
GENERAL NOTICES • ALGEMENE KENNISGEWINGS

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA**NOTICE 284 OF 2020****THE ELECTRONIC COMMUNICATIONS ACT 2005, (ACT NO. 36 OF 2005)****THE FINAL RADIO FREQUENCY SPECTRUM ASSIGNMENT PLAN FOR THE FREQUENCY BAND 470 TO 694 MHz**

1. The Independent Communications Authority of South Africa ("the Authority"), hereby publishes the **Radio Frequency Spectrum Assignment Plan for the frequency band 470 to 694 MHz** in terms of sections 30, read with sections 2 (d), 2 (e), 4, 30, 31(4), and 33 of the Electronic Communications Act (Act No. 36 of 2005).
2. This Radio Frequency Assignment Plan must be read with the Broadcast Digital Migration Policy published in Government Gazette Number 35014 (Notice 97 of 2012), Promotion-of-Diversity-and-Competition-on-Digital-Terrestrial-Television-Regulations published in Government Gazette number 37929 (Notice 682 of 2014), Terrestrial Broadcasting Frequency Plan 2013, published in Government Gazette number 36321 (Notice 298 of 2013), the Update to the Terrestrial Broadcasting Frequency Plan, published in Government Gazette Number 38005 (Notice 801 of 2014), National Radio Frequency Plan 2018 published in Government Gazette number 41650 (Notice 266 of 2018), National radio frequency plan 2018 published in Government Gazette Number 42337 (Notice 266 of 2018) and International Mobile Telecommunications (IMT) Roadmap 2019 published in Government Gazette Number 42829 (Notice 600 of 2019)

3. The goal of this Radio Frequency Assignment Plan is to implement regulation 9 of the Radio Frequency Spectrum Assignment Plan published in Government Gazette 38640 (Notices 271, 272, 273 and 274 of 2015).



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ACTING CHAIRPERSON



Radio Frequency Spectrum Assignment Plan

Rules for Services operating in the Frequency Band
from 470 to 694 MHz

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1. Definitions

In this Radio Frequency Spectrum Assignment Plan, terms used shall have the same meaning as in the Electronic Communications Act 2005 (no. 36 of 2005); unless the context indicates otherwise;

Administration	means Members States of the International Telecommunications Union.
BRIFIC	Radiocommunication Bureau, International Frequency Information Circular
“DTT”	means Digital Terrestrial Television
“DVB-T2”	means Digital Video Broadcasting – Second Generation Terrestrial
“IMT”	means International Mobile Telecommunications
“ITU”	means the International Telecommunication Union
“ITU-R”	means the International Telecommunication Union Radiocommunication Sector
“NRFP”	means the National Radio Frequency Plan 2018 for South Africa
“RFSAP”	means Radio Frequency Spectrum Assignment Plan
“SFN”	means Single Frequency Networks
“SKA”	Square Kilometre Array
“WRC-12”	means World Radio Conference 2012 held in Geneva
“WRC-15”	means the World Radio Conference 2015 held in Geneva
“WRC-19”	means the World Radio Conference 2019 held in Sharm El-Sheikh, Egypt.

2. Purpose

3.1 The purpose of this RFSAP is:

- 3.1.1 to provide a plan for the phased approach in implementing the analogue television switch-off onto Digital Terrestrial Television through a Single Frequency Network (SFN);
- 3.1.2 to implement the Transitional arrangements provisions set out in regulation 9 of the Radio Frequency Spectrum Assignment Plan published in Government Gazette 38640 (Notices 271, 272, 273 and 274 of 2015);
- 3.1.3 to provide information on the requirements attached to the use of a frequency band in line with the allocation and other information in the latest version of the National Radio Frequency Plan 2018 (“NRFP”);
- 3.1.4 to provide information on technical characteristics of radio systems, frequency channelling, coordination and details on required migration of existing users of the band and the expected method of assignment;
- 3.1.5 to provide the requirements necessary for the utilisation of the frequency band between 470 to 694 MHz for DTT in order to release frequencies in the band 694 to 860 MHz for IMT immediately after analogue television switch-off in the affected areas;
- 3.1.6 to ensure alignment of Annexure J of the Terrestrial Broadcasting Plan 2013, with the notified frequencies of the ITU-R Master International Frequency Register (MIFR). The aim being to emphasise the ITU’s recognition that stated that MT systems which are mobile systems that provide access to a wide range of telecommunication services including advanced mobile services, supported by mobile and fixed networks, which are increasingly packet-based;
- 3.1.7 to speed-up the process to release the frequency bands from 694 to 862 MHz for IMT; and
- 3.1.8 to enable the immediate availability of the band 470 to 694 MHz for Digital Terrestrial Television at the time of analogue Television switch-off.

3.2 The key features of this RFSAP for DTT are:

- 3.2.1 a high degree of commonality of functionality worldwide while retaining the flexibility to support a wide range of services and applications in a cost-efficient manner;
- 3.2.2 compatibility of services within IMT and with fixed broadcast networks;
- 3.2.3 capability of interworking with other radio access systems;
- 3.2.4 high quality DTT services;
- 3.2.5 user equipment suitable for worldwide use;
- 3.2.6 user-friendly applications, services and equipment; and
- 3.2.7 allow for the most efficient use of the spectrum using the DVB-T2 technology together with SFN networks.

3. General

- 4.1 South Africa adopted the DVB-T2 broadcast transmission standard for implementation. This said standard is a DVB European-based Consortium standard adopted by the ITU and its radio Regulations.
- 4.2 All installations to be used for purposes of transmission with the said standard must comply with safety rules as specified in applicable standards. A further requirement will be that any equipment that will be used for purposes of transmission with the said standard shall be required to obtain certification under South African laws and Regulations.
- 4.3 The assignment of the frequency band 470 to 694 MHz and the channel arrangement as outlined in Annexure J of the Terrestrial Broadcasting Frequency Plan, 2013 as updated in 2014, provides that the Terrestrial Broadcast Frequency Plan, 2013 does not allow for a direct migration from analogue to digital television but rather for a two-stage process which will first allow analogue television to be transmitted in parallel with DTT and thereafter there will be a restacking process of frequencies to release the digital dividend (694 to 862 MHz);
- 4.4 The said plan has however been overtaken by events since the deadline for analogue switch-off passed on 17 June 2015, and
- 4.5 furthermore, the analogue and digital assignments above 694 MHz are no longer protected and have been suppressed from the ITU-R MIFR.
- 4.6 In order to eliminate interference to existing analogue transmissions during the dual illumination period there must be frequency changes required to DTT frequencies within the band 470 to 694 MHz before analogue switch-off.
- 4.7 Analogue switch-off also applies to Analogue Terrestrial Broadcast Self-Help stations (“Self-Help stations”) which, in most cases, will have to migrate to Direct to Home (DTH) as there will not be DTT available in these areas including the provisions for Self-Help stations. Analogue switch-off for Self-Help stations shall be implemented in accordance with the provisions in section 2.4 on Self-Help stations in the Terrestrial Broadcasting Frequency Plan, 2013.
- 4.8 The requirement for the migration of Studio Transmitter Links within the 800 MHz band need to migrate immediately out of the band as per Terrestrial Broadcast Frequency Plan, 2013, the Radio Frequency Migration Plan 2019 and the NFRP 2018.

- 4.9 The Authority has studied SFN's which are registered with the ITU in the Radiocommunications Bureau (BR) International Frequency Information Circular (BRIFIC) database and noticed that numerous of them similar to the size of SFN's in the South African BRIFIC entries.

4. ITU Recommendations, Resolutions and Reports

The ITU-R Recommendations constitute a set of international technical standards developed by the Radiocommunication Sector (formerly CCIR) of the ITU. They are the result of studies undertaken by Radiocommunication Study Groups on:

- 5.1 the use of a vast range of wireless services, including popular new mobile communication technologies;
- 5.2 the management of the radio-frequency spectrum and satellite orbits;
- 5.3 the efficient use of the radio-frequency spectrum by all radiocommunication services;
- 5.4 terrestrial and satellite radiocommunication broadcasting;
- 5.5 radio wave propagation;
- 5.6 systems and networks for the fixed-satellite service, for the fixed service and the mobile service;
- 5.7 space operation, Earth exploration-satellite, meteorological-satellite and radio astronomy services.
- 5.8 The ITU published Recommendations, Resolutions and Reports with respect to the utilisation of band 470 – 690 for purposes of advising Administrations the planning criteria, including protection ratios, for various methods of providing second generation digital terrestrial television broadcasting (DTTB) systems in the VHF/UHF bands as follows:
 - 5.8.1 Recommendation ITU-R P.1546-6 (08/2019): Method for point-to-area predictions for terrestrial services in the frequency range 30 MHz to 4 000 MHz
 - 5.8.2 Recommendation ITU-R M.2012-4 (11/2019): Detailed specifications of the terrestrial radio interfaces of International Mobile Telecommunications-Advanced (IMT Advanced);
 - 5.8.3** Report ITU-R2241-0 (2011) Compatibility studies in relation to Resolution 224 in the bands 698-806 MHz and 790-862 MHz;
 - 5.8.4 Report ITU-R BT.2386-2 (04/2019) Digital terrestrial broadcasting: Design and implementation of single frequency networks (SFN)

- 5.8.5 Report ITU-R M.2074-0 (2006): Report on Radio Aspects for the terrestrial component of IMT-2000 and systems beyond IMT-2000;
- 5.8.6 Recommendation ITU-R M.1645-0 (06/2003) Framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000;
- 5.8.7 The ITU Radio Regulations (RR) Edition 2016, Provision Number 5.1.2 of the Geneva 2006 (GE06) Agreement, and the WRC rev 2019 Resolution 224-4 (Rev. WRC 15), Resolution 260 (WRC-15) and the results of activities undertaken by the within ITU Region 1 (African Region);
- 5.8.8 Recommendation ITU-R M.2090-0 (10/2015) on specific unwanted emission limit of International Mobile Telecommunication (IMT) mobile stations operating in the frequency band 694-790 MHz to facilitate the protection of existing services in the ITU Region 1 in the frequency band 470-694 MHz;
- 5.8.9 Recommendation ITU R M.1036-6 (10/2019) dealing with the lower duplexer of the Frequency arrangement A5 in Recommendation ITU R M.1036-6 (i.e. uplink in 703-733 MHz) and a maximum output power of 23 dBm, to provide for a nine (9) MHz guard band between Broadcasting and IMT; and
- 5.8.10 ITU Report ITU-R BT.2339-0, (11/2014) with respect to co-channel sharing and compatibility studies between digital terrestrial television broadcasting and IMT in the frequency band 694-790 MHz in the GE06 planning area were studied and ITU-R Reports was developed in this respect.

