



## ELECTRONICS TEST AND DEVELOPMENT CENTRE

(STQC Directorate, Ministry of Communications & Information Technology)

100 ft Road, Peenya Industrial Estate, Bengaluru-560 058

(Phone: (080) 2839 4252/4647/4766/5992; Telefax: +91-080- 23722314)

E-mail: [etdcbe@stqc.gov.in](mailto:etdcbe@stqc.gov.in)



T-0044

Page 01 of 16

Report No.: TR/EMC/64135-2

### TEST REPORT

#### 1. Scope

|     |   |  |                          |             |
|-----|---|--|--------------------------|-------------|
| 1.  | Service request number:                                   | 64135  | Date:24/04/2017          | Job No.: 02 |
| 2.  | Test requested by<br>(Name & Address of the Organization) | M/s. CEM Solutions Pvt. Ltd.<br>#143/A1, Bommasandra Industrial Area,<br>Hebagodi Village, Bangalore-560099. |                          |             |
| 3.  | Description/Unambiguous identification of the item:       |  |                          |             |
|     | a) Nomenclature   | STM/BLOX eSBC  |                          |             |
|     | b) Manufactured by  | ALLO.COM   |                          |             |
|     | c) Model / type no.                                       | ALLO-STM/eSBC  |                          |             |
|     | d) No. of items submitted                                 | 01   | Sampling :Not applicable |             |
|     | e) Serial no.   | SP23001910816  |                          |             |
| 4.  | Date of submission of test samples                        | 24/04/2017   |                          |             |
| 5.  | Condition of test samples on receipt                      | Good   |                          |             |
| 6.  | Test carried out at                                       | In-house/ <del>On</del> -site  |                          |             |
| 7.  | Date of start of tests                                    | 24/04/2017   |                          |             |
| 8.  | Date of completion of tests                               | 25/04/2017   |                          |             |
| 9.  | Date of issue of test report                              | 28/04/2017   |                          |             |
| 10. | Applicable standard/test specification                    | FCC PART 15:2007 Class B.  |                          |             |
| 11. | Test category   | Performance Test   |                          |             |
| 12. | Laboratory Environment condition                          | Temp: 15 to 35°C RH: 45 to 70%   |                          |             |

#### 2. Major equipment used

| SN | Nomenclature      | Make            | Model      | Cal. Due   |
|----|-------------------|-----------------|------------|------------|
| 1. | EMI test receiver | R&S             | ESCI7      | 19/10/2017 |
| 2. | Bi-Log Antenna    | Electro metrics | EM-6917B-1 | 04/06/2017 |
| 3. | EMI test receiver | R&S             | ESCI       | 30/12/2017 |
| 4. | V-Network         | R&S             | ESH3Z5     | 02/05/2017 |

- This report refers only to the item tested and shall not be reproduced except in full without the written approval from Director, ETDC, Bengaluru. Refer to information contained on the cover.

Date of Release: 15.06.16

Prop to





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Page 02 of 16

Test Parameter : 1) Conducted Emission measurement on power line  
2) Radiated Emission measurement @ 3mts. distance  
Test Specification : FCC Part 15: 2007, Class B  
Detector Used : Quasi Peak (QP) / Average (Avg)  
Detector Bandwidth

| Frequency (MHz) | Detector Bandwidth (kHz) |
|-----------------|--------------------------|
| 0.15 - 30       | 9                        |
| 30 - 1000       | 120                      |

Limits:

| Class B                                      |                 |                  |  |                   |
|--|-----------------|------------------|--|-------------------|
| Conducted Emission measurement on power line |                 |                  | Radiated Emission measurement @ 3mts. distance |                   |
| Freq. Range (MHz)                            | QP (dB $\mu$ V) | AVG (dB $\mu$ V) | Freq. Range (MHz)                              | QP (dB $\mu$ V/m) |
| 0.15 - 0.5                                   | 66 - 56         | 56 - 46          | 30-88  | 40                |
| 0.5 - 5                                      | 56              | 46               | 88-216   | 43.5              |
| 5 - 30                                       | 60              | 50               | 216-960  | 46                |
|  |                 |                  | 960-1000                                       | 54                |

**EUT Configuration:** The EUT is a STM/BLOX eSBC, powered by 5V DC through 230V AC to 5V DC adaptor (Make: XING YUAN, Model No: XY24S-0503000Q-U, Serial No: 1620).

**Remark:** The Image of EUT and test setup for Radiated Emission measurement @3 mts. distance are shown in Annexure 'A' and 'B' respectively. The graphs for Conducted Emission measurement on power line and Radiated Emission measurement @3 mts. distance tests are shown in Annexure 'C' and 'D' respectively.

Summary of test results:

Conducted Emission measurement on power line:  
Meets the Class B Limits of FCC Part 15: 2007  
Few Significant emission are reported in page no. 03  
Radiated Emission measurement @3 mts. distance:  
Meets the Class B Limits of FCC Part 15: 2007  
Few Significant emission are reported in page no. 04

Qpato



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Report No.: TR/EMC/64135-2

Page 03 of 16

**Results:** (1) Conducted Emission measurement on power line.

| Frequency (MHz)   | Qp Reading (dB $\mu$ V) | Qp Limit (dB $\mu$ V) | Avg Reading (dB $\mu$ V) | Avg Limit (dB $\mu$ V) |
|-------------------|-------------------------|-----------------------|--------------------------|------------------------|
| <b>On Line</b>    |                         |                       |                          |                        |
| 0.154             | 43.21                   | 66.00                 | 31.79                    | 59.00                  |
| 0.194             | 37.52                   | 64.86                 | 26.02                    | 57.52                  |
| 0.226             | 36.65                   | 63.71                 | 26.04                    | 56.04                  |
| 0.246             | 35.25                   | 63.14                 | 24.98                    | 55.30                  |
| 0.422             | 36.49                   | 58.29                 | 29.70                    | 49.01                  |
| 1.226             | 29.74                   | 56.00                 | 20.68                    | 46.00                  |
| <b>On Neutral</b> |                         |                       |                          |                        |
| 0.154             | 44.45                   | 66.00                 | 33.03                    | 59.00                  |
| 0.178             | 41.33                   | 65.14                 | 29.87                    | 57.89                  |
| 0.190             | 39.13                   | 64.86                 | 28.08                    | 57.52                  |
| 0.202             | 37.34                   | 64.57                 | 26.50                    | 57.15                  |
| 0.214             | 36.45                   | 64.29                 | 27.04                    | 56.78                  |
| 1.242             | 30.76                   | 56.00                 | 21.26                    | 46.00                  |

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Report No.: TR/EMC/64135-2

Page 04 of 16

### Results: (2) Radiated Emission measurement @ 3mts. distance

| Frequency (MHz) | Quasi-peak emission level* (dB $\mu$ V/m) | Angle (deg) | Polarisation (H/V)** | Quasi-peak Limit (dB $\mu$ V/m) |
|-----------------|---|-------------|----------------------|---------------------------------|
| 30.20           | 27.32                                     | 180         | H                    | 40                              |
| 250.00          | 23.91                                     | 180         | H                    | 46                              |
| 422.64          | 24.50                                     | 0           | H                    | 46                              |
| 500.00          | 31.79                                     | 270         | V                    | 46                              |
| 676.16          | 30.30                                     | 180         | H                    | 46                              |
| 754.84          | 31.84                                     | 0           | H                    | 46                              |

\*-The antenna height adjusted between 1 m and 4 m above the ground plane for maximum emission level at each test frequency.

