



For the Best

Catalogue 2015-2016



CORPORATE PROFILE

EXCELLENCE / COMMITMENT / SERVICE

Matchmaster strives to be our customers' first choice and "For The Best" in the market we serve by exceeding our customers expectations, providing new technology solutions, leveraging our diverse brands, driving operational excellence, and committing to the highest standards of business practices - all of which will drive Matchmaster's long-term growth, value and success. Matchmaster fully understands and exceeds our customers' needs, wants and preferences and provides greater value to our customers than our competitors. Matchmaster builds on the company's reputation and image internally and externally while driving initiatives to ensure Matchmaster remains "For The Best" for our customers and our employees.



For the Best

70th
ANNIVERSARY
2009

Matchmaster opened its engineering business in 1939. The design and manufacturing of TV Reception Systems and solutions began in 1954, two years before television hit the airwaves. Today with nearly 75 years of industry experience Matchmaster is firmly established as the nation's leader in engineering and product technology, commercial product development, outstanding service and industry training. Matchmaster caters for all domestic and commercial television reception equipment, system design, technical advice as well as consultancy in developing and designing integrated solutions and commissioning for your next project.

Matchmaster products range from the humble television antenna to complex distribution systems including Fibre Optics, TV over CAT6 and IPTV into the future. Matchmaster specialise in commercial distribution systems with design and engineering capabilities to suit every possible application.

Matchmaster provide local technical support for everything from domestic antenna installations through to complex commercial network design, in multiunit dwellings as well as designs for the hospitality industry. Matchmaster is an endorsed trainer and is known for delivering the best training program of its type.



DESIGN / MANUFACTURE / DISTRIBUTION

Matchmaster designs, manufactures and distributes a comprehensive range of installation hardware and system equipment throughout Australia and New Zealand via our own manufacturing and distribution centers as well as a network of Agents.

Matchmaster products are recognised as the industry standard for being "The Heavy Duty Choice" and enjoy a reputation for strength, durability and performance beyond the specifications or capacity of our competitors. Our Australian made antennas, hardware and accessories are ISO quality assured. Matchmaster lead the industry in high definition television reception equipment and have a comprehensive range marketed via Matchmaster brands such as DigiMATCH, DigiHUB, MagnaDIGITAL, SQUARIAL and Optical Fibre Solutions.

Matchmaster in addition to our locally manufactured products are agents for a select group of products from internationally well known companies including WISI, Terra, Scion, Telemann, Johansson, Cahors, PPC and Televes.

CORPORATE PROFILE

DIAGRAMS / INSPECTIONS / TESTS

The Matchmaster Engineering Team not only generate technical layout and routing diagrams in our design laboratory but are also active participants in field inspections, testing and commissioning. In this way they are constantly able to provide a superior advisory service to contract installers and consultants.

Matchmaster's promise is simple; when a Matchmaster system is installed according to our design it will provide the highest quality reception first time, every time!



SPECIALISED / PROJECT DESIGN

Matchmaster's Engineering Team has designed many systems which utilise professional design software which is proprietary produced and licensed exclusively in Australia and New Zealand, this ensures that your system design is correctly produced from the beginning. Together with the utilisation of sophisticated headend equipment, Matchmaster create television reception systems for a range of applications and varying sites. Our design service ensures that your television reception system will access the growing range of communication options including full fibre systems, HFC Network, SMATV, CATV, MATV, IPTV and of course high definition digital.



TERRA



johansson



The Leader of Digital TV Signal Analyzer
TELEMANN



Televes



INTEGRATING / FUTURE / TECHNOLOGY

Technology is rapidly changing and demand for new technology in Digital Ready Reception services is in demand. Whether it is a housing estate, block of units, apartments, hospitals, clubs, luxury hotels or resorts the importance of providing an integrated and expandable communications network is imperative. Providing a specially designed and installed integrated system for Digital services will ensure that future expansion is catered for.

So start with Matchmaster who will consult, develop, design and commission your next project.

ENVIRONMENT / HEALTH / SAFETY

Matchmaster is committed to environment, health and safety excellence. We believe in good corporate environmental citizenship in the communities in which we operate, and in providing a healthy and safe workplace. Matchmaster is committed to complying with all environmental, health and safety laws and regulations, wherever we operate in Australia and New Zealand. Matchmaster seeks to conserve energy, water and raw materials, use recycling and reduce waste. We work to instill these values in all our employees. Matchmaster's Environment, Health and Safety policy, a copy of which is available at www.matchmaster.com.au, is the basis for our commitment to Environment, Health and Safety programs.



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Steps on how to connect an 'F' Compression Connector
Masthead Checklist
Choosing an Amplifier
Taps & Splitters
DB Conversion Table
Coax Cable Losses
Channel Frequency
Site Channel Information

Note: While all due care has been taken in preparing this catalogue, typographical errors may occur. Owing to continuous evolving new technologies, reviews of products, formats, size and specification can change without prior notification.
Copyright © MATCHMASTER TV RECEPTION SYSTEMS



For the Best

Are you ready for Digital?

DigiMATCH® antennas complete the Digital Picture. Matchmaster provides the best Domestic and Commercial Digital TV reception systems including design, equipment supply and the best technical expertise.

- TV Antennas and Accessories
- MATV, Fibre and CATV solutions
- Accredited Training Courses
- New Zealand designed and manufactured



**Call us today Toll Free: 0800-AERIAL (0800-237425)
for details of your local Matchmaster Reseller of
Digital Ready products!**



UHF ANTENNAS

COMBINATION ANTENNAS

01MM-CA02 02.2

MAGNA X-TYPE

02MM-MDU18 02.2

02MM-MDU23 02.2

02MM-MDU31 02.3

02MM-MDU36 02.3

02MM-MDU43 02.3

WISI

02MM-EE06A 02.4

TV SIGNAL FINDER

12MM-DF02 02.4

UHF DIGITAL ANTENNA

02MM-DAT45 02.5

02MM-DAT75 02.5



For the Best

02

UHF ANTENNAS

03

04

COMBINATION ANTENNAS

05

06

VHF/UHF INDOOR TV ANTENNA

07

01MM-CA02

08

Application

Best suited to indoor use in good signal areas.

09

Features

- Frequency: VHF (174-230MHz) UHF (470-694MHz)
- Connector: IEC-connector male
- Receives Full HD television, Digital signals and DAB radio programs
- Signal clear technology with extremely low noise circuitry
- For reception of local and regional UHF and VHF reception - disappears when placed alongside a flat screen TV
- Horizontal or Vertical mounting
- Ultra flat design
- Attractive mirror finish
- Product dimensions: with stand - 535 x 60 x 60 mm / without stand 535 x 55 x 25 mm (WxHxD)



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MAGNA X-TYPE

20

UHF PHASED ARRAY TV ANTENNA

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18 ELEMENTS CH(21-48)

30

02MM-MDU18



UHF X TYPE TRIPLEX DIPOLE

23 ELEMENTS CH(21-48)

02MM-MDU23



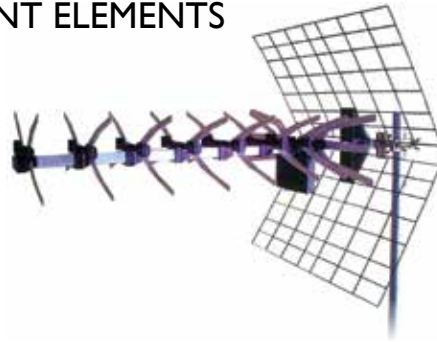
UHF ONLY TV ANTENNA 31 EQUIVALENT ELEMENTS

02MM-MDU31

Channels (21-48)

Features

- Maximum Gain 11dB
- 'X' type elements for increased gain and wideband performance
- 'F' type PCB Balun for quick installation and improved VSWR
- UV resistant black plastics



NEW
'F' Connection
Model

RELIABLE USER FRIENDLY GREAT VALUE
MAGNA
Digital
A Matchmaster product

UHF PHASED ARRAY TV ANTENNA CH(21-48)

02MM-MDU36

* Suitable for tree lined areas and undulating terrain

Features

- Analogue and Digital compatible
- The best value in it's class
- Easy Horizontal-Vertical mounting, no additional bars required
- Compact high visual impact packaging which means you can fit more in your van
- 'F' Type PCB balun for quick installation, improved VSWR and interference reduction
- 'X' Type elements for increase gain and wideband performance
- Heavy gauge Phasing Harness, extruded back screen & UV resistant black plastics for strength & durability



RELIABLE USER FRIENDLY GREAT VALUE
MAGNA
Digital
A Matchmaster product



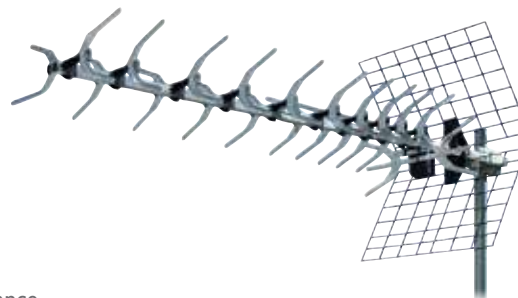
UHF X TYPE TRIPLEX DIPOLE 43 ELEMENTS

02MM-MDU43

Channels (21-48)

Features

- X type elements for increased gain & wideband performance
- F Type PCB balun for quick installation & improved VSWR
- UV resistant black plastics
- Compact high visual impact packaging



4G
READY

Technical Data

Model	02MM-MDU23	02MM-MDU31	02MM-MDU43
Frequency Range	470-860MHz	470-860MHz	470-860MHz
Max. Gain	10dB	11dB	13dB
Front-Back Ratio	>18dB	>18dB	>20dB
Length	604mm	825mm	1070mm
Cable Connection	'F' Type	'F' Type	'F' Type
Pack unit (inner / outer)	1 / 5	1 / 5	1 / 5
Outer Carton (mm)	330 x 647 x 60.5	350 x 825 x 70	353 x 668 x 67.5

UHF ANTENNAS

ANTENNA WISI UHF(21-51) PHASED ARRAY 'F' TYPE (2 PACK)

02MM-EE06A

Application

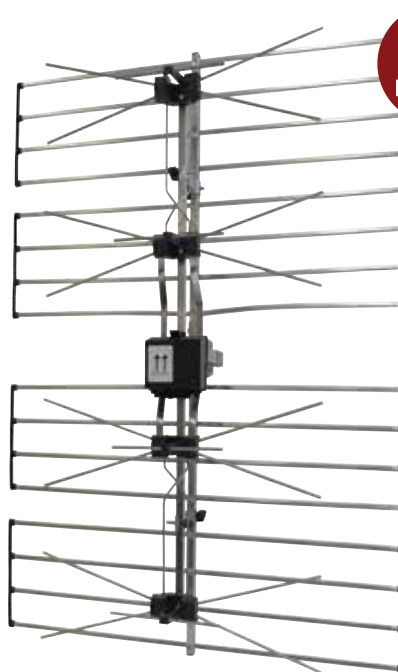
Best suited to metropolitan and fringe areas to receive UHF Channels.

Features

- 694MHz built in 4G low pass filter
- Ideal for stacking
- Best for coastal areas against salt corrosion.
- The Best UHF Phased Array Antenna now has even BETTER performance

Choose the antenna used by TX Australia as their reference antenna. Ideal for undulating terrain, areas of dense vegetation and high ghosting areas.

- For the best digital compatible 4-dipole phased array
- For the best performance
- For the best weatherproof 'F' Type balun
- For the best in ease of installation
- For the best clamping system
- For the best anti-ghost reflector system
- For the best in German engineering



Technical Data

Elements	20
Band	B4, B5
Channels	21-51
Max. Gain	13.5dB
HPBW Horizontal	46°
Vertical	27°
Wind Loading	
Horizontal/Vertical	107N
Balun Type	'F' Type PCB
Packing Type/Unit	Inner: 1
	Outer: 2
Inner Carton Size	840 x 110 x 690mm
Weight	4.0kg

The 02MM-EE06A has double the power at the high end band 5 where it is needed the most, compensating for cable losses. It also has better VSWR which maintains better multiplex flatness reducing digital dropouts and the clamping system ensures the antenna is kept in desired position giving continued performance and quality pictures through all weather conditions.



DIGITAL TV SIGNAL FINDER

TERRESTRIAL DIGITAL TV SIGNAL FINDER

I2MM-DF02

The Matchmaster Digital TV Signal Finder is designed to ensure that you position and angle your Digital TV Antenna in the correct direction for optimal reception results.

Most televisions are now using an internal digital tuner to look for and lock onto TV channels. A good quality signal is essential for high quality digital pictures and to achieve this the antenna must be pointed in the right direction and at the correct angle to maximise digital signal strength and quality. Quite often the channels are limited in number and are of poor picture quality, because the aerial is not tuned in accurately enough. At last a simple solution is available from Matchmaster, a smart pocket sized hand held Digital Signal Finder which simply plugs into your existing aerial system, in your home, caravan, motor home or boat, and with little effort indicates the best direction for the aerial to point. All this only takes a few seconds of your time and gives professional results.

Features

- Simple connection instructions
- Suitable for the Home, Caravan, Boating and Leisure enthusiast
- Simple connection instructions
- Easily locate the best Digital TV picture quality for your application
- Time saving
- Includes 9V battery
- Battery operated

Application

- Connect the antenna cable to the port marked 'ANT'.
- Remove any external amplifiers* that may be connected to the antenna.
- Turn the signal finders' power to on.
- Adjust the antenna to the best position by watching the LED lights. Higher up the scale gives a better signal. When in position, remove finder and replace any amplifiers that were disconnected.

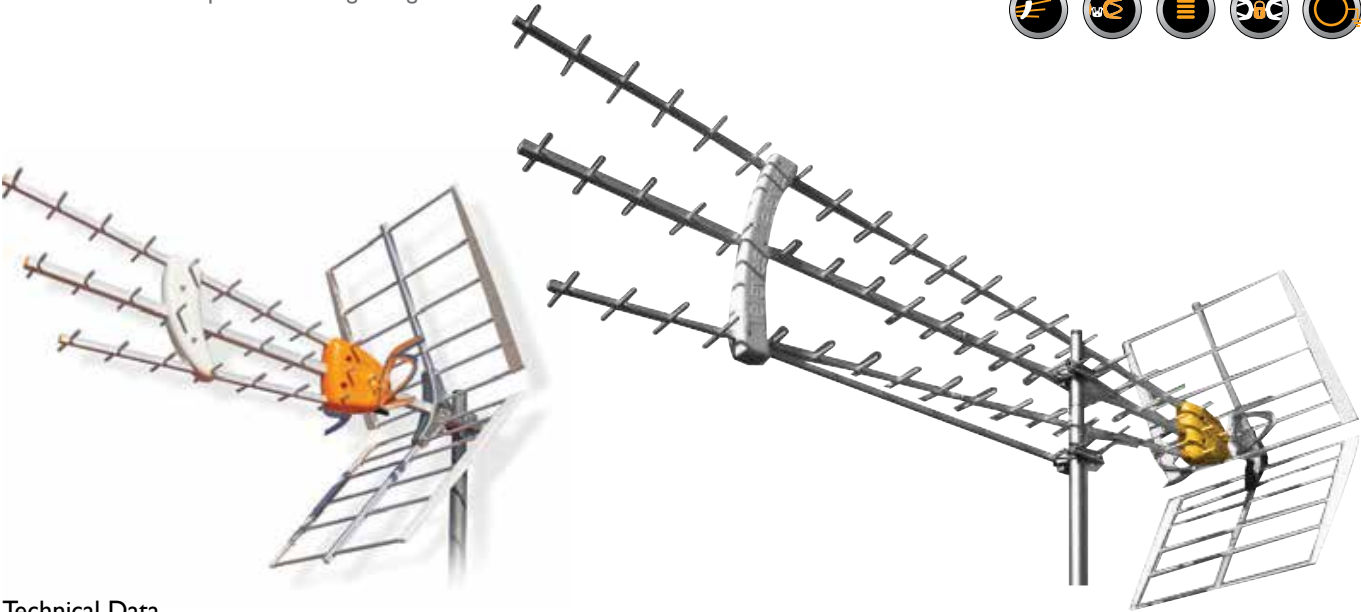


UHF DIGITAL ANTENNA

02MM-DAT45
02MM-DAT75

WITH
AUTOMATIC
GAIN
CONTROL

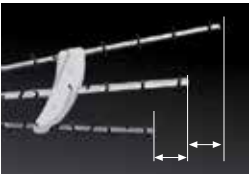
These UHF Digital Antennas are designed to function in automatic mode (BOSS-Tech activated) or passive mode. Do not worry about signal strength, just align the antenna and the BOSS-Tech device will automatically adjust the output signal to the optimum level*. Whether in automatic or passive mode, the DAT45 offers exclusive functionality to maximise the reception of the digital signal.



Technical Data

	02MM-DAT45		02MM-DAT75	
Mode	Passive	Automatic	Passive	Automatic
Operating Band	UHF	UHF	UHF	UHF
Gain	17dB	32dB max.	19dB	31 dB max.
Output Level	–	Self regulated	–	Auto regulated
Noise Figure	–	2 dB typ	–	2 dB typ
Recommended Input Signal Level	>75 dBµV	<75 dBµV	>75 dBµV	<75 dBµV
Powering Voltage	0 Vcc	12-24Vcc	0 Vcc	12-24 Vcc
Consumption	–	45 mA max.	–	40 mA max.
Beamwidth	30°	30°	30°	30°
Wind Load	120N (@ 130 Km/h)	120N (@ 130 Km/h)	141N (@ 130 Km/h), 194N (@ 150 Km/h)	

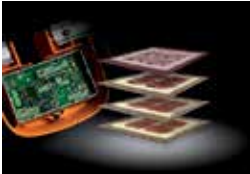
Additional Features



The asymmetrical directors provide the perfect reception pattern to reduce ECHOES.



Fully shielded BOSS-Tech enclosure to protect against impulsive noise.



State-of-the-art Multilayer technology providing highest stability and reliability.



Newly patented dipole that greatly improves the reception margins throughout the complete terrestrial band.



All the antenna's electronic elements are grounded, giving unprecedented protection against electrostatic discharges.

Power supply not included.
Recommended power supply:
10MM-PSD14



*The Automatic Mode is activated with a 12-24Vdc

Televes

WHY MATCHMASTER ANTENNAS ARE "FOR THE BEST" CHOICE

Since 1956 when Matchmaster launched the model A Antenna, we have prided ourselves on delivering the highest quality products to the market. Innovation has been a key to the success of Matchmaster.



An example of this was the invention of the 'G' Unit® by Dr Rudolph Guertler. The 'G' Unit® is the driven element in the majority of the DigiMATCH™ Antennas and is the **ONLY** unique dipole invented in Australia for the Television Industry and was awarded the **"highest patent award available."**



Now with close to 4 million Matchmaster antennas sold in Australia our history is a testament to the industry for installing quality products in consumers homes.

History aside Matchmaster today in relation to all DigiMATCH™ UHF/VHF products are all still manufactured in Australia. The products feature 'F' type baluns and diplexer systems for the best VSWR, Black UV resistant plastics and 12.7mm extruded heavy duty elements for better band width and superior strength. This coupled with high visibility retail red packaging with high strength outer cartons reduces the cost to the consumer by eliminating damage in transit.



High profile packaging is your silent sales person in your warehouse, shop or van improving consumer confidence in the product they are purchasing from you. Matchmaster is committed to be For The Best for our customers in product, distribution, engineering, technical back up and value for your money.

Thank you for supporting Matchmaster, For The Best...





