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SAFETY

- 1. Please read this manual carefully before first use.
- 2. The LCD is not a touch screen.
- 3. Do not place heavy items on the device.
- 4. Do not leave the device near to heat sources, in direct sunlight, in places with strong mechanical vibration or dusty environments.
- 5. Please place the device in ventilated surroundings.
- 6. The device should be fully charged before using for the first time (recommend 6 hours for the first charge).
- 7. Contact Matchmaster Communications Pty Ltd if malfunction of the device happens.
- 8. Damaging the device on operation without following the guideline will not be warranted.

WARNING

- 1. Avoid using batteries near heat sources.
- 2. Do not get wet.
- 3. Avoid charging in heated locations or direct sunlight.
- 4. Charge using only charging accessories supplied.
- 5. When the battery is being charged by a vehicle charger, please ensure the polarity of the charging connection is correct.





NOTE

- 1. Antistatic: The battery is equipped with a protective circuit to avoid the occurrence of various accidents. Do not use the battery in the generation of static electricity as static electricity (100V or above) will easily damage the protection circuit which may lead to battery failure or damage, heat causing smoke/fire or deformation of the battery pack.
- 2. Charge temperature range: Recommended charge temperature range is 0~45. Charging in an environment beyond this range may cause a decrease in battery performance and reduce the life span.
- 3. Charging mode: Please use the supplied charger in the recommended environment for the battery charge. After discharge of the battery, please charge the battery in time. Due to the special characteristics of the car charging, the battery cannot reach the saturation state when the vehicle is used to charge the battery.
- 4. First use: With the first use of the battery, if the battery is not clean or an abnormal smell or other abnormal behavior is noted, please discontinue charging and return to Matchmaster Communications Pty Ltd.
- 5. When the meter is not in use for a long period of time it is best to remove the battery from the device and place in a low temperature and humidity environment for optimal preservation.
- 6. Battery period of guarantee: The warranty period is 6 months from the date of shipment. However, if the problem is not due to the failure of the manufacturing process, but instead due to improper use or storage warranty will not be applied.

1 OVERVIEW

The 12MM-DSTM2 is an HD digital signal meter and portable device for installation and adjustment of satellite and terrestrial receiving antennas.

1.1 Features

- Combination of DVB-T/T2/C and DVB-S/S2
- High resolution 5"TFT LCD
- Multi-lingual OSD and use-friendly UI
- Supports Spectrum function
- Real time constellation display
- Supports TP search and blind search
- USB 2.0 for software update/media play back
- Supports time shift
- Supports TP PVR
- Supports program edit (move/skip/lock/delete/ rename)
- Supports electronic program guide (EPG)
- Supports HDTV video/audio output

1.2 Accessories

- 1x Manual
- 1x Power Adapter
- 1x Power Cable
- 1x Car Adaptor
- 1x Connector F-Type
- 1x Connector F-Type to IEC typ
- 1x Connector BNC to AV
- 1x AV Cable
- 1x Remote Control Unit (RCU)
- 1x Carry Bag

- Supports HD TV input
- Supports AV input for monitor installing
- Supports DC+12V out for monitor installing
- Ease of use via shortcut keys
- Supports RCU
- Built in loudspeaker for audio play
- Video and Audio signal when signal locked
- Built in LED light
- Large lithium battery capacity (4000mAh)
- Support 8MP camera input, supported formats are AHD TVI CVI CVBS

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2 INTRODUCTION OF PANEL FUNCTIONS

2.1 Remote Control

- 1. Power
- 2. Show the teletext content if teletext is transmitted
- 3. Subtitle language
- 4. Sleep
- 5. Find
- 6. Play, stop and pause
- 7. Main menu
- 8. Confirm the highlighted menu item. Open the channel list
- 9. Left and right
- 10. EPG
- 11. Fast backward and fast forward
- 12. Numeric key (0-9)
- 13. Favorite channel
- 14. Mute
- 15. Multi-coloured buttons
- 16. Zoom
- 17. PVR
- 18. GOTO TP or Satellite
- 19. Recall
- 20. Start recording
- 21. Exit
- 22. Up and down
- 23. Display information
- 24. TV/radio
- 25. Play previous item and play next item
- 26. Satellite list
- 27. Audio language

