

## Frequency Table for South Indian Classical Music

This table is presented with a view to provide a pitch reference for Karnatak Music. Confusion often arises regarding the tonic (*Adhara Shadja*) frequency of South Indian classical singers. Some people incorrectly place the male *Adhara Shadja* around C4 (see table below) and female *Adhara Shadja* around G4, whereas these should be C3 and G3 respectively. In the table below, the pitch frequencies are shown along with the South Indian reference pitch designations such as 1, 1.5, 2 etc. Thus, the correct frequencies are B2(0.5), C3(1), C3\*(1.5), D3(2), D3\*(2.5), E3(3), F3(4), F3\*(4.5), G3(5), G3\*(5.5), A3(6)=220Hz, A3\*(6.5), B3\*(7) (and B4, C4 etc.).

Remarks	Designation	Sruti/Kattai	Frequency
	A1		55.0000000
	A1*		58.2704700
	B1		61.7354100
<i>Normal Indian voice Mandra range</i>			
	C2		65.4063900
	C2*		69.2956600
	D2		73.4161900
	D2*		77.7817500
	E2		82.4068900
	F2		87.3070600
	F2*		92.4986000
	G2		97.9988600
	G2*		103.8262000
	A2		110.0000000
	A2*		116.5409000
	B2	0.5	123.4708000
<i>Normal Indian Voice Adhara Shadja</i>			
Male <i>Adhara Shadja</i>	C3	1	130.8128000
Male <i>Adhara Shadja</i>	C3*	1.5	138.5913000
Male <i>Adhara Shadja</i>	D3	2	146.8324000
Instrument Solo <i>Adhara Shadja</i>	D3*	2.5	155.5635000
Instrument Solo <i>Adhara Shadja</i>	E3	3	164.8138000
Female <i>Adhara Shadja</i>	F3	4	174.6141000
Female <i>Adhara Shadja</i>	F3*	4.5	184.9972000
Female <i>Adhara Shadja</i>	G3	5	195.9977000
Female <i>Adhara Shadja</i>	G3*	5.5	207.6524000
Female <i>Adhara Shadja</i>	A3	6	220.0000000
-	A3*	6.5	233.0819000
-	B3	7	246.9417000
Male <i>Tara Shadja</i>	C4	8	261.6256000
Male <i>Tara Shadja</i>	C4*		277.1826000
Male <i>Tara Shadja</i>	D4		293.6648000

Instrument Solo <i>Tara Shadja</i>	D4*		311.1270000
Instrument Solo <i>Tara Shadja</i>	E4		329.6276000
Female <i>Tara Shadja</i>	F4		349.2282000
Female <i>Tara Shadja</i>	F4*		369.9944000
Female <i>Tara Shadja</i>	G4		391.9955000
Female <i>Tara Shadja</i>	G4*		415.3047000
Female <i>Tara Shadja</i>	A4		440.0000000
-	A4*		466.1638000
-	B4		493.8833000

The data presented above is further validated by presenting the spectrum of a male voice and a female voice. For the sake of clarity, a zoomed view of the plot around the fundamental is also shown.

From the spectrum analyzer plots of male and female voices, it can be seen that:

Male voice singing at C (all units in Hz.)

1. Measured fundamental frequency of Adhara Shadja: 132.723 (close to C3=130.8)
2. Measured fundamental frequency of Panchama: 198.344 (close to G3=196, approx 1.5 x Adhara Shadja)
3. Measured fundamental frequency of Tara Shadja: 264.97(close to C4=261.6)