FM ANTENNAS

FM

03MM-1EFM

03.2

03MM-3EFM

03.2

03MM-5EFM

03.2



For the Best

FM ANTENNAS

FM

FM ANTENNA - 1 ELEMENT, LOOPED DIPOLE

03MM-1EFM

Features

- Balun with integrated UHF diplexer for direct combining of UHF
- F connections
- Compact design
- Retail packaging



UHF application

FM ANTENNA - 3 ELEMENT

03MM-3EFM

Features

- 12.7mm elements
- Black U/V resistant insulators

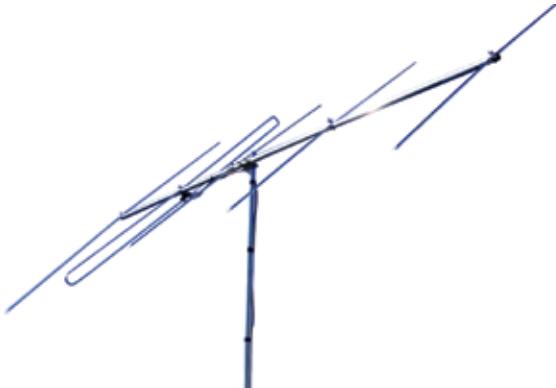


FM ANTENNA - 5 ELEMENT

03MM-5EFM

Features

- 12.7mm elements
- Black U/V resistant insulators
- Split boom for ease of transport



Technical Data

Model	03MM-1EFM	03MM-3EFM	03MM-5EFM
Gain	3dB	5dB	6dB
F/B	12dB	15dB	16dB
Elements	1 Looped Dipole	3	5
Balun	Balun + UHF Diplexer	Yes	Yes
Boom length	610 mm	1720 mm	1800 mm
Packing unit	1	1	1
Carton size LxHxW	520 x 520 x 85 mm	1830 x 330 x 120 mm	1800 x 1200 mm, split boom
Weight	2kg	2.18kg	3kg



HOME THEATRE

04MM-HMH01	04.2
04MM-MMC01	04.3

CONNECTORS

08MM-HD59F	04.4
08MM-HD59R	04.4

WALL PLATES

04MM-HTP01	04.4
04MM-HTP02	04.4
04MM-HTP04	04.4
04MM-HTP06	04.4

PLASMA & LCD MOUNTS

04MM-LCDB2	04.4
04MM-PMFI	04.4

INSERTS

04MM-HTA01	04.5
04MM-HTA02	04.5
04MM-HTA03	04.5
04MM-HTA04	04.5
04MM-HTA05	04.5
04MM-HTA06	04.5
04MM-HTA07	04.5
04MM-HTA08	04.5
04MM-HTA09	04.5

HIGH DEFINITION LEADS

04MM-TOS01	04.6
04MM-TOS03	04.6

HOME THEATRE

HIDDEN MEDIA HUB

04MM-HMH01

The Hidden Media Hub is a recessed box used to house AV and power outlets behind wall mounted flat-screen T.V's. It is specially designed so installers can easily hide cables in the wall cavity, provide easy access to all T.V points, hide cables from sight with the paintable lid and allow as close a mount to the wall as possible.

It is the first recessed hub designed for Australian and New Zealand electrical switch gear that is able to be mounted in a shallow wall with a minimum depth of 70mm. The Hidden Media Hub is suitable for a range of different scenarios.

Exclusive New Zealand distributor

New Zealand Design Registration Number: 418283 and 418555

Features

- Dimensions 285 x 250 x 70mm
- Can hold up to 5 New Zealand standard face plates
- Able to hold signal converters like HDMI converters, DDA24 or Modulator
- Designed for new and existing constructions
- Suitable for residential and commercial buildings
- Made for in-wall and ceiling applications
- Paintable
- Easily hide cables in the wall cavity



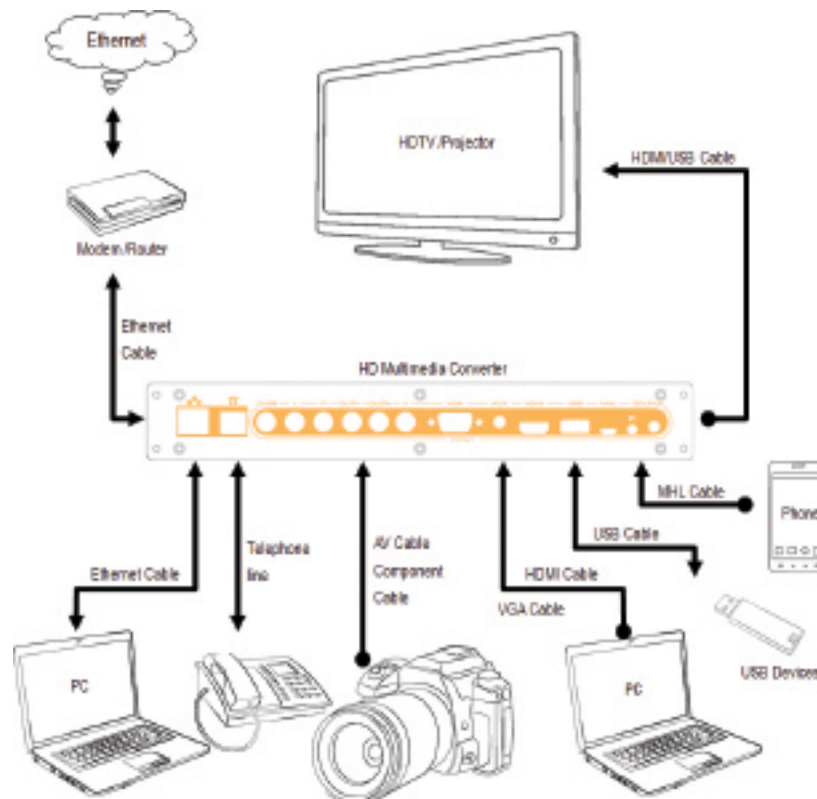
**Only 70mm
in depth, perfect for
New Zealand walls.**

**Lid off - flat enough
for brackets against
the wall. Lid on - for
hinged brackets.**



CONVERTS MULTI STANDARD MEDIA TO HDMI®

04MM-MMC01



HOME THEATRE

CONNECTORS

R59 CONNECTOR 'F' TYPE

08MM-HD59F



R59 CONNECTOR RCA

08MM-HD59R



WALL PLATES

WALL PLATE 1 OUTLET

04MM-HTP01



WALL PLATE 2 OUTLET

04MM-HTP02



WALL PLATE 4 OUTLET

04MM-HTP04



WALL PLATE 6 OUTLET

04MM-HTP06



PLASMA AND LCD MOUNTS

LCD TV WALL MOUNT

WITH +/- 20° TILT

04MM-LCDB2

- Extends 8cm from wall
- Holds weight up to 30kg
- Easy slide in installation and removal
- Rigid extruded aluminium construction and anodised finish
- Integrated Spirit Level for simple and accurate install
- Knob adjustment allows for up to 20° tilt control
- Cable management organises cables neatly
- 5 Year Warranty



PLASMA TV & LCD WALL MOUNT

04MM-PMF I

- Fixed wall mount holds up to 80kgs
- Low profile - mounts less than 5cm (2") from the wall
- Easy & quick installation - Lift and Hook design
- Expandable arms & cross bar to fit screens 32" - 60"
- Compatible with all hole patterns including VESA standard
- 5 Year Warranty



INSERTS

F-PAL INSERT

04MM-HTA01



RJ12 INSERT

04MM-HTA06



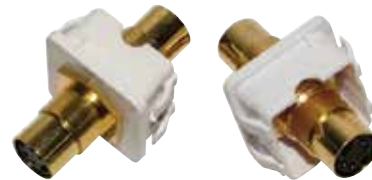
PDL TO KEYSTONE ADAPTOR

04MM-HTA02



SUPER VHS

04MM-HTA07



F-F INSERT

04MM-HTA03



F TO RCA INSERT (BLUE/GREEN/RED)

04MM-HTA08



BANANA/BINDING POST INSERT

04MM-HTA04



F TO RCA INSERT (BLUE/RED/YELLOW)

04MM-HTA09



BLACK INSERT

04MM-HTA05



HOME THEATRE

HIGH DEFINITION LEADS

TOSLINK PLUG TO TOSLINK JACK
RIGHT ANGLED CONNECTOR

04MM-TOS01

Features

- Right angle application



3M TOSLINK MALE TO MALE LEAD

04MM-TOS03

Features

- Toslink to Toslink Optical lead
- 3m length



Digital



Analog

Get ready for Digital
Your Vision is our Vision
ANTENNA SELECTION GUIDE

Simply the easiest way to find the **Best Digital TV Antenna**
for your area go to www.matchmaster.net.nz to try it out!



Scan me now!



ACCESSORIES

FLY LEADS

05MM-FL150	05.2
05MM-FL1500	05.2
05MM-BL1500	05.2

DIPLEXER

05MM-DOP2H	05.2
05MM-DOP2C	05.2

MOUNTING ACCESSORIES

05MM-L735F	05.2
05MM-DOP2C	05.2
05MM-DOP2H	05.2

WALL PLATES

05MM-WP01	05.3
05MM-WP04	05.3
05MM-WP61	05.3
05MM-WP61B	05.3
05MM-WP62	05.3

INTER-ROOM CHANNEL CHANGER

05MM-RE03	05.4
05MM-RE03-BAT	05.4
05MM-RE03E	05.4
05MM-RE04	05.4
05MM-RE05	05.4

WALL PLUGS

05MM-WPS-B	05.5
05MM-WPS-W	05.5

ATTENUATORS

05MM-AF03P	05.5
05MM-AF06P	05.5
05MM-AF10P	05.5
05MM-AF20P	05.5

JOINERS & PLUGS

05MM-L616	05.5
05MM-L617	05.5

ACCESSORIES

FLY LEADS

FLY LEAD RG59

05MM-FL I 50

Pair 'F' - 'F' Type
150mm



DIGILEAD DIGITAL FLY LEAD

05MM-FL I 500

RG59 Trishield - 'F' Male to 'F' Male
1500mm



DIGILEAD DIGITAL FLY LEAD

05MM-BL I 500

RG59 Trishield - 'F' Male to B/Lee - Male
1500mm



DIPLEXER

DIPLEXER FTA/SAT
FOR HPM™ PLATE

05MM-DOP2H



DIPLEXER FTA/SAT
FOR CLIPSAL™ PLATE

05MM-DOP2C

Technical Data

Freq. Range	Input 1	950-2300MHz
	Input 2	40-860MHz
Insertion Loss		2.3dB
Isolation		20dB
Dimension		62 x 52 x 16mm

MOUNTING ACCESSORIES

05MM-L735F

Outlet COBI | 'F' F/M



DIPLEXER FTA/SAT

05MM-DOP2C

(Suitable for Clispal® double ganged plate)

• Foxtel Approved (FI0234)

Individual Pack

Includes inserts

05MM-DOP2H

(Suitable for HPM® double ganged plate)

• Foxtel Approved (FI0235)

Individual Pack

Includes inserts

WALL PLATES

OUTLET WALL PLATE 'F' TYPE A CLASS

05MM-WP01

- Return loss >20dB to 3GHz
- Fully shielded 'F' type rear connector
- Pay TV approved



OUTLET PLATE SAT/FTA/PDR

05MM-WP04

- Return loss >20dB to 3GHz Sat >20dB to 1GHz FTA
- 4 Gang outlet plate
- Pay TV approved
- Suitable for 5 wire systems



A-CLASS OUTLET PLATE

- LARGE BULL NOSE (WHITE)

05MM-WP61



WITH BULLNOSE
CLIPPED ON



WITHOUT BULLNOSE

Features

- Bull nose cable management solution for computer networks, home theatre systems, or any other application which involves in-wall cabling
- Cabling remains neat, tidy and secure via the cable management push through system
- Easy to run cables through the wall
- Large opening which can accommodate a large run of cables at once
- Sold in Individual Hang Sell Pack
- 10 per outer carton

A-CLASS OUTLET PLATE

- CABLE MANAGEMENT + 2 OUTLETS

05MM-WP62

Features

- Push through cable management solution for computer networks, home theatre systems, or any other application which involves in-wall cabling
- Cabling remains neat, tidy and secure via the cable management push through system
- Easy to run cables through the wall
- 2 way outlet also includes 2 blank inserts
- Sold in Individual Hang Sell Pack
- 10 per outer carton
- Fits Clipsal and Matchmaster inserts refer to inserts (Page 48)



A-CLASS OUTLET PLATE

- LARGE BULL NOSE (BLACK)

05MM-WP61B



ACCESSORIES

INTER-ROOM CHANNEL CHANGER

05MM-RE03

Application

Allows your existing remote to control equipment anywhere inside or outside the house. This Remote Control Extender uses the smartest and easiest technology in extending the remote control operation, by installing the transmitter in the battery pocket only, your remote control now detects the key signals and transmits them far away. Once installed the upgraded remote control with RF transmitter can operate through doors, windows, floors and walls, and this extender kit removes the worry about line of sight requirements. When the RF transmitter is installed, the remote control still transmits the normal infrared signal like a normal remote control. Meaning your remote control will transmit both signals in Infrared (IR) and radio frequency (RF) at the same time, regardless of distance or line of sight.

Features

- Transmits the remote control signal with Radio Frequency
- Uses the smartest and easiest technology in extending the remote control operation
- Transmission distance up to 30 meters through walls
- Transmitter is installed in the battery pocket only
- Works with most AA & AAA powered remotes
- Simply replaces battery in your remote
- Built-in battery charger
- Two re chargeable batteries included
- Quick & easy to install

Pack Contains

- 1x RF Transmitter
- 2x 2/3 AAA Rechargeable Battery
- 1x AA Sleeve
- 1x RF Receiver
- 1x Eye Emitter
- 1x Power Supply

Spare Parts

- Replacement/ additional transmitters are available
- Part No: 05MM-RE04

REMOTE
EXTENDER

Technical Data

Operation Frequency	433.92MHz
IR Emitting Range	8m (Typical)
Battery Included	1.2V 2/3AAA x 2 (Rechargeable)
Working Voltage	230V - 50Hz
Product Dimensions	100 x 55 x 100mm
Product Weight	80g



2X REPLACEMENT BATTERIES FOR INTER-ROOM CHANNEL CHANGER

05MM-RE03-BAT



XRAY REMOTE 3 EYE EMITTER

05MM-RE03E



IR OVER HDMI® KIT

05MM-RE05

ADDITIONAL TRANSMITTER AND BATTERIES FOR 05MM-RE03

05MM-RE04

Includes

- 2 x Rechargeable 2 / 3 AAA batteries
- 1 x AAA to AA converter
- 1 x Transmitter
- 1 x 3 Eye Emitter



WALL PLUGS

WALL PLUG SINGLE - BLACK

05MM-WPS-B

WALL PLUG SINGLE - WHITE

05MM-WPS-W



ATTENUATORS

ATTENUATOR 3DB 'F' POWER PASS

05MM-AF03P

ATTENUATOR 6DB 'F' POWER PASS

05MM-AF06P

ATTENUATOR 10DB 'F' POWER PASS

05MM-AF10P

ATTENUATOR 20DB 'F' POWER PASS

05MM-AF20P



Application

Attenuators are used in a wide variety of applications and can satisfy almost any requirement where a reduction in power is needed. Attenuators are used to extend the dynamic range of devices such as power meters and amplifiers, reduce signal levels to detectors and match circuits.

JOINERS & PLUGS

JOINER PAL FEMALE TO FEMALE

Not suitable for Digital

05MM-L616



JOINER PAL MALE TO MALE

Not suitable for Digital

05MM-L617





For the Best

Are you ready for Digital?

DigiMATCH® antennas complete the Digital Picture. Matchmaster provides the best Domestic and Commercial Digital TV reception systems including design, equipment supply and the best technical expertise.

- TV Antennas and Accessories
- MATV, Fibre and CATV solutions
- Accredited Training Courses
- New Zealand designed and manufactured



**Call us today Toll Free: 0800-AERIAL (0800-237425)
for details of your local Matchmaster Reseller of
Digital Ready products!**



COAXIAL CABLE

RG11 QUADSHIELD

06MM-E11Q 06.2

06MM-E11QF 06.2

RG6 QUADSHIELD

06MM-E6Q 06.2

06MM-E6QS 06.2

RG6 SKY APPROVED

06MM-E6SKYB 06.2

06MM-E6SKYW 06.02

06MM-E6SKYB-150 06.02

06MM-E6SKYW-150 06.02

CABLE REEL FRAME

11MM-REEL01 06.03



For the Best

COAXIAL CABLE

As listed in the SKY Commercial Guidelines

RG11 QUADSHIELD

CABLE RG11 QUADSHIELD

06MM-E11Q

(305m Reel) meter marked



CABLE RG11 QUADSHIELD FLOODED

06MM-E11QF

(305m Reel) meter marked



RG6 QUADSHIELD

CABLE RG6 QUADSHIELD

06MM-E6Q

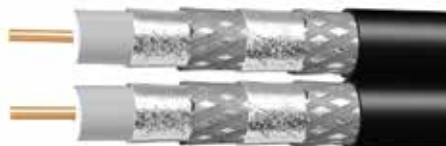
(305m Reel) meter marked



CABLE RG6 QUADSHIELD SIAMESE

06MM-E6QS

(150m Reel) meter marked



RG6 SKY APPROVED

RG6 SKY BLACK 305M REEL

06MM-E6SKYB

RG6 SKY WHITE 305M REEL

06MM-E6SKYW



RG6 SKY BLACK 150M REEL

06MM-E6SKYB-150

RG6 SKY WHITE 150M REEL

06MM-E6SKYW-150



RG6 SKY APPROVED SPECIFICATIONS

Electrical Properties

Impedance	75.0 +/- 3.0 Ohms
Velocity or Propagation	85.0% Nominal
Return Loss	5 MHz to 1000 MHz ≥ 20dB 1000 MHz to 3000 MHz ≥ 15dB
Nominal DC Resistance	Centre Cond. 100.1 Outer Cond. 34.4
Attenuation	@ 68° F (20° C)

Frequency	dB /100 feet Nominal	dB /100 meters Nominal
5 MHz	0.55	1.81
55 MHz	1.52	4.99
83 MHz	1.85	6.08
187 MHz	2.71	8.88
211 MHz	2.90	9.51
250 MHz	3.14	10.29
300 MHz	3.37	11.06
350 MHz	3.66	12.00
400 MHz	3.94	12.93
450 MHz	4.18	13.71
500 MHz	4.43	14.52
550 MHz	4.66	15.27
600 MHz	4.85	15.90
750 MHz	5.37	17.61
865 MHz	5.80	19.01
1000 MHz	6.22	20.41
1200 MHz	6.80	22.32
1450 MHz	7.47	24.50
1800 MHz	8.29	27.21
2200 MHz	9.15	30.01
2400 MHz	10.10	33.14
2800 MHz	10.90	35.76
3000 MHz	11.28	37.01



CABLE REEL FRAME

CABLE DISPENSER FRAME

11MM-REEL01

- Durable pre-galvanised steel frame (cable not included)



WHY MATCHMASTER ANTENNAS ARE "FOR THE BEST" CHOICE

Since 1956 when Matchmaster launched the model A Antenna, we have prided ourselves on delivering the highest quality products to the market. Innovation has been a key to the success of Matchmaster.



An example of this was the invention of the 'G' Unit® by Dr Rudolph Guertler. The 'G' Unit® is the driven element in the majority of the DigiMATCH™ Antennas and is the **ONLY** unique dipole invented in Australia for the Television Industry and was awarded the **"highest patent award available."**



Now with close to 4 million Matchmaster antennas sold in Australia our history is a testament to the industry for installing quality products in consumers homes.

History aside Matchmaster today in relation to all DigiMATCH™ UHF/VHF products are all still manufactured in Australia. The products feature 'F' type baluns and diplexer systems for the best VSWR, Black UV resistant plastics and 12.7mm extruded heavy duty elements for better band width and superior strength. This coupled with high visibility retail red packaging with high strength outer cartons reduces the cost to the consumer by eliminating damage in transit.



High profile packaging is your silent sales person in your warehouse, shop or van improving consumer confidence in the product they are purchasing from you. Matchmaster is committed to be For The Best for our customers in product, distribution, engineering, technical back up and value for your money.

Thank you for supporting Matchmaster, For The Best...





