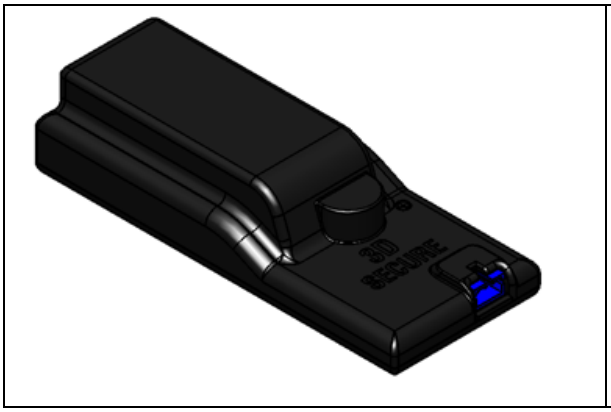
VUZITECH™ 3D SECURE USER INSTRUCTIONS



1 What is wireless VuZiTech 3D Secure?

VuZiTech 3D Secure™ is a **walk-up security system** for scooters and motorcycles. **3D Secure Relay™** is installed in the scooter engine compartment and is compatible with all scooters. The Relay wiring harness connects to horn and lights. A **3D Secure Keyfob™** authorizes operation.

Up to 4 Keyfobs can be paired with each Relay.

Each Keyfob can be paired with Relays on other scooters.

Each family member only needs one Keyfob to be able to operate any of the family scooters. The Keyfob can be on your keychain, or in your pocket, backpack or purse.

A blue LED indicator on the scooter shows status of the system and warns off thieves.

VuZiTech Anti-Hijack™ mode prevents violent theft of the scooter while you are riding. If the rider is knocked off, the scooter will stop and the alarm will sound.

Keyfob buttons: '**S**ecurity' is the default mode. Or choose '**A**nti-Hijack' mode. '**V**alet' mode temporarily disables the system. The Keyfob battery lasts up to 2 years. Battery replacement (CR2450) is simple and safe.

VuZiTech 3D Secure uses Gyroscopic technology to reduce false alarms on the scooter.

2 Features

Security Mode. Press 'S' to activate Security Mode.

Allows starting of the scooter only when a Keyfob is nearby. Start attempts are prevented when the Keyfob is not nearby, and the scooter will 'alarm' if moved.

Anti-Hijack Mode. Press 'A' to activate Anti-Hijack Mode.

Similar to Security Mode, except the Keyfob monitors acceleration. If the Keyfob experiences severe motion, it will flash the Red LED under the **A** key of the Keyfob and alert the Relay of a possible HiJacking. If the Relay loses contact for a short time with the Keyfob while the Keyfob motion alarm is activated, the Relay will disable the scooter.

Quiet Mode. Press 'V' when the scooter is off to activate Quiet Mode.

Quiet mode suppresses the 'walk up' and 'walk away' notifications (horn and lights) until cleared (by pressing V again).

Valet Mode. Press 'V' when the scooter is running to activate Valet Mode.

Valet mode allows the owner to let a friend or Valet operate the scooter without setting off the alarm or disabling starting. Valet mode is cleared on the first authorized start attempt with the Keyfob nearby.

Alarm Mode. Automatic.

If the scooter experiences motion when the Keyfob is not nearby, or when disabled after Anti-HiJack has disabled the scooter, the Horn and Lights will sound/flash for 5 seconds. This renews on any motion. If the scooter is left alone, the Horn and Lights stop.

Range Test Mode, near and far.

VuZiTech range can be measured by holding down the 'A' key. The horn will sound for every radio packet that is received. Normal coverage is a packet received slightly faster than one per second. Use this mode to measure radio range of the Keyfob. To get 'boosted power' to test long range, press a button, first, before starting range test.

Reset Mode. Turn off Anti-Hijack, Valet and Quiet modes.

To restore a Keyfob to default mode, still paired, hold down the **S** button until the scooter responds with a 'blare', a ½ second of horn and lights. On release, the Amber LED will double flash when it receives confirmation from the bike. If the scooter is not nearby, the Reset has no effect.

