

Mk4 Navigation Upgrade Notes

- **Model & Year:** 98-01 7-Series, U.S.
- **Expertise:** Intermediate
- **Date:** January 2016
- **Updated:** November 6, 2021
- **Time Estimate:** varies

7 Series E38

Tools Required

- Basic hand tools

Facilities Needed

- None

Parts Required



- **(1) Mk4 Nav Computer:** p/n varies, price (used): \$200 - \$300.

Getting Started

"Why upgrade using old stuff?"

Because swapping your navigation computer from an early CD-based system (Mk2 and Mk3) built from 1998-2002, to the more recent DVD-based system (Mk4) built from 2003-2008, offers advantages for BMW owners who wish to keep their cars factory-like. Yes, the last map update was in 2015 but it's still very usable.

But it's really not even about navigation! People prefer to use navigation on their phones, which makes in-dash nav irrelevant. The emphasis has shifted towards integration. And with the Mk4 the main advantage *is* integration.

For example, the Mk4 integrates factory Sirius satellite radio (when coupled with factory [New Gen radios](#)), displaying complete song titles and station info. Additionally, if paired with a [factory MP3 CD changer](#), a Mk4 will display Audiotext (song title and artist data) from New Gen radios, providing direct folder navigation. If installing a [factory Bluetooth system](#), a Mk4 integrates beautifully by displaying [phone info screens](#). And back-up cameras can be added using a factory video module (displays "Television" option).

Also note that installing a non-factory (aftermarket) nav will result in loss of control over one or more of the following systems: DSP sound, Check Control, On-Board Computer, Aux Ventilation, SES Voice Control (9/00-on), R/T steering wheel button, and some settings such as the date/time display on your instrument cluster. By contrast, a Mk4 is fully compatible.

Of course, you should replace old 4:3 monitors with factory 16:9 widescreens for the best experience -- a plug-n-play upgrade (it would be a crime not to do so!). The numerous graphics advantages of the Mk4, detailed below, combined with the great look of a big monitor make this the "proper" choice for your E38 7-Series. And it's a compelling option for other BMWs too.

While the 2015 maps may be somewhat dated, learn to get the most out of them. While driving around town, utilize the Mk4's improved graphics to continuously display maps in "perspective" view, which eliminates street name clutter and just shows a pretty picture of the surroundings. On long trips, the continuous central display of good-looking maps with ETA and distance remaining for all passengers to see makes the journey much more informative (with fewer "Are we there yet?" questions). Use the [Destination Input Map](#) to add points of interest not included. And unlike phone-based navigation, coverage will extend into areas lacking cellular data signals.

There are many DIY resources for nav upgrades (such as [E39Source](#)). To purchase a Mk4, [Bimmernav](#) was for many years the premier vendor. But that's no longer the case since map updates are discontinued. Currently, the best source for used navs is eBay. Meanwhile, Mk4 prices have dropped considerably, making this upgrade a tremendous value. And as mentioned above, its map features are not the real draw anyway.

And although aftermarket companies like [Avin](#), [Dynavin](#) and [Seicane](#) offer modern replacements, beware Avin has received negative reviews (buggy) while Dynavin and Seicane do not fit the E38. And as mentioned above, some integration will be lost. Furthermore, these units cost close to \$1000 with required accessories. And none of these look as nice as a factory nav.

Factory Mk4 w/Bluetooth versus Dynavin N7

The Dynavin N7 appears to be the best aftermarket nav available (but it won't fit E38). So how does it compare to a factory Mk4 nav with Bluetooth TCU (which does fit E38)? Some considerations:

1. To use Bluetooth functions, Dynavin needs to be ON (just like other aftermarket BT systems). But factory BT operates independently, in the background and always at-the-ready (no need to turn it ON).
2. The N7 does not respond to the "R/T" steering wheel button. On factory BT, this toggles the wheel controls to telephone mode and brings up your paired directory on the instrument cluster or MID, allowing you to scroll for a contact using the up/down buttons (even while music or nav functions are displayed). Pressing "R/T" again toggles the controls back to radio mode.
3. N7 cannot operate with radio ON/monitor OFF (factory navs can). This is useful at night to reduce glare while music plays.
4. N7 cannot be controlled using the stock SES voice recognition system (9/00-on). Using the steering wheel voice button with a factory set-up, speak "Route Map" to bring up the navigation display. The system also responds to several other commands such as "Instruction Off", "Scale 800 feet", "Gas stations at current location", and many more. See [Voice Control User Manual](#).
5. The Parrot BT software on the N7 cannot record "voice tags" of commonly called numbers. On factory BT, you can press the steering wheel voice button and speak a pre-recorded name to place a call. However, the N7 can activate your paired phone which will allow use of Siri or OK Google voice commands.
6. N7 nav maps (iGo Pro) are current, but look cartoon-ish and even juvenile compared to a Mk4. Although Mk4 map updates ended in 2015, many people allow their iGo subscription to lapse due to the expense (\$99/yr), resulting in outdated maps too. Of course, if you don't use onboard navigation, this is a moot point.

Since the N7 benefits from current software, its main advantages are: 1) Current maps, 2) Bluetooth audio streaming (not possible with factory BT, must use workarounds, see [Factory Bluetooth Retrofit](#)) with full ID3 tag support (displays album art, not just song info), 3) Apple iPod integration, 4) Apple CarPlay (+\$300) and Android Auto (standard) to emulate phone screens (display phone-based nav) and, 5) Touch screen functionality for the latest "wow" factor.

And I doubt Dynavin's onboard CD/DVD player will get much use; it will just take up space while people use other media.

There can be bugs in N7 software which will require updating to the current version, but this is typical of all aftermarket systems. See [Dynavin discussion](#) for more (it's quite lengthy; begin from most recent post). In the end, the cost and integration advantages of the Mk4 are clear.

First Impressions: Avin Avant 4

For 7 series owners, Avin is the only aftermarket nav whose size (depth) allows it to fit the dash. It also has the most factory-like appearance, which I like.

Unlike Dynavin, the Avin is an Android headunit. This means it works using the Android operating system (like a phone) and requires an Internet data connection, which comes from a Wi-Fi hotspot from your phone. (An internal SIM card option doesn't appear to be available). Note the Wi-Fi connection will draw considerable battery power from your phone, so you'll need to keep it charging while driving. In short, the Avin is an in-dash phone.

This also means that, unless you have an unlimited data plan, Avin will cost money to use everyday as it draws mobile data. Furthermore, it will lose functionality upon phone signal loss. Avin does offer iGo maps optionally (+\$50, on SD card), which means you could use navigation without an Internet connection (like Dynavin).

Avin is more affordable than Dynavin (\$450 vs \$700). It also has a nifty i-bus app (+\$90), which allows configuration of several native BMW features such as daytime running lights and side mirror fold/unfold. (This functionality typically requires [NavCoder](#) or other factory software.)

The catch is, the Avin seems to be somewhat buggy, with complaints going unanswered by their customer service (unlike Dynavin) and comes with no installation instructions. See lengthy [Avin discussion](#) for more (see recent posts for Avant 4).

In the meantime, a Mk4 upgrade offers significant cost and integration advantages. Installing a Mk4 is mostly a plug-n-play process. The following notes are a collection of the finer points of this upgrade.

Upgrade Notes

Mk4 Advantages

Many features distinguish this system from earlier ones, but the highpoints are:

- New(er) maps.
- DVD media stores much more info on a single disc (two discs for all of USA).
- Much faster processor (renders map graphics faster).
- Better graphics for maps and menus, including "perspective" map view and split screen.
- Moving maps: car icon stays centered on screen while maps move underneath (previously opposite).
- Legal disclaimer ("lawyer") screen disappears automatically after 8 seconds (see Operating Systems below).

The Mk4 Purchase

Upgrading to the Mk4 nav is more affordable than ever. As of this writing, used prices (on eBay, for example) range from about \$200-\$300, versus \$799 a few years ago. After the purchase, sell your old system to help offset your costs. For example, Mk3 navs seem to fetch about \$100.

Maps

A good source from which to purchase the 2-disc set of 2015 DVD maps is [eBay](#) (about \$25). Verify the maps are for chassis series E38/E39/E46/E53 (labeled "High") and not for newer generation nav systems (labeled "Professional") by looking for BMW part number 65-90-2-365-699. NOTE: Some claim to have trouble using eBay maps (which are copies of factory originals). Be sure to buy from established vendors with positive feedback. If you prefer, [factory-original maps](#) range from \$75 to \$130.

