

## TECHNICAL ANNEX

Technical annex with norms

and conditions of measurement

of the information in this cata-

logue. TV standard tables and

identification of channels.

# NORMS

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The High Frequency products presented in this catalogue (Chapters 1 to 10) comply with the European norms regulating products "for cable distribution networks for television signals, audio signals and interactive signals."

EN 60065	Safety requirements
EN 50083-1	Safety requirements
EN 50083-2	Electromagnetic compatibility

Alcad certifies the compliance of these norms by the "Declaration of Conformity" which is included in the instruction pages. The CE marking on the products, packaging, instruction pages or catalogues guarantees this compliance.

Additional country standardisation is therefore unnecessary in the countries of the European Union, given that the CE marking is the only requirement required for the commercialisation and installation of our equipment.

In addition, the specifications, measurement methods and publication of information regarding these products fully comply with the following non-obligatory norms:

EN 50083-3	Active broadband equipment for coaxial distribution networks
EN 50083-4	Passive broadband equipment for coaxial distribution networks
EN 50083-5	Head-end equipment
EN 50083-7	System requirements
EN 50083-8	Electromagnetic compatibility for systems

These norms facilitate the work of the installer by making the products adapt to the systems where they will be installed and publishing the necessary documentation so the installer can comply with the European norms with regards to installations.

The Home Electronic products presented in this catalogue (Chapter 11) comply with the European norms demanded of products of "Consumer Electronics for the Home".

EN 60065	Safety requirements
EN 50081-1	Electromagnetic compatibility

## TECHNICAL INFORMATION

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### General Information

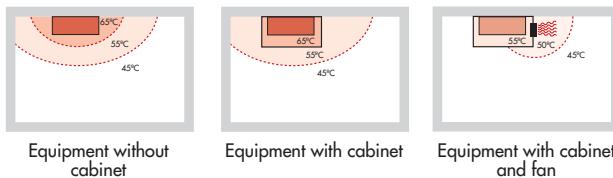
#### Impedance

The impedance of the RF inputs and outputs of the products is  $75\ \Omega$ , except where indicated differently.

#### Temperature of the equipment and environmental temperature

The temperature of the equipment is the temperature of the air surrounding the equipment at a distance of less than 1cm and is the temperature which should be tested to determine whether a piece of equipment is correctly installed. Operating equipment outside its recommended temperature range may result in damage to the equipment. Unless indicated otherwise, this temperature range is from  $-10\ ^\circ\text{C}$  to  $+65\ ^\circ\text{C}$  for equipment installed outdoors or indoors. It is shown on datasheets as the operating temperature or as the temperature in close proximity to the equipment.

The environmental temperature is the temperature of the air at a distance of more than 1m from the equipment or from the cabinet in which the equipment is installed. If the equipment is installed in a cabinet with a ventilator, the maximum allowable environmental temperature will be the maximum allowable temperature of the equipment minus  $20^\circ\text{C}$ . If the equipment is not installed in a cabinet or is installed in a cabinet without a ventilator, the maximum allowable environmental temperature will be the maximum allowable temperature of the equipment minus  $10^\circ\text{C}$ , unless indicated otherwise.



#### Mains voltage

The necessary mains voltage to feed the equipment conforms to the IEC 38 / UNE 21301:1991 norm for a voltage of 230 Vac  $+6\%/-10\%$ , or with improved margins according to those indicated in the product information.

#### Antenna wind resistance

The resistance to wind of the antennas is specified according to the norm EN 50083-1 for a wind pressure of  $800\ \text{N/m}^2$ . For antennas installed at a height greater than 20m a corrective coefficient of 1.375 should be applied which corresponds to a wind pressure of  $1.100\ \text{N/m}^2$ .

#### Antenna gain

The gain of the non-isotropic antennas is indicated in dB (dBd) with regards to the gain of a dipole antenna of  $\lambda/2$ . The gain of the isotropic antennas (omnidirectionals) is indicated in dBi with regards to the gain of an isotropic antenna, this measurement is 2 dB greater than the former.

# TECHNICAL INFORMATION

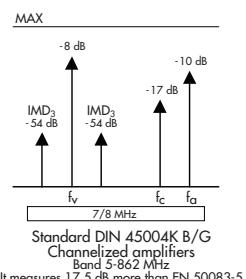
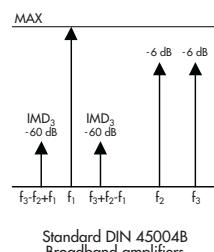
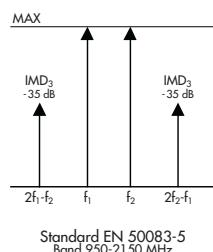
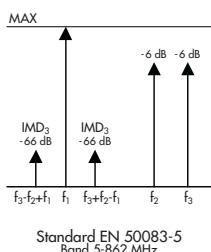
## Amplifiers

The maximum output levels of the active products are specified according to the EN 50083-4 norm for head-end equipment and according to the EN 50083-3 norm for amplifiers of distribution or cascadelables. The levels for broadband amplifiers are also specified according to the DIN 45004B norms as are the levels for monochannel amplifiers in norm DIN 45004K.

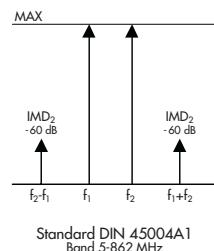
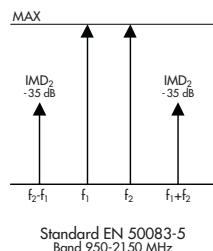
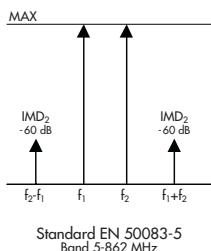
The following methods of measurement also specify the maximum levels which maintain 2nd or 3rd intermodulation order (IMD<sub>2</sub> or IMD<sub>3</sub>) under a maximum level.

### Head-end amplifiers

#### Output level in terms of the 3rd order intermodulation (IMD<sub>3</sub>)

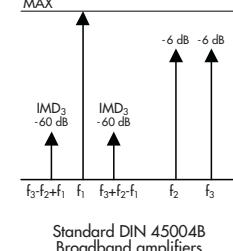
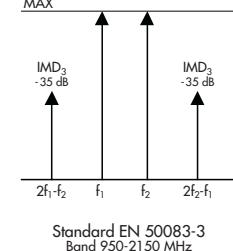
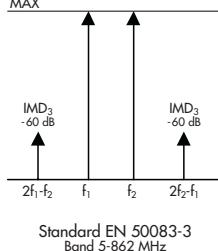


#### Output level in terms of the 2nd order intermodulation (IMD<sub>2</sub>)

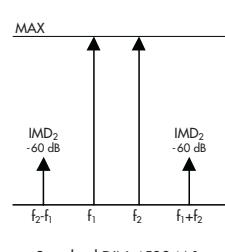
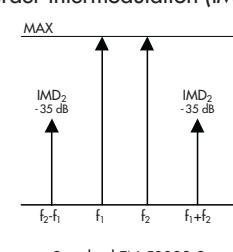
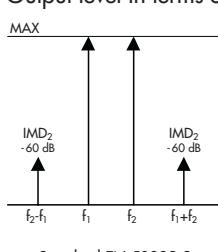


### Distribution and cascadelables amplifiers

#### Output level in terms of the 3rd order intermodulation (IMD<sub>3</sub>)



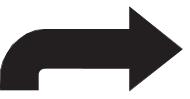
#### Output level in terms of the 2nd order intermodulation (IMD<sub>2</sub>)



# OUTPUT LEVEL EQUIVALENCES

## Table of equivalences

There are different forms of expressing the maximum output level of amplifiers in terms of the method of measurement that is applied. In practice, this can make it difficult for the installer to know if a product fulfils the full specifications of a certain project. The use of this table allows you to obtain the maximum output level of an amplifier according to the most frequently used methods of measurement using the maximum output level measured with a different method.



		DIN 45004K	EN 50083-3	DIN V VDE 0855	UTE C90-124	
		3 carriers IMD <sub>3</sub> α -54 dB	3 carriers IMD <sub>3</sub> α -35 dB	2 carriers IMD <sub>3</sub> α -35 dB	2 carriers IMD <sub>3</sub> α -46 dB	3 carriers IMD <sub>3</sub> α -42 dB
DIN 45004K	3 carriers IMD <sub>3</sub> α -54 dB	+0.0	-	-	-	-11.5
EN 50083-3	2 carriers IMD <sub>3</sub> α -35 dB	-	+0.0	+0.0	-5.5	-6.5
DIN V VDE 0855 Part12	2 carriers IMD <sub>3</sub> α -35 dB	-	+0.0	+0.0	-5.5	-6.5
	2 carriers IMD <sub>3</sub> α -46 dB	-	+5.5	+5.5	+0.0	-1.0
UTE C90-124	3 carriers IMD <sub>3</sub> α -42 dB	+11.5	+6.5	+6.5	+1.0	+0.0
	2 carriers IMD <sub>3</sub> α -52 dB	-	+8.5	+8.5	+3.0	+2.0
UTE C90-120	3 carriers IMD <sub>3</sub> α -46 dB	-13.5	+8.5	+8.5	+3.0	+2.0
	2 carriers IMD <sub>3</sub> α -54 dB	-	+9.5	+9.5	+4.0	+3.0
DIN 45004B	3 carriers IMD <sub>3</sub> α -60 dB	-	+9.5	+9.5	+4.0	+3.0
UTE C90-125	3 carriers IMD <sub>3</sub> α -52 dB	+16.5	+11.5	+11.5	+6.0	+5.0
EN 50083-3	2 carriers IMD <sub>3</sub> α -60 dB	-	+12.5	+12.5	+7.0	+6.0
	3 carriers IMD <sub>3</sub> α -60 dB	-	+15.5	+15.5	+10.0	+9.0
EN 50083-3	42 carriers CTB α -60 dB	-	+23.5	+23.5	+21.0	+20.0

Example: Calculate the maximum output level according to norm UTE C90-124 of an amplifier with a maximum output level of 115 dB<sub>p</sub>V according to norm DIN 45004K

$$115 \text{ dB}_pV (\text{DIN 45004K}) - 11.5 \text{ dB} = 103.5 \text{ dB}_pV (\text{UTE C90-124})$$

Example: Calculate the maximum output level according to norm DIN 45004B of an amplifier with a maximum output level of 117 dB<sub>p</sub>V according to norm EN 50083-3 ( 2 IMD<sub>3</sub> carriers -60 dB)

$$117 \text{ dB}_pV (\text{EN 50083-3}) + 3.0 \text{ dB} = 120.0 \text{ dB}_pV (\text{DIN 45004B})$$

# OUTPUT LEVEL EQUIVALENCES

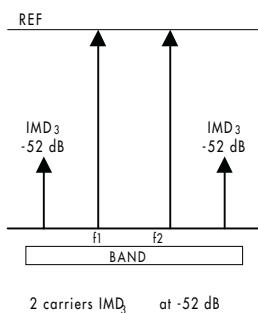
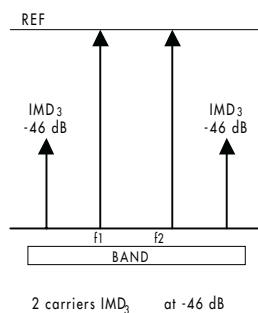
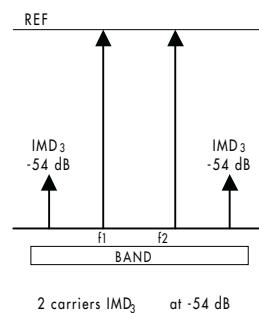
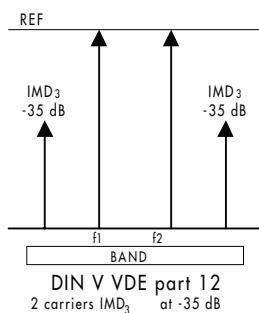
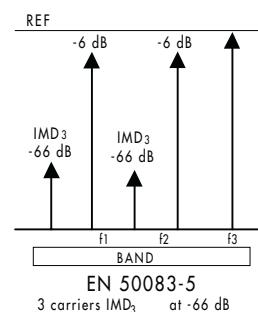
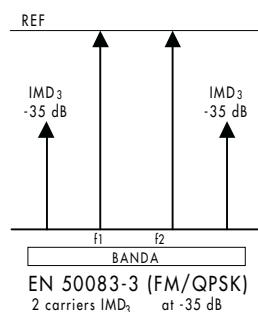
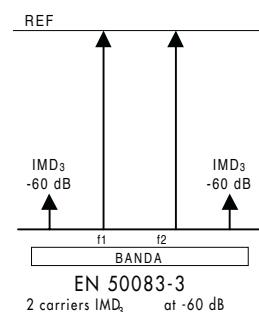
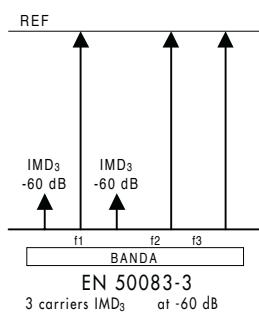
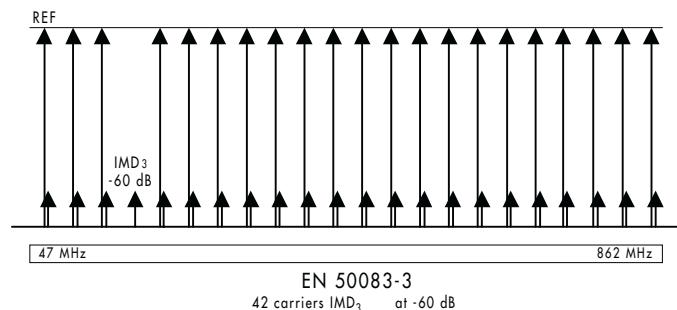
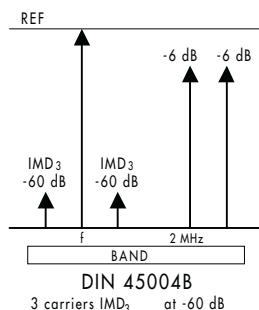
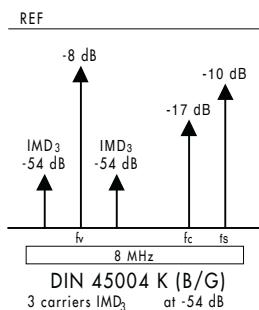
## Table of equivalences

