

Aurora 9X

There's a high build quality here that gives the set a solid, dependable feel.

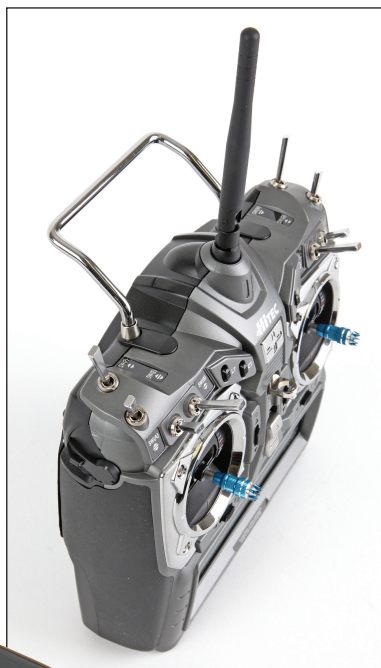
GRAHAM ASHBY DONS NECK STRAP AND GETS HITCHED TO HITEC'S MID-RANGE NEWCOMER

I've been campaigning Hitec's trailblazing Aurora 9 radio for three and a half years now and, although our relationship has had its ups and downs, the set has become a faithful companion. You see, I never go mad over brand new radio systems, indeed, like all my past favourites – Futaba's FF7 Super, JR's stonking X-3810, and its equally capable PCM9X – the Aurora 9 has had to earn my respect the hard way, through honest, dependable service. Initially it was installed in just a couple of airframes and flown in tandem with my hugely more sophisticated JR DSX12. This latter radio was the sort of thing I'd yearned to own for decades. It was pure indulgence for my humble requirements but I didn't care. I loved its robust metal case, its bling, its abundance of switches, dials and sliders, its backlit LCD and its heavyweight functionality. Personally, I found it pretty intuitive where programming was concerned, too, however as time passed and new models needed setting up, I'd find myself consciously reaching for the Aurora in preference to the flagship JR set. But why?

The 9X will operate all your existing Hitec 2.4GHz receivers, and some!

The 9X is available as a combo (transmitter and receiver) or as a transmitter only version. We have the latter.

Part of the answer, I suspect, goes back to the rather volatile early days of 2.4GHz radio when many manufacturers rushed to get systems into production, often at the expense of any long term vision. Truth is, 2.4GHz had



production, indeed it was some considerable time before the arrival of the Aurora 9 but my goodness when it arrived it was clear that Hitec's development team had got it right. You see, easy as the DSX12 is to program for this long time exponent of the brand, the Aurora is easier, much easier. The transmitter's backlit touch screen is a significant factor here, not only because the process of scrolling through menus is eliminated but also because the programming rationale is so natural. What's more, whilst the Aurora is clearly not the most expensive set on the market, there's no denying the comfort of the transmitter in the hands or the feeling of dependability that comes from its compact 32oz. And as if this isn't enough to put a self-assured smile on your face, binding is breeze; it works every time and, get this, I've never had to rebind a model at the field. Oh, and I've never suffered a glitch or experienced a brown-out situation, either (says he clasp the nearest lump of wood)!

caught them with their trousers down and if Spektrum was to be stopped from driving a coach and horses through the long established hierarchy of the radio market, something needed to be done, and quickly. Sure enough, something was done, although in many cases, it could be argued, too quickly. Whether by necessity or judgement, Hitec wasn't one of the manufacturers to rush a brand-new system into

Over these last few years, then, my Aurora 9 has gradually become my new favourite radio. I've recommended it to many people and no-one has yet come back and complained that they've been misguided. Mind you, objectivity being the hallmark of all decent reviews, I should mention my one criticism of the set, this being the rather ill-conceived on / off switch which lies parallel with, and directly





Hitec produced a winner with the Aurora 9 and the 9X can only add to the success.

**...my Aurora 9
has become
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favourite radio**

beside, the throttle trim function. Alas, on my early set the main switch had a very soft 'action' resulting in me, and a number of others, being caught out by inadvertently switching the set of in flight whilst reaching for the throttle trim. With a considerably agonising reboot time there's usually only one outcome when this happens, and it's not pretty!

