

Plug & Play

Modern car remapping technology is more seamless than ever. We talk to the owner of a brand-new Porsche Macan diesel as he hands his car over to be remapped.

Story and photography: Neill Watson

Car remapping and electronic tuning techniques have been around for decades now, but I'll admit that previous personal experience of remapping car services has led to me hold mixed views. It can be an industry filled with smoke and mirrors, with bold claims that are often hard to quantify and verify. We've all heard horror stories of laptop-wielding wizards who've plugged in, worked some magic and then left owners with a pile of molten alloy just a few weeks later. Or tuning companies offering shiny boxes with flashing LEDs but little else. And of course, there's that old chestnut of your car warranty. An unusual set of ECU readings is the perfect opportunity to sidestep an expensive engine claim. So would you really take an almost brand-new Porsche Macan with less than a few thousand miles behind it to a remapping company?

As I head across the wintery M62 towards the Lancashire headquarters of Tunit, I may not be exactly sceptical, but I'm possibly cautious. I have questions. Many of them. However, I'm probably directing them at a company better qualified to answer than most. Over a strong northern brew, MD of Tunit Ltd Michael Bromley gives me a fast rundown on the history of both the company and the remapping industry in general.

Established in 1998 with the purpose of offering the-then relatively new concept of turbo diesel remapping, Tunit's first product was a simple plug and play unit. "It was the size of one

of those old Motorola brick phones, but it worked and proved that remapping could improve diesel power and driveability." At that time, there were a multitude of similar products on the marketplace, all using similar techniques of signal amplification for improving performance.

As the technologies developed, drive-by-wire throttles and other integrations and advancements created both hurdles and opportunities for the Tunit remapping technology and as the company continued to invest, the level of sophistication grew. Through a series of incremental improvements, the Tunit technology has evolved into today's tiny unit capable of handling the complex interrogation of a modern ECU safely, while offering a far more bespoke solution than the earliest models.

Today, the company sells worldwide through its dealer network and has blue chip clients that include the British Army. Its latest product is called Advantage. With more powerful processing hardware and adjustability across a range of parameters, the Advantage can be set to the owner's objectives: "We can set a unit for optimum economy, improved low end for towing or simply a general improvement in driveability," Michael tells us. "But the owner can also adjust the settings themselves to further tailor the power delivery."

"Development is an ongoing process," he continues. "As car manufacturers develop more complex systems, we have to keep pace. The big thing right now is the 'clock speed' of the latest engine management systems." Indeed, as





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engines become more complex, the processors inside the ECU are more powerful than ever: "Plus, some have begun using clever techniques to develop barriers."

So, does this mean that the makers don't approve? "Actually, they're generally okay with it," he confirms, "they just want to stop casual fiddling. It tends to be individual dealers that have issues. But these days some of our biggest resellers are actually franchised dealers."

In fact, Tunit's range of warranty and guarantee options on the Advantage are testament to its confidence in the product. Your Tunit can be upgraded, reset to a new car or even part exchanged at any time. The unit itself has a five year warranty and the company stand behind a one year engine and drivetrain warranty as part of the package.

So, who would take an almost new Porsche Macan diesel straight to an ECU mapping company with less than a couple of thousand

miles on the odometer? That question is easily answered when we meet its owner, as we shall refer to him. Holding our hot tea mugs, we chat about his new Porsche: "I love it. I had to wait what seemed like ages for delivery, but I'm really pleased with it so far." As well as a succession of fast German turbo diesels, he's also an ex-964 Carrera 4 owner. We swap iPhone camera rolls and reminisce about air-cooled 911s as we talk about the Macan.

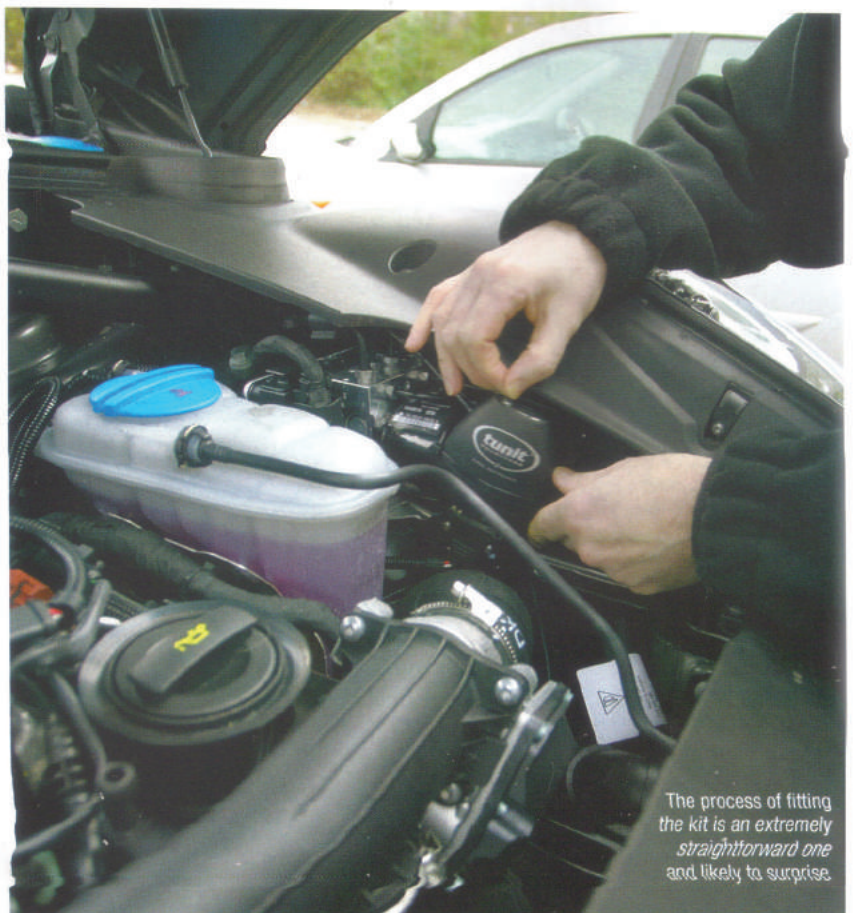
So why did he bring it here, so new and so soon after the 'new car' novelty period?"