UTE C90-120		DIN 45004B		UTE C90-125		EN 50083-3	
2 carriers IMD <sub>3</sub> α -52 dB	3 carriers IMD <sub>3</sub> α -46 dB	2 carriers IMD <sub>3</sub> α -54 dB	3 carriers IMD <sub>3</sub> α -60 dB	3 carriers IMD <sub>3</sub> α -52 dB	2 carriers IMD <sub>3</sub> α -60 dB	3 carriers IMD <sub>3</sub> α -60 dB	
-	-13.5	-	-	-16.5	-	-	
-8.5	-8.5	-9.5	-9.5	-11.5	-12.5	-15.5	
-8.5	-8.5	-9.5	-9.5	-11.5	-12.5	-15.5	
-3.0	-3.0	-4.0	-4.0	-6.0	-7.0	-10.0	
-2.0	-2.0	-3.0	-3.0	-5.0	-6.0	-9.0	
+0.0	+0.0	-1.0	-1.0	-3.0	-4.0	-7.0	
+0.0	+0.0	-1.0	-1.0	-3.0	-4.0	-7.0	
+1.0	+1.0	+0.0	+0.0	-2.0	-3.0	-6.0	
+1.0	+1.0	+0.0	+0.0	-2.0	-3.0	-6.0	
+3.0	+3.0	+2.0	+2.0	+0.0	-1.0	-4.0	
+4.0	+4.0	+3.0	+3.0	+1.0	+0.0	-3.0	
+7.0	+7.0	+6.0	+6.0	+4.0	+3.0	+0.0	
+18.0	+18.0	+17.0	+17.0	+15.0	+14.0	+11.0	

# 906 OUTPUT LEVEL EQUIVALENCES

## Measurement methods

The maximum levels which maintain 2nd or 3rd order intermodulations under a maximum level are specified in these methods of measurement.



### FREQUENCY OF THE CARRIERS

- f<sub>v</sub> Video carrier frequency
- f<sub>c</sub> Color carrier frequency
- f<sub>s</sub> Audio carrier frequency
- f<sub>1</sub> Frequency 1
- f<sub>2</sub> Frequency 2
- f<sub>3</sub> Frequency 3

# BROADBAND SYSTEMS

## Calculating the operating level of the amplifiers

The reduction of the maximum output level of the amplifier in terms of the number of channels and of the number of amplifiers in series should be taken into account in analogue terrestrial TV installations with broadband amplifiers. By applying these reductions to the maximum output level according to norm DIN 45004B the level of intermodulations can be maintained at 54dB weaker than that of the channels which is undetectable in the TV. This reduction in the output level should be applied to all the amplifiers of the line.

$N_{\text{omax}}$	Maximum operating level
$N_{\text{max}}$	Maximum output level DIN 45004B
$R_1$	Reduction by number of channels
$R_2$	Reduction by number of amplifiers in series

$$N_{\text{fmax}} = N_{\text{max}} - R_1 - R_2$$

### **R<sub>1</sub>**

CHANNELS	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Reduction	0	2.5	3.5	4.5	5	5.5	6	6.5	7	7.5	8	8	8.5	8.5	9	9

### **R<sub>2</sub>**

AMPLIFIERS	1	2	3	4	5	6
Reduction	0	3	4.5	6	7	7.5

Example: The following reductions in level should be applied in an installation designed for the distribution of up to 15 channels and with three broadband amplifiers in series, with a maximum output level of 120 dB $\mu$ V DIN 45004B:

$$R_1 = 8.5 \text{ dB}$$

$$R_2 = 4.5 \text{ dB}$$

$$N_{\text{omax}} = 120 - 8.5 - 4.5 = 107 \text{ dB}\mu\text{V}$$

The intermodulations will not be visible if the output level of the three amplifiers is adjusted to 107 dB $\mu$ V DIN 45004B.

Note: It is possible to calculate the reduction values with the following formulas instead of using the reduction tables.

n Number of channels

m Number of amplifiers in series

$$R_1 = 7.5 \cdot \log(n-1)$$

$$R_2 = 10 \cdot \log(m)$$

# BROADBAND SYSTEMS

## Correction of the output level in terms of the number of channels

There are different forms of expressing the maximum output level of amplifiers in terms of the method of measurement that is applied. To use an amplifier in a particular installation we need to know the maximum output level for a determined number of channels, maintaining the intermodulations at a level that will be undetectable on the TV. In the case of channels with AM or QAM modulation, the intermodulations should be 54 dB weaker than the channels, and in the case of FM or QPSK modulations, the intermodulations should be 35 dB weaker. The following table allows you to determine the maximum output level with a specific number of channels starting with the maximum output level according to the most frequently used methods of measurement.

		2 channels	5 channels	10 channels	15 channels	20 channels
EN 50083-3	2 carriers IMD <sub>3</sub> a -35 dB	-0.0	-4.5	-7.0	-8.5	-9.5
DIN V VDE 0855 part12	2 carriers IMD <sub>3</sub> a -35 dB	-0.0	-4.5	-7.0	-8.5	-9.5
	2 carriers IMD <sub>3</sub> a -46 dB	-4.0	-8.5	-11.0	-12.5	-13.5
UTE C90-124	3 carriers IMD <sub>3</sub> a -42 dB	-3.0	-7.5	-10.0	-11.5	-12.5
	2 carriers IMD <sub>3</sub> a -52 dB	-1.0	-5.5	-8.0	-9.5	-10.5
UTE C90-120	3 carriers IMD <sub>3</sub> a -46 dB	-1.0	-5.5	-8.0	-9.5	-10.5
	2 carriers IMD <sub>3</sub> a -54 dB	-0.0	-4.5	-7.0	-8.5	-9.5
DIN 45004B	3 carriers IMD <sub>3</sub> a -60 dB	-0.0	-4.5	-7.0	-8.5	-9.5
UTE C90-125	3 carriers IMD <sub>3</sub> a -52 dB	+2.0	-2.5	-5.0	-6.5	-7.5
EN 50083-3	2 carriers IMD <sub>3</sub> a -60 dB	+3.0	-1.5	-4.0	-5.5	-6.5
	3 carriers IMD <sub>3</sub> a -60 dB	+6.0	+1.5	-1.0	-2.5	-3.5
EN 50083-3	42 carriers CTB a -60 dB	+19.0	+13.0	+9.5	+7.5	+6.5

Example: Calculate the maximum output level of an amplifier with 30 FM or QPSK channels whose maximum output level is 120 dB<sub>P</sub>V according to norm EN-50083-3 (IMD<sub>3</sub> – 35 dB).

$$120 \text{ dB}_P\text{V} (\text{EN 50083-3}) - 11.0 \text{ dB} = 109.0 \text{ dB}_P\text{V} (30 \text{ channels FM or QPSK with IMD}_3 \text{ at } -35 \text{ dB})$$

Example: Calculate the maximum output level of an amplifier with 20 AM or QAM channels whose maximum output level is 109 dB<sub>P</sub>V according to norm UTE C90-125.

$$109 \text{ dB}_P\text{V} (\text{UTE C90-125}) - 7.5 \text{ dB} = 99.5 \text{ dB}_P\text{V} (20 \text{ channels AM or QAM with IMD}_3 \text{ at } -54 \text{ dB})$$

## BROADBAND SYSTEMS

Correction of the output level in terms of the number of channels

30 channels	42 channels	50 channels	60 channels	77 channels	90 channels	APPLICATION
-11.0	-12.0	-12.5	-13.5	-14.0	-14.5	FM / QPSK IMD <sub>3</sub> -35 dB
-11.0	-12.0	-12.5	-13.5	-14.0	-14.5	FM / QPSK IMD <sub>3</sub> -35 dB
-15.0	-16.0	-16.5	-17.5	-18.0	-18.5	AM / QAM IMD <sub>3</sub> -54 dB
-14.0	-15.0	-15.5	-16.5	-17.0	-17.5	AM / QAM IMD <sub>3</sub> -54 dB
-12.0	-13.0	-13.5	-14.5	-15.0	-15.5	AM / QAM IMD <sub>3</sub> -54 dB
-12.0	-13.0	-13.5	-14.5	-15.0	-15.5	AM / QAM IMD <sub>3</sub> -54 dB
-11.0	-12.0	-12.5	-13.5	-14.0	-14.5	AM / QAM IMD <sub>3</sub> -54 dB
-11.0	-12.0	-12.5	-13.5	-14.0	-14.5	AM / QAM IMD <sub>3</sub> -54 dB
-9.0	-10.0	-10.5	-11.5	-12.0	-12.5	AM / QAM IMD <sub>3</sub> -54 dB
-8.0	-9.0	-9.5	-10.5	-11.0	-11.5	AM / QAM IMD <sub>3</sub> -54 dB
-5.0	-6.0	-6.5	-7.5	-8.0	-8.5	AM / QAM IMD <sub>3</sub> -54 dB
+4.5	+3.0	+2.0	+1.5	+0.5	-0.5	AM / QAM IMD <sub>3</sub> -54 dB

# TV NORMS

## Terrestrial TV standards

Main technical specifications of the different standards of analogue TV and of the norm DVB-T for digital TV in its two variants 2K and 8K.

STANDARD	B	D	G	H	I	K	K1	L	M	N		
Number of channels			25				30	25				
Number of lines			625				525	625				
Channel bandwidth	MHz	7	8				6					
Video bandwidth	MHz	5	6	5	5.5	6		4.2				
Video-audio separation	MHz	+5.5	+6.5	+5.5	+6	+6.5		+4.5				
Vestigial side band	MHz	0.75		1.25		0.75	1.25		0.75			
Video modulation		Negative						Positive	Negative			
Audio modulation		FM						AM	FM			

DVB-T	Mode 2K	Mode 8K
Number of carriers ( $N'$ )	1,706	6,818
Carriers modulation	QPSK, 16 QAM or 64 QAM	
Useful symbol duration ( $T_s$ )	ms	224
Security interval ( $D$ ) $\Delta$	ms	$T_s/4, T_s/8 \text{ o } T_s/32$
Carrier bandwidth ( $1/T_s$ )	Hz	4,464
Multiplex bandwidth	MHz	7.62

# TV STANDARDS

## TV standards by country

Standards of analogue TV used on the VHF and UHF band of the different countries in the world. Due to the difficulties in compiling this information and to the variations which these standards are continuously subjected to, this information should be used as a guide only. We recommend that the official authorities of each country be consulted in order to confirm the standards in present use.