SPLITTERS

'F' TYPE AP/DC

07MM-TM12	07.02
07MM-TM13	07.02
07MM-TM14	07.02
07MM-TM16	07.02

'F' TYPE VERTICAL AP/DC

07MM-TMV12	07.03
07MM-TMV13	07.03
07MM-TMV14	07.03
07MM-TMV16	07.03
07MM-TMV18	07.03

'F' TYPE AP/DC OUTDOOR

07MM-TM12-OD	07.04
07MM-TM14-OD	07.04



For the Best

SPLITTERS

'F' TYPE AP/DC

SAT IF COMPATIBLE 2 WAY SPLITTER
WITH DC POWER PASS TO ALL PORTS

07MM-TM12



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5-40	5.5dB	17dB	>75dB
40-1000	4.7dB	20dB	>65dB
1000-1750	6.0dB	17dB	>65dB
1750-2450	6.5dB	16dB	>55dB

SAT IF COMPATIBLE 3 WAY SPLITTER
WITH DC POWER PASS TO ALL PORTS

07MM-TM13



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5-40	8.0dB	16dB	>75dB
40-1000	7.5dB	20dB	>65dB
1000-1750	9.0dB	17dB	>65dB
1750-2450	11.5dB	16dB	>55dB

SAT IF COMPATIBLE 4 WAY SPLITTER
WITH DC POWER PASS TO ALL PORTS

07MM-TM14



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5-40	8.0dB	13dB	>75dB
40-1000	8.5dB	20dB	>65dB
1000-1750	10.5dB	16dB	>65dB
1750-2450	11.5dB	15dB	>55dB

SAT IF COMPATIBLE 6 WAY SPLITTER
WITH DC POWER PASS TO ALL PORTS

07MM-TM16



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5-47	12.5dB	20dB	>75dB
40-1000	12.5dB	20dB	>65dB
1000-1750	14.5dB	17dB	>65dB
1750-2450	16.0dB	16dB	>55dB
2050-2450	17.5dB	13dB	>45dB

'F' TYPE VERTICAL AP/DC

DIGITAL COMPATIBLE 2 WAY
DC POWER PASS ALL PORTS

07MM-TMV12



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5 - 40	≤ 4.2	≥ 18	≥ 10
40 - 1000	≤ 4.8	≥ 20	≥ 10
1000 - 1750	≤ 6.0	≥ 20	≥ 10
1750 - 2050	≤ 6.2	≥ 20	≥ 10
2050 - 2400	≤ 6.5	≥ 20	≥ 10

DIGITAL COMPATIBLE 3 WAY
DC POWER PASS ALL PORTS

07MM-TMV13



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5 - 40	≤ 7.5	≥ 20	≥ 8
40 - 1000	≤ 8.5	≥ 20	≥ 10
1000 - 1750	≤ 11.0	≥ 20	≥ 10
1750 - 2050	≤ 11.0	≥ 20	≥ 9
2050 - 2400	≤ 11.5	≥ 20	≥ 9

DIGITAL COMPATIBLE 4 WAY
DC POWER PASS ALL PORTS

07MM-TMV14



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5 - 40	≤ 8.5	≥ 20	≥ 8
40 - 1000	≤ 9.5	≥ 20	≥ 10
1000 - 1750	≤ 10.0	≥ 20	≥ 10
1750 - 2050	≤ 11.5	≥ 20	≥ 10
2050 - 2400	≤ 12.0	≥ 20	≥ 10

DIGITAL COMPATIBLE 6 WAY
DC POWER PASS ALL PORTS

07MM-TMV16



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5 - 40	≤ 11.5	≥ 20	≥ 8
40 - 1000	≤ 12.5	≥ 20	≥ 10
1000 - 1750	≤ 14.0	≥ 20	≥ 10
1750 - 2050	≤ 16.5	≥ 20	≥ 10
2050 - 2400	≤ 17.5	≥ 20	≥ 10

DIGITAL COMPATIBLE 8 WAY
DC POWER PASS ALL PORTS

07MM-TMV18



Frequency Range MHz	Insertion Loss	Isolation B/Outputs	Return Loss
5 - 40	≤ 12.0	≥ 20	≥ 8
40 - 1000	≤ 13.0	≥ 20	≥ 10
1000 - 1750	≤ 15.5	≥ 20	≥ 10
1750 - 2050	≤ 18.0	≥ 20	≥ 10
2050 - 2400	≤ 18.5	≥ 20	≥ 10

SPLITTERS

'F' TYPE AP/DC OUTDOOR

SPLITTER 2 WAY OUTDOOR
POWER PASS TO ALL PORTS

07MM-TM12-OD

- Digital Compatible
- Frequency Range 5-2400MHz
- Easy to install
- 'F' Type connections for fast installations and impulse noise reduction
- Weatherproof housing for external mounting
- Environmentally Smart
 - MEPS and RoHs compliant



SPLITTER 4 WAY OUTDOOR
POWER PASS TO ALL PORTS

07MM-TM14-OD

- A-Class - 10dB extra screening effectiveness reduces interference
- All Ports Power Pass (DC Only)
- Allows the main TV antenna/satellite feed to be split for up to 4 outlets.
- Frequency Range: 5-2450MHz

Includes

- 1x A-Class Splitter 4 Way Outdoor
- 2x mounting screws





CONNECTORS AND TOOLS

RG59

08MM-SI59	08.2
-----------	------

RG11

08MM-QM11	08.2
-----------	------

HOME THEATRE

08MM-HD59R	08.2
08MM-HD59F	08.2

RG6

08MM-EX6XLG	08.3
08MM-F6WROS	08.3
08MM-SI6	08.3
08MM-QM06	08.3

ADAPTORS

08MM-A1	08.4
08MM-A2	08.4
08MM-A3	08.4
08MM-A4	08.4
08MM-A6	08.4
08MM-A7	08.4
08MM-A8	08.4
08MM-A9	08.4
08MM-A10	08.4
08MM-A11	08.4
08MM-A16	08.4
08MM-F813G	08.4
08MM-B1	08.5
08MM-B2	08.5
08MM-B4	08.5
08MM-B5	08.5
08MM-B6	08.5
08MM-B7	08.5
08MM-B9	08.5
08MM-B10	08.5
08MM-T1	08.5
18MM-DV49A	08.5
21MM-DV25	08.5

TOOLS

08MM-CT01	08.6
08MM-CT01PLUNGER	08.6
08MM-HT352/ST05	08.6
08MM-HTR352	08.6
08MM-HT323	08.6
08MM-ST10	08.6
08MM-SKY-KIT	08.6
08MM-SKY-KIT2	08.6

CONNECTORS & TOOLS

RG59 CONNECTORS

SELF INSTALL RG59 CONNECTOR

08MM-SI59

No compression tool required,
coax stripper (08MM-HT352)



GET READY FOR DIGITAL
Digital Friendly Device

RGII CONNECTORS

COMPRESSION UNIVERSAL
CONNECTOR RGII

08MM-QMII

Use 08MM-CT01 compression tool and
08MM-HT352 stripping tool



GET READY FOR DIGITAL
Digital Friendly Device

HOME THEATRE CONNECTORS

R59 CONNECTOR RCA

08MM-HD59R



R59 CONNECTOR 'F' TYPE

08MM-HD59F



RG6 CONNECTORS

RG6 COMPRESSION DUAL & QUAD CONNECTOR

08MM-EX6XLG

Use 08MM-CT01 compression tool and
08MM-HT352 stripping tool

- Sky approved



RG6 WRO 'F' TYPE

08MM-F6WROS

- Alloy
- Sky approved



SELF INSTALL RG6 CONNECTOR

08MM-SI6

No compression tool required,
coax stripper (08MM-HT352)

Features

- Use Digital Ready 'F'-Type fittings without having to haul the crimping tool into a cramped roof-space. Works in conjunction with your existing RG6 Stripper
- Now you can use Digital Ready 'F'-Type fittings on your TV system without having to buy specialist tools, just push the connector on!



GET READY FOR DIGITAL
Digital Friendly Device

COMPRESSION UNIVERSAL CONNECTOR RG6

08MM-QM06

Use 08MM-CT01 compression tool and
08MM-HT352 stripping tool



CONNECTORS & TOOLS

ADAPTORS

'F' MALE TO IEC (PAL)
MALE ADAPTOR

08MM-A1



'F' FEMALE TO IEC (PAL)
MALE ADAPTOR

08MM-A2



'F' MALE TO IEC (PAL)
FEMALE ADAPTOR

08MM-A3



'F' FEMALE TO IEC (PAL)
FEMALE ADAPTOR

08MM-A4



'F' FEMALE TO RCA
MALE ADAPTOR

08MM-A6



'F' MALE TO 'F'
MALE ADAPTOR

08MM-A7



'F' FEMALE TO RCA
FEMALE ADAPTOR

08MM-A8



'F' MALE TO RCA
FEMALE ADAPTOR

08MM-A9



'F' MALE TO 'F' FEMALE
ELBOW ADAPTOR

08MM-A10



'F' FEMALE TO 'F' MALE
PUSH-ON ADAPTOR

08MM-A11



'F' FEMALE TO IEC MALE
RIGHT ANGLE ADAPTOR

08MM-A16



'F' FEMALE TO 'F' FEMALE
3GHZ ADAPTOR

08MM-F813G



CONNECTORS & TOOLS

BNC MALE TO IEC
FEMALE ADAPTOR
08MM-B1



BNC MALE TO 'F'
FEMALE ADAPTOR
08MM-B2



BNC MALE TO RCA
FEMALE ADAPTOR
08MM-B4



BNC FEMALE TO 'F'
MALE ADAPTOR
08MM-B5



ADAPTOR 'F' FEMALE
TO BNC FEMALE
08MM-B6



BNC FEMALE TO RCA
MALE ADAPTOR
08MM-B7



RG6 BNC CRIMP
TYPE ADAPTOR
08MM-B9



BNC FEMALE TO BNC
FEMALE ADAPTOR
08MM-B10



'F' TYPE TERMINATOR
75 OHM
08MM-T1

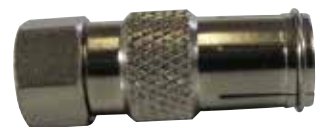


ADAPTER 'F' FIXED TO 'F' PUSH-ON
18MM-DV49A

The DV49A is an F-male to F-Male push on and used as a quick connection to join 2-products with F-Female connections.

TERMINATOR WITH DC BLOCKING
21MM-DV25

The DV25 is used to terminate the "end of line" on the MDS™ system, the terminator has a DC block.



CONNECTORS & TOOLS

TOOLS

COMPRESSION TOOL 'F' CONNECTORS

08MM-CT01

Features

- Professional tool suitable for RG6/11 'F' connectors
- Termination is accomplished in a single action giving you a professional cost effective solution for 'F' connector type compression



CABLE STRIPPER RG59, RG6 AND RG11

08MM-HT352/ST05

- Light weight, compact, cost-effective stripper, simple to operate
- Adjustable stripping blade for different insulation thickness, prevents damage of shielding and conductors
- The cassette can be reversed to change different coaxial cable
- Easy to adjust with thumb screw



CABLE STRIPPER RG59, RG6 AND RG11

08MM-HT323



COAX CABLE STRIPPER WITH SPANNER

08MM-ST10



REPLACEMENT PLUNGER FOR 08MM-CT01

08MM-CT01 PLUNGER

REPLACEMENT BLADES FOR 08MM-HT352

08MM-HTR352

CRIMP, STRIPPER & CONNECTORS TOOL KIT

08MM-SKY-KIT

Tool Kit Includes

- 08MM-CT01 Compression Tool
- 08MM-EX6XL-G Connectors RG6 DUAL/QUAD - Sky Approved
- 08MM-HT352/ST05 Cable Stripper

CRIMP, STRIPPER & CONNECTORS TOOL KIT INCLUDING CARRY CASE

08MM-SKY-KIT2





DIPLEXERS, TRIPLEXERS AND FILTERS

DIPLEXERS, TRIPLEXERS AND FILTERS

09MM-SD02	09.2
09MM-SD05	09.2
09MM-FDU-FM	09.2
05MM-DOP2C	09.2
05MM-DOP2H	09.2

JOHANSSON 'F' TYPE DIPLEXERS

09MM-DTF01	09.3
09MM-DTF02	09.3

SPLITTER / COMBINER / FILTER WITH BACKFEED

09MM-DDP22	09.4
------------	------

DIPLEXERS, TRIPLEXERS & FILTERS

DIPLEXERS, TRIPLEXERS AND FILTERS

SATELLITE 40-2300MHZ DIPLEXER

09MM-SD02



SATELLITE TERRESTRIAL OUTDOOR
AUTO POWER BYPASS

09MM-SD05



DIPLEXER UHF / FM

09MM-FDU-FM

UHF / FM with DC Auto Bypass

- Outdoor housing

Technical Specifications

Input 1	FM: 88-108MHz	< 1.0dB
Input 2	UHF: 500-694MHz	< -2.5dB
DC Auto by Pass W / 100mA PTC		



DIPLEXER FTA/SAT FOR
CLIPSAL® D / GANG PLATE

05MM-DOP2C

Technical Specifications

Freq. Range	Input 1	950-2300MHz
	Input 2	40-860MHz
Insertion Loss		2.3dB
Isolation		20dB



DIPLEXER FTA/SAT FOR HPM® PLATE

05MM-DOP2H

Technical Specifications

Freq. Range	Input 1	950-2300MHz
	Input 2	40-860MHz
Insertion Loss		2.3dB
Isolation		20dB
Dimension		62 x 52 x 16mm



DIPLEXERS, TRIPLEXERS & FILTERS

JOHANSSON 'F' TYPE DIPLEXERS

All models feature

- Industry standard 'F' connector
- Strap for easy installation and long life
- Non-corrosive circuit board with high quality components
- U/V stabilised weather proof black housing



* Indoor use only

DIGITAL TERRESTRIAL FILTER CH(25-48)

09MM-DTF01

Used to filter unwanted 'Digital Killing' interference from 4G Cellphone and strong VHF



INDOOR DIGITAL TERRESTRIAL 4G FILTER

09MM-DTF02

- Frequency 'Pass Band' 88-694MHz
- LTE rejection 694-710MHz 18dB
- LTE rejection 710-790MHz 35dB
- LTE rejection 790MHz + 45dB
- Connections 'F' Female, 'F' Male
- Power Pass 'No'

* LTE (Long Term Evolution)



DIPLEXERS, TRIPLEXERS & FILTERS

SPLITTER / COMBINER / FILTER WITH BACKFEED

FM + DIGITAL UHF + SATELLITE

09MM-DDP22



NEW

Technical Specifications

			Typical Value	Q.C Limit	Remark
Frequency Range			5~2150MHz		
IN A			I		F-(f) connector
IN B			I		F-(f) connector
OUT 1			I		F-(f) connector
OUT 2			I		F-(f) connector
Insertion Loss (dB)	IN A-OUT1	88-108MHz	6.5	≤7.5	
	IN A-OUT2	470-700MHz	9.0	≤10	
		950-2150MHz	6.5	≤7.5	
	IN B-OUT1 IN B-OUT2	470-700MHz	8.0	≤9.0	
Return Loss (dB)	IN A	88-108MHz	10	≥9.0	
		470-700MHz	10	≥9.0	
		950-2150MHz	8.5	≥7.5	
	IN B	470-700MHz	10	≥9.0	
	OUT1 OUT2	88-108MHz	17	≥15	
		470-700MHz	15	≥12	
		950-2150MHz	10	≥9.0	

DC pass (Max:18V/1A)

OUT1, OUT2 ← → IN



AMPLIFIERS

AMPLIFIER SPLITTER

10MM-MA22FL 10.2

AMPLIFIER SATELLITE

10MM-SA18 10.2

MASTHEAD AMPLIFIERS

10MM-MD15P 10.3

10MM-MD24UP 10.3

10MM-MA30FM 10.3

10MM-J25SLN-4G 10.3

POWER SUPPLIES

10MM-PSD14 10.4

10MM-PSM18F 10.4

10MM-DC-PASS 10.4

MULTISWITCHES

10MM-MST08 10.4

10MM-MST08P 10.4

10MM-MST316-19 10.4

AMPLIFIERS

10MM-DDA24 10.5

10MM-DDA28 10.5

30MM-DDA28 10.5

MODULATORS

10MM-MT47 10.6

10MM-MT57 10.6

10MM-MR03 10.6

DIGITAL MODULATORS

See section 14MM

AMPLIFIERS

AMPLIFIER SPLITTER

AMPLIFIER SPLITTER 2 WAY

10MM-MA22FL

Adaptors for easy connectivity

Includes

3x A3 Female IEC

Features:

- Ideal for improving reception on a single TV or allows the TV and FM signal to be split to 2 TV's
- 1 Input 2 Outputs
- 15dB \pm 3dB Gain
- Max output level at 60dB IMA 100dB μ V
- Compact flat design with all cable entry points on one side for easy access
- Easy to install and fully automatic in operation
- LED light shows operation at a glance
- Hang sell resealable clamshell packaging



Technical Data

No. of Inputs	1
No. of outputs	2
Gain	15dB \pm 3dB
Max Output	100dB μ V
60dBIMR	

4G
READY



AMPLIFIER SATELLITE

AMPLIFIER SATELLITE 18DB INLINE

10MM-SA18

The Satellite Amplifier is a fully screened remote powered device which will work in a voltage range of 12-18V DC



Technical Specifications

Frequency Range	950-2050MHz
No. of Input	1 'F' Type
No. of Outputs	1 'F' Type
Gain	18 \pm 1.5dB
Return Loss (input)	5dB
(outputs)	4dB
Noise Figure	5dB
Gain Adj. VHF	13 - 20dB
UHF	-
Max Output 60dIMR at 35IMR	-
	105dB μ V
Screening	VHF > 75dB
	UHF > 65dB
Input/Output Imped.	75 Ohm
Power Source	15VDC \pm 3
Power Consumption	1W
Dimensions (mm)	80x27x16

MASTHEAD AMPLIFIERS

AMPLIFIER MASTHEAD UHF/VHF WITH 14V DC POWER SUPPLY

10MM-MD15P

- Gain UHF/VHF 15dB
- Perfect for up to 12 outlets
- Low noise figure <2.5dB - ideal for digital reception
- Posistor protected power supply
- 'F' type connection for easy installation
- Fully shielded
- Weatherproof housing



MASTHEAD AMPLIFIER 4G UHF SWITCHABLE

10MM-MD24UP

- Switchable 694MHz low pass filter
- Gain 24dB UHF
- Gain with LTE filter 694MHz 24dB
- 720MHz 10dB
- 820MHz < 1dB
- VHF switch diplexing max attenuation 2.84dB at 230MHz
- Return loss VHF > 13dB
- Return loss UHF > 14dB
- 14Vdc
- Stainless Steel mounting strap included



AMPLIFIER MASTHEAD 30DB UHF 25DB VHF + SWITCHABLE FM TRAP

10MM-MA30FM

- Switchable input selection - UHF / VHF
- Environmentally friendly RoHS compliant
- 'F' Type Connections
- Adjustable gain on UHF & VHF
- New Tilt Feature for easy installation
- Weatherproof
- Fully shielded for durability
- No links to cut
- Power supply sold separately (10MM-PSD14 - 14V DC 'F' Type Power supply or 10MM-PSM06 - 14V DC Power supply)



DIGITAL MASTHEAD UHF AMPLIFIER A-CLASS SUPER LOW NOISE

10MM-J25SLN-4G

- UHF Only
- 2 Year Warranty
- Easy to install
- 'F' Type connections for fast installation and impulse noise reduction
- Low noise for clearer pictures
- High output proven performance
- Weatherproof housing for external mounting
- Environmentally Smart - MEPS and RoHS compliant
- Compression Connector Compatible
- Gain UHF 10dB - 25dB Adjustable
- Power supply sold separately (10MM-PSD14 - 14V DC 'F' Type Power Supply)



GET READY FOR DIGITAL
Digital Friendly Device

AMPLIFIERS

POWER SUPPLIES

POWER SUPPLY 14V DC

10MM-PSD14

Features

- Reduces protrusion
- Environmentally smart
 - MEPS and RoHS compliant
 - Male 'F' type connection



'F' TYPE POWER SUPPLY

10MM-PSM18F

Input: 100 - 240V ~ 50/60Hz 900mA
Output: 18V 200mA



DC-PASS / ADAPTOR-LEAD

10MM-DC-PASS

Allow power to bypass non power devices



MULTISWITCHES

SATELLITE MULTI-SWITCH 5 X 8 WITH TONE REMOTE

10MM-MST08

SATELLITE MULTI-SWITCH 5 X 8 WITH POWER SUPPLY

10MM-MST08P

Includes power supply



MULTISWITCH, 1RU 19", 2 X SAT, 1 X TER, 1 X BACKFEED AND COMPATIBLE WITH MDS AND DDA

10MM-MST316-19

- Four inputs - combined SAT H+TER, SAT V,TER and back feed (UHF)
- Two DIP-Switches to select TER input from combined SAT H+TER or TER, and 0VDC or 14VDC to TER input.
- 13VDC to SAT V, 18VDC to SAT H and selectable 14VDC to TER when 18VDC_IN exist or 18VDC from subscribers. If only 13VDC from subscribers, all above voltages will be lower than 13VDC, maybe just 12VDC.
- SAT V/H inputs are selected by 13VDC or 18VDC from subscribers.

