National Centre for Radio Astrophysics

Internal Technical Report

GMRT/RFI/1 – 06th November 2020

# 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*

| Revision | Date | Modification/ Change |
|---|---|---|
| Ver. 1 | 06th November. 2020 | First Version |

**Objective:**

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

**(Model No.C11)**

**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:**

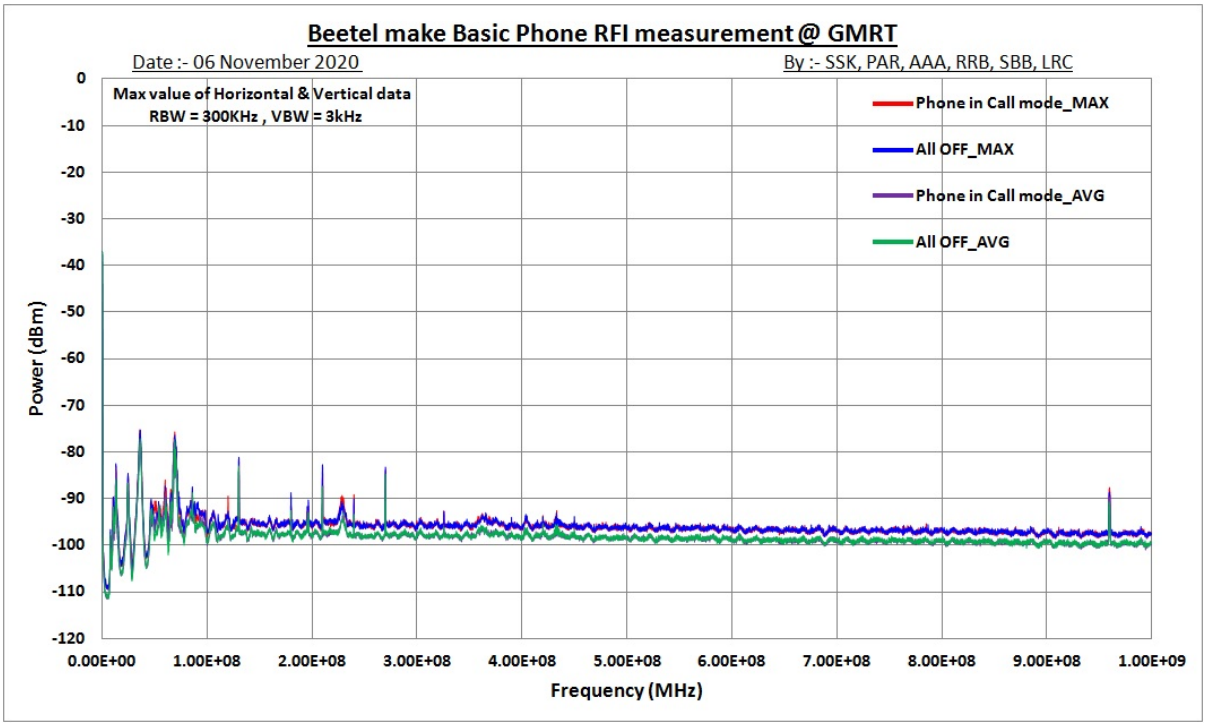


**Fig.1**:- Max Value of all data for Horizontal & Vertical polarization in the Frequency band 0-1000MHz.

1. **Red line** shows no radiation above the noise floor level when Phone in call mode (Another phone kept outside the shielded lab) with trace in Maxhold mode.
2. **Blue line** shows the ambient noise floor level in the All OFF condition with trace in Maxhold mode.
3. **Violet line** shows no radiation above the noise floor level when Phone in call mode (Another phone kept outside the shielded lab) with trace in Average mode.
4. **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.

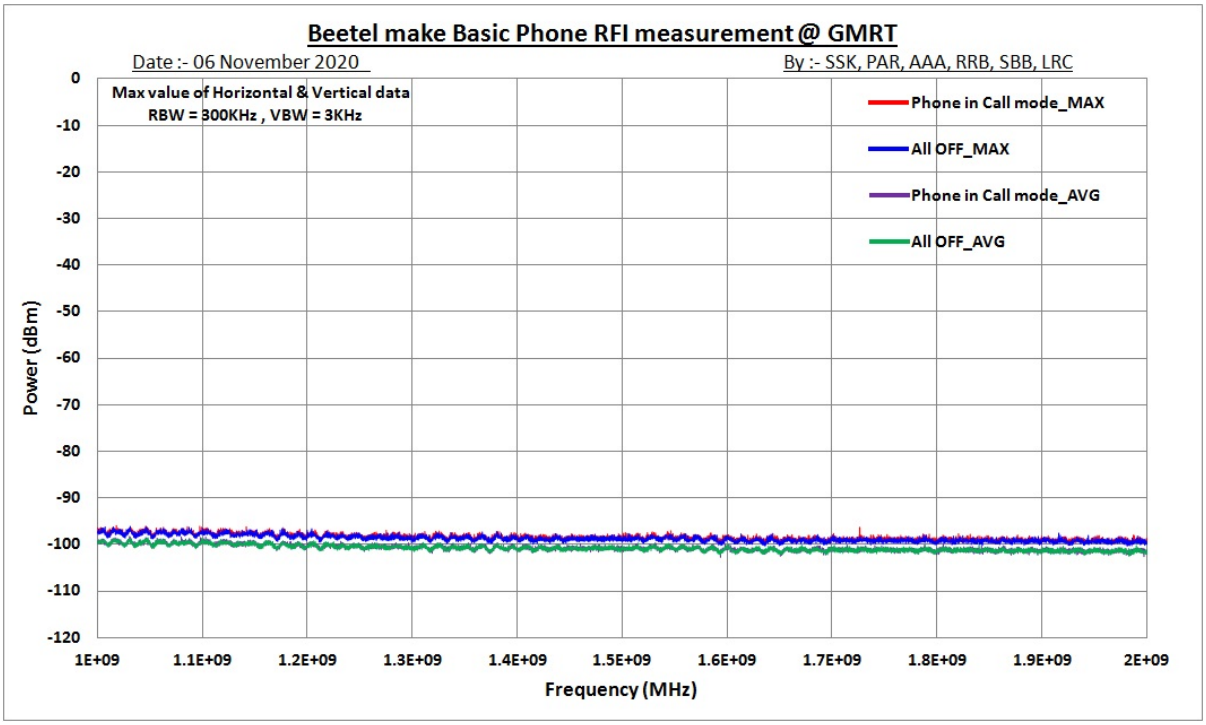


**Fig.2**:- Max Value of all data for Horizontal & Vertical polarization in the Frequency band 1000-2000MHz.

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

**Images:**

**Image1: Beetel make Basic phone Model No. C11 (Front View)**

**Conclusion**:-

The **Beetel make Basic phone (Model No.C11)** does not produces any broad band as well as periodic radio frequency emission (RFI) above the ambient noise floor level (all OFF mode) in the frequency band from 30-2000MHz. Hence found a suitable option to be used inside the GMRT premises.

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