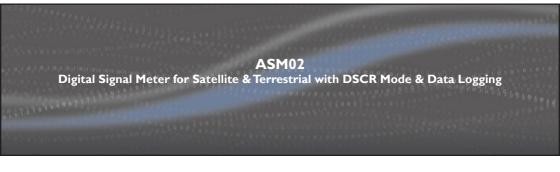


TECHNOLOGY... SINCE 1937

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# User Guide



### **Important Safety Notice**

Thank you for purchasing this Antiference signal analyser product. Please read the following instructions carefully, retain for future reference and read the following safety considerations:

- I. Do not place any items on the device
- 2. Ensure no liquids are on or near the device as splashes may damage the unit
- 3. For cleaning, use a damp cloth only without solvents
- 4. Do not attempt to open the case as there is a danger of electric shock
- 5. Repairs should be carried out by a qualified technician
- 6. Keep the protective jacket in place while using the meter
- 7. Store the meter in the carry case when not in use to protect the screen from damage
- 8. Use only the supplied power supply as 3rd party products may damage the product

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### **1. Introduction**

The Antiference ASM02 is an advanced signal analyser for satellite and terrestrial signals. It features an 8.9 inch touch screen display and simple to use menu system. It supports DVB-S/S2/DVB-T/T2/DVB-C/C2, **DAB/DAB+.** Also included is a DSCR mode for analysis of SKY Q systems and a data logging function allowing the user to download logs to a USB drive and view in an Excel spreadsheet. Supplied in a protective holder and carry case, this meter is ideal for use in the field for professional installers.

### **2. Features**

- 8.9 inch touch screen display
- Supports DVB-S/S2/DVB-T/T2/DVB-C/C2, DAB/DAB+
- Video decoding: MPEG- 1, MPEG-2, MPEG-4, H.263, H.264, HVEC/H.265(up to 4K@60fps), AVS, VC-1, VP8, MVC
- Audio decoding: MPEG-1, MPEG-2, ISO/IEC 13818-3 LAYER I&II
- Measurement values MER, dbµV, VBER, CBER, LBER
- LNB & RF short circuit protection
- Signal lock audible notification
- Data log function
- USB interface for data log download & firmware updates
- HDMI output
- LED flashlight
- Li-ion battery 5000mAh@7.4V with fast charging function
- OSD with multi-languages
- Internal storage
- Protective case
- Power supply 100-240V/50/60Hz 12V 2000mA

### **3. Package contents**

- I. ASM02 Signal Meter
- 2. I 2V 2000mA Mains Charger with 3 Pin UK Plug
- 3. 12V In-Car Charger
- 4. Soft Carry Case
- 5. Rubber/Plastic ASM02 Protective Jacket
- 6. F Connector Adaptors
- 7. 4 Point Shoulder Strap



### 4. Front & Top Panel Layouts

#### 4.1.Top Panel Description



- I. Satellite LNB Input
- 2. Terrestrial RF Input
- 3. Reset Button
- 4. HDMI Output
- 5. USB Interface
- 6. I 2V DC Input
- 7. On/off Switch

### 4. Front & Top Panel Layouts (cont)

#### 4.2. Front Panel Description



- I. Green LED. When lit, indicates 13V is enabled in DVB-S/S2 mode
- 2. Green LED. When lit, indicates 18V is enabled in DVB-S/S2 mode
- 3. Green LED. When lit, indicates 22KHz tone is enabled in DVB-S/S2 mode
- 4. Green LED. When lit, indicates 5V DC power is enabled in DVB-T mode
- 5. Green LED. When lit, indicates 12V DC power in is enabled in DVB-T mode
- 6. Charging Indicator LED. Red when charging, blue when charged
- 7. Red LED. Lit to indicate a short on the LNB or RF input
- 8. Power Indicator LED. Green when on.
- 9. Mode button to toggle between TV mode and measurement
- 10. LED/flashlight on/off control button.
- II. Increase volume
- 12. Decrease volume
- 13. Menu button
- 14. Exit menu button
- 15. Search function. Press to scan for channel in measurement mode
- 16. Store button. Press to save screen shots
- 17. Hotkey FI
- 18. Hotkey F2
- 19. Hotkey F3
- 20. Hotkey F4
- 21. Info button

### 5. Main Menu

When the ASM02 has booted, the main menu will appear. To navigate to the sub-menu's, simply tap the icon of the mode you wish to operate and the menu for that function will appear.

To return to the previous menu, press [EXIT]



### 6. DVB-S/S2 Mode

#### 6.1. Measurement Menu

Tap DVB-S/S2 icon to enter the satellite measurement menu. This menu shows all the analysis of the incoming satellite signal. The available satellite channel plans are listed down the left hand side of the screen and the measurement details on the right. Select the satellite required from the list to begin.

