



NO. SOTAX (LG) 3-4/03 (P-III)

GOVERNMENT OF THE PUNJAB  
LOCAL GOVT. & COMMUNITY DEVELOPMENT  
DEPARTMENT

Dated Lahore, the 12<sup>th</sup> August, 2013

To

1. All Divisional Commissioners  
in the Punjab
2. All District Coordination Officers  
City District Governments in the Punjab
3. All Director Generals  
Development Authorities in the Punjab
4. All Tehsil/Town Municipal Officers  
Tehsil / Town Municipal Administrations  
in the Punjab

Subject: **AMENDMENTS IN POLICY GUIDELINES FOR INSTALLATION OF  
BTS (BASE TRANS-RECEIVERS STATION) TOWERS.**

In continuation of this Department's letter of even number dated 19.01.2009 on the subject cited above.

2. Following guidelines are issued for installation of BTS in the residential area:

**Policy Guidelines For Installation Of BTS Towers In Residential Areas**

- i. In all residential areas/schemes/localities, which are duly approved by Development Authorities/Town Municipal Authorities or their predecessors, BTS Towers shall be installed in the pre-designated commercial areas on roof of community water tanks or any on commercial building in accordance with laid down conditions specified at Appendix 1 and 2. BTS towers shall not be installed in residential areas.
- ii. In the walled city of Lahore and in similar localities in other cities and towns of the province, which are duly notified by the government, permission for installation of BTS towers shall be granted by the concerned authorities mandated for the preservation of such localities in accordance with the concerned laws/rules and regulations.
- iii. In the old parts of the cities and towns, where there are no pre-designated commercial areas or community water tanks and RCC commercial buildings, low powered metro wallmount and macro poles not more than 9 meters shall be installed subject to the guidelines specified in Appendix 1 and 2.
- iv. Installation of BTS towers shall not be permitted in slums, unrecognized /unregulated katchi abadis and all such areas.
- v. Installation of BTS towers shall not be allowed in narrow lanes in order to reduce the risk caused by earthquake or wind related disasters;

- vi. Installation of BTS tower shall not be allowed on non-Reinforced Concrete Constructed buildings or those which are structurally unsafe.
- vii. Installation of BTS towers shall not be allowed on or in the vicinity of premises of heritage buildings preserved under Special Premises (Preservation) Ordinance 1985 will be granted and minimum of 200 feet radius will be the prohibited area around them to keep the sky line from getting cluttered and for preserving such sites beauty and structure.
- viii. Cellular Company which intends to install BTS tower must demonstrate that all reasonable steps have been taken for co-sharing before applying to the permitting agencies to install new single company tower.
- ix. No installation shall be allowed in educational and medical care institutions. A safe distance of 100 meter from these institutions shall be adhered to.
- x. All towers/BTS installations will comply with all applicable standards laid down by Federal Regulatory Authorities in addition to these conditions;
- xi. After the installation of BTS Tower, the concerned cellular company shall submit to the concerned TMA a third party assessment certificate regarding the structural stability of the tower.
- xii. The Mobile Companies shall ensure that in case of alternative power provision:
  - a. First back option shall be batteries based with a minimum of 8-10 hours backup
  - b. Second backup option shall be Generator- based in compliance with EPA regulation and guidelines

3.

### Operational Requirements

- i. Permitting Agency shall inspect the site during the construction of a tower before its operations.
- ii. Structural stability assessment shall be conducted, at least once every year, of each tower by a certified Engineer registered with the Pakistan Engineering Council. A report in this regard will be furnished to the concerned TMA.
- iii. Authorization holders must ensure that specific exposure limits are in conformity with those of the International Commission on Non-Ionizing Radiation Protection (ICNIRP), which are recommended by the World Health Organization (WHO), to protect workers and the general public against the excessive exposure to RF fields.
- iv. Signboards and warning signs (Danger RF Radiation restricted area. Do not enter) must be installed at the site of BTS tower for public protection from radiation;
- v. No access should be provided for general public to BTS tower by erecting wire fencing and locking of door to the roof etc

