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GENERAL NOTICE

NOTICE 938 OF 1999

SOUTH AFRICAN TELECOMMUNICATIONS REGULATORY AUTHORITY



NOTICE IN RESPECT OF THE GENERAL POLICY AND REQUIREMENTS FOR SPREAD SPECTRUM / WIDEBAND AND LOW POWER VIDEO SURVEILLANCE (LPVS) OPERATIONS IN THE 2.4 GHz ISM FREQUENCY BAND.

In terms of the Telecommunications Act, (Act No. 103 of 1996), section 29 (1) – (2) as well as section 30 (9) (a), the South African Telecommunications Regulatory Authority (SATRA) hereby makes known The General Policy and Requirements for Spread Spectrum / Wideband and Low Power Video Surveillance (LPVS) Operations in the 2.4 GHz ISM Frequency Band.

OPERATIONS IN THE 2.4 - 2.4835 GHz ISM FREQUENCY BAND

REFERENCES

- (1) European Telecommunication Standard ETS 300 328 (1996)
(Pending modification by draft amendment ETS 300 328 prA1).
- (2) European Telecommunication Standard ETS 300 440
- (3) Government Gazette No.16820,(2), 17 November 1995.
- (4) Government Gazette No.18883, 30 April 1998.
- (5) Government Gazette No.19472, 15 February 1999.
- (6) Telecommunications Act No.103 of 1996.

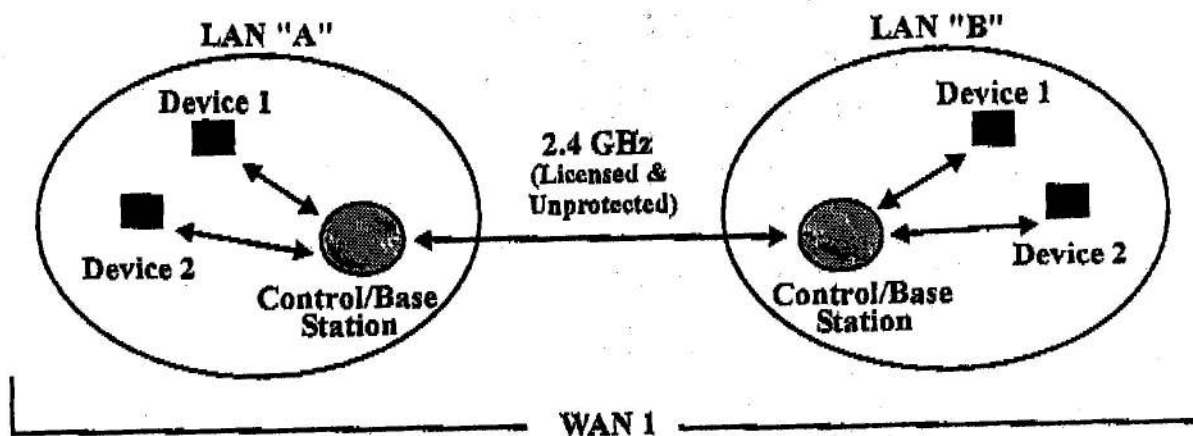
GENERAL

In addition to secondary operations for example TDMA services being provided by Telkom, Eskom etc. on a countrywide basis, the following configurations are currently also considered in the 2.4 GHz ISM band.

- The unlicensed Spread Spectrum / Wideband LAN;
- The unlicensed security type Low Power Video Surveillance;
- The licensed Spread Spectrum / Wideband WAN;
- The licensed security type Low Power Video Surveillance.

In all of these configurations, the equipment must be type approved by the Authority (SATRA).

Local / Wide Area Networking



According to European Telecommunications Standards (ETS), a Local Area Network or LAN is defined as "a group of user stations each of which can communicate with at least one other using a common transmission medium commonly managed".

In the case of Frequency Hopping Spread Spectrum (FHSS) type modulation technology being employed, a specific or single frequency may not be permanently selected, locked onto or engaged to provide radio communications between points/stations.