Bypass Mode. Use Plug or leave the keyfob on the scooter.

VuZiTech can be disabled either by leaving a Keyfob under the scooter seat or by un-plugging the Relay and attaching the VuZiTech Bypass Plug to the VuZiTech installation wiring harness.

3 Installation

Quick instructions. See VuZiTech Installation Manual for more detail.

Install VuZiTech wiring harness.

Harness	Description	Yamaha	Honda
Red	+12V Power	Red	Red
Black	Ground	Chassis or Batt Negative	Chassis or Green
Yellow A Yellow B	Cut IGN wire and connect either side to Yellow A and Yellow B.	Brown or Yellow	Brown or Black/White
or			
Yellow A Yellow B	Cut Spark wire and connect either side to Yellow A and Yellow B	Orange or Yellow/Brown	Orange or Yellow/Blue
Brown	Horn Positive	Brown	Brown
Brown	N/C	--	--
Brown	N/C	--	--
Blue	Horn Negative	Purple	Purple
Blue	Headlight (lo-beam)	Green	Green
Blue	Tail light (Brake)	Blue (L)	Blue (L)

Table 1 Typical Wiring Colors for common scooters

Some wires may need to be extended. Horn and lights may be easier to connect in the steering column. Keep Yellow wires short.

Install VuZiTech LED cable. Drill a 1/4" hole in Dashboard of Scooter. Insert LED holder and LED. Route cable to engine area, near VuZiTech Relay Wiring Harness.

Test that the scooter won't start.

Install 'Bypass Plug'. Confirm that the scooter will start.

Remove and save the Bypass Plug. Install the Relay. Connect the LED cable. Use Tie-wraps to secure the Relay. Confirm the LED flashes every 2 seconds. Confirm the scooter will start.

Pair the Keyfob. Hold a magnet to the Relay and Press/Hold the **S** and **V** keys for 3-5 seconds on the Keyfob. Listen for Scooter Horn and watch for Lights. Triple Chirp starts pairing. Second Triple chirp confirms it. Pair up to 4 Keyfobs. To remove pairing, hold a magnet to the Relay while plugging it into the harness.

Confirm the LED flashes every 5 seconds when the Keyfob is NOT present, and is otherwise Off.

4 Behaviors

This table describes the behaviors of the scooter's LED, Horn and Lights in all modes.

4.1 Scooter System behaviors

Mode	Keyfob Proximity	Scooter LED	Horn and Lights
Keyfob Proximity changes	Approaching	Stops flashing when Keyfob is 'near' in most cases.	Double Chirp, unless in 'Quiet Mode'
	Leaving (Out of range)	Resumes flashing once every 5 seconds, except in Valet.	Single Chirp, unless in 'Quiet Mode'
Standard Security Mode	Near	LED off.	Single Chirp when entering this mode. Otherwise none
	Far	LED flash every 5 seconds	none
Anti-Hijack Mode	Near	LED off	Single Chirp when entering this mode. Otherwise none.
	Far	LED flash every 5 seconds	none
	Triggered	LED off	Scooter disables. Alarm Mode Horn and Lights (for 5 seconds, repeating when the scooter moves).
Quiet Mode	Near	LED off	Single Chirp when entering this mode. Otherwise none.
	Far	LED two flashes every 5 seconds	none
Valet Mode	Near	LED one flash per second until bike is off plus 10 seconds, after Keyfob is not proximate.	Single Chirp when entering this mode. Otherwise none.
	Far	LED off.	none.
RangeTestMode	Near	Maintains normal behavior.	Horn and Light chirp on each reception of a Radio signal. Every 0.6 seconds in good coverage. Hold still for normal range. Shake periodically for 'bonus' range.
Pairing mode	Near	Green/Red/Amber repeating for 10 seconds	Triple chirp, then either a single chirp for failure or triple chirp for success..
	Far	None.	None
Reset	Near	None	½ long Horn/Lights "Blare".
	Far	None	None.
Alarm	Near	Never happens. Scooter won't alarm if Keyfob is near	None. Never happens. Scooter won't alarm if Keyfob is near.
	Far	LED 50% on/off every second	50% on/off every second.