- vi. Provision of solar or dried batteries generator for BTS tower must be ensured;
- vii. Repair and maintenance of the premises on/in which the BTS sites are to be constructed will be the responsibility of the Mobile Company as per their requirements;
- viii. The security of BTS towers in all respects will be the absolute responsibility of the concerned cellular company;
- ix. After the installation of BTS Tower, the concerned cellular company shall submit to the concerned TMA a third party assessment certificate regarding the structural stability of the tower.
- x. NOC from the neighborhood in immediate 400 meter radius area where the tower is to be mounted.
- xi. Cellular Company shall furnish affidavit stating the following that in case of any loss to life or property the concerned cellular company will be bound to pay Rs. 0.2 million (two lacs) to each victim and make good any damage to any property.
- xii. Indemnity Bond to take care of any loss or injury due to accident caused by the tower including a declaration to the effect that the applicant person/cellular company shall take special precautions for fire safety and lightning and shall be solely responsible for paying all kinds of compensation and damages and would be responsible for any civil or criminal case arising therefrom.

4. **Regularization of existing BTS Towers in Residential Areas:**

a. The BTS towers installed by the cellular companies in residential areas prior to this policy shall have a moratorium of three years and within this period the companies shall have to replace or bring them in conformity with technical specification provided in this policy, failing which all such towers shall be removable at the expense of cellular companies.

Following committee is notified for regularization of the towers already installed in the residential area:

- |      |   |                 |
|------|---|-----------------|
| i.   | Administrator of the concerned TMA                        | <b>Convener</b> |
| ii.  | TMO of the concerned TMA                                  | Member          |
| iii. | Representative of Environment Protection Deptt.           | Member          |
| iv.  | Representative of District Coordination Officer concerned | Member          |
| v.   | TO(P&C) of concerned TMA                                  | Member          |
| vi.  | Representative of Development Authority concerned         | Member          |
| vii. | Any other member(s) co-opted by the committee             |                 |

b. All BTS Towers installed in the residential areas will be required to shift their energy source from WAPDA/Generator to solar energy within a period of six

months. All NOCs thus granted under the above mentioned policy shall stand null and void after the expiry of this "grace period".

  
(MAHMOOD AHMAD)  
SECTION OFFICER (TAX)

**No. & Date Even.**

A copy is forwarded for information and necessary action to:

1. The Secretary to Chief Minister, Punjab.
2. The Secretary to Government of the Punjab, Finance Department.
3. The Secretary to Government of the Punjab, HUD&PHE Department.
4. The Secretary to Government of the Punjab, Environmental Protection Department.
5. The Secretary to Government of the Punjab, Information Technology Department.
6. The Secretary to Government of the Punjab, Industries Department.
7. The Deputy Secretary (General) / Staff Officer to Chief Secretary.
8. The PSO to Minister for Local Government, Punjab.
9. The Chief Executive Officers, all Cellular Companies.

  
(MAHMOOD AHMAD)  
SECTION OFFICER (TAX)

APPENDIX 1

SITING OF TOWERS

| Zoning      | Permissible Height | Average Plot Size & Protection Area | Minimum Set Back Required-<br>(In accordance with Bldg Codes)  | Neighbourhood Requirement  |
|-------------|--------------------|-------------------------------------|--|--|
| Residential | <35 meter          | Not less than 20 m x 20 m           | Not less (<20m) from base of tower to boundary fence or nearest structure depending on local conditions and in agreement with the local community. | Tower may be battery/solar or generator powered. Immediate neighbours within 50m radius shall be Consulted. Co-location must be the first Option |

APPENDIX 2

Basic Limits for Public and Occupational Exposure (ICNIRP)

| Type of exposure     | Frequency range | Current density for head and trunk( $\text{mA}/\text{m}^2$ ) (rms) | Whole body average SAR(W/kg) | Localized SAR (head and trunk)(W/kg) | Localized SAR (limbs)(W/kg) |
|----------------------|-----------------|--|------------------------------|--------------------------------------|-----------------------------|
| Occupational Workers | Up to 1 Hz      | 40   |                              |                                      |                             |
|                      | 1-4 Hz          | $40/f$   |                              |                                      |                             |
|                      | 4 Hz-1 kHz      | 10   |                              |                                      |                             |
|                      | 1-100 kHz       | $f/100$  |                              |                                      |                             |
|                      | 100 kHz-10 MHz  | $f/100$  | 0.4                          | 10                                   | 20                          |
|                      | 10 MHz-10 GHz   |  | 0.4                          | 10                                   | 20                          |
| General Public       | Up to 1 Hz      | 8  |                              |                                      |                             |
|                      | 1-4 Hz          | $8/f$  |                              |                                      |                             |
|                      | 4 Hz-1 kHz      | 2  |                              |                                      |                             |
|                      | 1-100 kHz       | $f/500$  |                              |                                      |                             |
|                      | 100 kHz-10 MHz  | $f/500$  | 0.08                         | 2                                    | 4                           |
|                      | 10 MHz-10 GHz   |  | 0.08                         | 2                                    | 4                           |