SPREAD SPECTRUM / WIDEBAND LAN CONFIGURATION**Definition -**

Defined as a wireless Local Area Network (LAN) using spread spectrum/wideband modulation technology; operated over short distance inside buildings, offices, warehouses etc and on single sites or pieces of land. This configuration is subject to the following conditions:

Conditions -

- (1) 2.4 GHz spread spectrum or other similar type wideband LAN systems may be considered in the ISM band of 2400 - 2483.5 MHz.
- (2) Unlicensed when confined to within a building, warehouse or office complex etc. and between the terminals of the licensee only. On a licensed basis when operated outside buildings.
- (3) Only equipment type approved by the Authority (SATRA) according to prescribed standards may be used.
- (4) No radio interference may be caused to ISM and other secondary operations within the band or to any other radio users outside the band.
- (5) No complaints of radio interference to spread spectrum or other similar type wideband systems within the band will be investigated.
- (6) The system shall conform to the limits laid down by Government Gazette No.19472.

Technical -

- (1) The type approval standard to be utilised is the ETS 300 328 until acceptance of the draft amendment ETS 300 328 pr.
- (2) The RF power limits shall be in accordance with the standard mentioned above (1) as well as Government Gazette No.19472 i.e.
 - a. The maximum EIRP is defined as the total radiated power of the system that will not exceed -10 dBW, 100 mW or 20 dBm.
 - b. The peak power density is defined as the highest instantaneous level of the power in Watts per Hertz generated within the power envelope. This shall be -10 dBW or 100 mW per 100 kHz EIRP for equipment using Frequency Hopping Spread Spectrum (FHSS) modulation and -20 dB/W or 10 mW per MHz for other modulation types.

SPREAD SPECTRUM / WIDEBAND WAN CONFIGURATION**Definition -**

Defined as a wireless Wide Area Network (WAN) using spread spectrum/wideband modulation technology; used for point-to-point and/or point-to-multipoint radio communications for distances greater than that of a LAN system and employing directional antennae. This configuration is subject to successful radio co-ordination being obtained as well as licence fees.

Conditions -

- (1) WAN spread spectrum or other similar type wideband systems operating above 1 GHz will only be considered in the ISM band 2400 - 2483.5 MHz.
- (2) WAN's are seen to be links between two points of radio communication outside of a building, warehouse etc.
- (3) According to the Telecommunications Act, it is currently Telkom's prerogative to provide this type of facility.

- (4) SATRA may consider licensing an entity other than Telkom if the network or system is to be operated on contiguous private property or land and does not interface or interconnect to the PSTN (Private Switched Telecommunications Network). The network or system must not cross any public roads, railway lines etc. In either case, WAN systems or networks are subject to licensing.
- (5) Only equipment type approved by the Authority (SATRA according to prescribed standards may be used.
- (6) No complaints of radio interference to spread spectrum or other similar type wideband systems will be investigated.
- (7) No radio interference may be caused to ISM and other secondary operations within the band or to any other radio users outside the band.

Technical -

- (1) The type approval standard to be utilised is the ETS 300 328 until acceptance of the draft amendment ETS 300 328 pr.
- (2) The maximum EIRP (radiated power) of the system/equipment per link or point-to-point operation shall not exceed 1.0 Watt or 30 dBm in the case of FHSS.
- (3) The maximum EIRP (radiated power) of the system/equipment per link or point-to-point operation shall not exceed 100 mW or 20 dBm in the case of DSSS (Direct Sequence Spread Spectrum) or other modulation types.
- (4) Other technical parameters pertaining to the LAN configuration will apply.

LPVS CONFIGURATION

Definition -

Defined as a system consisting of one or more low power video devices being controlled by, or connected to, one (1) LPVS control centre or base station which is not interconnected with other similar type control or base stations.

