



**i-CAN S490**

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# **Technical Requirements Summary**

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## 1 INTRODUCTION

**i-CAN S490** is a new generation **HD HEVC DVB-S2** product in **Set-Top-Box (STB)** form factor that is dedicated for the Italian Tivùsat retail market. It is compatible with Italian UHD Book 1.0.1 and Tivusat market and technical requirements. This product will complement the existing portfolio of FTA zappers and Tivùsat decoders.

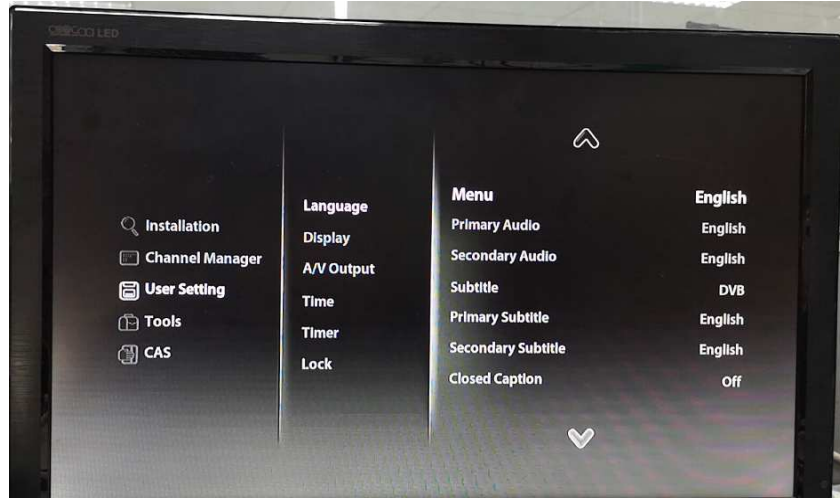
## 2 PRODUCT SPECIFICATION


### 2.1 General

ID	Item	Description
A.	Chipset	Vendor: Ali Model: <b>M3528</b>
B.	RAM Memory	<b>256MB DDR3</b>
C.	Flash Memory	<b>128MB Nand</b> Flash
D.	Mass Storage	External via USB (2.0 500 mA)
E.	Front-End	Single <b>DVB-S2</b> <ul style="list-style-type: none"> <li>- Compliant with UHD-BOOK 1.0.1 front end requirements (HD SAT receiver only, DVB-S2X not required)</li> </ul> DiSEqC 1.2 support Unicable v1 (SCR) and v2 (DCSS) support
F.	Connectivity	<b>Ethernet</b> for basic applications: Weather forecast
G.	CAS & DRM, Security	Nagra Merlin <ul style="list-style-type: none"> <li>- NASC 3.0 Tier 3</li> <li>- CAK7 DLK-Merlin 2.13.1 - (CAK_ICME 2.13.1)</li> <li>- DALAPI 7.17.1</li> </ul> No DRM support
H.	Software Stack	SW featuring: <ul style="list-style-type: none"> <li>- First time automatic installation (needs modification to be in line with HD Book : LCN, Parental PIN selection)</li> <li>- HD Zapper profile, Tivùsat STB specification 2019, version 1.0, compliant (mostly related specific EPG protocol through the DSMCC, Nagra messaging, relevant chapters highlighted)</li> <li>- UHD-BOOK 1.0.1 compliant (excluding HbbTV and any HbbTV Connected features, relevant chapters highlighted)</li> <li>- Italian and English languages</li> <li>- Tivùsat LCN ordering</li> <li>- OTA update</li> </ul>

- USB Media Player with codecs limited to the list of codecs supported in main Menu.
- USB PVR
- Connected Applications: Weather forecast
- TivuSAT Logo and colours to be applied to the Menu
- I-CAN Splash screen at boot to be added
- Standby timer to be added (CE compliance requirement)

I. **UI screenshots  
(indicative only)**



		
<p>J.</p>	<p>Operating Conditions</p>	<p>Operating Temperature Range from 5 to 40*C</p>
<p>K.</p>	<p>Annual Failure Rate</p>	<p>The annual failure rate during the warrant period shall be no higher than 2%</p>

**2.2 Decoder**


ID	Item	Description
A.	Classification	HD HEVC (H.265)
B.	Video Output	SD: PAL (576i,576P) HD: 720p, 1080i, 1080p

C.	Video Decoders	(1) MPEG-2: MP@ML, MP@HL (2) H.264 p.10: MP@L4.1, HP@L4.2 (3) H.265 (HEVC) Main 10 @ Level 4.1
D.	Audio Decoders	(1) MPEG-1 layer 1, 2, 3 (MP3) (2) Dolby Digital and Dolby Digital Plus (3) HE AAC