5. Transmit Configuration for DVB-T2

- 6.1 The DTT Frequency Plan in Annexure J of the Terrestrial Broadcasting Plan 2013, is designed with the Transmit Configuration for DVB-T2 (Fixed Reception). The Terrestrial DTT Frequency Plan which was developed for South Africa is based on the following transmit configuration:

Technology:	DVB-T2
Constellation:	256 QAM
FEC/Code Rate:	3/5
Guard Interval	1/8
Location Probability:	95%
FFT size	32Ke
Block length	64800

Effective minimum usable field strength (CH21):	49.873 dBuV/m
Capacity	30.01Mb/s
Pilot Pattern	PP2

6.2 The transmit configuration is the most optimum transition configuration preferred. However, if the guard interval is smaller than the specified GI, this will lead to self-interference in the network. The Authority therefore emphasise that the transmission parameters should comply to the specified transmission configuration above even though 3 Mbit/s may be compromised.

6.3 The following transmit configuration or similar is possible, however, caution should apply as self-interference may result on the network thus making the SFN(s) unimplementable. See below transmit configuration:

Constellation:	256 QAM
FEC/Code Rate:	3/5
Guard Interval	1/16
Location Probability:	95%
FFT size	32Ke
Block length	64800
Effective minimum usable field strength (CH21):	49.375 dBuV/m
Capacity	33.27 Mb/s
Pilot Pattern	PP4

6. Radio Frequency Spectrum Assignment Plan to clear the IMT 700 and IMT 800 spectrum of the Broadcasting Services after analogue television switch-off.

7.1 The Terrestrial Television Broadcasting Frequencies as registered and Coordinated with ITU and South Africa's six (6) neighbouring countries in accordance with the GE-06 Agreement.

7.2 Further, South Africa's current DTT frequency plan has been registered in 2014 with the ITU Master International Register having met the conformance requirements in accordance with the Geneva 06 and having been coordinated with South Africa's six (6) neighbouring countries.

7.3 The Terrestrial Television Plan contains 1257 frequencies for DTT implementation in the band 470 MHz to 694 MHz.

7.4 This plan is colloquially known as the seven (7) MUX plan since it provides for the deployment of seven multiplexes per transmission point in an 8 MHz channels per province as per the diagram below.

7.5 The details of the DTT Plan are contained in Annexure A and Annexure B to this RFSAP.

7.6 The Figures and maps below summarise the design of the 7 MUX plan and the multiplex group combinations in the respective provinces.

No.	Group 1	Group 2	Group 3	Group 4
1	CH21	CH22	CH23	CH24
2	CH25	CH26	CH27	CH28
3	CH29	CH30	CH31	CH32
4	CH33	CH34	CH35	CH36
5	CH37	CH38	CH39	CH40
6	CH41	CH42	CH43	CH44
7	CH45	CH46	CH47	CH48

Figure 1

MUX	NC1	NC2	NW	LP1	LP2	MP	KZN	GP	WC	EC	FS
MX1	3 (CH23)	4 (CH24)	2 (CH22)	1 (CH21)	2 (CH22)	3 (CH23)	2 (CH22)	4 (CH24)	1 (CH21)	3 (CH23)	1 (CH21)
MX2	3 (CH27)	4 (CH28)	2 (CH26)	1 (CH25)	2 (CH26)	3 (CH27)	2 (CH26)	4 (CH28)	1 (CH25)	3 (CH27)	1 (CH25)
MX3	3 (CH31)	4 (CH32)	2 (CH30)	1 (CH29)	2 (CH30)	3 (CH31)	2 (CH30)	4 (CH32)	1 (CH29)	3 (CH31)	1 (CH29)
MX4	3 (CH35)	4 (CH36)	2 (CH34)	1 (CH33)	2 (CH34)	3 (CH35)	2 (CH34)	4 (CH36)	1 (CH33)	3 (CH35)	1 (CH33)
MX5	3 (CH39)	4 (CH40)	2 (CH38)	3 (CH39)	1 (CH37)	2 (CH38)	4 (CH40)	4 (CH40)	1 (CH37)	2 (CH38)	1 (CH37)
MX6	3 (CH43)	4 (CH44)	2 (CH42)	3 (CH43)	1 (CH41)	2 (CH42)	3 (CH43)	4 (CH44)	1 (CH41)	2 (CH42)	1 (CH41)
MX7	3 (CH47)	4 (CH48)	2 (CH46)	3 (CH47)	1 (CH45)	2 (CH46)	3 (CH47)	4 (CH48)	1 (CH45)	2 (CH46)	1 (CH45)

Figure 2

7.7 It should be noted that the frequency assignments were slightly distorted to reduce interference to broadcasting service licensees in other neighbouring countries.

7.8 The Terrestrial Television Broadcasting Plan also allowed for eSwatini (Kingdom of) and Lesotho (Kingdom of) to be included in the Digital Frequency Network (DFN) structure. In contrast, the conventional Multi Frequency Network (MFN) frequency plan approach would have provided only a maximum of four (4) national multiplexes for South Africa.

7.9 The maps below indicate the respective SFN's per province on a national basis and the channels that are to be used per province. Theoretically it is also possible to create a national country wide SFN which would have created 28 national SFN's each offering an 8 MHz channel. The plan as it currently stands can be further expanded to include localised MFN services per site as and where required.

