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GENERAL NOTICE

NOTICE 628 OF 1999



SOUTH AFRICAN TELECOMMUNICATIONS REGULATORY AUTHORITY

NOTICE IN RESPECT OF REQUIREMENTS AND POLICY FOR OPERATIONS IN THE 1.4/1.5 GHz BAND AND 2.0 GHz BAND.

In terms of the Telecommunications Act, (Act No. 103 of 1996), and pursuant to Notice 759 of 1997 published in Government Gazette No. 17983 on 6 May 1997, where notice is given of the revision of the South African Frequency Allocation Plans (Band Plans) and Migration Strategies.

The South African Telecommunications Authority (SATRA) hereby adopts and makes known the requirements and policy for operations in the 1.4 GHz, 1.5 GHz and 2.0 GHz frequency bands.

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S.A.T.R.A**Detailed Policy / Requirements for Operations in the 1.4 & 1.5 GHz Bands -
(1350 - 1525 MHz)****NOTES:**

All aspects or implications of this policy should be referenced to the relevant sections of the Telecommunications Act (103 of 1996). In particular:

- In accordance with Sect. 41 of the Act, a private telecommunication network may only be provided using Telkom facilities, except where the network is on private property, or when Transnet or Eskom maintains it.
- In accordance with Sect. 43 and 44 of the Act, Telkom has the first right of refusal to provide telecommunication facilities to interconnect with the telecommunication system of another telecommunication service provider.
- In accordance with Sect. 30 of the Act, any user holding a radio frequency licence, which was valid immediately before the date of commencement of the Act, shall have certain rights to continue to utilise the radio spectrum.

In general, SATRA will discourage the use of radio for the provision of links having a narrow RF channel bandwidth. As far as the technical parameters of any new link/service are concerned, SATRA, however, reserves the right to make exceptions on a case-by-case basis at its own discretion. In particular, where there is no other realistic alternative for providing the service.

Prior to the purchasing of fixed link equipment, users should approach the Regulator (SATRA) to discuss the availability of suitable frequencies and, if appropriate, initiate the licensing process. SATRA cannot guarantee the availability of particular frequencies for fixed links and the prior purchase of equipment cannot be used as motivation or an overriding reason to assign a frequency in a particular band.

DEFINITIONS:

High Density Area - From a radio frequency spectrum point of view, a High Density Area will be defined by a circle which will at least include the geographical borders of any city, region or metropolitan area and where the concentration or number of radio sites within this circle is greater than, or equal to, 0.1 site per square kilometer. The term High Density Area refers to, for example, complexes in the greater Johannesburg, Pretoria, Cape Peninsula and Durban areas and may also include centres of population such as Nelspruit, Kimberley etc.

Low Density Area - All areas not being classified as a High Density Area.

POLICY AND REQUIREMENTS

1. In general, the design of systems or networks should be based on sound engineering and frequency management principles. In particular, the frequency spectrum must be utilised in an optimum and efficient manner at all times and thus allowing for maximum re-use and sharing capabilities.
2. Channel arrangement for the band 1350 - 1375 / 1492 - 1517 MHz according to CEPT Recommendation TR13-01; Annex A (detailed plan attached). Channels 1 and 143 to be utilised first until fully saturated where after the next channel will be considered.
3. Channel arrangement for the band 1375 - 1400 / 1427 - 1452 MHz according to CEPT Recommendation TR13-01, Annex B (detailed plan attached). Channel 1 to be utilised first until fully saturated where after the next channel will be considered.
In the case of the capped portion 1395 - 1400 / 1447 - 1462 MHz, channel 40 to be utilised first until fully saturated where after the next channel will be considered
4. Channel arrangement for the band 1517 - 1525 MHz according to the attached channel plan. Channels 1 and 147 to be utilised first until fully saturated where after the next channel will be considered.