30MM-MST316 - See section 30MM

Technical Data

Model		10MM-MST08 / 10MM-MST08P	
		Typical	QC Limit
Frequency Response		47~2150MHz	
Inputs - F connectors		4 SAT + 1 Terr	
Outputs - F connectors		8	
Insertion Loss	Terr 47~694MHz	0dB	<2dB
	SAT 950~2150MHz	0dB	<2dB
	Terr to SAT	23dB	>20dB
	SAT to Terr	23dB	>20dB
	Cross polar. H/V	25dB	>23dB
Isolation	Out-Out	47~694MHz	28dB >23dB
		950~2150MHz	30dB >24dB
Return Loss	Terr Inputs	47~694MHz	10dB >8dB
	Terr Outputs	47~694MHz	8dB >6dB
	SAT Inputs	950~2150MHz	10dB >8dB
	SAT Outputs	950~2150MHz	8dB >6dB
Output Level	SAT (IMA ₃ 35dB)	EN50083-3	97dBμV >92dBμV
	Terr (IMA ₃ 60dB)	EN50083-5	88dBμV >83dBμV
Switching Commands		13V, 18V, 13V/22kHz, 18V/22kHz	
Switching Voltage		15±1V	
Frequency Range of 22KHz Tone		22±4KHz	
Level of 22KHz Tone		0.7±0.25Vp-p	
LNB power supply		from receiver	
Power consumption		max. 180mA	

AMPLIFIERS

DIGITAL DISTRIBUTION AMPLIFIER

10MM-DDA24

For the best in reticulation of SKY Digital, FreeView SD/HD, MPEG2, MPEG4, Analogue and Digital TV Distribution. Includes Active backfeed for distribution of SKY / DVD etc.

- 4 Outputs
- 1 - 2 Switchable Inputs
- Freq: 47-2150MHz
- Includes power supply



DIGITAL DISTRIBUTION AMPLIFIER

10MM-DDA28

For the best in reticulation of SKY Digital, FreeView SD/HD, MPEG2, MPEG4, Analogue and Digital TV Distribution. Includes Active backfeed for distribution of SKY / DVD etc.

- 8 Outputs
- 1 - 2 Switchable Inputs
- Freq: 47-2150MHz
- Includes power supply



DIGITAL DISTRIBUTION AMPLIFIER

30MM-DDA28

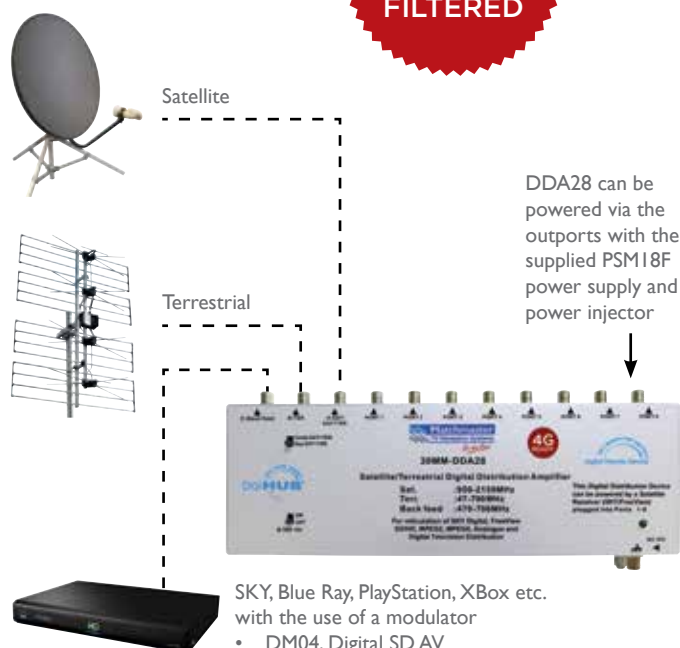
For the Best in Sky, FreeView, SD, HD, MPEG2, MPEG4, Analogue and Digital distribution.

Digital Distribution Amplifier with 8 outputs, 1-2-switchable inputs and active backfeed.

Allows output from SKY / DVD etc to be viewed on all TV's connected to DDA28. Replaces the need for a splitter/amplifier and allows any SKY / FreeView satellite receiver or FreeView HD receiver to plug into any outlet.

Features

- Frequency 47 - 2150 MHz
- 2 Inputs SAT & Terrestrial Combined or separate
- Backfeed
- Satellite and Terrestrial powering
- Comes complete with power supply for Local powering. Also has a power injector supplied for remote powering through coax
- Instruction sheet for input and output options. Suitable for domestic and commercial installations (used for reticulation within apartment when used off a commercial system).



SKY, Blue Ray, PlayStation, Xbox etc. with the use of a modulator

- DM04, Digital SD AV
- DM05, Digital SD AV
- DM21, Digital HD 720P
- MT47, Analogue 1 x AV
- MT57, Analogue 1 x AV stereo
- MR03, Analogue 3 x AV



COMPATIBLE PRODUCT

AMPLIFIERS

MODULATORS

MODULATOR TERRA DSB MONO 85 DBUV

10MM-MT47

Technical Data

RF Output	
Level (typical)	85 dBμV
Level Adjustment	0 ±-20dB
Frequency Range*SC	170-300 MHz, 470-862 MHz
Combining through loss Terr/SAT	1.5dB/2.5dB
Frequency Range of RF Combining	5-2150 MHz
Signal/Noise Ratio	≥55 dB
Power Consumption	230V~50Hz 2.5W
Operating Temp.	-10deg C + + 50deg C
Dimensions (mm)	133x63x39
Weight	0.36kg



MODULATOR TERRA DSB
STEREO 85 DBUV

10MM-MT57

Technical Data

RF Output	
Level (typical)	85± 3dBμV
Level Adjustment	0 ±-20dB
Frequency Range*SC	170-300 MHz, 470-862 MHz
Combining through loss Terr/SAT	1.5dB/2.5dB
Frequency Range of RF Combining	5-2150 MHz
Signal/Noise Ratio	≥55 dB
Power Consumption	230V~50Hz 2.5W
Operating Temp.	-10deg C + + 40deg C
Dimensions (mm)	133x63x39
Weight	0.36kg



MODULATOR DIGIMATCH
DSB 85DB 3 X AV-RF

10MM-MR03





INSTALLATION HARDWARE

MASTING

IIMM-MEP05	11.2
IIMM-MEK	11.2
IIMM-MEP1	11.2
IIMM-MEPJ10	11.2

CURVED FASCIA MOUNTS

IIMM-HS500	11.2
IIMMHS1000	11.2
IIMM-HS1200	11.2
IIMM-HS1500	11.2
IIMM-HS2000	11.2
IIMM-HS2500	11.2
IIMM-UEM	11.2

RIDGE MOUNTS

IIMM-RM03	11.3
IIMM-RM05	11.3
IIMM-RM10	11.3
IIMM-RM10R	11.3
IIMM-IRM	11.3

ADJUSTABLE SWIVEL MOUNTS

IIMM-AM1000K	11.3
IIMM-AM1500K	11.3
IIMM-AM2000K	11.3
IIMM-MT10R	11.3
IIMM-MT15R	11.3
IIMM-MT20R	11.3
IIMM-AMBASE	11.3
IIMM-AMBASE-L	11.3

STAY BARS AND ACCESSORIES

IIMM-SB10A	11.4
IIMM-SB15A	11.4
IIMM-SB20A	11.4
IIMM-SB10G	11.4
IIMM-SB15G	11.4
IIMM-SB20G	11.4
IIMM-SB25G	11.4
IIMM-SB500AU	11.4
IIMM-SB700AU	11.4
IIMM-SB1000AU	11.4
IIMM-SB350A	11.4
IIMM-SB500A	11.4
IIMM-SB700A	11.4
IIMM-SB1000A	11.4

JIGGER BOOM (STANDOFF)

IIMM-JB500G	11.4
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MOUNTING CLAMPS AND ACCESSORIES

IIMM-PIPECLAMP	11.5
IIMM-UB6M	11.5
IIMM-HDN	11.5
IIMM-620	11.5
IIMM-665	11.5

CABLE CLIPS & TIES

IIMM-CC7B	11.5
IIMM-CC7W	11.5
IIMM-CT140W	11.5
IIMM-CT200B	11.5
IIMM-CT200W	11.5
IIMM-CT380B	11.5
IIMM-CT380W	11.5

SCREWS, BOLTS AND MISC ACCESSORIES

IIMM-ST25	11.6
IIMM-ST50	11.6
IIMM-ST65	11.6
IIMM-ST75	11.6
IIMM-ST100	11.6
IIMM-ST125	11.6
IIMM-SI01	11.6
IIMM-REEL01	11.6

INSTALLATION HARDWARE

MASTING

MAST EXTENSION POLE
0.5M GALVANISED

I I MM-MEP05

MAST EXTENSION POLE
1.0M GALVANISED

I I MM-MEP1



MAST EXTENSION KIT 1.5M

I I MM-MEK



MAST EXTENSION 1.5M GALVANISED

I I MM-MEJ10

CURVED FASCIA MOUNTS

MOUNT CURVED
FASCIA GALVANISED 0.5M

I I MM-HS500

MOUNT CURVED
FASCIA GALVANISED 1.0M

I I MM-HS1000

MOUNT CURVED
FASCIA GALVANISED 1.2M

I I MM-HS1200

MOUNT UNDER EAVE

I I MM-UEM



MOUNT CURVED
FASCIA GALVANISED 1.5M

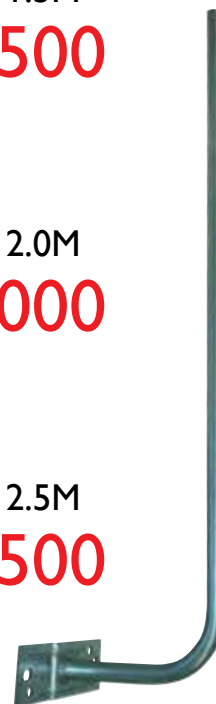
I I MM-HS1500

MOUNT CURVED
FASCIA GALVANISED 2.0M

I I MM-HS2000

MOUNT CURVED
FASCIA GALVANISED 2.5M

I I MM-HS2500



INSTALLATION HARDWARE

RIDGE MOUNTS

RIDGE MOUNT 0.3M

11MM-RM03

RIDGE MOUNT 0.5M

11MM-RM05

RIDGE MOUNT 1.0M

11MM-RM10

RIDGE MOUNT 1.0M ROLLED

11MM-RM10R

RIDGE MOUNT BASE

11MM-IRM

complete with V block assembly
(needs mast)



ADJUSTABLE SWIVEL MOUNTS

SWIVEL MOUNT 1.0M

11MM-AM1000K

Complete with alloy stays and base

SWIVEL MOUNT 1.5M

11MM-AM1500K



SWIVEL MOUNT 2.0M

11MM-AM2000K

Complete with alloy stays and base



MAST ONLY 1.0M FOR
ADJ RIDGE MOUNT

11MM-MT10R



MAST ONLY 1.5M FOR
ADJ RIDGE MOUNT

11MM-MT15R

MAST ONLY 2.0M FOR
ADJ RIDGE MOUNT

11MM-MT20R

BASE ONLY FOR ADJUSTABLE MOUNT

11MM-AMBASE

Used with MT10R-MT20R mast

EXTRA LONG BASE 340MM

11MM-AMBASE-L

INSTALLATION HARDWARE

STAY BARS & ACCESSORIES

STAY 1.0M ALLOY SINGLE

11MM-SB10A

STAY 1.5M ALLOY SINGLE

11MM-SB15A

STAY 2.0M ALLOY SINGLE

11MM-SB20A

ADJ STAY 0.5M-0.90M WITH U BOLT

11MM-SB500AU

ADJ STAY 0.7M-1.30M WITH U BOLT

11MM-SB700AU

ADJ STAY 1.0M-1.75M WITH U BOLT

11MM-SB1000AU

STAY 1.0M GALVANISED SINGLE

11MM-SB10G

STAY 1.5M GALVANISED SINGLE

11MM-SB15G

STAY 2.0M GALVANISED SINGLE

11MM-SB20G

STAY 2.5M GALVANISED SINGLE

11MM-SB25G

ADJ STAY 0.35M-0.60M
(WITHOUT U BOLT)

11MM-SB350A

ADJ STAY 0.5M-0.90M
(WITHOUT U BOLT)

11MM-SB500A

ADJ STAY 0.7M-1.30M
(WITHOUT U BOLT)

11MM-SB700A

ADJ STAY 1.0M-1.75M
(WITHOUT U BOLT)

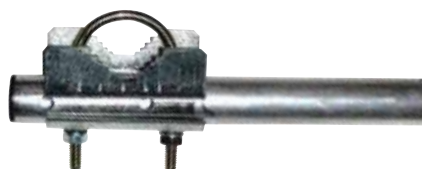
11MM-SB1000A



JIGGER BOOMS (STANDOFF)

JIGGER BOOM 500MM GALVANISED

11MM-JB500G



INSTALLATION HARDWARE

MOUNTING CLAMPS & ACCESSORIES

PIPE CLAMP 27MM

11MM-PIPECLAMP



HEAVY DUTY NEST

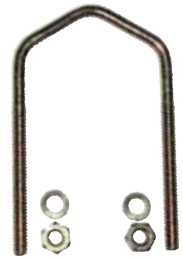
11MM-HDN



U BOLT ONLY - STANDARD

11MM-UB6M

Complete with nuts & washers



V BLOCK ASSEMBLY
COMPLETE - HEAVY DUTY

11MM-620



V BLOCK ASSEMBLY
COMPLETE - STANDARD

11MM-665



CABLE CLIPS & TIES

CLIPS 7MM BLACK C NAIL (100)

11MM-CC7B

CLIPS 7MM WHITE C NAIL (100)

11MM-CC7W



CABLE TIES 140MM WHITE (100)

11MM-CT140W

CABLE TIES 200MM BLACK (100)

11MM-CT200B

CABLE TIES 200MM WHITE (100)

11MM-CT200W

CABLE TIES 370MM BLACK (100)

11MM-CT380B

CABLE TIES 370MM WHITE (100)

11MM-CT380W

INSTALLATION HARDWARE

SCREWS, BOLTS & MISC ACCESSORIES

TEK SCREW 25MM - LOOSE

11MM-ST25

TEK SCREW 50MM - LOOSE

11MM-ST50

TEK SCREW 65MM - LOOSE

11MM-ST65

TEK SCREW 75MM - LOOSE

11MM-ST75

SEALANT (CLEAR) EACH

11MM-SI01

CABLE DISPENSER FRAME

11MM-REEL01

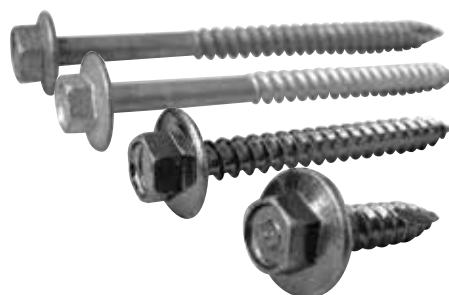
• Durable pre-galvanised steel frame

TEK SCREW 100MM - LOOSE

11MM-ST100

TEK SCREW 125MM - LOOSE

11MM-ST125





TEST EQUIPMENT

I2MM-TDM5	I2.2
I2MM-TDM6	I2.3
I2MM-SDM7	I2.4
I2MM-H60	I2.5
I2MM-DF02	I2.6



For the Best

02
03
04
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TEST EQUIPMENT

ANALOGUE & DIGITAL TERRESTRIAL SIGNAL LEVEL METER WITH SPECTRUM ANALYSER

I2MM-TDM5

Features

- Analogue/Digital C/N Measurement
- Channel/Freq. Spectrum Measurement
- Graphic Tilt Measurement (Max.11)
- USB Interface
- Cable Loss Compensation
- Antenna Focusing with Beep Sound
- Editable Channel Plan
- Ultra Portable Type(400g)



Digital TV

Frequency Range	45~870MHz
Measurement Unit	dBuV, dBmV, dBm
Input Impedance	75Ω (F type connector)
Frequency Resolution	10KHz
Level Measurement Range	25dBuV ~ 120dBuV
Digital Channel Power Measurement Resolution	0.1dB
Digital Channel Power Measurement Accuracy	±2.0dB
C/N Measurement	- Range: 0~50dB - Bandwidth: 0.5MHz ~ 9MHz - Offset: 0.5MHz ~ 9MHz

Analogue TV

Frequency Range	45~870MHz
Measurement Unit	dBuV, dBmV, dBm
Input Impedance	75Ω (F type connector)
Frequency Resolution	10KHz
Level Measurement Range	25dBuV ~ 120dBuV
Level Measurement Resolution	0.1dB
Level Measurement Accuracy	±2.0dB
V/A Measurement C/N Measurement	- Range: 0~50dB - Bandwidth: 0.5MHz ~ 9MHz - Offset: 0.5MHz ~ 9MHz

Graphic Tilt Spectrum Measurement (Analogue/Digital Channels)

Range	45 ~ 870MHz
Indication	Tilt Slope, Video Level

Channel Spectrum Measurement (Analogue/Digital Channels)

Range	45~870MHz
Span	16CH/38CH/56CH/110Ch
Measurement Range	25dBmV ~ 120dBu
Reference Level Division	10dB
Marker Indication	Analog Channel (Video/Audio Level) - Digital Channel (Channel Power)

Frequency Spectrum Measurement (Analogue/Digital Channels)

Range	45~870MHz
Span	10/22/56/110MHz
Measurement Range	25dBuV ~ 120dBuV
Reference Level Division	10dB
Marker Indication	Carrier Level

TEST EQUIPMENT

DIGITAL TV SIGNAL ANALYSER

I2MM-TDM6

Analogue and digital measurements, spectrum analyser and data logger all in a compact, lightweight, hand held unit

- Frequency range: 5-870MHz
- Analogue and digital Measurements
- Measurement range: 15-120dBuV
- Spectrum analyser – channel, frequency, tilt, peak and average
- Long battery life – 4-5 Hours
- Ni-Mh rechargeable batteries
- Weighs UNDER 1kg including batteries

Analogue

- Power levels
- C/N measurement
- V/A measurement
- Data logger with pass/fail indicator

Digital

- Digital power
- C/N measurement
- MER measurement
- Pre-BER and post-BER measurements
- Data logger with pass/fail indicator

Other features

- Automatic distinction of digital and analogue channels in spectrum mode
- Constellation diagrams
- Auto scan for channels
- Over 250 channel storage
- Free downloadable Software
- Graphics display: 70 x 38mm
- CTB/CSO measurement

Accessories Included

- Hard Carrying case for meter protection
- PC Interface Connection Cable
- Cigarette Lighter adaptor lead for in car



The Leader of Digital TV Signal Analyzer

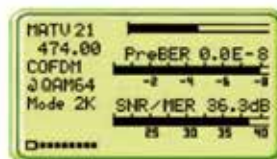
TELEMANN



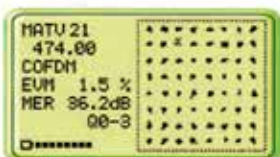
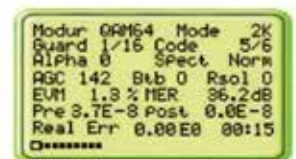
Analogue Signal Measurement



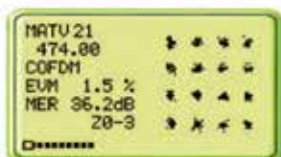
Power Measurement for Digital Channel



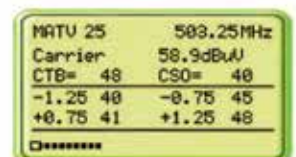
MER, Pre-BER, Post-BER, Error Counter



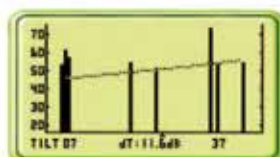
Constellation Diagram Analysis & Zoom



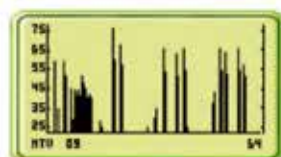
Analogue/Digital Channel C/N Measurement



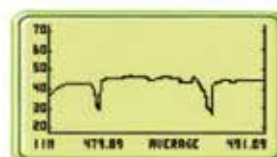
CTB/CSO Measurement



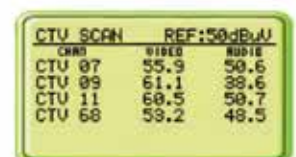
Tilt Spectrum Analysis



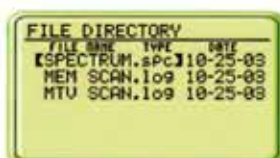
Channel Spectrum Analysis



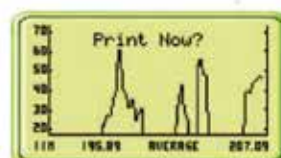
Frequency Spectrum Analysis



Scan



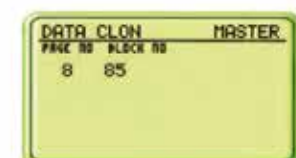
File (Saving/Reviewing/Deleting)



RS232C Interface
(Printing/CH Plan Editing)



MATV/CATV CH Plan



Data Cloning

TEST EQUIPMENT

SATELLITE DVB-S/S2 DIGITAL FIELD STRENGTH METER

I2MM-SDM7

Allows Measurement of services such as VAST, Foxtel, Austar and more.

Features

- Convenient & quick searching
- I/Q Constellation Diagram (HD Level 8PSK)
- Per-BER, Post-BER, SNR, MER measurement
- Blind scan for DVB-S, DVB-S2, DSS & TP list
- Easy to upload & download new satellite file list
- Data Logger with USB port
- Spectrum Analyzer
- Accurate level measurement
- DiSEqC 1.0/1.1/1.2(Rotator) supporting
- Easy portable & lightweight type
- Li-Po Battery

Accessories Included

- 1x Digital Satellite Analyzer
- 1x User Manual
- 1x 'F' Connector
- 1x Portable Bag with shoulder strap
- 1x USB Cable



Analogue SAT

Frequency Range	950MHz - 2150MHz
Frequency Resolution	0.1MHz
Level Measurement Range	20dBμV(-40dBmV)-110dBμV(+50dBmV)
Level Measurement Resolution	0.1dB
Level Measurement Bandwidth	3-20MHz or AUTO
Level Measurement Accuracy	±2dB(5-50°C)
Level Units	dB(dBμV, dBmV, dBm) or %

Digital SAT (DVB-S, DVB-S2 & DSS)

Frequency Range	950MHz - 2150MHz
Frequency Resolution	0.1MHz
Level Measurement Range	20dBμV(-40dBmV)-110dBμV(+50dBmV)
Level Measurement Resolution	0.1dB
Level Measurement Bandwidth	3-20MHz or AUTO
Level Measurement Accuracy	±2dB(5-50°C)
LOCX Range	25 dBμV(-35dBmV)-110dBμV(+50dBmV)
DVB-S2	1) QPSK - Symbol Rate: 1-36MSps - FEC: 1/4, 1/3, 2/5, 3/5, 1/2, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 2) 8PSK - Symbol Rate: 1-30MSps - FEC: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
DSS QPSK	Symbol Rate: 20MSps / FEC: 3/4, 5/6, 6/7
MER Range	5dB - 20dB
SNR Range	8PSK: 3-20dB QPSK: 2-16dB
BER Range	Per-BER: 2xE-2 ... 2xE-8 Post-BER: 2xE-4 ... 2xE-9
Spectrum Inversion	Auto
I/Q Constellation Diagram	8PSK, QPSK

Spectrum Mode

Level Range	25dBμV - 110dBμV
Measurement Range	20dBμV - 110dBμV
Span	120MHz, 240MHz, 600MHz, Full
Peak Level Indication	Auto
Sweep Rate	900ms/600ms/300ms

User config for LNB/sW/Rotator

SW Config	22KHz, DSEqC 1.0/1.1/1.2 Dish Legacy
Sat File	Max 99, 84TP per Sat File, Max 1368TP

USB Port

Downloading / Uploading with PC	Config Files
Downloading / Uploading / Printing with PC	Max 99 Logger Files & 1 Scanned File

Power Supply

Rechargeable Battery (Built-In)	Config Files
Continuous Operating Time in Full Charging (over 8hours)	Max 99 Logger Files & 1 Scanned File
Main Adapter	DC 12V/500mA

Circumstance

Usable Temperature	5-50°C
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TEST EQUIPMENT



I2MM-H60

MATHEMATICAL PRECISION AND
EXCLUSIVE FUNCTIONALITIES
NOW WITH A HIGHER RESOLUTION
AND CONTRAST SCREEN



**Expanded Spectrum Range
Up to 3.3GHz**
That allows the detection of
LTE interference



**Attenuation
Measurement**
In channel and
frequency



**Selective Optical
Interface**



**Remote Control
of Measurement**
Through an IP based
network

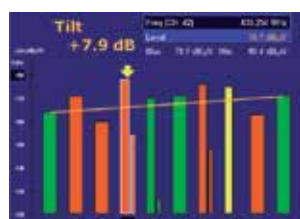
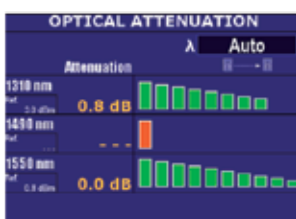


Unprecedented speed and mathematical precision in all your measurements...

... now clearer than ever before

Televes set a clear benchmark in the sector when it launched the first portable field spectrum analyser worldwide that incorporated digital Processing technology. This milestone set a before and after in certifying television services in buildings and homes because the professional installer could now utilise all the mathematical precision of an sophisticated laboratory equipment in a portable format of just 2Kg.

four years later, digital Processing keeps offering unprecedented functionality, and Televes has decided to launch its newest technological piece of art with great enhancements and features, presented in a larger and clearer screen.



SPECTRUM ANALYSER EXTENDED TO 3,3 GHz

Tilt function

Measures network attenuation in channel and frequency

MPEG4 with common interface video in HD

HDMI output

Selective optical interface

DVB-T2 demodulation

High resolution, high contrast screen

Digital Processing enhanced



Remote control of your H60 meter

Ideal for extended signal tests of head-end and broadband distribution networks. Leave your H60 connected to any distribution network and manage the unit remotely. Once finished, export the results to any PC using the HSuite software (included).

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TEST EQUIPMENT

TERRESTRIAL DIGITAL TV SIGNAL FINDER

I2MM-DF02

The Matchmaster Digital TV Signal Finder is designed to ensure that you position and angle your Digital TV Antenna in the correct direction for optimal reception results.

Most televisions are now using an internal digital tuner to look for and lock onto TV channels. A good quality signal is essential for high quality digital pictures and to achieve this the antenna must be pointed in the right direction and at the correct angle to maximise digital signal strength and quality. Quite often the channels are limited in number and are of poor picture quality, because the aerial is not tuned in accurately enough. At last a simple solution is available from Matchmaster; a smart pocket sized hand held Digital Signal Finder which simply plugs into your existing aerial system, in your home, caravan, motor home or boat, and with little effort indicates the best direction for the aerial to point. All this only takes a few seconds of your time and gives professional results.

Features

- Simple connection instructions
- Suitable for the Home, Caravan, Boating and Leisure enthusiast
- Simple connection instructions
- Easily locate the best Digital TV picture quality for your application
- Time saving
- Includes 9V battery
- Battery operated

Application

- Connect the antenna cable to the port marked 'ANT'.
- Remove any external amplifiers* that may be connected to the antenna.
- Turn the signal finders' power to on.
- Adjust the antenna to the best position by watching the LED lights. Higher up the scale gives a better signal. When in position, remove finder and replace any amplifiers that were disconnected.



Digital



Analog

Get ready for Digital
Your Vision is our Vision
ANTENNA SELECTION GUIDE

Simply the easiest way to find the **Best Digital TV Antenna** for your area go to www.matchmaster.net.nz to try it out!



Scan me now!



SATELLITE EQUIPMENT

DISHES

I3MM-R45P	13.2
I3MM-R65P	13.2
I3MM-R80P	13.2
I3MM-R45P-KIT1	13.2
I3MM-R45P-KIT2	13.2
I3MM-R65P-K	13.2
I3MM-R65P-K2	13.2
I3MM-R65P-K4	13.2
I3MM-R80P-K	13.2
I3MM-R80P-K2	13.2
I3MM-SMC80	13.3
I3MM-SMC80-SK	13.3
I3MM-SMC100	13.3

LNB & ACCESSORIES

I3MM-KF04	13.3
I3MM-KF04A	13.3
I3MM-KF10	13.3
I3MM-KF15	13.3
I3MM-KFDO	13.3
I3MM-SF95	13.3
I3MM-DISQ4	13.3

RECEIVERS SATELLITE

I3MM-DSR15	13.4
I3MM-DSR16	13.4

MOUNTS SATELLITE

I3MM-SM01	13.5
I3MM-SM04-G	13.5
I3MM-SM04HD	13.5
I3MM-SM06	13.5
I3MM-SM08	13.5
I3MM-SM09	13.5
I3MM-SM09P	13.5
I3MM-SM12	13.5
I3MM-SM12P	13.5
I3MM-SM15	13.5
I3MM-CLEVISBR1	13.5

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SATELLITE EQUIPMENT

DISHES

Features:

- Heavy gauge galvanized steel and a superior rolled edge for added strength and durability
- Light grey powder coating
- Quality fittings
- Available in 4 sizes
- Your choice of a single box (for the shelf) or bulk pack (4) for the installer

SATELLITE DISH 45CM
I3MM-R45P

SATELLITE DISH 65CM
I3MM-R65P

SATELLITE DISH 80CM
I3MM-R80P



Mounting assembly for 45cm



Mounting assembly for 65cm & 80cm



Rolled edge for strength and durability

Satellite dish kits

I3MM-R45P-KIT1	45cm satellite dish, LNB, satellite finder, coax, connectors and ground mount
I3MM-R45P-KIT2	45cm satellite dish, LNB, satellite finder, coax, connectors, ground mount, power adaptor and HD satellite receiver
I3MM-R65P-K	65cm satellite dish and I0750 LNB
I3MM-R65P-K2	65cm satellite dish and I1300 LNB
I3MM-R65P-K4	65cm satellite dish, I0750 LNB and wall mount
I3MM-R80P-K	80cm satellite dish and I0750 LNB
I3MM-R80P-K2	80cm satellite dish and I1300 LNB

Stand shown not included

SATELLITE EQUIPMENT

DISH SAT 80CM

13MM-SMC80

Plastic Dishes SMC



DISH SAT 100CM

13MM-SMC100

Plastic Dishes SMC



STAINLESS STEEL MOUNTING KIT

13MM-SMC80-SK

Stainless mounting kit for SMC80

LNB AND ACCESSORIES

SAT LNB DIGIMATCH

13MM-KF04

10750



SAT LNB STRONG

13MM-KF10

10750. Dual Output



SAT LNB DIGIMATCH

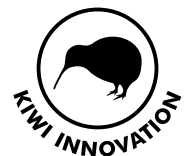
13MM-KF04A

11300



SATELLITE HORIZONTAL / VERTICAL LNB

13MM-KF15



Features

- Allows the receiving of the Horizontal polarity and Vertical Polarity on one piece of coaxial cable
- Horizontal polarity uses a 10750 Local oscillator and the Vertical polarity
- Compatible with MDS™, DDA and MST Matchmaster solutions
- Horizontal and Vertical polarity stacked 10750/11300
- Input: 12.25 - 12.75GHz
- Output: 950 - 2150MHz
- Gain: 65dB
- Noise: 0.6dB



DISEQC SWITCH

13MM-DISQ4

4 way



SATELLITE FINDER 950-2250MHz

13MM-SF95

Features

- Frequency Range 0.95GHz~2.15GHz
- Sensitivity 7dB
- Power Supply DC13~18V
- Operating Range LNB Gain+52~60dB



SAT LNB HOLDER

13MM-KFDO

D1 + D2



SATELLITE EQUIPMENT

RECEIVERS SATELLITE

SATELLITE RECEIVER - MINI

13MM-DSR15

Features:

- Full function remote
- IR bubble so receiver can be placed behind TV
- Pre loaded with current FreeView channels
- Electronic Program Guide "EPG"
- Teletext • TV/Radio • Compact size
- Record on to external hard-drive
- INPUTS & OUTPUTS
- 1.5M Composite Video L&R audio lead
- USB for recording
- IR, for extension IR bubble

Accessories:

- Remote Control, Batteries, AV Cable, IR Bubble,
- Power Pack, USB adaptor cable, Operation manual



Includes:

- 1 x Receiver 2 x AAA Batteries
- 1 x Power Supply 1 x IR Bubble
- 1 x USB Cable 1 x Remote Control
- 1 x Operating Manual

MINI DIGITAL HD SATELLITE RECEIVER

13MM-DSR16

Features:

- Full function remote
- IR extender bubble for "Behind-TV" use
- DVB-S and S2 receiver
- Full HD on HD programs
- HDMI output (HDMI lead not included)
- USB recording
- Time shift
- Media playback
- Electronic program guide

Product Includes:

- 1x Digital HD* satellite receiver with HDMI output
- 1x Pre-programmed for FreeView SD
- 2x AAA batteries
- 1x Power supply
- 1x IR bubble
- 1x USB cable
- 1x Remote

* Please note that this receiver will produce the same definition as received.



MOUNTS

SATELLITE WALL MOUNT (SMALL)

13MM-SM01



SATELLITE MOUNT - ROOF

13MM-SM04-G

- Mast 550mm (45mm dia)
- Adj Stay 1 x 700-1300mm
- Adj Stay 1 x 500- 900mm
- Base (CLEVISBR1)
- Bolt kit
- SKY approved



SATELLITE MOUNT - ROOF - HEAVY DUTY

13MM-SM04HD

- Mast 800mm
- Adj Stays 2 x 700-1300mm
- Base (CLEVISBR1)
- Bolt kit



SATELLITE MOUNT WALL SUPPORT

13MM-SM06



SATELLITE MOUNT - UNDER EAVE

13MM-SM08

- Adjust Stays 2 x 700mm
- Base (CLEVISBR1)
- Bolt kit
- Mast 1.6mm thick pre-galv steel (45mm dia)



SATELLITE MOUNT WALL

13MM-SM09

- Fixed Stay 680mm
- Pre-galv 32mm dia
- Bolt kit



SATELLITE MOUNT ROOF - 1M DISH

13MM-SM12

- Heavy Duty
- Adj Stays 2 x 800-1300mm
- Mast 62.0mm dia. Stays 25.4mm dia
- Base super heavy duty



SATELLITE MOUNT - PROFESSIONAL

13MM-SM09P

- Mast 800mm
- Adj Stay 1 x 500mm
- Adj Stay 1 x 200mm(approx)
- Base (CLEVISBR1)
- Bolt kit



SATELLITE MOUNT - ROOF PELMET FOR LARGE DISH

13MM-SM12P



SATELLITE MOUNT GROUND - PORTABLE

13MM-SM15

- Suitable for up to 60 - 65cm dish
- For dishes with universal mast fixing



SATELLITE MOUNT - BASE ONLY

13MM-CLEVISBR1

- Base has a series of holes to assist in locating the correct mounting points on the roof or wall.
- It also has horizontal and vertical tags for the desired orientation of the pole



VIP™ IPTV GLOBAL SOLUTION

HOTEL / EDUCATION / CORPORATE / HEALTHCARE



STREAMER / VOD SERVER / MIDDLEWARE / BOX ACCESSORIES

CAHORS THE GLOBAL SOLUTION

To succeed in IPTV, you need an end-to-end solution that lets you deliver the content and compelling services that your customers want.

Today, customers demand the ability to access all type of content across all types of devices and expect a consistent, high quality experience across all environments. Actually, multi-service providers are looking to take advantage of the commercial opportunities presented by IP Networks.

Call Matchmaster today for your IPTV solutions 0800-AERIAL (0800-237425)



 CAHORS



HEADEND EQUIPMENT

MULTI-BAND TERRESTRIAL AMPLIFIER

I4MM-MA202	I4.2
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TERRA AMPLIFIERS

I4MM-HA205R30	I4.3
I4MM-BA213U	I4.4

SATELLITE AMPLIFIERS

I4MM-SA100	I4.5
I4MM-SA45	I4.6
I4MM-HSA100R	I4.7
I4MM-ST45	I4.7

MODULES

I4MM-AT420	I4.8
I4MM-AT440	I4.9
I4MM-UP410S	I4.9
I4MM-MDX420	I4.10
I4MM-MA400	I4.11

ACCESSORIES

I4MM-MR19-420	I4.11
I4MM-MR420	I4.11
I4MM-CB420	I4.12
I4MM-DC420	I4.12
I4MM-UP410S	I4.12

MMH3000 MINI MODULAR HEADEND EQUIPMENT & ACCESSORIES

I4MM-UC380	I4.12
I4MM-UD101	I4.13
I4MM-UD104	I4.13
I4MM-PC100	I4.13
I4MM-AF310B	I4.13
I4MM-RD313C	I4.13
I4MM-RD314C	I4.13
I4MM-DM313C	I4.13
I4MM-DM314C	I4.13
I4MM-CT311	I4.14
I4MM-TDX311	I4.14
I4MM-MD331	I4.14
I4MM-TRX360	I4.14
I4MM-DM04	I4.15
I4MM-DM05	I4.15

HEADEND EQUIPMENT

MULTI-BAND TERRESTRIAL AMPLIFIER

5-INPUT TERRESTRIAL AMP

I4MM-MA202

Features:

- Splitband FM+VHF and UHF amplifiers
- Gain level control with interstage amplifiers and attenuators
- Protection and indication of DC overload
- Switchable +12V DC feeding for preamplifiers through all inputs*
- Built-in test point
- Die-cast housing



Technical Data

Gain	FM (88-108 MHz)	30 dB
	VHF (47-68 MHz)	40 dB
	VHFIII (174-260 MHz)	40 dB
	UHF (470-862 MHz)	2 x 47dB
	UHFV (614-862 MHz)	—
	UHFIV (470-590 MHz)	—
Number of inputs		5
Noise figure, typical		< 5 dB (VHF); <4 dB (UHF)
Maximal output level IMD3=60 dB (DIN45004B)		VHF 118 dBμV; UHF 121 dBμV
Gain control	Attenuator	0 ÷ -20 dB
	Switch	0/-10 dB
Return loss		> 10 dB
External DC feeding		12V 0.1 A max
Power consumption**		< -60 dB
Power consumption		230V~ 50 Hz 9.5 W
Operating temperature range		-20° ÷ +50°C
Dimensions/Weight (packed)		265x175x60 mm/1.1 kg

TERRA AMPLIFIERS

AMPLIFIER 27/36DB SWITCHABLE GAIN
47-862MHZ + RETURN PATH 5-30MHZ

I4MM-HA205R30

Features

- High-power amplifier designed as a great all-round amplifier
- Switchable internal amplifier section allowing it to switch effortlessly between medium and high gain performance. This allows the gain of the amplifier to be reduced without degrading the quality of the signal being amplified
- Solid die-cast housing
- Variable slope and gain control built-in, providing even greater adjustment.
- Ventilated power-supply section allowing for greater heat dissipation and a longer MTBF when compared to other amplifiers
- 'F' Connectors on all ports
- External test ports for both input and output
- Passive and active return path supported using the internal jumpers
- 240V Mains powered

Technical Data

I4MM-HA205R30

Forward Path

Frequency range	47-862 MHz
Gain Switchable*	27/36dB
Gain Adjustment	18dB
Slope Adjustment	18dB
Interstage equalizer	-6/-3/0 dB
Flatness*	±0.75dB
Input & Output Return Loss	>14dB at 40 MHz; -1.5 dB/oct, but not less 10 dB
Output level CTB, CSO (EN50083-3)**	109 dBμV
Noise figure	8 dB
Test points attenuation	-20 dB

Return Path

Frequency Range	5-65MHz
Gain, switchable	27/-4dB
Gain adjustment	18 dB
Input attenuator	-10/0 dB
Output equalizer	-6/-3/0 dB
Flatness	±0.75 dB
Return loss	>14dB
Noise figure	7 dB (active, 0 dB input attenuator)
Max output level IMD3=60 dB (DIN45004B)	115 dBμV (active)

General

Power Supply	230V ~ 50Hz 7.5W	30-48V
Operating Temperature	-20 °C ÷ +50 °C	

* For amplifier with return path measured 10MHz after the starting frequency of forward path

** With 6dB interstage equaliser

I4MM-HA205R30



HEADEND EQUIPMENT

AMPLIFIER HIGH POWERED 39DB GAIN
47-862MHZ + RETURN PATH 5-30MHZ

I4MM-BA2I3U

Features

- High-powered amplifier designed to supply signal to large-scale television networks.
- Suitable for both indoor and protected outdoor scenarios.
- Weatherproof and RF shielded design allows it to operate reliably in a range of conditions.
- Straight-forward internal plastic casing shows exactly where to adjust each setting.
- GaAs push-pull output stage.
- 240V mains powered.
- 'F' Connectors on all ports.
- External test ports for both input and output.
- Passive return path module included, with the ability to insert an active return path module if required (sold separately).
- Variable slope and gain control built-in.
- Fixed slope and gain adjustment also available through the provided plug-in modules.