7.10 The details of the DTT Plan are contained in Annexure A and Annexure B to this RFSAP.

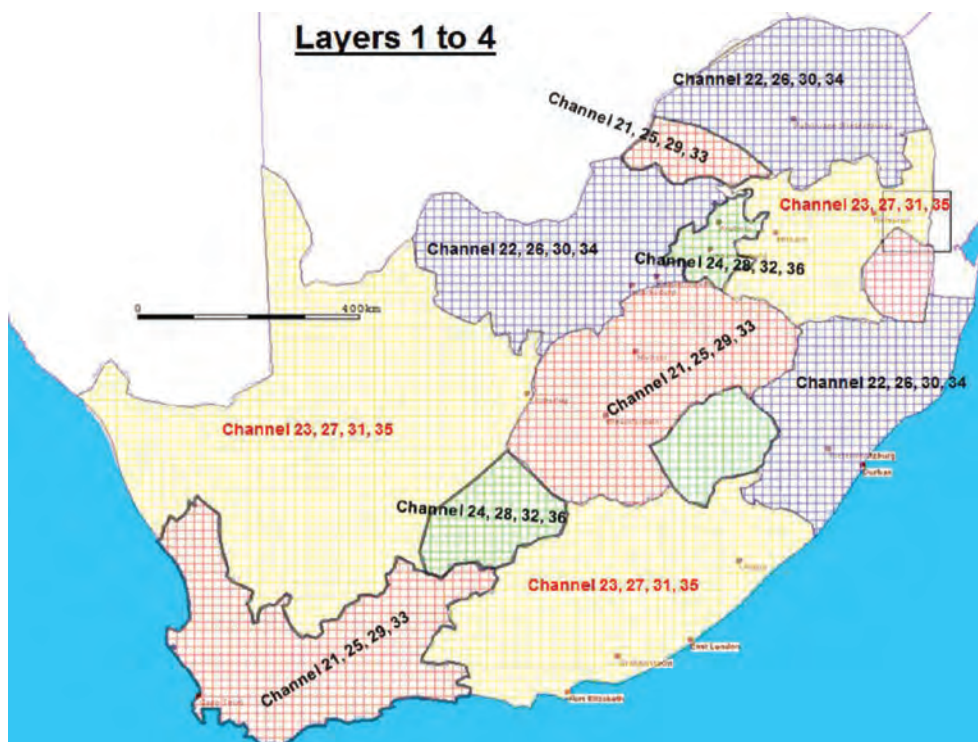


Figure 3

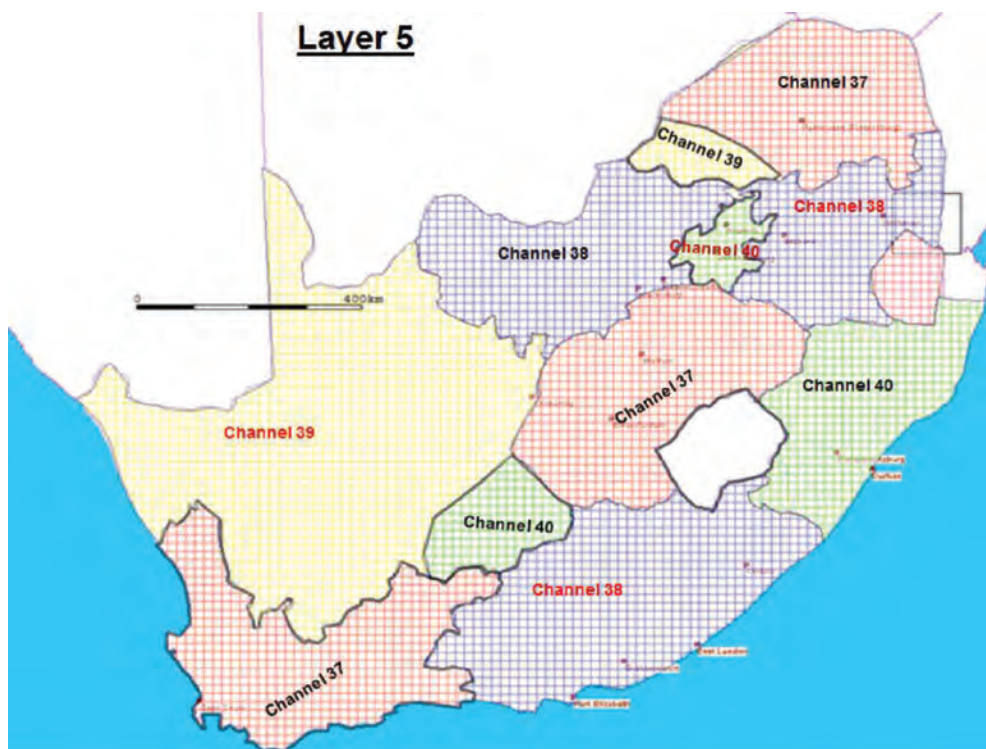


Figure 4

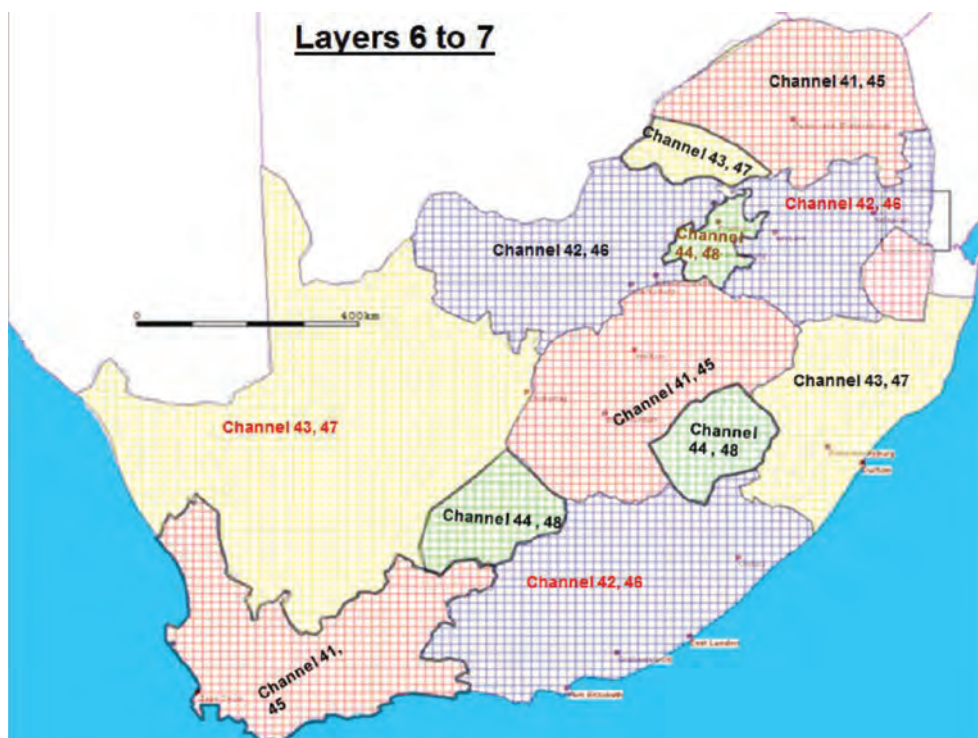


Figure 5

- 7.11 The current plan for Analogue Switch Off (ASO) is to launch DTT on an MFN thus compelling a second migration phase before being able to release IMT700 and IMT800 spectrum. This approach also implies an extended dual illumination phase (where analogue and digital television operational in the band 470 MHz to 860 MHz) before releasing the IMT spectrum after the second migration phase and ASO.
- 7.12 .
- 7.13 The scenario where the Guard Interval is smaller than the specified Guard Interval will lead to self-interference in the network. This RFSAP therefore emphasise that the transmission parameters must comply with the above specified transmission configuration. This is to ensure the envisaged optimised implementation of the DTT Plan in Annexure A and Annexure B is realised within the envisage immediate implementation.

7. Re-Alignment of DTT Multiplexes

- 9.1 To create a plan with the least possible interference the large SFN's were broken up into smaller SFN's in some provinces as illustrated in Annexure A and Annexure B of this RFSAP.
- 9.2 In order to enable analogue services to be switch-off, Digital transmitters are to immediately operate in the frequencies as illustrated in **Annexure A (Column 5) and Annexure B (Column 5)** in accordance with coordinated frequencies in Annexure J of the Terrestrial Broadcasting Plan 2013, as amended.
- 9.3 In order to ensure re-alignment of the SFN, to Annexure J of the Terrestrial Broadcasting Plan 2013, as at a later stage, the frequencies are to be in accordance with **Annexure A (Column 14) and Annexure B (Column 14)** of this RFSAP.
- 9.4 The Freq (MHz) and CH are the frequency and associated channel number at which the service shall be implemented in transitional phase to ensure that the IMT700 and IMT800 frequencies can immediately be released after analogue switch-off. The Transitional Phase is the time period taken to Switch Analogue Frequencies directly to the Digital Single Frequency Network (SFN).
- 9.5 In the transitional phase there are no DTT assignments above 694 MHz. The final phase includes the frequencies and its associated final channel numbers which the station will operate in the provincial SFN network. The envisaged analogue switch-off phases per province to ensure the Digital Transmitters switch-on in order to enable the release IMT700 and IMT 800 frequencies are as illustrated in the table below:

9.6 **Table 1. Transitional¹ Arrangements to enable the rollout of DDTT SFN(s) preceding the Analogue Switch-off phases.**

Item	Province	Digital Switch-on phase of Frequencies Migration to channel below 694 MHz	Analogue Switch-off Phases	Recommendation
1	Free State	Phase 1 Starts (2Month)	Phase 1 Ends (4 Months)	These proposed phases require well-coordinated project plan between and amongst all stakeholders concerned in accordance with the “Broadcast Digital Migration Policy published in Government Gazette Number 35014 (Notice 97 of 2012)”,
2	Northern Cape	Phase 2 starts (2 Months)	Phase 2 Ends (4 Months)	
3	Limpopo Province	Phase 3 Starts (2Months)	Phase 3 Ends (4 Months)	
4	North West	Phase 4 Starts (2 Months)	Phase 4 Ends (4 Months)	
5	Mpumalanga	Phase 5 Starts (2 Months)	Phase 5 Ends (4 Months)	
6	Gauteng	Phase 6 Starts (2 Months)	Phase 6 Ends (4 Months)	
7	Western Cape	Phase 7 Starts (2 Months)	Phase 7 Ends (4 Months)	
8	Kwa-Zulu Natal	Phase 8 Starts (2 Months)	Phase 8 Ends (4 Months)	
9	Eastern Cape	Phase 9 Starts (2 Months)	Phase 9 Ends (4 Months)	

9.7 The Authority aim that the IMT700 and IMT800 shall be clear from the broadcaster by end of the first semester of 2021.

9.8 The main advantages of changing all Multi- Frequency Network (MFN) DTT assignments below CH49 Single Frequency Network (SFN) before starting the analogue switch-off are as following:

¹ The phases are to be adjusted in accordance with the Policy imperatives and the representations from Industry based on a workable plan.

- 9.8.1 the first migration of all analogue stations interfered with by DTT stations can be initiated – These transmitter stations affected are included in Appendix C;
- 9.8.2 South Africa can then initiate the migration of all Digital Dividend 1 (“DD1”) analogue transmitters to Digital in order to clear the DD1 dividend (790 to 860 MHz) and;
- 9.8.3 Simultaneously initiate the migration all Digital Dividend 2 (“DD2”) analogue transmitters to Digital in order to clear the DD2 dividend (694 to 790 MHz); and
- 9.8.4 broadcasting service licensees can then migrate all analogue TV services in the band (470 to 694 MHz) at a pace that will not impact negatively on the broadcasters.

10. Requirements for usage of Radio Frequency Spectrum

- 10.1 This section covers the minimum key characteristics considered necessary to make the best use of the available frequencies.
- 10.2 The use of the 470 to 694 MHz Frequency band is limited for DTT services and only systems using digital technologies that promote spectral efficiency will be issued with an assignment. Capacity enhancing digital techniques are being rapidly developed and such techniques that promote efficient use of spectrum, without reducing quality of service are encouraged. In some cases, a radio system conforming to the requirements of this RFSAP may require modifications if harmful interference is caused to other radio stations or systems.
- 10.3 The allocation of spectrum and shared services within these bands are found in the NRFP and an extract of NRFP 2018 is shown in **Appendix A**.
- 10.4 While the maximum radiated power to be allowed is contained in Annexure A and Annexure B of this RFSAP.
- 10.5 In some cases, a radio system conforming to the requirements of this RFSAP may require modifications if harmful interference occurs.
- 10.6 The interference analysis results for digital on analogue transmission during the transitional phase are shown in **Annexure C to F**.
- 10.7 Criteria and guidelines for interference mitigation are dealt by Joint Spectrum Advisory Group, established in terms of the Digital Migration Regulations, 2012.

11. Implementation

11.1 No new assignment in the frequency range 470 to 694 MHz shall be approved unless they comply with this RFSAP.

11.2 The propagation model for use is contained in ITU-R Recommendation P.1546.

12. Co-ordination Requirements

All the frequencies used in this RFSAP have been coordinated and the assignment which have been included in the ITU-R BRIFIC database. All the frequencies used in this RFSAP are either coordinated or fall outside the coordination contour of the assignment which is registered in the BRIFIC ITU database. All coordination has been performed in line with the Geneva 2006 Agreement (GE06).

13. Assignment

The assignments in this frequency band are made in accordance with the procedure for Standard Applications in line with regulation 5 of the Radio Frequency Spectrum Regulations 2015, as amended.

14. Amendment

- 14.1 Existing Radio Frequency Spectrum Licences will be amended in accordance with the transitional arrangements in section 9 of this RFSAP, in accordance with regulation 9 of the Radio Frequency Spectrum Regulations 2015, as amended, read with regulation 12 (3) of the Digital Migration Regulations published in the Government Gazette Number 36000 (Notice 1070 of 2012).

15. Radio Frequency Migration

15.1 Specific Procedure

15.1.1 Radio Frequency Spectrum Licensees in this band shall migrate in accordance with phases in Annexure A and Annexure B in line with transitional arrangements as illustrated in Section 7 of this RFSAP.

