

THE PROFESSIONAL & ACCURATE ANALYZER

mod. **HD FLASH STCO**



**Automatic, Fast**

- **DVB-T2** opt.
- **OPTIC INPUT** opt.
- **FULL MPEG2 & 4 SD & HD**
- **REAL TIME SPECTRUM** with **MAX HOLD**
- **LCN PROGRAM CODE**

- **MER Versus CARRIERS MEASUR.** opt.
- **TOUCHSCREEN** opt.
- **ECHOES, MICROECHOES & PREECHOES** in REAL TIME
- **CONDITIONAL ACCESS**
- **8h LI-ION POL. BATTERIES**

**RIGHT SIDE**



- 1 = Remote Power Supply switch - DC at RF IN ON/OFF
- 2 = IF/RF input connector, type "F" 75 Ω interchangeable
- 3 = Optic Input connector, TC-ST & SC interchangeable (opt.)
- 4 = Common Interface Slot for CAM module

**LEFT SIDE**



- 5 = Power Supply Input (12 V DC - 3A)
- 6 = Analog Audio / Video Input connector
- 7 = Analog Audio / Video Output connector
- 8 = HDMI output connector
- 9 = USB OTG micro connector for SW upgrades and memory stick

## HD FLASH MAIN FEATURES

DVB-S & S2 DVB-T/H & T2 M-PLP/DVB-C/(C2 opt.), Analog Radio TV & DOCSIS D.S.

**COMBINED HD PROFESSIONAL ANALYZER, 4-2.250 MHz, for SAT QPSK/8PSK - TV COFDM & CATV QAM signals, with MPEG-2/4 H264 decoder and Analog TV Pictures & Radio**

- Pre-memorized SAT transponder navigation, can be upgraded but not cancelled, all the main satellite and TV channel plans worldwide
- Assisted satellite dish pointing, double input (DUAL LNB) and sat finder functions
- All DiSEqC commands, SCR with automatic search, USALS motor protocol
- MEASUREMENTS: MER, PER, LDPC, BCH, aBER, bBER, EVM, ECHOES, Noise Margin, Level/Power, Real time spectrum analyzer and constellation visualization
- CATV MEASUREMENTS: DOCSIS downstream, INGRESS mode, LEAKAGE mode, BARS SCAN and TILT
- Optional: ATSC 8VSB for USA, or GB20600-2006 single and multicarriers for CHINA, or ISDB-T for JAPAN and BRAZIL, etc.
- **HW upgrades in factory: DVB-C2 (up to 31.12.2013)**



## HD FLASH MEASUREMENT EXAMPLES



DVB-T2 rotated Constellation 256 QAM mod., on the right relative modulation parameters & M-PLP



DVB-S2 multistream Constellation 8PSK mod., on the right relative modulation parameters



ECHO MEASUREMENT in SFN networks, with impulse response in real time, green area shows the guard interval



MICROECHO MEASUREMENT in SFN networks, with impulse response in real time and relative guard interval



Spectrum in real time, fast and super-fast with memory peak. **Detects and memorizes all the details for you.**



All the measurements, A/V PID, the picture and settings on one screen



Bars Scan TV & CATV function from 10 to 100 channels  
█ = analog █ = digital



MER Versus CARRIER MER measurement for carriers (optional)

## HD FLASH MAIN FUNCTIONS

*For technical specifications see product cross reference table*





- TV and CATV TUNER, extended band, 4-1000 MHz
- SAT TUNER, extended band, 930-2250 MHz
- GSM extended band, 860-1000 MHz for telephone repeater installation, see application note
- **LTE FILTER, manual or automatic opt.**
- Exclusive patented **ROVER AUTODISCOVERY** system: auto-matically detects and selects analog and digital COFDM/QAM TV signals in both measurement and spectrum mode
- Spectrum in real time, fast and super fast with memory peak
- Dual spectrum, Single and Multichannel simultaneously opt.
- **Detects, measures and SHOWS pictures of MPEG 2 and 4 H264 HD High Definition programs**
- **All the measurements, program lists, A/V PIDs, NET ID, LCN, settings and pictures on one screen**
- **Automatic quality analysis: FAIL-MARG-PASS and ITU Q1/Q5 opt.**
- HELP function automatically identifies all the signals with any digital modulation SAT, TV and CATV
- **Barscan TV and CATV function from 10 to 100 channels on one screen**
- Automemory, Manual memory and Datalogger functions
- TV & IF SAT test ICT FENITEL Spain
- **Stereo, Audio AAC supplied, DOLBY optional**
- New 7" TFT display, 16:10, high resolution
- **Audio Video Input/Output (analog)**
- **Slot for Conditional Access Common Interface**
- **CAM for C.I. plus opt.**
- Weighs only 2.5 kg, dim: H 11.5 x L 24.5 x D 18 cm
- **LI-ION-POLIMER 10A battery with 8 hour battery capacity**
- Battery test function, to regenerate and measure the batteries and calibrate the battery indicator
- Supplied with transport padded bag, accessories, mains and vehicle battery chargers, USB-OTG and Audio Video cables
- Free SW upgradeable on-line (USB-2 OTG socket)