2.2 Front Panel Introduction

- Power switch: press it for 3~4 seconds to switch the device power on/off
- 2. Power indicator
- 3. Battery indicator (Red light for charging, green light for fully charged)
- 4. 13V indicator
- 5. 18V indicator
- 6. 22KHz indicator
- 7. Signal Locked indicator
- 8. F1~F4: shortcut keys
- 9. Numeric keys
- 10. GOTO: Select satellite or transponder
- 11. LIGHT: Long press 3~4seconds to turn on LED floodlight
- 12. SCREEN: Signal source switching
- 13. MUTE: turn on or turn off the voice
- 14. SPEC: shortcut key for spectrum analyzer
- 15. CONS: shortcut key for constellation analyzer
- 16. FIND: shortcut key for satellite finding
- 17. ANGLE: Shortcut key for Angle calculation
- 18. Arrow keys: The keys offer the movement of cursor to a specified direction.
- 19. OK: confirm key
- 20. MENU: Show main menu
- 21. EXIT: exit menu (main menu or sub menu)
- 22. Digitron: Show the current signal quality
- 23. LCD screen





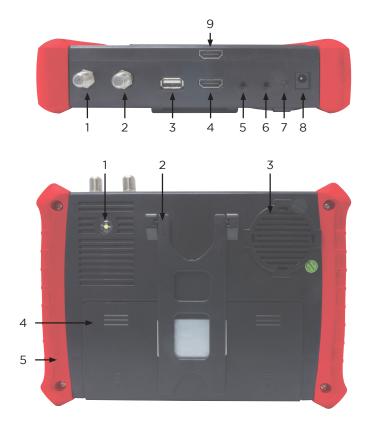


2.3 Top Panel Introduction

- 1. F connector male for Satellite Input
- 2. F connector male for Terrestrial and Cable Input
- 3. USB connector
- 4. HDTV OUT connector
- 5. AV OUT connector (3.5 Phone Jack)
- 6. AV IN connector (3.5 Phone Jack)
- 7. Reset key
- 8. DC jack (for charger)
- 9. HD IN connector

2.4 Rear Panel Introduction

- 1. LED floodlight
- 2. Holder
- 3. Loudspeaker
- 4. Battery
- 5. Hand grips



3 DETAILED OPERATION GUIDE

When you turn on the device, you can see the main menu which consists of DVB-S2, DVB-T2, DVB-C, Compass, Spectrum, Multimedia and Setting.



013.1E				
Satellite	(NewSat1)	FEC: 3/4	Pol.:	-90.0
LNB Туре	05150	Az: 90.0	EI:	74.6
Freq	4173			Lock
Symbol	9201			
Polarity	н	PWR:		dBuv
22KHz	Off			7.0.11
DiSEqC	2/4	a.BER	C/N:	7.6 db
Search	ТР	0.00E+00	MER:	5.0 db
S: Q:				66 % 32 %

3.1 DVB-S/S2 3.1.1 Satellite Finding

Move cursor to "Satellite Finding" and press "OK", then you will enter the "Satellite Finding" interface.

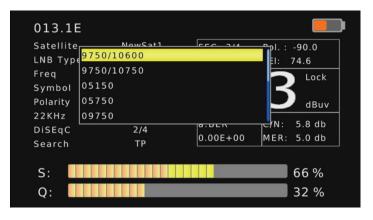
 Press"OK" on the Satellite option, then you will see the following window. Press [▲/▼] to select an existing satellite and press "OK" to confirm.

 Press"OK" on the LNB Type option, then you will see the following window. Press [▲ / ▼] to select the LNB Type and press "OK" to confirm.

3. Press"OK" on the Freq, Symbol Rate, Polarity option, and follow steps as above to adjust as needed.

- 4. Use the number buttons to input the Frequency, Symbol Rate and Polarity manually, then press "OK" to confirm.
- When the signal is locked, the buzzer will sound. The signal quality bar will also be displayed on the LCD. Meanwhile, the LOCK LED will light up.
- 6. Press"OK "on the Search option, and the satellite finder will begin to search the channel according to the TP you selected or input manually. It will switch to the Program page after the search (if there is a program on the Transponder).

013.16	E	
Satellite LNB Type Freq Symbol Polarity 22KHz	AFF AAA ANY K. ATLANTIC DIDD A	PI.: -90.0 El: 74.6 B Lock dBuv /N: 5.9 db
DiSEqC Search S: Q:		66 %



013.1E			
Satellite	NowSat1	FFC. 3/4	- pl.: -90.0
LNB Туре	001 4173 H 9201		El: 74.6
Freq	002 4148 H 6148		Lock
Symbol	003 4116 H 21375		
Polarity	004 4097 H 9991		
22KHz	Off		
DiSEqC	2/4	a.BER	C/N: 5.0 db
Search	ТР	3.02E+04	MER: 5.0 db
S:			66.94
5:			66 %
Q:			32 %







3.1.2 Dish Setting

Move cursor to "Dish Setup" and press "OK", then you can enter the "Dish Setup" interface.



- Under the Satellite list page, you can press [$\blacktriangle / \checkmark$] to 1. select the satellite.
- 2. Press [F1] to add a new satellite through setting Satellite Name, Longitude Direction, Longitude Angle or Band.