15.1.2 Affected licensees are to apply for an amendment of their spectrum licences where applicable.

16. Commencement

- 16.1 This Radio Frequency Assignment Plan will come into effect upon publication in the Government Gazette.

Appendix A National Radio Frequency Plan

ITU Region 1 allocations and footnotes	South African allocations and footnotes	Typical Applications	Notes and Comments
470-694 MHz BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	470-694 MHz BROADCASTING RADIO ASTRONOMY 5.304 5.149 5.311A	DTT Broadcasting (470-694 MHz) Radio Astronomy (606 – 614 MHz) SAP/SAB Applications	Broadcasting Allotments in accordance with GE89 and GE06. Broadcast assignments in accordance with the latest version of the Terrestrial Broadcasting Frequency Plan as amended (GG No.36321) 02 April 2013. Band IV/V Analogue television is to be migrated to digital television and ensure harmonisation with SADC. The use of ‘White Spaces’ in this band is under consideration (subject to Non Interference Non Protection basis to users under a primary allocation).470 - 606 MHz, max. 50 mW ERP 606 - 614 MHz, max. 50 mW ERP

Appendix B Interference Resolution Process

When requesting coordination, the relevant characteristics of the base station in accordance with the GE06 plan should be forwarded to the Administration affected. All of the following characteristics should be Included:

- a) carrier frequency [MHz];
- b) name of transmitter station;
- c) country of location of transmitter station;
- d) geographical coordinates [latitude, longitude];
- e) effective antenna height [m];
- f) antenna polarisation;
- g) antenna azimuth [deg];
- h) antenna gain [dBd];
- i) effective radiated power [dBW];
- j) expected coverage zone or radius [km];
- k) date of entry into service [month, year];
- l) code group number used; and
- m) antenna tilt [deg].

The Administration affected shall evaluate the request for coordination and shall within 30 days notify the result of the evaluation to the Administration requesting coordination. If in the course of the coordination procedure the Administration affected requires additional information, it may request such information.

If in the course of the coordination procedure, an Administration may request additional information.

If no reply is received by the Administration requesting coordination within 30 days, it may send a reminder to the Administration affected. An Administration not having responded within 30 days following communication of the reminder shall be deemed to have given its consent and the code co-ordination may be put into use with the characteristics given in the request for coordination.

The periods mentioned above may be extended by common consent.

Appendix C Interference cases per province

DTT frequencies selected from 7 Mux plan to minimize interference on existing analogue. See sections on frequency assignments/allotments.

Easter Cape CH 46 - MUX 1

Interference Herschel CH46 SBC3 - Confirm "on air" Consider Herschel as priority area for Analogue Switch-off

Sterkspruit - Large power difference on adjacent channel 47 - ensure same TX power levels - This will resolve the interference

Aliwal North Goedemoed - Co-Channel on CH46 - switch over to satellite reception

Eastern Cape CH 35- MUX2

Despatch Adjacent Channel with Despatch CH34 - slight interference - ensure same transmission power - This will resolve the interference

Barkley East co-channel CH 35 - slight interference - Increase the power on SBC1 Transmitter with 6 dB to overcome interference

Northern Cape CH31 - MUX 2

No interference predicted

Northern Cape CH24 & CH27 MUX 1

No interference predicted

Western Cape CH33 & CH38 MUX1

No Interference predicted

Western Cape CH29 MUX2

Graafwater interfered by Piketberg - Graafwater Self-help viewers to migrate to satellite immediately

Northern Province Mux 1 & 2 Area A

No interference CH21 & CH33

Northern Province Mux 1 Area B CH26

No Interference

Northern Province Mux 2 Area B CH30

No Interference

Mpumalanga Mux1 CH35

Slight Interference Davel etv CH34 on outskirts (complementary coverage available) and Steelpoort Legobo SBC3 Self-Help

Mpumalanga Mux 2 CH31

Light interference in Davel CH30 Coverage (SABC1)

North West Mux 1 CH34

No interference problems

North West Mux 2 CH46

No interference problems - Mux2 split not required

Gauteng Mux 1 CH 36

No interference predicted

Gauteng Mux 2 CH 44

There is some interference on the Potgietersrus etv transmission on CH44 near Nylstroom. Pretoria etv CH29 offer Complementary Coverage. Prioritize analogue switch-off in Potgietersrus coverage area near Nylstroom

KwaZulu-Natal Mux 1 CH 30

Interference on Maqabaqabeni SBC3 CH30 - Confirm "on air" If "On Air" treat as priority area for Analogue "switch off"

KwaZulu-Natal Mux 2 CH 40

No Interference

Free State Mux 1 CH21

Koffiefontein (CH21) SBC1, Phillipolis (CH21) SBC2, Marquard (CH21) SBC1, Manguzi (CH21) SBC1.

Free State Mux 2 CH25

Grootvlei Eskom (CH25) SBC2, Marquard (CH25) SBC1, Manguzi (CH25) SBC1.

Appendix D: Percentage of Population located nationally in areas where interference is possible

Item	Program	People located in area	Percentage population located in area
1	etv	56 724	0.10%
2	SABC1	260921	0.45%
3	SABC2	58305	0.10%
4	SABC3	96122	0.17%

Important remarks

Figures above reflects the maximum number of people located in the areas where interference is possible. Population figures do not include households that already migrated to DTT or DTH (indication is that 60% of television viewers already migrated to DTH or DTT). Most viewers affected will experience slight interference on analogue TV program. As such, Special efforts should be made to migrate affected viewers and others to DTT & DTH as soon as possible to avoid interference. Emphasis should be placed on migration of analogue television viewers who experience interference and where the frequency is transmitted above the 694 MHz to release the spectrum for IMT.

Appendix E: Radio Astronomy

The Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007) (AGAA) provides for the Minister responsible for Science and Technology to declare any area or part of an area in the Province of the Northern Cape (except Sol Plaatje Municipal area) as an astronomy advantage area (AAA). The AAA's must be protected, amongst others, from harmful radio frequency interference, which may be caused by radio communication services. The SKA has been built in the Northern Cape Province. The SKA location, frequencies bands to be protected, protection levels, coordination procedures, and other parameters are prescribed through the Astronomy Geographic Advantage Act (21/2007) (AGA Act): Notice of the radio frequency spectrum exempted for use within the Karoo Central Astronomy Advantage Areas published in Government Gazette Number 42531 (Notice 926 of 2019). The band 100 MHz to 25.5 GHz are earmarked for the SKA.

Radiocommunications with transmitters located within the AAA's, which operate within the radio frequency range/s identified for radio astronomy purposes are to be subjected to the provisions of the AGAA. All transmitters located, or to be located, within the AAA's will be subject to authorisation according to the prescribed processes by the Astronomy Geographic Advantage Act (21/2007) (AGA Act): Notice of the radio frequency spectrum exempted for use within the Karoo Central Astronomy Advantage Areas published in Government Gazette Number 42531 (Notice 926 of 2019) Where authorisation has been granted in accordance with the prescribed procedures, a prospective licensee is still required to submit a spectrum application form for consideration by the Authority.

Where a licensee is required to move its electronic communications facility or migrate to an alternative radio frequency band, The Authority will consult and agree with the licensee regarding the reasonable period within which the licensee must cease to operate its electronic communications facility and migrate to an alternative band.

ANNEXURE A - Digital Terrestrial Television Multiplex 1.