5. Minimum Link / Hop distances :
⇒ New Assignments - 20 km.
6. Antenna beamwidths as measured at the 3 dB points to be less than, but not exceeding -
⇒ 8 degrees in total (i.e. ± 4 degrees from the nominal direction of the link) for new assignments in both urban and rural areas. Wider beamwidths will be considered provided motivation can be submitted that such beamwidths will improve frequency reuse.
7. Transmitter power delivered to the antenna must be adjusted to the absolute minimum level for satisfactory overall system performance.
8. Diversity techniques to be employed in a spectrum efficient manner and to allow for maximum frequency reuse capabilities.
9. In the case of spectrum being exclusively allotted to a user on either a permanent or temporary basis (e.g. 1395 - 1400 / 1447 - 1452 MHz), systems or networks may only be installed or deployed after authority to proceed has been obtained from the Regulator (SATRA). Exclusive users are to submit a full link engineering report and/or properly completed Microwave application forms to SATRA in this regard. Each installation shall be deemed authorised in principle if no objection is received from SATRA within 7 (seven) working days after receipt of the engineering report by SATRA. Further and final processing of applications/licences in this regard will be handled afterwards in the normal manner (i.e. via the Commercial Radio Licensing division). The Authority (SATRA), however, reserves the right to request the implementation of modifications or changes to the final link design parameters should these not be in conformance with sound frequency management principles or the general requirements outlined in this document.
10. In the case of spectrum being allotted for shared usage on either a permanent or temporary basis, systems or networks may only be installed or deployed once the official licence has been issued by the Authority (SATRA). In this regard, full technical details as prescribed must timeously be submitted to the Authority for processing in the normal manner (i.e. via the Commercial Radio Licensing division).
11. It should be noted that the type approval of equipment may in the near future become a pre-requisite for licensing. In this respect, authority or licensing as mentioned under (9) and (10) above, will not be considered without the equipment being type approved by the Authority (SATRA).
12. In the case of bulk licensees being involved (e.g. Telkom, Transtel etc.), a technical record of all operations shall be provided to the Authority (SATRA) in electronic format on a monthly basis. The format of these records will be as prescribed by the Authority (SATRA). As far as applicants other than bulk users are concerned, technical particulars will be provided on the prescribed application form (attached).
13. Serious consideration be given to the possibility of exclusive spectrum users above 3 GHz releasing frequencies/channels for subdivision and sharing in order to accommodate narrower RF channel bandwidths should equipment become available.

S.A.T.R.A.**Detailed Policy / Requirements for Operations in the 2.0 GHz Band
(2025 - 2110 / 2200 - 2285 MHz)****NOTES:**

All aspects or implications of this policy should be referenced to the relevant sections of the Telecommunications Act (103 of 1996). In particular:

- In accordance with Sect. 41 of the Act, a private telecommunication network may only be provided using Telkom facilities, except where the network is on private property, or when Transnet or Eskom maintains it.
- In accordance with Sect. 43 and 44 of the Act, Telkom has the first right of refusal to provide telecommunication facilities to interconnect with the telecommunication system of another telecommunication service provider.
- In accordance with Sect. 30 of the Act, any user holding a radio frequency licence, which was valid immediately before the date of commencement of the Act, shall have certain rights to continue to utilise the radio spectrum.

In general, SATRA will discourage the use of radio for the provision of links having a narrow RF channel bandwidth. As far as the technical parameters of any new link/service are concerned, SATRA, however, reserves the right to make exceptions on a case-by-case basis at its own discretion. In particular, where there is no other realistic alternative for providing the service.

Prior to the purchasing of fixed link equipment, users should approach the Authority (SATRA) to discuss the availability of suitable frequencies and, if appropriate, initiate the licensing process. SATRA cannot guarantee the availability of particular frequencies for fixed links and the prior purchase of equipment cannot be used as motivation or an overriding reason to assign a frequency in a particular band.