	PAL 4.433 MHz		PAL 4.433 MHz		NTSC 3.579 MHz		STANDARD VHF		SECAM 4 MHz		STANDARD VHF	
	VHF	UHF	VHF	UHF	VHF	UHF	VHF	UHF	VHF	UHF	VHF	UHF
AFGHANISTAN	D	-	PORTUGAL	B	G	BERMUDA	M	-	CONGO	K1	K1	
ALBANIA	B	G	QUATAR	B	G	BOLIVIA	M	-	CZECH. REP.	D	K	
ALGERIA	B	G	ROMANIA	D	K	CANADA	M	-	FRANCE	L	L	
ANGOLA	I	-	SINGAPORE	B	G	CHILE	M	M	GABON	K1	K1	
AUSTRALIA	B	B	SOUTH AFRICA	I	I	COLOMBIA	M	M	GERMANY	B	G	
AUSTRIA	B	G	SPAIN	B	G	COSTA RICA	M	M	GREECE	B	G	
BAHREIN	B	G	SRI LANKA	B	-	CUBA	M	M	GUADALOPE	K1	-	
BANGLADESH	B	-	SUDAN	B	-	DOMINICAN REP.	M	M	GUIANA (FR.)	K1	-	
BELGIUM	B	H	SWAZILAND	B	G	ECUADOR	M	M	GUIANA (REP.)	K1	-	
CAMEROON	B	G	SWEDEN	B	G	EL SALVADOR	M	M	HUNGARY	D	K	
CHINA	D	D	SWITZERLAND	B	G	GREENLAND	M	M	IRAN	B	G	
CYPRUS	B	G	TANZANIA	I	I	GUAM	M	-	IRAQ	B	-	
EGYPT	B	G	THAILAND	B	G	GUATEMALA	M	M	IVORY COAST	K1	-	
DENMARK	B	G	TURKEY	B	G	HAITI	M	-	SECAM 4 MHz			
FINLAND	B	G	UGANDA	B	G	HONDURAS	M	-	AFGHANISTAN	D	-	
GERMANY	B	G	UNITED ARAB. EM.	B	G	JAMAICA	N	-	IVORY COAST	D	K	
GHANA	B	G	UNITED KINGDOM	-	I	JAPAN	M	M	LEBANON	K1	-	
HONG KONG	-	I	YEMEN (ARAB REP.)	B	-	KOREA (SOUTH)	M	-	LIBYA	B	-	
ICELAND	B	G	YUGOSLAVIA	B	G	MEXICO	M	M	LUXEMBOURG	B	G	
INDIA	B	-	ZAMBIA	B	G	NETH. ANTILLES	M	-	MADAGASCAR	B	G/L	
INDONESIA	B	-	ZANZIBAR	I	I	NICARAGUA	M	M	MARTINIQUE	K1	K1	
IRELAND	I	I	ZIMBABWE	B	G	PANAMA	M	M	MAURITIUS	K1	-	
ISRAEL	B	G	PAL 3.575 MHz			PERU	M	M	MONACO	B	-	
ITALY	B	G	PAL 3.582 MHz			PHILIPPINES	M	M	MOROCCO	L	L/G	
JORDAN	B	G	PAL 3.582 MHz			PUERTO RICO	M	M	NEW CALEDONIA	B	G	
KENYA	B	G	PAL 3.582 MHz			SAMOA	M	-	POLAND	K1	-	
KUWAIT	B	G	PAL 3.582 MHz			SURINAM	M	-	RUSSIA	D	K	
LIBERIA	B	-	PAL 3.582 MHz			TAIWAN	M	-	SAUDI ARABIA	B	G	
LUXEMBOURG	B	G/L	PAL 3.582 MHz			TRINIDAD	M	-	SENEGAL	K1	K1	
MALAYSIA	B	G	PAL 3.582 MHz			USA	M	M	SYRIA	B	G	
MALTA	B	-	PAL 3.582 MHz			VENEZUELA	M	-	TOGO	K1	-	
NETHERLANDS	B	G	PAL 3.582 MHz			YEMEN (DEM. REP.)	B	-	TUNISIA	B	G	
NEW ZEALAND	B	G	PAL 3.582 MHz			SECAM 4 MHz			ZAIRE	K1	K1	
NIGERIA	B	I	PAL 3.582 MHz			BAHAMAS	M	-	BENIN	K1	-	
NORWAY	B	G	PAL 3.582 MHz			BARBADOS	M	-	BULGARIA	D	K	
OMAN	B	G	PAL 3.582 MHz									
PAKISTAN	B	G	PAL 3.582 MHz									

# TV STANDARDS

## Channel identification

To avoid the existing confusion among channels of different standards, Alcad asks that orders of monochannel amplifiers (905-ZG and 905 ZP) and channel converters (905-CO) be made according to the following specifications, concerning the identification of the channel and the model to be used in relation to the channel.

		ZG-611	ZG-4XX		
		ZP-611	ZP-4XX		
		CO-705	CO-405		
STANDARD	BI	Interband	BIII	Interband	UHF
B/G CCIR	C/02..04	C/S01..S10	C/05..12	C/S11..S41	C/21..69
B/G ITALY	C/A..C	C/S01..S10	C/D..H, H1, H2	C/S11..S41	C/21..69
B/G NEW ZELAND	C/Z01..Z03	C/S01..S10	C/Z04..Z11	C/S11..S41	C/21..69
B AUSTRALIA	C/A00..A05 C/A05A	C/AS01..AS10	C/A06..A12 C/A09A C/A10N,A11N	C/AS11..AS41	C/A20..A75
L FRANCE	C/L02..L04	C/LS01..LS07	C/L05..L10 C/LS08..LS13	C/LS14..LS41	C/21..69
K1 DOM TOM	C/K01..K03	-	C/K04..K09	-	-
D/K OIRT	C/R01..R05	C/RS01..RS08	C/R06..R12	C/RS11..RS18 C/RS20..RS41	C/21..69
D/K POLAND	C/R01..R05	C/PS01..PS08	C/R06..R12	C/PS09..PS38	C/21..69
D/K ZCECH REP.	C/R01..R05	-	C/R06..R12	-	C/21..69
I UK	-	-	-	-	C/21..69
I UK (SM8)	C/U02..U04	C/IS01..IS10	C/U05..U12	C/IS11..IS18 C/IS21..IS41	C/21..69
I IRELAND	C/IA..IC	C/IS01..IS10	C/ID..IJ	C/IS11..IS18 C/IS21..IS41	C/21..69
I SOUTH AFRICA	C/IA..IC	C/IS01..IS10	C/I04..I13	C/IS14..IS18 C/IS21..IS41	C/21..69
FREQUENCIES MHz	42,00 - 144,00	94,00 - 174,75	174,00 - 258,18	222,75 - 470,00	470,00 - 862,00

ZG-4XX	ZP-4XX
ZG-411	ZP-411
ZG-412	ZP-412
ZG-413	ZP-413
ZG-414	ZP-414
ZG-431	ZP-431

# TV STANDARDS

## Channel identification

To avoid the existing confusion among channels of different norms, Alcad asks that orders of monochannel amplifiers (905-CH) be made according to the following specifications, concerning the identification of the channel and the model to be used in relation to the channel.

STANDARD		CH-101	CH-301	CH-401
B/G	CCIR	BI	BIII	UHF
B/G	ITALY	C/A..B	C/D..H. H1. H2	C/21..69
B/G	NEW ZEALAND	C/Z01..Z03	C/Z04..Z11	C/21..69
B	AUSTRALIA	C/A00..A02	C/A06..A12.A09A C/A10N.A11N	C/A20..A75
L	FRANCE	-	C/L05..L10 C/LS08..LS13	C/21..69
K1	DOM TOM	C/K01..K03	C/K04..K09	-
D/K	OIRT	C/R01..R02	C/R06..R12	C/21..69
D/K	POLAND	C/R01..R02	C/R06..R12	C/21..69
D/K	ZCECH REP.	C/R01..R02	C/R06..R12	C/21..69
I	UK	-	-	C/21..69
I	UK (SM8)	C/U02..U04	C/U05..U11	C/21..69
I	IRELAND	-	C/I0..IJ	C/21..69
I	SOUTH AFRICA	C/IA..IC	C/I04..I11	C/21..69
FREQUENCIES MHz		42.00 - 70.00	174.00 - 230.75	470.00 - 862.00

### Adjustment and change of channel groups

The amplifiers of the 905-ZG, 905-ZP and 905-CH range are manufactured and adjusted according to the following groups:

BAND	GROUP	FREQUENCIES	CHANNELS B/G CCIR
BI	-	42.00 - 70.00 MHz	C/2..04
BIII	-	174.00 - 230.75 MHz	C/5..12
	-	174.00 - 215.00 MHz	-
	-	208.00 - 238.00 MHz	C/S1..S04
Interband	1	68.00 - 108.00 MHz	C/S5..S10
Interband	2	102.00 - 134.75 MHz	C/S11..S16
Interband	3	132.00 - 174.75 MHz	C/S17..S22
Interband	4	230.00 - 272.00 MHz	C/S23..S27
Interband	5	270.00 - 321.00 MHz	C/S28..S34
Interband	6	318.00 - 363.00 MHz	C/S35..S41
Interband	7	358.00 - 419.00 MHz	C/21..32
Interband	8	414.00 - 470.00 MHz	C/33..44
UHF	A	470.00 - 568.00 MHz	C/45..56
UHF	B	566.00 - 666.00 MHz	C/57..69
UHF	C	662.00 - 758.00 MHz	
UHF	D	757.00 - 862.00 MHz	

# CHANNEL TABLES

## B/G standard – CCIR channels

VHF				UHF			
CHANNEL	VIDEO	AUDIO	RANGE	CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz		MHz	MHz	MHz
2	48.25	53.75	47.00 - 54.00	21	471.25	476.75	470.00 - 478.00
3	55.25	60.75	54.00 - 61.00	22	479.25	484.75	478.00 - 486.00
4	62.25	67.75	61.00 - 68.00	23	487.25	492.75	486.00 - 494.00
S1	105.25	110.75	104.00 - 111.00	24	495.25	500.75	494.00 - 502.00
S2	112.25	117.75	111.00 - 118.00	25	503.25	508.75	502.00 - 510.00
S3	119.25	124.75	118.00 - 125.00	26	511.25	516.75	510.00 - 518.00
S4	126.25	131.75	125.00 - 132.00	27	519.25	524.75	518.00 - 526.00
S5	133.25	138.75	132.00 - 139.00	28	527.25	532.75	526.00 - 534.00
S6	140.25	145.75	139.00 - 146.00	29	535.25	540.75	534.00 - 542.00
S7	147.25	152.75	146.00 - 153.00	30	543.25	548.75	542.00 - 550.00
S8	154.25	159.75	153.00 - 160.00	31	551.25	556.75	550.00 - 558.00
S9	161.25	166.75	160.00 - 167.00	32	559.25	564.75	558.00 - 566.00
S10	168.25	173.75	167.00 - 174.00	33	567.25	572.75	566.00 - 574.00
5	175.25	180.75	174.00 - 181.00	34	575.25	580.75	574.00 - 582.00
6	182.25	187.75	181.00 - 188.00	35	583.25	588.75	582.00 - 590.00
7	189.25	194.75	188.00 - 195.00	36	591.25	596.75	590.00 - 598.00
8	196.25	201.75	195.00 - 202.00	37	599.25	604.75	598.00 - 606.00
9	203.25	208.75	202.00 - 209.00	38	607.25	612.75	606.00 - 614.00
10	210.25	215.75	209.00 - 216.00	39	615.25	620.75	614.00 - 622.00
11	217.25	222.75	216.00 - 223.00	40	623.25	628.75	622.00 - 630.00
12	224.25	229.75	223.00 - 230.00	41	631.25	636.75	630.00 - 638.00
S11	231.25	236.75	230.00 - 237.00	42	639.25	644.75	638.00 - 646.00
S12	238.25	243.75	237.00 - 244.00	43	647.25	652.75	646.00 - 654.00
S13	245.25	250.75	244.00 - 251.00	44	655.25	660.75	654.00 - 662.00
S14	252.25	257.75	251.00 - 258.00	45	663.25	668.75	662.00 - 670.00
S15	259.25	264.75	258.00 - 265.00	46	671.25	676.75	670.00 - 678.00
S16	266.25	271.75	265.00 - 272.00	47	679.25	684.75	678.00 - 686.00
S17	273.25	278.75	272.00 - 279.00	48	687.25	692.75	686.00 - 694.00
S18	280.25	285.75	279.00 - 286.00	49	695.25	700.75	694.00 - 702.00
S19	287.25	292.75	286.00 - 293.00	50	703.25	708.75	702.00 - 710.00
S20	294.25	299.75	293.00 - 300.00	51	711.25	716.75	710.00 - 718.00
S21	303.25	308.75	302.00 - 310.00	52	719.25	724.75	718.00 - 726.00
S22	311.25	316.75	310.00 - 318.00	53	727.25	732.75	726.00 - 734.00
S23	319.25	324.75	318.00 - 326.00	54	735.25	740.75	734.00 - 742.00
S24	327.25	332.75	326.00 - 334.00	55	743.25	748.75	742.00 - 750.00
S25	335.25	340.75	334.00 - 342.00	56	751.25	756.75	750.00 - 758.00
S26	343.25	348.75	342.00 - 350.00	57	759.25	764.75	758.00 - 766.00
S27	351.25	356.75	350.00 - 358.00	58	767.25	772.75	766.00 - 774.00
S28	359.25	364.75	358.00 - 366.00	59	775.25	780.75	774.00 - 782.00
S29	367.25	372.75	366.00 - 374.00	60	783.25	788.75	782.00 - 790.00
S30	375.25	380.75	374.00 - 382.00	61	791.25	796.75	790.00 - 798.00
S31	383.25	388.75	382.00 - 390.00	62	799.25	804.75	798.00 - 806.00
S32	391.25	396.75	390.00 - 398.00	63	807.25	812.75	806.00 - 814.00
S33	399.25	404.75	398.00 - 406.00	64	815.25	820.75	814.00 - 822.00
S34	407.25	412.75	406.00 - 414.00	65	823.25	828.75	822.00 - 830.00
S35	415.25	420.75	414.00 - 422.00	66	831.25	836.75	830.00 - 838.00
S36	423.25	428.75	422.00 - 430.00	67	839.25	844.75	838.00 - 846.00
S37	431.25	436.75	430.00 - 438.00	68	847.25	852.75	846.00 - 854.00
S38	439.25	444.75	438.00 - 446.00	69	855.25	860.75	854.00 - 862.00
S39	447.25	452.75	446.00 - 454.00				
S40	455.25	460.75	454.00 - 462.00				
S41	463.25	468.75	462.00 - 470.00				