No.	MUX	DTT	TX-Name	Freq. (MHz)	CH	ERP (kW)	Longitude	Latitude	Province	Pol.	SFN Id	CH	Freq. (MHz)
1	1	DVB-T2	MOUNT AYLIFF	634	41	50	029°23'41.000"	-30°50'11.000"	EC	H	EC1	46	674
2	1	DVB-T2	NGANGELIZWE	674	46	0.2	028°48'31.000"	-31°37'15.000"	EC	H	EC1	46	674
3	1	DVB-T2	NGQELENI	674	46	10	029°07'34.000"	-31°45'57.000"	EC	V	EC1	46	674
4	1	DVB-T2	NOUPOORT	498	24	10	024°56'01.000"	-31°18'14.000"	EC	H	EC1	46	674
5	1	DVB-T2	PATENSIE	674	46	0.05	024°49'43.000"	-33°45'37.000"	EC	V	EC1	46	674
6	1	DVB-T2	PAUL SAUER DAM	674	46	0.1	024°33'43.000"	-33°45'13.000"	EC	V	EC1	46	674
7	1	DVB-T2	PORT ELIZABETH	674	46	72	025°26'29.000"	-33°56'10.000"	EC	H	EC1	46	674
8	1	DVB-T2	PORT ELIZABETH CITY	674	46	2	025°35'31.000"	-33°55'28.000"	EC	V	EC1	46	674
9	1	DVB-T2	PORTST JOHNS	674	46	10	029°31'39.000"	-31°36'39.000"	EC	H	EC1	46	674
10	1	DVB-T2	QUEENSTOWN	674	46	58	026°47'05.000"	-31°43'56.000"	EC	H	EC1	46	674
11	1	DVB-T2	SOMERSET EAST	674	46	0.125	025°34'41.000"	-32°42'45.000"	EC	V	EC1	46	674
12	1	DVB-T2	STERKSPRUIT	674	46	20	027°16'14.000"	-30°41'44.000"	EC	V	EC1	46	674
13	1	DVB-T2	STRAALHOEK	674	46	10	029°50'53.000"	-30°20'49.000"	EC	V	EC1	46	674
14	1	DVB-T2	SUURBERG	674	46	40	025°34'29.000"	-33°14'55.000"	EC	H	EC1	46	674
15	1	DVB-T2	UGIE	674	46	0.7	027°58'26.000"	-31°11'28.000"	EC	V	EC1	46	674
16	1	DVB-T2	UMTATA	674	46	10	028°44'36.000"	-31°35'48.000"	EC	H	EC1	46	674
17	1	DVB-T2	WILLOWMORE	674	46	1	023°27'36.000"	-33°14'05.000"	EC	H	EC1	46	674
18	1	DVB-T2	ALI WAL NORTH	674	46	50	026°34'00.000"	-30°47'05.000"	EC	H	EC1	46	674
19	1	DVB-T2	ANDRIESKRAAL	674	46	0.1	024°42'35.000"	-33°46'42.000"	EC	V	EC1	46	674
20	1	DVB-T2	BARKLY EAST	674	46	0.5	027°26'00.000"	-30°51'30.000"	EC	V	EC1	46	674
21	1	DVB-T2	BEDFORD	674	46	10	026°02'57.000"	-32°37'57.000"	EC	H	EC1	46	674
22	1	DVB-T2	BURGERSDORP	674	46	0.25	026°20'21.000"	-31°00'02.000"	EC	V	EC1	46	674
23	1	DVB-T2	BUTTERWORTH	674	46	10	028°12'25.000"	-32°16'35.000"	EC	H	EC1	46	674
24	1	DVB-T2	CALA	674	46	20	027°45'02.000"	-31°33'15.000"	EC	V	EC1	46	674
25	1	DVB-T2	CRADOCK	674	46	20	025°32'27.000"	-32°18'01.000"	EC	H	EC1	46	674
26	1	DVB-T2	DESPATCH	674	46	2	025°25'29.000"	-33°45'53.000"	EC	V	EC1	46	674
27	1	DVB-T2	EAST LONDON	674	46	63	027°48'58.000"	-32°56'20.000"	EC	H	EC1	46	674
28	1	DVB-T2	ELANDS HEIGHT	674	46	100	028°07'10.000"	-30°47'44.000"	EC	H	EC1	46	674
29	1	DVB-T2	ENGCOBO	674	46	10	028°00'34.000"	-31°39'20.000"	EC	V	EC1	46	674
30	1	DVB-T2	ENTSHATHONGO	674	46	50	028°40'10.000"	-32°08'39.000"	EC	V	EC1	46	674
31	1	DVB-T2	GRAAFF-REINET	674	46	28	024°27'04.000"	-32°04'44.000"	EC	H	EC1	46	674
32	1	DVB-T2	GRAHAMSTOWN	674	46	65	026°42'31.000"	-33°17'15.000"	EC	H	EC1	46	674
33	1	DVB-T2	HANKEY	674	46	0.04	024°52'12.000"	-33°49'52.000"	EC	V	EC1	46	674
34	1	DVB-T2	HOLY CROSS	674	46	30	029°38'25.000"	-31°07'56.000"	EC	V	EC1	46	674
35	1	DVB-T2	KAREEDOUW	674	46	5	024°25'48.000"	-34°01'29.000"	EC	H	EC1	46	674
36	1	DVB-T2	KING WILLIAMS TOWN	674	46	18	027°15'36.000"	-32°40'44.000"	EC	H	EC1	46	674
37	1	DVB-T2	KIRKWOOD	674	46	0.1	025°26'53.000"	-33°23'22.000"	EC	V	EC1	46	674
38	1	DVB-T2	ELLIOT	674	46	0.8	027°51'57.000"	-31°10'36.000"	EC	V	EC1	46	674
39	1	DVB-T2	PETRUS STEYN	474	21	20	028°19'06.000"	-27°30'51.000"	FS	H	FS1	21	474
40	1	DVB-T2	SENEKAL	474	21	10	027°30'26.000"	-28°15'19.000"	FS	H	FS1	21	474
41	1	DVB-T2	SPRINGFONTEIN	474	21	20	025°46'08.000"	-30°16'14.000"	FS	H	FS1	21	474
42	1	DVB-T2	UIDRAND (KROONSTADT)	474	21	0.25	027°14'16.000"	-27°41'18.000"	FS	V	FS1	21	474
43	1	DVB-T2	THEUNISSEN	546	36	34	026°34'50.000"	-28°11'55.000"	FS	H	FS1	21	474
44	1	DVB-T2	WITSIESHOEK	474	21	10	028°50'49.000"	-28°31'04.000"	FS	V	FS1	21	474
45	1	DVB-T2	BETHLEHEM	474	21	50	028°29'58.000"	-28°14'10.000"	FS	H	FS1	21	474
46	1	DVB-T2	BLOEMFONTEIN	474	21	100	026°13'50.000"	-29°06'13.000"	FS	H	FS1	21	474
47	1	DVB-T2	BOESMANSKOP	474	21	10	027°12'55.000"	-30°00'28.000"	FS	H	FS1	21	474
48	1	DVB-T2	FICKSBURG TOWN	474	21	0.1	027°51'27.000"	-28°52'36.000"	FS	V	FS1	21	474
49	1	DVB-T2	HARRISMITH 074	474	21	50	029°06'25.000"	-28°15'18.000"	FS	V	FS1	21	474
50	1	DVB-T2	KROONSTADT	474	21	50	027°11'10.000"	-27°25'16.000"	FS	H	FS1	21	474
51	1	DVB-T2	LADYBRAND	474	21	10	027°22'42.000"	-29°10'18.000"	FS	H	FS1	21	474
52	1	DVB-T2	DEWETSDORP	474	21	0.01	026°39'37.000"	-29°34'44.000"	FS	V	FS1	21	474
53	1	DVB-T2	MONDEOR	594	36	0.5	027°59'37.000"	-26°16'54.000"	GP	V	GP1	36	594
54	1	DVB-T2	MULBARTON	594	36	0.03	028°03'56.000"	-26°17'36.000"	GP	V	GP1	36	594
55	1	DVB-T2	PRETORIA	594	36	70	027°59'03.000"	-25°41'20.000"	GP	H	GP1	36	594
56	1	DVB-T2	PRETORIA NORTH	594	36	0.25	028°10'07.000"	-25°41'25.000"	GP	V	GP1	36	594
57	1	DVB-T2	SUNNYSIDE	594	36	20	028°12'24.000"	-25°45'53.000"	GP	V	GP1	36	594
58	1	DVB-T2	WELVERDIEND	594	36	90	027°14'55.000"	-26°26'47.000"	GP	H	GP1	36	594
59	1	DVB-T2	BEZ VALLEY	594	36	0.5	028°05'04.000"	-26°11'41.000"	GP	V	GP1	36	594
60	1	DVB-T2	HEIDELBERG	594	36	1	028°20'53.000"	-26°29'19.000"	GP	V	GP1	36	594