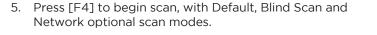
- 3. Press [F2] to edit existing satellite, which includes Satellite Name, Longitude Direction, Longitude Angle and Band.

4. Press [F3] to delete existed satellite. If you press OK, the satellite will be deleted or you can press "EXIT" to exit.





Satellite		
057 070.3E Ku_NSS 703	LNB Type	05150
058 138.0E Ku_TELSTAR		13/18V
059 013.1E C_NewSat1	Confirm	Off
		None
	Do you want to delete this?	LNB2
	DiSEqC1.1	None
	Motor	None



Dish Setup

0000

6. Press [GOTO] to get into the TP list, you can also use [F1] [F2] [F3] [F4] to add, edit, delete or begin to scan the selected TP. Press [GOTO] to return to the satellite list.

- Select one of the satellites and press [◄/▶] to get into the LNB Type setting.
- LNB Type: Press [▲ / ▼] to choose LNB Type between 9750/10600, 9750/10750, 05150, 05750, 09750, 10600, 10700, 10750, 11300 and 11475.
- LNB Power: Press [</ ▶] to choose between Off/13V/ (13V/18V)/18V.
- 10. 22K: Choose AUTO/ON/OFF.
- Toneburst: Press [◄/ ►] to choose between None/ BurstA/BurstB.
- DiSEqC1.0: Press [</ ▶] to choose between None/ LNB1/ LNB2/ LNB3/ LNB4.
- DiSEqC1.1: Press [◀/ ▶] to choose between None/ LNB1~LNB16.
- Motor: Press [◀/▶] to choose between None/ DiSEqC1.2/DiSEqC1.3.



DiSEaC1.1

F3

E2

Add

Channel Search < Default

All

ISEQUI.

All Channels

None

None

None

Scan Mode

Crypted Service Type







3.1.3 Angle Calculation

Move cursor to "Angle Calculation" and press "OK", then you can enter the "Angle Calculation" interface.

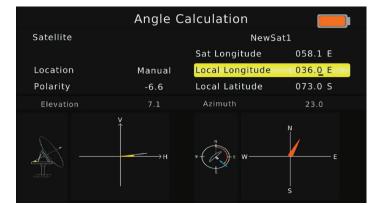
- Press [◄/▶] on Satellite option to select an existing satellite, the longitude of the satellite will be changed correspondingly.
- Press [▲/▼] on Sat Longitude option, then you can use the number keys to input the satellite longitude you want.
- If you select Manual, then you can move cursor to the Local Longitude and the Local Latitude and use the Number keys to input the value you want. (Press [◄/►] to select east or west local longitude, south or north Hemisphere).
- 4. When a parameter has changed, the system will calculate the result and will show the picture on the screen automatically.

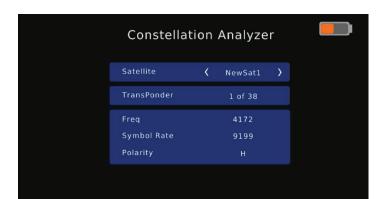
3.1.4 Constellation Analyzer

Move the cursor to "Constellation Analyzer" and press "OK", then you will enter the "Constellation Analyzer" interface.

- 1. Press [◀ / ▶] to select a satellite and you can see the Transponder changes accordingly.
- Press [</ ▶] to select a Transponder and you can see TP frequency, Symbol Rate and Polarity change accordingly.
- 3. Press"OK ", then you will see the quality bar and the strength bar.
- 4. Under Constellation Analyzer interface (by Frequency), press

[\blacktriangle / \blacktriangledown] to switch between other Frequency of the selected satellite







3.2 DVB-T/T2

the "DVB-T/T2" interface.

 DVB-T/T2

 Auto Search

 Manual Search

 Country
 England

 Antenna Power
 Off

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1. Press [▲ / ▼] on Manual Search and press"OK", then you will see the following menu.

Move cursor to "DVB-T" and press "OK", then you will enter



DVBC		
	> Auto Search	
	Manual Search	
Cable	Full Scan	



3.3 DVB-C

Move cursor to "DVB-C" and press "OK", then you will enter the "DVB-C" interface.

1. Press [▲ / ▼] on Manual Search and press"OK", then you will see the following menu.



3.4 Compass

Move cursor to "Compass" and press "OK" then you will enter the "Compass" interface.

- 1. Before using this function, please calibrate the equipment. By pressing [F1 key] and horizontally rotating to calibrate the equipment.
- Press [◄/▶] to can choose the satellite and it will calculate the Elevation and Azimuth value automatically.
- 3. The red arrow represents the north needle, and the blue arrow represents the south needle
- 4. Note: to use this function, you need to set the local latitude and longitude parameters first. The calculated value is for reference only.