Code	<b>HD FLASH "HW" OPTIONS</b>
<b>HD FL. TOUCH</b>	HW and SW for TOUCH-SCREEN function for mod. HD FLASH
<b>HD OPTIC INPUT</b>	HW and SW for TV & SAT optic input with interchangeable "FC", "ST", "SC" connectors for optic power measurements and spectrum
<b>HD "LTE" FILTER</b>	HW and SW for built-in and selectable rejection filters to select and attenuate "LTE" Telecom TX
<b>HD MULTIMEASURES TV</b>	HW and SW for simultaneous representation of: MEASUREMENT, PICTURES, SPECTRUM, CONSTELLATION, ECHOES
<b>HD CAM Plus</b>	HW, CAM for C.I. Plus (only for some standards)
<b>HD AUDIO DOLBY +</b>	HW and SW for Dolby AC3-AC3E-DD+ and "AAC" Audio
<b>HD DVB-C2</b>	HW and SW for DVB-C2, factory upgrade
<b>HD ATSC USA</b>	HW and SW for 8VSB USA, specify when ordering *
<b>HD GB20600 CHINA</b>	HW and SW for CHINA Single and Multicarriers, specify when ordering *
<b>HD ISDB-T JAPAN BRASIL</b>	HW and SW for Standards in Japan and Brazil, specify when ordering *

\* Specify one standard when ordering, only one TV standard per country

Code	<b>HD FLASH "APP" (SW) OPTIONS</b>
<b>HD SATEXPERT FUNCTION</b>	APP, To point a satellite dish in 1 second
<b>RIGHTS-SMART-1</b>	APP for Authorization code for the SMART PRO. SW, PC management SW, to create plans & download measurements
<b>DVB-T2</b>	APP for DVB-T2. Demodulator for second generation Terrestrial TV
<b>HD MER versus CARRIER</b>	APP for MER measurement for DVB-T & T2