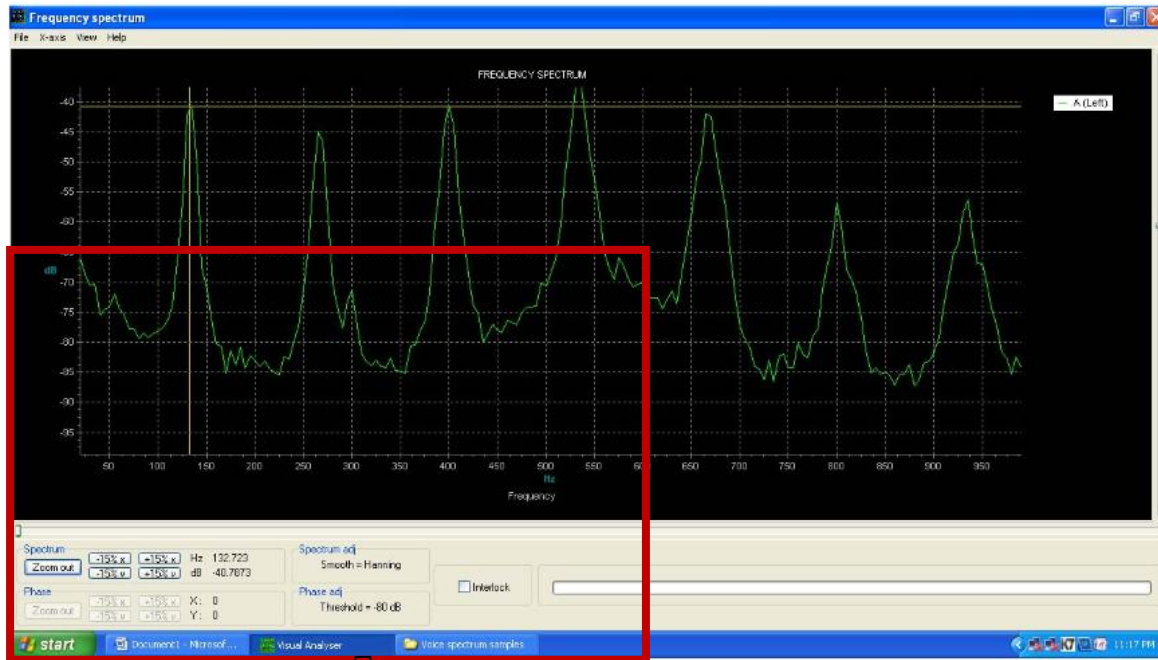
Female voice singing at G (all units in Hz.)

1. Measured fundamental frequency of Adhara Shadja: 200.082 (close to G3=196)
2. Measured fundamental frequency of Panchama: 297.011(close to D4=293.7, approx 1.5 x Adhara Shadja)
3. Measured fundamental frequency of Tara Shadja: 397.307(close to G4=392)