3.5 Spectrum

Move cursor to "Spectrum" and press "OK", then you will enter the "Parameter Setting" interface.

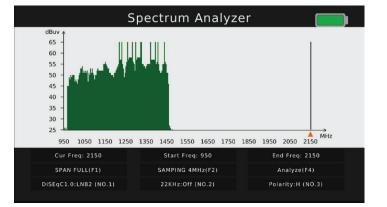
- 1. Press [F1] to switch SPAN of spectrum frequency, FULL is default. The smaller span will show clearer signal status of frequencies.
- 2. Press [F4] to pause current status.
- 3. Press [\blacktriangle / \blacktriangledown] to move power reference position.
- Press [◄ / ▶] to move cursor to select the frequency, the signal strength of the selected frequency will be displayed on the left-top corner.
- 5. DVB-S/DVB-T/DVB-C all support spectrum sub-board function

3.6 Multimedia

Connect your USB and move the cursor to "Multimedia" and press "OK", then you will enter the "USB" interface.

1. Press [▲ / ▼] on Multimedia and press "OK", then you will see the following menu.





USB		
	> Multimedia DB Management	





 Press [◀ / ▶] to select the media you want. Press "OK" to select the file you want to play Music, Photo, Movie and PVR.

- 3. Press [◄/ ▶] to select PVR and press "OK", press [▲/
 ▼] to select the [HBPVR] file and press "OK", then you will see the program you have recorded.
- 4. The next time if you want to restore the factory default and keep the recorded information, you can press Backup to USB.

3.7 Setting

Move cursor to "Setting "and press "OK", then you will enter the "System Setting" interface.

3.7.1 Program

Move cursor to "Program" and press "OK", then you will enter the "program" interface.

1. Press [▲/▼] on Program Edit option and press "OK", enter password: 000000 then you will see the TV list.





ojsten setting	
Program	Picture
EPG	Option
Device Setup	Time
System	USB Upgrade







Moving a service position

- Press [▲/▼] on channel list, select the channels which you want to edit in channel list by pressing [Red/F1] Key.
- 2. Press [▲ / ▼] to move the cursor to the position you want and press the [OK] key.
- 3. Press [EXIT] Key to save the settings.



Lock (Password: 000000)

- Press [▲/▼] on channel list, select the channel which you want to edit in the channel list by pressing [Yellow/ F3] Key.
- 2. Press [Yellow/F3] Key to lock or unlock the channel.
- 3. Press [EXIT] Key to save the settings.



Delete

- Press [▲/▼] in channel list, select the channels which you want to edit in channel list by pressing [Blue/F4] Key.
- 2. Press the [OK] key to confirm to delete the channel.
- 3. Press [EXIT] Key to save the settings.

FAV (Favourite)

- Press [▲/▼] in channel list, select the channels which you want to edit in the channel list by pressing [FAV] Key.
- Press [▲ / ▼] to choose what "Favourite Type" and press the [OK] key.
- 3. Press [EXIT] Key to save the settings.







Skip and rename

3.7.2 EPG

program guide.

Follow the same way to set for Skip or to give a new name.

 Press [▲/▼] on Sort option, here you can Press [◀/
] to select "By Freq", "By Service Name", "Default" or "By Encrypt".

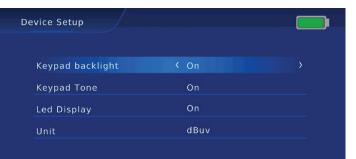
Press [\blacktriangle / \blacktriangledown] on EPG option and press "OK", to see the



rogram Guide			
	101 Canal 9	> Mon. 06 Oct 200	8 14:18
05 Oct 23:00-23:00 06 Oct 23:00-23:00		Canal 9	
		Page: 1 / 0	
OK Book (N	Book list F3	Page Down 🔣 Page Up	

3.7.3	Device	Setup
-------	--------	-------

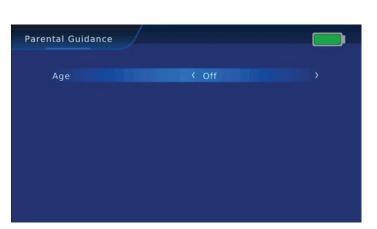
- Press [▲/▼] on "Device Setup" option and press "OK", then you will see the following menu.
- Press [▲/▼] on Keypad backlight, Keypad Tone, or Led Display option, then press [◄/▶] to choose backlight, Keypad Tone or Led Display between "On" & "Off".