Optional Accessories

PD06-30: 5 – 30 MHz return path diplexer that will be required with each node that wishes to implement an active return path. Other bandwidths can be ordered on request.



Technical Data

Forward Path

Forward Path*	47-862MHz
Return Path*	5-30 MHz

Gain

Forward Path**	39dB
Return Path	-2.5dB
Flatness***	± 0.5 dB
Gain Adjustment	20dB
Slope adjustment, typical	18 dB
Inverse cable equalizer	0-9 dB in 1 dB step
Output level CTB, CSO (EN50083-3)****	109 dBµV
Input and Output return loss*****	>14dB
Noise Figure	<7dB
Test points attenuation	-20dB

General

Mains powering	230V ~ 50Hz 11W
Operating temperature range	-20°C + +50°C
Dimensions & Weight	180x132x76mm (with fixing ears) 213x132x76mm) / 1.4kg

* Depends on plug-in modules: return path passive pd 02-xx or active pr 02-xx (Return path modules should be ordered separately)

** With link 0 dB instead of interstage attenuator JXP-xx and interstage equalizer: 4dB & 6dB JXP-xx attenuators are supplied in scope of the amplifier delivery

*** For amplifier with return path - ± 0.7 dB

**** Measured with 6dB interstage equalizer

***** When $f \geq 40$ MHz, return loss ≥ 14 dB (40MHz) - 1.5 dB/octave, but not less 10dB

SATELLITE AMPLIFIERS

SAT IF AMPLIFIER WITH PASSIVE TERRESTRIAL TV PATH

I4MM-SA100

Features:

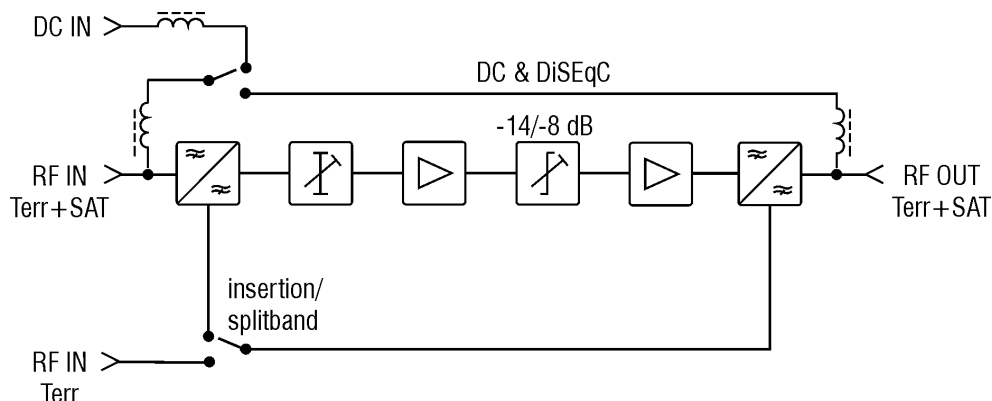
- For amplification signals of SAT and terrestrial TV bands
- Suitable for signals combining of SAT and terrestrial TV bands
- Possibility of DC feeding for LNBs
- From external power supply
- Possibility of DC and DiSEqC signals pass
- Built-in separate gain & slope regulators for every band die-cast housing



Technical Data

Frequency Path		
Frequency range	SAT IF	950-2400 MHz
	Terr. TV	5-862 MHz
Gain	SAT IF	23-31 dB (pre-correction)
	Terr. TV	-4 dB
Gain Adjustment	SAT IF	10 dB
	Terr. TV*	—
Slope Adjustment	SAT IF	14/8 dB switchable
	Terr. TV*	—
Input and output return loss	SAT IF	≥ 10 up to 1750 MHz, 1750-2400 MHz linear decrease from 10 dB up to 7 dB
	Terr. TV	≥ 10 dB
Maximal output level IMD3=35 dB (EN50083-3)	SAT IF	120 dBμV (2 equal carriers)
	Terr. TV	115 dBμV
Maximal output level IMD3=60 dB (DIN45004B)		
Noise figure	SAT IF	8 dB
	Terr. TV	8 dB
General		
Mains power consumption		230 V~ 50 Hz 5 W
Temperature range		-20° ÷ +50° C
Dimensions		185x91x47 mm/0.7 kg

* terrestrial gain, slope adjustment and return path are not available at passive terrestrial TV mode



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HEADEND EQUIPMENT

AMPLIFIER SAT 35-45DB

I4MM-SA45

MATV launch amplifiers, designed for small and medium size distribution networks. To be used as MATV headend. Featuring a Low/High gain switch guaranteeing a wide dynamic margin with low noise figure.

Features

- Split-band amplification.
- 20 dB independent attenuators (PIN diode) for each band.
- Gain switch: high/low..
- Automatic DC power through inputs (selectable).
- Test output (-30 dB).
- Low power consumption.

Technical Data

Input	MATV Band		SAT Band
Output	MATV/SAT Band		
Frequency range	47-862MHz		950-2150MHz
Gain	-1,5dB		35dB (950MHz) 45dB (2150MHz)
Gain adjustment range	-		0-20dB
Input equalizer	-		0-12
Output level	DIN45004B	-	-
	EN50083	IMD3	≥124dB
		IMD2	-
		CTB, CSO, XMOD	-
Noise figure	-		9dB
Rejection UHF- IF SAT	-		-
Power on inputs	-		13/17Vdc
Max current through inputs	-		300mA
Max current available			300mA
Max through current Out -> In			-
22KHz tone amplitude	-		0,6Vpp
AC power consumption			14W



SPLIT BAND AMPLIFIER

I4MM-HSA100R

Satellite IF Amplifier with Active/Passive
Terrestrial TV Path, Switchable

Features

- Amplifies both Satellite and Terrestrial services
- Terrestrial stage can be switched to passive if it is not needed
- DC power pass through, allows power to be passed to an LNB or masthead amplifier
- Independent gain and slope adjustment available for both satellite and terrestrial bands.
- Ventilated power-supply section allowing for greater heat dissipation and a longer MTBF when compared to other amplifiers.
- Solid die-cast housing
- Foxtel Approved (F30672)



General

Mains power consumption	230V ~ 50Hz 7.5W
Temperature Range	-20°C - +50°C
Dimensions mm	185x91x47
Weight kg	0.7

* terrestrial gain, slope adjustment and return path are not available in passive terrestrial TV mode



Forward Path

Frequency Range SAT IF	950 – 2400 MHz
Frequency Range TERR TV	47-862 MHz
Gain SAT IF	23-31 dB
Gain TERR TV	21-24dB
Gain Adjustment SAT IF	10dB
Gain Adjustment TERR TV*	18dB
Slope Adjustment SAT IF	14/8dB switchable
Slope Adjustment TERR TV*	18dB
Input & Output return loss SAT IF	>7dB
Input & Output return loss TERR TV	>10dB
Max output level IMD3=60dB (DIN45004B) TERR TV	115dBμV
Noise Figure SAT IF	8dB
Noise Figure TERR TV	8dB

SATELLITE/TERRESTRIAL AMPLIFIERS

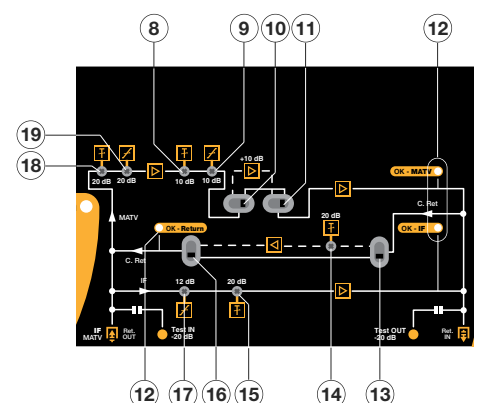
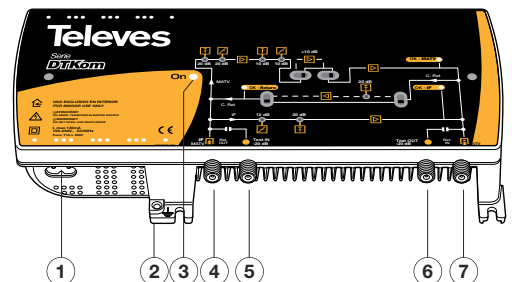
I4MM-ST45

Televes



1. Mains supply input (196-264V~ 50/60 Hz)
2. Ground connection
3. On LED
4. IF + MATV input
5. IF + MATV input test
6. IF + MATV output test
7. IF + MATV output
8. Return channel input
9. MATV signal attenuator
10. Configuration switch for main channel amplifier

11. Configuration switch for main channel amplifier
12. Status LEDs. "On" position means signal presence.
13. Configuration switch for return channel amplifier
14. Return channel attenuator
15. IF attenuator
16. Configuration switch for return channel amplifier
17. IF equalizer
18. MATV signal attenuator
19. MATV signal equalizer



Technical Data

MATV

Frequency range	47-862 MHz	87 - 862 MHz
Adjustable gain	40-53dB	
Output level (DIN 45004B) dBμV	124	

FI

Frequency range	950-2150 MHz
Gain	42dB
Output Level (EN50083) dBμV	121

Return Path

Frequency range	5-30	5-65
Gain Active/Passive dB	20/-4	
Output level (DIN 45004B) dBμV	115	
Powering (Vac)	196-264	
Dimensions	158 x 102 x 51 mm	

HEADEND EQUIPMENT

MODULES

DUAL SINGLE-CHANNEL AMPLIFIER

I4MM-AT420 (UHF)

Each module includes two channel amplifiers for terrestrially broadcast free-to-air channels. This means that most locations will only require 3 of these modules to cover all locally-broadcast digital content.

- Two completely independent channel amplifiers in each module
- Frequency agile channel amplifiers can be reprogrammed to any UHF channel
- Dual 8MHz SAW-filtering implemented on each channel results in class-leading channel selectivity.
- 30dB of AGC protection included for each channel, helping to maintain a stable RF output level
- Settings are programmed through push-button interface on the front of the module



Technical Data

Parameters

I4MM-AT420

Input	
Number of internal channel amplifiers	2
Channel Allocation	New Zealand
Channel Range	20 - 75
Bandwidth	8MHz
Selectivity	-40 dB @ ± 2 MHz from edge of 7MHz filter
Loop through gain	0 \pm 1.5 dB
Return loss	> 12 dB
Output	
Level	85 dB μ V
Attenuation available	0 - 10 dB in 1 dB steps
Frequency range of RF combining	47 - 2150 MHz
Combining through loss Terr/Sat	1.5/2.5 dB
Return Loss	> 10 dB
Noise Figure	8 dB
Flatness of channel bandwidth	\pm 1.5 dB
General	
Masthead Amplifier Supply	12V 100mA max
Power Consumption	12V 450mA
Operating Temperature Range	0 - 50°C
Dimensions	198 x 107 x 36mm

QUAD SINGLE-CHANNEL AMPLIFIER

I4MM-AT440

- TV channel amplifiers tunable in UHF range
- SAW filters provide a high selectivity processing of digital and analog channels
- integrated LTE signal suppression filter (for at440 only)
- each section has a built-in AGC system and an independent regulator of output level
- built-in indicators and push buttons allow operatively to set required parameters
- DIN rail or wall mounting
- DC feeding for preamplifiers through RF input
- robust die-cast housing
- connectors:
 - 4xRF - type F
 - screw terminal block for DC entry
 - power distribution bus

Technical Data

Tuning range of channels	470-790 MHz
RF input	TV standard DVB-T*
	Channel bandwidth 8 MHz
	Level/impedance 50-75 dBμV/75 Ω
	Frequency range of RF distribution 47-790 MHz
	Loop through gain 0 ± 1.5 dB
	Return loss >10 dB
RF output	Level/ impedance, typical 82 dBμV/75 Ω
	MER of DVB-T signal ≥ 36 dB (input signal MER 38 dB)
	Frequency range of RF combining 47-2150 MHz
	DC pass through 0.3 A
	Combining through loss Terr/SAT 1.5/2.5 dB
	Level adjustment range**** 0 ÷ -10 dB by 1 dB step
	Return loss ≥10 dB
Noise figure	8 dB
Selectivity, typical	40 dB, ±2 MHz from 8 MHz bandwidth border
Offset**	±0.25 MHz by 0.125 MHz step
Spurious signals level	≤ -55 dBc
Mirror channel selectivity	≥ 60 dB
Flatness of channel bandwidth, typical	± 1.5 dB
DC feeding for external****	12 V 0.1 A max.
Current consumption***	12 V 0.75 A
Operating temperature range	0° ÷ +50°C
Dimensions/Weight (packed)	198x107.5x48.5 mm/1 kg

* 21-69 channels for AT420 by G standard, 20-75 channels for AT421 by Au standard, 21-60 channels for at440 by G standard

** the offset is used for fine tuning of the channel frequency response

*** without external DC loading

**** software control



POWER SUPPLY MULTICHANNEL 12V, 4.5AMP

I4MM-UP410S

- switch-mode technology
- short circuit and overload protected
- DIN rail or wall mounting and power distribution bus connectors



TERRA

Technical Data

DC output voltage	+12V 4.5 A, max.
Mains voltage	187-250V ~ 50 Hz
Operating temperature range	-20° ÷ +50°C
Dimensions/Weight (packed)	198x107.5x48 mm/ 0.9 kg

HEADEND EQUIPMENT

MODULATOR DUAL AV TO DVB-T

I4MM-MDX420

Modulating analogue video/audio signal into COFDM modulated DVB-T RF channel.

- AV - DVB-T stand-alone modulator
- PSI generation: SDT, NIT, LCN
- Processing from 2 video and audio sources into single RF DVB channel
- OLED graphical display and joystick control of internal microprocessor
- Adjustable RF output level and audio input level
- Loop through RF combining
- Low level harmonics and intermodulation products
- Robust diecast housing connectors:
 - Video/audio input - RCA socket
 - RF - type F
 - Screw terminal block for DC entry
 - Power distribution bus



Technical Data

I4MM-MDX420

TV standard*		PAL (B, D, G, H, I, M, N, 60); SECAM, NTSC (M, 4.43)
Video input	frequency range	20 Hz - 6 MHz
	level/impedance	1V ± 0.1V / 75Ω
Audio input	frequency range	20 Hz - 15 kHz
	level/impedance	775 mV/10 kΩ
Processing Video	level adjustment*	+ 6 ÷ -6 dB by 2 dB step
	encoding	ISO/IEC 13818-2 MPEG-2 MP@ML
	resolution*	720 x 576 (at 25 fps), 720 x 480 (at 30 fps)
	frame rate*	25 max. PAL, SECAM, 30 max. NTSC
Processing Audio	compressed system bit rate*	2...9 Mbps
	encoding	ISO /IEC 11172-3 (MPEG I audio) layer 2 compliant
	sampling rate*	44.1 kHz
	compressed bit rate*	256 Kbps
Modulation	audio mode*	Stereo
	MER	≥ 35 dB
	modulation*	QPSK, QAM16, QAM64
	channel bandwidth*	7/8 MHz
RF output	guard interval*	1/4, 1/8, 1/16, 1/32
	code rate*	1/2, 2/3, 3/4, 5/6, 7/8
	transmission mode	2K
	frequency range*	110 - 860 MHz
Current consumption	level/impedance	85 dBμV/75 Ω
	output C/N	≥ 50 dB
	output level adjustment range*	0 ÷ -15.5 dB by 0.5 dB step
	frequency range of RF combining	47-2150 MHz
Operating temperature range	DC pass through	0.3 A
	combining through loss Terr/SAT	1.5/2.5 dB
Dimensions/Weight (packed)	return loss	≥ 10 dB
		12V 0.65 A
		0° ÷ +50°C
		198x107.5x48.5 mm/1.12 kg

*software control

MULTIBAND SYSTEM AMPLIFIER

I4MM-MA400

A multiband amplifier for delivering a high-level output from a Terra Multichannel Headend. This module has three separate inputs (FM, VHF and UHF) for different services and includes manual gain control for each input. The resulting amplified signals are combined and made available at the output port.

Technical Data

Parameters	I4MM-MA400
Number of inputs	3
Gain – FM (88-108 MHz)	30dB
Gain – VHF BIII (174-260 MHz)	30dB
Gain – UHF (470-862 MHz)	30dB
Noise figure	VHF <7dB; UHF <5dB
Max Output IMD3=60dB (DIN45004B)	VHF 116 dBμV; UHF 118 dBμV
Gain Control Attenuator	0 – -15dB
Gain Control Switch	0/-10dB
Return Loss	> 10dB
Power Consumption	12V 480mA
Operating Temperature Range	0 – 50°C
Dimensions	198 x 107 x 36mm



Accessories applications



ACCESSORIES

I9” RACK-MOUNTABLE DIN RAIL

I4MM-MR I9-420

Mounting system for the Terra Multichannel Headend intended to be used in a 19” rack. This mounting solution will hold up to 10 modules comfortably



I METRE DIN RAIL

I4MM-MR420

Useful for mounting very large numbers of modules to a wall (such as a bank of modulators and power supplies)



HEADEND EQUIPMENT

RF BRIDGE FOR TERRA MULTICHANNEL MODULES

I4MM-CB420

Allows for a quick RF connection between Terra Multichannel modules. Each Multichannel module is supplied with one of these RF bridges as part of the product, though there will be occasions where additional bridges may be required.

A variant of this RF bridge with greater spacing between connection points will be required for some modules that are not yet ready for market. This RF bridge will be called I4MM-CB420L



DC DISTRIBUTION CABLE FOR TERRA MULTICHANNEL MODULES

I4MM-DC420

This cable allows a single DC power source to be shared by multiple headend modules with 36mm spacing between connection points.

A variant of this cable with greater spacing between connection points will be required for some modules that are not yet ready for market. This cable will be called I4MM-DC420L



POWER SUPPLY MULTICHANNEL 12V, 4.5AMP

I4MM-UP410S

- switch-mode technology
- short circuit and overload protected
- DIN rail or wall mounting and power distribution bus connectors



Technical Data

DC output voltage	+12V 4.5 A, max.
Mains voltage	187-250 V ~ 50 Hz
Operating temperature range	-20° ÷ +50°C
Dimensions/Weight (packed)	198x107.5x48 mm/ 0.9 kg

TERRA 

MMH3000 MINI MODULAR HEADEND EQUIPMENT & ACCESSORIES



TERRA 

BASE UNIT 8 MODULE 19" RACK MOUNTABLE

I4MM-UC380

Features

- For DVB-S, DVB-T signal reception and video audio modulation to RF
 - Integrated DC & data distribution bus, RF output amplifier and power supply
 - Available in VSB or DSB modules with mono and A2 stereo
 - Modulates in Analogue and Digital (DVB-T).
 - Open architecture system for easy integration of new components
 - Loop through output & input for Satellite or Terrestrial signals
 - DIP switch for address setting of the base unit
 - RF output amplifier for high level output 102dBμV
 - TS distribution bus. Up to 7 slave modules can be connected to a single "master" module Optional embedded USB interface
- * Image shown with optional Fan cooling block FP 380

HEADEND EQUIPMENT

USB DATA BUS ADAPTOR INTERNAL

I4MM-UD101



QPSK-PAL TRANSMODULATOR VSB

I4MM-RD313C

- QPSK Transmodulator VSB for MMH3000
- Output 110-860MHz

QPSK-PAL TRANSMODULATOR DSB

I4MM-RD314C

- QPSK Transmodulator DSB for MMH3000
- Output 110-860MHz



USB-CMH DATA BUS ADAPTOR EXTERNAL

I4MM-UD104

MMH HANDHELD PROGRAMMER

I4MM-PC100

- For programming up to 16 modules in 2 sub racks for MMH3000 headends
- Connection to the data bus through connector; placed on the base unit
- 2 line, 16 characters LCD display with back light



MPEG-PAL TRANSMODULATOR VSB

I4MM-DM313C

- MPEG-PAL Transmodulator VSB for MMH3000
- Output 110-860MHz Slave card for RD31*

MPEG-PAL TRANSMODULATOR DSB

I4MM-DM314C

- MPEG-PAL Transmodulator DSB for MMH3000
- Output 110-860MHz Slave card for RD31*



FM BAND AMPLIFIERS

I4MM-AF310B

Features

- 30dB
- 40dB gain
- Gain control
- Sharp filtering



TERRA 

02

03

HEADEND EQUIPMENT

04

CONVERTER UHF/VHF DIGITAL & ANALOGUE

05

I4MM-CT3 I I

06

Features

- 45-862MHz Input and Output
- Input channel to output channel converter
- Works via low frequency IF and allows to change program's retransmitting frequency
- Double conversation technology
- High selectivity determined by double SAW filters
- AGC system at input
- Input signal level measurement
- Low level harmonics and intermodulation products
- 12V DC for preamplifier powering
- Input RF loop through
- 50dB gain
- 20dB adjustment

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Q-8PSK COFDM TRANSMODULATOR/ REGENERATOR

14

I4MM-TDX3 I I

17

Features

- TS processing: EPG multiplexing PCR restamping service filtering PSI/SI regeneration NIT generation PMT version monitoring
- Connectors: MPEG2 TS output RF input & output – type F

19

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3 INPUT MPEG2 ENCODER - TS OUTPUT

I4MM-MD33 I

Converting analogue video/audio signals into MPEG2 coded transport stream - output to TRX360

Features

- Three composite video and three stereo audio inputs
- Three individual MPEG2 TS outputs
- MPEG2 TS PID control
- Video brightness, contrast, saturation, hue control
- Programmable audio and video compression bit rates
- Programmable audio sampling rate
- Audio level control
- Parameters control via CMH data bus extension port
- Firmware upgradeable
- Connectors: 3-channel video/audio input – 15-pin Sub-D socket on the bottom side three MPEG2 TS Outputs: TS1, TS2 and TS3 on the front panel

COFDM MODULATOR X 6 TS INPUTS

I4MM-TRX360

Multiplexing up to 6 transport streams and converting into COFDM modulated DVB-T RF channel.

TS processing: EPG multiplexing, PCR restamping, Service filtering, PSI/SI regeneration, NIT generation.

Connectors: 6xMPEG TS inputs, MPEG2 TS Output (multiplexed)

- Output MER >35dB
- Output C/N >35



HEADEND EQUIPMENT

SD ENCODER AND MODULATOR CVBS
TO DVB-T DIGITAL RF

I4MM-DM04



Encoding Section - Video

Encoding	MPEG-2 MP@ML(4:2:0)
Interface	CVBS *I
Resolution	720x576_50i (PAL); 720x480_60i (NTSC)
Bit rate	1.000~19.500 Mbps

Encoding Section - Audio

Encoding	MPEG1 Layer II
Interface	I*Stereo /mono
Resolution	48KHz
Bit rate	64, 96, 128, 192, 256, 320, 384kbps

Modulator Section

Standard	DVB-T COFDM
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/32, 1/16, 1/8, 1/4
Transmission mode	2K
MER	≥42dB
RF frequency	30~960 MHz, 1KHz step
RF output level	-16~ -36 dBm (73-93dBμV), 0.1db step

System

Management	Local control: LCD + control buttons
Language	English
LCN Insertion	Yes
Upgrade	JTAG or USB

General

Power supply	DC 12V
Dimensions	153*110*50mm
Weight	< 1kg
Operation temperature	0~45°C

HD ENCODER AND MODULATOR
HDMI TO DVB-T DIGITAL RF (MPEG4)

I4MM-DM05



Encoding Section - Video

Encoding	H.264 MP@L 3.0 3.0/3.1/4.0
Interface	HDMI*I
Resolution	Input: 480i@59.94/60FPS Output: 480p@30FPS

	Input: 576i@50FPS Output: 576p@25FPS
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	Input: 720p@50/59.94/60FPS Output: 720p@50/59.94/60FPS
--	---

	Input: 1080i@50FPS Output: 1080p@25FPS
--	---

	Input: 1080i@59.94/60FPS Output: 1080p@30FPS
--	---

	Input: 1080p@59.94/60FPS Output: 1080p@30FPS
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Aspect rate	16:9, 5:4
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Bit rate	1.000~18.000 Mbps
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Encoding Section - Audio

Encoding	MPEG-1 Layer 2, MPEG-2 AAC
Sample rate	48KHz
Bit rate	64, 96, 128, 192, 256, 320kbps

DVB-T Modulator Section

Standard	DVB-T COFDM
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/32, 1/16, 1/8, 1/4

Transmission mode	2K, 8K
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MER	≥31dB
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RF frequency	142.5~858 MHz, 1KHz step
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RF output level	-14 ~ +6dBm, 0.1db step
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System

Management	LCD + control buttons
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Language	English
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LCN Insertion	Yes
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Upgrade	USB
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General

Power supply	DC 12V
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Dimensions	183x110x50mm
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Weight	< 1kg
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Operation temperature	0~45°C
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WHY MATCHMASTER ANTENNAS ARE "FOR THE BEST" CHOICE

Since 1956 when Matchmaster launched the model A Antenna, we have prided ourselves on delivering the highest quality products to the market. Innovation has been a key to the success of Matchmaster.



An example of this was the invention of the 'G' Unit® by Dr Rudolph Guertler. The 'G' Unit® is the driven element in the majority of the DigiMATCH™ Antennas and is the ONLY unique dipole invented in Australia for the Television Industry and was awarded the "highest patent award available."



Now with close to 4 million Matchmaster antennas sold in Australia our history is a testament to the industry for installing quality products in consumers homes.

History aside Matchmaster today in relation to all DigiMATCH™ UHF/VHF products are all still manufactured in Australia. The products feature 'F' type baluns and diplexer systems for the best VSWR, Black UV resistant plastics and 12.7mm extruded heavy duty elements for better band width and superior strength. This coupled with high visibility retail red packaging with high strength outer cartons reduces the cost to the consumer by eliminating damage in transit.



High profile packaging is your silent sales person in your warehouse, shop or van improving consumer confidence in the product they are purchasing from you. Matchmaster is committed to be For The Best for our customers in product, distribution, engineering, technical back up and value for your money.

Thank you for supporting Matchmaster, For The Best...





COMMERCIAL TAPS & SPLITTERS

A-CLASS PRECISION TM SERIES TAPS

I7MM-TM111	17.2
I7MM-TM114	17.2
I7MM-TM117	17.2
I7MM-TM408	17.2
I7MM-TM411	17.2
I7MM-TM414	17.2
I7MM-TM417	17.2
I7MM-TM420	17.2
I7MM-TM423	17.2



For the Best

COMMERCIAL TAPS & SPLITTERS

A-CLASS PRECISION TM SERIES TAPS



Features

- A Class – Extra screening effectiveness reduces interference
- Frequency Range 5 - 2150 MHz
- Power Pass One Port (AC/DC)
- Hang Sell Packs as well as Outer Display Packs

One Way Taps

A Class TM Taps	Side Loss	Frequency Range	Insertion Loss	Isolation/ Out-Tap
17MM-TM111	11dB	5 – 1000MHz 1000 – 2150MHz	<2.5dB <3.5dB	>25dB >22dB
17MM-TM114	14dB	5 – 1000MHz 1000 – 2400MHz	<2dB <3.5dB	>25dB >22dB
17MM-TM117	17dB	5 – 1000MHz 1000 – 2400MHz	<1.5dB <2dB	>28dB >25dB



Four Way Taps

A Class TM Taps	Side Loss	Frequency Range	Insertion Loss IN - OUT	Reverse Isolation OUT - TAP	Mutual Isolation OUT - TAP
17MM-TM408	8dB	5 – 1000MHz 1000 – 2150MHz	Terminated	Terminated	>18dB
17MM-TM411	11dB	5 – 1000MHz 1000 – 2150MHz	<5.5dB <6.5dB	>22dB >20dB	>18dB >18dB
17MM-TM414	14dB	5 – 1000MHz 1000 – 2400MHz	<4dB <6dB	>20dB >18dB	>20dB >18dB
17MM-TM417	17dB	5 – 1000MHz	<3dB <5dB	>20dB >20dB	>20dB >18dB
17MM-TM420	20dB	5 – 1000MHz 1000 – 2400MHz	<2.5dB <3.5dB	>20dB >20dB	>20dB >18dB
17MM-TM423	23dB	5 – 1000MHz 1000 – 2400MHz	<2dB <3.5dB	>25dB >23dB	>20dB >18dB



FILTERS

FILTERS

I9MM-IS2G

19.2

I9MM-SRG3G75F

19.2



For the Best

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FILTERS

FILTERS

ISOLATOR 2GHZ 800V DC I9MM-IS2G

Features

- Screen and centre conductor full DC isolation
- Frequency Range 5 – 2150MHz
- Insertion Loss (dB) 0.5dB Max
- Isolation 400V DC / 800V DC Peak
- Return Loss ≥13 dB



Application for ALL Surge Protectors
Safeguard your expensive electronic equipment from lightning induced surges. Countless internet, CCTV, CATV, Satellite and Telecommunication users have watched their precious electronic equipment destroyed by lightning induced surges travelling on their coax feed lines. Let the Matchmaster Lightning Surge Protectors safeguard your equipment. Suitable for all out door antennas, Cable TV Users, TV/ Satellite, CCTV, Internet antenna, satellite telecommunication.

Features for ALL Surge Protectors

- DC feed suitable for satellite applications, 90 volt discharge voltage

Technical Data

Part Number I9MM-SRG3G75F

Connector	'F' (Female)
Frequency Range	3GHz (5-3000MHz)
VSWR	Less than 1.5:1
Insertion Loss	Less than 0.1dB
Discharge Voltage	DC 90V
Max Power Rating	200W
Isolation	3KV – 7KV Peak
Return Loss	≥18 db

SURGE PROTECTOR 3GHZ 75 OHM 'F' I9MM-SRG3G75F





FIBRE OPTIC RANGE

FIBRE-OPTIC RECEIVERS

20MM-OD004	20.2
20MM-MO418-55	20.3
20MM-MO428-55	20.4
20MM-HA5116	20.5
20MM-HA5116-2	20.5

FIBRE-OPTIC PASSIVES

20MM-OSP-1* 2/4/6/8/16	20.6
20MM-OSP-1* 2-19NZ	20.6
20MM-SO4141X4	20.6
20MM-SO4181X8	20.6
20MM-SO4242X4	20.7
20MM-FPP3P-SHELF	20.7
20MM-FPP-SCD6	20.7
20MM-FPP-B-BLANK	20.7
20MM-SC/APC-SC/APC	20.7
20MM-OAF-SCAPC-SM-03	20.7
20MM-OAF-SCAPC-SM-05	20.7
20MM-PC-OMI-DSCSC-05	20.7

FIBRE OPTIC RANGE

FIBRE OPTIC RECEIVERS

AGC 80 DB μ V OPTICAL RECEIVER

20MM-OD004

Very compact optical receivers for cost sensitive installations with extended frequency range to 2400MHz.

Features

- Very compact optical receivers for cost sensitive installations with extended frequency range 1002 MHz (OD004 - frequency range 2400 MHz)
- electronic setting of all parameters
- AGC based on optical input level
- Digital indication of optical input level and other parameters
- connectors: RF output - type F, optical - SC/APC



Technical Data

Optical input

Optical wave length	1100-1600 nm
Optical input level (AGC range), switchable	-15 \div -6 / -8 \div 0 dBm
Optical return loss	> 40 dB
Noise current density	≤ 7.0 pA/ $\sqrt{\text{Hz}}$

RF output

frequency range	47-2400 MHz
impedance	75 Ω
return loss	≥ 14 dB at 40 MHz -1.5 dB/oct (47-950 MHz); ≥ 10 dB up to 1750 MHz; ≥ 7 dB up to 2400 MHz
frequency response	± 1.5 dB
gain adjustment (manual control mode)	31 dB by 1 dB step

Output level* (AGC range), optical input level

-8 \div 0 dBm	78 dB μ V
-15 \div -6 dBm	80 dB μ V
Output level* (CTB, EN50083-3)	90 dB μ V
Output level* (CSO, EN50083-3)	83 dB μ V
Max. output level	104 dB μ V
IMD3=60 dB, 2 carries, 2150 MHz, +f=10 MHz	
Power consumption	230V~ 50/60 Hz 4 W
Operating temperature range	-20° \div + 50°C
Dimensions/Weight (packed)	133x73x39 mm/0.36 kg

* optical input signal 4.9% OMI, 1310 nm

OPTICAL TX SMATV 1550

SINGLE +6DBM

20MM-MO418-55

Features

- Suitable for SAT IF and CATV application
- Option with Web control and SNMP agent functionality marked by letter L, e.g. mo418L
- Low signal loss over long distances
- Simple installation in the headend with easy module parameter set-up
- Loop through RF distribution
- AGC mode for constant laser loading
- manual gain control allows to maintain optimum operation over wide range of input signals
- LED display for easy setup and maintenance
- DIN rail or wall mounting
- Robust die-cast housing
- Connectors: 3xRF input/output and test - type F, optical - SC/APC and power distribution bus
- Digital indication of optical input level and other parameters
- connectors: RF output - type F, optical - SC/APC

Technical Data

Optical power	1x6 dBm
Optical wave length	1550 ± 3 nm
Laser type	DFB
RF frequency range	47-2400 MHz
RF input level	70-85 dBμV
RF input impedance	0...-15 dB by 1 dB step
AGC range	± 5 dB
RF input loop through frequency range	47-2400 MHz
RF input loop through loss	< 1 dB
RF input loop through flatness	± 1.0 dB
Return loss	≥ 18 dB at 40 MHz -1.5 dB/oct (47-950 MHz); ≥ 10 dB up to 1750 MHz; ≥ 7 dB up to 2400 MHz
Relative intensity noise RIN	< -150 dB/Hz
Terr.TV intermodulation distortion CSO**	> 55 dB
Terr.TV intermodulation distortion CTB**	> 60 dB
Terr.TV carrier/noise ratio C/N**	> 50 dB
SAT IF intermodulation distortions***	> 35 dB
Supply voltage	12V ± 1 V
DC feeding for external	12V 0.4 A
Current consumption	0.35 A max.
Operating temperature range	0° + + 50°C
Dimensions/Weight (packed)	198x107.5x36 mm/ 0.9 kg

** OMI=4.0 %, 42 channel CENELEC, optical

receiver input power - 2 dBm

*** OMI=20 %, two tone test metod according EN50083-3



FIBRE OPTIC RANGE

OPTICAL TX SMATV 1550
TWIN 6DBM

20MM-MO428-55

Features

- Suitable for SAT IF and CATV application
- Option with Web control and SNMP agent functionality marked by letter L, e.g. mo418L
- Low signal loss over long distances
- Simple installation in the headend with easy module parameter set-up
- Loop through RF distribution
- AGC mode for constant laser loading
- manual gain control allows to maintain optimum operation over wide range of input signals
- LED display for easy setup and maintenance
- DIN rail or wall mounting
- Robust die-cast housing
- Connectors: 3xRF input/output and test - type F, optical - SC/APC and power distribution bus

Technical Data

Optical power	2x6 dBm
Optical wave length	1550 ± 3 nm
Laser type	DFB
RF frequency range	47-2400 MHz
RF input level	70-85 dBμV
RF input impedance	0...-15 dB by 1 dB step
AGC range	± 5 dB
RF input loop through frequency range	47-2400 MHz
RF input loop through loss	< 1 dB
RF input loop through flatness	± 1.0 dB
Return loss	≥ 18 dB at 40 MHz -1.5 dB/oct (47-950 MHz); ≥ 10 dB up to 1750 MHz; ≥ 7 dB up to 2400 MHz
Relative intensity noise RIN	< -150 dB/Hz
Terr.TV intermodulation distortion CSO**	> 55 dB
Terr.TV intermodulation distortion CTB**	> 60 dB
Terr.TV carrier/noise ratio C/N**	> 50 dB
SAT IF intermodulation distortions***	> 35 dB
Supply voltage	12V ± 1 V
DC feeding for external	12V 0.4 A
Current consumption	0.4 A max.
Operating temperature range	0° + 50°C
Dimensions/Weight (packed)	198x107.5x36 mm/ 0.9 kg

** OMI=4.0 %, 42 channel CENELEC, optical

receiver input power - 2 dBm

*** OMI=20 %, two tone test metod according EN50083-3



FIBRE OPTIC RANGE

40mW-16dBm EDFA

20MM-HA5116

The Matchmaster HA5116 EDFA produces 16dBm of power and is used to increase the power from a Fibre Transmitter. 16dBm is used with a 16-way optical splitter in a Analogue/Digital system or a 32-way optical splitter in a digital only system.

40mW-12.5dBm EDFA

20MM-HA5116-2

The Matchmaster HA5116-2 EDFA produces 12.5dBm of power out 2-ports and is used to increase the power from a Fibre Transmitter. 12.5dBm is used with a 16-way optical splitter in a Analogue/Digital system or a 32-way optical splitter in a digital only system.



	Performance			Index			Supplement
				Min.	Typ.	Max.	
Optical Feature	Operating Wavelength	(nm)		1540		1563	CATV
	Input Power	(dBm)		-10	+3	+10	
	Maximum Output	(dBm)		+10		+26	Pin=0dBm
	Output Power	(dBm)		-6		0	HA5100/P
	Number of Output Ports			1		8	SC/APC
				1		16	LC/APC
	Difference of Each	(dBm)		-0.5		+0.5	
	Noise Figure	(dB)				6.3	HA5100-26
	Polarization	(dB)				0.3	
	Polarization	(dB)				0.4	
	Polarization Mode	(ps)				0.5	
	Input/output isolation	(dB)		30			
General Feature	Pump power leakage	(dBm)				-30	
	Echo loss	(dB)		55			APC
	SNMP	Network		RJ45			
	Serial Interface			RS232			
	Power Supply	(V)		90		265	220VAC
				30		72	-48VDC
				23		25	+24VDC
	Power Consume	(W)				50	
	Operating Temperature	(°C)		-5		65	
	Storage Temperature	(°C)		-40		80	
	Operating Relative	(%)		5		95	
		(")		19 x 14.5 x 1.75			1RU (19")
	Size (W) x (D) x (H)	(")		12.4 x 15.4 x 5.25			3D (12.4", desk-type)
		(mm)		150 x 125 x 22			Modulator

FIBRE OPTIC RANGE

OPTICAL PASSIVES

STANDALONE OPTICAL SPLITTERS

20MM-OSP-1*2/4/6/8/16

The Standalone cassette Optical Splitters have SC/APC male ends and are used as a standalone unit or used to populate our 19" rack mount options.



2 WAY OPTICAL IN 19" RACK MOUNT

20MM-OSP-1*2-19NZ

1*2/4/6/8/12/16/32, built to order in NZ

The 19" rack mount Optical Splitters are built to order in a quality "Dynamix" 19" IRU rack. The standalone splitters are terminated into a Duplex SC/APC chassis mount adaptor and can be ordered in the above range. They can also be customised with Eg. 1 x 4-way and 1 x 32-way combo in the same housing. A fully populated rack can provide 36 connections.



