

Community Radio Technical Primer

Nomad

India Network

Nomad and Its existence

- ◆ Nomad is a group of communication technologists committed to development and propagation of people oriented technologies
- ◆ Our mission is to re-appropriate technology that touches people's lives and put them in public domain
- ◆ Our technological solutions are free of copyright

Community Radio

- ◆ Community Radio is not about technology... it is about communities and development
- ◆ Technology should not exceed 20 to 25 per cent of a CRS budget for the exercise to be viable
- ◆ Low cost technology is essential for the station to be sustainable
- ◆ Community Radio needs to be a mass movement

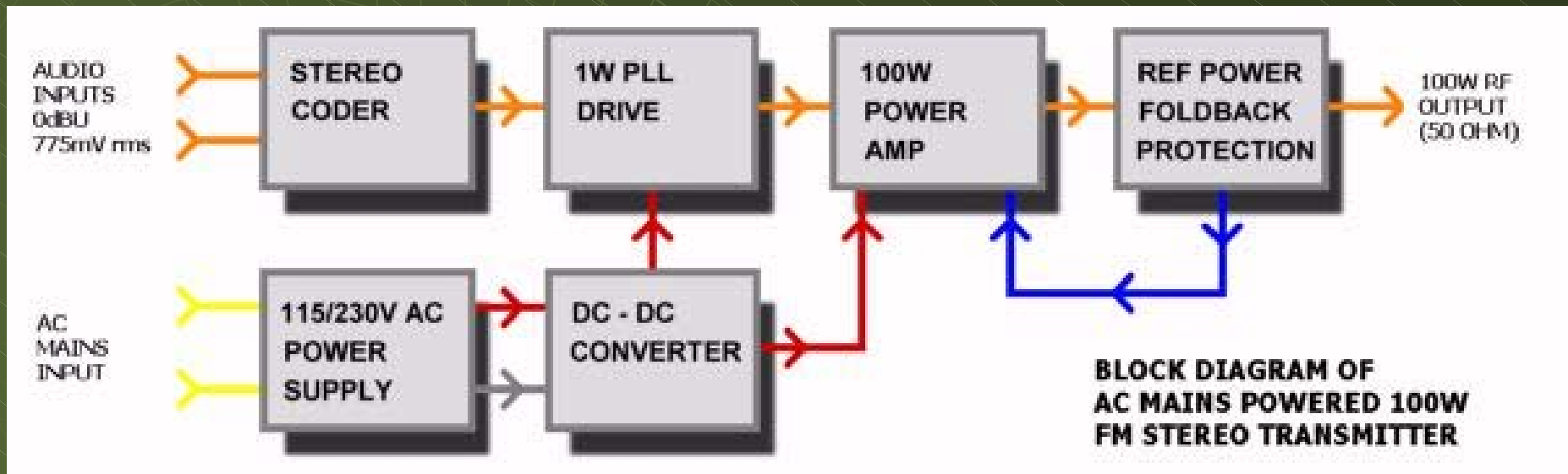
Model budgetary allocation

<i>No</i>	<i>Components</i>	<i>Cost in %</i>
1	Planning and Licensing (Capex)	5
2	Civil Works (Capex)	20
3	Equipment (Capex)	20
4	Programming	30
5	Personnel	20
6	Marketing and Revenue generation	5
7	Total	100