# CHANNEL TABLES

B/G standard – Italy

VHF			
CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz
A	53.75	59.25	52.50 - 59.50
B	62.25	67.75	61.00 - 68.00
C	82.25	87.75	81.00 - 88.00
S1	105.25	110.75	104.00 - 111.00
S2	112.25	117.75	111.00 - 118.00
S3	119.25	124.75	118.00 - 125.00
S4	126.25	131.75	125.00 - 132.00
S5	133.25	138.75	132.00 - 139.00
S6	140.25	145.75	139.00 - 146.00
S7	147.25	152.75	146.00 - 153.00
S8	154.25	159.75	153.00 - 160.00
S9	161.25	166.75	160.00 - 167.00
S10	168.25	173.75	167.00 - 174.00
D	175.25	180.75	174.00 - 181.00
E	183.75	189.25	182.50 - 189.50
F	192.25	197.75	191.00 - 198.00
G	201.25	206.75	200.00 - 207.00
H	210.25	215.75	209.00 - 216.00
H1	217.25	222.75	216.00 - 223.00
H2	224.25	229.75	223.00 - 230.00
S11	231.25	236.75	230.00 - 237.00
S12	238.25	243.75	237.00 - 244.00
S13	245.25	250.75	244.00 - 251.00
S14	252.25	257.75	251.00 - 258.00
S15	259.25	264.75	258.00 - 265.00
S16	266.25	271.75	265.00 - 272.00
S17	273.25	278.75	272.00 - 279.00
S18	280.25	285.75	279.00 - 286.00
S19	287.25	292.75	286.00 - 293.00
S20	294.25	299.75	293.00 - 300.00
S21	303.25	308.75	302.00 - 310.00
S22	311.25	316.75	310.00 - 318.00
S23	319.25	324.75	318.00 - 326.00
S24	327.25	332.75	326.00 - 334.00
S25	335.25	340.75	334.00 - 342.00
S26	343.25	348.75	342.00 - 350.00
S27	351.25	356.75	350.00 - 358.00
S28	359.25	364.75	358.00 - 366.00
S29	367.25	372.75	366.00 - 374.00
S30	375.25	380.75	374.00 - 382.00
S31	383.25	388.75	382.00 - 390.00
S32	391.25	396.75	390.00 - 398.00
S33	399.25	404.75	398.00 - 406.00
S34	407.25	412.75	406.00 - 414.00
S35	415.25	420.75	414.00 - 422.00
S36	423.25	428.75	422.00 - 430.00
S37	431.25	436.75	430.00 - 438.00
S38	439.25	444.75	438.00 - 446.00
S39	447.25	452.75	446.00 - 454.00
S40	455.25	460.75	454.00 - 462.00
S41	463.25	468.75	462.00 - 470.00

UHF			
CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz
21	471.25	476.75	470.00 - 478.00
22	479.25	484.75	478.00 - 486.00
23	487.25	492.75	486.00 - 494.00
24	495.25	500.75	494.00 - 502.00
25	503.25	508.75	502.00 - 510.00
26	511.25	516.75	510.00 - 518.00
27	519.25	524.75	518.00 - 526.00
28	527.25	532.75	526.00 - 534.00
29	535.25	540.75	534.00 - 542.00
30	543.25	548.75	542.00 - 550.00
31	551.25	556.75	550.00 - 558.00
32	559.25	564.75	558.00 - 566.00
33	567.25	572.75	566.00 - 574.00
34	575.25	580.75	574.00 - 582.00
35	583.25	588.75	582.00 - 590.00
36	591.25	596.75	590.00 - 598.00
37	599.25	604.75	598.00 - 606.00
38	607.25	612.75	606.00 - 614.00
39	615.25	620.75	614.00 - 622.00
40	623.25	628.75	622.00 - 630.00
41	631.25	636.75	630.00 - 638.00
42	639.25	644.75	638.00 - 646.00
43	647.25	652.75	646.00 - 654.00
44	655.25	660.75	654.00 - 662.00
45	663.25	668.75	662.00 - 670.00
46	671.25	676.75	670.00 - 678.00
47	679.25	684.75	678.00 - 686.00
48	687.25	692.75	686.00 - 694.00
49	695.25	700.75	694.00 - 702.00
50	703.25	708.75	702.00 - 710.00
51	711.25	716.75	710.00 - 718.00
52	719.25	724.75	718.00 - 726.00
53	727.25	732.75	726.00 - 734.00
54	735.25	740.75	734.00 - 742.00
55	743.25	748.75	742.00 - 750.00
56	751.25	756.75	750.00 - 758.00
57	759.25	764.75	758.00 - 766.00
58	767.25	772.75	766.00 - 774.00
59	775.25	780.75	774.00 - 782.00
60	783.25	788.75	782.00 - 790.00
61	791.25	796.75	790.00 - 798.00
62	799.25	804.75	798.00 - 806.00
63	807.25	812.75	806.00 - 814.00
64	815.25	820.75	814.00 - 822.00
65	823.25	828.75	822.00 - 830.00
66	831.25	836.75	830.00 - 838.00
67	839.25	844.75	838.00 - 846.00
68	847.25	852.75	846.00 - 854.00
69	855.25	860.75	854.00 - 862.00

# CHANNEL TABLES

## B/G standard – New Zealand

VHF				UHF			
CHANNEL	VIDEO	AUDIO	RANGE	CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz		MHz	MHz	MHz
1	45.25	50.75	44.00 - 51.00	21	471.25	476.75	470.00 - 478.00
2	55.25	60.75	54.00 - 61.00	22	479.25	484.75	478.00 - 486.00
3	62.25	67.75	61.00 - 68.00	23	487.25	492.75	486.00 - 494.00
S1	105.25	110.75	104.00 - 111.00	24	495.25	500.75	494.00 - 502.00
S2	112.25	117.75	111.00 - 118.00	25	503.25	508.75	502.00 - 510.00
S3	119.25	124.75	118.00 - 125.00	26	511.25	516.75	510.00 - 518.00
S4	126.25	131.75	125.00 - 132.00	27	519.25	524.75	518.00 - 526.00
S5	133.25	138.75	132.00 - 139.00	28	527.25	532.75	526.00 - 534.00
S6	140.25	145.75	139.00 - 146.00	29	535.25	540.75	534.00 - 542.00
S7	147.25	152.75	146.00 - 153.00	30	543.25	548.75	542.00 - 550.00
S8	154.25	159.75	153.00 - 160.00	31	551.25	556.75	550.00 - 558.00
S9	161.25	166.75	160.00 - 167.00	32	559.25	564.75	558.00 - 566.00
S10	168.25	173.75	167.00 - 174.00	33	567.25	572.75	566.00 - 574.00
4	175.25	180.75	174.00 - 181.00	34	575.25	580.75	574.00 - 582.00
5	182.25	187.75	181.00 - 188.00	35	583.25	588.75	582.00 - 590.00
6	189.25	194.75	188.00 - 195.00	36	591.25	596.75	590.00 - 598.00
7	196.25	201.75	195.00 - 202.00	37	599.25	604.75	598.00 - 606.00
8	203.25	208.75	202.00 - 209.00	38	607.25	612.75	606.00 - 614.00
9	210.25	215.75	209.00 - 216.00	39	615.25	620.75	614.00 - 622.00
10	217.25	222.75	216.00 - 223.00	40	623.25	628.75	622.00 - 630.00
11	224.25	229.75	223.00 - 230.00	41	631.25	636.75	630.00 - 638.00
S11	231.25	236.75	230.00 - 237.00	42	639.25	644.75	638.00 - 646.00
S12	238.25	243.75	237.00 - 244.00	43	647.25	652.75	646.00 - 654.00
S13	245.25	250.75	244.00 - 251.00	44	655.25	660.75	654.00 - 662.00
S14	252.25	257.75	251.00 - 258.00	45	663.25	668.75	662.00 - 670.00
S15	259.25	264.75	258.00 - 265.00	46	671.25	676.75	670.00 - 678.00
S16	266.25	271.75	265.00 - 272.00	47	679.25	684.75	678.00 - 686.00
S17	273.25	278.75	272.00 - 279.00	48	687.25	692.75	686.00 - 694.00
S18	280.25	285.75	279.00 - 286.00	49	695.25	700.75	694.00 - 702.00
S19	287.25	292.75	286.00 - 293.00	50	703.25	708.75	702.00 - 710.00
S20	294.25	299.75	293.00 - 300.00	51	711.25	716.75	710.00 - 718.00
S21	303.25	308.75	302.00 - 310.00	52	719.25	724.75	718.00 - 726.00
S22	311.25	316.75	310.00 - 318.00	53	727.25	732.75	726.00 - 734.00
S23	319.25	324.75	318.00 - 326.00	54	735.25	740.75	734.00 - 742.00
S24	327.25	332.75	326.00 - 334.00	55	743.25	748.75	742.00 - 750.00
S25	335.25	340.75	334.00 - 342.00	56	751.25	756.75	750.00 - 758.00
S26	343.25	348.75	342.00 - 350.00	57	759.25	764.75	758.00 - 766.00
S27	351.25	356.75	350.00 - 358.00	58	767.25	772.75	766.00 - 774.00
S28	359.25	364.75	358.00 - 366.00	59	775.25	780.75	774.00 - 782.00
S29	367.25	372.75	366.00 - 374.00	60	783.25	788.75	782.00 - 790.00
S30	375.25	380.75	374.00 - 382.00	61	791.25	796.75	790.00 - 798.00
S31	383.25	388.75	382.00 - 390.00	62	799.25	804.75	798.00 - 806.00
S32	391.25	396.75	390.00 - 398.00	63	807.25	812.75	806.00 - 814.00
S33	399.25	404.75	398.00 - 406.00	64	815.25	820.75	814.00 - 822.00
S34	407.25	412.75	406.00 - 414.00	65	823.25	828.75	822.00 - 830.00
S35	415.25	420.75	414.00 - 422.00	66	831.25	836.75	830.00 - 838.00
S36	423.25	428.75	422.00 - 430.00	67	839.25	844.75	838.00 - 846.00
S37	431.25	436.75	430.00 - 438.00	68	847.25	852.75	846.00 - 854.00
S38	439.25	444.75	438.00 - 446.00	69	855.25	860.75	854.00 - 862.00
S39	447.25	452.75	446.00 - 454.00				
S40	455.25	460.75	454.00 - 462.00				
S41	463.25	468.75	462.00 - 470.00				

# CHANNEL TABLES

L standard – France

VHF			
CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz
2	55,75	49,25	49,00 - 57,00
3	60,50	54,00	53,75 - 61,75
4	63,75	57,25	57,00 - 65,00
S1	120,00	126,50	118,75 - 126,75
S2	128,00	134,50	126,75 - 134,75
S3	136,00	142,50	134,75 - 142,75
S4	144,00	150,50	142,75 - 150,75
S5	152,00	158,50	150,75 - 158,75
S6	160,00	166,50	158,75 - 166,75
S7	168,00	174,50	166,75 - 174,75
S8	176,00	182,50	174,75 - 182,75
S9	184,00	190,50	182,75 - 190,75
S10	192,00	198,50	190,75 - 198,75
5	176,00	182,50	174,75 - 182,75
6	184,00	190,50	182,75 - 190,75
7	192,00	198,50	190,75 - 198,75
8	200,00	206,50	198,75 - 206,75
9	208,00	214,50	206,75 - 214,75
10	216,00	222,50	214,75 - 222,75
S11	200,00	206,50	198,75 - 206,75
S12	208,00	214,50	206,75 - 214,75
S13	216,00	222,50	214,75 - 222,75
S14	224,00	230,50	222,75 - 230,75
S15	232,00	238,50	230,75 - 238,75
S16	240,00	246,50	238,75 - 246,75
S17	248,00	254,50	246,75 - 254,75
S18	256,00	262,50	254,75 - 262,75
S19	264,00	270,50	262,75 - 270,75
S20	272,00	278,50	270,75 - 278,75
S21	280,00	286,50	278,75 - 286,75
S22	288,00	294,50	286,75 - 294,75
S23	296,00	302,50	294,75 - 302,75
S24	303,25	309,75	302,00 - 310,00
S25	311,25	317,75	310,00 - 318,00
S26	319,25	325,75	318,00 - 326,00
S27	327,25	333,75	326,00 - 334,00
S28	335,25	341,75	334,00 - 342,00
S29	343,25	349,75	342,00 - 350,00
S30	351,25	357,75	350,00 - 358,00
S31	359,25	365,75	358,00 - 366,00
S32	367,25	373,75	366,00 - 374,00
S33	375,25	381,75	374,00 - 382,00
S34	383,25	389,75	382,00 - 390,00
S35	391,25	397,75	390,00 - 398,00
S36	399,25	405,75	398,00 - 406,00
S37	407,25	413,75	406,00 - 414,00
S38	415,25	421,75	414,00 - 422,00
S39	423,25	429,75	422,00 - 430,00
S40	431,25	437,75	430,00 - 438,00
S41	439,25	445,75	438,00 - 446,00