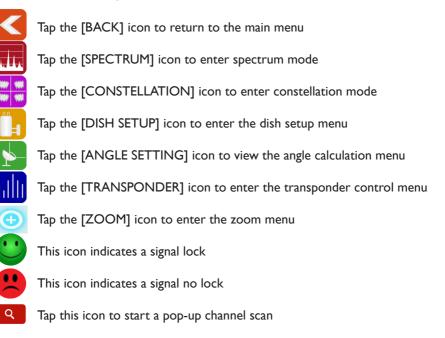
Once the satellite is selected, choose the transponder required from the next column by tapping the frequency value. Scroll to see additional transponders not in view.

Tap and hold the transponder value to enter manual edit mode. Pop up window will appear.

#### 6.1. Measurement Menu (cont)

	Satellite > Measure				) 🚺 📐		
1/3	Astra 19.2E	1/80	10714 H 22000	MER	12.2 dB	LKM	7.7 dB
1/3	East 19.2° 9750 / 10600	2/80	10758 V 22000	CBER	2.12E-5	VBER	<1.0E-7
		2/00	10738 ¥ 22000	Pilot Pattern	PPO	Orbit Position	28.2° E
2/3	HOTBIRD, 13 East 13.0°	3/80	10773 H 22000	TS Bitrate	33.790 Mbps	Frequency Offset	0.305 MHz
	9750 / 10600	4/80	10788 V 22000	Feed current	0 mA	Feed voltage	19.4 V
3/3	Astra 2			ONID	0X2	TSID	0X7F9
	East 28.2* 9750 / 10600	5/80	10803 H 22000		•		
		6/80	10818 V 22000				Q
		7/80	10847 V 23000		l dBµV		Ð
		8/80	10891 H 22000	DVB-S	QPSK 5/6 		

#### Explanation of Functions in DVB-S/S2 Mode



#### 6.1. Measurement Menu (cont)

<	Satellite > Measure				) 🚺 📘		Ê
1/3	Astra 19.2E	1/80	10714 H 22000	MER	12.2 dB	LKM	7.7 dB
1/3	East 19.2° 9750 / 10600	2/80	10758 V 22000	CBER	2.12E-5	VBER	<1.0E-7
		2/80	10758 V 22000	Pilot Pattern	PPO	Orbit Position	28.2° E
2/3	HOTBIRD, 13 East 13.0°	3/80	10773 H 22000	TS Bitrate	33.790 Mbps	Frequency Offset	0.305 MHz
	9750 / 10600	4/80	10788 V 22000	Feed current	0 mA	Feed voltage	19.4 V
3/3	Astra 2	4/80	10788 V 22000	ONID	0X2	TSID	0X7F9
3/3	East 28.2* 9750 / 10600	5/80	10803 H 22000				
		6/80	10818 V 22000		<u> </u>		Q
		7/80	10847 V 23000	66.1	l dBµV		$\odot$
		8/80	10891 H 22000	DVB-S	QPSK 5/6 		

#### **Explanation of Elements**

MER LKM CBER LBER Pilot Pattern Orbit Position TS Bit rate Freq Offset Feed Current Feed Voltage ONID TSID 66.1dBµV DVB-S QPSK 5/6

- Modulation error ratio value
- Link margin test results
- CBER test results
- LBER test results
- The pilot pattern of signal value
- The orbit position of the TS in the NIT table
- The bit rate of the input TS
- The offset value of the setting frequency and input signal
- The feed current of the LNB port
- The feed voltage of the LNB port
- The Original Network ID of the input transport stream
- The Transport Stream identification of the input stream
- The power level of the input signal
- DVB type, demodulation type & FEC value

#### Hot Key Function in DVB-S/S2 Mode









Dish Set Up

TP Control

Mute

Help





#### 6.2. Spectrum

The ASM02 can display live spectrum from 950MHz to 2150MHz covering legacy satellite analysis and limited wideband frequencies.



#### Functions in Spectrum Mode

- Tap the spectrum chart to see more detail including the centre of the frequency and power level
- To return to the previous menu, press [EXIT]
- Tap [RANGE] segment to set the frequency scan range
- To set the LNB voltage output tap [13V/18V] segment
- Toggle 22kHz tone on and off by tapping the [22K ON/OFF] segment
- Start or stop the spectrum run process by tapping the [RUN/STOP] segment
- Tap and hold on the screen for fine setting of frequency

#### Hot Key Function in Spectrum Mode











LO band

22K on/off

13V/18V

Mute

Help





#### 6.3. Constellation

This menu shows the constellation chart of the live stream. The transponder list is shown on the left hand side of the screen. Touch a transponder in the list to switch to it.