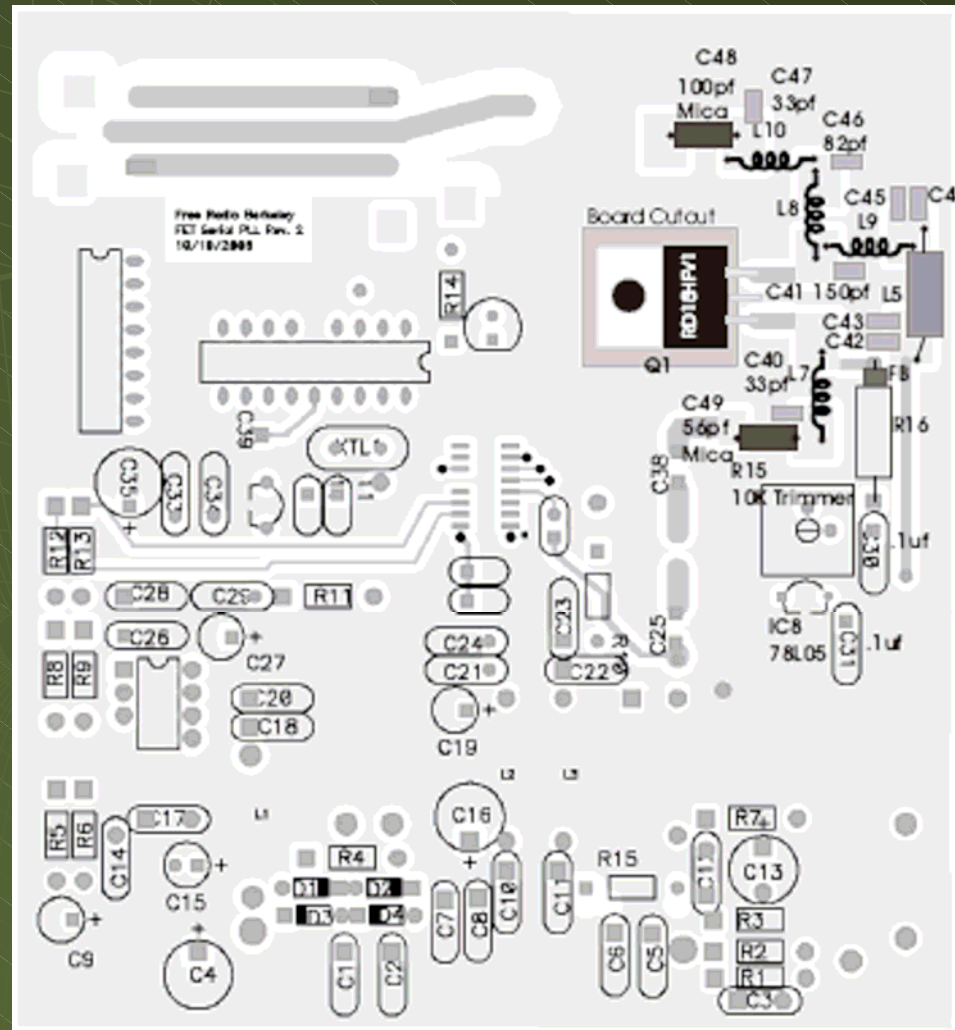
Nomad and Community Radio

- ◆ We develop open source transmission systems and sound architecture designs
- ◆ We have designs for 1 W to 150 W transmitters, suitable for Indian environment
- ◆ They are robust, easy to use and maintain
- ◆ Meets International Telecommunication standards (ITU-R)
- ◆ We collaborate with global community radio movement in general and Free Radio Movement in North and South America in particular