FEATURES FUNZIONI FUNKTIONEN FUNCIONES FONCTIONS		HD PRO TAB <sup>STC</sup>	HD PRO <sup>STC</sup>	HD TOUCH <sup>STC</sup>	HD FLASH <sup>STC</sup>	
EXCLUSIVE ROVER INSTRUM. FUNCTIONS	COMPLETE, SIMPLE, EASY-TO-USE (TOUCH)	•	•	•	opt.	
	16:10 LED TFT DISPLAY, HIGH BRIGHTNESS	10,2" HD	7" HD	7" HD	7" HD	
	"LI-ION-POLIMER" BATTERIES from 10A, hours capacity	6 h	8 h	8 h	8 h	
	TOUCH &/or CLASSIC &/or COMBINED COMMANDS	COMBINED	COMBINED	ALL TOUCH	COMBINED	
	MAXIMUM ERGONOMICS and OPERATING SAFETY	•	•	•	•	
	SIX SELECTABLE LANGUAGES: UK-IT-FR-ES-DE-PO	•	•	•	•	
	MULTI MEASUREMENTS: Spect, Meas, Picture, Echoes, Constell.	opt.	opt.	opt.	opt.	
	AUTODISCOVERY Analog./Digital and TV/CATV	•	•	•	•	
	AUTOQUALITY Fail-Marginal-Pass	•	•	•	•	
	AUTOMEMORY Automatic memorization TV and CATV	•	•	•	•	
	MANUMEMORY Mixed Memoriz., SAT-TV-CATV and RD	•	•	•	•	
	HELP FUNCTION with Auto lock in SAT, CATV and SPECTRUM	•	•	•	•	
	SAT-TV-CATV DIRECT SELECTION	3 KEYS	3 KEYS	3 ICONS	3 KEYS	
	TV & CATV SEPARATE CHANNEL PLANS	•	•	•	•	
	DVB-S/S2 AUTOMATIC SELECTION	•	•	•	•	
	DVB-T/T2 AUTOMATIC SELECTION	•	•	•	•	
	SEPARATE MENUS for EACH FUNCTION	•	•	•	•	
	DRIVE ALL LNB's & MULTISWITCHES DiSEqC & SCR	•	•	•	•	
	ALL MAIN WORLDWIDE SATELLITES & TRANSPONDERS PRE-STORED	•	•	•	•	
	SATEXPERT FUNCTION, SAT pointing in 1 sec.	opt.	opt.	opt.	opt.	
ALPHANUMERICAL KEYBOARD for CH, TR, FREQ. selection	KEYS & ICONS	KEYS & ICONS	ICONS	KEYS & ICONS		
DISPLAY BACKGROUND COLOR SELECTION	•	•	•	•		
SHOCK-PROOF & RAIN-PROOF HOUSING, supplied with transport bag	•	•	•	•		
BANDS	Extended SAT BAND - MHz	•	930 – 2.250	930 – 2.250	930 – 2.250	
	TV & RD BAND - MHz	•	41 – 887	41 – 887	41 – 887	
	CATV extended BAND & return path - MHz	•	4 – 1.000	4 – 1.000	4 – 1.000	
	GSM TELECOM BAND - MHz	•	860 – 1.000	860 – 1.000	860 – 1.000	
RF FILTERS	REJECTION FILTERS for "LTE" BAND - MHz	790 – 862 opt.	790 – 862 opt.	790 – 862 opt.	790 – 862 opt.	
CONNECT.	INTERCHANGEABLE RF CONNECTOR	DUAL:"N"50Ω & "F"75Ω	FIX "N" 50 Ω	"F" 75 Ω	"F" 75 Ω	
OPTICS	OPTICAL INPUT, FC, ST, SC INTERCHANGEABLE CONNECTOR	—	—	opt.	opt.	
WORLD STANDARD CATS	SAT	DVB-S	•	•	•	•
		DVB-S2	•	•	•	•
		DVB-S2 MULTISTREAM	•	•	—	—
	TV	DVB-T	•	•	•	•
		DVB-T2	•	•	•	opt.
		ATSC USA	opt.	opt.	opt.	opt.
		GB20600 CHINA	opt.	opt.	opt.	opt.
	ISDB-T JAPAN & BRAZIL	opt.	opt.	opt.	opt.	
	ANALOG TV WW STANDARD "CCIR" B-G-D-K-L-M-N	•	•	•	•	
	CATV	DVB-C & annex A	•	•	•	•
DVB-C & annex B		opt.	opt.	opt.	opt.	
DVB-C2		opt.	opt.	opt.	opt.	
VIDEO	MPEG 2 SD	•	•	•	•	
	MPEG 2 & 4 HD	•	•	•	•	
	HDMI OUTPUT	•	•	•	•	
	ANALOG VIDEO INPUT	•	•	•	•	
	ANALOG VIDEO OUTPUT	•	•	•	•	
AUDIO	"AAC" AUDIO	•	•	•	•	
	"DOLBY+" AUDIO	opt.	opt.	opt.	opt.	
	ANALOG AUDIO INPUT	•	•	•	•	
	ANALOG AUDIO OUTPUT	•	•	•	•	
TRANSP. STREAM	T.S. ASI INPUT	•	•	opt.	—	
	T.S. ASI OUTPUT (Decoded via C.I.)	•	•	opt.	—	
	T.S. READER/RECORDER via LAN/PC	opt.	opt.	opt.	—	
	INTERNAL T.S. ANALYZER	opt.	opt.	opt.	—	
GPS	C.I. DESCRAMBLER	•	•	•	•	
	GPS RECEIVER USB	opt.	opt.	opt.	—	
	10 MHz from GPS INPUT	opt.	opt.	—	—	
LAN. IP	1 PPS from GPS INPUT	opt.	opt.	—	—	
	LAN, IP to ASI & ASI to IP	—	LAN (IPTV opt.)	•	—	
OTHERS	USB On The GO for MEMORY STICK	•	•	•	•	
	Free SW UPGRADES	•	•	•	•	
	BATTERY TEST FUNCTION	•	•	•	•	
	BATTERY SAVE FUNCTION	•	•	•	•	
	DiSEqC, SCR, USALS MOTOR	•	•	•	•	