Table 2 System Behaviors

4.2 Keyfob Behaviors

To prevent accidental mode changes, most mode changes require a double-press of one of the three buttons. Successful mode entry is confirmed on the Keyfob with a double-flash of the LED.

Behavior	User Action	Keyfob LED	Result
Pairing	Hold down **A** and **V** buttons for 3-4 seconds, then release	Green/Red/Amber flashing LED sequence.	Keyfob enters Pairing Mode for 20 seconds, then resumes normal behavior.
Reset	Hold down **S** button until the scooter responds, then release.	Double Amber Flash AFTER bike has responded	No action if not near Scooter. Scooter will exit Anti-Hijack mode, Quiet Mode, and/or Valet Mode. Scooter will 'blare' Horn and Lights for ½ second.
Security Mode	Press **S** button	Double Green Flash	Scooter will sound a single 'chirp' on mode change.
Anti-Hijack Mode	Press **A** button	Double Red Flash. Single flash when Keyfob is shaken.	Scooter will sound a single 'chirp' on mode change.
Valet Mode	Press **V** when engine running	Double Amber Flash	Scooter will allow starts and will not alarm until Valet mode is cancelled by Reset or by a successful Start attempt with the Keyfob nearby. (Normal use of the Scooter will turn off the Valet mode.)
Quiet Mode	Press **V** when engine is NOT running	Double Amber Flash	Walk-up 'double chirp' and walk-away single chirp are **suppressed** until revoked by pressing **V** again (when bike is off) or **Reset**
Range Test Mode	Hold down the "**A**" button	None	Scooter will sound a 'chirp' for each RF packet, allowing the user to experiment with range. (For boosted power, press any key before entering rang test.)
Alarm	Shaking the Keyfob	Red LED flashes	Only in Anti-Hijack mode.

Table 3 Keyfob Behaviors

5 Relay UI/Ux

Relay User Interface/User Experience are described in talbes 5.1 and 5.2.

5.1 LED Behaviors

LED Behavior	State≈	Description
One flash per 2 sec	Not Paired	Starts allowed, no alarms
One flash per 5 seconds	Paired	Scooter will only start with Keyfob nearby or in Valet or bypass modes
Rapid, 2 flash per sec	Pairing mode	Lasts 20 seconds from magnet
No LED	Running, Keyfob nearby or in Valet mode	When running, the LED is usually off.
One flash per second	Valet Standby	When the Keyfob has requested Valet, before the Keyfob leaves the area. LED goes out when the Keyfob leaves and stays out until the Keyfob returns and the scooter is started.
Double Flash, every 5 seconds	Walk-up/Walk-away quiet	No beep or double beep as Keyfob proximity is lost or regained. Resets on Start.
On/off each second (50%)	Alarm	Scooter horn and light are also going off.

Table 4 Relay LED Behaviors

5.2 Horn/Lights Behaviors

Horn sounds include a Beep, which is a single, short sound, a Chirp, which is two quick sounds in succession. The text below says 'Single Beep', but the lights will also flash at the same time as the horn, in the same pattern, if connected correctly.

Horn/Lights	State	Description
Single Beep	Relay mode change.	Horn will notify user that a change in mode was received due to activity on the Keyfob
	Keyfob proximity lost.	"Walk-away' notification
	End of Pairing, unsuccessful	Timeout after a Pairing attempt when no successful Pair has been made.
	Erase Pairing, successful	When power is applied to the Relay while a magnet is held in place. LED will resume slow rate of 1 flash per 5 sec.
Chirp (double beep)	Walk-up	When Keyfob approaches scooter.
	End of Valet mode	When Keyfob is proximate and scooter is started.
	Start of Valet mode	When Valet mode is indicated, while the scooter is running, by two quick presses of the Keyfob.
Blare (1/2 second Horn/Lights	Reset received by scooter	Alternate way to turn off Anti-Hijack, Valet and Quiet Mode from pushing and holding the S button.
On/Off beeping for 5 seconds	Alarm mode	Caused by scooter motion when Keyfob is not proximate and scooter not running..
Regular beeping	RangeTest Mode	Active while holding down **A** key in order to test radio range.