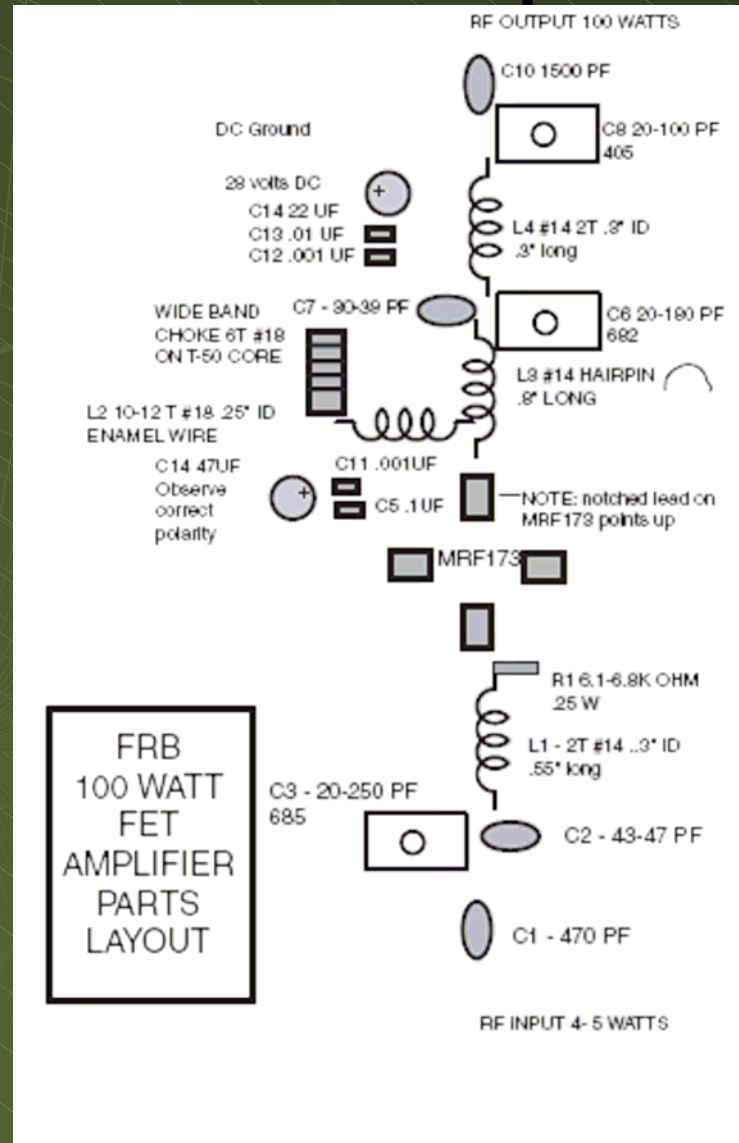
Block Diagram of Transmission Systems



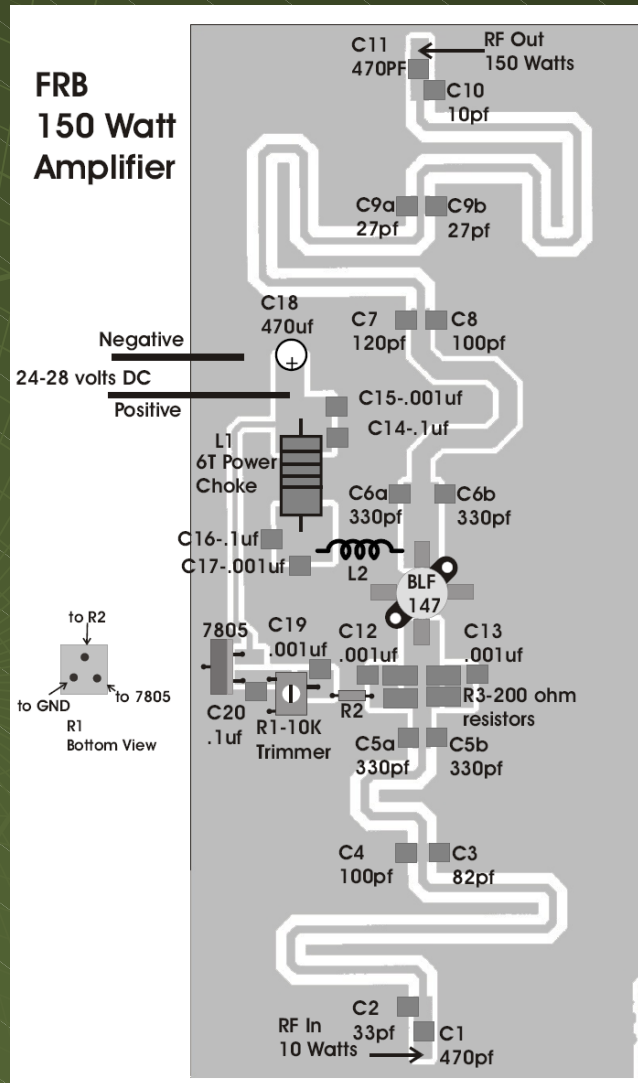
1W Drive with 10W Amplifier



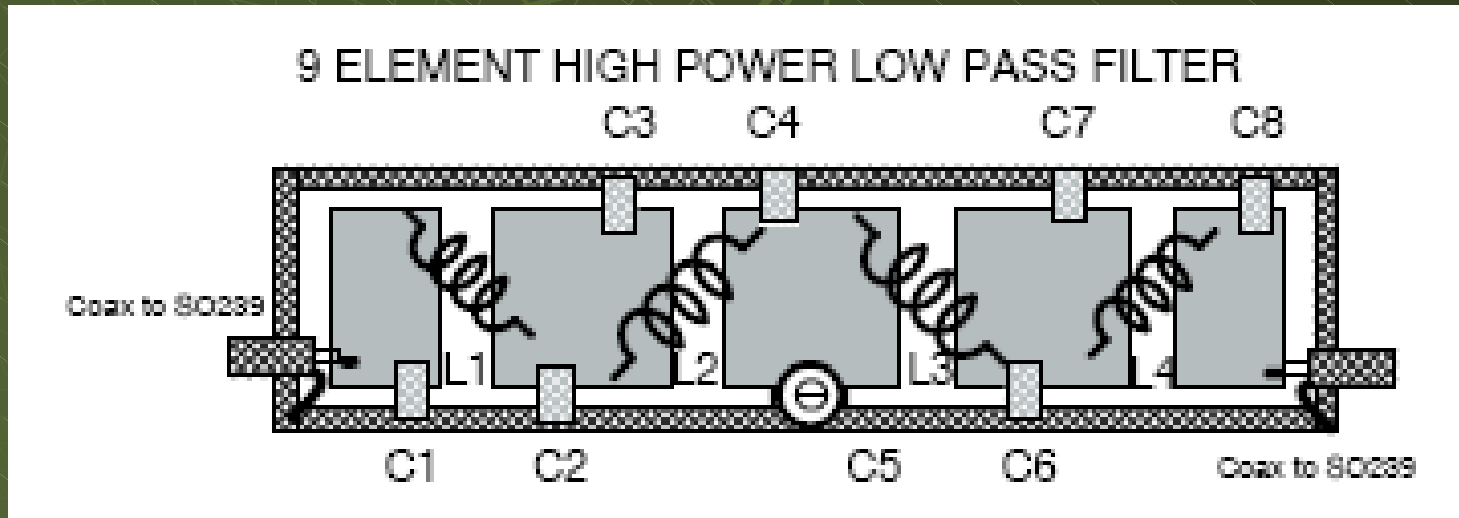
100 W Amplifier



150 W Amplifier

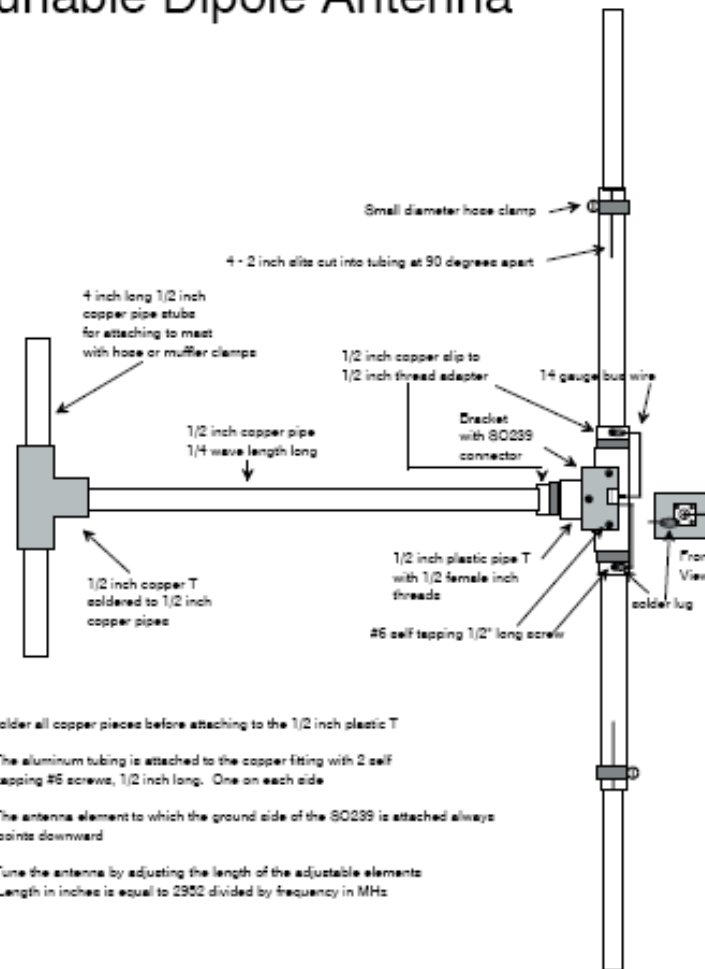


Low pass filter



Antenna System

Tunable Dipole Antenna



Making Airwaves Affordable

- ◆ Factors that influence cost
 - Unavailability of key components in Indian markets
 - Premium charged by multi-national electronics companies on RF components in India
 - Shortage of RF enthusiasts
 - Lack of domestic demand