\*\* (H/V):H-Horizontal polarization, V-Vertical polarization

*Gupta*  
Tested By  
(Neeraj Gupta)  
(SA 'A')

*[Signature]*  
Approved By  
**Dr. N.C. JOSHI**  
Scientist 'E'  
Electronics Test & Development Centre  
Ministry of Comm. & IT., STQC Directorate  
Govt. of India, Bangalore

*[Signature]*  
Issued By  
**CO-ORDINATOR  
TESTING SERVICES,  
E.T.D.C., BENGALURU.**





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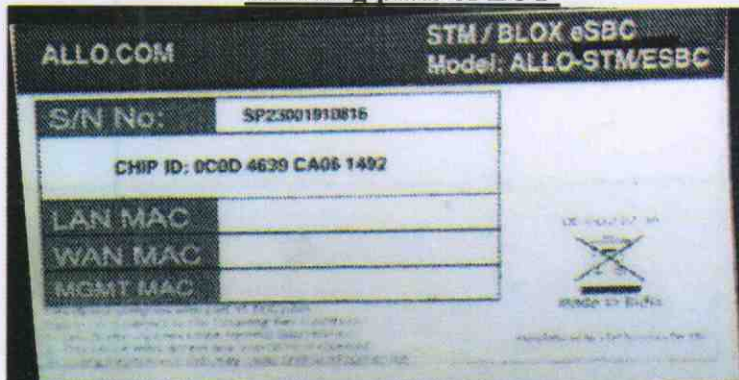
Annexure "A"

Page 05 of 16

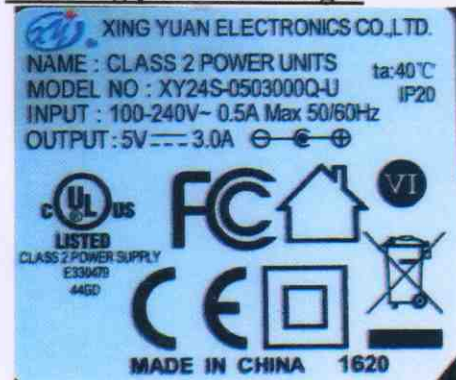
### Image of EUT



### Marking plate of EUT



### Marking plate of Charger



Prapta



14/2



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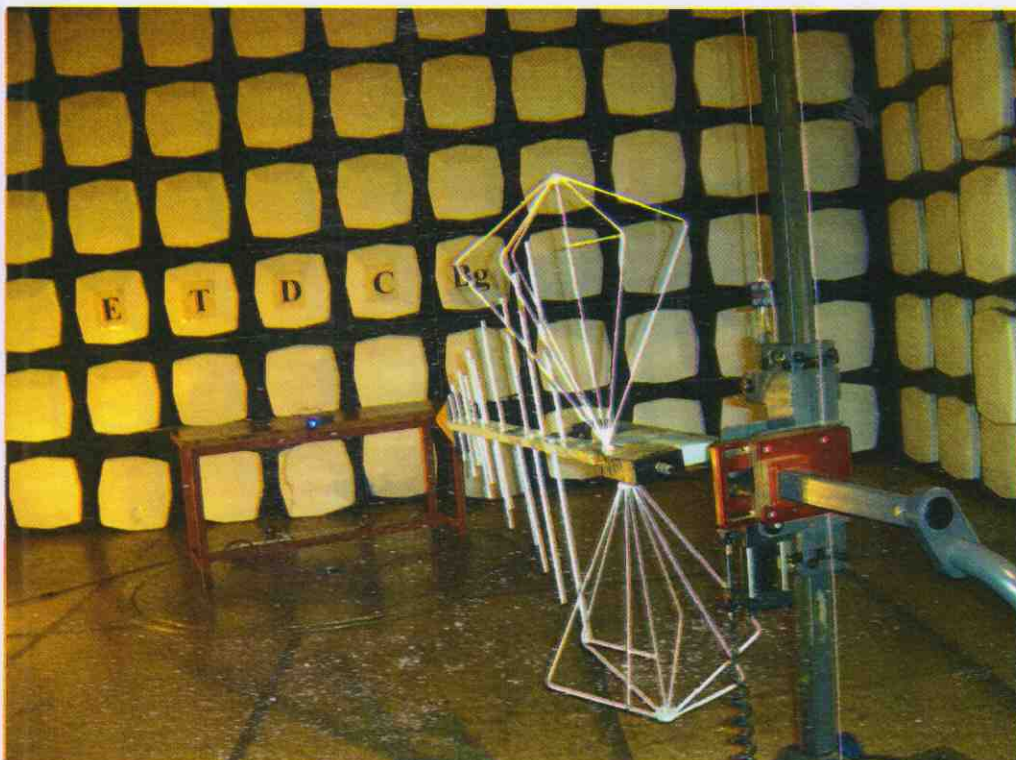
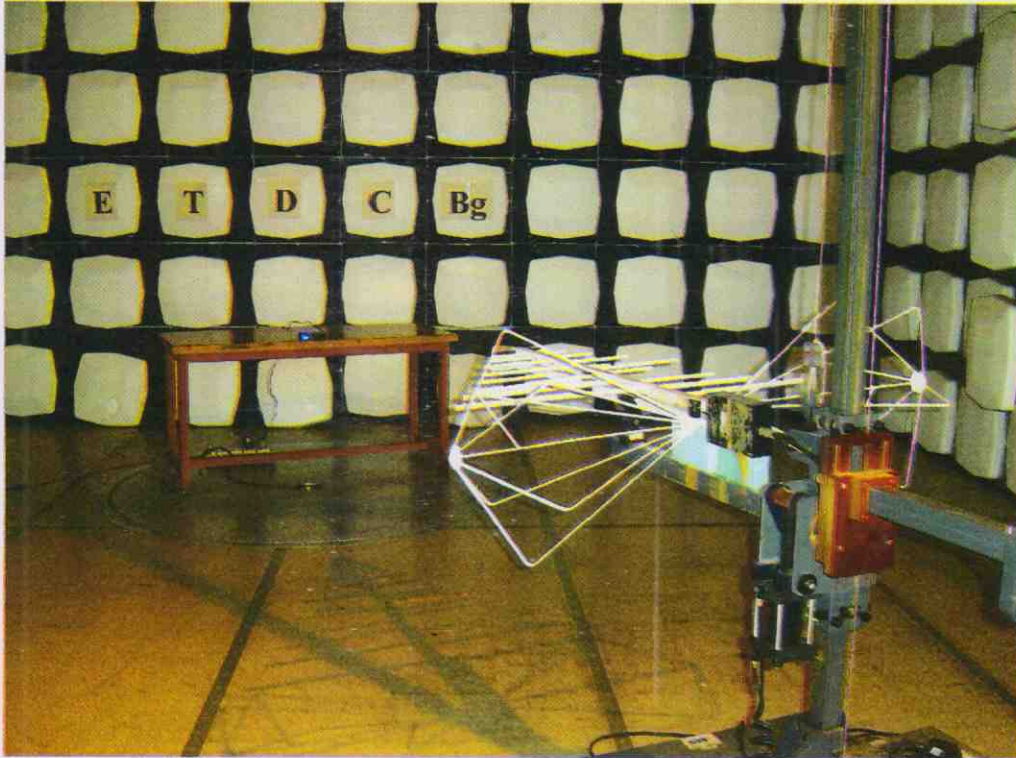
E-mail: [etdcbg@stqc.gov.in](mailto:etdcbg@stqc.gov.in)