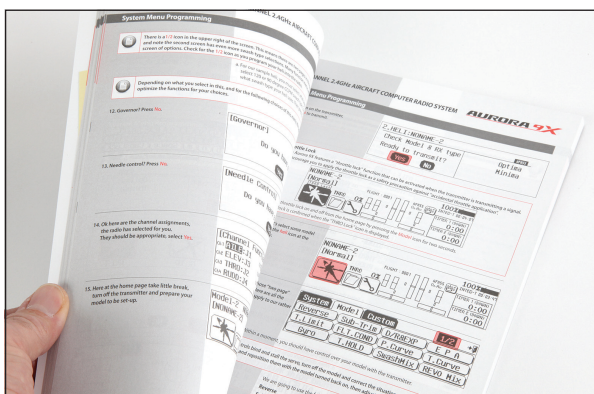
NEW BROOM

So, how does the new 9X fit into the scheme of things? Well, in short it replaces the 9 and if I'm being totally honest it isn't particularly ground-breaking in terms of its revised specification or appearance. What Hitec has done here is simply update an already successful package with a more sophisticated and potentially longer-living version.

As you can see, the design is practically identical to the 9, the exception being the rear of the transmitter where the original Spectra 2.4GHz module has, sensibly, been



I like the manual although it has to be said it's riddled with grammatical and index errors. Mine is a version 1.0 however version 1.2 (available as a free download on Hitec's website) seems vastly improved.



The clean module-free rear case is an obvious and welcome development

Note how the switches are labelled to make identification in the Switch Selection menu easy.

dropped in favour of a built-in system. The module idea was originally conceived to allow the 9 to act as a bridge system for existing 35MHz users. That said, 35MHz Aurora modules were never made available in the UK so as far as we Brits were concerned, the whole thing was a white elephant. Allied to this, the external lead that connected the module to the back of the aerial was often sited as a point of disapproval, although I have to be honest it's never



bothered me. Anyway, fact is, the 9X is module-free so this whole bone of contention is now history. Where the module once lived the charger and trainer sockets now reside, along with a new servo-style 'data' port that allows you to up / download model setups via your PC and, presumably, take on firmware updates.

It's always encouraging when manufacturers listen to customers and although Hitec clearly didn't think the switch design a problem, it has gone to the trouble of incorporating a neatly sculpted stylus into the rear case. And very welcome it is, too. Other refinements to the basic design include revised three-position 'A' and 'D' switches (where you and I would usually have rates) and a standard Futaba-style J connector plug on the lead of its updated (from 1300mAh) 2000mAh NiMH battery pack. This aside the most obvious difference between the two transmitters is the colour, the 9X having received a subtle facelift in the form of a grey fascia and blue anodised sticks, as opposed to the original black and red of the 9. I like it, very slightly more than the black.

AT A GLANCE

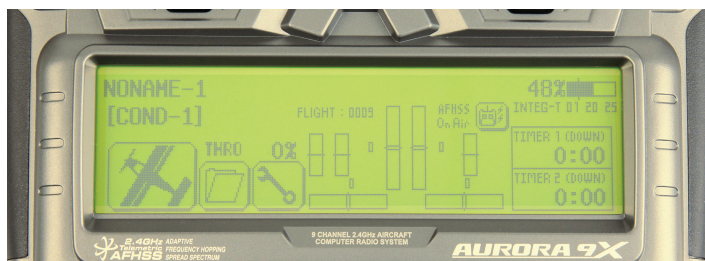
- 9 assignable channels
- Aeroplane, helicopter and glider programming
- 30 model memories
- Built-in AFHSS / SLT 2.4GHz module
- 4096 resolution
- Backlit LCD touch screen
- Touch screen stylus
- Ball raced gimbals
- Vibration mode
- Customizable menu
- Fully assignable sticks, switches and trims
- Trainer system
- Mode changing (four available)
- Digital trim adjuster (200 steps)
- 20 character model naming
- Quick model setup

SYSTEM UPDATES

It's fair to say that the biggest improvement in the new radio is in an area that most will hardly notice. Resolution is word that's often banded about when the relative merits of a particular radio are being sold, and so it is here. Anyone remember Futaba making big things of the 1024 bit resolution offered by its first FF7. That, of course, was well over 20 years ago, indeed these days we frequently talk of systems that offer a 2048 bit resolution. Pretty impressive when all's considered, however the new 9X boasts a massive 4096 which, to all intents and purposes, means that at full throw each servo has the potential to move in 4096 increments as opposed to the 1024 or 2048 of a lower resolution setup. The result? Much finer control with a keener 'locked in' feel. Mind you, none of it makes the slightest difference unless you're operating a receiver that can process the full 4096 bit information stream and, significantly, servos that can deliver it. Ultimately, your resolution will always be equal to the weakest link in the chain and for most of us that'll be the human one, which likely won't be able to tell the difference! Those at the top of their game may appreciate it, though, and since we're getting all 4096 bits for a decent price, it seems churlish to complain.