DEFINITIONS:

- High Density Area -** From a radio frequency spectrum point of view, a High Density Area will be defined by a circle which will at least include the geographical borders of any city, region or metropolitan area and where the concentration or number of radio sites within this circle is greater than, or equal to, 0.1 site per square kilometer. The term High Density Area refers to, for example, complexes in the greater Johannesburg, Pretoria, Cape Peninsula and Durban areas and may also include centres of population such as Nelspruit, Kimberley etc.
- Low Density Area -** All areas not being classified as a High Density Area.

POLICY AND REQUIREMENTS

1. In general, the design of systems or networks should be based on sound engineering and frequency management principles. In particular, however, the frequency spectrum must be utilised in an optimum and efficient manner at all times and thus allowing for maximum reuse and sharing capabilities.
2. Channel arrangement for the band 2025 - 2110 / 2200 - 2285 MHz according to CEPT Recommendation TR13-01, Annex C (detailed plan attached). Channel 1 and 16 of the F.S part as well as channel 9 of the F.S for WLL portion to be utilised first until fully saturated where after the next channel will be considered.
3. Minimum Link / Hop distance : 30 km.
4. Antenna beamwidths as measured at the 3 dB points to be less than, but not exceeding, 6 degrees in total (i.e. ± 3 degrees from the nominal direction of the link). Wider beamwidths will be considered provided motivation can be submitted that such beamwidths will improve frequency reuse.

5. Transmitter power delivered to the antenna must be adjusted to the absolute minimum level for satisfactory overall system performance.
6. Diversity techniques to be employed in a spectrum efficient manner and to allow for maximum frequency reuse capabilities.
7. In the case of spectrum being exclusively allotted to a user on either a permanent or temporary basis (e.g., 2075 - 2110 / 2250 - 2285 MHz), systems or networks may be installed or deployed without prior authority to proceed having been obtained from the Authority (SATRA). A technical record of all operations shall, however, be provided to the Authority (SATRA) in electronic format on a monthly basis. The format of these records will be as prescribed by the Authority (SATRA). The Authority (SATRA) reserves the right to request the implementation of modifications/changes to the final link design parameters should these not be in conformance with sound frequency management principles or the general requirements outlined in this document.
8. In the case of spectrum being allotted for shared usage on either a permanent or temporary basis (i.e. 2025 - 2075 / 2200 - 2250 MHz), systems or networks may only be installed or deployed once the final licence has been issued by the Authority (SATRA). In this regard, full technical details as prescribed must timeously be submitted to the Authority for processing in the normal manner (i.e. via the Commercial Radio Licensing division).
9. It should be noted that the type approval of equipment may in the near future become a pre-requisite for licensing. In this respect, authority or licensing as mentioned under (7) and (8) above, will not be considered without the equipment being type approved by the Authority (SATRA).
10. Serious consideration be given to the possibility of exclusive spectrum users above 3 GHz releasing frequencies/channels for subdivision and sharing in order to accommodate narrower RF channel bandwidths should equipment become available.

