



BA31 Factory+

Bluetooth Retrofit Kit

OWNER'S MANUAL

COMPATIBLE RADIO



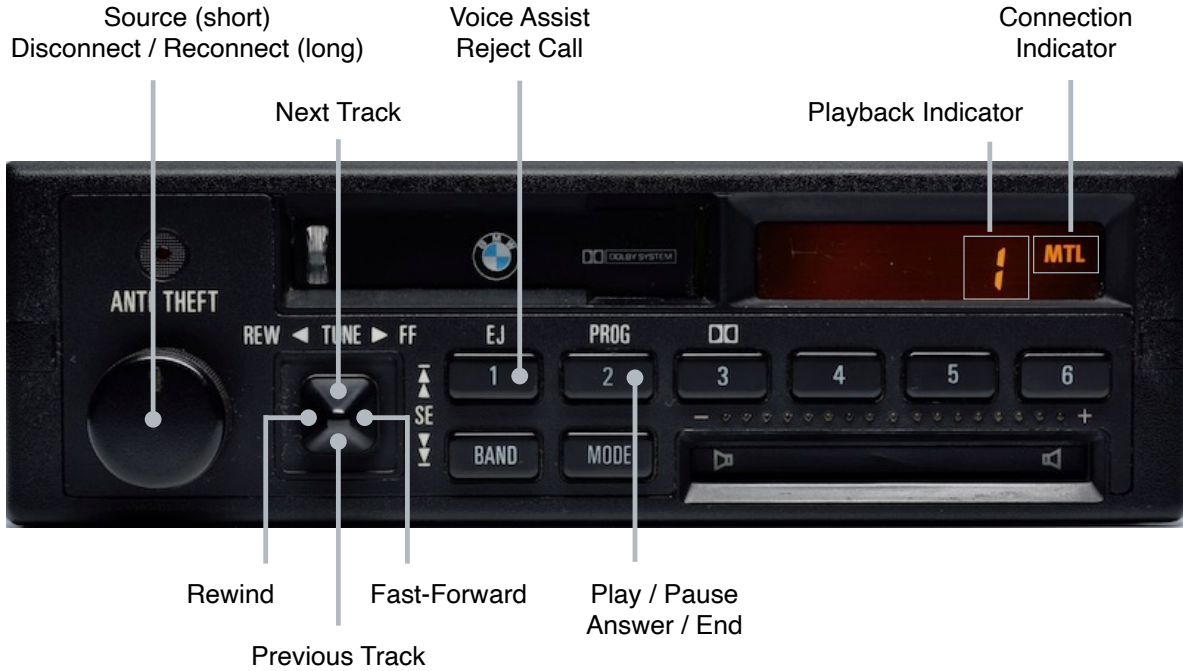
BMW CM5908



QUICK GUIDE WITH DISPLAY+



QUICK GUIDE WITHOUT DISPLAY+



GENERAL INFO

Thank you for purchasing a Factory+ Bluetooth Retrofit Kit from Cantaloupe Radio. We go to great efforts to engineer a product that lets you get the most out of your factory radio today while remaining true to its period styling. Please take a minute to read this manual to ensure you get the most out of your purchase.

APPLICABLE RADIO MODELS

The BA31 is designed to work with the BMW CM5908 radio.

CONTENTS

If you have opted for self-installation, begin by verifying your kit contains the following parts:

- BA31 circuit board
- (2) screws (these may be installed on either side of the circuit board)
- Microphone with windscreen and clip
- Microphone/Aux harness
- 8-pin wiring harness

MONEY BACK GUARANTEE

We're confident you'll enjoy this transformation of your factory radio. However, if you are unsatisfied with the upgrade for any reason, let us know within 30 days of purchase to arrange for a return and full refund.

LIMITED WARRANTY

Your Factory+ kit comes with a 1-year limited warranty against any defects hindering functionality. Should you experience any issues during this period, please contact us to resolve.

INSTALLATION

To make installation as painless as possible, we provide an installation video taking you step-by-step through the process. To view the video, scan the QR to the right.



DASHBOARD DESKTOP APPLICATION

Our desktop application, *Dashboard*, helps you get the most out of your Factory+ kit. With *Dashboard*, you can:

- Change device settings
- Update firmware for new features and improvements
- Submit diagnostics if you encounter an issue
- Reset your Factory+ kit



Dashboard is available for Mac and Windows platforms. Scan the QR to the right for more info.

COMMON OPERATION

OPTIONAL ADD-ON PRODUCTS

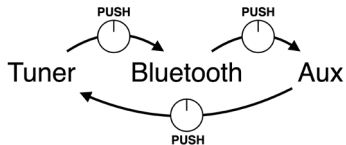
The BA31 has 2 optional, add-on products that can be used in conjunction with BA31 to further enhance the CM5908 radio.