3.7.4 System

1. Press [▲/▼] on "System" and press "OK", then you will see the following menu.

System	
Parental Guidance	
Set Password	
Restore Factory Default	
Information	



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3. Press "OK" on Set Password option to reset the user password.

2. Press"OK" to get into the Parental Guidance (the

default password is 000000).

Input Old Password	
Input New Password	
Confirm Password	

4. Press "OK" on Restore Factory Default to Factory Reset.



5. Press "OK" on information option to get the hardware or software version.





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3.7.5 Picture

Press [\blacktriangle / \blacktriangledown] on "Picture" and press "OK", then you will see the following menu. Here you can set the Aspect Ratio, Resolution, TV Format and PQ level.

Picture		
Aspect Ratio	4 16:9 Wide Screen	>
Resolution	720p	
TV Format	PAL	
PQ Level	Default	

3.7.6 Option

- 1. Press [▲ / ▼] on Option and press "OK", then you will see the following menu.
- Press [▲/▼] to choose OSD Language, Subtitle Language or Audio Language you want.

Option		
OSD Language	<pre></pre>	>
Subtitle Language	English	
Audio Language	English	
Digital Audio	РСМ	
Audio Description	25	

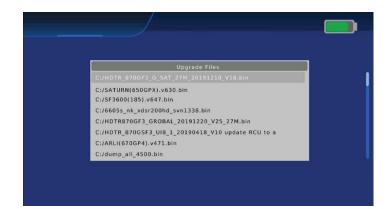
3.7.7 Time

- 1. Press [▲/▼] on Time option and press "OK", then you will see the following menu.
- 2. Press [◀/▶] to select Auto or Manual for Time Offset adjustments and to Choose Time Zone, Date or Time when [Time Offset] is set to Manual.

Time Offset	< Auto	
Sleep	Off	

3.7.8 USB Upgrade

Save the SW onto a FAT32 formatted USB, and move cursor to "USB Upgrade" and press "OK", then you can enter the "Software Update" interface to choose the correct SW to upgrade to.