K	Satellite > Con	stellation			
1/80	10714 H 22000	Power level	66.1 dBµV	n Mari Jang San An	a dia sector
2/80	10758 V 22000	DVB-S	QPSK 5/6		
3/80	10773 H 22000	As	stra 2		
4/80	10788 V 22000	MER	LKM	•	
5/80	10803 H 22000	12.4 dB	7.9 dB	1.28	al est
6/80	10818 V 22000	CBER 2.12E-5	LBER <1.0E-7		
7/80	10847 V 23000	Feed current	Feed voltage		
8/80	10891 H 22000	0 mA	19.5 V		

#### **Explanation of Elements**

- The power level of the input signal
- Current satellite name
- DVB type, demodulation type & FEC value
- Carrier to noise ratio
- Link margin test results
- CBER test results
- LBER test results
- The feed current of the LNB port
- The feed voltage of the LNB port



Tap this icon or press [EXIT] to return to the previous menu

Power level Astra 2 DVB-S QPSK 5/6 CNR LKM CBER LBER Feed Current Feed Voltage

#### 6.4. Dish Setup

The dish setup menu allows the manual configuration of various parameters including LNB type, power, tone & switch type.

Satellite > Dish Setup > Astra 2								
	✓ Universal	9750/10750	5150	5750	9750			
LNB Type	10600	10750	11300	11475	10410			
	Customised							
22K	On	Off	🗸 Auto					
	13V	18V	Off	✓ Auto				
LNB Power		-						
	None	DisEqc1.0	DisEqc1.1	EN50494/SCR	EN50607/SCD2			
	✓ <sup>None</sup>	DisEquito	Disequiti	EN30494/30K	EN30007/3002			
Switch type	dSCR							
Moto Type	✓ Fixed	DisEqc1.2	USALS					
, F =								

#### **Explanation of Elements**

LNB Type	<ul> <li>Tap desired value to set. The edit pop up window allows the setting of the local oscillator value if required</li> </ul>
22K	- Tap to adjust the 22KHz tone status
LNB Power	- Tap to set the LNB voltage
Switch Type	<ul> <li>Tap 'NONE' to disable all switch types. Tap DiSEqC 1.0 or 1.1 to select DiSEqC option. Adjust port selection via pop up. Tap SCR or DSCR options and user band selection via pop up window</li> </ul>
Motor Type	- Tap to select motor type



#### 6.5. Motor Settings

The motor setting menu allows changes to be made to a motorised satellite system. A dish can be controlled in this menu as part of the set up process.

	Satellite > Mot	tor Setup			Ê
1/80	10714 H 22000	MER	11.2 dB	LKM	6.7 dB
2/80	10758 V 22000	CBER	1.27E-4	LBER	<1.0E-7
2,00	10730 1 22000	Feed current	32 mA	Feed voltage	19.0 V
3/80	10773 H 22000				
4/80	10788 V 22000	<u> </u>	Local Longitude	0.0°E Local La	titude 51.5°N
5/80	10803 H 22000		MOVE TO EAST	MOVE TO WEST	STOP
6/80	10818 V 22000	67.3 dBµV	SET EAST LIMIT	SET WEST LIMIT	DISABLE LIMIT
7/80	10847 V 23000	DVB-S QPSK 5/6	MOVE TO CENTER	GOTO POSITION	STORE POSITION
8/80	10891 H 22000				

#### **Explanation of Elements**

- The power level of the input signal
- DVB type, demodulation type & FEC value
- Modulation error ratio value
- Link margin test results
- CBER test results
- LBER test results
- The feed current of the LNB port
- The feed voltage of the LNB port
- Testing local longitude. Tap value to edit
- Testing local latitude. Tap value to edit

67.3 dBµV DVBS QPSK 5/6 MER LKM CBER LBER Feed Current Feed Voltage Local Longitude Local Latitude



Tap this icon or press [EXIT] to return to the previous menu

#### 6.5. Motor Settings (cont)



#### **DiSEqC** Command Buttons

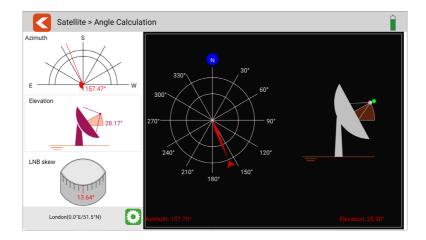
MOVE TO EAST	Tap to send MOVE TO EAST command
MOVE TO WEST	Tap to send MOVE TO WEST command
STOP	Tap to send STOP MOVING command
SET EAST LIMIT	Tap to set the east limit command
SET WEST LIMIT	Tap to send the west limit command
DISABLE LIMIT	Tap to send the DISABLE LIMITATION command
MOVE TO CENTER	Tap to centre the dish position
GOTO POSITION	Tap to send command to saved position
STORE POSITION	Tap to save position



Tap this icon or press [EXIT] to return to the previous menu

#### 6.6. Angle Calculation

This menu calculates the azimuth & elevation of the satellite dish via the current satellite settings and local position. The ASM02 can monitor the alignment process helping the user to get the dish in the correct position.