UHF			
CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz
21	471,25	477,75	470,00 - 478,00
22	479,25	485,75	478,00 - 486,00
23	487,25	493,75	486,00 - 494,00
24	495,25	501,75	494,00 - 502,00
25	503,25	509,75	502,00 - 510,00
26	511,25	517,75	510,00 - 518,00
27	519,25	525,75	518,00 - 526,00
28	527,25	533,75	526,00 - 534,00
29	535,25	541,75	534,00 - 542,00
30	543,25	549,75	542,00 - 550,00
31	551,25	557,75	550,00 - 558,00
32	559,25	565,75	558,00 - 566,00
33	567,25	573,75	566,00 - 574,00
34	575,25	581,75	574,00 - 582,00
35	583,25	589,75	582,00 - 590,00
36	591,25	597,75	590,00 - 598,00
37	599,25	605,75	598,00 - 606,00
38	607,25	613,75	606,00 - 614,00
39	615,25	621,75	614,00 - 622,00
40	623,25	629,75	622,00 - 630,00
41	631,25	637,75	630,00 - 638,00
42	639,25	645,75	638,00 - 646,00
43	647,25	653,75	646,00 - 654,00
44	655,25	661,75	654,00 - 662,00
45	663,25	669,75	662,00 - 670,00
46	671,25	677,75	670,00 - 678,00
47	679,25	685,75	678,00 - 686,00
48	687,25	693,75	686,00 - 694,00
49	695,25	701,75	694,00 - 702,00
50	703,25	709,75	702,00 - 710,00
51	711,25	717,75	710,00 - 718,00
52	719,25	725,75	718,00 - 726,00
53	727,25	733,75	726,00 - 734,00
54	735,25	741,75	734,00 - 742,00
55	743,25	749,75	742,00 - 750,00
56	751,25	757,75	750,00 - 758,00
57	759,25	765,75	758,00 - 766,00
58	767,25	773,75	766,00 - 774,00
59	775,25	781,75	774,00 - 782,00
60	783,25	789,75	782,00 - 790,00
61	791,25	797,75	790,00 - 798,00
62	799,25	805,75	798,00 - 806,00
63	807,25	813,75	806,00 - 814,00
64	815,25	821,75	814,00 - 822,00
65	823,25	829,75	822,00 - 830,00
66	831,25	837,75	830,00 - 838,00
67	839,25	845,75	838,00 - 846,00
68	847,25	853,75	846,00 - 854,00
69	855,25	861,75	854,00 - 862,00

# CHANNEL TABLES

## I standard – Ireland

VHF				UHF			
CHANNEL	VIDEO MHz	AUDIO MHz	RANGE MHz	CHANNEL	VIDEO MHz	AUDIO MHz	RANGE MHz
A	45.75	51.75	44.50 - 52.50	21	471.25	477.25	470.00 - 478.00
B	53.75	59.75	52.50 - 60.50	22	479.25	485.25	478.00 - 486.00
C	61.75	67.75	60.50 - 68.50	23	487.25	493.25	486.00 - 494.00
S1	95.25	101.25	94.00 - 102.00	24	495.25	501.25	494.00 - 502.00
S2	103.25	109.25	102.00 - 110.00	25	503.25	509.25	502.00 - 510.00
S3	111.25	117.25	110.00 - 118.00	26	511.25	517.25	510.00 - 518.00
S4	119.25	125.25	118.00 - 126.00	27	519.25	525.25	518.00 - 526.00
S5	127.25	133.25	126.00 - 134.00	28	527.25	533.25	526.00 - 534.00
S6	135.25	141.25	134.00 - 142.00	29	535.25	541.25	534.00 - 542.00
S7	143.25	149.25	142.00 - 150.00	30	543.25	549.25	542.00 - 550.00
S8	151.25	157.25	150.00 - 158.00	31	551.25	557.25	550.00 - 558.00
S9	159.25	165.25	158.00 - 166.00	32	559.25	565.25	558.00 - 566.00
S10	167.25	173.25	166.00 - 174.00	33	567.25	573.25	566.00 - 574.00
D	175.25	181.25	174.00 - 182.00	34	575.25	581.25	574.00 - 582.00
E	183.25	189.25	182.00 - 190.00	35	583.25	589.25	582.00 - 590.00
F	191.25	197.25	190.00 - 198.00	36	591.25	597.25	590.00 - 598.00
G	199.25	205.25	198.00 - 206.00	37	599.25	605.25	598.00 - 606.00
H	207.25	213.25	206.00 - 214.00	38	607.25	613.25	606.00 - 614.00
I	215.25	221.25	214.00 - 222.00	39	615.25	621.25	614.00 - 622.00
J	223.25	229.25	222.00 - 230.00	40	623.25	629.25	622.00 - 630.00
S11	239.25	245.25	238.00 - 246.00	41	631.25	637.25	630.00 - 638.00
S12	247.25	253.25	246.00 - 254.00	42	639.25	645.25	638.00 - 646.00
S13	255.25	261.25	254.00 - 262.00	43	647.25	653.25	646.00 - 654.00
S14	263.25	269.25	262.00 - 270.00	44	655.25	661.25	654.00 - 662.00
S15	271.25	277.25	270.00 - 278.00	45	663.25	669.25	662.00 - 670.00
S16	279.25	285.25	278.00 - 286.00	46	671.25	677.25	670.00 - 678.00
S17	287.25	293.25	286.00 - 294.00	47	679.25	685.25	678.00 - 686.00
S18	295.25	301.25	294.00 - 302.00	48	687.25	693.25	686.00 - 694.00
S21	303.25	309.25	302.00 - 310.00	49	695.25	701.25	694.00 - 702.00
S22	311.25	317.25	310.00 - 318.00	50	703.25	709.25	702.00 - 710.00
S23	319.25	325.25	318.00 - 326.00	51	711.25	717.25	710.00 - 718.00
S24	327.25	333.25	326.00 - 334.00	52	719.25	725.25	718.00 - 726.00
S25	335.25	341.25	334.00 - 342.00	53	727.25	733.25	726.00 - 734.00
S26	343.25	349.25	342.00 - 350.00	54	735.25	741.25	734.00 - 742.00
S27	351.25	357.25	350.00 - 358.00	55	743.25	749.25	742.00 - 750.00
S28	359.25	365.25	358.00 - 366.00	56	751.25	757.25	750.00 - 758.00
S29	367.25	373.25	366.00 - 374.00	57	759.25	765.25	758.00 - 766.00
S30	375.25	381.25	374.00 - 382.00	58	767.25	773.25	766.00 - 774.00
S31	383.25	389.25	382.00 - 390.00	59	775.25	781.25	774.00 - 782.00
S32	391.25	397.25	390.00 - 398.00	60	783.25	789.25	782.00 - 790.00
S33	399.25	405.25	398.00 - 406.00	61	791.25	797.25	790.00 - 798.00
S34	407.25	413.25	406.00 - 414.00	62	799.25	805.25	798.00 - 806.00
S35	415.25	421.25	414.00 - 422.00	63	807.25	813.25	806.00 - 814.00
S36	423.25	429.25	422.00 - 430.00	64	815.25	821.25	814.00 - 822.00
S37	431.25	437.25	430.00 - 438.00	65	823.25	829.25	822.00 - 830.00
S38	439.25	445.25	438.00 - 446.00	66	831.25	837.25	830.00 - 838.00
S39	447.25	453.25	446.00 - 454.00	67	839.25	845.25	838.00 - 846.00
S40	455.25	461.25	454.00 - 462.00	68	847.25	853.25	846.00 - 854.00
S41	463.25	469.25	462.00 - 470.00	69	855.25	861.25	854.00 - 862.00

# CHANNEL TABLES

## I standard – England

This table of channels has been completed with VHF channels corresponding to cable TV frequency tables. The original table of channels for England does not have VHF channels.

<b>VHF</b>			
<b>CHANNEL</b>	<b>VIDEO</b>	<b>AUDIO</b>	<b>RANGE</b>
	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>
2	47.25	53.25	46.00 - 54.00
3	55.25	61.25	54.00 - 62.00
4	63.25	69.25	62.00 - 70.00
S1	95.25	101.25	94.00 - 102.00
S2	103.25	109.25	102.00 - 110.00
S3	111.25	117.25	110.00 - 118.00
S4	119.25	125.25	118.00 - 126.00
S5	127.25	133.25	126.00 - 134.00
S6	135.25	141.25	134.00 - 142.00
S7	143.25	149.25	142.00 - 150.00
S8	151.25	157.25	150.00 - 158.00
S9	159.25	165.25	158.00 - 166.00
S10	167.25	173.25	166.00 - 174.00
5	175.25	181.25	174.00 - 182.00
6	183.25	189.25	182.00 - 190.00
7	191.25	197.25	190.00 - 198.00
8	199.25	205.25	198.00 - 206.00
9	207.25	213.25	206.00 - 214.00
10	215.25	221.25	214.00 - 222.00
11	223.25	229.25	222.00 - 230.00
12	231.25	237.25	230.00 - 238.00
S11	239.25	245.25	238.00 - 246.00
S12	247.25	253.25	246.00 - 254.00
S13	255.25	261.25	254.00 - 262.00
S14	263.25	269.25	262.00 - 270.00
S15	271.25	277.25	270.00 - 278.00
S16	279.25	285.25	278.00 - 286.00
S17	287.25	293.25	286.00 - 294.00
S18	295.25	301.25	294.00 - 302.00
S21	303.25	309.25	302.00 - 310.00
S22	311.25	317.25	310.00 - 318.00
S23	319.25	325.25	318.00 - 326.00
S24	327.25	333.25	326.00 - 334.00
S25	335.25	341.25	334.00 - 342.00
S26	343.25	349.25	342.00 - 350.00
S27	351.25	357.25	350.00 - 358.00
S28	359.25	365.25	358.00 - 366.00
S29	367.25	373.25	366.00 - 374.00
S30	375.25	381.25	374.00 - 382.00
S31	383.25	389.25	382.00 - 390.00
S32	391.25	397.25	390.00 - 398.00
S33	399.25	405.25	398.00 - 406.00
S34	407.25	413.25	406.00 - 414.00
S35	415.25	421.25	414.00 - 422.00
S36	423.25	429.25	422.00 - 430.00
S37	431.25	437.25	430.00 - 438.00
S38	439.25	445.25	438.00 - 446.00
S39	447.25	453.25	446.00 - 454.00
S40	455.25	461.25	454.00 - 462.00
S41	463.25	469.25	462.00 - 470.00

<b>UHF</b>			
<b>CHANNEL</b>	<b>VIDEO</b>	<b>AUDIO</b>	<b>RANGE</b>
	<b>MHz</b>	<b>MHz</b>	<b>MHz</b>
21	471.25	477.25	470.00 - 478.00
22	479.25	485.25	478.00 - 486.00
23	487.25	493.25	486.00 - 494.00
24	495.25	501.25	494.00 - 502.00
25	503.25	509.25	502.00 - 510.00
26	511.25	517.25	510.00 - 518.00
27	519.25	525.25	518.00 - 526.00
28	527.25	533.25	526.00 - 534.00
29	535.25	541.25	534.00 - 542.00
30	543.25	549.25	542.00 - 550.00
31	551.25	557.25	550.00 - 558.00
32	559.25	565.25	558.00 - 566.00
33	567.25	573.25	566.00 - 574.00
34	575.25	581.25	574.00 - 582.00
35	583.25	589.25	582.00 - 590.00
36	591.25	597.25	590.00 - 598.00
37	599.25	605.25	598.00 - 606.00
38	607.25	613.25	606.00 - 614.00
39	615.25	621.25	614.00 - 622.00
40	623.25	629.25	622.00 - 630.00
41	631.25	637.25	630.00 - 638.00
42	639.25	645.25	638.00 - 646.00
43	647.25	653.25	646.00 - 654.00
44	655.25	661.25	654.00 - 662.00
45	663.25	669.25	662.00 - 670.00
46	671.25	677.25	670.00 - 678.00
47	679.25	685.25	678.00 - 686.00
48	687.25	693.25	686.00 - 694.00
49	695.25	701.25	694.00 - 702.00
50	703.25	709.25	702.00 - 710.00
51	711.25	717.25	710.00 - 718.00
52	719.25	725.25	718.00 - 726.00
53	727.25	733.25	726.00 - 734.00
54	735.25	741.25	734.00 - 742.00
55	743.25	749.25	742.00 - 750.00
56	751.25	757.25	750.00 - 758.00
57	759.25	765.25	758.00 - 766.00
58	767.25	773.25	766.00 - 774.00
59	775.25	781.25	774.00 - 782.00
60	783.25	789.25	782.00 - 790.00
61	791.25	797.25	790.00 - 798.00
62	799.25	805.25	798.00 - 806.00
63	807.25	813.25	806.00 - 814.00
64	815.25	821.25	814.00 - 822.00
65	823.25	829.25	822.00 - 830.00
66	831.25	837.25	830.00 - 838.00
67	839.25	845.25	838.00 - 846.00
68	847.25	853.25	846.00 - 854.00
69	855.25	861.25	854.00 - 862.00

