



R33 GTR

R34 GTR



USING R32 GTR ECU

Overview

Both R33 GTR and R34 GTR ECUs use later model Hitachi ECUs with H8 processors. Only one option was available in Japan for tuning these ECUs which are difficult and expensive to obtain and require specialist installation and tuning.

Nistune does not have support for these ECUs but we have found that using a modified R32 ECU is a plug-in alternative to using a full aftermarket ECU and works seamlessly in the R33 and R34 models.

The only main differences when using this solution:

- The R33/R34 models both use different O2 sensors (Titania vs Zirconia). This is not an issue since the voltage levels output are only slightly different.
- The R34 models are supplied with Nissan Anti Theft system which is not available on the R32 model so an aftermarket immobiliser is essential for your vehicle.

Modifications

The following modifications are required to the ECU depending on model.

1. Sensor heaters (R33 and R34)

R32 runs the heaters whenever IGN power is on. R33/R34 ECUs control the heaters itself by supplying GND (the heater has 12V supplied to the other side whenever IGN is on) to turn heaters on. So what we need to do is supply GND to the heaters so they operate the same as R32 - they're on whenever IGN is on.

This is done inside the ECU by linking O2 sensor ground (**Pin 115**) to injector ground (**pin 116**)

2. Ignition Switch (R34 only)

NATS wiring in the R34 moves the ignition switch.

Wire from **pin 8** (R34 ignition input) to **pin 45** (R32 ignition input)

3. Crank Angle Sensor (R34 only)

NATS wiring in the R34 swaps the crank angle sensor signal wires. Swap over pins **41/51** with pins **42/52**.

4. Ignition Ground Refernce (R34 only)

R34 uses an external igniter. Wire ground (**pin 10/20**) through to ground (**pin 50/60**) to provide a ground reference in the R32 ECU to ground the R32 internal igniter drivers.

5. Add consult CLK line (R34 only)

R34 ECU does not require a clock line for consult communications. You will need to manually add a pin 31 into the ECU. You can remove and use the pin 54 (IMMU) since this is not used. The consult plug will need to be directly wired to the ECU harness following the 'MAF and consult pinout' document

Note that pin 54 (TPS idle contact point) is not wired into the R34 vehicle. This will not be used by the ECU.

Refer to the following page matching the colour coded descriptions

BNR32 RB26DETT ECU PINOUT

Injector Power Supply (Counter Electromotive Reflex Circuit)		109	101		Injector # 1 Control Signal
Injector # 5 Control Signal		110	102		
		111	103		Injector # 3 Control Signal
Injector # 6 Control Signal		112	104		Fuel Pump Terminal Voltage Control (FPCM) 1
		113	105		Injector # 2 Control Signal
Injector # 4 Control Signal		114	106		Fuel Pump Terminal Voltage Control (FPCM) 2
[R33/R34 Heater Ground]		115	107		Injector Ground
Injector Ground		116	108		Injector Ground
Ignition Signal # 6		11	1		Ignition Signal # 1
Ignition Signal # 2		12	2		Ignition Signal # 5
Ignition Signal # 4		13	3		Ignition Signal # 3
		14	4		AAC Valve
		15	5		
ECU Relay		16	6		Sub Electrical Fan Relay (Engine Temperature)
Injection Pulse Signal (Ti Monitor)		17	7		Tachometer Speed Signal
Fuel Pump Relay		18	8		Ignition Switch (IGN) [R33/R34]
Power Steering Oil Pressure Switch		19	9		Air Conditioner Relay (AC Cut Signal)
Ignition Signal System Ground		20	10		Ignition Signal System Ground
		O			
Clock (Synchronization Signal) CLK		31	21		Receive (Control Unit Data Reception) RX
Malfunction Indicator Lamp		32	22		Transmit (Data Sent From Control Unit) TX
		33	23		Detonation Sensor (Cylinders 1-3)
Air Flow Meter Ground		34	24		Detonation Sensor (Cylinders 4-6)
Air Flow Meter Intake Air Quantity (Front)		35	25		Wastegate Valve Control Solenoid Valve
Intake Air Temperature Sensor Signal		36	26		Air Flow Meter Ground
		37	27		Air Flow Meter Intake Air Quantity Signal (Rear)
Throttle Sensor Signal Opening Output		38	28		Engine Temperature Sensor Signal
		39	29		Exhaust Gas Sensor Signal (Front)
		40	30		Sensor Ground (TPS, Coolant Temp.)
Crank Angle Sensor (120 Degree Signal)		51	41		Crank Angle Sensor (120 Degree Signal)
Crank Angle Sensor (1 Degree Signal)		52	42		Crank Angle Sensor (1 Degree Signal)
Vehicle Speed Sensor		53	43		Ignition Switch (START Signal)
Throttle Valve Switch (Idle Contact Point)		54	44		Neutral Switch Signal
Exhaust Gas Sensor Signal (Rear)		55	45		Ignition Switch (IGN) [R32]
Throttle Sensor Output Signal		56	46		Air Conditioner Switch Signal
Throttle Valve Switch Power Supply		57	47		Check (Diagnosis Activation) CHK
Battery Power Supply		58	48		Throttle Sensor Power Supply
Control Unit Power Supply		59	49		Control Unit Power Supply
Ground (Control Unit)		60	50		Ground (Control Unit)

Notes on Sensors:

R32 uses a titania sensor. These sensors don't produce a voltage themselves - they're resistive. So resistance changes between rich and lean. This type of sensor produces a voltage of between approx 0V for lean to 1V for rich.

R33 uses a zirconia sensor. This type of sensor produces a voltage of between approx 0V for lean to 1V for rich. When running these sensors with an R32 ECU you'll find that they still work but the voltage range is different (read lower). The lean/rich trigger voltages must be adjusted using NISTune. Monitor the voltages in NISTune and adjust the rich/lean trigger voltages as required.