Tap this icon or press [EXIT] to return to the previous menu

#### 6.7.TP Control

Within the transponder (TP) control menu, more detail can be seen on each transponder being received. This includes the frequencies, MER, signal strength & quality in percentages.

In this menu it is possible to create and download a data log of the signals being received by transponder.

<	Satellite > TP Cont	rol			🖸 🚺 🙆	
14/77	11082 H 22000	Power level	MER	Strength		93%
14/77	TP 65 DVB-S	69.3 dBµV	6.9 dB	Quality		48%
	11095 V 30000	Power level	MER	Strength		99%
15/77	TP 708	77.4 dBµV		Quality		0%
	11097 V 23000	Power level	MER	Strength		99%
16/77	TP 66 DVB-S2	75.5 dBµV	14.4 dB	Quality		90%
	11112 H 22000	Power level	MER	Strength		0%
17/77	TP 67	0	0	Quality		0%
	11126 V 22000	Power level	MER	Strength		0%
18/77	TP 68	0	0	Quality		0%
	11141 H 22000	Power level	MER	Strength		0%
19/77	TP 69	0	0	Quality		0%
	11171 H 22000	Power level	MER	Strength		0%
20/77	TP 71	0	0	Quality		0%
	11224 V 23000	Power level	MER	Strength		0%
21/77	TP 106	0	0	Quality		0%

Tap this icon to edit the transponder list for this menu. See page 16.



Tap this icon to save the datalog in Excel format. See page 17. This can also be downloaded to a USB drive.



Adjust the speed between normal and fast or pause the scan



#### 6.8.TP Control (cont)

The transponder list can be edited in this menu manually. The top list of transponders are already available in the TP control menu. The bottom list are the rest of the transponders which are not currently available in the TP control menu. Tap an item to add it to the TP control menu.

When finished, tap DONE to return to the TP control menu.

It is also possible to remove or add all should this be required.

The transponders in scope
C TP 41 10714 H 22000 TP 45 10773 H 22000 TP 46 10788 V 22000 TP 47 10803 H 22000
➡ TP 50 10847 V 23000
➡ TP 57 10964 H 22000
The rest transponders
⊕ TP 44 10758 V 22000     ⊕ TP 48 10818 V 22000     ⊕ TP 0 12441 V 29500     ⊕
DONE REMOVE ALL ADD ALL

#### 6.9. Datalogging

The ASM02 can save a datalog via the TP control menu. This can be done from the DVB-S mode or DVB-T mode, See page 15 (DVB-S) or page 23 (DVB-T) to view how this process is started. Once the datalog has been saved, this data can be downloaded to a USB drive.

From the TP control menu (DVB-S) or the datalog/scope menu (DVB-T), tap the icon and the menu below will appear Choose a file name and location for the datalog to be stored and then tap 'done'.

Save as			.xls	
Folder	reports			
-				
screenshots	reports			
	_		_	
		CANCEL	DONE	

#### 6.10. DSCR Mode

The ASM02 is pre-programmed with the UK DSCR user bands for analysis of DSCR systems. To access this menu, navigate to the DVB-S/S2>dish setup>switch type menu (shown below) and select the user band required.

Satellite > Dish Setup > Astra 2								
	✓ Universal	9750/10750	5150	5750	9750			
LNB Type	10600	10750	11300	11475	10410			
	Customised							
	On	Off	✓ Auto					
22K	UII	UII	V Auto					
	1011	4014						
LNB Power	13V	18V	Off	✓ Auto				
	News	DisEqc1.0	DisEqc1.1	EN50494/SCR	EN50607/SCD2			
	None	DISEQCT.0	DISEQUIT	EN30494/SCR	EN50607/SCD2			
Switch type	( dSCR )							
	$\smile$							
	✓ Fixed	DisEqc1.2	USALS					
Moto Type	<ul> <li>Fixed</li> </ul>	DiseqC1.2	USALS					

When the DSCR option is selected, the following menu will appear. Select the user band required and then click 'done'.