No.	MUX	DTT	TX-Name	Freq. (MHz)	CH	ERP (kW)	Longitude	Latitude	Province	Pol	SFN Id	CH	Freq. (MHz)
61	1	DVB-T2	HELDERKRUIJN	594	36	20	027°51'32.000"	-26°06'05.000"	GP	V	GP1	36	594
62	1	DVB-T2	JOHANNESBURG	594	36	50	028°00'26.000"	-26°11'31.000"	GP	H	GP1	36	594
63	1	DVB-T2	LINMEYER	594	36	0.1	028°04'16.000"	-26°16'08.000"	GP	V	GP1	36	594
64	1	DVB-T2	MENLO PARK	594	36	0.2	028°16'09.000"	-25°46'15.000"	GP	V	GP1	36	594
65	1	DVB-T2	MOOI RIVER	546	30	10	029°52'04.000"	-29°11'07.000"	KN	H	KZ1	30	546
66	1	DVB-T2	NEWCASTLE	546	30	1	029°57'12.000"	-27°43'07.000"	KN	V	KZ1	30	546
67	1	DVB-T2	NONGOMA	658	44	10	031°39'27.000"	-27°54'18.000"	KN	H	KZ1	30	546
68	1	DVB-T2	NQUTU	546	30	15.1	030°40'42.000"	-28°15'43.000"	KN	V	KZ1	30	546
69	1	DVB-T2	OVERPORT	674	46	26	030°59'44.000"	-29°50'12.000"	KN	V	KZ1	30	546
70	1	DVB-T2	PIETERMARITZBURG	546	30	20	030°19'49.000"	-29°34'47.000"	KN	V	KZ1	30	546
71	1	DVB-T2	PONGOLA	658	44	1.5	031°39'00.000"	-27°31'34.000"	KN	V	KZ1	30	546
72	1	DVB-T2	PORT SHEPSTONE	546	30	74	030°17'17.000"	-30°44'07.000"	KN	H	KZ1	30	546
73	1	DVB-T2	QUDENI	546	30	75	030°51'59.000"	-28°38'03.000"	KN	V	KZ1	30	546
74	1	DVB-T2	THE BLUFF	546	30	2.5	031°00'45.000"	-29°54'40.000"	KN	V	KZ1	30	546
75	1	DVB-T2	UBOMBO	650	43	50	032°04'52.000"	-27°33'42.000"	KN	H	KZ1	30	546
76	1	DVB-T2	ULUNDI	546	30	50	031°23'38.000"	-28°27'00.000"	KN	V	KZ1	30	546
77	1	DVB-T2	VERULAM	546	30	0.01	031°02'19.000"	-29°38'25.000"	KN	V	KZ1	30	546
78	1	DVB-T2	VRYHEID	546	30	10	030°47'38.000"	-27°44'27.000"	KN	H	KZ1	30	546
79	1	DVB-T2	DONNYBROOK	546	30	60	029°51'19.000"	-29°54'56.000"	KN	H	KZ1	30	546
80	1	DVB-T2	DURBAN	546	30	100	030°43'00.000"	-29°46'11.000"	KN	H	KZ1	30	546
81	1	DVB-T2	EMPANGENI	578	34	0.25	031°53'31.000"	-28°44'38.000"	KN	V	KZ1	30	546
82	1	DVB-T2	ESHOWE	546	30	63	031°13'37.000"	-28°51'29.000"	KN	H	KZ1	30	546
83	1	DVB-T2	ESTCOURT	546	30	0.1	029°51'56.000"	-29°00'55.000"	KN	V	KZ1	30	546
84	1	DVB-T2	GLENCOE	546	30	50	029°56'51.000"	-28°09'04.000"	KN	H	KZ1	30	546
85	1	DVB-T2	GREY TOWN	546	30	10	030°32'10.000"	-29°00'46.000"	KN	H	KZ1	30	546
86	1	DVB-T2	GREY TOWN DORP	546	30	1	030°36'48.000"	-29°02'05.000"	KN	V	KZ1	30	546
87	1	DVB-T2	HOWICK	546	30	0.04	030°13'52.000"	-29°30'13.000"	KN	V	KZ1	30	546
88	1	DVB-T2	KOKSTAD	546	30	0.4	029°29'24.000"	-30°36'42.000"	KN	V	KZ1	30	546
89	1	DVB-T2	LADY SMITH	546	30	1	029°47'19.000"	-28°35'23.000"	KN	V	KZ1	30	546
90	1	DVB-T2	LOSKOP	546	30	1.5	029°12'42.000"	-28°39'41.000"	KN	V	KZ1	30	546
91	1	DVB-T2	LOUWSBURG	658	44	15	031°16'32.000"	-27°33'44.000"	KN	V	KZ1	30	546
92	1	DVB-T2	MATATIELE	546	30	10	028°49'19.000"	-30°23'45.000"	KN	H	KZ1	30	546
93	1	DVB-T2	NYLSSTROOM	474	21	1	028°25'59.000"	-24°47'58.000"	L	V	LP1A	21	474
94	1	DVB-T2	POTGIETERSRUS	514	26	62	029°14'10.000"	-24°09'24.000"	L	H	LP1B	26	514
95	1	DVB-T2	SIBASA	514	26	16	030°26'54.000"	-22°56'57.000"	L	V	LP1B	26	514
96	1	DVB-T2	THABAZIMBI	474	21	67	027°36'51.000"	-24°27'59.000"	L	H	LP1A	21	474
97	1	DVB-T2	TZANEEN	514	26	80	030°00'17.000"	-23°47'06.000"	L	H	LP1B	26	514
98	1	DVB-T2	GABA	514	26	8	030°42'25.000"	-22°47'02.000"	L	V	LP1B	26	514
99	1	DVB-T2	MALAMBA	514	26	0.2	030°15'09.000"	-22°53'56.000"	L	V	LP1B	26	514
100	1	DVB-T2	TOLWE	514	26	16	028°27'29.000"	-23°04'59.000"	L	V	LP1B	26	514
101	1	DVB-T2	DZAMBA	514	26	1	030°18'41.000"	-22°49'05.000"	L	V	LP1B	26	514
102	1	DVB-T2	LOUIS TRICHARDT	514	26	23	029°45'26.000"	-23°00'02.000"	L	V	LP1B	26	514
103	1	DVB-T2	TSHAMAVUDZI	514	26	5	030°31'42.000"	-22°39'15.000"	L	V	LP1B	26	514
104	1	DVB-T2	HOEDSPRUIT	586	35	10	030°52'08.000"	-24°32'30.000"	L	H	MP1	35	586
105	1	DVB-T2	MIDDELBURG	586	35	50	029°23'24.000"	-25°49'04.000"	MP	H	MP1	35	586
106	1	DVB-T2	NELSPRUIT	586	35	76	030°46'33.000"	-25°30'55.000"	MP	H	MP1	35	586
107	1	DVB-T2	PIETRETIET	586	35	76	030°41'03.000"	-27°01'11.000"	MP	H	MP1	35	586
108	1	DVB-T2	SABIE	586	35	0.1	030°45'34.000"	-25°07'44.000"	MP	V	MP1	35	586
109	1	DVB-T2	STANDERTON	586	35	0.25	029°12'51.000"	-26°57'37.000"	MP	V	MP1	35	586
110	1	DVB-T2	VOLKSRUST	610	38	15	029°53'14.630"	-27°18'36.000"	MP	H	MP1	35	586
111	1	DVB-T2	BURGERSFORT	586	35	50	030°19'48.000"	-24°40'05.000"	MP	H	MP1	35	586
112	1	DVB-T2	CAROLINA	586	35	10	030°37'57.000"	-26°10'37.000"	MP	H	MP1	35	586
113	1	DVB-T2	DAVEL	610	38	50	029°37'26.000"	-26°27'30.000"	MP	H	MP1	35	586
114	1	DVB-T2	DULLSTROOM	586	35	10	030°11'17.000"	-25°34'21.000"	MP	H	MP1	35	586
115	1	DVB-T2	HECTORSPRUIT	586	35	0.631	031°36'20.000"	-25°28'47.000"	MP	V	MP1	35	586
116	1	DVB-T2	LYDENBURG	586	35	0.1	030°26'04.000"	-25°06'19.000"	MP	V	MP1	35	586
117	1	DVB-T2	MBUZINI	586	35	20	031°54'53.000"	-25°52'26.000"	MP	V	MP1	35	586
118	1	DVB-T2	POFADDER	522	27	30	018°56'25.000"	-29°14'30.000"	NC	H	NC1A	27	522
119	1	DVB-T2	PRIESKA	522	27	10	022°36'57.000"	-29°40'52.000"	NC	H	NC1A	27	522
120	1	DVB-T2	SPRINGBOK	522	27	10	017°48'29.000"	-29°35'04.000"	NC	H	NC1A	27	522

No.	MUX	DTT	TX-Name	Freq. (MHz)	CH	ERP (kW)	Longitude	Latitude	Province	PoL	SFN Id	CH	Freq. (MHz)
121	1	DVB-T2	UPINGTON	586	35	50	021°44'12.000"	-28°52'56.000"	NC	H	NC1A	27	522
122	1	DVB-T2	UPINGTON TOWN	586	35	0.4	021°12'00.000"	-28°30'25.000"	NC	V	NC1A	27	522
123	1	DVB-T2	VICTORIA WEST	498	24	0.5	023°13'50.000"	-31°41'15.000"	NC	H	NC1B	24	498
124	1	DVB-T2	WILLISTON	522	27	0.1	020°55'08.000"	-31°19'31.000"	NC	H	NC1A	27	522
125	1	DVB-T2	ALEXANDER BAY	522	27	0.1	016°29'49.000"	-28°36'32.000"	NC	V	NC1A	27	522
126	1	DVB-T2	CALVNIA	522	27	10	019°46'57.000"	-31°23'03.000"	NC	H	NC1A	27	522
127	1	DVB-T2	COLESBERG	498	24	0.5	025°03'28.000"	-30°42'30.000"	NC	V	NC1B	24	498
128	1	DVB-T2	DE AAR	626	40	50	023°59'16.000"	-30°27'49.000"	NC	H	NC1B	24	498
129	1	DVB-T2	DOUGLAS	522	27	10	023°31'49.000"	-29°04'14.000"	NC	H	NC1A	27	522
130	1	DVB-T2	GARIES	522	27	50	018°04'43.000"	-30°18'52.000"	NC	H	NC1A	27	522
131	1	DVB-T2	KIMBERLEY	474	21	68	024°54'19.000"	-28°51'14.000"	NC	H	FS1	21	474
132	1	DVB-T2	KURUMAN	578	34	5	023°18'49.000"	-27°21'05.000"	NC	H	NW1	34	578
133	1	DVB-T2	KURUMAN HILLS	522	27	80	023°33'38.000"	-27°53'13.000"	NC	H	NC1A	27	522
134	1	DVB-T2	MOTSWEDI	578	34	7	025°52'18.000"	-25°16'55.000"	NC	H	NW1	34	578
135	1	DVB-T2	PIET PLESSIS	578	34	10	024°49'55.000"	-26°14'56.000"	NW	H	NW1	34	578
136	1	DVB-T2	POMFRET	578	34	20	023°34'44.000"	-25°49'52.000"	NW	V	NW1	34	578
137	1	DVB-T2	RUSTENBURG	578	34	32	027°07'06.000"	-25°36'56.000"	NW	H	NW1	34	578
138	1	DVB-T2	SUPINGSTAD	578	34	10	026°01'36.000"	-24°47'20.000"	NW	V	NW1	34	578
139	1	DVB-T2	SWARTRUGGENS	578	34	1	026°48'09.000"	-25°40'59.000"	NW	V	NW1	34	578
140	1	DVB-T2	TAUNG	578	34	18	024°37'00.000"	-27°31'30.000"	NW	H	NW1	34	578
141	1	DVB-T2	ZEERUST	578	34	63	026°02'51.000"	-25°51'37.000"	NW	H	NW1	34	578
142	1	DVB-T2	SCHWEIZER RENEKE	578	34	100	025°13'07.000"	-27°08'13.000"	NW	H	NW1	34	578
143	1	DVB-T2	CHRISTIANA	578	34	10	024°55'50.000"	-27°53'03.000"	NW	H	NW1	34	578
144	1	DVB-T2	ENZELSBERG	578	34	2	026°13'16.000"	-25°25'07.000"	NW	H	NW1	34	578
145	1	DVB-T2	GANYESA	578	34	61	024°16'00.000"	-26°36'12.000"	NW	H	NW1	34	578
146	1	DVB-T2	GROOT MARICO	578	34	10	026°26'08.000"	-25°37'11.000"	NW	V	NW1	34	578
147	1	DVB-T2	KLERKSDORP	578	34	50	026°24'29.000"	-26°45'14.000"	NW	H	NW1	34	578
148	1	DVB-T2	MADIBOGO	578	34	4	025°15'14.000"	-26°27'28.000"	NW	H	NW1	34	578
149	1	DVB-T2	MONTAGU	570	33	0.125	020°08'37.000"	-33°47'16.000"	WC	V	WC1	33	570
150	1	DVB-T2	NAPIER	666	45	1	019°53'33.000"	-34°31'45.000"	WC	H	WC1	33	570
151	1	DVB-T2	OUTSHOORN	570	33	100	022°16'02.000"	-33°40'16.000"	WC	H	WC1	33	570
152	1	DVB-T2	PAARL	610	38	4	018°56'23.000"	-33°42'51.000"	WC	V	WC1	33	570
153	1	DVB-T2	PIKETBERG	570	33	56	018°44'19.000"	-32°49'09.000"	WC	H	WC1	33	570
154	1	DVB-T2	PLETTENBERG BAY	570	33	0.125	023°22'25.000"	-34°03'34.000"	WC	V	WC1	33	570
155	1	DVB-T2	RIVERSDALE	666	45	160	021°07'41.000"	-34°01'07.000"	WC	H	WC1	33	570
156	1	DVB-T2	SEA POINT	610	38	0.4	018°23'51.000"	-33°54'33.000"	WC	V	WC1	33	570
157	1	DVB-T2	SIMONSTOWN	610	38	2	018°25'37.000"	-34°11'54.000"	WC	V	WC1	33	570
158	1	DVB-T2	STELLENBOSCH	610	38	0.8	018°52'10.000"	-33°54'59.000"	WC	V	WC1	33	570
159	1	DVB-T2	TABLE MOUNTAIN	610	38	0.6	018°24'13.000"	-33°57'25.000"	WC	V	WC1	33	570
160	1	DVB-T2	TOUWSRIVIER	570	33	0.05	020°01'12.000"	-33°20'59.000"	WC	V	WC1	33	570
161	1	DVB-T2	TYGERBERG	610	38	50	018°35'46.000"	-33°52'29.000"	WC	V	WC1	33	570
162	1	DVB-T2	UNIONDALE	666	45	2.5	023°03'02.000"	-33°43'24.000"	WC	V	WC1	33	570
163	1	DVB-T2	UNIONDALE TOWN	570	33	0.025	023°07'36.000"	-33°38'46.000"	WC	V	WC1	33	570
164	1	DVB-T2	VAN RHYNSDORP	570	33	50	018°41'24.000"	-31°45'16.000"	WC	H	WC1	33	570
165	1	DVB-T2	VILLERSDORP	666	45	60	019°30'25.000"	-33°58'09.000"	WC	H	WC1	33	570
166	1	DVB-T2	AURORA	610	38	0.25	018°38'29.000"	-33°49'39.000"	WC	V	WC1	33	570
167	1	DVB-T2	BEAUFORT WEST	570	33	60	022°30'25.000"	-32°15'29.000"	WC	H	WC1	33	570
168	1	DVB-T2	CAPE TOWN	610	38	50	018°23'15.000"	-34°03'15.000"	WC	V	WC1	33	570
169	1	DVB-T2	CERES	666	45	11	019°27'32.000"	-33°15'10.000"	WC	V	WC1	33	570
170	1	DVB-T2	CLIFTON	610	38	0.1	018°22'37.000"	-33°56'30.000"	WC	H	WC1	33	570
171	1	DVB-T2	FISHHOEK	610	38	0.1	018°26'12.000"	-34°08'59.000"	WC	V	WC1	33	570
172	1	DVB-T2	FRANSCHHOEK	570	33	2	019°04'26.000"	-33°54'26.000"	WC	V	WC1	33	570
173	1	DVB-T2	GEORGE	570	33	34	022°27'04.000"	-33°55'38.000"	WC	H	WC1	33	570
174	1	DVB-T2	GRABOUW	610	38	1	018°58'03.000"	-34°06'05.000"	WC	V	WC1	33	570
175	1	DVB-T2	GROOT BRAKRIVIER	570	33	0.25	022°13'00.000"	-34°02'31.000"	WC	V	WC1	33	570
176	1	DVB-T2	HERMANUS	570	33	0.6	019°13'18.000"	-34°24'48.000"	WC	V	WC1	33	570
177	1	DVB-T2	HEXRIEVIER	570	33	0.1	019°39'23.000"	-33°30'54.000"	WC	V	WC1	33	570
178	1	DVB-T2	HOUT BAY	610	38	4	018°20'56.000"	-34°00'44.000"	WC	V	WC1	33	570
179	1	DVB-T2	KLEINMOND	570	33	2	019°08'28.000"	-34°23'22.000"	WC	V	WC1	33	570
180	1	DVB-T2	KNYSNA	498	24	0.5	023°02'31.000"	-34°04'17.000"	WC	V	WC1	33	570
181	1	DVB-T2	LADISMITH (CAPE)	570	33	10	021°25'18.000"	-33°37'55.000"	WC	H	WC1	33	570
182	1	DVB-T2	MATJIESFONTEIN	666	45	20	020°30'20.000"	-33°16'52.000"	WC	H	WC1	33	570