<b>MEASUREMENTS</b> <b>MISURE</b> <b>MASSNAHMEN</b> <b>MEDIDAS</b> <b>MESURES</b>		<b>HD PRO TAB<sub>STC</sub></b> 	<b>HD PRO<sub>STC</sub></b> 	<b>HD TOUCH<sub>STC</sub></b> 	<b>HD FLASH<sub>STC</sub></b> 
<b>EXCLUSIVE ROVER INSTRUM. MEASUREMENT</b>	MAXIMUM MEASUREMENT SPEED & CHAN/FREQ. SELECTION	●	●	●	●
	REAL TIME SPECTRUM with MAX MEMORY PEAK	●	●	●	●
	MULTI MEASUREMENTS: Spect, Meas, Picture, Echoes, Constell	● opt.	● opt.	● opt.	● opt.
	AUTOMATIC MEASUREMENTS: DIG. Power/ANALOG Level	AUTO Selection	AUTO Selection	AUTO Selection	AUTO Selection
	NUMERICAL MEAS & LINEAR with BARS and with MEMORY PEAK	●	●	●	●
	BARSCAN & TILT, LEVEL BAR CHART from 1 to 100 Channels	●	●	●	●
	MAX READING CLARITY of MEASUREMENT PARAMETERS	●	●	●	●
	ANALYSIS of LOSSES in DISTRIBUTION NETWORKS SAT-TV-CATV	●	●	●	●
	PROFESSIONAL MEAS for BROADCASTERS & MANUFACTURERS	●	●	—	—
	ECHOES-PREECHOES-MICROECHOES in real time	●	●	●	●
	SUGGESTED MEASUREMENT VALUES printed on lightshield	●	●	●	●
	CATV MEASUREMENTS: LEAKAGE, INGRESS, RETURN PATH	●	●	●	●
	REFLECTOMETER MEAS. for COAX CABLES (Interruption Distance)	opt.	opt.	opt.	opt.
	DVB-S/S2	up to 25 dB ± 1	up to 25 dB ± 1	up to 25 dB ± 1	up to 25 dB ± 1
<b>MER MEASUREMENT</b>	DVB-T/T2	up to 42 dB ± 1	up to 42 dB ± 1	up to 38 dB ± 1	up to 36 dB ± 1
	DVB-C/C2	up to 40 dB ± 1	up to 40 dB ± 1	up to 40 dB ± 1	up to 38 dB ± 1
<b>DVB (S-T-C) MEASUREMENT</b>	MER versus CARRIERS in DVB-T & T2	●	●	●	opt.
	bBER (pre) - aBER MEASUREMENT (Post Error Correction)	●	●	●	●
	CONTINUOUS ERROR COUNTER	●	●	●	●
	NOISE MARGIN MEASUREMENT, SAT, TV & CATV	●	●	●	●
	AUTOMATIC QUALITY MEASUREMENT (Fail, Marginal, Pass)	● AUTOQUALITY	● AUTOQUALITY	● AUTOQUALITY	● AUTOQUALITY
	CONSTELLATION REPRESENTATION with ZOOM	●	●	●	●
<b>DVB-2 (S2-T2-C2) MEASUREMENT</b>	ECHOES-PREECHOES-MICROECHOES REPRESENTATION in real time	●	●	●	●
