vs. bucket seats). Contact the vehicle manufacturer's corporate headquarters, if necessary, for specific air bag information for the vehicle make, model, and front compartment configuration involved in your communication equipment installation.

! WARNING

VEHICLES WITH ANTI-SKID BRAKING SYSTEMS

For vehicles with electronic anti-skid braking systems, refer to the "Anti-Skid Braking Precautions," Motorola publication 68P81109E34. This publication can be ordered from Motorola® Worldwide Systems and Aftermarket Parts Department.

OPERATING THE ADVANCEMOBILE™

The AdvanceMobile™ will allow:

1. Calls from the unit to a pre-set private ID or group ID.

2. Cellular calls to the unit.

3. When used with the Optional Control Module, PTT calls from the unit to a Group ID and 9 different Private ID numbers.

SET UP OF ADVANCEMOBILE™

NOTE! The AdvanceMobile™ requires an activation from the carrier

INSTALLATION OF ADVANCEMOBILE™

A. SPEAKER INSTALLATION

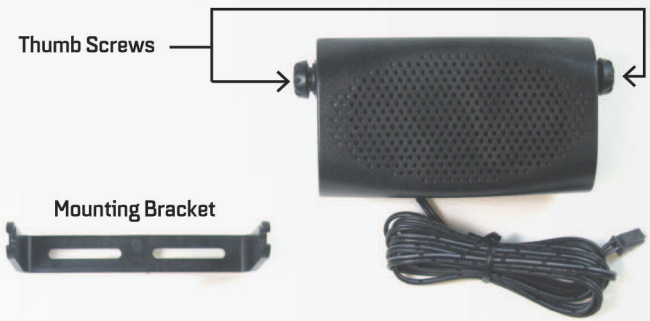
1. Mount the Speaker beneath the dashboard, on the passenger's side of the vehicle, out of the way of the passenger. Do not mount the Speaker on the dashboard or the rear window shelf.

2. The Speaker should be located more than four feet from the junction box.

3. The Speaker includes a mounting bracket, permitting it to be mounted in a variety of ways. Loosen the thumbscrews on the side of the speaker and using the mounting bracket as a template, drill the necessary mounting holes and secure the bracket with the self-tapping screws provided.

4. Position the Speaker on the mounting bracket and secure it by tightening

Diagram 1



the thumbscrews. The mounting bracket is used to permanently mount the Speaker in place while permitting it to be tilted to a desired angle.

5. Feed the cable out of sight to the location where you intend to mount the junction box.

6. The speaker should be located at least 3 ft (1m) from the visor mic. Avoid placing the speaker where it faces the visor microphone.

C. MOUNTING THE MICROPHONE

Selecting the correct position for the microphone is vital for the successful performance of the AdvanceMobile™

1. The Microphone should be mounted either on the sun visor directly above, and facing, the driver or on the headliner just above, and facing, the driver. One of the following two microphones will be supplied with this kit.

Diagram 2

2. The microphone supplied has a noise canceling feature so must be mounted facing the driver as shown in the picture above.
3. To avoid visual or physical obstruction, route the microphone cable down inside the door molding. Allow sufficient slack in the connector end of the cable to reach the Junction Box.
4. Feed the cable to the location where you intend to mount the junction box.

Note: The microphone should not be mounted near a window or in a spot where road and ambient background noise would be substantially high (above 85dB SPL).

D. INSTALLING THE POWER CABLE

CAUTION: The AdvanceMobile™ should be used with a negative ground electrical system only. Reverse polarity (positive ground) will trigger protection circuits which cause the cable fuse to open. Check the ground polarity before you begin the installation to prevent wasted time and effort. 12V DC or 24V DC automotive systems are directly supported

Determine the best cable route to the vehicle ignition for the Power Cable from the location where you intend to mount the Junction Box.