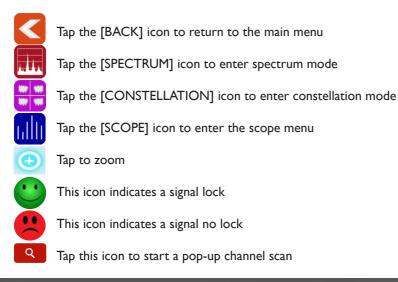
1680 MHz	1280 MHz	1380 MHz	1480 MHz	91	30 MHz	1000	1030 MHz	
User Band 3	User Band 9	User Band 11	User Band		ser Band	15	User Band	16
1080 MHz User Band 17	1130 MHz User Band 18	1530 MHz User Band 19	1580 MHz User Band		630 MHz ser Band	21	1730 MHz User Band	22
1780 MHz User Band 23	1830 MHz User Band 24	1880 MHz User Band 25	1930 MHz User Band	26				
		User Band	3					
	L	User Band Iser Band Frequency	3 1680					

#### 7.1. Measurement

From the main menu, tap the DVB-T/T2 icon to enter the terrestrial measurement menu. This menu shows all the analysis of the incoming terrestrial signal. The incoming terrestrial frequencies are listed on the left hand side of the screen and the measurement details on the right.

Select the frequency required by tapping to highlight. Tap and hold to toggle pop up window to change parameters such as bandwidth, frequency or system type.





#### 7.1. Measurement (cont)

<	Terre	estrial Measure				
19/49	CH: 39	618.0MHz	CNR	26.3 dB	MER	32.0 dB
19/49		8 MHz	CBER	9.16E-5	VBER	8.64E-5
20/49	CH: 40	626.0MHz		141 mA		12.4 V
20/49		8 MHz	Feed current	141 HIA	Feed voltage	12.4 V
21/49	CH: 41	634.0MHz	ONID	0X233A	TSID	0X104B
21/49		8 MHz	Pilot Pattern	PP0	FFT Mode	вк
22/49	CH: 42	642.0MHz				
22/49		8 MHz	TS Bitrate	24.880 Mbps	Frequency Offset	0.35 MHz
23/49	CH: 43	650.0MHz			Q	
23/49		8 MHz		<u>·</u>	L CA	Ð
	CH: 44	658.0MHz				
24/49		8 MHz	68.0	dBuV	0V	5V 12V
	CH: 45	666.0MHz		-QAM 2/3	Attenuati	on 0.0 db
25/49		8 MHz	DVD-1 04		Attenduti	5.5 GD
26/49	CH: 46	674.0MHz				

#### **Explanation of Elements**

MER CBER LBER Feed Current Feed Voltage ONID TSID Pilot Pattern FFT Mode TS Bit rate Frequency Offset 68.0 dBµV DVB-T QPSK 5/6

- Modulation error ratio value
- CBER test results
- LBER test results
- The feed current of the RF input load
- The feed voltage of the RF input load
- The Original Network ID of the input transport stream
- The Transport Stream identification of the input stream
- The pilot pattern value of the signal
- The FFT carrier mode
- The bit rate of the incoming transport stream
- The offset value of the live input signal
- Power level of input signal
- DVB type, demodulation type and FEC value

#### Hot Key Function in Spectrum Mode









Mute



Help

Range +



e -

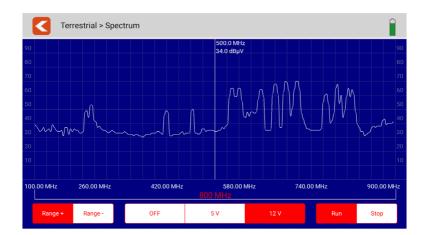
5V/12V/OFF



Tap this icon or press [EXIT] to return to the previous menu

#### 7.2. Spectrum

The terrestrial spectrum can scan from 100MHz to 900MHz to show live analysis of the incoming signal.



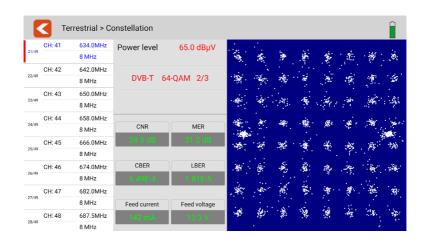
#### **Functions in Spectrum Mode**

- Tap the spectrum chart to see more detail including the detail of frequency and power level
- To return to the previous menu, press [EXIT]
- Tap [RANGE] segment to set the frequency scan range
- To set the antenna output voltage by tapping the [OFF/5V/12V] segment
- Start or stop the spectrum run process by tapping the [RUN/STOP] segment
- Tap and hold on the screen for fine setting of frequency



#### 7.3. Constellation

The constellation menu shows the live transport stream on a constellation chart. the multiplex frequencies are shown on the left hand side of the screen with the detail on the middle and the constellation chart on the right. Tap a frequency to see details.