Conditions -

- (1) LPVS are seen as a terrestrial point-to-point (P-P) or point-to-multipoint (P-MP) radio communications operation mainly transmitting video signals/images. Control frequencies/signals utilised (e.g. for panning, zooming purposes etc.) are normally/generally considered in other frequency bands which will be subject to the rules, regulations, policies and procedures as prescribed by the Authority (SATRA).
- (2) Two types of LPVS configurations will be considered in the 2400 - 2483.5 MHz band viz. unlicensed and licensed. Unlicensed usage of this band by LPVS services will be restricted to indoor operations only (e.g. within a building, office complex, warehouse, mall etc.).
- (3) As far as the licensed LPVS configuration is concerned, and according to the Telecommunications Act, it is currently Telkom's prerogative to provide this type of facility.
- (4) SATRA may consider licensing an entity other than Telkom if the network or system is to be operated on contiguous private property or piece of land and does not interface or interconnect to the PSTN (Private Switched Telecommunications Network). The network or system must not cross any public or national roads, railway lines etc. In either case, systems or networks are subject to licensing.

- (5) Only equipment type approved by SATRA according to prescribed standards may be used.
- (6) No radio interference may be caused to ISM and other secondary operations within the band or to other radio users outside the band.
- (7) No complaints of radio interference to LPVS or other similar type systems will be investigated within this band.

Technical -

- (1) The type approval standard to be utilised is the ETS 300 440.
- (2) The maximum EIRP is defined as the total effective radiated power of the system under normal and extreme test conditions and should not exceed -10 dBW, 100 mW or 20dBm.
- (3) The frequency range of the equipment is determined by the lowest and highest frequencies occupied by the power envelope. The lowest frequency of the power envelope is the frequency furthest below the frequency of maximum power where the output power drops below the level of -80 dBm/Hz spectral power density (-30 dBm if measured in a 100 kHz bandwidth) eirp. The highest frequency of the power envelope is the frequency furthest above the frequency of maximum power where the output power drops below the level of -80 dBm/Hz spectral power density (-30 dBm if measured in a 100 kHz bandwidth) eirp.
- (4) The frequency range of the equipment shall not exceed the band limits of 2400.0000 and 2483.5000 MHz.
- (5) In the case of equipment capable of tuning across the band 2400 - 2483.5 MHz, testing laboratories/facilities must select and record at least the lowest and highest operating frequency (also referred to as the operating centre frequency) of the equipment to determine the frequency range of the equipment. In this respect, due consideration must be given to the power envelope at these frequencies as described under (3) above. In addition, the nominal operating frequency i.e. the frequency at which the equipment will normally be operated on as well as the EIRP value at the nominal frequency must be recorded and indicated.

FEES

Unlicensed Operations: No prescribed licence fees.

Licensed Operations: R2500.00 per Base or Control station per year

TYPE APPROVAL REQUIREMENTS

LPVS and Spread Spectrum/Wideband LAN / WAN:

SATRA will require the following in order to assess the application for type approval:

- Equipment must be tested by an accredited test laboratory and must be in compliance with the above-mentioned/applicable ETS standard.
- An original or certified true copy of the complete test report in English.
- Full technical characteristics and description of operation of the equipment, system and service including colour photographs or pamphlets.