Report No.: TR/EMC/64135-2

Annexure "B"

Page 06 of 16

### EUT Test Setup for Radiated Emission measurement @ 3mts. distance



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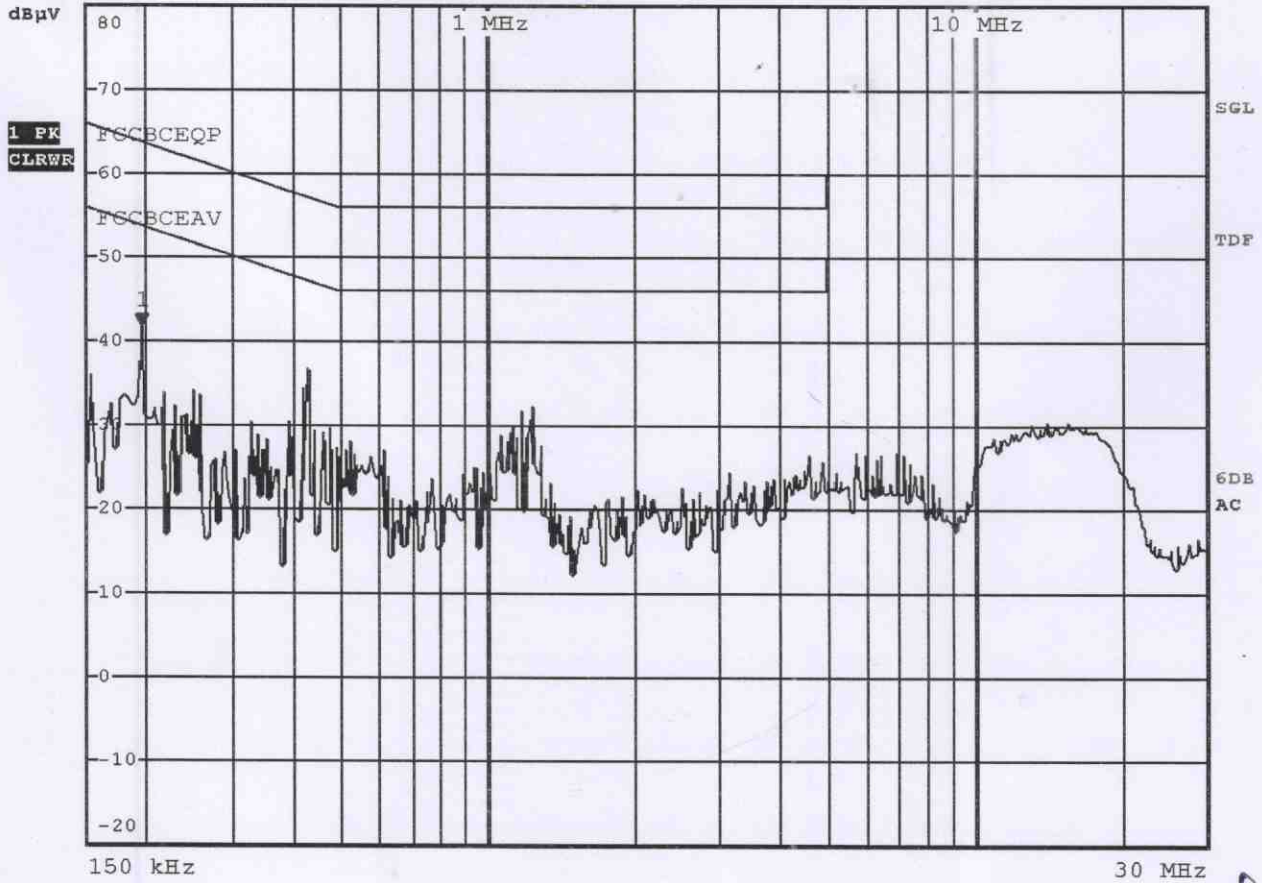
*Geeta*

Graphs of Conducted Emission measurement on power line (Peak measurement)



RBW 9 kHz Marker 1 [T1 ]  
MT 1 s 41.79 dBuV

Att 10 dB AUTO PREAMP ON 194.00000000 kHz



*Pupta*

*(Signature)*

SRF:64135, CE Test on STM/BLOX eSBC, Make: ALLO.COM, Model:

ALLO- STM/eSBC, S/N: SP23001910816, on Line

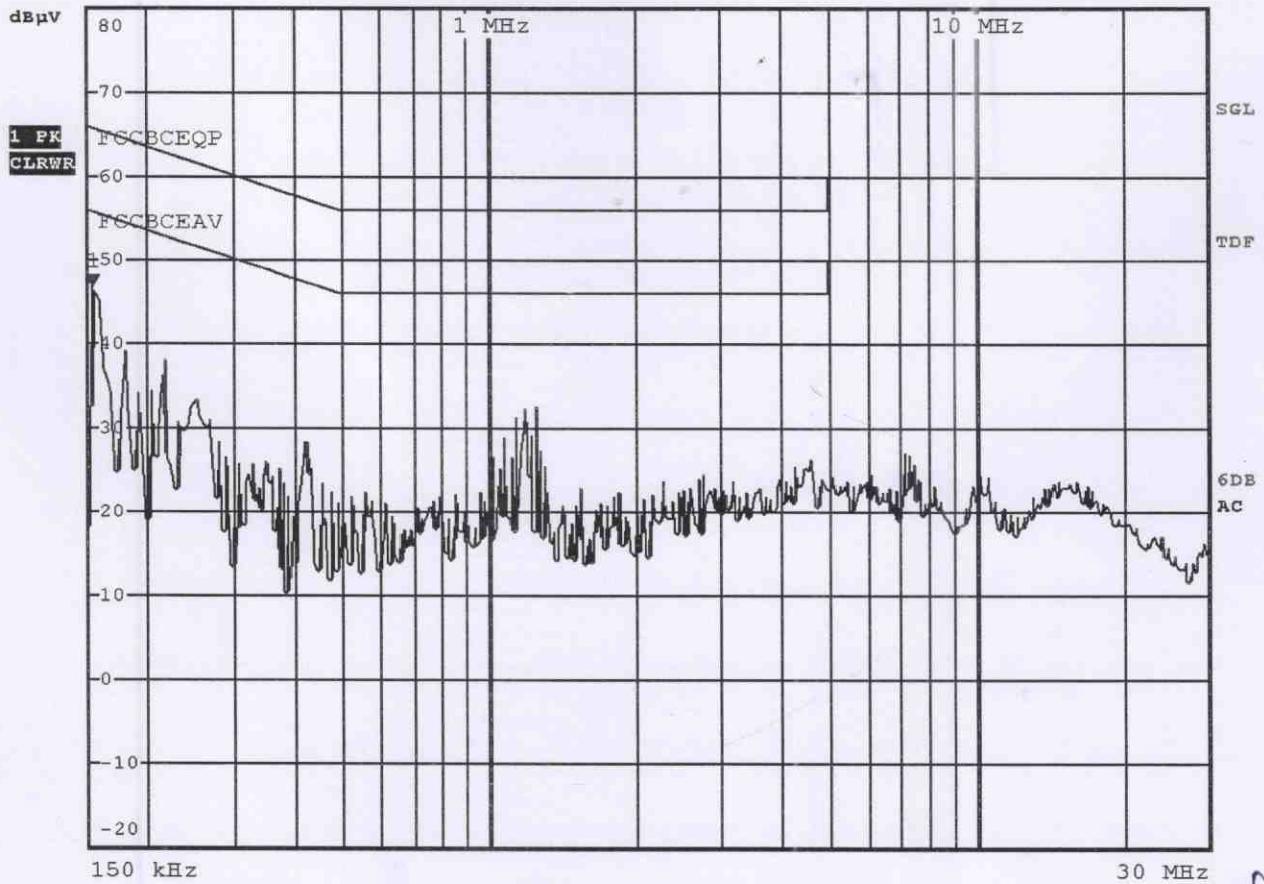
Date: 25.APR.2017 10:37:05



Graphs of Conducted Emission measurement on power line (Peak measurement)



RBW 9 kHz Marker 1 [T1 ]  
MT 1 s 46.82 dBµV  
Att 10 dB AUTO PREAMP ON 154.000000000 kHz



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*Gupta*

SRF:64135, CE Test on STM/BLOX eSBC, Make: ALLO.COM, Model:

ALLO- STM/eSBC, S/N: SP23001910816, on Neutral

Date: 25.APR.2017 10:40:02

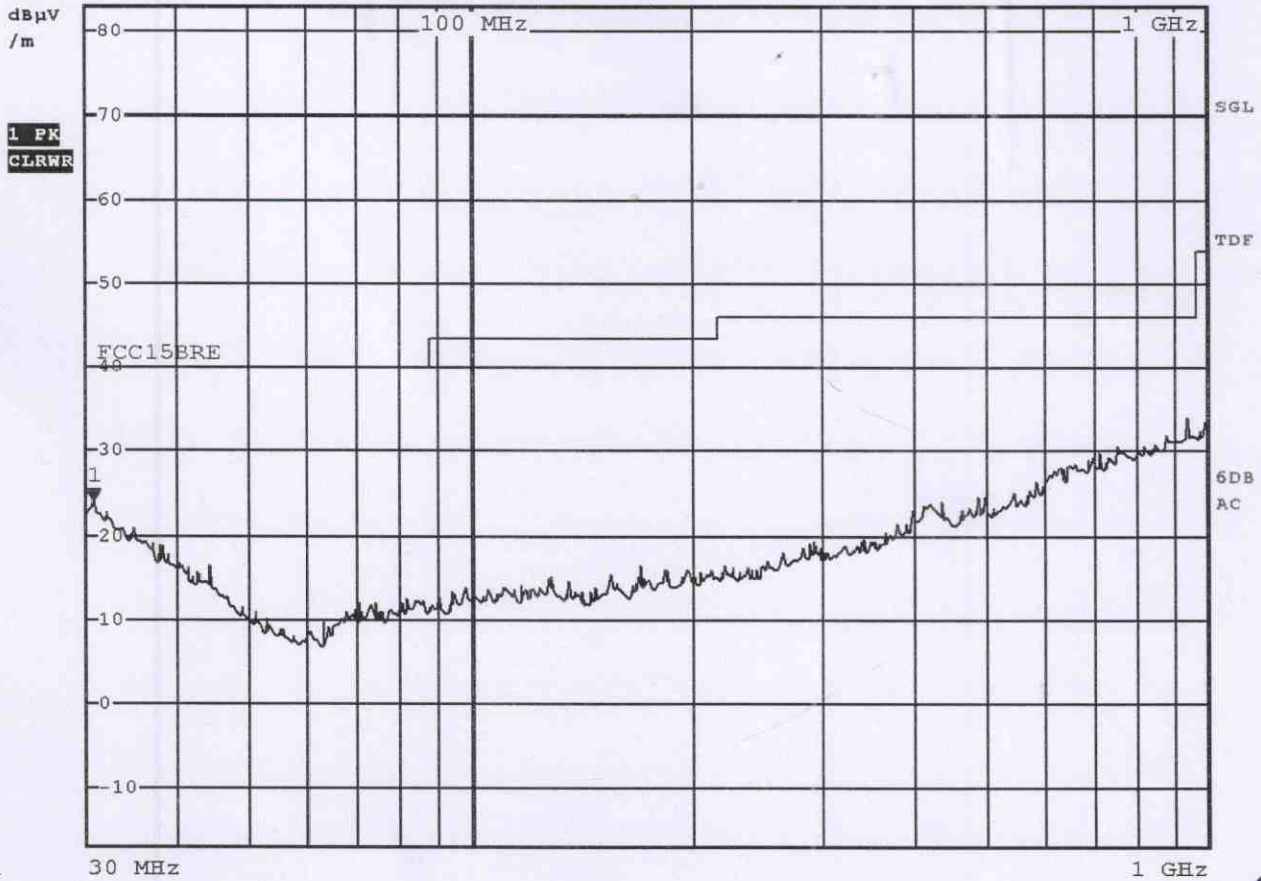




Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 24.00 dBμV/m  
Att 0 dB AUTO PREAMP ON 30.560000000 MHz



Egypt

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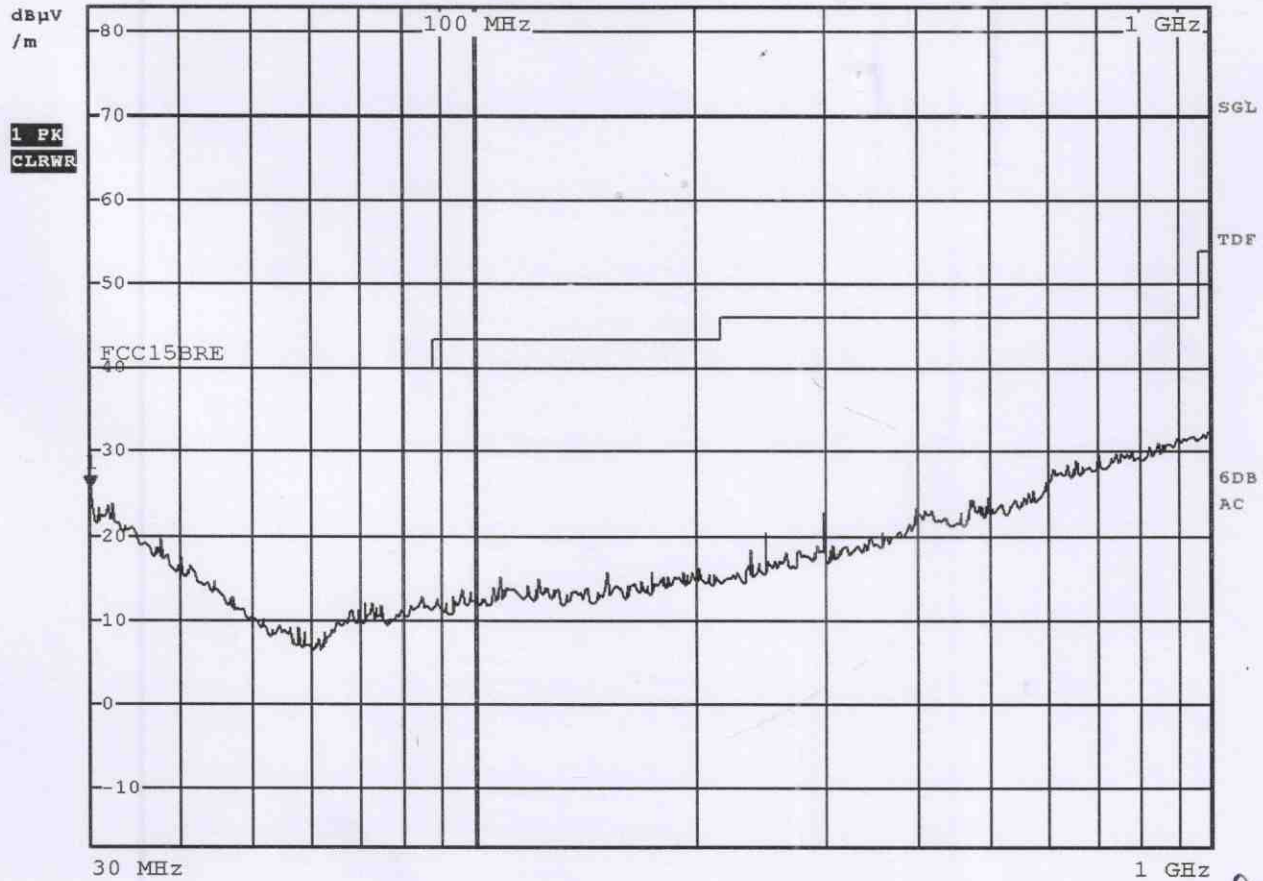
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Date: 26.FEB.2017 15:29:49



Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 25.73 dBµV/m  
Att 0 dB AUTO PREAMP ON 30.000000000 MHz



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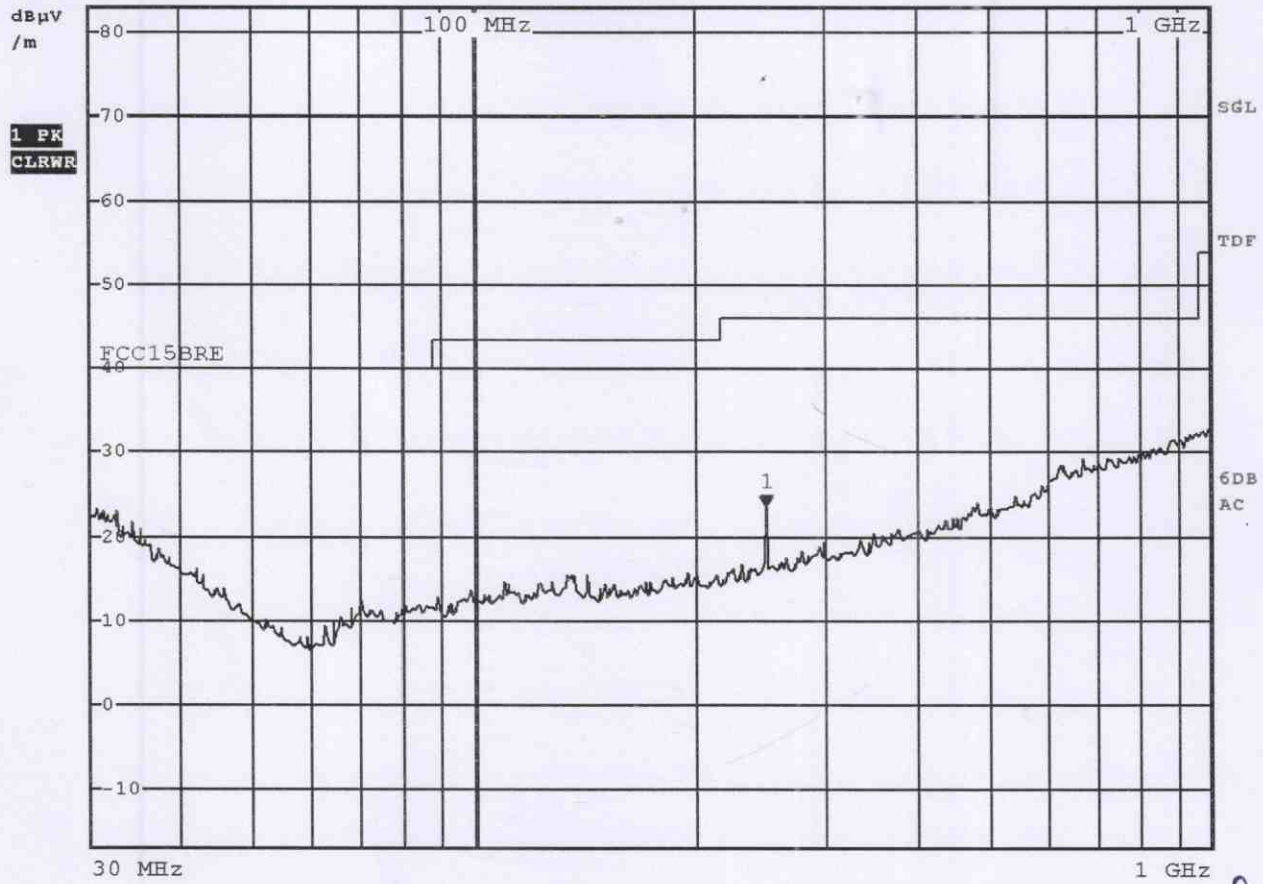
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ALLO-STM/eSBC, S/N: SP23001910816, EUT: 90 Deg, Antenna: HP  
Date: 26.FEB.2017 15:33:10



Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 ms 23.60 dBµV/m  
Att 0 dB AUTO PREAMP ON 250.000000000 MHz



*Prapta*

*(Signature)*

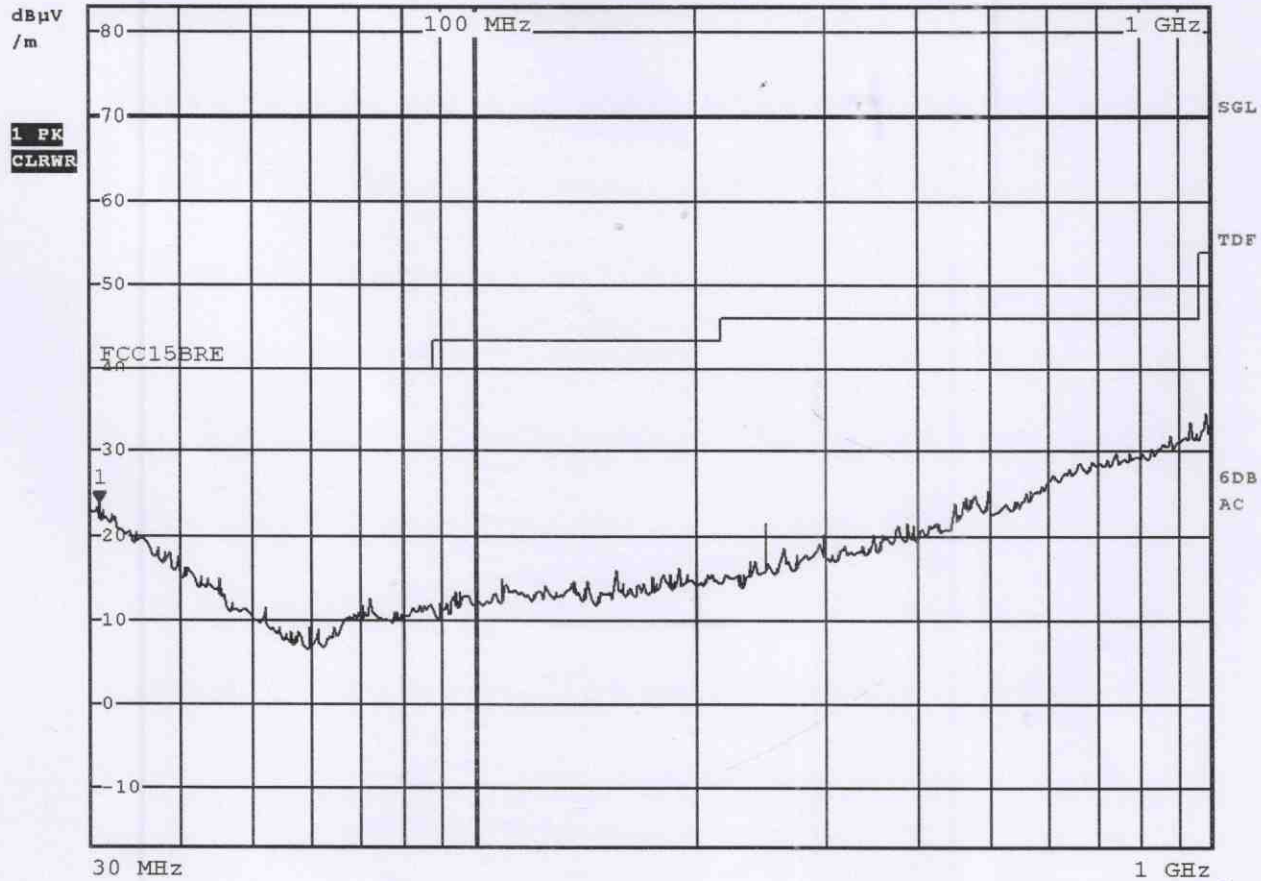
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Date: 26.FEB.2017 15:45:37



Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 23.90 dBµV/m  
Att 0 dB AUTO PREAMP ON 30.840000000 MHz



Gupta

CM

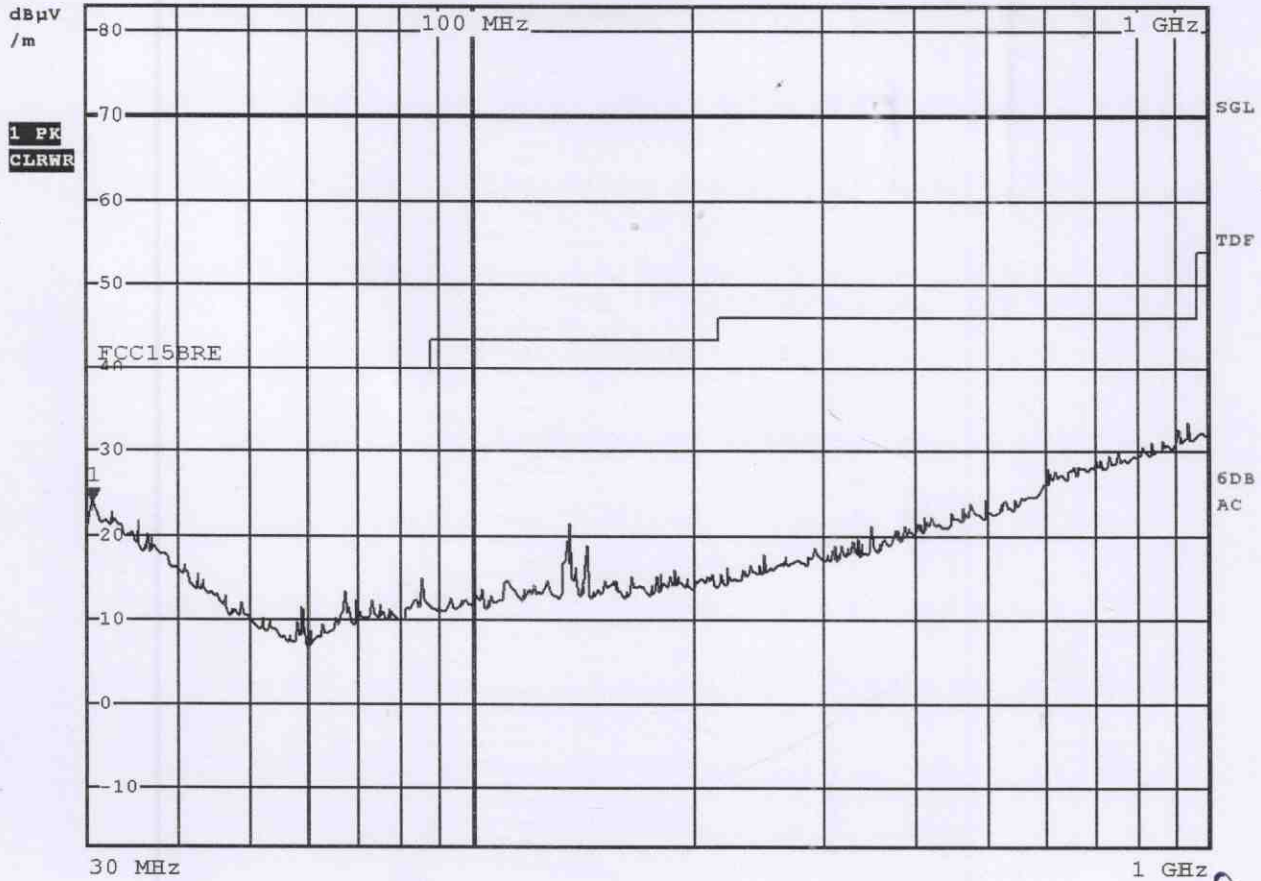
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Date: 26.FEB.2017 15:44:43



Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 24.01 dBµV/m  
Att 0 dB AUTO PREAMP ON 30.440000000 MHz



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*Graph*

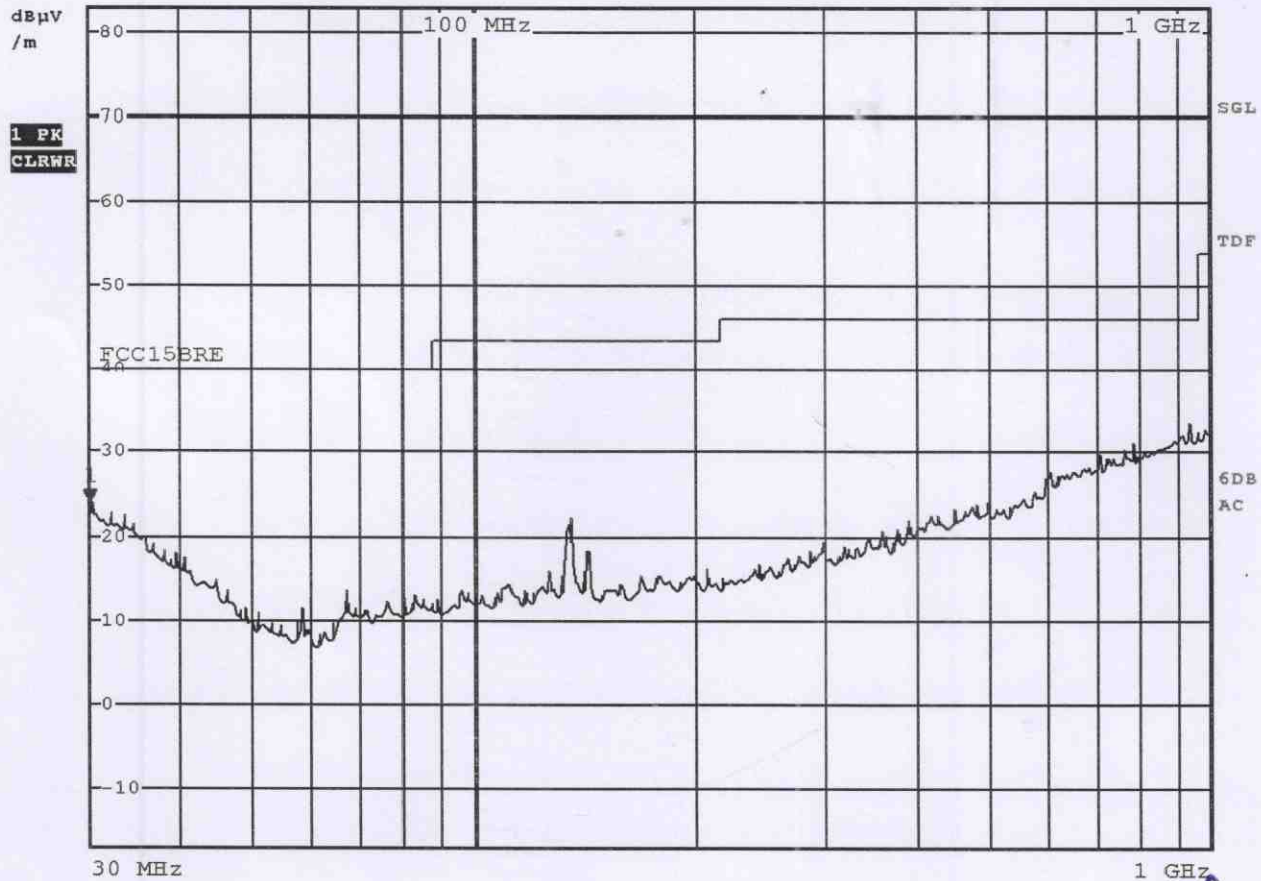
SRF: 64135, RE Test on STM/BLOX eSBC, Make: ALLO.COM, Model:  
ALLO-STM/eSBC, S/N: SP23001910816, EUT: 0 Deg, Antenna: VP  
Date: 26.FEB.2017 15:50:11



Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 24.05 dBμV/m  
Att 0 dB AUTO PREAMP ON 30.000000000 MHz