Table 5 Relay Horn/Lights Behaviors(s)

6 FCC

FCC statements:

“This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.”

“Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.”

7 FAQ

7.1 What is VuZiTech 3D Secure?

What is VuZITech 3D Secure?

VuZiTech 3D Secure is a 'walk-up' security solution for scooters. Operators don't have to push any buttons to secure or un-secure the scooter. With a keyfob in your pocket, on your keyring, in your purse or backpack, just walk-up to use the scooter and when you walk away, the scooter is secured. VuZITech 3D secure also has a patent-pending protection against hijacking. If someone knocks you from the bike, it will disable a short distance away.

How VuZiTech 3D Secure different/better than competitors?

1) Walk-up enable, automatic security
2) Anti-Hijack prevention
3) Up to 4 keyfobs per scooter
4) Keyfob can control up to 4 scooters, you only need to carry one keyfob for multiple scooters
5) Install on any bike (IGN/+Spark/-Spark/+/-Spark, +Horn/lights, -Horn/lights, +/-Horn/lights)
6) Attractive keyfob and Relay
7) Easy-install wiring harness and bypass plug
8) Long battery life 1-2 years, and easy battery replacement

Can I use it with multiple Scooters?

Yes.

Can multiple people use it with one Scooter?

Yes. Up to 4 Keyfobs can control a single scooter.

How many keyfobs can work with one Scooter?

4.

Can I let a friend use my Scooter?

Yes. Use Valet mode, or install the bypass plug.

What happens when my Scooter needs servicing?

Install the bypass plug, or put into Valet mode, or leave the keyfob on your keychain.

How long does the battery last?

One to two years.

Where can I get replacement batteries?

CR2450 coin cell batteries are common.

Does VuZiTech 3D secure work with my Smart Phone?

Not yet.

Does VuZiTech 3D secure use Bluetooth?
No

Can a Smart Phone intercept my keyfob signals?
No

How does 3D Secure avoid interference from other radios?
Radio packets are frequent and very, very short. They dodge interference by being very short and very often.

Will my smartphone interfere with 3D Secure?
Not yet. **VuZiTech 3D Secure Pro** is Coming…

Is VuZITech 3D Secure waterproof?
Yes. The Keyfob is water-resistant. The Relay is waterproof to 1 meter

7.2 How is VuZiTech 3D Secure used?

What is "walk-up" security?
This means you don't need to press a button to enable or secure the scooter. Just 'walk-up' to use the scooter and 'walk-away' to secure it.

How do you use Valet mode?
Double Press the V button when the engine is running and you are close to the scooter.

What do I do if the scooter makes too much noise?
Quiet mode allows you to turn off the 'walk-up' and 'walk-away' chirps. Double press **V** when the scooter is off and you are close.

How does the Anti-Hijack feature work?
Double Press the **A** key when you are close to the scooter. If the keyfob is bumped hard, it will alarm the scooter. If the scooter leaves the keyfob, the scooter will be disabled. Don't put the keyfob on your keychain if you wan to use Anti-hijack. It will be bumped often, but more importantly, it will go away with the scooter and not stay with you.

Will the guy stealing my bike try to steal the keyfob, too?
They won't know to look for it until its too late.

How much power does 3D Secure take from my scooter?
About 1.5mA at 12V when the keyfob is nearby, and about 2.5mA at 12V when it is not. This is a very low current drain on your battery, often less than the rest of the bike takes just when sitting 'off'.