CEPT Band	TR13-01(A)						TR13-01(A)						CEPT Band
Chr.Freq	1.4 GHz (F.S)						1.4 GHz (F.S)						Chr.Freq
Ch.Width	1433.5 MHz 25 kHz & 500 kHz						1433.5 MHz 25 kHz & 500 kHz						Ch.Width
Separ.	142 MHz						142 MHz						Separ.
Ch.Spac.	100x25 kHz & 43x500 kHz						100x25 kHz & 43x500 kHz						Ch.Spac.
Chr.Gap	117 MHz						117 MHz						Chr.Gap
Ch.	Go	Return	Ch.	Go	Return	Ch.	Go	Return	Ch.	Go	Return	Ch.	
1	1390.5125	1492.5125	37	1351.4125	1493.4125	73	1352.3125	1494.3125	109	1357.2500	1499.2500	109	
2	1350.5375	1492.5375	38	1351.4375	1493.4375	74	1352.3375	1494.3375	110	1357.7500	1499.7500	110	
3	1350.5625	1492.5625	39	1351.4625	1493.4625	75	1352.3625	1494.3625	111	1358.2500	1500.2500	111	
4	1350.5875	1492.5875	40	1351.4875	1493.4875	76	1352.3875	1494.3875	112	1358.7500	1500.7500	112	
5	1350.6125	1492.6125	41	1351.5125	1493.5125	77	1352.4125	1494.4125	113	1359.2500	1501.2500	113	
6	1350.6375	1492.6375	42	1351.5375	1493.5375	78	1352.4375	1494.4375	114	1359.7500	1501.7500	114	
7	1350.6625	1492.6625	43	1351.5625	1493.5625	79	1352.4625	1494.4625	115	1360.2500	1502.2500	115	
8	1350.6875	1492.6875	44	1351.5875	1493.5875	80	1352.4875	1494.4875	116	1360.7500	1502.7500	116	
9	1350.7125	1492.7125	45	1351.6125	1493.6125	81	1352.5125	1494.5125	117	1361.2500	1503.2500	117	
10	1350.7375	1492.7375	46	1351.6375	1493.6375	82	1352.5375	1494.5375	118	1361.7500	1503.7500	118	
11	1350.7625	1492.7625	47	1351.6625	1493.6625	83	1352.5625	1494.5625	119	1362.2500	1504.2500	119	
12	1350.7875	1492.7875	48	1351.6875	1493.6875	84	1352.5875	1494.5875	120	1362.7500	1504.7500	120	
13	1350.8125	1492.8125	49	1351.7125	1493.7125	85	1352.6125	1494.6125	121	1363.2500	1505.2500	121	
14	1350.8375	1492.8375	50	1351.7375	1493.7375	86	1352.6375	1494.6375	122	1363.7500	1505.7500	122	
15	1350.8625	1492.8625	51	1351.7625	1493.7625	87	1352.6625	1494.6625	123	1364.2500	1506.2500	123	
16	1350.8875	1492.8875	52	1351.7875	1493.7875	88	1352.6875	1494.6875	124	1364.7500	1506.7500	124	
17	1350.9125	1492.9125	53	1351.8125	1493.8125	89	1352.7125	1494.7125	125	1365.2500	1507.2500	125	
18	1350.9375	1492.9375	54	1351.8375	1493.8375	90	1352.7375	1494.7375	126	1365.7500	1507.7500	126	
19	1350.9625	1492.9625	55	1351.8625	1493.8625	91	1352.7625	1494.7625	127	1366.2500	1508.2500	127	
20	1350.9875	1492.9875	56	1351.8875	1493.8875	92	1352.7875	1494.7875	128	1366.7500	1508.7500	128	
21	1351.0125	1493.0125	57	1351.9125	1493.9125	93	1352.8125	1494.8125	129	1367.2500	1509.2500	129	
22	1351.0375	1493.0375	58	1351.9375	1493.9375	94	1352.8375	1494.8375	130	1367.7500	1509.7500	130	
23	1351.0625	1493.0625	59	1351.9625	1493.9625	95	1352.8625	1494.8625	131	1368.2500	1510.2500	131	
24	1351.0875	1493.0875	60	1351.9875	1493.9875	96	1352.8875	1494.8875	132	1368.7500	1510.7500	132	
25	1351.1125	1493.1125	61	1352.0125	1494.0125	97	1352.9125	1494.9125	133	1369.2500	1511.2500	133	
26	1351.1375	1493.1375	62	1352.0375	1494.0375	98	1352.9375	1494.9375	134	1369.7500	1511.7500	134	
27	1351.1625	1493.1625	63	1352.0625	1494.0625	99	1352.9625	1494.9625	135	1370.2500	1512.2500	135	
28	1351.1875	1493.1875	64	1352.0875	1494.0875	100	1352.9875	1494.9875	136	1370.7500	1512.7500	136	
29	1351.2125	1493.2125	65	1352.1125	1494.1125	101	1353.2500	1495.2500	137	1371.2500	1513.2500	137	
30	1351.2375	1493.2375	66	1352.1375	1494.1375	102	1353.7500	1495.7500	138	1371.7500	1513.7500	138	
31	1351.2625	1493.2625	67	1352.1625	1494.1625	103	1354.2500	1496.2500	139	1372.2500	1514.2500	139	
32	1351.2875	1493.2875	68	1352.1875	1494.1875	104	1354.7500	1496.7500	140	1372.7500	1514.7500	140	
33	1351.3125	1493.3125	69	1352.2125	1494.2125	105	1355.2500	1497.2500	141	1373.2500	1515.2500	141	
34	1351.3375	1493.3375	70	1352.2375	1494.2375	106	1355.7500	1497.7500	142	1373.7500	1515.7500	142	
35	1351.3625	1493.3625	71	1352.2625	1494.2625	107	1356.2500	1498.2500	143	1374.2500	1516.2500	143	
36	1351.3875	1493.3875	72	1352.2875	1494.2875	108	1356.7500	1498.7500					