	NET ID, CID, NID, TSID & LCN TABLES	●	●	●	●
	PER (packet error ratio)	●	●	●	●
	LDPC (post error correction)	●	●	●	●
	BCH (pre error correction)	●	●	●	●
	CONTINUOUS ERROR COUNTER	●	●	●	●
	AUTOMATIC QUALITY MEASUREMENT (Fail, Marginal, Pass)	AUTOQUALITY	AUTOQUALITY	AUTOQUALITY	AUTOQUALITY
	CONSTELLATION REPRESENTATION with ZOOM & ROTATION	●	●	●	●
	ECHOES-PREECHOES-MICROECHOES REPRESENTATION in real time	●	●	●	●
NET ID, CID, NID, TSID & LCN TABLES	●	●	●	●	
MULTI PLP (T2) SELECTION	●	●	●	●	
LEVEL MEASUREMENT, Simultaneous with Picture & digital Meas	up to 126 dBμV	up to 126 dBμV	up to 126 dBμV	up to 126 dBμV	
<b>LEVEL-POWER MEASUREMENT</b>	Average POWER MEASURE, Simultaneous with Picture & digital Meas	up to 126 dBμV	up to 126 dBμV	up to 126 dBμV	up to 126 dBμV
	REAL TIME SPECTRUM with MEMORY PEAK and AUTORANGING	up to 126 dBμV	up to 126 dBμV	up to 126 dBμV	up to 126 dBμV
<b>SPECT ANALYSIS</b>	SELECTABLE SPECTRUM SPEED (Sweep Rate)	●	●	●	●
	POSSIBILITY of STORING SAT, TV & CATV SPECTRUMS	●	●	●	●
	DYNAMIC RANGE TV SPECT 60 dB, SELECT. 1-2-5-10 dB/DIV.	●	●	●	●
	SAT/TV/CATV SEPARATE SPAN VALUE	●	●	●	●
	SPECTRUM VIEW SELECTION: Full or Contours	●	●	●	●
<b>OPTIC MEASUR (opt.)</b>	SPECIAL FUNCTIONS Δ MRK & BW for Filter Calibration	●	●	●	●
	OPTIC POWER MEASUREMENTS	●	●	● opt.	● opt.
	OPTIC LOSS AUTOMATIC CALCULATION	—	—	● opt.	● opt.
	OPTIC/ELECTRIC CONVERTER for Spect & Meas, SAT & CATV	—	—	● opt.	● opt.
<b>TRANSPORT STREAM</b>	INTERCHANGEABLE FC-ST-SC OPTICAL CONNECTOR	—	—	● opt.	● opt.
	T.S. ANALYZER/READER with ASI IN/OUT opt.	● opt. via LAN	● opt. via LAN	● opt. via LAN	—
	INTERNAL T.S. ANALYZER (FPGA)	● opt.	● opt.	—	—
	Video & Audio RATE	●	●	●	●
<b>LCN</b>	LCN program numbers list	●	●	●	●
<b>IP</b>	IP to ASI & ASI to IP Encapsul. & Measurements	—	● opt.	—	—