# CHANNEL TABLES

## I standard – South Africa

VHF				UHF			
CHANNEL	VIDEO	AUDIO	RANGE	CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz		MHz	MHz	MHz
A	45.75	51.75	44.50 - 52.50	21	471.25	477.25	470.00 - 478.00
B	53.75	59.75	52.50 - 60.50	22	479.25	485.25	478.00 - 486.00
C	61.75	67.75	60.50 - 68.50	23	487.25	493.25	486.00 - 494.00
S1	95.25	101.25	94.00 - 102.00	24	495.25	501.25	494.00 - 502.00
S2	103.25	109.25	102.00 - 110.00	25	503.25	509.25	502.00 - 510.00
S3	111.25	117.25	110.00 - 118.00	26	511.25	517.25	510.00 - 518.00
S4	119.25	125.25	118.00 - 126.00	27	519.25	525.25	518.00 - 526.00
S5	127.25	133.25	126.00 - 134.00	28	527.25	533.25	526.00 - 534.00
S6	135.25	141.25	134.00 - 142.00	29	535.25	541.25	534.00 - 542.00
S7	143.25	149.25	142.00 - 150.00	30	543.25	549.25	542.00 - 550.00
S8	151.25	157.25	150.00 - 158.00	31	551.25	557.25	550.00 - 558.00
S9	159.25	165.25	158.00 - 166.00	32	559.25	565.25	558.00 - 566.00
S10	167.25	173.25	166.00 - 174.00	33	567.25	573.25	566.00 - 574.00
4	175.25	181.25	174.00 - 182.00	34	575.25	581.25	574.00 - 582.00
5	183.25	189.25	182.00 - 190.00	35	583.25	589.25	582.00 - 590.00
6	191.25	197.25	190.00 - 198.00	36	591.25	597.25	590.00 - 598.00
7	199.25	205.25	198.00 - 206.00	37	599.25	605.25	598.00 - 606.00
8	207.25	213.25	206.00 - 214.00	38	607.25	613.25	606.00 - 614.00
9	215.25	221.25	214.00 - 222.00	39	615.25	621.25	614.00 - 622.00
10	223.25	229.25	222.00 - 230.00	40	623.25	629.25	622.00 - 630.00
11	231.25	237.25	230.00 - 238.00	41	631.25	637.25	630.00 - 638.00
12	239.25	245.25	238.00 - 246.00	42	639.25	645.25	638.00 - 646.00
13	247.43	253.43	246.18 - 254.18	43	647.25	653.25	646.00 - 654.00
S14	263.25	269.25	262.00 - 270.00	44	655.25	661.25	654.00 - 662.00
S15	271.25	277.25	270.00 - 278.00	45	663.25	669.25	662.00 - 670.00
S16	279.25	285.25	278.00 - 286.00	46	671.25	677.25	670.00 - 678.00
S17	287.25	293.25	286.00 - 294.00	47	679.25	685.25	678.00 - 686.00
S18	295.25	301.25	294.00 - 302.00	48	687.25	693.25	686.00 - 694.00
S21	303.25	309.25	302.00 - 310.00	49	695.25	701.25	694.00 - 702.00
S22	311.25	317.25	310.00 - 318.00	50	703.25	709.25	702.00 - 710.00
S23	319.25	325.25	318.00 - 326.00	51	711.25	717.25	710.00 - 718.00
S24	327.25	333.25	326.00 - 334.00	52	719.25	725.25	718.00 - 726.00
S25	335.25	341.25	334.00 - 342.00	53	727.25	733.25	726.00 - 734.00
S26	343.25	349.25	342.00 - 350.00	54	735.25	741.25	734.00 - 742.00
S27	351.25	357.25	350.00 - 358.00	55	743.25	749.25	742.00 - 750.00
S28	359.25	365.25	358.00 - 366.00	56	751.25	757.25	750.00 - 758.00
S29	367.25	373.25	366.00 - 374.00	57	759.25	765.25	758.00 - 766.00
S30	375.25	381.25	374.00 - 382.00	58	767.25	773.25	766.00 - 774.00
S31	383.25	389.25	382.00 - 390.00	59	775.25	781.25	774.00 - 782.00
S32	391.25	397.25	390.00 - 398.00	60	783.25	789.25	782.00 - 790.00
S33	399.25	405.25	398.00 - 406.00	61	791.25	797.25	790.00 - 798.00
S34	407.25	413.25	406.00 - 414.00	62	799.25	805.25	798.00 - 806.00
S35	415.25	421.25	414.00 - 422.00	63	807.25	813.25	806.00 - 814.00
S36	423.25	429.25	422.00 - 430.00	64	815.25	821.25	814.00 - 822.00
S37	431.25	437.25	430.00 - 438.00	65	823.25	829.25	822.00 - 830.00
S38	439.25	445.25	438.00 - 446.00	66	831.25	837.25	830.00 - 838.00
S39	447.25	453.25	446.00 - 454.00	67	839.25	845.25	838.00 - 846.00
S40	455.25	461.25	454.00 - 462.00	68	847.25	853.25	846.00 - 854.00
S41	463.25	469.25	462.00 - 470.00	69	855.25	861.25	854.00 - 862.00

# CHANNEL TABLES

K1 standard – DOM-TOM France

VHF				UHF			
CHANNEL	VIDEO	AUDIO	RANGE	CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz		MHz	MHz	MHz
1	43.25	49.75	42.00 - 50.00	21	471.25	477.75	470.00 - 478.00
2	52.25	58.75	51.00 - 59.00	22	479.25	485.75	478.00 - 486.00
3	60.25	66.75	59.00 - 67.00	23	487.25	493.75	486.00 - 494.00
4	175.25	181.75	174.00 - 182.00	24	495.25	501.75	494.00 - 502.00
5	183.25	189.75	182.00 - 190.00	25	503.25	509.75	502.00 - 510.00
6	191.25	197.75	190.00 - 198.00	26	511.25	517.75	510.00 - 518.00
7	199.25	205.75	198.00 - 206.00	27	519.25	525.75	518.00 - 526.00
8	207.25	213.75	206.00 - 214.00	28	527.25	533.75	526.00 - 534.00
9	215.25	221.75	214.00 - 222.00	29	535.25	541.75	534.00 - 542.00
				30	543.25	549.75	542.00 - 550.00
				31	551.25	557.75	550.00 - 558.00
				32	559.25	565.75	558.00 - 566.00
				33	567.25	573.75	566.00 - 574.00
				34	575.25	581.75	574.00 - 582.00
				35	583.25	589.75	582.00 - 590.00
				36	591.25	597.75	590.00 - 598.00
				37	599.25	605.75	598.00 - 606.00
				38	607.25	613.75	606.00 - 614.00
				39	615.25	621.75	614.00 - 622.00
				40	623.25	629.75	622.00 - 630.00
				41	631.25	637.75	630.00 - 638.00
				42	639.25	645.75	638.00 - 646.00
				43	647.25	653.75	646.00 - 654.00
				44	655.25	661.75	654.00 - 662.00
				45	663.25	669.75	662.00 - 670.00
				46	671.25	677.75	670.00 - 678.00
				47	679.25	685.75	678.00 - 686.00
				48	687.25	693.75	686.00 - 694.00
				49	695.25	701.75	694.00 - 702.00
				50	703.25	709.75	702.00 - 710.00
				51	711.25	717.75	710.00 - 718.00
				52	719.25	725.75	718.00 - 726.00
				53	727.25	733.75	726.00 - 734.00
				54	735.25	741.75	734.00 - 742.00
				55	743.25	749.75	742.00 - 750.00
				56	751.25	757.75	750.00 - 758.00
				57	759.25	765.75	758.00 - 766.00
				58	767.25	773.75	766.00 - 774.00
				59	775.25	781.75	774.00 - 782.00
				60	783.25	789.75	782.00 - 790.00
				61	791.25	797.75	790.00 - 798.00
				62	799.25	805.75	798.00 - 806.00
				63	807.25	813.75	806.00 - 814.00
				64	815.25	821.75	814.00 - 822.00
				65	823.25	829.75	822.00 - 830.00
				66	831.25	837.75	830.00 - 838.00
				67	839.25	845.75	838.00 - 846.00
				68	847.25	853.75	846.00 - 854.00
				69	855.25	861.75	854.00 - 862.00

# CHANNEL TABLES

## D/K standard – OIRT Channels

VHF				UHF			
CHANNEL	VIDEO	AUDIO	RANGE	CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz		MHz	MHz	MHz
1	49.75	56.25	48.50 - 56.50	21	471.25	477.75	470.00 - 478.00
2	59.25	65.75	58.00 - 66.00	22	479.25	485.75	478.00 - 486.00
3	77.25	83.75	76.00 - 84.00	23	487.25	493.75	486.00 - 494.00
4	85.25	91.75	84.00 - 92.00	24	495.25	501.75	494.00 - 502.00
5	93.25	99.75	92.00 - 100.00	25	503.25	509.75	502.00 - 510.00
S1	111.25	117.75	110.00 - 118.00	26	511.25	517.75	510.00 - 518.00
S2	119.25	125.75	118.00 - 126.00	27	519.25	525.75	518.00 - 526.00
S3	127.25	133.75	126.00 - 134.00	28	527.25	533.75	526.00 - 534.00
S4	135.25	141.75	134.00 - 142.00	29	535.25	541.75	534.00 - 542.00
S5	143.25	149.75	142.00 - 150.00	30	543.25	549.75	542.00 - 550.00
S6	151.25	157.75	150.00 - 158.00	31	551.25	557.75	550.00 - 558.00
S7	159.25	165.75	158.00 - 166.00	32	559.25	565.75	558.00 - 566.00
S8	167.25	173.75	166.00 - 174.00	33	567.25	573.75	566.00 - 574.00
6	175.25	181.75	174.00 - 182.00	34	575.25	581.75	574.00 - 582.00
7	183.25	189.75	182.00 - 190.00	35	583.25	589.75	582.00 - 590.00
8	191.25	197.75	190.00 - 198.00	36	591.25	597.75	590.00 - 598.00
9	199.25	205.75	198.00 - 206.00	37	599.25	605.75	598.00 - 606.00
10	207.25	213.75	206.00 - 214.00	38	607.25	613.75	606.00 - 614.00
11	215.25	221.75	214.00 - 222.00	39	615.25	621.75	614.00 - 622.00
12	223.25	229.75	222.00 - 230.00	40	623.25	629.75	622.00 - 630.00
S11	231.25	237.75	230.00 - 238.00	41	631.25	637.75	630.00 - 638.00
S12	239.25	245.75	238.00 - 246.00	42	639.25	645.75	638.00 - 646.00
S13	247.25	253.75	246.00 - 254.00	43	647.25	653.75	646.00 - 654.00
S14	255.25	261.75	254.00 - 262.00	44	655.25	661.75	654.00 - 662.00
S15	263.25	269.75	262.00 - 270.00	45	663.25	669.75	662.00 - 670.00
S16	271.25	277.75	270.00 - 278.00	46	671.25	677.75	670.00 - 678.00
S17	279.25	285.75	278.00 - 286.00	47	679.25	685.75	678.00 - 686.00
S18	287.25	293.75	286.00 - 294.00	48	687.25	693.75	686.00 - 694.00
S20	295.25	301.75	294.00 - 302.00	49	695.25	701.75	694.00 - 702.00
S21	303.25	309.75	302.00 - 310.00	50	703.25	709.75	702.00 - 710.00
S22	311.25	317.75	310.00 - 318.00	51	711.25	717.75	710.00 - 718.00
S23	319.25	325.75	318.00 - 326.00	52	719.25	725.75	718.00 - 726.00
S24	327.25	333.75	326.00 - 334.00	53	727.25	733.75	726.00 - 734.00
S25	335.25	341.75	334.00 - 342.00	54	735.25	741.75	734.00 - 742.00
S26	343.25	349.75	342.00 - 350.00	55	743.25	749.75	742.00 - 750.00
S27	351.25	357.75	350.00 - 358.00	56	751.25	757.75	750.00 - 758.00
S28	359.25	365.75	358.00 - 366.00	57	759.25	765.75	758.00 - 766.00
S29	367.25	373.75	366.00 - 374.00	58	767.25	773.75	766.00 - 774.00
S30	375.25	381.75	374.00 - 382.00	59	775.25	781.75	774.00 - 782.00
S31	383.25	389.75	382.00 - 390.00	60	783.25	789.75	782.00 - 790.00
S32	391.25	397.75	390.00 - 398.00	61	791.25	797.75	790.00 - 798.00
S33	399.25	405.75	398.00 - 406.00	62	799.25	805.75	798.00 - 806.00
S34	407.25	413.75	406.00 - 414.00	63	807.25	813.75	806.00 - 814.00
S35	415.25	421.75	414.00 - 422.00	64	815.25	821.75	814.00 - 822.00
S36	423.25	429.75	422.00 - 430.00	65	823.25	829.75	822.00 - 830.00
S37	431.25	437.75	430.00 - 438.00	66	831.25	837.75	830.00 - 838.00
S38	439.25	445.75	438.00 - 446.00	67	839.25	845.75	838.00 - 846.00
S39	447.25	453.75	446.00 - 454.00	68	847.25	853.75	846.00 - 854.00
S40	455.25	461.75	454.00 - 462.00	69	855.25	861.75	854.00 - 862.00
S41	463.25	469.75	462.00 - 470.00				