NOTE:

$f$  is the frequency in Hertz.

Due to electrical inhomogeneity of the body, current densities should be averaged over a cross-section of  $1 \text{ cm}^2$  perpendicular to the current direction.

All SAR values are to be measured in a period of 6-minutes.

For a localized SAR averaging mass in any 10g of contiguous tissue, the maximum SAR obtained should be the value used for the estimation of exposure.

Reference Levels for Public and Occupational Exposure (ICNIRP)

| Type of Exposure      | Frequency Range | Electric field Strength (V/m) | Magnetic Field Strength (A/m) | Equivalent Plane Wave Power Density $S_{eq}$ (W/m <sup>2</sup> ) |
|-----------------------|-----------------|-------------------------------|-------------------------------|--|
| Occupational Exposure | Up to 1 Hz      | -                             | $2 \times 10^5$               |  |
|                       | 1-8 Hz          | 20 000                        | $2 \times 10^5 / f^2$         |  |
|                       | 8-25 Hz         | 20 000                        | $2 \times 10^4 / f$           |  |
|                       | 0.025-0.82 kHz  | $500 / f$                     | $20 / f$                      |  |
|                       | 0.82-65 kHz     | 610                           | 24.4                          |  |
|                       | 0.065-1 MHz     | 610                           | $1.6 / f$                     |  |
|                       | 1-10 MHz        | $610 / f$                     | $1.6 / f$                     |  |
|                       | 10-400 MHz      | 61                            | 0.16                          | 10   |
|                       | 400-2000 MHz    | $3 f^{1/2}$                   | $0.008 f^{1/2}$               | $f / 40$   |
|                       | 2-300 GHz       | 137                           | 0.36                          | 50   |
| General Public        | Up to 1 Hz      | -                             | $2 \times 10^4$               |  |
|                       | 1-8 Hz          | 10 000                        | $2 \times 10^4 / f^2$         |  |
|                       | 8-25 Hz         | 10 000                        | $5 000 / f$                   |  |
|                       | 0.025-0.8 kHz   | $250 / f$                     | $4 / f$                       |  |
|                       | 0.8-3 kHz       | $250 / f$                     | 5                             |  |
|                       | 3-150 kHz       | 87                            | 5                             |  |

141

|              |                |                 |  |
|--------------|----------------|-----------------|--|
| 0.15-1 MHz   | $87$           | $0.73/f$        |  |
| 1-10 MHz     | $87/f^{1/2}$   | $0.73/f$        |  |
| 10-400 MHz   | $28$           | $0.073$         |  |
| 400-2000 MHz | $1.375f^{1/2}$ | $0.0037f^{1/2}$ |  |
| 2-300 GHz    | $61$           | $0.16$          |  |

NOTE

$f$  is as indicated in the frequency range column.

For frequencies between 100 KHz and 10GHz, the averaging time is 6 minutes.

For frequencies up to 100 KHz, the peak values can be obtained by multiplying the rms value by 2( $\approx 1.414$ ). For pulses of duration  $t_p$ , the equivalent frequency to apply should be calculated as  $f = 1/(2t_p)$ .

Between 100 KHz and 10MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100MHz to the 32-fold peak at 10MHz. For frequencies exceeding 10MHz, it is suggested that the peak equivalent plane-wave power density, as averaged over the pulse width, does not exceed 1000 times the *Seq* limit, or that the field strength does not exceed the field strength exposure levels given in the above table.

For frequencies exceeding 10GHz, the averaging time is  $68/f$  1.05 minutes ( $f$  in GHz).