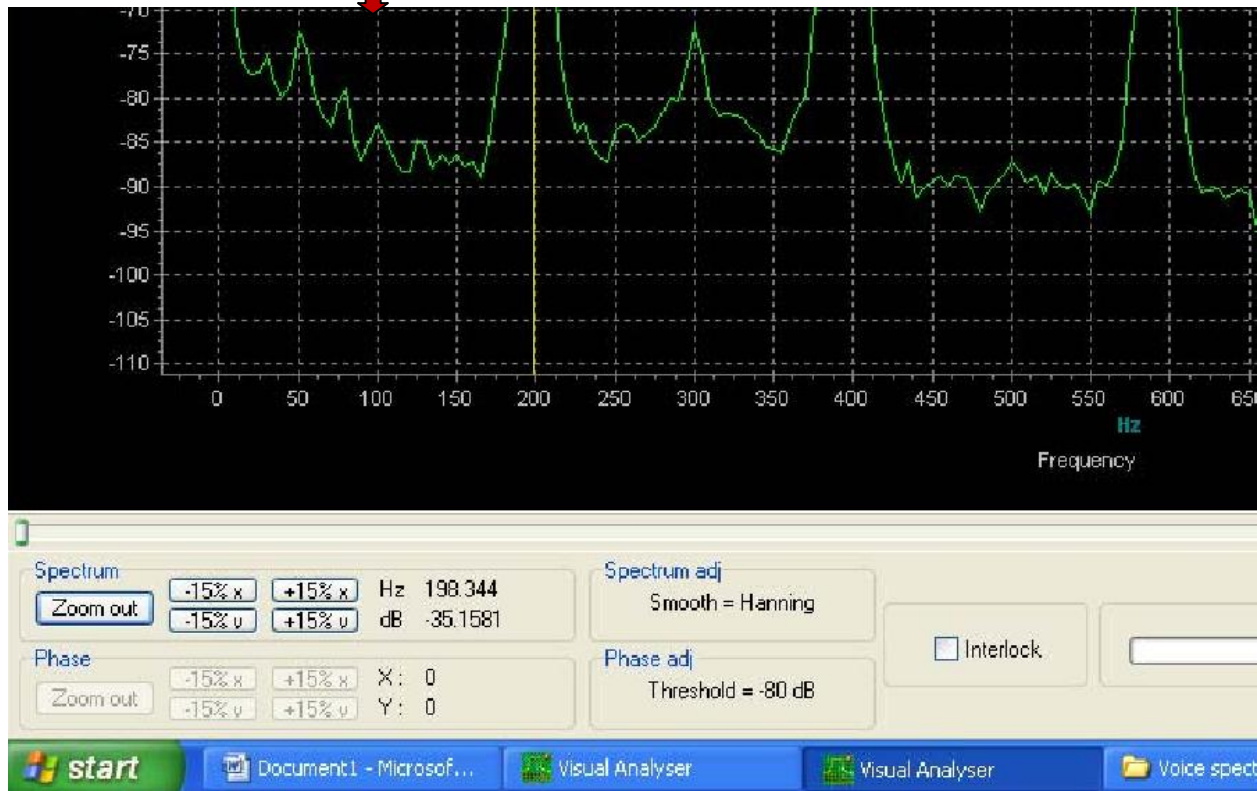
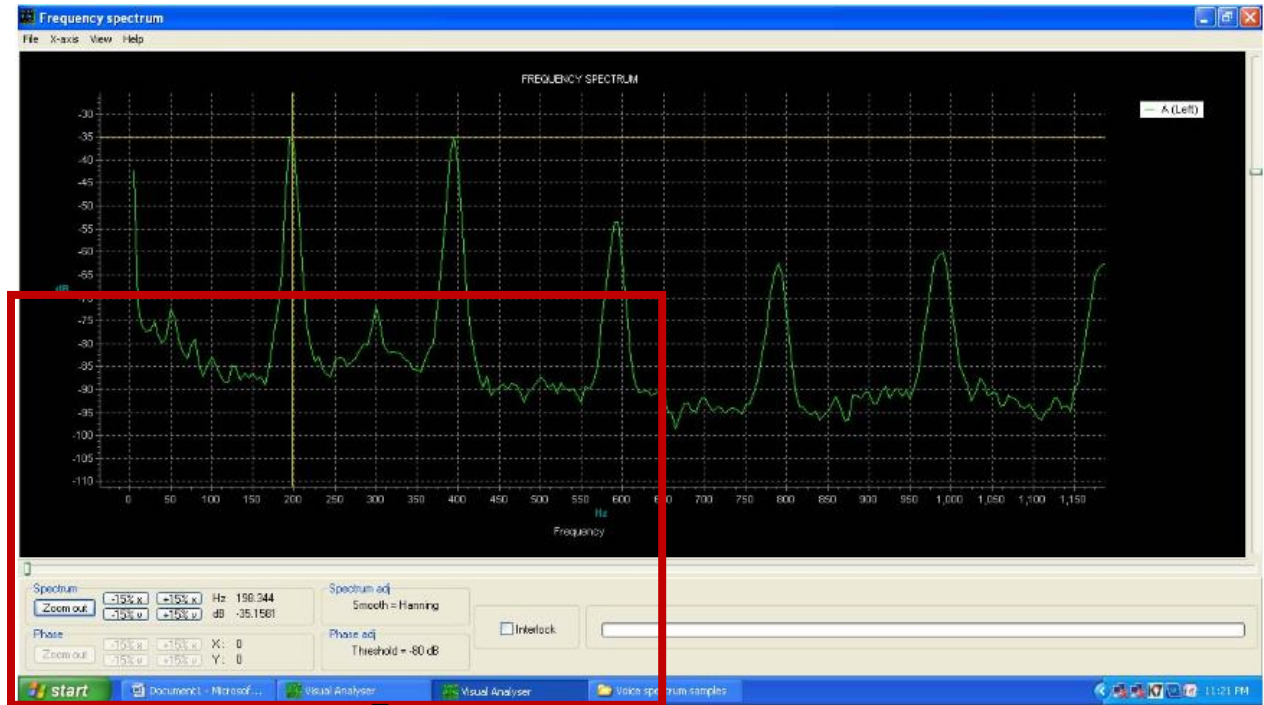
**Note: The Minor variation in the spectrum analyzer readings above is mainly due to the frequency error in the software spectrum analyzer due to limited data sampling.**