Cost

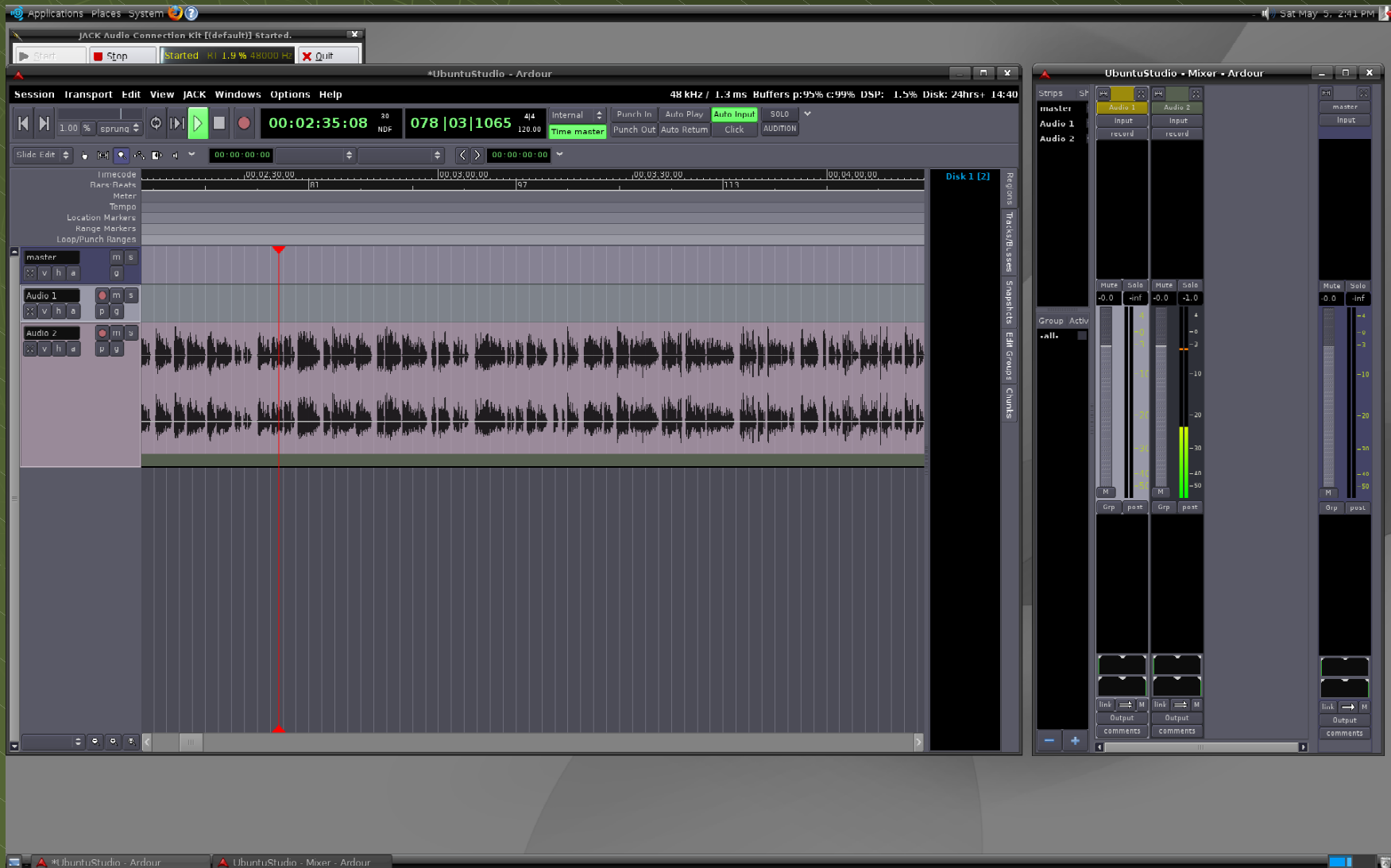
<i>No</i>	<i>Particular</i>	<i>Cost In Rs</i>
1	100 W ERP Transmission System	Rs 75000
2	Antenna and feeder Cable	Rs 20000
3	Antenna Mast	*
4	Civil Works and Acoustics	**
5	Studio and Sound Architechture	***
6	Uninterrupted Power Supply	****

Open Source Radio

- ◆ Linux based operating system... Ubuntu Studio, Suse 10.1
- ◆ Advance Linux Sound Architecture
- ◆ Jack Audio Connection Kit
- ◆ Many other tools for radio automation, recording, editing, sequencing and mixing

Professional tools

Ardour 2 interface



Experience Open Source

Courtesy of OSDir.com



Caution !!

Want to Experiment with RF ? Please
do so with a trained person ... RF
burns are dangerous

They are like microwave – cooking you
from within