#### **Explanation of Elements**

Power level DVB-T 64QAM 2/3 CNR CBER LBER Feed Current Feed Voltage

- The power level of the input signal
- DVB type, demodulation type & FEC value
- Carrier to noise ratio
- CBER test results
- LBER test results
- The feed current of the RF input load
- The feed voltage of the RF input load



Tap this icon or press [EXIT] to return to the previous menu

#### 7.4. Scope

The scope menu shows signal lock and the various multiplex incoming signals. This menu shows power level, MER plus signal strength and quality in percentages. Tap the mux you want to view on the left hand side.

ĥ П Terrestrial > Scope 12V • x Power level MER 538.0 MHz Strength 89% 1/6 Ouality CH: 29 DVB-T 65.0 dBµV 30.0 dB 99% Power level MER 554.0 MHz Strength 89% CH: 31 DVB-T 65.0 dBuV 31.7 dB Quality 99% Power level MER 602.0 MHz Strength 90% 3/6 CH: 37 Quality 99% DVB-T 66.0 dBµV 31.2 dB MER 634.0 MHz Power level 93% Strength 99% CH: 41 DVB-T Quality 69.0 dBuV 32.4 dB 658.0 MHz Power level MER Strenath 94% 5/6 CH: 44 DVB-T Quality 70.0 dBµV 30.0 dB 99% Power level MER 682.0 MHz 95% Strength 6/6 Quality 99% CH: 47 DVB-T2 71.0 dBµV 27.1 dB



Tap this icon to edit the multiplex list for this menu See page 24.



Tap this icon to save the datalog in Excel format. See page 17. This can also be downloaded to a USB drive.



Pause the scan



#### 7.5. Datalog

The multiplex list can be edited in this menu manually. The top list of multiplexes are already available in the scope menu. The bottom list are the rest of the multiplexes which are not currently available in the scope menu.

Tap an item to add it to the scope menu.

When finished, tap DONE to return to the scope menu.

It is also possible to remove or add all should this be required.

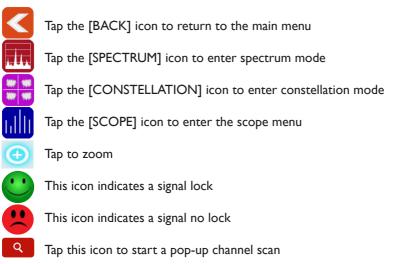
The frequent	cy channels in scope						
<b>C</b> H: 29	538.0 MHz	😑 СН: 31	554.0 MHz	😑 CH: 37	602.0 MHz	😑 CH: 41	634.0 MHz
<b>C</b> H: 44	658.0 MHz	😑 СН: 47	682.0 MHz				
The rest freq	uency channels						
🕂 CH: 21	474.0 MHz	🕂 CH: 22	482.0 MHz	🕂 CH: 23	490.0 MHz	🕂 CH: 24	498.0 MHz
🕂 CH: 25	506.0 MHz	🕂 CH: 26	514.0 MHz	🕂 CH: 27	522.0 MHz	🕂 CH: 28	530.0 MHz
🕂 CH: 30	546.0 MHz	🕂 CH: 32	562.0 MHz	🕂 CH: 33	570.0 MHz	🕂 CH: 34	578.0 MHz
🕂 CH: 35	586.0 MHz	🕂 CH: 36	594.0 MHz	🕂 CH: 38	610.0 MHz	🕂 CH: 39	618.0 MHz
🕂 CH: 40	626.0 MHz	🕂 CH: 42	642.0 MHz	🕂 CH: 43	650.0 MHz	🕂 CH: 45	666.0 MHz
🕂 CH: 46	674.0 MHz	🕂 CH: 48	687.500 MHz	🕂 CH: 49	698.0 MHz	🕂 CH: 50	706.0 MHz
		DONE	REMO	VE ALL	ADD ALL		

#### 8.1. Measurement

From the main menu, tap the DVB-C icon to enter the cable TV measurement menu. This menu shows all the analysis of the incoming cable TV signal. The incoming frequencies are listed on the left hand side of the screen and the measurement details on the right.

Select the frequency required by tapping to highlight. Tap and hold to toggle pop up window to change parameters such as bandwidth, frequency or system type.

<	Cable	Measure				
	CH: S40	458.0MHz	MER	32.0 dB	VBER	8.64E-5
47/97	DVB-C	458.0MHz 6875.0 Kbd	CBER	9.16E-5	ONID	0X233A
	CH: S41	466.0MHz	TS Bitrate	24.880 Mbps	TSID	0X104B
48/97	DVB-C	6875.0 Kbd	15 bitrate		1510	
	CH: K/E21	474.0MHz	Frequency Offset	0.35 MHz		
49/97	DVB-C	6875.0 Kbd				
50/97	CH: K/E22	482.0MHz				
50/97	DVB-C	6875.0 Kbd		•	_	
51/97	CH: K/E23	490.0MHz			C	λ.
	DVB-C	6875.0 Kbd				
52/97	CH: K/E24	498.0MHz	68.0	dBµV	Attenuation	0.0 db
32/9/	DVB-C	6875.0 Kbd	DVB-C	64-QAM		_
53/97	CH: K/E25	506.0MHz	515 0			
	DVB-C	6875.0 Kbd				
54/97	CH: K/E26	514.0MHz				



