Technical Specification
Rev 0.1

EduTree

World's first TV AD replacer

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Modification History:

Version	Date	Author	Description
0.1	06/03/18	Nikhil Adroja	Initial Version

CEREBROZ EDUTREE
AWAKENING GENIUS

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Technical information

Advanced Processor

- ARM Cortex-A53 Quad-Core processor with floating-point unit and NEON SIMD engine embedded, supporting the 64/32-bit ARMv8 architecture
- GPU: ARM T820 to accelerate 2D and 3D graphics processing
- Video & picture encoding/decoding functions

DDR4 RAM

- Two 1GB 16bit DDR4 are connected with processor
- 1.2V compatible DDR4 I/O

eMMC – Internal Memory

- 16 GB eMMC 5.0
- 8 bit bus width
- Voltage: 1.8V & 3.3V

WiFi

- Wi-Fi Standards: IEEE 802.11b, IEEE 802.11g, IEEE 802.11n
- External Antenna
- Operating Frequency: 2.402～2.480GHz
- USB Interface between Processor and WiFi module

Interfaces:

- High sheep UART for debugging purpose
- I2C Interface
- IR Receiver
- HDMI Tx
- HDMI Rx
- AV In
- AV Out
- Gigabit Ethernet
- 3x USB 2.0
- 1x USB 3.0

Operating Condition:

- Input Voltage: DC 5V @ 2A
- Operating temperature: 10 C to 60 C
- Wi-Fi Frequency: 2.402~2.480GHz

Application:

World's First TV Ad replacer

- When EduTree will be connected in between Satellite set top box and TV, EduTree will show Educational videos in place of the Advertisement (Internet connection is required). EduTree will get the trigger signal from Cerebroz cloud server when any AD will come in particular channels. We remember every Advertisement comes in the TV due to watching TV Ads many times in a day. Same way if the education will be provided in place of the TV Ad, every student will remember the basic fundamentals of their curriculum without any extra efforts. Students will get the educational cartoon video of their respective standard and board. The social and general knowledge videos will also be provided with EduTree for their parents.

Parental Control

- Parents will have control on TV about what to be allowed in TV.
- Every video will have three short MCQ questions which will calculate the children's growth and show off the chart having progress report.
- Students will be encouraged through its growth report

Wi-Fi

- Connect the LAN cable of any Internet service provider to EduTree, EduTree will get the internet connection. Home WiFi can also be connected automatically to EduTree. (To connect to this module, you need to set user name and password as "cerebroz". After development we will provide more facility)
- 30 m ideal line of sight range of the Wi-Fi range can be achieved through smart 5dB antenna

Personal Tutor

- EduTree will provide government approved NCRT syllabus based education videos to students

- Videos will be in English language as well as in Local language
- Any doubt or any hard question can be asked to Cerebroz community portal. Student can get the quick and perfect answer at their home

How to use:

Connect EduTree with set top box and TV as shown in below image:

EduTree has AV and HDMI interface for connecting with set top box and TV. Some of the old TV and set top box have only AV (Yellow, Red and White) cable connections. So AV ports can be used in that case. See below image for more information.

