

## Antenna Information for sp400 (for Quatech radio that falls under FCC: F4AWLNG1 is used)

Description: A chip antenna by Taiyo Yuden (#AF216M245001) is mounted on a custom PCB board specifically designed by Hewlett-Packard to mount into the front of the sp400. The chip antenna has a matching circuit tested and determined for the sp400 unique configuration. There is also a low pass filter; all components are mounted on the custom PCB board. The antenna board is designed to be removed and replaced if faulty.

According to the datasheet from Taiyo Yuden the antenna has the following specs:

2.4GHz Helical Antenna (P/N: AF216M245001; Manufacturer: Taiyo Yuden); More information:

<b>Efficiency</b>	<b>&gt; -1.6dB</b>	<b>(69%)</b>
<b>Peak Gain</b>	<b>&gt; +1.7dBi</b>	
<b>Average Gain</b>	<b>&gt; +0.0dBi</b>	<b>(ZX plane-Vertical polarization)</b>

3.0 Electrical characteristics		
3.1 Input Impedance	:	50 $\Omega$ (Specified value )
3.2 Frequency bandwidth	:	2400 to 2500MHz
3.3 Gain*1	:	+1 dBi min. (Peak) -2 dBi min. (Vertical polarization average gain of omni directional plane)
	:	-6 dBi min. (Total average gain)
3.4 VSWR in bandwidth*2	:	3.0 (Typical)
* 1: Total average gain in 3.3 of electrical characteristics shall be total average gain of V, H polarization in X-Y, Y-Z and X-Z side (Average of total measurement points) in mounted on Taiyo Yuden evaluation board.		
* 2: VSWR in bandwidth in 3.4 of electrical specification shall be VSWR mounted on Taiyo Yuden on standard board.		

Coax Cable used from the antenna board to the Wifi module is approximately 125mm +/-5mm in length and diameter is 1.13mm; one end has an IPEX connector (20278-112R-13) to connector to module (radio) the other end is soldered directly to board. Manufacturer is Wellshow

Picture of antenna PCB outside of unit:



Picture inside unit with case off of unit:

