National Centre for Radio Astrophysics

Report on RFI measurement of Beetel make Basic phone

Shri. Sureshkumar, Shri. Pravin Raybole, Shri. Ankur, Shri. Shrikant Bhujbal, Lalit Chaudhari

skumar@gmrt.ncra.tifr.res.in, pravin@gmrt.ncra.tifr.res.in

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Ver. 1	08th January. 2021	First Version

Objective:

To find out radio frequency interference coming from the **Beetel make Basic phone**.

(Model No.B11)

Specifications:

- Ringer volume control
- Redial
- Flash
- LED for Ring indication
- Tone pulse Switchable
- Mute
- Pause
- Wall/ Desk Mountable

Test setup:

1. Measurement is done at 3 meter distance with LPDA antenna used as a receiving antenna at Multi-Purpose Building location (MPB).
2. LPDA Antenna is connected with 20dB post-amplifier.
3. Measurement is done in the horizontal and vertical polarization mode with Phone in Call mode and all OFF condition.
4. Measurement frequency range: 30MHz to 2 GHz frequency range.

Measurement Results:
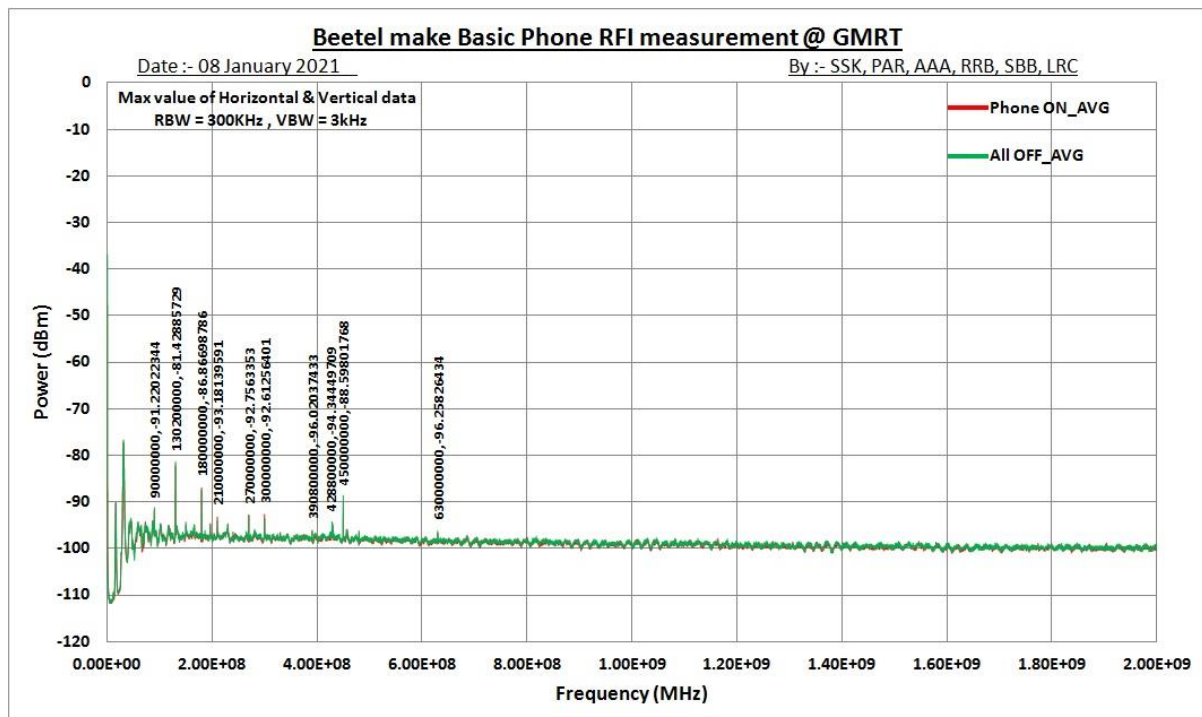
Fig.1:- Max Value of all avg. data for Horizontal & Vertical polarization in the Frequency band 0-2000MHz.
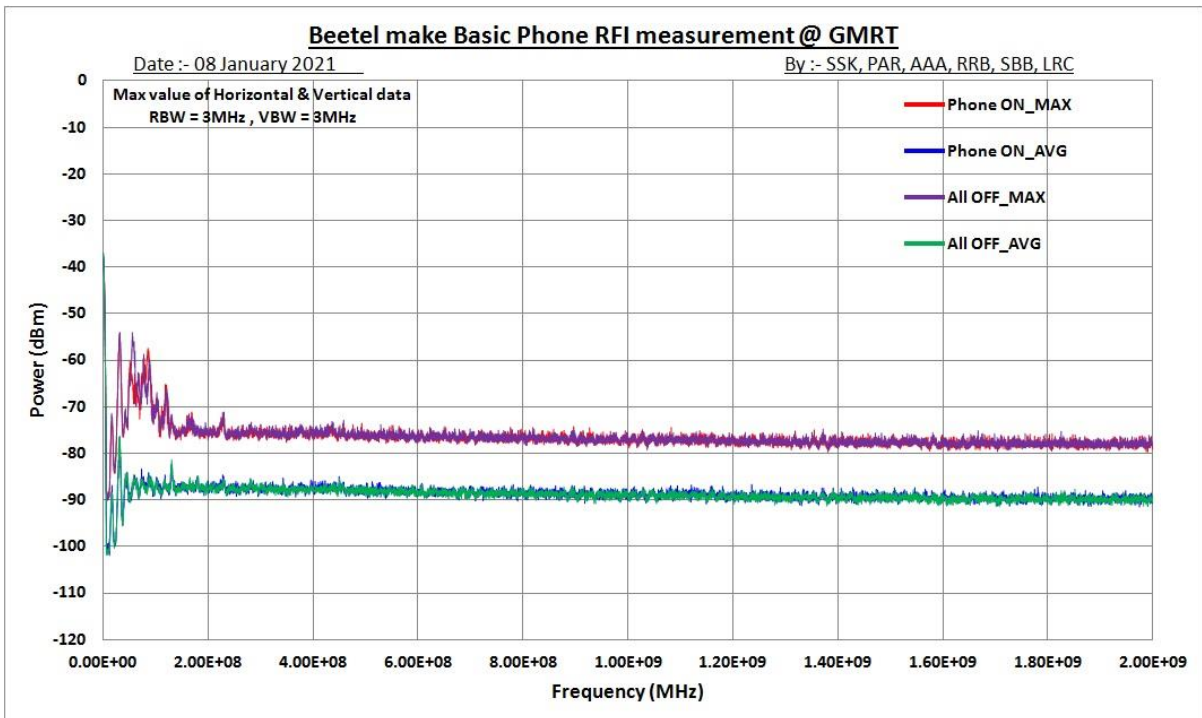
1. **Red line** shows no radiation above the noise floor level when Phone in call mode with trace in Average mode.
2. **Green line** shows the ambient noise floor level in the All OFF condition with trace in Average mode.