## 2.3 Interfaces

ID	Item	Description	Location
A.	Display	N/A	N/A
B.	Indicators	1 x Dual LED (Red: Standby Green: In Operation)	Front panel
C.	Buttons	3 key (CH+/CH-/Standby)	Front panel
D.	I/R	1 x I/R Receiver	Front panel
E.	RF In (DVB-S2)	1x IEC 60169-2 Connector (F-female) for DST RF Input	Rear panel
F.	Ethernet	1x Ethernet Port for fast Ethernet	Rear panel
G.	HDMI	1x HDMI connector (HDMI 1.4 with HDCP)	Rear panel
H.	S/PDIF	1 x Optical S/PDIF connector	Rear panel
I.	Analog A/V	3 x RCA (Audio L+R, Video)	Rear panel
J.	Smart Card	1 Smart Card Reader	Rear panel
K.	Power Input	12V -1.5A	Rear panel
L.	USB	USB 2.0 with 500mA	Rear panel

## 2.4 Enclosure

ID	Item	Description
A.	Dimensions	180x110x42mm
B.	Cooling	Passive (No Fan)
C.	Outlook (Indicative only, Ethernet port to be populated. Printings and LOGO are subject to change).	 <p>The top view shows a black, rectangular enclosure with a textured top surface and ventilation grilles on the front and sides. The front panel features a power button, a red LED indicator, and the HDMI and DOLBY AUDIO logos.</p> <p>The rear view shows a variety of ports: RF IN, a USB port, an HDMI port, a VIDEO port, L and R audio ports, S/PDIF, and a TV 1.5A power input. A 'Chip down' indicator is also present. A small warning label is visible above the ports.</p>
D.	Operation	Horizontal operation (like typical STB, nearby TV).

## 2.5 Certifications & Compliance

ID	Item	Description
A.	Regulatory	CE (RED, RoHS, ErP, StandBy Power consumption) WEEE (waste bin logo) Batteries Directive REACH Regulation
B.	Front-End	DVB-S2 (ETS EN 302 307) compliant with UHD-BOOK 1.0.1
C.	Interface	HDMI /HDCP (HDMI.org) (Self-Certification) Dolby (Self-Certification)

D.	Tivùsat	STB shall be compliant with HD Zapper profile of Tivùsat STB specification 2019, version 1.0 STB shall pass Tivusat certification.
E.	CA	Nagra NASC 3 Tier 3

### 3 STANDARD ACCESSORIES & PACKAGING

ID	Item	Description
A.	Power Supply Unit (PSU)	External
B.	Remote Control Unit (RCU)	
C.	Batteries	2xAAA alkaline batteries
D.	Documents	A5 Size, BW, 20 pages
E.	Cables	RCA to Scart Adapter 1.5m long
F.	Packaging	Individual carton ("Giftbox"), with cushioning, accommodating single product unit and all accessories, printed in colour, glossy. Customer art design to be provided following Tivusat rules.



**4 STANDARD ROYALTIES & LICENSES**

ID	Item	Description
A.	MPEG-2	MPEG-2 Patent Portfolio
B.	AVC	Advanced Video Codec
C.	HEVC	High-Efficiency Video Codec
D.	MPEG Audio	MPEG Audio 2 Channel
E.	Dolby Audio	Dolby Digital & Dolby Digital Plus
F.	MP3	MPEG 1 Audio Layer 3
G.	HE-AAC	High Efficiency Audio Codec
H.	HDMI	HDMI Licensing
I.	DVB-S2	DVB-S2 PPL
J.	CAS	Nagra Merlin

Above royalties and licenses are included in the standard product offer. Any other is subject to license and commercial agreement.

**5 DOCUMENT APPROVAL**

ADB reserves the right to modify the design of described product, as long as the modification will not deteriorate parameters beyond the range provided by this specification.

Parties signed hereunder hereby express mutual approval of product specification described in this document. After document sign-off changes are still possible, however:

- Any change request or modification to the agreed specifications after this document sign-off will initiate a process of evaluation and assessment of schedule and project/product cost impact.
- If a change is requested that presents any impact on schedule or project/product cost, Parties shall communicate to take a decision whether such a change should be implemented or discarded.

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*Name (Customer)*

*Date*

*Signature*

## Document History

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Ver.	Author	Release date	Change log
0.1	C.Clementi	2019-07-22	Initial Version
0.4	C.Clementi B.Bulczynski	2019-11-05	Revised version. To avoid misunderstanding requirement of Tivusat certification has been highlighted.

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