"I've had my last five cars all done by Tunit. I used to wait a while, but the benefits to me are so obvious, it's now the first thing I do," he tells us. Well, that's a positive comment. Indeed this Macan still has that unique new car smell that I wish I could bottle and sell. We pop the bonnet release and lift that large, beautifully pressed clamshell to reveal the usual car manufacturer's plastic cover across the V6. A couple of quick

release fasteners later, the Tunit guys are accessing the connections into the management system. "We use plugs and connectors that are the same as the original manufacturer's," explains Michael. "It ensures a much more secure fit and better durability."

In fact, watching the Tunit being fitted is, if anything, a bit of a none event. Moments later, some neatly sheathed and routed wires are in place, the tiny unit is secured to the engine bay and the plastic engine cover is back in place. The Tunit sits, little LEDs winking away. I'm not sure what I was expecting. Perhaps flames from the exhaust or something. We watch the guys secure the Macan to the dyno. This isn't normally part of the install process, but this Macan is the first to arrive with them and they're interested...

"Our calculations show that we should be getting around 300hp. We're basing this on the similar Volkswagen unit, but taking into account that the Porsche mapping is different, plus



The process of fitting the kit is an extremely straightforward one and likely to surprise.



The results on the rollers are only half the story here, improvements to real-world performance are what make this kind of modification worthy of serious consideration.



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the PDK gearbox software is another variable."

With the Macan's levels double checked, its first power run is undertaken. We pause as someone takes a screwdriver to the unit, then cross checks something on a laptop and lets it run is on the dyno once more. The result? 302hp. That's up from the 258hp standard output. Some more small adjustments based upon what the owner wished from his car and some more runs on the rollers show a nice, fat torque curve.

With such good results, I have to wonder why the car manufacturers don't do this from the factory... "That's probably our number one question too," says Michael. "Principally, it needs to set a map that will cater for many things, including third world fuel quality, differing climates and all sorts, so they are inevitably not the optimum. We supply different software for each country we sell to. Plus, of course, there's the argument that the manufacturer can subsequently offer the face-

lifted car with improved performance."

Perhaps one of the most interesting figures from Tunit's expertise is that it actually reduces emissions by as much as 27 percent. "Most tuning companies create improved fuel economy by mapping lots of torque into the bottom end," he informs us. "This gives better mpg because the gearbox shifts earlier or the driver will go up the gears quicker. However, they nearly all have significantly increased emissions. We use the same techniques, but we also use the engine load parameters to shut off fuel when it's not needed." Indeed an independent report by Harper Adams University that tested 14 units concluded that some actually doubled emissions, whereas Tunit's significantly cut all the nasties.

So enough of the theory. Out in the real world, what has happened to the Macan? Rather than ask for immediate feedback, I deliberately waited a few days before catching up. "The driveability is transformed," its owner tells us. "It was already a good car, especially in Sport Chrono mode, but

now, it goes like lightning. Overtakes on Yorkshire B roads are a breeze now. A regular cross country journey that I know used to give me 32.6mpg, I now get 36.7. And I'm cracking on a bit across the Yorkshire Wolds at that too. I used to get 45mpg just cruising, so you never know, I might get around 50mpg in that mode."

The key phrase that keeps popping up here is 'driveability'. With a useful 50hp increase, spread across a very smooth torque curve, it's fair to say that this Macan is now capable of covering ground at a quite indecent pace but in a total drama-free way. While you may share my views that diesel is, in fact, the fuel of Satan, there's no denying the sheer pace at which modern common rail injected cars can cover ground. Add in the Sport Chrono Pack, the lightning quick PDK shift and the further improvements of Tunit's well-proven package that's simple to fit and even backed by its own drivetrain warranty, and you can imagine just how rapidly you're going to be arriving at that next corner ○