# CHANNEL TABLES

D/K standard – Poland

VHF			
CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz
1	49.75	56.25	48.50 - 56.50
2	59.25	65.75	58.00 - 66.00
3	77.25	83.75	76.00 - 84.00
4	85.25	91.75	84.00 - 92.00
5	93.25	99.75	92.00 - 100.00
S1	111.25	117.75	110.00 - 118.00
S2	119.25	125.75	118.00 - 126.00
S3	127.25	133.75	126.00 - 134.00
S4	135.25	141.75	134.00 - 142.00
S5	143.25	149.75	142.00 - 150.00
S6	151.25	157.75	150.00 - 158.00
S7	159.25	165.75	158.00 - 166.00
S8	167.25	173.75	166.00 - 174.00
6	175.25	181.75	174.00 - 182.00
7	183.25	189.75	182.00 - 190.00
8	191.25	197.75	190.00 - 198.00
9	199.25	205.75	198.00 - 206.00
10	207.25	213.75	206.00 - 214.00
11	215.25	221.75	214.00 - 222.00
12	223.25	229.75	222.00 - 230.00
S9	231.25	237.75	230.00 - 238.00
S10	239.25	245.75	238.00 - 246.00
S11	247.25	253.75	246.00 - 254.00
S12	255.25	261.75	254.00 - 262.00
S13	263.25	269.75	262.00 - 270.00
S14	271.25	277.75	270.00 - 278.00
S15	279.25	285.75	278.00 - 286.00
S16	287.25	293.75	286.00 - 294.00
S17	295.25	301.75	294.00 - 302.00
S18	303.25	309.75	302.00 - 310.00
S19	311.25	317.75	310.00 - 318.00
S20	319.25	325.75	318.00 - 326.00
S21	327.25	333.75	326.00 - 334.00
S22	335.25	341.75	334.00 - 342.00
S23	343.25	349.75	342.00 - 350.00
S24	351.25	357.75	350.00 - 358.00
S25	359.25	365.75	358.00 - 366.00
S26	367.25	373.75	366.00 - 374.00
S27	375.25	381.75	374.00 - 382.00
S28	383.25	389.75	382.00 - 390.00
S29	391.25	397.75	390.00 - 398.00
S30	399.25	405.75	398.00 - 406.00
S31	407.25	413.75	406.00 - 414.00
S32	415.25	421.75	414.00 - 422.00
S33	423.25	429.75	422.00 - 430.00
S34	431.25	437.75	430.00 - 438.00
S35	439.25	445.75	438.00 - 446.00
S36	447.25	453.75	446.00 - 454.00
S37	455.25	461.75	454.00 - 462.00
S38	463.25	469.75	462.00 - 470.00

UHF			
CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz
21	471.25	477.75	470.00 - 478.00
22	479.25	485.75	478.00 - 486.00
23	487.25	493.75	486.00 - 494.00
24	495.25	501.75	494.00 - 502.00
25	503.25	509.75	502.00 - 510.00
26	511.25	517.75	510.00 - 518.00
27	519.25	525.75	518.00 - 526.00
28	527.25	533.75	526.00 - 534.00
29	535.25	541.75	534.00 - 542.00
30	543.25	549.75	542.00 - 550.00
31	551.25	557.75	550.00 - 558.00
32	559.25	565.75	558.00 - 566.00
33	567.25	573.75	566.00 - 574.00
34	575.25	581.75	574.00 - 582.00
35	583.25	589.75	582.00 - 590.00
36	591.25	597.75	590.00 - 598.00
37	599.25	605.75	598.00 - 606.00
38	607.25	613.75	606.00 - 614.00
39	615.25	621.75	614.00 - 622.00
40	623.25	629.75	622.00 - 630.00
41	631.25	637.75	630.00 - 638.00
42	639.25	645.75	638.00 - 646.00
43	647.25	653.75	646.00 - 654.00
44	655.25	661.75	654.00 - 662.00
45	663.25	669.75	662.00 - 670.00
46	671.25	677.75	670.00 - 678.00
47	679.25	685.75	678.00 - 686.00
48	687.25	693.75	686.00 - 694.00
49	695.25	701.75	694.00 - 702.00
50	703.25	709.75	702.00 - 710.00
51	711.25	717.75	710.00 - 718.00
52	719.25	725.75	718.00 - 726.00
53	727.25	733.75	726.00 - 734.00
54	735.25	741.75	734.00 - 742.00
55	743.25	749.75	742.00 - 750.00
56	751.25	757.75	750.00 - 758.00
57	759.25	765.75	758.00 - 766.00
58	767.25	773.75	766.00 - 774.00
59	775.25	781.75	774.00 - 782.00
60	783.25	789.75	782.00 - 790.00
61	791.25	797.75	790.00 - 798.00
62	799.25	805.75	798.00 - 806.00
63	807.25	813.75	806.00 - 814.00
64	815.25	821.75	814.00 - 822.00
65	823.25	829.75	822.00 - 830.00
66	831.25	837.75	830.00 - 838.00
67	839.25	845.75	838.00 - 846.00
68	847.25	853.75	846.00 - 854.00
69	855.25	861.75	854.00 - 862.00

# CHANNEL TABLES

## B/B standard – Australia

VHF				UHF			
CHANNEL	VIDEO	AUDIO	RANGE	CHANNEL	VIDEO	AUDIO	RANGE
	MHz	MHz	MHz		MHz	MHz	MHz
0	46.25	51.75	45.00 - 52.00	20	471.25	476.75	470.00 - 477.00
1	57.25	62.75	56.00 - 63.00	21	478.25	483.75	477.00 - 484.00
2	64.25	69.75	63.00 - 70.00	22	485.25	490.75	484.00 - 491.00
3	86.25	91.75	85.00 - 92.00	23	492.25	497.75	491.00 - 498.00
4	95.25	100.75	94.00 - 101.00	24	499.25	504.75	498.00 - 505.00
5	102.25	107.75	101.00 - 108.00	25	506.25	511.75	505.00 - 512.00
5A	138.25	143.75	137.00 - 144.00	26	513.25	518.75	512.00 - 519.00
S1	105.25	110.75	104.00 - 111.00	27	520.25	525.75	519.00 - 526.00
S2	112.25	117.75	111.00 - 118.00	28	527.25	532.75	526.00 - 533.00
S3	119.25	124.75	118.00 - 125.00	29	534.25	539.75	533.00 - 540.00
S4	126.25	131.75	125.00 - 132.00	30	541.25	546.75	540.00 - 547.00
S5	133.25	138.75	132.00 - 139.00	31	548.25	553.75	547.00 - 554.00
S6	140.25	145.75	139.00 - 146.00	32	555.25	560.75	554.00 - 561.00
S7	147.25	152.75	146.00 - 153.00	33	562.25	567.75	561.00 - 568.00
S8	154.25	159.75	153.00 - 160.00	34	569.25	574.75	568.00 - 575.00
S9	161.25	166.75	160.00 - 167.00	35	576.25	581.75	575.00 - 582.00
S10	168.25	173.75	167.00 - 174.00	36	583.25	588.75	582.00 - 589.00
6	175.25	180.75	174.00 - 181.00	37	590.25	595.75	589.00 - 596.00
7	182.25	187.75	181.00 - 188.00	38	597.25	602.75	596.00 - 603.00
8	189.25	194.75	188.00 - 195.00	39	604.25	609.75	603.00 - 610.00
9	196.25	201.75	195.00 - 202.00	40	611.25	616.75	610.00 - 617.00
9A	203.25	208.75	202.00 - 209.00	41	618.25	623.75	617.00 - 624.00
10	209.25	214.75	208.00 - 215.00	42	625.25	630.75	624.00 - 631.00
10N	210.25	215.75	209.00 - 216.00	43	632.25	637.75	631.00 - 638.00
11	216.25	221.75	215.00 - 222.00	44	639.25	644.75	638.00 - 645.00
11N	217.25	222.75	216.00 - 223.00	45	646.25	651.75	645.00 - 652.00
12	224.25	229.75	223.00 - 230.00	46	653.25	658.75	652.00 - 659.00
S11	231.25	236.75	230.00 - 237.00	47	660.25	665.75	659.00 - 666.00
S12	238.25	243.75	237.00 - 244.00	48	667.25	672.75	666.00 - 673.00
S13	245.25	250.75	244.00 - 251.00	49	674.25	679.75	673.00 - 680.00
S14	252.25	257.75	251.00 - 258.00	50	681.25	686.75	680.00 - 687.00
S15	259.25	264.75	258.00 - 265.00	51	688.25	693.75	687.00 - 694.00
S16	266.25	271.75	265.00 - 272.00	52	695.25	700.75	694.00 - 701.00
S17	273.25	278.75	272.00 - 279.00	53	702.25	707.75	701.00 - 708.00
S18	280.25	285.75	279.00 - 286.00	54	709.25	714.75	708.00 - 715.00
S19	287.25	292.75	286.00 - 293.00	55	716.25	721.75	715.00 - 722.00
S20	294.25	299.75	293.00 - 300.00	56	723.25	728.75	722.00 - 729.00
S21	301.25	306.75	300.00 - 307.00	57	730.25	735.75	729.00 - 736.00
S22	308.25	313.75	307.00 - 314.00	58	737.25	742.75	736.00 - 743.00
S23	315.25	320.75	314.00 - 321.00	59	744.25	749.75	743.00 - 750.00
S24	322.25	327.75	321.00 - 328.00	60	751.25	756.75	750.00 - 757.00
S25	329.25	334.75	328.00 - 335.00	61	758.25	763.75	757.00 - 764.00
S26	336.25	341.75	335.00 - 342.00	62	765.25	770.75	764.00 - 771.00
S27	343.25	348.75	342.00 - 349.00	63	772.25	777.75	771.00 - 778.00
S28	350.25	355.75	349.00 - 356.00	64	779.25	784.75	778.00 - 785.00
S29	357.25	362.75	356.00 - 363.00	65	786.25	791.75	785.00 - 792.00
S30	364.25	369.75	363.00 - 370.00	66	793.25	798.75	792.00 - 799.00
S31	371.25	376.75	370.00 - 377.00	67	800.25	805.75	799.00 - 806.00
S32	378.25	383.75	377.00 - 384.00	68	807.25	812.75	806.00 - 813.00
S33	385.25	390.75	384.00 - 391.00	69	814.25	819.75	813.00 - 820.00
S34	392.25	397.75	391.00 - 398.00	70	821.25	826.75	820.00 - 827.00
S35	399.25	404.75	398.00 - 405.00	71	828.25	833.75	827.00 - 834.00
S36	406.25	411.75	405.00 - 412.00	72	835.25	840.75	834.00 - 841.00
S37	413.25	418.75	412.00 - 419.00	73	842.25	847.75	841.00 - 848.00
S38	420.25	425.75	419.00 - 426.00	74	849.25	854.75	848.00 - 855.00
S39	427.25	432.75	426.00 - 433.00	75	856.25	861.75	855.00 - 862.00
S40	434.25	439.75	433.00 - 440.00				
S41	441.25	446.75	440.00 - 447.00				

There will not be any new services on the C/3-5A channels.

The C/10-11 channels of the new services will be adjusted with 1 MHz (indicated as channels C/10N-11N).

The C/20-27 and C/70-75 channels will only be used as modulators.