# "HD FAMILY" SAT-TV-CATV & OPTIC METER - Technical Specifications

		MAIN SPECIFICATIONS											
		SIZE (mm) H-L-D	115x245x180	115x245x180	115x245x180	115x245x180	225x130x65	165x225x80	165x225x80	165x225x80	165x225x80	165x225x80	
		WEIGHT (Kg)	3	2.5	2.5	2.5	1.6	1.4	1.2	1.2	1.2	1.2	
		Soft Bag Protection	●	●	●	●	●	●	●	●	●	●	
		Battery Duration (hours)	6 hours	8 hours	8 hours	8/10 hours	6 hours	6 hours	4 hours	4 hours	4 hours	4 hours	
		Graphics Display Multi-language	●	●	●	●	●	●	●	●	●	●	
		TFT Color Display	10" Color 16:10 TOUCH SCREEN	7" Color 16:10 TOUCH SCREEN	7" Color 16:10 TOUCH SCREEN	7" Color 16:10	4,3" Color 16:10	3,5" Color 4:3					
MEMORY		Total Logger	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	
		PROGS per PLAN	199	199	199	199	199	199	199	199	199	199	199
		Total PLANS	99	99	99	99	99	99	99	99	99	99	99
		Tuning System and NAVIGATION	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	
		Level Accuracy (dB)	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	
		Dynamic Range dBuV-(dBmV-dBm)	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 126 TV	30 - 115 SAT 5 - 115 TV	30 - 115 SAT 5 - 115 TV	30 - 115 SAT 5 - 115 TV	30 - 115 SAT 5 - 115 TV	30 - 115 SAT 5 - 115 TV	30 - 115 SAT 5 - 115 TV	
SPECIAL FUNCTIONS		USB & SW Upgrades via Internet	● USB2 O.T.G.	● USB2 O.T.G.	● USB2 O.T.G.	● USB2 O.T.G.	● USB2	● USB2	● USB2	● USB2	● USB2	● USB2	
		NAVIGATION ENCODER & NUMERIC KEYPAD	●	●	●	●	●	●	●	●	●	●	●
		TRANSPONDER DIRECT NAVIGATION	●	●	●	●	●	●	●	●	●	●	●
		NETWORK DATA & PROGRAM. NAMES	●	●	●	●	●	●	●	●	●	●	●
		TV PROGRAMS AUTOMEMORY	●	●	●	●	●	●	●	●	●	●	●
		DRIVER for LNB S.C.R.	●	●	●	●	●	●	●	●	●	●	●
		DiSEqC a-b-c-d & USALS MOTOR	●	●	●	●	●	●	●	●	●	●	●
		Dual LNB SAT POINTER	●	●	●	●	●	●	●	●	●	●	●
		SAT EXPERT	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.
		REMOTE POWER SUPPLY VOLTAGES	●	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V
		BARSCAN and TILT	●	●	●	●	●	●	●	●	●	●	●
		INGRESS and LEAKAGE	●	●	●	●	●	●	●	●	●	●	●
		AUDIO-VIDEO		CVBS & HDMI	●	●	●	●	●	●	●	●	●
DIRECT CONDIT. ACCESS SYSTEM	●			●	●	●	●	●	●	●	●	●	●
AN. TV SOUND and RADIO	●			●	●	●	●	●	●	●	●	●	●
ANALOG TV PICT	●			●	●	●	●	●	●	Network Id PROG & PID only	Network Id PROG & PID only	Network Id PROG & PID only	Network Id PROG & PID only
MPEG2 & 4 HD DECODER	●			●	●	●	●	●	●	Network Id PROG & PID only	Network Id PROG & PID only	Network Id PROG & PID only	Network Id PROG & PID only
MPEG2 DECODER	●			●	●	●	●	●	●	●	●	●	●
MEASUREMENTS		SPECTRUM ANALYSIS with MEMORY PEAK	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	● REAL TIME	
		DIGITAL QUALITY FAIL-MARG-PASS	●	●	●	●	●	●	●	●	●	●	●
		CONSTELLATION & REAL TIME ECHOS	●	●	●	●	●	●	●	● Constellation	●	●	●
		DEMODULATED M.E.R.-B.E.R.-P.E.R.-SNR-EVM NOISE MARGIN	Optical IN & IPTV	● opt. Optic	● opt. Optic ● opt. IPTV	● opt. Optic	● opt. Optic						
			QAM	●	●	●	●	●	●	●	●	●	●
			COFDM	● T2 ON BOARD	● T2 ON BOARD	● T2 ON BOARD	● T2 opt.	● T2 opt.	● T2 opt.	● T2 opt.	● T2 opt.	● T2 opt.	● T2 opt.
			8PSK	●	●	●	●	●	●	●	●	●	●
QPSK	●	●	●	●	●	●	●	●	●	●	●		
INPUT CONNECTOR		"N" 50 Ω	"N" 50 Ω	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC		
FREQUENCY RANGE BAND		SAT	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz		
		TV	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	
		CATV	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	
		RADIO	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	
MODEL		HD PRO TAB STCOI	HD PRO STCOI	HD TOUCH STCOI	HD FLASH STCOI	HD COMPACT STC	HD LIGHT STC	HD ONE STC	HD SAT	HD TV	HD CABLE		