#### 8.1. Measurement (cont)

<		Measure				
	CH: S40	458.0MHz	MER	32.0 dB	VBER	8.64E-5
47/97	DVB-C	6875.0 Kbd	CBER	9.16E-5	ONID	0X2334
48/97	CH: S41	466.0MHz	TS Bitrate	24.880 Mbps	TSID	0X104E
48/97	DVB-C	6875.0 Kbd	To billuce		1010	
	CH: K/E21	474.0MHz	Frequency Offset	0.35 MHz		
49/97	DVB-C	6875.0 Kbd				
	CH: K/E22	482.0MHz				
50/97	DVB-C	6875.0 Kbd				
	CH: K/E23	490.0MHz				2
51/97	DVB-C	6875.0 Kbd				
	CH: K/E24	498.0MHz	68.0	dBµV	Attenuation	0.0 db
52/97	DVB-C	6875.0 Kbd	DVB-C	64-QAM	_	_
	CH: K/E25	506.0MHz	DVD-C	OT-GOIN		
53/97	DVB-C	6875.0 Kbd				
54/97	CH: K/E26	514.0MHz				

#### **Explanation of Elements**

MER CBER LBER ONID TSID TS Bit rate Frequency Offset 68.0 dBµV DVB-C X-QAM 5/6

- Modulation error ratio value
- CBER test results
- LBER test results
- The Original Network ID of the input transport stream
- The Transport Stream identification of the input stream
- The bit rate of the incoming transport stream
- The offset value of the live input signal
- Power level of input signal
- DVB type, demodulation type and FEC value

#### Hot Key Function in Spectrum Mode











Range +



5V/12V/OFF

Mute

Help



Tap this icon or press [EXIT] to return to the previous menu

#### 8.2. Spectrum

The cable spectrum can scan from 100MHz to 900MHz to show live analysis of the incoming signal.

#### Functions in Spectrum Mode

- Tap the spectrum chart to see more detail including the detail of frequency and power level
- To return to the previous menu, press [EXIT]
- Tap [RANGE] segment to set the frequency scan range
- Start or stop the spectrum run process by tapping the [RUN/STOP] segment
- Tap and hold on the screen for fine setting of frequency



#### 8.3. Constellation

The constellation menu shows the live transport stream on a constellation chart. the channel frequencies are shown on the left hand side of the screen with the detail on the middle and the constellation chart on the right. Tap a frequency to see details.

#### **Explanation of Elements**

Power level DVB-C 64QAM 2/3 CNR CBER LBER

- The power level of the input signal
- DVB type, demodulation type & FEC value
- Carrier to noise ratio
- CBER test results
- LBER test results



#### 8.4. Scope

The scope menu shows signal lock and the various incoming signals. This menu shows power level, MER plus signal strength and quality in percentages. Tap the mux you want to view on the left hand side.



Tap this icon to edit the multiplex list for this menu See page 24.



Tap this icon to save the datalog in Excel format. See page 17. This can also be downloaded to a USB drive.



Pause the scan



#### 8.5. Datalog

The frequency list can be edited in this menu manually. The top list of frequencies are already available in the scope menu. The bottom list are the rest of the frequencies which are not currently available in the scope menu.

Tap an item to add it to the scope menu.

When finished, tap DONE to return to the scope menu.

It is also possible to remove or add all should this be required.

### 9. DAB/DAB+ Mode

The ASM02 can analyse DAB & DAB+ signals via the DAB menu. From the main menu, tap the DAB/DAB+ tile to navigate to the measurement menu.

	AB+								Ê
	DAB/DAB+ Program List								
39/46		Name Radio UP			Serv OXC6	ice ID ec10000		_	
40/46		Radio X			0Xcc	ic40000			
41/46		Smooth 3Count	ti		0Xcc	c80000		RESC	AN
42/46		Smooth Chill			0Xeb	c90000	ſ		
43/46		Smooth UK 0Xc0c60000				OFF 51	/ 12 V		
	216.928 MHz								
						_			
						_		_	
				= 2					
5A 5B 5C 5D 6A	6B 6C 6D 7A 7E	3 7C 7D 8A 8B 8C	8D 9A 9B	9C 9D	10A 10B 10C 10D 1	1A 11B 11C 11D	12A 12B 12C 12D 1	3A 13B 13C 1	3D 13E 13F
	Radio Info	rmation				Measu	ire Results		
Fr	equency	225.648 M	Hz		Po	ower level	20	5 dBµV	
E	nsemble	Herts Beds B	lucks			SNR		7 dB	
	Bitrate	40 kbps				CNR		8 dB	
Comp	onent ID	768				ACQ		1	
	Mode	Stereo				EID	0	Xc181	