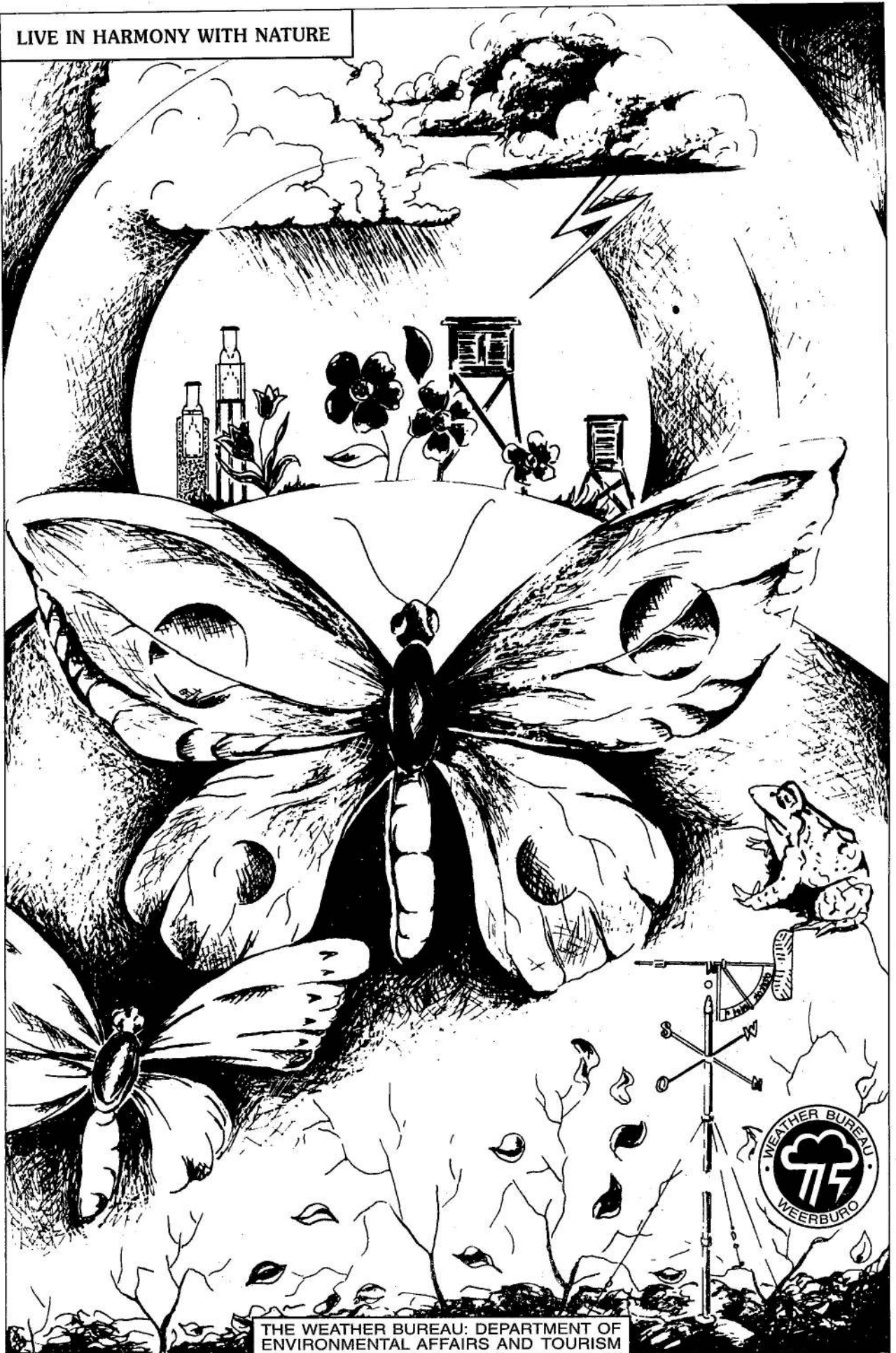
Above information must be submitted to:

Head of Department (HoD)
Commercial Radio Licensing
SATRA
Private Bag X1
Marlboro, 2063
South Africa

Additional Notes -

- An official notice of equipment type approval may be issued to the applicant or to a company authorised by the applicant, but the distributor must be a South African registered Company. It is, therefore, imperative that a certified true copy of the SA company registration certificate be provided.
- The Authority (SATRA) can, unfortunately, not accept/recognise equipment type approvals issued by other countries or authorities. SATRA will, however, accept test reports from accredited overseas laboratories provided the equipment has been tested according to the SATRA prescribed specifications or standards.
- At this point in time no approval label is required. However, the International marking such as the CE mark is acceptable.
- Provided that full technical details and a complete set of information as described above, have been submitted, a minimum period of two weeks should be allowed for the processing of applications by the Technical Division.
- The band 2400 - 2483.5 MHz is primarily allocated for ISM (Industrial, Scientific and Medical) use in South Africa. It should further be noted that Spread Spectrum/Wideband LAN or WAN and LPVS is considered as a telecommunications service operating on a secondary basis in the ISM band 2.4 - 2.4835 GHz. In addition, and notwithstanding any comments contained within this information sheet, the Authority (SATRA) will endeavor to keep the noise floor level in this band to an absolute minimum.

LIVE IN HARMONY WITH NATURE



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