After connecting EduTree in between set top box and TV, the below screen will be appeared on TV
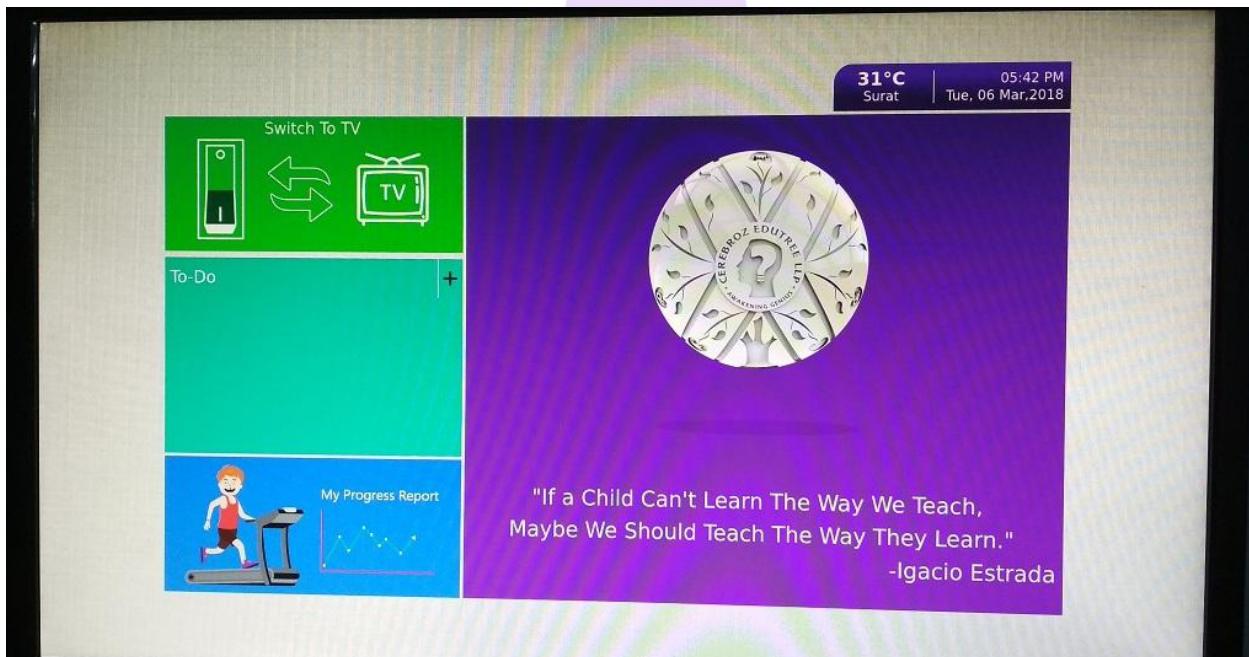
If we want to see TV show, we can click on switch icon using wireless mini keyboard named EduKey.
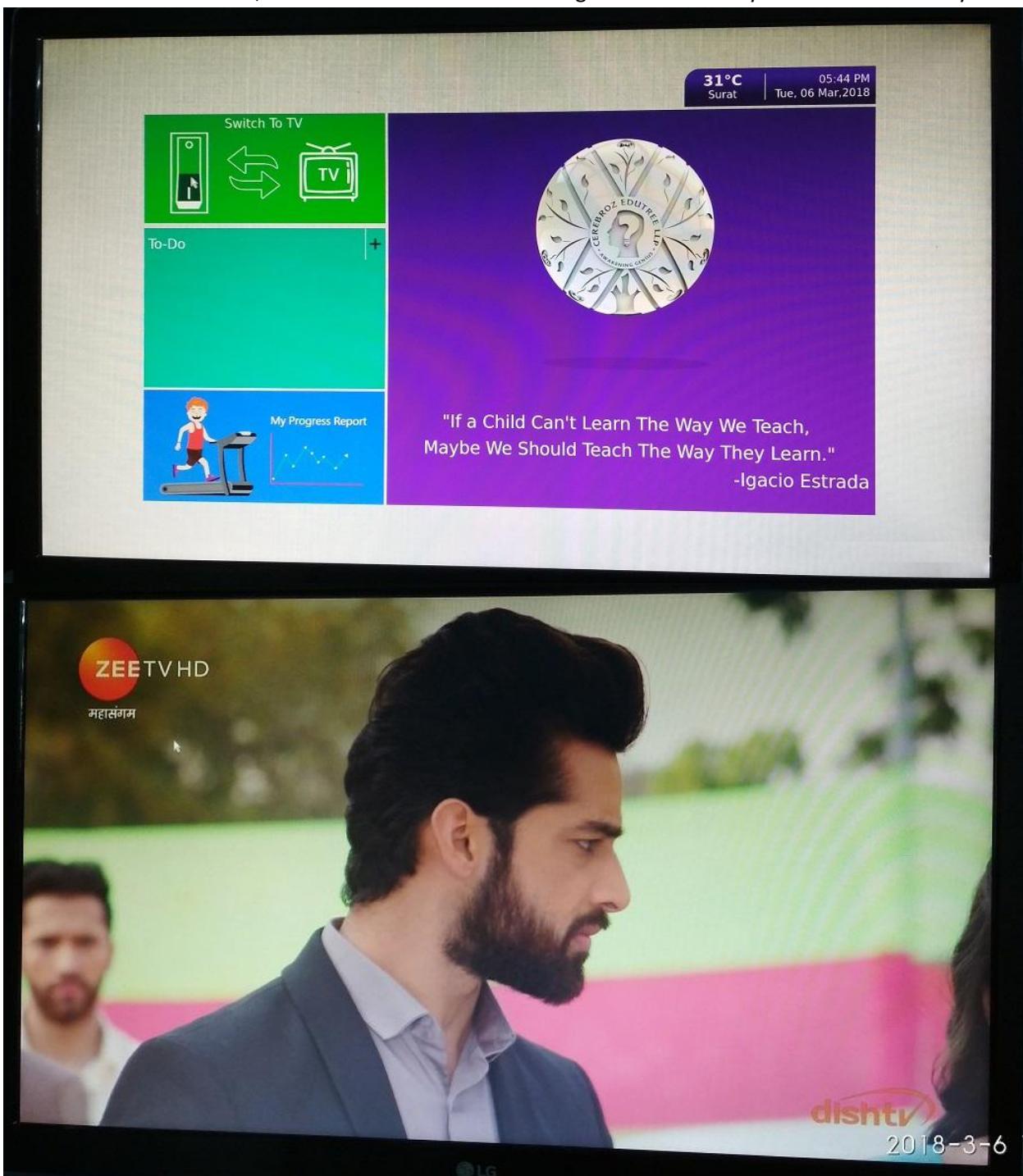