4 TECHNICAL SPECIFICATIONS

Main Processor 600MHz based CPU Flash Memory 64M Bits DDR SDRAM 1024M Bits DDR SDRAM 1024M Bits Juner/Fronk-end	System Resources				
DDR SDRAM Inter/Front-end DDR-S/DVB-S2 Input Connector Input Connector Input Connector Input Connector Input Connector Signal Level Signal Level Signal Level Signal Level Current: Max500mA Overload Protection DiSEqC Control Version 10/11/12/13,USALS Available Z2KHz Tone Demodulation DiSEqC Control Version 10/11/12/13,USALS Available Z2KHz Tone DVB-TDVB-T2 DVB-C Input Connector IEC-type, Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level S0-09dBµV Impedance T50 DVB-T Power Output (VDC) SV (Maximum 150mA), 12V and 24V (Maximum 350mA) DVB-T Power Output (VDC) SV (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK, 16-QAM, 64-QAM, 256-QAM Bandwidth 6,7,8 MHz Power Charger output Input Voltage Adapter Power Consumption INW MAX Power charger output I2.6V/4000mAh Battery toAraging time 3-6H Battery	Main Processor	600MHz based CPU			
Tuner/Front-end DVBFs/DVB-52 Input Connector F-type, Connector, Male Frequency Range 950H12-2150MHz Signal Level 25-072B/V Impedance 750 LNB Power & Polarization Vertical: +13V Horizontal: +18V Horizontal: +18V Current: Max 500mA Overload Protection DiSEqC Control Version 1.0/1.1/.2/1.3/USALS Available 22KHz Tone Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C Tope Input Connector IEC-type, Connector, Male Input Prequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-103dBµV Impedance 750 DVB-TD VDR-C Tope Power Output (VDC) SV (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK, 8PSK (6-QAM, 26-QAM, 26-QAM Bandwidth 6,78 MHz Power Supply Tope Input Voltage Adapter 100-240V AC 50/60Hz Power Consumption 11W MAX	Flash Memory	64M Bits			
DVB-S/DVB-S2 Input Connector F-type, Connector, Male Frequency Range 950MHz-2150MHz Signal Level 25-107dBjV Impedance 750 LNB Power & Polarization Vertical: +13V DiSEqC Control Vertical: +13V Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C Input Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dByV Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power charger output 14V DC 3.0A Battery 12.6 V/4000mAh Battery tandard discharging time 3-6H Battery standar	DDR SDRAM	1024M Bits			
Input Connector F-type, Connector, Male Frequency Range 950MHz-2150MHz Signal Level 25-107dBjV Impedance 750 LNB Power & Polarization Vertical: +13V Horizontal: +18V Current: Max.500mA DisEqC Control Version 1.0/1.1/1.2/1.3.USALS Available ZXHz Tone Frequency: 231KHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C IEC-type, Connector, Male Input Frequency: 231KHz Impedance DVB-T/DVB-T2 DVB-C IEC-type, Connector, Male Input Frequency: UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBjV Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK, 16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power charger output 14V DC 3.0A Battery tanight time >5H A/V Data	Tuner/Front-end				
Frequency Range 950MHz-2150MHz Signal Level 25-107dBµV Impedance 750 LNB Power & Polarization Vertical: +13V Morizontal: +18W Current: Max.500mA DISEqC Control Version 1.0/1.1/1.2/1.3,USALS Available 22KHz Tone Frequency: 2231KHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C IEC-type, Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Oncage Adapter Input VDtage Adapter 100-240V AC 50/60Hz Power Charging time 3-6H Battery charging time 3-6H Battery charging time 3-6H Battery charging time 3-6H Battery trandard discharging time >5H A/V DAta input/output CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output	DVB-S/DVB-S2				
Signal Level 25-107dBµV Impedance 750 LNB Power & Polarization Vertical: +13V Horizontal: +18V Current: Max.500mA Overload Protection Overload Protection DiSEqC Control Version 1.0/1.1/1.2/1.3,USALS Available 2XHz Tone Frequency: 2231KHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C IEC-type, Connector, Male Input Connector IEC-type, Connector, Male Input Gonnector 30-109dBµV Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power charger output 11W MAX Power charger output 11W MAX Power charger output 14V DC 3.0A Battery 3-6H Battery thanging time 3-6H Battery totarigning time 3-6H A/V IN/OUT CVBS (Remark: AHD/TVI/CVI/CVB	Input Connector	F-type, Connector, Male			
Impedance 750 LNB Power & Polarization Vertical: +13V Horizontal: +18V Current: Max.500mA Overload Protection Overload Protection DiSEqC Control Version 1.0/1.1/1.2/1.3,USALS Available 22KHz Tone Frequency: 223iKHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C Input Frequency: 223iKHz Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Impedance 750 DVB-T Power Output (VDC) SV (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Consumption TIW MAX Power Consumption TIW MAX Power Consumption TW MAX Power Consumption 12.6 V/4000mAh Battery standard discharging time 3-6H Battery standard discharging time 3-5H A/V IN/OUT CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output AUdio output Built-in Loudspeaker	Frequency Range	950MHz~2150MHz			
LNB Power & Polarization Vertical: +13V Horizontal: +18V Current: Max.500mA Overload Protection DiSEqC Control Version 10/11/1.2/1.3,USALS Available 22KHz Tone Frequency: 2231KHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C IEC-type, Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Input Source 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK, 16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power charger output 14V DC 3.0A Battery 3-6H Battery standard discharging time >5H A/V Data input/output Audio Linput/L/R output	Signal Level	25~107dBµV			