# "STANDARD" SAT-TV-CATV & OPTIC METER - Technical Specifications

		MAIN SPECIFICATIONS										
		SIZE (mm) H-L-D	115x245x180	115x245x180	215x225x115	195x225x80	165x225x80	165x225x80	165x225x80	65 x 226 x 105	65 x 226 x 105	215 x 125 x 60
		WEIGHT (Kg)	2.5	2.5	2.2	1,4	1.2	1.2	1.1	1.1	1.1	1.3
		Soft Bag Protection	●	●	●	●	●	●	●	●	●	●
		Battery Duration (hours)	2 to 3 hours	2 to 3 hours	3 to 4 hours	4 hours	4 hours	4 hours	4.5 hours	2.5 hours	2.5 hours	4 hours
		Graphics Display Multi-language	64 x 128 high brightness				64 x 128 high brightness	64 x 128 high brightness	64 x 128 high brightness	64 x 128 high brightness	64 x 128 high brightness	
		TFT Color Display	4.5" Color	6.5" Color 16:9 TOUCH SCREEN	4,4" Color	3,1" LIGHT 3,5" LIGHT PLUS						3.5" Color
MEMORY	Total Logger	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99 ITC FENITEL APPROVED	99	99	99
	PROGS per PLAN	199	199	199	199	199	199	199	199	1	199	199
	Total PLANS	99	99	99	99	99	99	99	99	9	99	99
		Tuning System and NAVIGATION	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Transp./ Ch./ Freq./ Prog. in Meas and Spect	Chan./ Freq./ Prog. in Meas and Spect	Chan./ Freq./ Prog. in Meas and Spect	Chan./ Freq./ Prog. in Meas and Spect	Chan./ Freq./ Prog. in Meas and Spect
		Level Accuracy (dB)	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.5 Typ. SAT 1.0 Typ. TV	1.0 Typ.	1.0 Typ.	1.0 Typ.
		Dynamic Range dBuV-(dBmV-dBm)	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 126 TV	30 - 126 SAT 5 - 110 TV	5-110 dBuV	5-110 dBuV	5-110 dBuV	0-126 dBuV	0-126 dBuV
		USB & SW Upgrades via Internet	● USB2	● USB2	● USB2	● USB2	● USB2	●	● USB2	●	● USB2	● USB2 O.T.G.
		NAVIGATION ENCODER & NUMERIC KEYPAD	●	●	●	●	●	●	●		Numeric KEYPAD	Numeric KEYPAD
		TRANSPONDER DIRECT NAVIGATION	●	●	●	●	●	●	●			
		NETWORK DATA & PROGRAM. NAMES	●	●	●	●	●	●	●			
		TV PROGRAMS AUTOMEMORY	●	●	●	●	●	●	●		●	●
		DRIVER for LNB S.C.R.	●	●	●	●	●	●	●			
		DiSeqC a-b-c-d & USALS MOTOR	●	●	●	●	●	●	●			
		Dual LNB SAT POINTER	●	●	●	●	●	●	●			
		SAT EXPERT	●	● opt.	● opt.	● opt.	● opt.	● opt.	● opt.			
		REMOTE POWER SUPPLY VOLTAGES	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5V-12V-18V-24V	5-12V-18V-24V	5-12V-18V-24V			
		BARSCAN and TILT	●	●	●	●	●	●	●	●	●	●
		INGRESS and LEAKAGE	●	●	●	●	●	●	●	●	●	●
		CVBS & HDMI	●	●								
		DIRECT CONDIT. ACCESS SYSTEM	●	●								
		AN. TV SOUND and RADIO	●	●	●	●	●		●	●	●	●
		ANALOG TV PICT	● SAT and TV Analog Picture	●	●	●	●					
		MPEG2 & 4 HD DECODER	●	● opt.				Network Iden. PROGS & PID only	Network Iden. PROGS & PID only	Network Iden. PROGS & PID only		
		MPEG2 DECODER	●	●	●	●	●	Network Iden. PROGS & PID only	Network Iden. PROGS & PID only	Network Iden. PROGS & PID only		
		SPECTRUM ANALYSIS with MEMORY PEAK	●	●	●	●	●	●	●	●	●	●
		DIGITAL QUALITY FAIL-MARG-PASS	●	●	●	●	●	●	●	●	●	●
		CONSTELLATION & REAL TIME ECHOS	●	●	●	●	●	●	●	●	●	●
		DEMODULATED M.E.R.-R.E.R.-PER-SNR-EVM NOISE MARGIN	Opt. Optical IN & IPTV									● Optical IN
		QAM	●	●	●	●	●		●	●	● QAM & CABLE MODEM DOCSIS 2.0	● QAM & CABLE MODEM DOCSIS 3.0
		COFDM	● T2 opt.	● T2 opt.	● T2 opt.	● T2 opt.	●					
		8PSK	●	●	●	●	●	●				
		QPSK	●	●	●	●	●	●				
		INPUT CONNECTOR	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F - BNC - IEC	F	F	F
FREQUENCY RANGE	BAND	SAT	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz	930-2.250 MHz				
		TV	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	47-1.000 MHz	4-1000 MHz	4-1000 MHz	4-1000 MHz
		CATV	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1000 MHz	4-1000 MHz	4-1000 MHz
		RADIO	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1.000 MHz	4-1000 MHz	4-1000 MHz	4-1000 MHz
			ATOM HD STC0L 	DIGICUBE STC 	ATOM POWER STC 	ATOM LIGHT/+ STC 	MASTER STC 	MASTER SAT 2 	MASTER CABLE 	FAST-C 	OMNIA-7 DOCSIS 2.0 	OMNIA-10 DOCSIS 3.0 