If we want to switch to EduTree home screen, press "E" character from EduKey (wireless mini keyboard). To return back to TV press "T" character from EduKey.
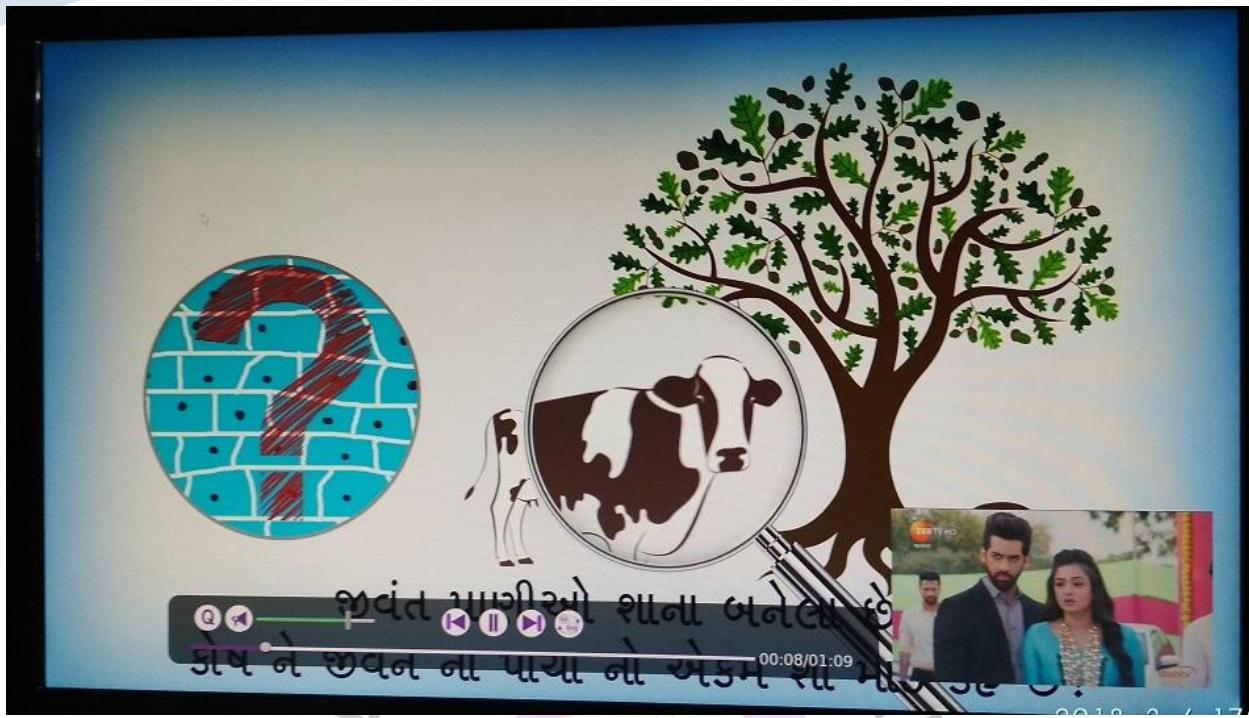
By clicking on the EduTree Globe, we can go inside the EduTree educational videos.