CEPT Band Chr.Freq Ch.Width Sepa. Ch.Spac. Chr.Gap	TR13-01(B) 1.4 GHz (F.S & F.S for WLL) 1413.5 MHz 500 kHz 52 MHz 500 kHz 27 MHz				1.5 GHz (F.S) Simplex - 7x500 kHz & 140x25 kHz - 7x500 kHz & 140x25 kHz -				CEPT Band Chr.Fr. Ch.Wi. Sepa. Ch.Sp. Chr.Ga						
Ch.	Go	Return	Go	Return	Ch.	Ch.	Ch.	Ch.	Ch.						
1	1375.7500	1427.7500	37	1393.7500	1445.7500	1	1517.7500	37	1521.7375	73	1522.6375	109	1523.5375	143	1524.4375
2	1376.2500	1428.2500	38	1394.2500	1446.2500	2	1518.2500	38	1521.7625	74	1522.6625	110	1523.5625	146	1524.4625
3	1376.7500	1428.7500	39	1394.7500	1446.7500	3	1518.7500	39	1521.7875	75	1522.6875	111	1523.5875	147	1524.4875
4	1377.2500	1429.2500	40	1395.2500	1447.2500	4	1519.2500	40	1521.8125	76	1522.7125	112	1523.6125		
5	1377.7500	1429.7500	41	1395.7500	1447.7500	5	1519.7500	41	1521.8375	77	1522.7375	113	1523.6375		
6	1378.2500	1430.2500	42	1396.2500	1448.2500	6	1520.2500	42	1521.8625	78	1522.7625	114	1523.6625		
7	1378.7500	1430.7500	43	1396.7500	1448.7500	7	1520.7500	43	1521.8875	79	1522.7875	115	1523.6875		
8	1379.2500	1431.2500	44	1397.2500	1449.2500	8	1521.0125	44	1521.9125	80	1522.8125	116	1523.7125		
9	1379.7500	1431.7500	45	1397.7500	1449.7500	9	1521.0375	45	1521.9375	81	1522.8375	117	1523.7375		
10	1380.2500	1432.2500	46	1398.2500	1450.2500	10	1521.0625	46	1521.9625	82	1522.8625	118	1523.7625		
11	1380.7500	1432.7500	47	1398.7500	1450.7500	11	1521.0875	47	1521.9875	83	1522.8875	119	1523.7875		
12	1381.2500	1433.2500	48	1399.2500	1451.2500	12	1521.1125	48	1522.0125	84	1522.9125	120	1523.8125		
13	1381.7500	1433.7500				13	1521.1375	49	1522.0375	85	1522.9375	121	1523.8375		
14	1382.2500	1434.2500				14	1521.1625	50	1522.0625	86	1522.9625	122	1523.8625		
15	1382.7500	1434.7500				15	1521.1875	51	1522.0875	87	1522.9875	123	1523.8875		
16	1383.2500	1435.2500				16	1521.2125	52	1522.1125	88	1523.0125	124	1523.9125		
17	1383.7500	1435.7500				17	1521.2375	53	1522.1375	89	1523.0375	125	1523.9375		
18	1384.2500	1436.2500				18	1521.2625	54	1522.1625	90	1523.0625	126	1523.9625		
19	1384.7500	1436.7500				19	1521.2875	55	1522.1875	91	1523.0875	127	1523.9875		
20	1385.2500	1437.2500				20	1521.3125	56	1522.2125	92	1523.1125	128	1524.0125		
21	1385.7500	1437.7500				21	1521.3375	57	1522.2375	93	1523.1375	129	1524.0375		
22	1386.2500	1438.2500				22	1521.3625	58	1522.2625	94	1523.1625	130	1524.0625		
23	1386.7500	1438.7500				23	1521.3875	59	1522.2875	95	1523.1875	131	1524.0875		
24	1387.2500	1439.2500				24	1521.4125	60	1522.3125	96	1523.2125	132	1524.1125		
25	1387.7500	1439.7500				25	1521.4375	61	1522.3375	97	1523.2375	133	1524.1375		
26	1388.2500	1440.2500				26	1521.4625	62	1522.3625	98	1523.2625	134	1524.1625		
27	1388.7500	1440.7500				27	1521.4875	63	1522.3875	99	1523.2875	135	1524.1875		
28	1389.2500	1441.2500				28	1521.5125	64	1522.4125	100	1523.3125	136	1524.2125		
29	1389.7500	1441.7500				29	1521.5375	65	1522.4375	101	1523.3375	137	1524.2375		
30	1390.2500	1442.2500				30	1521.5625	66	1522.4625	102	1523.3625	138	1524.2625		
31	1390.7500	1442.7500				31	1521.5875	67	1522.4875	103	1523.3875	139	1524.2875		
32	1391.2500	1443.2500				32	1521.6125	68	1522.5125	104	1523.4125	140	1524.3125		
33	1391.7500	1443.7500				33	1521.6375	69	1522.5375	105	1523.4375	141	1524.3375		
34	1392.2500	1444.2500				34	1521.6625	70	1522.5625	106	1523.4625	142	1524.3625		
35	1392.7500	1444.7500				35	1521.6875	71	1522.5875	107	1523.4875	143	1524.3875		
36	1393.2500	1445.2500				36	1521.7125	72	1522.6125	108	1523.5125	144	1524.4125		