## SUMMARY BY CODES/MODELS

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CODE	MODEL	PAGE	CODE	MODEL	PAGE
9010001	AA-101	28	9030051	AM-315	62
9010002	AA-102	28	9030052	AM-316	62
9980059	AC-013	37	9030000	AM-318	62
9980058	AC-014	37	9030023	AM-319	62
9050084	AC-201	111	9030032	AM-406	56
9050085	AC-202	111	9030031	AM-407	56
9050086	AC-203	111	9030076	AM-416	62
9050087	AC-204	111	9030099	AM-417	62
9050028	AD-001	121	9030007	AM-531	58
9050029	AD-002	121	9030009	AM-901	52
9050030	AD-003	121	9030006	AM-902	53
9050031	AD-004	121	9030015	AM-903	54
9090021	AE-303	253	9030107	AM-904	57
9050088	AF-205	111	9000057	AP-369	19
9050089	AF-206	111	9020037	AS-008	101
9040053	AI-100	208	9020038	AS-010	101
9040062	AI-108	209	9050083	AS-125	100
9040072	AI-110	212	9130012	AU-740	187
9040056	AI-131	210	9090020	AV-106	253
9040057	AI-133	210	9090032	AV-206	253
9510030	AI-175	277	9090031	AV-305	253
9040050	AI-200	208	9090033	AV-315	253
9040071	AI-210	212	9980017	BA-001	32
9040051	AI-221	211	9980013	BB-001	39
9040052	AI-223	211	9980012	BB-002	39
9040063	AI-400	211	9070043	BC-100	237
9040070	AI-410	212	9070099	BC-101	237
9040075	AI-414	213	9070046	BC-110	237
9030086	AL-100	60	9070044	BC-200	237
9030087	AL-105	60	9070045	BC-500	237
9030109	AM-101	51	9980055	BE-001	32
9030003	AM-102	51	9980018	BE-201	38
9030066	AM-103	51	9980053	BF-003	32
9030008	AM-105	53	9070033	BM-001	236
9030110	AM-111	62	9070034	BM-023	236
9030010	AM-112	62	9070037	BM-100	235
9030038	AM-113	62	9070038	BM-101	235
9030011	AM-115	62	9070039	BM-111	235
9030005	AM-126	53	9070040	BM-200	235
9030004	AM-200	51	9070035	BM-456	236
9030096	AM-204	51	9070041	BM-500	235
9030016	AM-205	54	9070042	BM-700	235
9030017	AM-206	54	9070036	BM-789	236
9030019	AM-207	54	9030093	BO-103	61
9030040	AM-208	57	9030043	BO-105	61
9030018	AM-210	62	9030054	BO-112	63
9030089	AM-215	62	9030100	BO-115	63
9030049	AM-216	62	9030075	BO-200	61
9030050	AM-217	62	9030002	BO-204	61
9030030	AM-301	52	9030012	BO-205	61
9030024	AM-305	55	9030045	BO-102	61
9030029	AM-306	55	9030013	BO-206	61
9030039	AM-308	57	9030014	BO-207	61
9030048	AM-309	57	9030111	BO-208	61

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CODE	MODEL	PAGE	CODE	MODEL	PAGE
9030028	BO-210	63	9000038	BU-539	16
9030077	BO-215	63	9000047	BU-547	15
9030078	BO-216	63	9980061	BV-500	35
9030079	BO-217	63	9980063	BZ-400	38
9510031	BO-293	277	9120074	CA-025	172
9030041	BO-305	61	9040060	CA-210	72
9030042	BO-306	61	9040061	CA-215	77
9030112	BO-308	61	9040073	CA-220	78
9030080	BO-315	63	9040074	CA-221	78
9030088	BO-316	63	9040014	CA-310	72
9510032	BO-393	278	9040011	CA-311	72
9030046	BO-406	61	9040039	CA-312	73
9030047	BO-407	61	9040058	CA-313	73
9030101	BO-416	63	9040006	CA-510	76
9030102	BO-417	63	9040064	CA-511	74
9030108	BO-904	61	9040003	CA-730	167
9000004	BP-303	23	9120098	CD-003	171
9010003	BR-103	27	9120079	CD-011	138
9010004	BR-105	27	9120094	CD-113	138
9070062	BS-100	233	9100013	CE-170	260
9070087	BS-101	241	9100015	CE-740	260
9070068	BS-110	233	9100012	CE-752	260
9070069	BS-111	233	9040031	CF-111	204
9070073	BS-112	233	9040032	CF-112	206
9070070	BS-210	233	9040046	CF-115	207
9070004	BS-220	234	9040047	CF-116	207
9070005	BS-420	234	9040033	CF-511	75
9070071	BS-510	233	9040034	CF-512	75
9070006	BS-620	234	9040035	CF-513	76
9070008	BS-820	234	9040036	CF-711	207
9510038	BT-100	277	9040037	CF-712	207
9000071	BT-151	25	9040042	CF-715	207
9510039	BT-200	277	9040043	CF-716	207
9000070	BT-451	22	9980099	CH-030	38
9000072	BT-557	22	9050071	CH-101	110
9000073	BT-581	22	9050075	CH-301	110
9000063	BT-751	21	9050077	CH-401	110
9000060	BT-756	21	9300030	CJ-000	264
9000061	BT-778	21	9300031	CJ-010	264
9000062	BT-790	21	9120075	CL-120	172
9000046	BU-119	17	9100016	CL-200	260
9000033	BU-147	17	9120039	CM-004	171
9000051	BU-229	17	9080005	CM-050	240
9000052	BU-238	17	9050079	CO-405	113
9000032	BU-247	15	9050080	CO-705	113
9000050	BU-259	20	9050018	CP-003	117
9000042	BU-269	15	9050027	CP-005	117
9000039	BU-289	15	9050054	CP-610	117
9000053	BU-347	17	9050041	CP-710	117
9000026	BU-439	18	9510066	CR-101	138
9000056	BU-453	16	9510054	CS-400	274
9000036	BU-454	16	9510055	CS-411	274
9000037	BU-455	16	9510058	CS-421	274
9000055	BU-469	17	9980062	CT-001	37

## SUMMARY BY CODES/MODELS

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CODE	MODEL	PAGE	CODE	MODEL	PAGE
9000043	BU-569	15	9140000	FE-009	70
9120003	CU-001	137	9140009	FE-015	71
9120068	CV-001	137	9140008	FE-016	71
9040016	DA-701	202	9140007	FE-017	71
9040019	DA-703	202	9140006	FE-018	71
9040017	DA-711	205	9140005	FE-019	71
9040025	DA-713	205	9060036	FI-243	228
9040015	DA-720	203	9060055	FI-244	229
9060011	DE-215	231	9100014	FI-250	260
9060012	DE-221	231	9060041	FI-253	228
9060013	DE-227	231	9060057	FI-254	229
9060014	DE-415	231	9060037	FI-473	228
9060015	DE-421	231	9060056	FI-474	229
9060016	DE-427	231	9060042	FI-483	228
9060017	DI-241	232	9060058	FI-484	229
9510037	DI-241	277	9040029	FL-100	79
9060019	DI-242	232	9040028	FL-200	79
9060096	DI-302	230	9000040	FM-102	24
9060018	DI-471	232	9000005	FM-200	24
9060020	DI-472	232	9060031	FP-211	226
9060061	DI-602	230	9060032	FP-217	226
9060062	DI-802	230	9060043	FP-223	226
9120048	DS-204	230	9060044	FP-226	226
9120049	DS-408	230	9060046	FP-414	227
9090016	DV-102	256	9060047	FP-420	227
9510034	DV-102	278	9060048	FP-426	227
9080004	EM-101	259	9020016	FR-413	50
9510035	EM-101	278	9090026	FR-423	254
9070020	EM-200	241	9130048	FU-901	182
9070021	EM-201	242	9130049	FU-902	182
9070022	EM-202	242	9000065	GA-269	26
9070024	EM-210	242	9000058	GA-454	26
9070025	EM-211	242	9000059	GA-569	26
9070027	EM-212	242	9100050	GC-007	261
9080012	EP-111	259	9000068	GD-269	26
9080013	EP-212	259	9000069	GD-454	26
9080020	EP-313	259	9000067	GD-751	26
9090019	EQ-126	255	9980016	GM-026	36
9090018	EQ-186	255	9980056	GM-040	36
9510006	EU-001	276	9980057	GM-050	36
9120035	FA-203	134	9980067	GM-200	36
9120046	FA-310	161	9980068	GM-350	36
9060053	FD-210	224	9080007	HC-001	257
9060033	FD-213	224	9080001	HC-095	257
9060034	FD-219	224	9080017	HE-000	268
9060035	FD-225	224	9080021	HE-001	268
9060054	FD-410	225	9080018	HE-100	268
9060038	FD-413	225	9080016	HE-200	268
9060039	FD-419	225	9080022	HE-201	268
9060040	FD-425	225	9300040	HT-000	264
9140004	FE-005	70	9120045	HV-105	31
9140003	FE-006	70	9510011	IA-001	275
9140002	FE-007	70	9120100	IP-001	115
9140001	FE-008	70	9510012	IR-001	272

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CODE	MODEL	PAGE	CODE	MODEL	PAGE
9510009	IR-101	272	9980006	MT-338	34
9510060	IR-201	273	9980007	MT-345	34
9510062	IR-211	273	9980008	MT-352	34
9510061	IR-301	273	9980003	MT-410	33
9980011	JV-335	37	9130013	MU-110	178
9000034	KA-001	39	9130016	MU-130	180
9120102	LA-100	116	9130014	MU-310	178
9120027	LF-001	259	9130017	MU-330	180
9120052	LS-001	172	9130005	MU-430	184
9120105	LS-207	116	9130007	MU-440	185
9050118	LT-100	120	9130008	MU-441	185
9050120	LT-102	120	9120051	LA-001	139
9050104	LT-107	120	9130018	MU-630	180
9050121	LT-112	120	9130011	MU-811	183
9030027	MA-401	59	9130025	MU-841	185
9080006	MC-001	257	9000044	MX-045	14
9080000	MC-095	257	9000045	MX-075	14
9080008	MC-101	257	9120018	PA-710	155
9080014	MC-104	139	9120061	PA-102	165
9080015	MC-204	264	9120065	PA-103	165
9080023	MC-302	116	9120093	PA-720	160
9090017	MD-104	256	9120006	PF-081	29
9510036	MD-104	278	9120016	PF-100	29
9510063	MD-110	136	9120030	PF-230	30
9510064	MD-310	136	9120042	PF-430	30
9510065	MD-410	136	9980009	PI-101	38
9020015	ME-214	169	9300041	PP-000	63
9120090	MF-201	135	9090028	PR-200	252
9120091	MF-202	135	9090029	PR-310	252
9120092	MF-205	135	9120032	PS-003	170
9120081	MF-206	135	9070079	PT-100	238
9120082	MF-207	135	9070080	PT-200	238
9120083	MF-208	135	9070082	PT-201	238
9120084	MF-209	135	9070081	PT-400	238
9510033	MH-950	278	9070083	PT-401	238
9020041	MM-200	46	9070084	PT-600	239
9020040	MM-207	47	9070085	PT-800	239
9020018	MM-208	46	9120063	PU-001	171
9020017	MM-303	46	9120064	PU-101	171
9020045	MM-214	49	9050102	PZ-010	119
9020042	MM-307	47	9050119	PZ-020	119
9020046	MM-402	48	9090023	RB-008	54
9020043	MM-406	48	9090022	RB-208	54
9020044	MM-407	48	9080019	RC-110	120
9120037	MR-010	170	9980066	RD-100	35
9120029	MS-011	170	9300000	RE-000	262
9120034	MS-511	132	9300001	RE-500	262
9120007	MS-512	132	9300002	RE-510	262
9120076	MS-513	132	9060050	RF-075	240
9120096	MS-514	132	9060052	RF-077	240
9120044	MS-521	131	9080011	RH-095	257
9980002	MT-210	33	9080010	RM-095	257
9980004	MT-325	34	9120011	RS-275	171
9980005	MT-332	34	9980065	RS-500	35

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CODE	MODEL	PAGE	CODE	MODEL	PAGE
9510029	RV-001	272	9050019	ZG-411	94
9510059	RV-011	272	9050023	ZG-412	96
9980023	SA-010	39	9050024	ZG-413	96
9070075	SB-003	241	9050026	ZG-414	96
9060021	SD-002	241	9050022	ZG-431	95
9060026	SD-003	241	9050074	ZG-611	94/98
9060060	SD-100	241	9050037	ZG-901	97
9020036	SE-008	102	9050073	ZG-902	97
9980069	SE-090	36	9050007	ZG-905	121
9130051	SF-001	188	9050001	ZP-004	117
9510020	SN-101	270	9050025	ZP-005	117
9300020	SO-000	262	9050097	ZP-211	107
9300024	SO-011	262	9050108	ZP-212	107
9300021	SO-511	262	9050091	ZP-411	104
9050123	SP-108	117	9050093	ZP-412	106
9050059	SP-113	117	9050094	ZP-413	106
9510021	SR-001	270	9050096	ZP-414	106
9980020	TA-001	33	9050092	ZP-431	105
9300050	TC-100	263	9050098	ZP-611	104/107
9300051	TC-200	263			
9300052	TC-400	263			
9300053	TC-500	264			
9300054	TC-600	264			
9300055	TC-700	264			
9980014	TE-014	37			
9980051	TI-025	32			
9050064	TO-543	89			
9050066	TO-544	89			
9050063	TO-551	89			
9120095	TP-543	147			
9120023	TP-544	147			
9120014	TP-551	147			
9120066	TP-561	149			
9120101	TQ-511	158			
9300010	TR-000	262			
9300011	TR-500	263			
9300012	TR-501	263			
9980052	TS-015	32			
9980050	TS-025	32			
9120038	UC-221	154			
9120041	UC-222	154			
9120010	UE-400	31			
9120001	US-511	163			
9120002	US-512	163			
9120008	US-513	163			
9120043	US-514	163			
9510004	VD-101	271			
9510010	VD-502	271			
9510057	VD-508	271			
9050043	VE-500	172			
9510005	VR-001	171			
9050045	ZF-701	168			
9050035	ZG-211	98			
9050106	ZG-212	98			