Note: - The discrete lines seen are coming from spectrum analyzer.
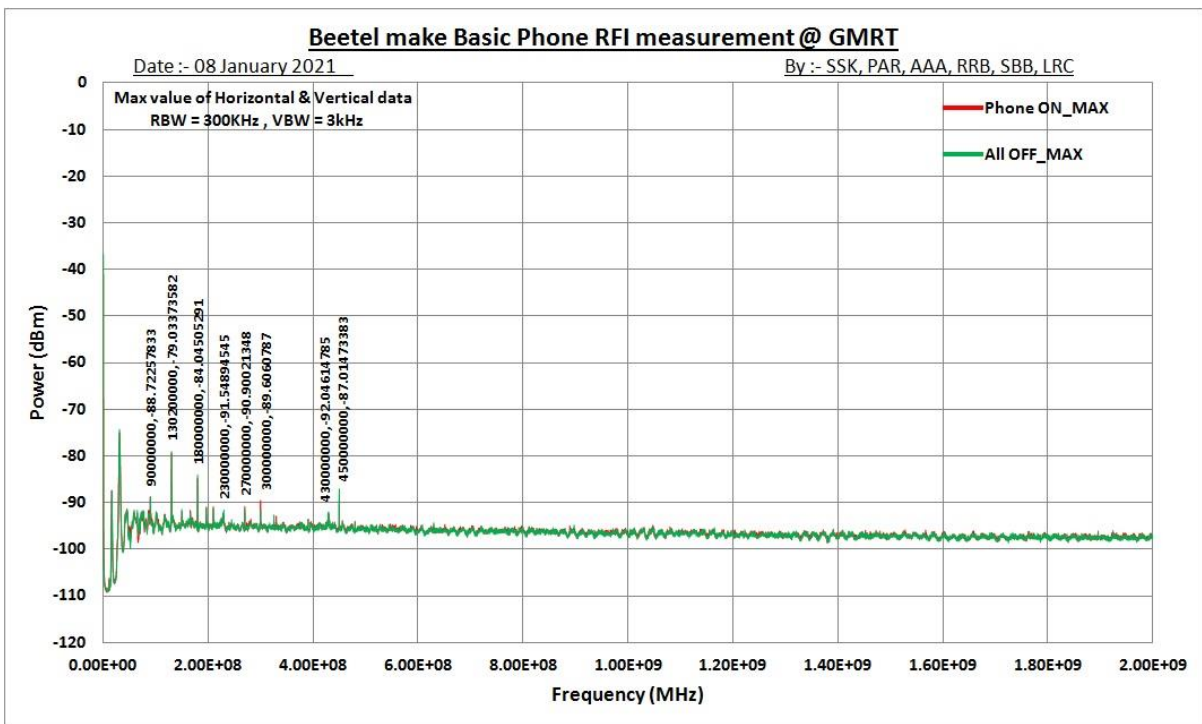
**Fig.1**:- Max Value of all data for Horizontal & Vertical polarization in the Frequency band 0-2000MHz.

1. **Red line** shows no radiation above the noise floor level when Phone in call mode with trace in Maxhold mode.
2. **Green line** shows the ambient noise floor level in the All OFF condition with trace in Maxhold mode.

Fig.3:- Max Value of all data for Horizontal & Vertical polarization in the Frequency band 0-2000MHz.

1. **Red line** shows no radiation above the noise floor level when Phone in call mode with trace in Maxhold mode.
2. **Blue line** shows no radiation above the noise floor level when Phone in call mode with trace in Average mode.
3. **Violet line** shows the ambient noise floor level in the All OFF condition with trace in Maxhold mode.
4. **Green line** shows the ambient noise floor level in the All OFF condition with trace in Average mode.