Horizontal: +18V Current: Max.500mA Overload Protection DiSEqC Control Version 1.0/1.1/.2/1.3.USALS Available 2XHz Tone Frequency:2231KHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-TZ DVB-T2 DVB-C Input Connector Input Connector IEC-type, Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBJV Impedance 750 DVB-T Power Output (VDC) SV (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power Consumption 11W MAX Power Consumption 11W MAX Power Consumption 11W MAX Power Consumption 11W MAX Power Consumption 126.V/4000mAh Battery standard discharging time 3-6H Battery standard discharging time >SH A/V Data input/Coutput	Impedance	75Ω			
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Overload ProtectionDiSEqC ControlVersion 1.0/11/12/1.3_USALS AvailableDEMEDIATEFrequency: 2231KHzDemodulationQPSK, 8PSKSymbol Rate2-45MspsDVB-T/DVB-T2 DVB-CIEC-type, Connector, MaleInput ConnectorIEC-type, Connector, MaleInput FrequencyUHF: 470-866MHz VHF: 170-230MHzSignal Level30-1094BµVImpedance750DVB-T Power Output (VDC)5V (Maximum 150mA), 12V and 24V (Maximum 350mA)DemodulationQPSK, 16-QAM, 64-QAM, 256-QAMBandwidth6,7,8 MHzPower SupplyInput Voltage AdapterInput Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower Charger output14V DC 3.0ABattery charging time3-6HBattery standard discharging time3-6HBattery standard discharging time3-6HBattery outputUA/V DAS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pUPS TO NOTUp to 1080pUSB1'USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationLCD DisplayLCD Display5 inchSize (WXHxD)210x150x52mm		Horizontal: +18V			
DiSEqC Control Version 1.0/11/1.2/1.3,USALS Available 22KHz Tone Frequency: 2231KHz Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C Input Connector Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7,8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power Consumption 11W MAX Power Consumption 11W MAX Power Charger output 14V DC 3.0A Battery standard discharging time 3-6H Battery standard discharging time 3-5H A/V DAT CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output Audio output Built-in Loudspeaker HD TV OUT Up to 1800 USB 1'USB 2.0 slot Compatible for Host Transport Stream MPEG-2/4 H.265 Supported Audio Codecs* AAC, MP3, WMA, WAV		Current: Max.500mA			
22KHz ToneFrequency: 2231KHzDemodulationQPSK, 8P5KSymbol Rate2-45MspsDVB-T/DVB-T2 DVB-CIEC-type, Connector, MaleInput FrequencyUHF: 470-866MHz VHF: 170-230MHzSignal Level30-109dBµVImpedance750DVB-T Power Output (VDC)5V (Maximum 150mA), 12V and 24V (Maximum 350mA)DemodulationQPSK,16-QAM, 64-QAM, 256-QAMBandwidth6,7,8 MHzPower SupplyInput Voltage AdapterInput Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower charger output14V DC 3.0ABattery12.6V/4000mAhBattery standard discharging time3-6HBattery standard discharging time>5HA/V DUTCVBS outputA/V IN/OUTCVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pHD TV OUTUp to 1080pHD TV INUp to 1080pUSB1'USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationELCD DisplayLCD Display5i nchSize (WXHxD)210x150x52mm		Overload Protection			
Demodulation QPSK, 8PSK Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C Input Connector Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Impedance 75Ω DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Ingut Voltage Adapter 100-240V AC 50/60Hz Power consumption 11W MAX Power consumption 11W MAX Power charger output 14V DC 3.0A Battery 12.6V/4000mAh Battery standard discharging time 3-6H Battery standard discharging time >5H A/V IN/OUT CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output Audio output Built-in Loudspeaker HD TV OUT Up to 1080p HD TV IN Up to 1080p USB 1*USB 2.0 slot Compatible for Host Transport Stream MPEG-2/4 H.265 Supported Audio Codecs* AAC, MP3, WMA, WAV Physical Spe	DiSEqC Control	Version 1.0/1.1/1.2/1.3,USALS Available			
Symbol Rate 2-45Msps DVB-T/DVB-T2 DVB-C IEC-type, Connector, Male Input Connector IEC-type, Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµU Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply Input Voltage Adapter Input Voltage Adapter 100-240V AC 50/60Hz Power Consumption 11W MAX Power Charger output 14V DC 3.0A Battery charging time 3-6H Battery standard discharging time >5H A/V Data input/output CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output Audio output Built-in Loudspeaker HD TV OUT Up to 1080p HD TV OUT Up to 1080p USB 1*USB 2.0 slot Compatible for Host Transport Stream MPEG-2/4 H.264 H.265 Supported Audio Codecs* AAC, MP3, WMA, WAV Physical Specification LCD Display LCD Display 5 inch	22KHz Tone	Frequency: 2231KHz			
DVB-T/DVB-T2 DVB-C Input Connector IEC-type, Connector, Male Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-109dBµV Impedance 750 DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7.8 MHz Power Supply 100-240V AC 50/60Hz Input Voltage Adapter 100-240V AC 50/60Hz Power Consumption 11W MAX Power Consumption 11W MAX Power charger output 14V DC 3.0A Battery 12.6V/4000mAh Battery charging time 3-6H Battery standard discharging time >5H A/V Data input/output CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output Aludio utput Built-in Loudspeaker HD TV OUT Up to 1080p USB 1*USB 2.0 slot Compatible for Host Transport Stream MPEG-2/4 H.264 H.265 Supported Audio Codecs* AAC, MP3, WMA, WAV Physical Specification LCD Display LCD Display 5 inch Size (WXHx	Demodulation	QPSK, 8PSK			