Resolution is one thing, however you'll also find three alternative 2.4GHz signal transmission technologies, these being AFHSS (bi-direction), AFHSS (single direction) and SLT (Secure Link Technology). Do what? I know, I know, if only life were simple eh? Well, to be honest, this isn't as bad as it sounds. Just think of it like this:

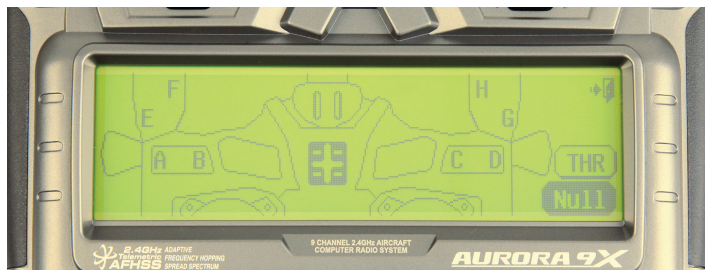
- AFHSS (bi-direction) is for operating Hitec's popular Optima series receivers.
- AFHSS (single direction) is for Minima and Maxima receivers.



A wealth of information available at the touch of an icon! Access to the programming menus is via the three icons in the bottom left corner.



Touch the timer display on the home screen and it automatically reverts to this large easy-read layout.



The 9X offers total control over switch selection. Simply tap the toggle you want, configure its direction of operation and the job's done.



System Management is where you can adjust certain aspects of the transmitter's operation (see text for details).

- SLT is for operating any of the Tx-ready model aeroplanes that use the SLT system.

So, significantly, not only will the 9X operate the latest Hitec receivers, and a bunch of SLT jobs by other manufacturers, it'll also take care of all the models you're currently flying with your Aurora 9. Good news, for it allows you to upgrade without having to replace all the receivers in your existing fleet. Incidentally, AFHSS (Adaptive Frequency Hopping Spread Spectrum) is a transmission technique that scans the 2.4GHz band, finds where the fewest frequencies are occupied, then makes its selection.

THERE'S MORE...

Another update that us mortals might initially find tricky to appreciate is an improvement in latency, this (in terms that I can understand), being the time taken from one's stick movement to the servo reaching its commanded position. The result, we're told, sees the response time of the Optima series receivers practically halved, whilst the new Maxima receivers achieve a truly impressive frame rate of 7ms. This, I suspect, is a little like the resolution enhancement and whilst reduced latency may be tricky for most of us to detect when flying our Acro Wot, I can't help feeling that the sum of all these tweaks in accuracy and speed are ultimately to be applauded, if only for the sake of future-proofing the radio against the

BASIC PROGRAMMING

- Fail-safe
- End point adjustment
- Dual rate and exponential
- Sub-trim
- Servo reverse
- 8 flight conditions
- 8 programmable mixes
- Servo speed adjust
- Servo monitor
- Throttle lock

gradual specification updates of servos and receivers.

These, of course, are basically processing tweaks to an already well-specified transmitter, however as you might expect there are also a few software additions.

The first of these activates a vibrator warning – within the rubber finger grips on the back of the transmitter – that can be turned on and off in the system management (SYS.MGMT) menu. It's worth having a browse in SYS.MGMT for here you'll also find options to control the LCD backlight, various start-up warnings, and Auto Hibernation which, as it suggests, powers down the transmitter at a pre-designated time (10, 20, 30 or 60 seconds) after the last stick input. Very handy if you're prone to leaving your set switched on by mistake.

Other enhancements include stick activated switches, 7-point curves on all mixes and a Swash Ring option, which allows helicopter fliers to fine-tune their swash setup and

prevent binding when the sticks are in to corners. Don't ask me too much about this, it's a 3D thing!

TELEMETRY

The 9X has a superb telemetry capability which I've used to very good effect with the 9. Taken for granted now but undeniably useful is the voltage display for your model's on-board Rx battery. This is standard fare on the 9 and 9X and doesn't require the purchase of additional on-board sensors. However, if you're

AIRCRAFT PROGRAMMING

- 9 different wing types including 3 flying wings
- 5 tail types
- 7-point throttle curve
- Throttle cut
- Idle down
- Fuel mixture
- Airbrake
- Airbrake-to-elevator mix
- Aileron-to-rudder mix
- Snap roll
- 3-axis gyro sensitivity adjustment
- Elevator-to-camber mix
- Rudder-to-aileron mix
- Aileron differential
- Aileron-to-flap mix
- Camber mix
- Flap Control
- V-Tail
- Delta mix
- Ailevator



HELICOPTER PROGRAMMING

- 6 swash types
- 7-point pitch curve
- 7-point throttle curve
- Throttle cut
- Gyro sensitivity
- Needle control
- Swash-to-throttle mix
- Rudder-to-throttle mix
- Fuel mixture
- Throttle hold
- Swash mix (ring / calibration)
- Revolution mix
- Governor (3 rates)

Flash 8 and Flash 7) and digital servos, i.e. where the advantages of that 4096 high resolution response and 7ms refresh frame rate can, hopefully, be appreciated.