- **Display+:** An enhanced LCD display that enables a more intuitive and extensible interface
- **Amp+:** An enhanced amplifier module that brings powerful Class-D amplification, subwoofer and line outputs, audio DSP, and more to the CM5908.

The BA31 can be used alone, with Display+, with Amp+, or with both Display+ and Amp+. Differences in behavior will be called out where applicable.

SOURCE SELECTION

With the kit installed, your radio now has 3 possible audio sources: tuner (AM, FM, WB), Bluetooth, and a 3.5mm auxiliary input. To cycle through the sources, press and release the volume knob.



CONNECTING BLUETOOTH

Factory+ kits don't require any special "pairing" mode to enter

before connecting a mobile device. Instead, the kit is always ready to connect whenever a device is not already connected. To do so, open your device's Bluetooth settings and connect to "Cantaloupe Radio BA31".

DISCONNECT & RECONNECT

In Bluetooth mode, a long press (>1sec) on the volume knob triggers one of two actions: if a device is connected, it will be disconnected; if no device is connected, the radio will attempt to reconnect a previously-connected device. Note this happens automatically when the radio is powered on.

PLAYBACK CONTROLS

In Bluetooth mode, playback can be controlled from the radio using the 4-way directional button and the **2/PROG** button:

- Play/Pause - **2/PROG**
- Next Track - **UP**
- Previous Track - **DOWN**
- Rewind - **LEFT**
- Fast-Forward - **RIGHT**

Note that depending on the currently-playing application on the mobile device, Rewind/Fast-Forward may behave differently (continuous scrub vs. skip ahead/back) or not be supported.

COMMON OPERATION AND OEM DISPLAY

VOICE ASSISTANT

Your mobile device's voice assistant can be invoked directly from the radio by pressing the **1/EJ** button in Bluetooth mode. After a short delay, your assistant's chime will play to indicate it is now listening for your command. Say your command and the assistant will respond. To dismiss the assistant at any time, press the **1/EJ** button again.

CALL HANDLING

When an incoming phone call is ringing, you can answer the call by pressing the **2/PROG** button. To reject an incoming call, press the **1/EJ** button. During a call, it can be ended by pressing the **2/PROG** button again.

AUTOMATIC SOURCE SWITCH FOR CALLS

To ensure an incoming call is not missed, the radio will automatically switch to Bluetooth if a call comes in while another source is selected. When the call is ended, rejected, or missed, the radio will return to the previously selected source.

OEM DISPLAY

When using the BA31 with the original radio LCD display, a limited amount of feedback is shown on screen and described below:

TUNER

Tuner operation and display works identically to original.

BLUETOOTH

In Bluetooth mode, the **MTL** indicator in the display shows the Bluetooth connection state:

Blinking: Disconnected
On: Connected


The display will show either a "1" or "2" depending on the playback state:

1: Playing
2: Paused

AUX

In aux mode, the **MTL** indicator will be off and a "1" will always be shown.

DOLBY® NOISE REDUCTION

When using the OEM display, it is still possible to engage Dolby Noise Reduction in Bluetooth and aux mode. However, this should NOT be enabled as it causes decreased audio clarity. It is disabled by default, but if a  icon is shown on the display, press the **3** button to disable it.

DISPLAY+

The remaining sections describe functionality with the Display+ module installed in place of the OEM display.

TUNER

When the tuner source is selected, the radio operates identical to original with a slightly reorganized display.



DISPLAY MODES

There are 2 display modes to choose from to suite your visual appetite. This selection affects the display appearance during Bluetooth use.

Rich



Minimal



In Rich mode, the track title & artist will scroll once when changed and can be scrolled at any time by pressing the **6** button. The playback status is shown in the lower left corner. In Minimal mode, only the playback status is shown in the center, with connection status shown in the lower left. To switch display modes, press the **5** button.

SETTINGS

While in Bluetooth or aux mode, press the **BAND** button to bring up the settings menu. Use the 4-way direction button to navigate the menu. **UP** & **DOWN** move through possible categories, settings, and values, while **LEFT** & **RIGHT** drill into or out of a category or setting.

The following settings can be adjusted:

- **Enable Phone Support:** For a completely factory look, you may prefer to not install the clip-on microphone in the vehicle. If so, disable this setting so the radio does not interfere with phone calls or voice assistant on the mobile device. A power cycle is required for this to take effect.
- **Left/Right Seek:** Given the less common usage of Rewind and Fast-Forward and their arguably more intuitive directions on the 4-way button, this setting allows you to instead use **LEFT** for previous track and **RIGHT** for next track.
- **Display Brightness:** The brightness of Display+ can be adjusted from 1-10. Note Display+ auto-dims when dash illumination is turned on like original.

Additional settings may become available over time through firmware updates, including audio EQ, crossover, etc. controls for Amp+. Those settings will be described in supplemental material included with Amp+.

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