Operating Systems

Be mindful of the nav's operating system, or software version. This determines the nav features available to you.

The best summary of official OS versions can be found in table form here: [xOutpost](#). Note the last Mk3 update was in 8/03 while Mk4 updates ran thru 3/08. The most desirable OS is version 27-on, which ran from 3/06-on. These will have the "perspective" map view and auto-disappearing "lawyer" screens. No significant changes were introduced after 3/06.

OS Updates

It's true that any nav can be updated to the most recent OS with an update disc. The catch is, this process can be slightly risky for the DIY'er. Some have "bricked" (crashed) their navs while trying to update. Using a reliable [update disc](#) is key. The newer OS also comes with a beautiful start-up ("splash") screen. It's doubtful BMW service centers can update these systems any longer, due to their age. Besides, service center pricing is outrageous.

Unless revealed by the seller, knowledge of the nav's OS will be unknown. However it can be deduced by reading the production date on the label. Note the production date of "04-07" in image below. This corresponds to OS version 27.1. Also note a software identifier is explicitly stated on the label ("SW:9.1"), but I have not found a cross-reference for this identifier anywhere.



Configuration

While Mk4 software is fully compatible with the E38 7-series, it may come configured for other BMW models, leaving some features non-functional in the E38. Of interest are the following settings:

- Region
- Language
- Radio Type

Of course, buying a Mk4 nav from a US-based car will ensure that Region is set to "US" (so U.S. maps will be readable) and Language is set to English.

But late build Mk4 units (from about 2006-on) may come from cars with newer radio types (BM53/BM54). This will cause loss of some radio features in the E38, such as Random and Scan, and cause difficulty with DSP settings. (Ask me how I know.) In this case, the nav unit needs to be configured for the standard C43 radio of the E38.

On the other end of the date spectrum, early Mk4 navs (thru 9/03) may come from cars with a setting which causes the arrival time display to fail. This is a minor issue, but some find it annoying. Again, it's a configuration issue.

Configuring the Mk4 nav can be accomplished using NavCoder software, freely available over the Internet. See [Using NavCoder](#) for more.

Summary

It's likely the Mk4 nav you purchase will need either a software update or configuration, or both. Some sellers offer custom configuration and/or updated software. This service usually costs extra (about \$100) and is often reflected in the price of the unit. If you're a die-hard DIY'er, see [Using NavCoder](#).

Mk4 Tips

1) The "perspective" map view must be enabled from the nav's service menu in order to be functional:

- From main menu, select "Settings".
- Press and hold MENU button for 8 seconds.
- Using left scroll knob, scroll down to PERSPECTIVE and turn it on.

Now, when in map view, pressing the right scroll knob will bring up the "perspective" option. In perspective view, street names are not shown so as to present a de-cluttered scene. This makes perspective view useful for times when navigation is not needed and instead you merely wish to display a pretty picture of the surroundings. When actual navigation functions are required, switch back to normal view.

2) Using voice commands such as "gas stations at current location" or "restaurants at destination" (or selecting same thru the menu) will populate your maps with icons reflecting the request. Soon, you will want to remove these icons, since they tend to clutter the map display:

- From INPUT DESTINATION menu, select *Information > Travel Information > Hide Map Icons*.

This is not in the Mk4 User Manual.

3) A great way to use map functions is in split-screen mode. This will display maps on the left half with travel directions on the right. Enable split screen from the Settings menu.

4) There are two display color schemes (blue/brown and grey/black) selectable in *Settings > Color Set*.

5) Using voice command, speak "route map" to instantly display the map at any time. See *Voice Control User Manual* below for more great features.

6) I found *Settings > Nav Volume* useless. To set volume of spoken nav instructions, use voice command "volume up" and "volume down". Again, see *Voice Control User Manual* below. If the nav's spoken directions become annoying, speak the voice command "instruction off".

7) The *Destination Input Map* allows you to visually input a destination if you don't have the address or, if you know geographically where to go but it's not on the map (ex: a newly constructed home). Cool.

Mk4 Official Literature

- [Mk4 User Manual](#)
- [Nav/Widescreen Service Information](#)
- [Voice Control User Manual](#) (some features require SES voice module, from 9/00)

Enjoy!

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