# Spectrum samples

Male Voice, Adhara Shadja (tonic), pitch=C

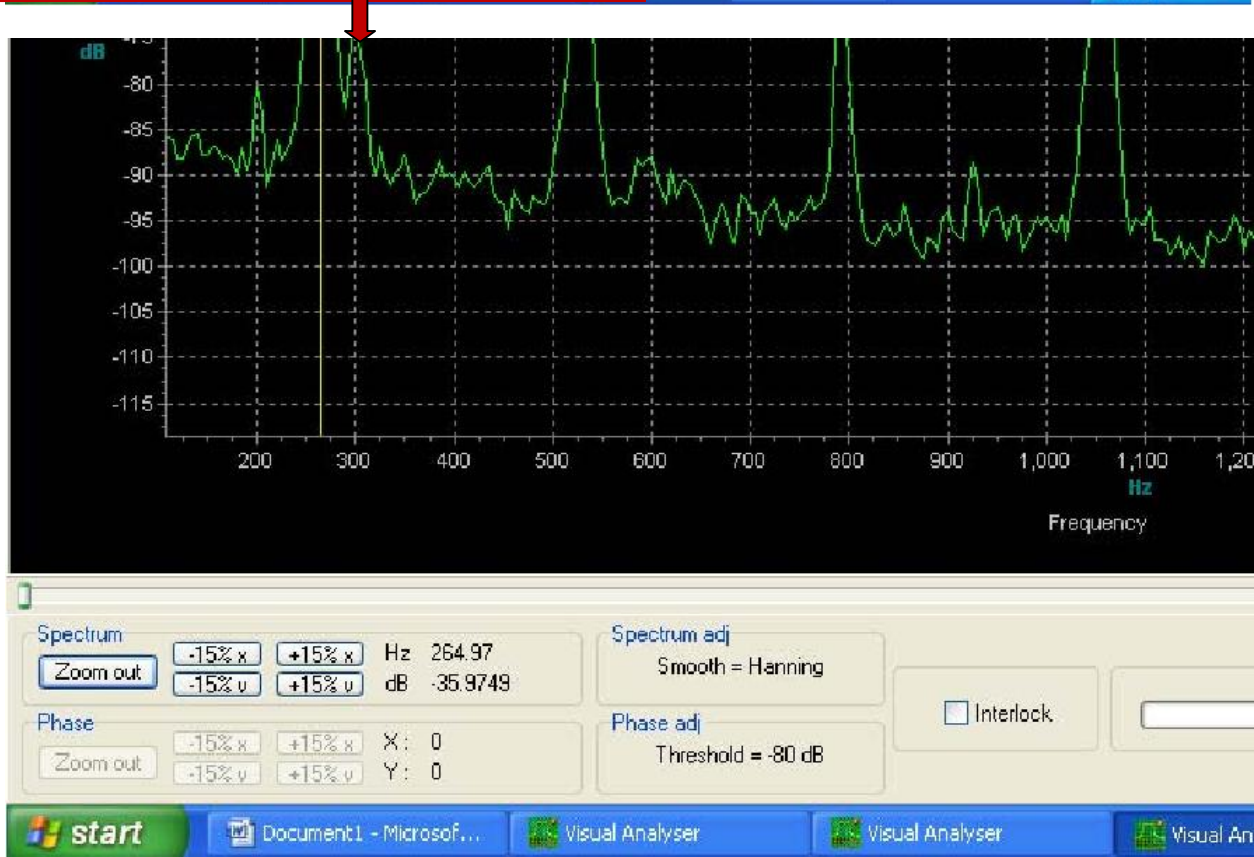
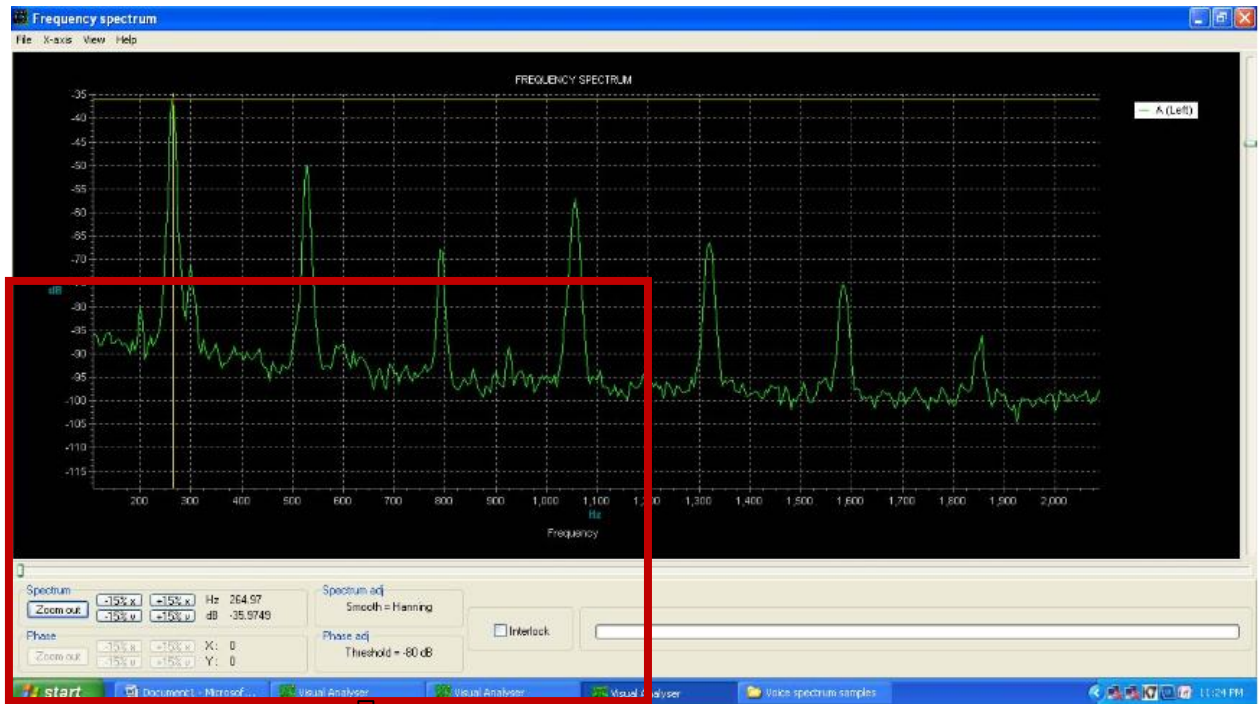