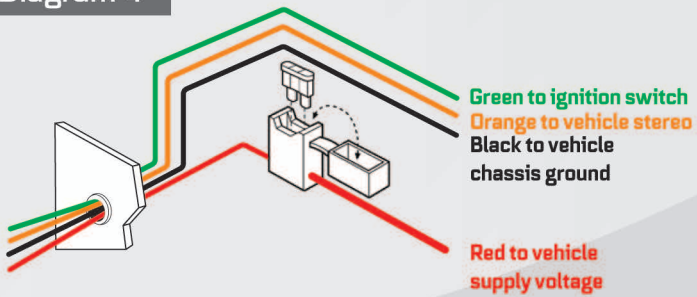
1. The DC power cable shipped with the AdvanceMobile™ is suitable for installation in most vehicles.
2. Route the black lead of the main power cable to a convenient chassis ground and the red lead to the positive supply voltage connection points. If it is necessary to penetrate the firewall, try to use an existing opening.
3. If there is no existing opening, drill a new hole approximately 9/16" or 3.5cm in diameter. Make sure that there is enough clearance on the opposite side. Insert a grommet into the hole to prevent damage to the power cable. When making connections on the engine side of the firewall, additional in-line fuse holder (included) should be used at the connection points.
4. Cut the black lead to the desired length.
5. If the connection is being made under the dash or in the vehicle cabin, connect the black lead directly to the chassis of the vehicle.

Diagram 3

Power Cable

6. If the connection is being made in the engine compartment, connect the in-line fuse holder between the black lead of the power cable and the desired chassis connection point.

Diagram 4



Note! Do not connect the black lead to the negative (-) battery terminal. The AdvanceMobile™ could be damaged if there were a malfunction in the vehicle's electrical system.

7. Cut the red lead to the desired length. This lead will be connected such that it has positive supply voltage at all times, even when the vehicle is turned off.
8. If the connection is being made under the dash or in the vehicle cabin, connect the red lead to a positive supply voltage point.
9. If the connection is being made in the engine compartment or directly to the battery, connect the in-line fuse holder between the red lead of the power cable and the desired positive voltage connection point.
10. Route and connect the green lead to a convenient ignition switch supply point in the vehicle.

Note! An ignition switch accessory terminal can be verified by measuring the terminal while operating the vehicle's key switch. With the ignition key in the "accessory ON" position, the terminal voltage should measure the vehicle's battery voltage. With the switch in the "OFF" position, it should measure near zero

STEREO MUTE

If the vehicle's stereo system supports an external muting feature, route and connects the orange wire to the car stereo system. Otherwise, the orange wire may be left unconnected and cut off or tied out of the way.

Note! The Car Kit supports an "Entertainment Mute" function when connected to a car stereo system that provides for external muting. This function is compatible with systems that mute the audio output when the control line is connected to ground

E. MOUNT THE VEHICULAR ANTENNA & GPS ANTENNA

1. Screw the antenna to the external magnetic (Mag) mount antenna base.
2. Mount the Mag Mount antenna or other external vehicular antenna (to be purchased separately if the supplied Mag Mount Antenna does not fit your purposes).

For best performance use a low-loss coaxial cable with the highest gain antenna.

3. Position the antenna, maintaining a separation distance of at least 8 inches (20 cms) between the antenna and the body of any user and nearby person, to assure compliance with the U. S. FCC regulations on RF exposure.
4 Connect the antenna cable to the external antenna connector on the junction box.

Diagram 5

5. If you intend to make use of the GPS feature, connect the GPS antenna cable to the GPS antenna connector on the junction box. The GPS antenna is an optional extra that is available to be purchased from AdvanceTec.
6. Feed the antenna cables out of sight to the location where you intend to mount the junction box.

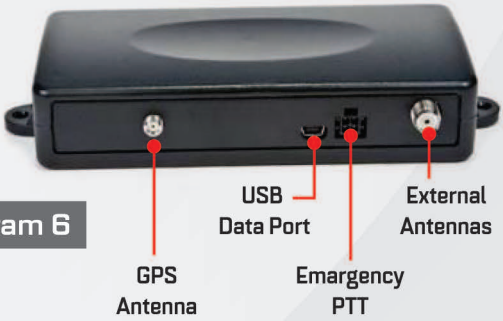


Diagram 6

F. EMERGENCY PTT FOR CELLULAR CALLS

The RED Emergency PTT is available as an optional extra

1. To attach the Emergency PTT to the gear lever, strap the PTT around the gear lever using the Velcro strip attached, with the cord facing down.
2. To attach the Emergency PTT to a flat surface, remove the 2 screws from the bottom of the PTT, which holds the Velcro strip in place. Remove the strips and replace the small plastic part that held the strips in place with the larger flat plastic part supplied with the PTT. Screw the new plastic part in place.
3. Feed the cable out of sight to the location where you intend to mount the 4 pin connector on the junction box.

Diagram 7

Velcro Strip

Flat Plastic

CAUTION: Make sure there is sufficient slack in the cable to allow the free movement of the gear lever without stretching the PTT cable.