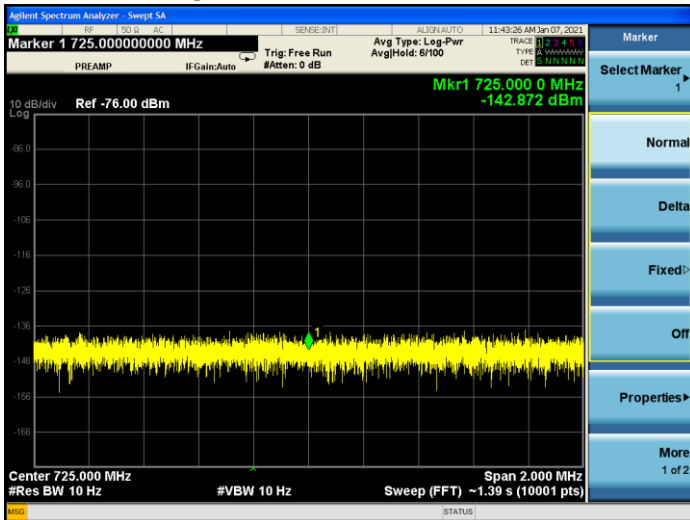## Measurement Results at lowest noise floor level:-
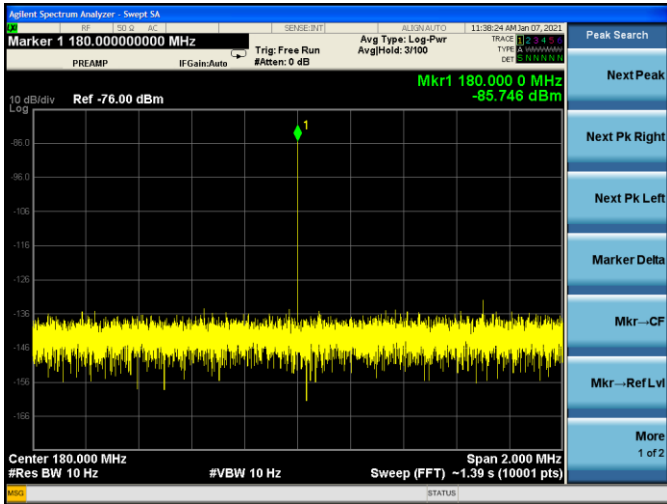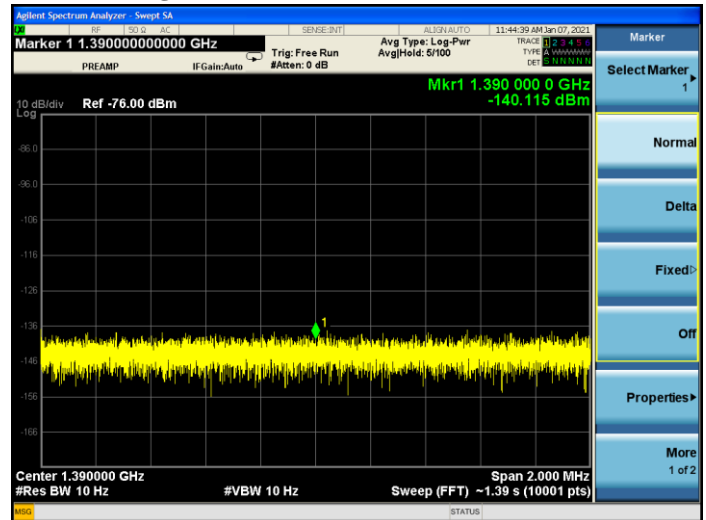

Image1: CF-180MHz_ALL ON condition
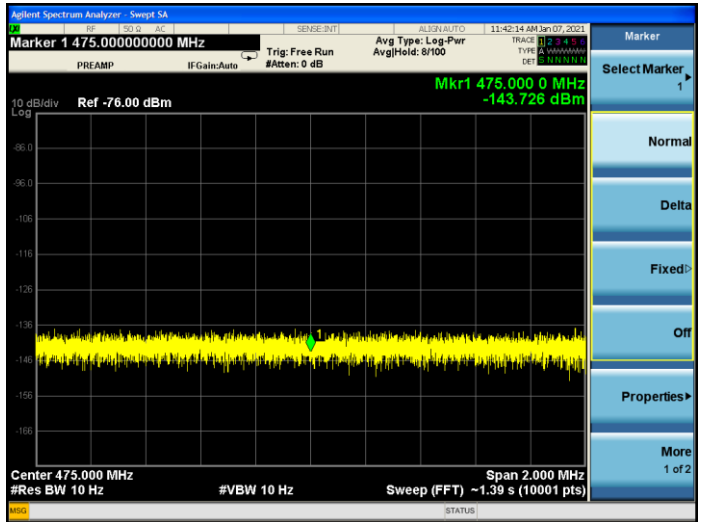
Image2: CF-425MHz_ALL ON condition

Image3: CF-725MHz_ALL ON condition

Image4: CF-1390MHz_ALL ON condition

Images:

Image1: Beetel make Basic phone Model No. B11 (Front View)

Conclusion:-

The **Beetel make Basic phone (Model No.B11)** does not produces any broad band as well as periodic radio frequency emission (RFI) and has not seen at the lowest noise floor level of the spectrum analyser (all OFF mode) in the frequency band from 30-2000MHz. Hence this phone could be used inside the antenna shell as well as GMRT premises.

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