# Male Voice, Panchama, pitch=C

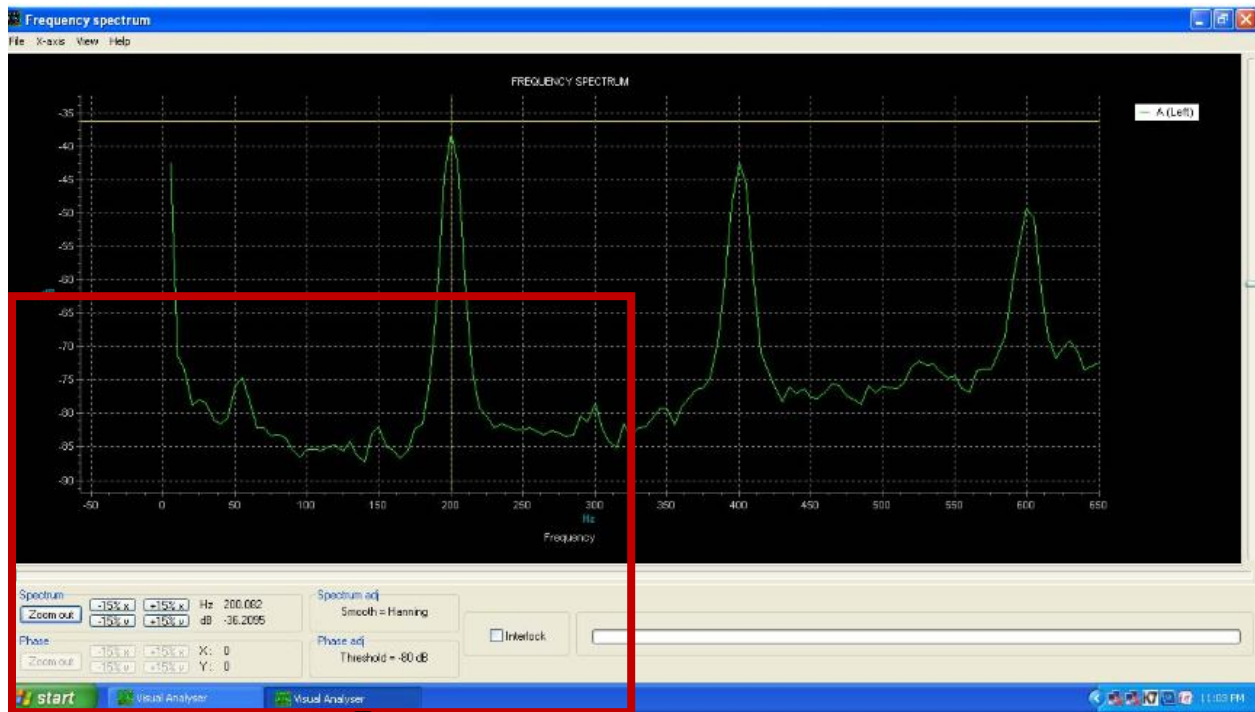




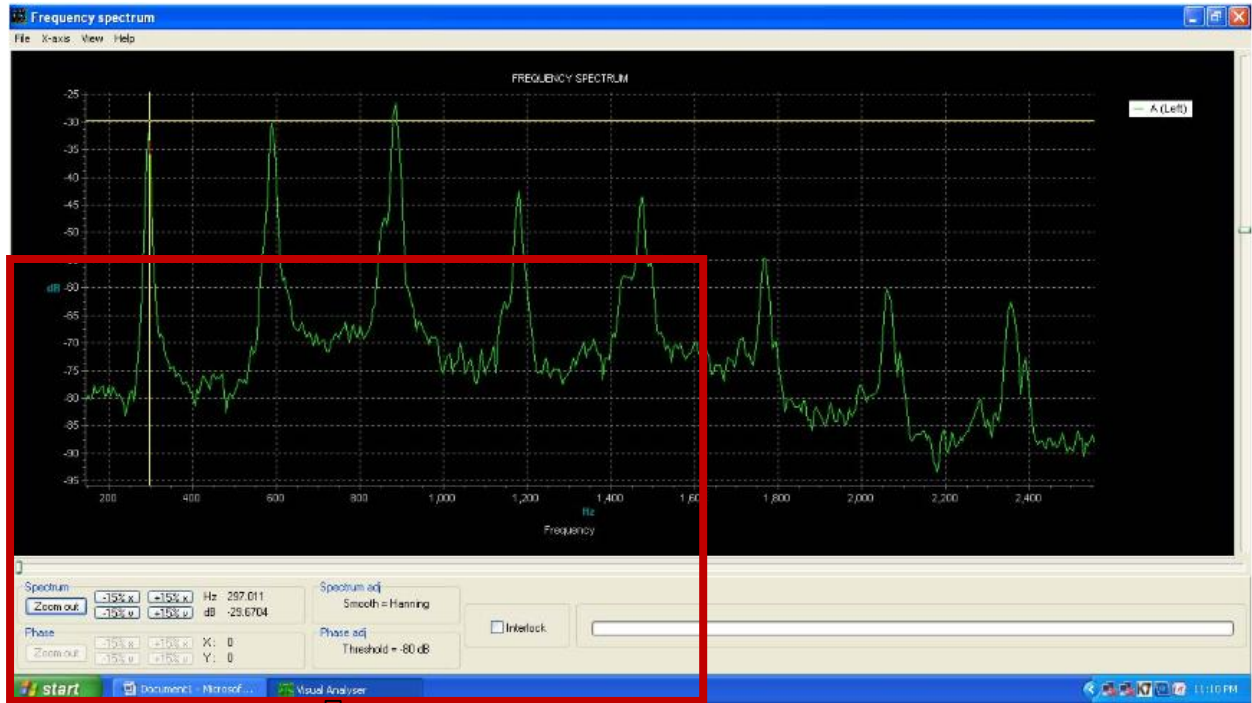
# Male Voice, Tara Shadja, Pitch=C



## Female Voice, Adhara Shadja, Pitch=G



# Female Voice, Panchama, Pitch=G





# Female Voice, Tara Shadja, Pitch=G