NEW FAVOURITE?

Having been an Aurora 9 (and now 9X) user for some time I thought you might like me to relate one or two of the small details that have helped endear me to the set. Top of the list is definitely the overall feel of the thing and the general impression (transmitted via the gimbals, switches and sliders) of owning a quality piece of kit. I also like the ease with which the touch screen allows you to interface the programming options and make selections. A perfect example of this is the throttle lock option where, to activate it, you simply press and hold the 'Model' icon. That's it! To release you follow the same procedure. Similarly, the timers are located in the bottom right-hand corner of the home screen. Touch them with your finger and, presto, the whole LCD is occupied by two large and very visible stopwatch displays.

I don't know about you but when installing radio gear I'm always getting confused as to which servo plugs into which channel. Fortunately the Aurora makes finding this

Apart from a colour change, outwardly the 9 and 9X are identical. The updates lie at the back of the set, but primarily within.

Removing the rubber finger grip reveals the warning buzzer plus inset screws for altering the mode and ratchet tension.

of a mind to know in-flight engine temperature, rpm, height, ground speed, air speed, fuel level or your electric power system's current and voltage, you'll need to make additional purchases. In a review of Hitec's telemetry offering back in the January 2012 issue I found the whole thing beautifully easy to install and operate and was pretty pleased with the results. At the time, my main issue was having to glance down at the transmitter's LCD to read the real-time information whilst flying. This, however, seems to have been at least partly addressed with the arrival of a voice announcing system, indeed given that there are also a few new sensors on offer, my plan is to re-visit Hitec telemetry later in the year to see if my earlier questions have been answered. Should be interesting.

By the way, in a related matter, it's worth noting that the telemetry function can only be performed when using Optima series receivers. The latest Minima and Maxima range



does not offer this capability. Moreover, while we're discussing receivers, note that Maxima units are designed to work only with second-generation AFHSS radios (Aurora 9X,

A larger capacity 2000mAh NiMH replaces the 1300mAh version in the Aurora 9.

Having used the 9 now for three years I've been delighted by the performance of the touch screen, not least its ability to remain free of scratches!



GLIDER PROGRAMMING

- 9 different wing types including 3 flying wings
- 5 tail types
- Motor control (on / off switch)
- Airbrake
- Airbrake-to-elevator mix
- Aileron-to-rudder mix
- Elevator-to-camber mix
- Rudder-to-aileron mix
- Aileron differential
- Aileron-to-flap mix
- Delta mix
- Camber mix
- Flap control
- Ailelevator
- Butterfly
- V-tail
- 3-axis gyro sensitivity adjustment
- Launch mix

information very easy, indeed just two finger presses take you to the Channel Function display which provides the receiver channel number and servo function information. Simple but oh-so useful. Of course, all this is jolly nice, however it's been the system's rock-solid dependability

that's been its most appealing quality and I've every reason to suspect the 9X will be the same.

Priced at £329.99 (£300 on the street), with nine channels and 30 model memories to fill, the Aurora 9X offers incredible value for money in my opinion and, though I've said it many times before, is probably all the transmitter most of us will ever need. Of course, that won't stop us buying new ones because, for us R/C flyers, our transmitter is our cockpit. And besides, who can resist a new set of gimbals, dials and switches?

My personal view is that the 9X won't be adopted in huge numbers by existing Aurora 9 users, simply because it's not too far removed. That said it does address some of the minor shortcomings of the original and really is worth consideration if you're looking for a new radio. Personally, I'd like to see Hitec tackle an 11-channel set next. I reckon the company is on a roll and could make a very respectable job of it.

Oh, and as for the on / off switch, I can report a slight improvement in that the new one has a far more positive action, greater resistance and a definite 'click'. I guess I'll just have to live with it!



DATAFILE

Name:	Aurora 9X
Radio type:	9-channel 2.4GHz AFHSS and SLT compatible
Manufactured by:	Hitec RCD Inc.
UK distributor:	J. Perkins Distribution Ltd. Tel. 01622 854300 www.jperkinsdistribution.co.uk
RRP:	£329.99
Weight:	32oz
Supplied with:	Charger, instruction manual, heavy-duty switch harness, sticker sheet and receiver wrap

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