#### Functions in DAB/DAB+ Mode

- Tap the RESCAN button to re-start a scan on all frequency channels
- Set antenna power output voltage via OFF/5V/12V segment
- Available programs are shown on the top of the screen with colour set to blue when the program is playing.
- Tap the blue bar to play/hear the program



### **10. DiSEqC Monitor**

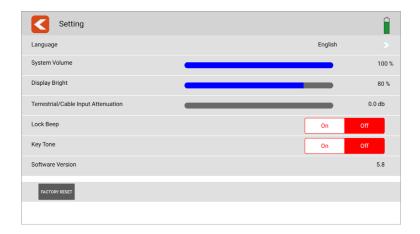
This menu for DiSEqC monitoring can detect DiSEqC commands on the LNB input of the meter. This can be used to fault find DiSEqC issues from another meter or set-top box.

DiSEqC Monitor	
Input Voltage 18.7 V	Input 22K Off
E01038F2 Commit Port 1 HL	
E01038F2 Commit Port 1 HL	la an
E01038F2 Commit Port 1 HL	DiSEqC 1.0

### **11. System Settings**

#### **General Settings & Parameters**

This menu allows the adjustment of general meter settings such as volume, brightness, attenuation etc and shows the current software version of the device.



### 12. Help

From the main menu, tap the 'help' button to access this user guide



### **13. Memory**

From the main menu, tap the 'memory' button to access the saved screenshots of the meter. From this menu, it is possible to edit the name of the screenshot, delete or copy to USB.





### 14. LNB/RF Overload

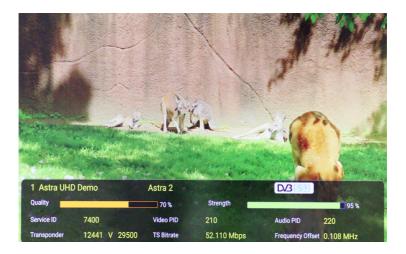
If an LNB or RF overload appears, a dialogue box will appear informing of the short or overload. Check the connections and once complete, tap 'YES' to try and lock signal again

### **15. Channel Scan & View**

From the measurement screen in any mode, click Q to perform a channel scan. Scan options include single channel, all channels or blind scan. The screen below will appear while the scan is carried out.



Once the scan is complete, the video can be viewed as below. Information on the channel is shown on the info bar below the video.



### **16. Technical Specifications**

### DVB-S/S2

Identification	DVB-S	DVB-S2			
Frequency Rage	250MHz ~ 2300MHz				
Demodulation	QPSK QPSK, 8QPSK				
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8,	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 5/6, 8/9, 9/10,			
Symbol Rate	2~45MSPS				
Input Impedance	75Ω				
Min.level in	35dBuV (noise)				
Max.level in	100dBuV				
LNB Power and Pol	Vertical 13V, Horizontal 18V,300mA				
Bandwidth	C/Ku-band selectable				

### DVB-T/T2

Identification	DVB-T	DVB-T2			
Frequency Rage	42MHz ~ 1002MHz				
Antenna Power	5V, 12V				
Carriers	2k, 4k, 8k	1k, 2k, 4k, 8k, 8k+E, 16k, 16k+EXT,			
		32k,32k+EXT			
Guard Interval	1/4, 1/8, 1/16, 1/32	1/4, 19/256, 1/8, 19/128, 1/16, 1/32,			
		1/128			
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8	1/2, 3/5, 2/3, 3/4, 4/5, 5/6			
Modulation	QPSK,16-QAM,64-QAM	16, 32, 64, 128, 256QAM			
Bandwidth	6, 7 and 8 MHz	1.7,5, 6,7 and 8 MHz			

### DVB-C/C2

Identification	DVB-C	DVB-C2
Frequency Rage	42MHz ~ 1002MHz	
Symbol Rate	1.7~7.2	
Bandwidth		6, 8MHz
Modulation	16, 32, 64, 128, 256QAM	16, 64, 256, 1024, 4096QAM

## **16. Technical Specifications**

### **17. Declaration of Conformity**

We, ANTIFERENCE LIMITED herewith declare that the HDMI extender kit complies with all essential requirements and any other applicable conditions set forth on directive 2014/30/EU.

According to the WEEE (Waste Electrical and Electronic Equipment) EU Directive, do not dispose of this product as household waste or commercial waste.Waste Electrical and Electronic Equipment should be appropriately collected and recycled as requiredby practices established for your country. For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.



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