

# MPEG Handheld Test Generator

## Portable



[MHG100/200] Portable Type

### FEATURES

- DTV standard compliance (ATSC, DVB-T/H, ATSC-M/H, IPTV, DVB-S/S2, QAM-A/B/C, ISDB-T, DVB-T2, DMB-TH, T-DMB, CMMB, DTMB, ISDB-S)
- DVB-ASI, DVB-SPI, SMPTE310 Interface supported
- Original bit-rate or user defined bit-rate supported
- Play-list supported
- Shows filename, packet size, bit rate, play time
- Seamless looping
- Sequential play by play-list
- Modulator and up-converter status indicated
- Internal test signal – MPEG2 TS Packet (RAW/188/204 Packet)
- Error injection
- RF six channel setting
- PCR jitter
- NIT table auto setting
- PSI/SI analyzer
- Last play
- Touch screen : 10.1 inch
- Color : silver
- Size : 270(W) × 115(D) × 220(H)
- Weight : 2.5kg

## Modulator

### DVB-T/H

Modulation Type	QPSK, 16QAM, 64QAM
FFT Size	2K, 4K, 8K (4K mode only for DVB-H)
Code Rates	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
Hierarchical Parameter	$\alpha = 1, 2, 4$
SFN and MFN Operation	Yes
Bandwidth	5, 6, 7, 8MHz (5MHz mode only for DVB-H)
RF Frequency	48 ~ 2150MHz
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

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## ATSC

Modulation Type	8VSB
RF Frequency	48 ~ 2150MHz
RF Connector	75Ω BNC
RF Channel	14 ~ 69 selectable RF output
IF Bandwidth	6MHz
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

## ATSC-M/H

Output Level	0 ~ -59dBm(0 ~ -120dBm, Option) - Supports captured file play, live from external ATSC-M/H MUX through ASI-SMPTE-310M input
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## DVB-S

Modulation Type	QPSK
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Symbol Rate	0.088 ~ 45dBm
Symbol Rate Accuracy	< ±1ppm
Symbol Rate Resolution	< 55dBm
Frequency Range	48 ~ 2150MHz
RF Frequency Accuracy	< ±1ppm
Spurious	> 50dB
Return Loss	>15dB
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

## DVB-S2

Modulation Type	QPSK, 8PSK, 16APSK, 32APSK
Code Rate	1/4, 1/3, 1/2, 2/3, 3/4, 2/5, 3/5, 4/5, 5/6, 8/9, 9/10
Symbol Rate Range	1 ~ 45dBm
Symbol Rate Accuracy	< ±25ppm
Symbol Rate Resolution	< 50dBm
Frequency Range	48 ~ 2150MHz
Connector	F Type BNC 75Ω
Accuracy	≤ ± 1ppm
Roll-Off Factor	0.35, 0.25, 0.20
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

## DMB-TH

Modulation Type	TDS-OFDM
QAM Mode	4QAM, 16QAM, 64QAM
TS Input	188/204 bytes, bit rate & PCR correction, PCR re—stamping
RF Frequency	48 ~ 2150MHz
Bandwidth	6, 7, 8MHz
Spurious	> 50 Db
Shoulders	@ +/-4.2 MHz : > 50 dB
Guard Interval	1/9 or 1/4
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

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## QAM-A/B/C

Modulation Type	4QAM, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
FEC Mode	Annex A, B, C
RF Frequency	48 ~ 2150MHz
RF Frequency Accuracy	< ± 1ppm
RF Connector	75Ω F-Connector
Step Size	200KHz
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)
Bit-rate Range	0 ~ 52.4Mbps

## ISDB-T

Modulation Type	Mode I, II, III
Code Rates	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
Constellation	DQPSK, QPSK, 16QAM, 64QAM
Timing Interleaving	Mode I = 0,4,8,16 / Mode II = 0,2,4,8 / Mode III = 0,1,2,4
Number of Segments	1seg / 13 segments
TMCC	ISDB-T information and IIP
RF Frequency	48 ~ 2150MHz
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

## DVB-T2

Modulation Type	BPSK, QPSK, 16QAM, 64QAM
FFT Size	1K, 2K, 4K, 8K
Guard Interval	1/4, 1/8, 1/16, 1/32, 1/128, 19/128, 19/256
Pilot Pattern	PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8
The Number Of PLP	Single PLP, Multi PLP (8 PLPS)
PLP Code Rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
PLP Modulation	QPSK, 16QAM, 64QAM, 256QAM
PLP FEC TYPE	16K, 64K
Frame Interval	1
Time Interleaving Length	0
Time Interleaving Type	0
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)
	- DVB-T2 modulation from DVB-ASI input is not supported
	- Supports T2MI multiplexed stream

## T-DMB

Transmission Mode	DAB transmission modes I, II, III, IV
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)
	- Transmission Mode automatically selected from the ETI stream
	- Supports ETI(NI, G.703), ETI(NA.704) 5592 and ETI(NA.704) 5376 File Format
	- T-DMB Modulation from TS input is not supported

## CMMB

Modulation Type	BPSK, QPSK, 16QAM
Subcarrier	4096/8MHz
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)
	- CMMB modulation from DVB-ASI input is not supported
	- CMMB stream should have control information table (CMCT)

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## DTMB

Modulation Type	4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM
Number Of Carrier	1 or 3780 sub-carriers selectable
Frame Length	4200, 4335, 4725 symbols
Code Rate	0.4, 0.6, 0.8
Time Interleaving Length	240, 720 symbols
Bandwidth	8MHz
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

## ISDB-S

Modulation Type	TC8PSK, QPSK, BPSK
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)
	- ISDB-S modulation from DVB-ASI input is not supported
	- Supports framed TS with TMCC (1~8 TS have totally 48 slots can be selected)

## IPTV

Gigabit	Intel 82544
Connector	RJ-45
IEEE standards	10/100/1000 BASE-T
Wiring	Category-5 UTP, 4-pair
Cover distance	100m
Bus type	PCI
IEEE support	802.3ab
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)

## DVB-C2

Modulation Type	NONE, BEST FIT, 4 Symbols, 8 Symbols
Guard Interval	1/64, 1/128
Data Slice Type	TYPE1, TYPE2
Time Interleaving Depth	'00'
FEC Header Type	ROBUST, HEM
BBHeader Format	NORMAL, HEM
The Number of PLP	Single PLP
PLP Code Rate	2/3, 3/4, 4/5, 4/5, 5/6, 8/9, 9/10
PLP Modulation	16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM
PLP FEC Type	16k, 64k
Bandwidth	6/7/8 MHz Mode Selectalbe
Output Level	0 ~ -59dBm(0 ~ -120dBm, Option)
	256QAM, 1024QAM, 4096QAM Configurations could have some post LDPC errors