Graph

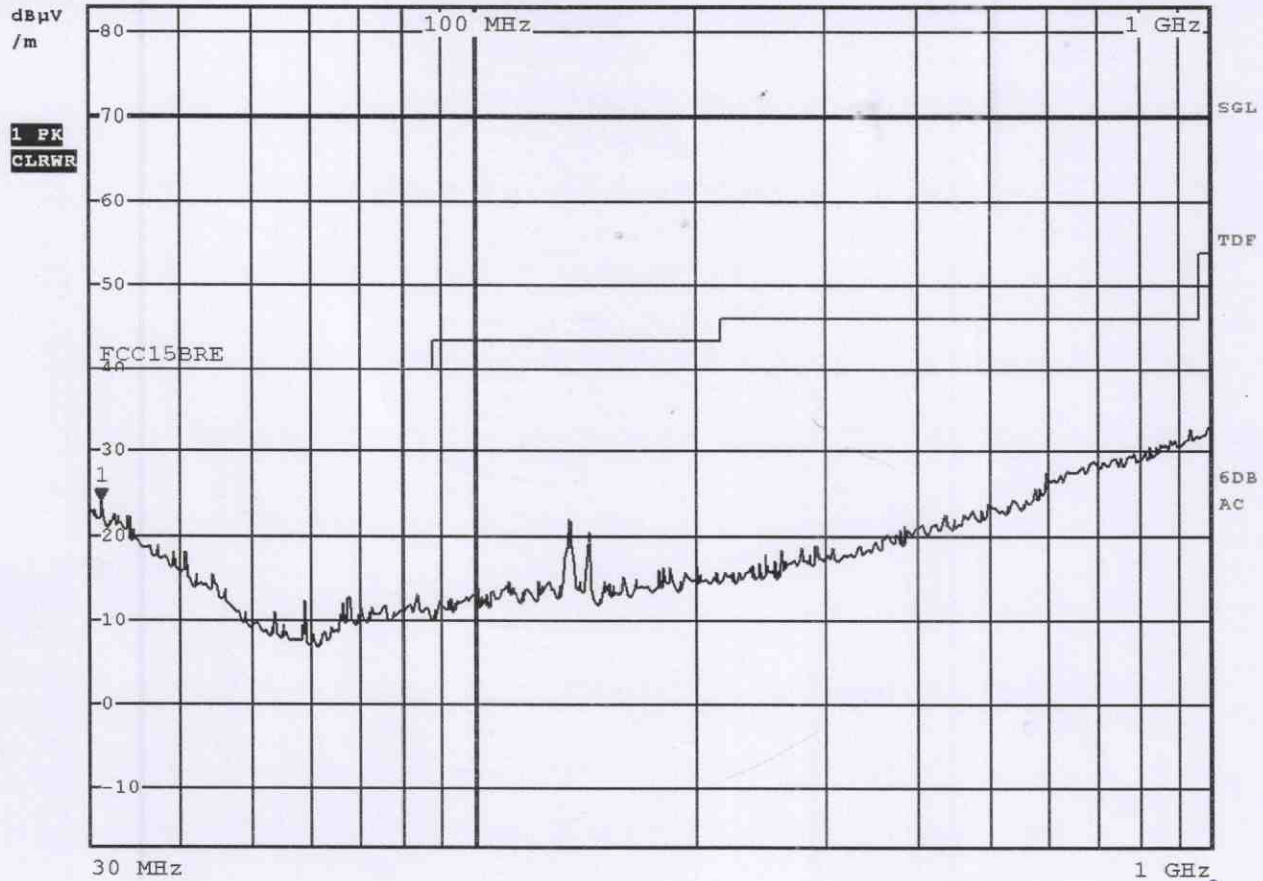
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Date: 26.FEB.2017 15:52:42



Graphs of Radiated Emission measurement @ 3mts. distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 24.02 dBµV/m  
Att 0 dB AUTO PREAMP ON 30.960000000 MHz



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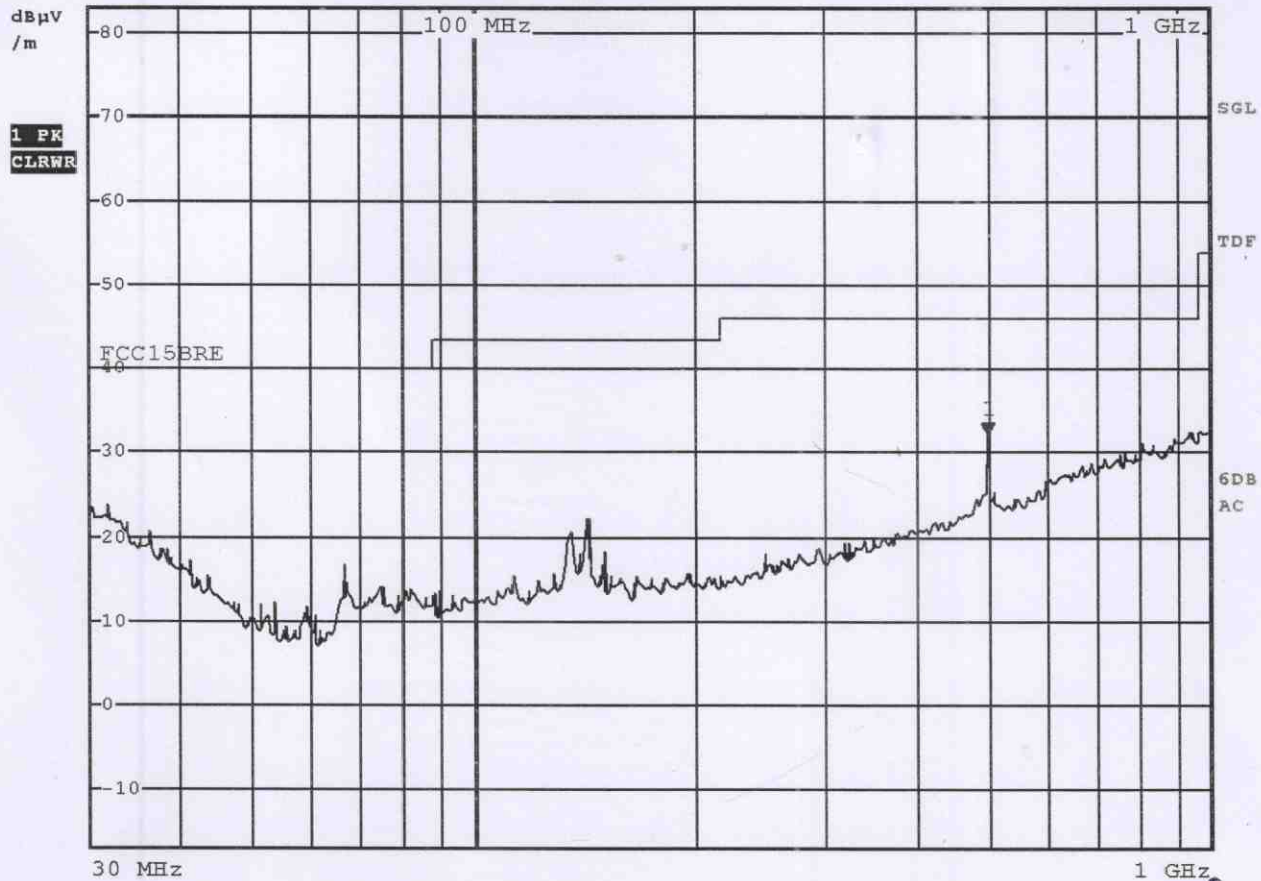
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Date: 26.FEB.2017 15:56:29



Graphs of Radiated Emission measurement @ 3mts. Distance



RBW 120 kHz Marker 1 [T1 ]  
MT 1 s 32.29 dBuV/m  
Att 0 dB AUTO PREAMP ON 500.000000000 MHz



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*Prapti*

SRF: 64135, RE Test on STM/BLOX eSBC, Make: ALLO.COM, Model:  
ALLO-STM/eSBC, S/N: SP23001910816, EUT: 270 Deg, Antenna: VP  
Date: 26.FEB.2017 15:59:30