Diagram 9

CONNECTING CABLES TO JUNCTION BOX.

1. Locate a position for the junction box beneath the dashboard on the pas-senger's side of the vehicle or on the center side post between the front seats.

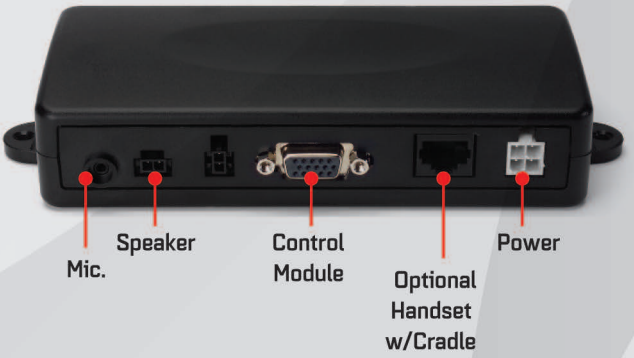
It must be protected from dirt and moisture and must be afforded adequate space for cooling. There must be sufficient space to allow for connection of all cabling.

2. DO NOT mount the junction box at this stage. First connect the Microphone, PTT, Speaker, Power cable and Control Module to their corresponding connections on the Junction Box as indicated in Diagram below.

3. Connect the coaxial antenna cable to the corresponding connector on the opposite side of the Junction Box.

4. After connecting the power cable's connector to the Junction Box, cut in half the red wire attached to the fuse housing supplied. Cut the long red power lead to the desired length and connect (crimp) it to the one end of the wire to the fuse housing.

Diagram 10



5. Connect the other end of the wire from the red fuse housing to the positive (+) side of the ignition. –The fuse housing can be secured in place by using a plastic tie or screw through the hole in the fuse's plastic housing

6. Mount the junction box in place using the 2 mounting screws supplied.

Diagram 11

REGISTERING THE ADVANCEMOBILE™ CX1 AND PROGRAMMING NUMBERS AND TEXT MESSAGES

1. Once the AdvanceMobile™ CX1 is powered and it will begin the registration process onto the CDMA Network. The initial registration onto the CDMA Network can take up to 3 minutes.

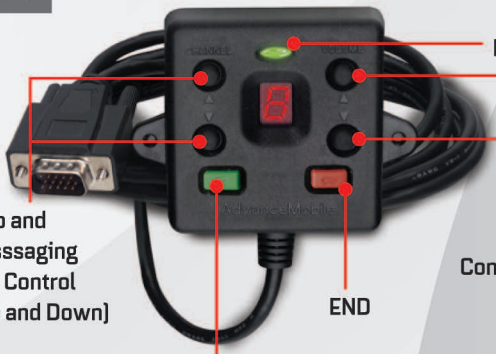
2. Once the registration is successful, 5 short beeps will be heard through the speaker.

3. After registration, the phone numbers with which the AdvanceMobile™ CX1 is to communicate, as well as the Text Messages you want the AdvanceMobile CX1 to send, must be loaded.

4. The phone numbers can be loaded with the Utility Software, available from AdvanceTec. The Text messages can only be loaded with the Utility software available from AdvanceTec. See below.

ADVANCEMOBILE™ CX1 CONTROL MODULE

Diagram 14



THE ADVANCEMOBILE™ CX1 CONTROL MODULE IS USED TO:

A. Program Phone Numbers,
B. Program Pre-set Text Messages
C. Navigate through the channels
D. Adjust the audio volume

CONNECTING CONTROL MODULE AND LOADING SOFTWARE

1. Connect the USB connector of the USB - Micro USB cable supplied, to a USB receptacle of a computer.

2. Connect the Micro USB connector to the Micro USB receptacle at the top of the Control Module, load the Utility Software CD (part # 99005) supplied by AdvanceTec and follow the programming instructions in the Use Guide.

A. PROGRAM THE PHONE NUMBER OR PTT NUMBER.

1. Enter a Phone, (Private/Prvt) number (choose from drop down menu) you want stored with which the AdvanceMobile CX1 will communicate, in an empty channel and press ENTER.

2. The number will turn RED

3. Repeat this process until you have stored all the numbers you want to store or all the channels are full and press the PROGRAM UNIT button

B. PROGRAM TEXT MESSAGES

1. On the right side of the screen enter a phone numbers to which a Text Message is to be sent, press ENTER

2. Create a Text Message that you want stored with that phone number (each Text Message is limited in length) and then press ENTER again. The Text Message will turn RED.

