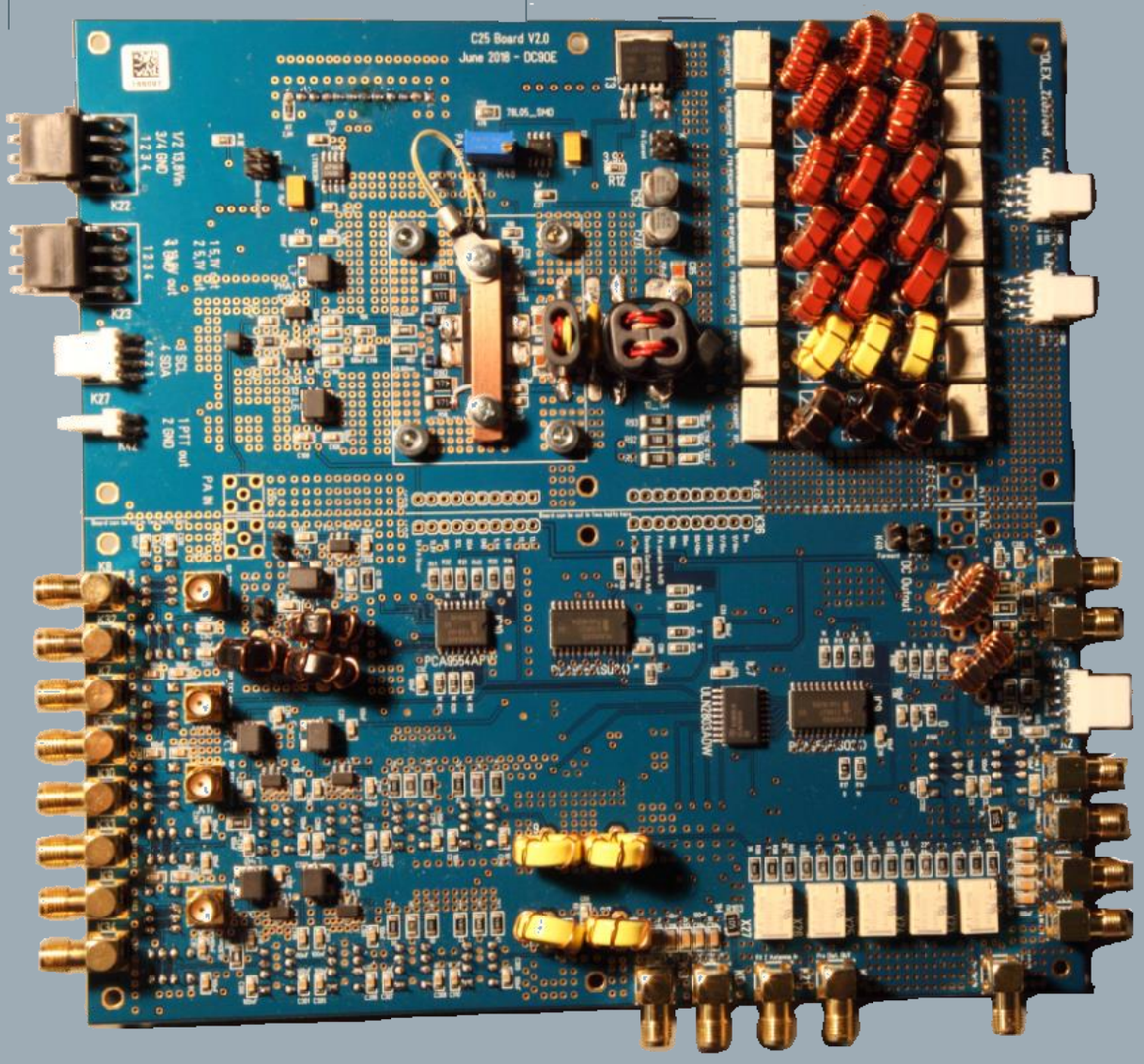
Charly 25

Radio Lab



TRx - Board

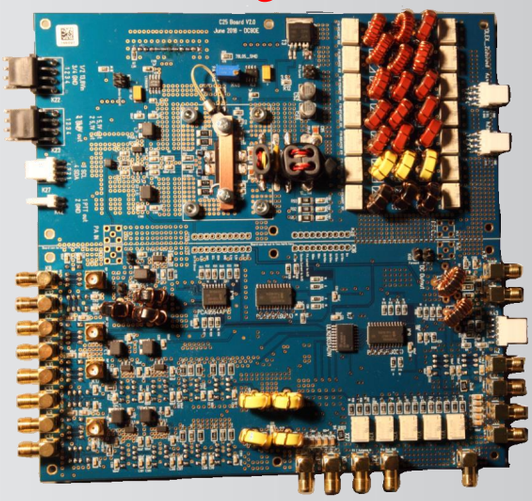
The new I2C bus controlled SDR-Frontend

The new board is designed in multi-layer technology and is completely controlled by I2C bus.
As a result, the board is not necessarily limited to use with the Stemlab 14 only.
With this new board all possibilities of the Red Pitaya / Stemlab14 board are exploited - this also includes the modified version of the Stemlabs (without analogue frontend).
The transmitting part of the board can thus be controlled with any oscillator (for example Si570), the receiving part contains enough gain reserves to give any receiving concepts very good performances, regardless of whether they are analog or digital.

Smart Radio Concepts

Charly 25

Radio Lab



Power

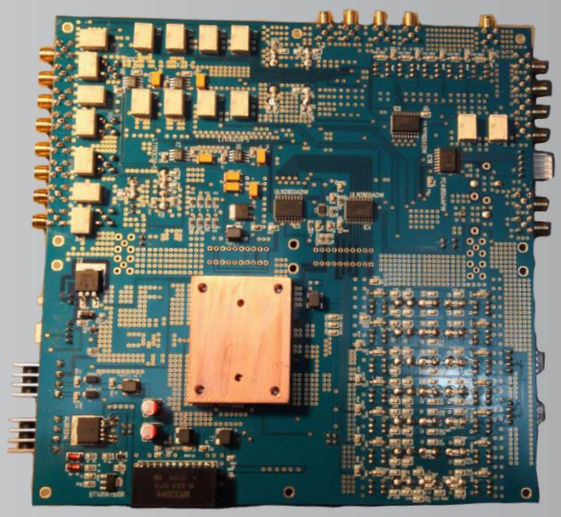
- Input 13.8V - Built-in 5V / 5A DC / DC converter to connect to Red Pitaya / Stemlab 14
- As a result, battery operation is easily possible (mobile operation)
- Integrated protection circuit against deep discharge of the battery
- Integrated protection against overvoltage and wrong polarity
- Overcurrent protection for total board and PA separated
- Detecting of current consumption via a 12-bit A / D converter and displayed in PowerSDR
- Current consumption for RX approx. 0.3A / TX approx. 3A (at 20W PEP), <5A at 20W CW

RX

- 2x RX channels with 55MHz low pass receiving range <50KHz to 55MHz
- 2x preamplifier (each 17dB +/- 1dB) OIP3 about 43dBm
- 2x attenuator 12dB / 24dB