CEPT Band	TR13-01(C) 2 GHz (F.S)	TR13-01(C) 2 GHz (F.S for WLL)	CEPT Band
Ctr. Freq	2155 MHz	2155 MHz	Ctr. Freq
Ch. Width	3.5/1.75 MHz	3.5 MHz	Ch. Width
Separ.	175 MHz	175 MHz	Separ.
Ch. Spac.	3.5/1.75 MHz	3.5 MHz	Ch. Spac.
Ctr. Gap	90 MHz	90 MHz	Ctr. Gap
Ch.	Go	Return	Ch.
1	2029.7500	2204.7500	1
2	2033.2500	2208.2500	2
3	2036.7500	2211.7500	3
4	2040.2500	2215.2500	4
5	2043.7500	2218.7500	5
6	2047.2500	2222.2500	6
7	2050.7500	2225.7500	7
8	2054.2500	2229.2500	8
9	2057.7500	2232.7500	9
10	2061.2500	2236.2500	10
11	2064.7500	2239.7500	11
12	2068.2500	2243.2500	12
13	2071.7500	2246.7500	13
14	2075.2500	2250.2500	14
15	2078.7500	2253.7500	15
16	2082.2500	2257.2500	16

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GENERAL NOTICE

South African Telecommunications Regulatory Authority

General Notice

628 Telecommunications Act (103/1996): Notice in respect of requirements and policy for operations in the 1.4/1.5 GHz Band and 2.0 GHz Band.....

1 20037

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