Note 1: Freq (MHz) and CH are the frequency and associated channel number at which the service shall be implemented in order to ensure that the IMT 700 and IMT 800 frequencies in order to clear the Frequency Band after analogue switch-off.

Note 2: No DTT assignments are above 694 MHz.

Note 3: Final Frequency and the associated final channel number is the frequency at which the station will operate in the provincial SFN network.

Note 4: In order to create a plan with the least possible interference the large SFN's were broken up into smaller SFN's in some provinces.

ANNEXURE B – Digital Terrestrial Television Multiplex 2.

No.	MUX	DTT	TX-Name	Freq. (MHz)	CH	ERP (kW)	Longitude	Latitude	Province	Pol.	SFN Id	CH	Freq. (MHz)
1	2	DVB-T2	QUEENSTOWN	586	35	58	026°47'05.000"	-31°43'56.000"	EC	H	EC2	35	586
2	2	DVB-T2	GRAHAMSTOWN	586	35	65	026°42'31.000"	-33°17'15.000"	EC	H	EC2	35	586
3	2	DVB-T2	UMTATA	658	44	10	028°44'36.000"	-31°35'48.000"	EC	H	EC2	35	586
4	2	DVB-T2	KING WILLIAMS TOWN	658	44	18.02	027°15'36.000"	-32°40'44.000"	EC	H	EC2	35	586
5	2	DVB-T2	BUTTER WORTH	658	44	10	028°12'25.000"	-32°16'35.000"	EC	H	EC2	35	586
6	2	DVB-T2	PORTST JOHNS	586	35	10	029°31'39.000"	-31°36'39.000"	EC	H	EC2	35	586
7	2	DVB-T2	ALI WAL NORTH	586	35	50	026°34'00.000"	-30°47'05.000"	EC	H	EC2	35	586
8	2	DVB-T2	SUURBERG	586	35	40	025°34'29.000"	-33°14'55.000"	EC	H	EC2	35	586
9	2	DVB-T2	MOUNT AYLIFF	490	23	50	029°23'41.000"	-30°50'11.000"	EC	H	EC2	35	586
10	2	DVB-T2	NGANGELIZWE	586	35	0.2	028°48'31.000"	-31°37'15.000"	EC	H	EC2	35	586
11	2	DVB-T2	STERKSPRUIT	586	35	20	027°16'14.000"	-30°41'44.000"	EC	V	EC2	35	586
12	2	DVB-T2	EAST LONDON	658	44	63	027°48'58.000"	-32°56'20.000"	EC	H	EC2	35	586
13	2	DVB-T2	PORT ELIZABETH	586	35	72	025°26'29.000"	-33°56'10.000"	EC	H	EC2	35	586
14	2	DVB-T2	PORT ELIZABETH CITY	586	35	2	025°35'29.630"	-33°55'28.000"	EC	V	EC2	35	586
15	2	DVB-T2	DESPATCH	586	35	2	025°25'29.000"	-33°45'53.000"	EC	V	EC2	35	586
16	2	DVB-T2	THEUNISSEN	682	47	34	026°34'50.000"	-28°11'55.000"	FS	H	FS2	25	506
17	2	DVB-T2	SUIDR-AND (KROONSTAD)	506	25	0.25	027°14'16.000"	-27°41'18.000"	FS	V	FS2	25	506
18	2	DVB-T2	BETHLEHEM	506	25	50	028°29'58.000"	-28°14'10.000"	FS	H	FS2	25	506
19	2	DVB-T2	SENEKAL	506	25	10	027°30'26.000"	-28°15'19.000"	FS	H	FS2	25	506
20	2	DVB-T2	LADYBRAND	506	25	10	027°22'42.000"	-29°10'18.000"	FS	H	FS2	25	506
21	2	DVB-T2	BOESMANSKOP	506	25	10	027°12'55.000"	-30°00'28.000"	FS	H	FS2	25	506
22	2	DVB-T2	KROONSTAD	506	25	50	027°11'10.000"	-27°25'16.000"	FS	H	FS2	25	506
23	2	DVB-T2	PETRUS STEYN	506	25	20	028°19'06.000"	-27°30'51.000"	FS	H	FS2	25	506
24	2	DVB-T2	WITSIESHOEK	506	25	0.5	028°50'49.000"	-28°31'04.000"	FS	V	FS2	25	506
25	2	DVB-T2	BLOEMFONTEIN	506	25	100	026°13'50.000"	-29°06'13.000"	FS	H	FS2	25	506
26	2	DVB-T2	WELVERDIEND	658	44	90	027°14'55.000"	-26°26'47.000"	GP	H	GP2	44	658
27	2	DVB-T2	BEZ VALLEY	658	44	0.5	028°05'04.000"	-26°11'41.000"	GP	V	GP2	44	658
28	2	DVB-T2	HELDERKRUIJN	658	44	20	027°51'32.000"	-26°06'05.000"	GP	V	GP2	44	658
29	2	DVB-T2	JOHANNESBURG	658	44	50	028°00'26.000"	-26°11'31.000"	GP	H	GP2	44	658
30	2	DVB-T2	MENLO PARK	658	44	0.04	028°16'09.000"	-25°46'15.000"	GP	V	GP2	44	658
31	2	DVB-T2	MONDEOR	658	44	0.5	027°59'37.000"	-26°16'54.000"	GP	V	GP2	44	658
32	2	DVB-T2	MULBARTON	658	44	0.03	028°03'56.000"	-26°17'36.000"	GP	V	GP2	44	658
33	2	DVB-T2	PRETORIA	658	44	70	027°59'03.000"	-25°41'20.000"	GP	H	GP2	44	658
34	2	DVB-T2	PRETORIA NORTH	658	44	0.25	028°10'07.000"	-25°41'25.000"	GP	V	GP2	44	658
35	2	DVB-T2	SUNNYSIDE	658	44	20	028°12'24.000"	-25°45'53.000"	GP	V	GP2	44	658
36	2	DVB-T2	LINMEYER	658	44	0.1	028°04'16.000"	-26°16'08.000"	GP	V	GP2	44	658
37	2	DVB-T2	HEIDELBERG	658	44	1	028°20'53.000"	-26°29'19.000"	GP	V	GP2	44	658
38	2	DVB-T2	PORT SHEPSTONE	626	40	74	030°17'17.000"	-30°44'07.000"	KN	H	KZ2	40	626
39	2	DVB-T2	DONNYBROOK	626	40	60	029°51'19.000"	-29°54'56.000"	KN	H	KZ2	40	626
40	2	DVB-T2	NEWCASTLE	626	40	1	029°57'12.000"	-27°43'07.000"	KN	V	KZ2	40	626
41	2	DVB-T2	VRYHEID	626	40	10	030°47'38.000"	-27°44'27.000"	KN	H	KZ2	40	626
42	2	DVB-T2	GLENCOE	626	40	50	029°56'51.000"	-28°09'04.000"	KN	H	KZ2	40	626
43	2	DVB-T2	LADYSMITH	626	40	1	029°47'18.600"	-28°35'23.000"	KN	V	KZ2	40	626
44	2	DVB-T2	ESHOVE	626	40	63	031°17'37.000"	-28°51'29.000"	KN	H	KZ2	40	626
45	2	DVB-T2	UBOMBO	626	40	50	032°04'52.000"	-27°33'42.000"	KN	H	KZ2	40	626
46	2	DVB-T2	KOKSTAD	626	40	0.4	029°29'24.000"	-30°36'42.000"	KN	V	KZ2	40	626
47	2	DVB-T2	PONGOLA	626	40	1.5	031°39'00.000"	-27°31'34.000"	KN	V	KZ2	40	626
48	2	DVB-T2	EMPANGENI	626	40	0.25	031°53'31.000"	-28°44'38.000"	KN	V	KZ2	40	626
49	2	DVB-T2	GREYTOWN	626	40	10	030°32'10.000"	-29°00'46.000"	KN	H	KZ2	40	626
50	2	DVB-T2	MATATIELE	682	47	10	028°49'19.000"	-30°23'45.000"	KN	H	KZ2	40	626