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Input Frequency UHF: 470-866MHz VHF: 170-230MHz Signal Level 30-1094BμV Impedance 75Ω DVB-T Power Output (VDC) 5V (Maximum 150mA), 12V and 24V (Maximum 350mA) Demodulation QPSK,16-QAM, 64-QAM, 256-QAM Bandwidth 6,7,8 MHz Power Supply 100-240V AC 50/60Hz Input Voltage Adapter 100-240V AC 50/60Hz Power Consumption 11W MAX Power charger output 14V DC 3.0A Battery 12.6V/4000mAh Battery standard discharging time 3-6H A/V Data input/output VIN/OUT A/V IN/OUT CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBs output Audio output Built-in Loudspeaker HD TV OUT Up to 1080p UBS 1*USB 2.0 slot Compatible for Host Transport Stream MPEG-2/4 H.264 H.265 Supported Audio Codecs* AAC, MP3, WMA, WAV Physical Specification 210x150x52mm	DVB-T/DVB-T2 DVB-C				
Signal Level30-109dBµVImpedance750DVB-T Power Output (VDC)5V (Maximum 150mA), 12V and 24V (Maximum 350mA)DemodulationQPSK,16-QAM, 64-QAM, 256-QAMBandwidth6,7,8 MHzPower SupplyInput Voltage AdapterInput Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower consumption11W MAXPower charger output14V DC 3.0ABattery3-6HBattery standard discharging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pHD TV OUTUp to 1080pUSB1'USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationEinchLCD Display5 inchSize (WxHxD)210x150x52mm	Input Connector	IEC-type, Connector, Male			
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DemodulationQPSK,16-QAM, 64-QAM, 256-QAMBandwidth6,7,8 MHzPower Supply100-240V AC 50/60HzInput Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower charger output14V DC 3.0ABattery12.6V/4000mAhBattery standard discharging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationLCD DisplayCize (WxHxD)210x150x52mm	Impedance	75Ω			
Bandwidth6,7,8 MHzPower SupplyInput Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower charger output14V DC 3.0ABattery12.6V/4000mAhBattery charging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationS inchSize (WxHxD)210x150x52mm	DVB-T Power Output (VDC)	5V (Maximum 150mA), 12V and 24V (Maximum 350mA)			
Bandwidth6,7,8 MHzPower SupplyInput Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower charger output14V DC 3.0ABattery12.6V/4000mAhBattery charging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationS inchSize (WxHxD)210x150x52mm	Demodulation	QPSK,16-QAM, 64-QAM, 256-QAM			
Input Voltage Adapter100-240V AC 50/60HzPower Consumption11W MAXPower charger output14V DC 3.0ABattery12.6V/4000mAhBattery charging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pHD TV INUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationECD DisplayLCD Display5 inchSize (WxHxD)210x150x52mm	Bandwidth	6,7,8 MHz			
Power Consumption11W MAXPower charger output14V DC 3.0ABattery12.6V/4000mAhBattery charging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pHD TV INUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationLCD DisplayLCD Display5 inchSize (WxHxD)210x150x52mm	Power Supply				
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Battery charging time3-6HBattery standard discharging time>5HA/V Data input/outputCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputA/V IN/OUTCVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS outputAudio outputBuilt-in LoudspeakerHD TV OUTUp to 1080pHD TV INUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationEinchLCD Display5 inchSize (WxHxD)210x150x52mm	Power charger output	14V DC 3.0A			
Battery standard discharging time >5H A/V Data input/output CVBS (Remark: AHD/TVI/CVI/CVBS is optional) input/ CVBS output Audio output Built-in Loudspeaker HD TV OUT Up to 1080p HD TV IN Up to 1080p USB 1*USB 2.0 slot Compatible for Host Transport Stream MPEG-2/4 H.264 H.265 Supported Audio Codecs* AAC, MP3, WMA, WAV Physical Specification 5 inch LCD Display 5 inch Size (WxHxD) 210x150x52mm	Battery	12.6V/4000mAh			
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HD TV OUTUp to 1080pHD TV INUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationECD DisplayLCD Display5 inchSize (WxHxD)210x150x52mm		Audio L input/ L/R output			
HD TV INUp to 1080pUSB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationECD DisplayLCD Display5 inchSize (WxHxD)210x150x52mm	Audio output	Built-in Loudspeaker			
USB1*USB 2.0 slot Compatible for HostTransport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationECD DisplayLCD Display5 inchSize (WxHxD)210x150x52mm	HD TV OUT	Up to 1080p			
Transport StreamMPEG-2/4 H.264 H.265Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationECD DisplayLCD Display5 inchSize (WxHxD)210x150x52mm	HD TV IN	Up to 1080p			
Supported Audio Codecs*AAC, MP3, WMA, WAVPhysical SpecificationLCD DisplaySize (WxHxD)210x150x52mm		1*USB 2.0 slot Compatible for Host			
Physical Specification LCD Display 5 inch Size (WxHxD) 210x150x52mm	· · · ·	MPEG-2/4 H.264 H.265			
LCD Display5 inchSize (WxHxD)210x150x52mm	Supported Audio Codecs*	AAC, MP3, WMA, WAV			
Size (WxHxD) 210x150x52mm					
	Size (WxHxD)				
	Net Weight	0.93Kg			
Operating Temperature 0°C ~ + 45°C	Operating Temperature	0°C ~ + 45°C			
Storage Temperature -10°C ~ + 70°C		-10°C ~ + 70°C			
Storage Humidity 5%~95% RH (Non-Condensing)	Storage Humidity	5%~95% RH (Non-Condensing)			

* Not all audio formats supported. Sound may not be available on all select channels.