Click on each folder to go inside and use "Esc" key of the keyboard to come out from the folder.

See other features of the EduTree by clicking on the icon.
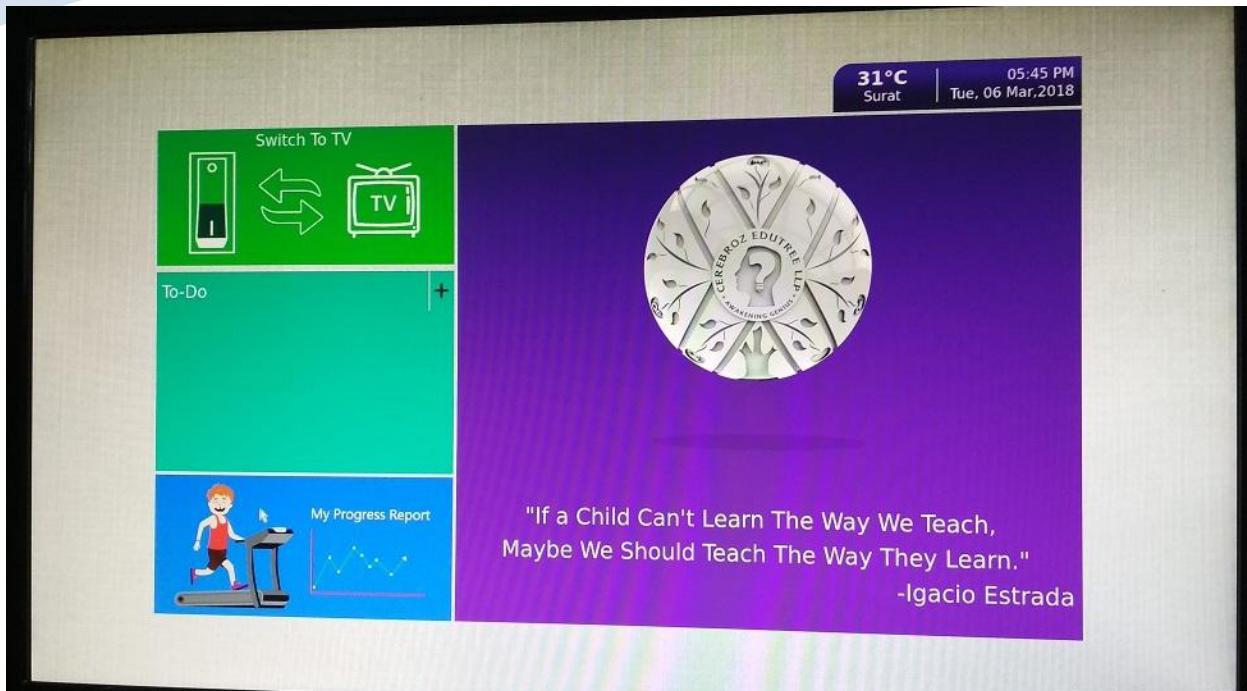
To turn on/off the EduTree, use power button of EduKey.

The functional keys of the EduKey are shown in below image.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party.

Responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:

The equipment complies with FCC Radiation exposure limits set forth for uncontrolled enviroment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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