3. You can create and store different TEXT MESSSAGES against different phone numbers in each open channel 0-9.
4. Once you have entered all the Text Messages you wish to enter, press the PROGRAM UNIT button to store the Text Messages.

C. NAVIGATE THROUGH THE CHANNELS TO MAKE A CALL AND SEND A TEXT MESSAGE.

1 With the AdvanceMobile™ CX1 powered, press the UP or DOWN Channel Control Buttons. Channel numbers 0 – 9 will show in the Control Module screen.

2 When the desired channel is reached, press the Green SEND button to initiate the call, if a phone call.

3. To send a stored Text Message, press both the Up and Down cannel buttons at the same time. A RED dot at the bottom of the LED window will light and the LED Indicator will change from GREEN to ORANGE.

4. When the desired Text message that corresponds with the number stored on the control module is reached, press the Green SEND button. The Text Message will be sent.

D. ADJUST THE VOLUME

1 Press the Volume Control Buttons on the Control Module Up or Down to raise or lower the volume of the AdvanceMobile™ CX1.

2 After a volume button is pressed, a blinking dot will appear in the bottom right corner of the screen to indicate that it is in the volume mode. The Minimum volume is 0 and the Maximum is 7.

3. After the volume has been adjusted, the blinking dot will disappear to

indicate that the unit is back in the channel mode.
4. The Channel and Volume selected will be saved when the AdvanceMobile ™ CX1 is powered off, provided it was powered for 3 minutes after the selection was initially made. The selection saved will resume when it is next powered up. 5. If the Control Module looses communication with the main unit, 3 horizontal lines will show in the Control Module window.

MAKING A PHONE CALL OR PTT CALL .
1. To make a phone call select the channel number on the Control Module associated with the phone number you want to call and press the Green SEND button.
2. When the call is answered, speak towards the visor microphone.
4 To end the call press the Red END button.

ANSWERING AN INCOMING CALL
1. To answer an incoming phone call, press the Green SEND button.
2. Speak towards the visor microphone.
3. To end the phone call, press the RED END button.

TURNING OFF THE ADVANCEMOBILE™ CX1
1. When the car ignition is ON, the AdvanceMobile™ CX1 will stay on.
2. When the ignition is turned OFF and there is no active call in progress, the AdvanceMobile™ CX1 will turn OFF after 30 seconds.
3. The AdvanceMobile ™ will remain on if an active call is in progress even if the ignition is turned OFF.

ADVANCEMOBILE™ CX1 CONTROL MODULE LED INDICATORS:

Steady RED	Unit not registered with the system
Steady GREEN	Unit registered with the system – OK
Orange	Call in progress OR Text Message Mode
Alternating Green & Red	Data transmitting for GPS.

SPECIFICATIONS

Input/Output

•Input voltage 10.5Vdc to 32V dc
Ignition detection:
•Ignition "ON" 2.5Vdc to 32Vdc
•Ignition "OFF" 0V to 2.5V or OPEN
•Outputs Entertainment Mute
•Open Drain
•Continuous current capacity: 50Ma

Audio Specifications

•RJ45 Supports and Privacy Handset Part # AT7107A
•2.5mm Stereo audio jack
•Speaker impedance: 4 Ohms 10W

•Microphone: Eco Canceling Noise Canceling (Use only AdvanceTec approved Visor Mic. part # AT8230A)

Communication Specifications

•Full Duplex Communication
•Automatic Start up
•Antenna Impedance: 50 Ohms
•SIM card: 3 Volts
•SIM cars PIN: Programmed by user one time, automatically introduced
•Onward. PIN saved on Non-Volatile memory

Receiver Specifications

•Frequency Range 851 min 870 MHz Max in the 800MHz band
•Frequency Range 935 min 941 MHz max in the 900MHz band
•Channel Spacing 25 N/A KHz
•Sensitivity (10% BER) – 111dBm max
•Strong Signal BER 0.1% max RF level = -80 dBm
•Overload Immunity 10% max on channel = _20dBm
•Inter-modulation Immunity -45 dBm min Far-out interferers
•(On cannel = -108dBm)
•Adjacent Channel Immunity -51 dBm min
•Spurious Response Immunity -51 dBm min
•Stability, unlocked 5 ppm max
•Stability, unlocked 1.9 ppm max
•Spurious Emissions per FCC requirements (3m)
•Conducted -57 dBm
•Radiated 500 uV/m