- Sensitivity about -139dBm / 500Hz
- Diversity reception with automatic optimization in PowerSDR
- Two connections for high performance switching with signal relays, since common semiconductor attenuators have a steep power derating curve below 50MHz

TX

- Output 20W from 160m to 6m (limited to 600m)
- Push-pull operation, quiescent current approx. 300mA
- Improved harmonics suppression and improved IMD values over the original 10W single-ended design
- Robust VHF transistor also withstands bad SWR
- An overcurrent protection circuit monitors the current consumption and switches off if necessary



A SW controlled attenuator can be used as a pre-distortion attenuator either for the internal PA or with an external coupler for an external PA (the pre-distortion settings are automated, this is a special feature in Power SDR)

Provide a signal for envelope-controlled PA's

Minimized Intermodulation Low Pass and PA Driver, intended for Red Pitayas without analog frontend (they do not have anti-aliasing filter and only deliver about 3dBm output at the TX output - our driver raises the signal and reaches an intermodulation value of -55dBc at + 16dBm output)

Software controlled RF outputs for connecting transverters for the VHF / UHF bands

- 32 dB coupler outputs for forward and returning signals, available for pre-distortion, phase measurement, etc.

BCD output for frequency transfer to external Pas

Max. 500V / 8A PTT output connection to switch any older devices

GET IN CONTACT WITH US

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