Will 3D Secure shut off my scooter while I'm riding?
In Anti-Hijack mode, this is possible, if the keyfob is shaken hard, and if communications are disrupted. This should not be common.

How do I cancel Valet mode?

Start the scooter with the keyfob nearby. Valet mode ends automatically. Or…

Press and hold **S** button while near Scooter for a 'system Reset'. Scooter will beep ½ second to confirm.

How do I cancel Quiet mode?

Start the scooter with the keyfob nearby. Quiet mode ends automatically. Or…

Press and hold **S** button while near Scooter for a 'system Reset'. Scooter will beep ½ second to confirm.

How do I switch between Security mode and Anti-Hijack mode?

When near the scooter, press **S** to change to Security mode, or press **A** to change to Anti-Hijack mode. Keyfob LED flashes once

How can I measure the range of my Keyfob?

Press and hold the **A** key. The Scooter's horn will beep each time it hears a radio packet (every 0.6 seconds when very close.) Hold with just two fingers to avoid shielding the radio signal with a finger.

7.3 How to install VuZiTech 3D Secure?

Is VuZiTech 3D Secure easy to install?

Yes, easy for anyone familiar with wire strippers. If that's not you, find a professional.

Does 3D Secure need to be installed by a professional?

No, self-installation is simple for anyone comfortable working with low voltage wiring.

What kind of wires can I use to enable/disable my bike?

IGN wires are generally 12V wires which are turned on when the key is turned to 'ON' and are required for the bike to run.

Coming from the scooter's CDI (Capacitive Discharge Ignition – sometimes called the Ignition 'brain') are positive, negative or combined positive/negative pulses of up to 600V which drive the scooter's spark plugs. VuZITech 3D secure works with CDI outputs, too, all three types. A voltmeter will not show a DC voltage on these wires and may not show an AC voltage either. The pulses are too brief. Look to the wiring guide or to your scooter's wiring diagram to find the spark output of the scooter's CDI.

VuZiTech 3D works with any of these enable/disable options without setting or adjustment. Just cut the wire and hook our Yellow wires to each side of the cut wire.

Do I have to make any setting to 3D Secure for my type of scooter?

No. Just hook up according to your scooter wire colors (see wiring chart in Table 1, above).

What if my scooter's wiring is unusual. Can I still use 3D Secure?

VuZiTech 3D works with all known scooters. Contact a professional installer for help.

What types of scooters can use 3D Secure?

VuZiTech 3D Secure is compatible with all scooters.

Can 3D Secure be used on a car?
Yes. Most car IGN wires or Start wires, in the steering column, are less than 10 Amps, which is the rated maximum steady current for VuZiTech 3D Secure. VuZiTech 3D Secure works with a wide input voltage range of 6.2V to 400V, so it will work with most cars.

If I use the Spark wire to disable the bike, 3D secure will see hundreds of volts. Is that okay?
Yes

If I use the IGN wire to disable the bike, 3D Secure will see only 8-12 volts. Is that okay?
Yes.

What happens if my battery voltage drops very far?
Below 8.5V battery voltage, VuZiTech 3D Secure will turn off. Normally, VuZITech 3D Secure consumes only 1 to 3mA, but when below 8.5V, current consumption drops to essentially nothing (1 to 10 uA). When this happens, charge your battery before attempting to start. To kick-start your scooter, use the Bypass Plug (in place of the Relay) until your scooter starts and re-charges the battery.

If my battery is dead, can I kick-start my Scooter with 3D Secure?
Probably not. Please install the bypass plug to support kick starting.
For added security, VuZiTech 3D Secure is 'Fail Secure', meaning if someone disables power or ground, the scooter will prevent operation. One side-effect is that kick-starting may not work.

7.4 Where to buy VuZiTech 3D Secure?

Where can I buy VuZiTech 3D Secure?

Can I buy 3D Secure in the U.S.?
Not yet, but contact us if you are interested.

If I have a problem with 3D Secure, who do I call?

If I have to make a warranty return, who do I call?