

1995 Rialta QD/SB TPMS & Backup Camera Upgrade

After having a close call with a flat tire and an IDIOT who wanted to sit in the blind spot on the right hand side of the motor home I decided I wanted to do 2 things to the Rialta.

1. Add a tire pressure monitoring system.

I had several prerequisites for the TPMS,

- a. I wanted a system that used internal sensors not the screw on the valve type.
 - b. I wanted metal valve stems.
 - c. Wanted the system to use one of the existing displays I already had (7" LCD Radio or 7" GPS via aux video input). Turned out that it can display to both however the GPS screen requires you to have an icon that is displayed when there is a video signal present.
 - d. Had both a visual and an audio alarm that could be set to low or high pressure or temperature. The alarm should override anything on the display screen i.e. backup cameras.
 - e. Had a way to view the pressure on demand (at the push of a button).
2. Upgrade my backup camera to add side cameras to eliminate any blind spots and add cameras to both hitch mount trunk and the scooter trailer.
I wanted a couple of things here also.
 - a. Side cameras needed to be enclosed in some type of case nothing too large that would stick out the side of the motorhome.
 - b. Side cameras should be wide angle view to see as much area as possible.
 - c. All cameras should include night vision (infrared LEDs and sensors).
 - d. Left and right side cameras should trigger with the turn signals or with a dedicated L/R switch. Mine work with the turn signals as long as the camera switch is turned on.
 - e. Need to be able to turn the backup cameras on and off at will. I did not want them to only work in reverse. Mine don't come on automatically in reverse you have to turn on the camera switch. That way you can see behind you while you are on the road.

- f. Be able to switch between any of the 2 active backup cameras. Either the one on the storage box or the one on the trailer (since you can't have both of them at the same time) and the one that is mounted above the rear window of the Rialta.
- g. All the cameras must be color in the daytime (they will be black and white at night with the infrared).

It took some searching but I came up with all the necessary parts.

The TPMS is a Rupse TPMS Tire Pressure Monitor System.

It had had all the necessary functions and parts to fill the bill perfectly. Found it on sale at Amazon.



Installation was fairly simple power comes from the ACC side of the switch. That way it is only on when the vehicle is running. The nice Yellow activation button is wireless so you just stick it someplace handy. There is a video in (I plugged the video coming from the backup cameras into this so the TPMS can override the video coming from the cameras if there is an alert situation). The video out goes to the AUX video in on the radio. My radio has several video in's I use the AUX so I can monitor the cameras while driving and not have to be in reverse for them to come on. I also plug the Sirius-XM Satellite Radio into the AUX audio input so I can listen to the Satellite radio and monitor the cameras without touching the radio. I just hit the camera switch on the dash and the backup camera comes on. I am adding an ON/OFF/ON toggle switch to the backup cameras so I can select either the Upper camera, Cargo camera or Trailer camera when it is attached. The Cargo and Trailer cameras feed thru a 5 way plug on the back of the Rialta. I used a Y jack to combine the video signal into one cable that I already have run to the dash. I ran 2 power circuits to the back so depending on which camera you supply power to determine which video you see.

I needed some special hardware to do all this fancy camera work. I found a device that switches left, right and rear video signals using input triggers. It is a Perimeter View 20-VS002 Video Switching Box by Mito Corp. It takes input from 3 video cameras and outputs video depending on which trigger is set. The triggers are 12v power coming from the backup lights or a turn signal. First let me say that connecting this is not hard BUT it is a LOT of wires! You need to run the supplied video cable to each camera along with a 12v power line. The switch supplies power to the camera that is triggered that way the cameras

are not drawing power all the time. I am only triggering the side cameras so I had to run a wire to each turn signal. You might could find these under the dash but for me it was easier to just run a wire to the front turn signals and you only need 1 wire for each.



The kit I got had adapters for the video and power connections along with the trigger and dc connections. I also got some female 5.5mm DC power connectors to plug the camera power leads into. This saved having to splice the power wires to the cameras. I got 20 pairs from Amazon for 15 bucks.



Turns out the switch has 2 video outputs so I connected one to the TPMS input and the other to my GPS. That way I can view the cameras even if the radio is turned off. However as I stated earlier you have to select an icon on the GPS that displays anytime a video signal is present. To connect to the GPS I did have to get a video input adapter. Amazon to the rescue again! I also purchased several short RCA cables to connect the cameras to the TPMS and the TPMS to the Radio. Like I said LOTS of WIRES!



Here is the completed wiring with the video switch and TPMS controller. All this goes behind the plastic kick panel and heater outlet which I have removed in this photo.



Now the cameras

I did not want to mount the side cameras to the cab body. You have to drill 4 - 1/8 inch mounting holes and 1 - 1/2 hole for the video and power plugs to pass thru. I did not want to put those in the metal cab because of possible rust problems in the future. I chose to mount the side cameras on the front bumper. Easy to drill and gives a great view down the side of the motor home. I may paint the camera case to match the bumper later but it looks ok just black. The camera can be rotated 360 degrees and moves up/down/left/right by loosening the screws on the cover.



The Right camera mounted to the bumper.

The Right camera view, when right turn is on.

As you can see the camera has a wide angle view of the lanes beside you. NO MORE BLIND SPOTS!

Normally the radio screen looks like this while listening to the satellite radio. The VW logo and touch inputs for the equalizer, volume and input selector are visible, along with indicators for Bluetooth connections and the time. You can see that the No signal indicator is telling us that no video signal is present on the AUX input.



But if you hit this switch (soon to be replaced with one that can select between 2 backup cameras).



Then you get this on the Radio screen!



Snap on a turn signal and you get one of these.....



Left!

Right!

If you push the TPMS button beside the radio or there is a problem with a tire you get this. You will see the tire pressures and temperatures. The pressure can display in Bar or LBS and the high and low limits can be set using the TPMS button and a pressing sequence.



Well there you go. It took a lot of research to find all the parts and to install them to get the results I was looking for. I met all my requirements and then some (the dual displays was a plus). I am currently working on a custom mount for my GPS. It was mounted with the suction cup and arm that came with it that I modified to mount on top of the dash. It was ok but I wanted something that looked more built in. I found a double DIN plastic under the dash radio case that I modified to hold and cover the GPS. It is just about finished (waiting on the paint to dry). Here is a sneak peak of that project (will have more when it is finished).



Just like owning a classic car you are never finished

Robert