- Transient Response 0.01% BER during RX-TXRX
- Frequency Acquisition 0.01% max ± 220 Hz RF input
- Blocking Immunity 10% max

Transmitter Specifications

- Frequency Range min 806 max 825 MHz band
- Frequency Range min 896 max 900 MHz band
- Channel spacing 25 KHz
- Power 0.44W min 0.7W max. Pulse average power: basic
- Terminal class
- TX BER 0.7% max
- ACCPR @ 25 KHz 60 dB min
- Frequent Stability 5 ppm max Unblocked to base
- Spurious Emissions – 13dBm max per FCC and IPU-R requirements

GPS SPECIFICATIONS

GPS Module

- Sensitivity : -152 dBm Tracking, -142 dBm Acquisition
- Protocol: TAIP (ASCII)
- Frequency: L1 type (1575.42 MHz) C/A code
- Channels: 12 channel simultaneous operation
- Update rate: 1Hz

Accuracy

- Horizontal: <3 meters (50%). <8 meters (90%)
- Altitude: <16 meters (50%), <16 meters (90%)
- Velocity: 0.06 m/sec.

•PPS" +/- 50 nanoseconds

Acquisition

•Reacquisition: 2 sec.
•Hot Start 9 sec.
•Warm Start 35 sec.
•Cold Start (TTFF): 39 sec. Out of the box: 41 sec

GPS Antenna Connection

•SMA (Sub Miniature A) connection with a male center contact. Use this contact for the GPS Antenna provided with the unit.
•50 Ohms impedance

GPS ANTENNA SPEC.

Patch

•Center Frequency 1575.42 ± 1.023 MHz (when covered with a radome and measured by LNA ground plane)
•Bandwidth (10dB return loss) 10 MHz min
•Gain at Zenith 1dB type
•Gain ay 10° elevation -5 dBic type
•Polarization R.H.C.P.
•Axial Ratio 5.0 dB type

Filter / LNA

•Center Frequency 1575.42 ± 1.023 MHz
•Gain 30-37 dB (pc:3V/32dB)
•Noise Figure 1.4 dB type (ps:3V / 1.35 dB)

- Filer out band attenuation
- Dielectric filter
- 7dB min fo±20 MHz
- 20dB min fo±50MHz
- 30dB Min fo±100MHz
- (fo - 1575.42MHz)
- Output V.S.W.R 2.0 max
- Voltage DC - 2.5-5.5V
- Curent DC - 8-23mA (ps:3V / 10mA)

Antenna connector

- Mini USB connector with a female center contact (Use this connector for the Antenna provided with the unit.
- 50 Ohms impedance

Environmental Specifications

- Operational Temperature -20 to +60°C
- Storage Temperature -40 to +85°C
- Shock MIL-STD-810E METHOD 516.4 Proc. 1, 18 shocks 40 G half-sine 6 – 9 msec 18
- Shocks 2500g's, 0.00075-second pulse
- Vibration 2X-EIA (not tested electronically during vibration) Sine 20 – 2000 Hz, 4G peak
- 1 hr per axis – 3 axis (X, y, z) Random 20 – 2000 Hz, 6G RMS; 1 hr per axis – axis (x, y, z)

▪ WARRANTY

Your product has a one-year limited warranty from date of purchase against defects in material and workmanship. Under this warranty, you may return a faulty product to AdvanceTec and AdvanceTec will either repair or replace the faulty product free of charge. To return a faulty product for repair or replacement, please call AdvanceTec in the USA at 305-623-3939 to obtain a Return Material Authorization number. If outside of the USA, contact your authorized AdvanceTec dealer for a Return Material Authorization This warranty covers only defects in material or workmanship in normal use and not damage from negligent handling, misuse, charging of batteries other than those the charger was specified and designed to charge, or lack of proper care.

Important: Opening of the product will void this warranty. This warranty gives you specific legal rights. You may also have other rights, which vary from state to state.

OTHER THAN AS EXPRESSLY SET FORTH ABOVE, AdvanceTec Industries, Inc DOES NOT MAKE ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS REGARDING THEIR PRODUCTS. ANY IMPLIED WARRANTIES OF MERCHANTABILITY, NONINFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED AND DISCLAIMED.

AdvanceTec will not be liable or responsible for any loss, damage, or injury caused by any failure of its products to operate properly or promptly.

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1150 NW 163rd Drive, Miami, FL 33169
T: 305-623-3939 **F:** 305-623-3996

www.advancetec.com