No.	MUX	DTT	TX-Name	Freq. (MHz)	CH	ERP (kW)	Longitude	Latitude	Province	PoL	SFN Id	CH	Freq. (MHz)
51	2	DVB-T2	MOOI RIVIER	626	40	10	029°52'04.000"	-29°11'07.000"	KN	H	KZ2	40	626
52	2	DVB-T2	NONGOMA	626	40	10	031°39'27.000"	-27°54'18.000"	KN	H	KZ2	40	626
53	2	DVB-T2	PIETERMARITZBURG	626	40	20	030°19'49.000"	-29°34'47.000"	KN	V	KZ2	40	626
54	2	DVB-T2	DURBAN	626	40	100	030°43'00.000"	-29°46'11.000"	KN	H	KZ2	40	626
55	2	DVB-T2	VERULAM	626	40	0.01	031°02'19.000"	-29°38'25.000"	KN	V	KZ2	40	626
56	2	DVB-T2	OVERPORT	626	40	26	030°59'44.000"	-29°50'12.000"	KN	V	KZ2	40	626
57	2	DVB-T2	THE BLUFF	626	40	2.5	031°00'44.060"	-29°54'40.880"	KN	V	KZ2	40	626
58	2	DVB-T2	THABAZIMBI	570	33	67	027°36'51.000"	-24°27'59.000"	L	H	LP2A	33	570
59	2	DVB-T2	LOUIS TRICHARDT	546	30	23	029°45'26.000"	-23°00'02.000"	L	V	LP2B	30	546
60	2	DVB-T2	TZANEEN	546	30	80	030°00'17.000"	-23°47'06.000"	L	H	LP2B	30	546
61	2	DVB-T2	SIBASA	546	30	16	030°26'54.000"	-22°56'57.000"	L	V	LP2B	30	546
62	2	DVB-T2	POTGIEIERSRUS	546	30	62	029°14'10.000"	-24°09'24.000"	L	H	LP2B	30	546
63	2	DVB-T2	HOEDSPRUIT	554	31	10	030°52'08.000"	-24°32'30.000"	L	H	MP2	554	31
64	2	DVB-T2	VOLKSRUST	642	42	15	029°53'14.630"	-27°18'36.000"	MP	H	MP2	554	31
65	2	DVB-T2	PIET RETIEF	554	31	76	030°41'03.000"	-27°01'11.000"	MP	H	MP2	554	31
66	2	DVB-T2	DAVEL	522	27	50	029°37'26.000"	-26°27'30.000"	MP	H	MP2	554	31
67	2	DVB-T2	SABIE	554	31	0.1	030°45'34.000"	-25°07'44.000"	MP	V	MP2	554	31
68	2	DVB-T2	STANDERTON	554	31	0.25	029°12'51.000"	-26°57'37.000"	MP	V	MP2	554	31
69	2	DVB-T2	CAROLINA	554	31	10	030°37'57.000"	-26°10'37.000"	MP	H	MP2	554	31
70	2	DVB-T2	NELSPRUIT	554	31	76	030°46'35.000"	-25°30'55.000"	MP	H	MP2	554	31
71	2	DVB-T2	MIDDELBURG	554	31	50	029°23'24.000"	-25°49'04.000"	MP	H	MP2	554	31
72	2	DVB-T2	KURUMAN HILLS	554	31	80	023°33'38.000"	-27°53'13.000"	NC	H	NC2A	554	31
73	2	DVB-T2	ALEXANDER BAY	554	31	0.1	016°29'49.000"	-28°36'32.000"	NC	V	NC2A	554	31
74	2	DVB-T2	KIMBERLEY	506	25	68	024°54'19.000"	-28°51'14.000"	NC	H	FS2	506	25
75	2	DVB-T2	CHRISTIANA	674	46	10	024°55'50.000"	-27°53'03.000"	NW	H	NW2	674	46
76	2	DVB-T2	ZEERUST	674	46	63	026°02'51.000"	-25°51'37.000"	NW	H	NW2	674	46
77	2	DVB-T2	SCHWEIZER RENEKE	674	46	100	025°13'07.000"	-27°08'13.000"	NW	H	NW2	674	46
78	2	DVB-T2	PIET PLESSIS	674	46	10	024°49'55.000"	-26°14'56.000"	NW	H	NW2	674	46
79	2	DVB-T2	RUSTENBURG	674	46	32	027°07'06.000"	-25°36'56.000"	NW	H	NW2	674	46
80	2	DVB-T2	PIKETBERG	610	38	56.1	018°44'19.000"	-32°49'09.000"	WC	H	WC2	538	29
81	2	DVB-T2	ODUTSHOORN	634	41	100	022°16'02.000"	-33°40'16.000"	WC	H	WC2	538	29
82	2	DVB-T2	VILLIERSDORP	634	41	60	019°30'25.000"	-33°58'09.000"	WC	H	WC2	538	29
83	2	DVB-T2	BEAUFORT WEST	538	29	60	022°30'25.000"	-32°15'29.000"	WC	H	WC2	538	29
84	2	DVB-T2	GEORGE	538	29	34	022°27'04.000"	-33°55'38.000"	WC	H	WC2	538	29
85	2	DVB-T2	PLETTENBERG BAY	538	29	0.125	023°22'25.000"	-34°03'34.000"	WC	V	WC2	538	29
86	2	DVB-T2	HERMANUS	538	29	0.603	019°13'18.000"	-34°24'47.000"	WC	V	WC2	538	29
87	2	DVB-T2	KNYSNA	538	29	0.501	023°02'31.000"	-34°04'17.000"	WC	V	WC2	538	29
88	2	DVB-T2	FRANSCHHOEK	538	29	2	019°04'26.000"	-33°54'26.000"	WC	V	WC2	538	29
89	2	DVB-T2	TYGERBERG	538	29	50	018°35'46.000"	-33°52'29.000"	WC	V	WC2	538	29
90	2	DVB-T2	AURORA	538	29	0.25	018°38'29.000"	-33°49'39.000"	WC	V	WC2	538	29
91	2	DVB-T2	CAPE TOWN	538	29	50	018°23'15.000"	-34°03'15.000"	WC	H	WC2	538	29
92	2	DVB-T2	CLIFTON	538	29	0.1	018°22'37.000"	-33°56'30.000"	WC	H	WC2	538	29
93	2	DVB-T2	FISHHOEK	538	29	0.1	018°26'12.000"	-34°08'59.000"	WC	V	WC2	538	29
94	2	DVB-T2	GRABOUW	538	29	1	018°58'03.000"	-34°06'05.000"	WC	V	WC2	538	29
95	2	DVB-T2	HOUT BAY	538	29	4	018°20'56.000"	-34°00'44.000"	WC	V	WC2	538	29
96	2	DVB-T2	PAARL	538	29	20	018°56'23.000"	-33°42'51.000"	WC	V	WC2	538	29
97	2	DVB-T2	SEA POINT	538	29	0.4	018°23'51.000"	-33°54'33.000"	WC	V	WC2	538	29
98	2	DVB-T2	SIMONSTOWN	538	29	2	018°25'37.000"	-34°11'54.000"	WC	V	WC2	538	29
99	2	DVB-T2	STELLENBOSCH	538	29	0.8	018°52'10.000"	-33°54'59.000"	WC	V	WC2	538	29
100	2	DVB-T2	TABLE MOUNTAIN	538	29	0.6	018°24'13.000"	-33°57'25.000"	WC	V	WC2	538	29

Note 5: Freq (MHz) and CH are the frequency and associated channel number at which the service shall be implemented in order to ensure that the IMT 700 and IMT 800 frequencies in order to clear the Frequency Band after analogue switch-off.

Note 6: No DTT assignments are above 694 MHz.

Note 7: Final Frequency and the associated final channel number is the frequency at which the station will operate in the provincial SFN network.

Note 8: In order to create a plan with the least possible interference the large SFN's were broken up into smaller SFN's in some provinces.

ANNEXURE C -Interference Results for etv (Red areas)



ANNEXURE D - Interference Results for SABC1 (Red areas)

ANNEXURE E - Interference Results for SABC 2 (Red areas)

ANNEXURE F - Interference Results for SABC 3 (Red areas)