OPTICAL SPLITTER 1X4

20MM-SO4141X4

Features

- Optical splitters for single mode fiber application
- Good spectral uniformity
- Wide wave length bandwidth
- High reliability
- Small size
- Connectors: optical - SC/APC



OPTICAL SPLITTER 1X8

20MM-SO4181X8

Features

- Optical splitters for single mode fiber application
- Good spectral uniformity
- Wide wave length bandwidth
- High reliability
- Small size
- Connectors: optical - SC/APC



Technical Data

Splitter	1x4
Operating wave length	1260-1650 nm
Insertion loss typical	7.0 dB
Insertion loss maximum value	7.5 dB
Loss uniformity	≤ 0.6 dB
Return loss	≥ 50 dB
Wave length dependent loss	≤ 0.3 dB
Directivity	≥ 55 dB
Temperature stability -20 to +70o C	≤ 0.4 dB
Optical input power, max.	300 mW
Operating temperature range	-20° ÷ +50°C
Dimensions/Weight (packed)	198x116x36 mm/0.65 kg

Technical Data

Splitter	1x8
Operating wave length	1260-1650 nm
Insertion loss typical	10.2 dB
Insertion loss maximum value	10.7 dB
Loss uniformity	≤ 0.8 dB
Return loss	≥ 50 dB
Wave length dependent loss	≤ 0.3 dB
Directivity	≥ 55 dB
Temperature stability -20 to +70o C	≤ 0.4 dB
Optical input power, max.	300 mW
Operating temperature range	-20° ÷ +50°C
Dimensions/Weight (packed)	198x116x36 mm/0.7 kg

FIBRE OPTIC RANGE

DUAL OPTICAL SPLITTER 1X4 + 1X4 20MM-SO4242X4

Features

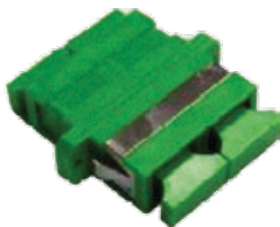
- Optical splitters for single mode fiber application
- Good spectral uniformity
- Wide wave length bandwidth
- High reliability
- Small size
- Connectors: optical - SC/APC



Technical Data

Splitter	1x4+1x4
Operating wave length	1260-1650 nm
Insertion loss typical	7.0 dB
Insertion loss maximum value	7.5 dB
Loss uniformity	≤ 0.6 dB
Return loss	≥ 50 dB
Wave length dependent loss	≤ 0.3 dB
Directivity	≥ 55 dB
Temperature stability -20 to +70o C	≤ 0.4 dB
Optical input power, max.	300 mW
Operating temperature range	-20° + +50°C
Dimensions/Weight (packed)	198x116x36 mm/0.7 kg

SC/APC CHASSIS DUPLEX ADAPTOR, 6 PER FPP-SCS6 36 PER FPP3P SHELF 20MM-SC/APC-SC/APC



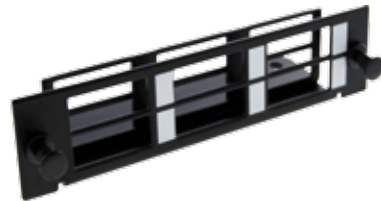
OPTICAL ATTENUATOR 5dB 20MM-OAF-SCAPC-SM-05



19"-1RU FIBRE PATCH-3-SLOT RACK 20MM-FPP3P-SHELF



6-PORT-PLATE for FPP3P 20MM-FPP-SCD6



BLANKING PLATE for FPP3P 20MM-FPP-B-BLANK



OPTICAL ATTENUATOR 3dB 20MM-OAF-SCAPC-SM-03



OMI PATCHCORD SC-SC DUPLEX 0.5M 20MM-PC-OMI-DSCSC-05



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MULTI-SWITCHES

MDS

21MM-MDS-S-AMP	21.2
21MM-MDS-S-19-4AMP	21.3
21MM-MDS-S-2SPLIT	21.4
21MM-MDS-S-4SPLIT	21.5
21MM-MDS-S-10-1TAP	21.6
21MM-MDS-S-15-1TAP	21.7
21MM-MDS-S-20-1TAP	21.8
21MM-MDS-S-4SWITCH	21.9
21MM-MDS-S-8SWITCH	21.10
21MM-MDS-S-16SWITCH	21.11
21MM-MDS-S-32SWITCH	21.12
21MM-MDS-A-4SWITCH	21.13
21MM-MDS-A-8SWITCH	21.14
21MM-DV25	21.14
18MM-DV49A	21.14



For the Best

MULTISWITCHES



3X2 MDS AMPLIFIER

21MM-MDS-S-AMP

Technical Data

Specification	Item	Typical Value	Q.C. Limit	Remark
Frequency Range	Terrestrial (TER)	47 ~ 694 MHz		
	Satellite (SAT)	950 ~ 2150 MHz		
Inputs		A(SAT1) / B(SAT2) / TER / DC_IN (+18V)		F-Type Female Connector
Outputs		A(SAT1+TER) / B(SAT2)		
Gain	SAT	23 ~ 30 dB	[23 ~ 30] ± 2 dB	
	TER	25 dB	25 dB ± 2 dB	
Attenuation ADJ	SAT	18 dB	18 ± 2 dB	
	TER	20 dB	20 ± 2 dB	
Slope ADJ	SAT	0 ~ 7 dB	0 ~ 8 dB	
	TER	0 ~ 18 dB	0 ~ 16 dB	
Isolation	Port/Port	32 dB	≥ 30 dB	
TER Outband Rejection	721MHz	28dB	≥ 25 dB	@694MHz
Return Loss	TER Input	12 dB	≥ 10 dB	
	TER Output	12 dB	≥ 10 dB	
	SAT Input	12 dB	≥ 10 dB	
	SAT Output	12 dB	≥ 10 dB	
Noise Figure	SAT	6 dB	≤ 8 dB	
	TER	5 dB	≤ 7 dB	
Max. Output Level	SAT	112 dBμV	≥ 110 dBμV	IMD3 35dB @ EN50083-3
	TER	110 dBμV	≥ 108 dBμV	IMD3 60dB @ EN50083-5
Max. Input Level *	SAT	110 dBμV	≥ 98 dBμV	IMD3 35dB @ EN50083-3
	TER	105 dBμV	≥ 103 dBμV	IMD3 60dB @ EN50083-5
DC to Input		500mA @ A : 18VDC ; B : 14VDC		
Current Consumption		150 mA max. @ 18VDC		
Power Indicator		LED (Green)		
External Switching Mode Power Supply		90 ~ 264 Vac / 47 ~ 63 Hz / 3A @ 18V		
Dimension		152 x 118.5 x 52mm (L x W x H)		

MULTISWITCHES

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MULTISWITCHES



2 WAY MDS SPLITTER

21MM-MDS-S-2SPLIT

Technical Data

Specification	Item		Typical Value	Q.C. Limit	Remark
Frequency Range	H/TV (Terr TV & SAT IF)		5 - 694 & 950 ~ 2150MHz	5 - 694 & 950 ~ 2150MHz	
	V (SAT IF)		950 ~ 2150 MHz	950 ~ 2150 MHz	
Inputs	H/TV /18V+ V/14V			H/TV /18V+ V/14V	F Connector
Outputs	2× (H/TV /18V+ V/14V)			2× (H/TV /18V+ V/14V)	F Connector
Insertion Loss	H/TV (IN-OUT)	5-694MHz	4.5 dB	≤ 5.0 dB	
		950-2150MHz	6.5 dB	≤ 7.0 dB	
	V (IN-OUT)	950-2150MHz	4.5 dB	≤ 5.0 dB	
Trunk Isolation	H/TV-V	5-2150MHz	35 dB	≥30 dB	
Mutual Isolation	H/TV (OUT-OUT)	5-694MHz	22 dB	≥ 20 dB	
		950-2150MHz	20 dB	≥ 18 dB	
	V (OUT-OUT)	950-2150MHz	20 dB	≥ 18 dB	
Return Loss	H/TV	5-694MHz	12 dB	≥ 10 dB	
		950-2150MHz	12 dB	≥ 10 dB	
	V	950-2150MHz	12 dB	≥ 10 dB	
Power pass (max,2A)	H/TV (IN-OUT2)		Switchable DC pass to tap H outputs		
	H/TV (IN-OUT1)		Yes	Yes	
	V (IN-OUT1 & OUT2)		Yes	Yes	



4 WAY MDS SPLITTER

21MM-MDS-S-4SPLIT

Technical Data

Specification	Item		Typical Value	Q.C. Limit	Remark
Frequency Range	H/TV (Terr TV & SAT IF)		5 - 694 & 950 ~ 2150MHz	5 - 694 & 950 ~ 2150MHz	
	V (SAT IF)		950 ~ 2150 MHz	950 ~ 2150 MHz	
Inputs			H/TV /18V+ V/14V	H/TV /18V+ V/14V	F Connector
Outputs			2× (H/TV /18V+ V/14V)	2× (H/TV /18V+ V/14V)	F Connector
Insertion Loss	H/TV (IN-OUT)	5-694MHz	4.5 dB	≤ 5.0 dB	
		950-2150MHz	6.5 dB	≤ 7.0 dB	
	V (IN-OUT)	950-2150MHz	4.5 dB	≤ 5.0 dB	
Trunk Isolation	H/TV-V	5-2150MHz	35 dB	≥30 dB	
Mutual Isolation	H/TV (OUT-OUT)	5-694MHz	25 dB	≥ 22 dB	
		950-2150MHz	25 dB	≥ 22 dB	
	V (OUT-OUT)	950-2150MHz	25 dB	≥ 22 dB	
Return Loss	H/TV	5-694MHz	12 dB	≥ 10 dB	
		950-2150MHz	12 dB	≥ 10 dB	
	V	950-2150MHz	12 dB	≥ 10 dB	
Power pass (max,2A)	H/TV (IN-OUT2)		Switchable DC pass to tap H outputs		
	H/TV (IN-OUT1)		Yes	Yes	
	V (IN-OUT1 & OUT2)		Yes	Yes	

MULTISWITCHES



1 WAY MDS TAP 10DB

21MM-MDS-S-10-1TAP

Technical Data

Specification	Item	Typical Value	Q.C. Limit	Remark
Frequency Range	H/TV (Terr TV & SAT IF)	5 ~ 694 & 950 ~ 2150MHz		
	V (SAT IF)	950 ~ 2150 MHz		F Connectors
Inputs		H/TV /18V + V/14V	H/TV /18V + V/14V	F Connectors
Outputs		H/TV /18V + V/14V	H/TV /18V + V/14V	F Connectors
Taps		H/TV /18V + V	H/TV /18V + V	
Insertion Loss	H/TV (IN-OUT)	5 ~ 694 & 950 ~ 2150MHz	2.5 dB	≤ 3.0 dB
	V (IN-OUT)	950 ~ 2150 MHz	1.8 dB	≤ 2.5 dB
TAP Loss	H/TV (IN-TAP)	5 ~ 694 & 950 ~ 2150MHz	10 dB	10 ± 2.0 dB
V (IN-TAP)	V (IN-TAP)	950 ~ 2150 MHz	8 ~ 12 dB	7.5 ~ 12.5 dB
Trunk Isolation	H/TV	5 ~ 694 & 950 ~ 2150MHz	35 dB	≥ 30 dB
Mutual Isolation	H/TV (OUTTAP)	5 ~ 694 & 950 ~ 2150MHz	22 dB	≥ 20 dB
	V (OUT-TAP)	950 ~ 2150 MHz	22 dB	≥ 20 dB
Return Loss	H/TV	5 ~ 694 & 950 ~ 2150MHz	12 dB	≥ 10 dB
	V	950 ~ 2150 MHz	12 dB	≥ 10 dB
Power Pass (max, 2A)	H/TV (IN-TAP)	Switchable DC pass to tap H outputs		
	H/TV (IN-OUT)	Yes		
	V (IN-TAP)	No		
	V (IN-OUT)	Yes		



I WAY MDS TAP 15DB
21MM-MDS-S-15-1TAP

Technical Data

Specification	Item	Typical Value	Q.C. Limit	Remark
Frequency Range	H/TV (Terr TV & SAT IF)	5 ~ 694 & 950 ~ 2150MHz		
	V (SAT IF)	950 ~ 2150 MHz		F Connectors
Inputs		H/TV /18V + V/14V	H/TV /18V + V/14V	F Connectors
Outputs		H/TV /18V + V/14V	H/TV /18V + V/14V	F Connectors
Taps		H/TV /18V + V	H/TV /18V + V	
Insertion Loss	H/TV (IN-OUT)	5 ~ 694 & 950 ~ 2150MHz	2.0 dB	≤ 2.5 dB
	V (IN-OUT)	950 ~ 2150 MHz	1.2 dB	≤ 2.0 dB
TAP Loss	H/TV (IN-TAP)	5 ~ 694 & 950 ~ 2150MHz	15 dB	15 ± 2.0 dB
	V (IN-TAP)	950 ~ 2150 MHz	13 ~ 17 dB	12.5 ~ 17.5 dB Fixed Slope
Trunk Isolation	H/TV	5 ~ 694 & 950 ~ 2150MHz	35 dB	≥30 dB
Mutual Isolation	H/TV (OUTTAP)	5 ~ 694 & 950 ~ 2150MHz	25 dB	≥ 20 dB
	V (OUT-TAP)	950 ~ 2150 MHz	25 dB	≥ 20 dB
Return Loss	H/TV	5 ~ 694 & 950 ~ 2150MHz	12 dB	≥ 10 dB
	V	950 ~ 2150 MHz	12 dB	≥ 10 dB
Power Pass (max, 2A)	H/TV (IN-TAP)	Switchable DC pass to tap H outputs		
	H/TV (IN-OUT)	Yes		
	V (IN-TAP)	No		
	V (IN-OUT)	Yes		

MULTISWITCHES



I WAY MDS TAP 20DB

21MM-MDS-S-20-1TAP

Technical Data

Specification	Item	Typical Value	Q.C. Limit	Remark
Frequency Range	H/TV (TerrTV & SAT IF)	5 ~ 694 & 950 ~ 2150MHz		
	V (SAT IF)	950 ~ 2150 MHz		F Connectors
Inputs		H/TV /18V + V/14V		F Connectors
Outputs		H/TV /18V + V/14V		F Connectors
Taps		H/TV /18V + V		
Insertion Loss	H/TV (INOUT)	5 ~ 694 & 950 ~ 2150MHz	2.0 dB	≤ 2.5 dB
	V (IN-OUT)	950 ~ 2150 MHz	1.2 dB	≤ 2.0 dB
TAP Loss	H/TV (IN-TAP)	5 ~ 694 & 950 ~ 2150MHz	20 dB	20 ± 2.0 dB
	V (IN-TAP)	950 ~ 2150 MHz	18 ~ 22 dB	17.5 ~ 22.5 dB Fixed Slope
Trunk Isolation	H/TV	5 ~ 694 & 950 ~ 2150MHz	35 dB	≥30 dB
Mutual Isolation	H/TV (OUT-TAP)	5 ~ 694 & 950 ~ 2150MHz	25 dB	≥ 22 dB
	V (OUT-TAP)	950 ~ 2150 MHz	25 dB	≥ 22 dB
Return Loss	H/TV	5 ~ 694 & 950 ~ 2150MHz	12 dB	≥ 10 dB
	V	950 ~ 2150 MHz	12 dB	≥ 10 dB
Power Pass (max, 2A)	H/TV (IN-TAP)	Switchable DC pass to tap H outputs		
	H/TV (IN-OUT)	Yes		
	V (IN-TAP)	No		
	V (IN-OUT)	Yes		

MULTISWITCHES

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MULTISWITCHES



8 WAY MDS SWITCH

21MM-MDS-S-8SWITCH

Technical Data

Specification	Item		Typical Value	Q.C. Limit	Remark
Frequency Range	Terrestrial (TER)		47 ~ 694 MHz	47 ~ 694 MHz	
	Satellite (SAT)		950 ~ 2150 MHz	950 ~ 2150 MHz	
Inputs			A(SAT+TER) / B(SAT) / DC_IN (+18V)		F-Type Female Connector
Outputs			8/16/32 x TAPs		F Connectors
Gain	SAT	Outputs 01-08	6.5 dB	6.5 ± 2.0 dB	@950MHz
	TER	Outputs 01-08	5.0 dB	5.0 ± 2.0 dB	@47MHz
Slope	SAT	Outputs 01-08	7.5 dB	7.5 ± 2.0 dB	@2150MHz-950MHz
	TER	Outputs 01-08	5.0 dB	5.0 ± 2.0 dB	@694MHz-47MHz
Attenuation Adj	SAT		10 dB	≥ 8 dB	
	TER		17 dB	≥ 15 dB	
Isolation	IN / IN		30 dB	≥ 25 dB	
	Switching		25 dB	≥ 23 dB	
Return Loss	OUT / OUT	TER	30 dB	≥ 25 dB	
		SAT	30 dB	≥ 25 dB	
	Output	TER	10 dB	≥ 8 dB	
		SAT	12 dB	≥ 10 dB	
Noise Figure	SAT		7 dB	≤ 8 dB	
	TER		6 dB	≤ 7 dB	
Max. O/P Level	SAT		93 dBμV	≥ 91 dBμV	35dB IMD3 @ EN50083-5
	TER	Outputs 01-08	91 dBμV	≥ 89 dBμV	60dB IMD3 @ EN50083-5
Current Consumption			180mA Max.	180mA Max.	@ Receiver
			130mA Max. @ 18VDC	130mA Max. @ 18VDC	@ H-Line or DC_IN
Power Indicator			LED (Green)	LED (Green)	
Switching Control			A (16.5 ~ 19V) / B (11.5 ~ 14.5V)		
Working Temperature			-20°C ~ +50°C		
Dimension			176.24 x 118.5 x 52mm (W x L x H)		

MULTISWITCHES



16 WAY MDS SWITCH

21MM-MDS-S-16SWITCH

Technical Data

Specification	Item		Typical Value	Q.C. Limit	Remark
Frequency Range	Terrestrial (TER)		47 ~ 694MHz	47 ~ 694MHz	
	Satellite (SAT)		950 ~ 2150 MHz	950 ~ 2150 MHz	
Inputs			A(SAT+TER) / B(SAT) / DC_IN (+18V)		'F' Type Female Outputs
Outputs			8/16/32 x TAPs		8/16/32 x TAPs Connector
Gain	SAT	Outputs 01-08	6.5 dB	6.5 ± 2.0 dB	@950MHz
		Outputs 09-16	5.0 dB	5.0 ± 2.0 dB	
	TER	Outputs 01-08	5.0 dB	5.0 ± 2.0 dB	@47MHz
		Outputs 09-16	4.0 dB	4.0 ± 2.0 dB	
Slope	SAT	Outputs 01-08	7.5 dB	7.5 ± 2.0 dB	@2150MHZ-950MHz
		Outputs 09-16	6.0 dB	6.0 ± 2.0 dB	
	TER	Outputs 01-08	5.0 dB	5.0 ± 2.0 dB	@694MHZ-47MHz
		Outputs 09-16	4.0 dB	4.0 ± 2.0 dB	
Attenuation Adj	SAT		10 dB	≥ 8 dB	
	TER		17 dB	≥ 15 dB	
Isolation	IN / IN		30 dB	≥ 25 dB	
	Switching		25 dB	≥ 23 dB	
	OUT / OUT	TER	30 dB	≥ 25 dB	
		SAT	30 dB	≥ 25 dB	
Return Loss	Input	TER	10 dB	≥ 8 dB	
		SAT	12 dB	≥ 10 dB	
	Output	TER	10 dB	≥ 8 dB	
		SAT	12 dB	≥ 10 dB	
Noise Figure	SAT		7 dB	≥ 8 dB	Not Compliant
	TER		6 dB	≥ 10 dB	Not Compliant
Max. O/P Level	SAT		93 dBμV	≥ 91 dBμV	35dB IMD3 @ EN50083-3
		Outputs 01-08	91 dBμV	≥ 89 dBμV	60dB IMD3 @ EN50083-5
		Outputs 09-16	87 dBμV	≥ 85 dBμV	
Current Consumption			180mA Max.		@Receiver
			160mA Max. @ 18VDC		@ H-Line or DC_IN
Power Indicator			5 LED (Green)		
Switching Control			A (16.5 ~ 19V) / B (11.5 ~ 14.5V)		
Working Temperature			-20°C ~ +50°C		
Dimension			264.24 x 118.5 x 52mm (W x L x H)		

MULTISWITCHES



32 WAY MDS SWITCH

21MM-MDS-S-32SWITCH

Technical Data

Specification	Item		Typical Value	Q.C. Limit	Remark
Frequency Range	Terrestrial (TER)		47 ~ 694 MHz		
	Satellite (SAT)		950 ~ 2150 MHz		
Inputs			A(SAT+TER) / B(SAT) / DC_IN (+18V)		F-Type Female Connector
Outputs			8 / 16 / 32 x TAPs		F-Type Female Connector
Gain	SAT	Outputs 01-16	6.5 dB	6.5 dB±2.0 dB	@950MHz
		Outputs 17-32	5.0 dB	5.0±2.0 dB	
	TER	Outputs 01-16	5.0 dB	5.0±2.0 dB	@47MHz
		Outputs 17-32	4.0 dB	4.0±2.0 dB	
Slope	SAT	Outputs 01-16	7.5 dB	7.5±2.0 dB	@2150MHz-950MHz
		Outputs 17-32	6.0 dB	6.0±2.0 dB	
	TER	Outputs 01-16	5.0 dB	5.0±2.0 dB	@694MHz-47MHz
		Outputs 17-32	4.0 dB	4.0±2.0 dB	
Attenuation Adj	SAT		10 dB	≥ 8 dB	
	TER		17 dB	≥ 15 dB	
Isolation	IN/IN		30 dB	≥ 25 dB	
	Switching		25 dB	≥ 23 dB	
	OUT/OUT	TER	30 dB	≥ 25 dB	
		SAT	30 dB	≥ 25 dB	
Return Loss	Input	TER	10 dB	≥ 8 dB	
		SAT	12 dB	≥ 10 dB	
	Output	TER	10 dB	≥ 8 dB	
		SAT	12 dB	≥ 10 dB	
Noise Figure	SAT		15 dB	≤ 16dB	
	TER		12 dB	≤ 13dB	
Max. O/P Level	SAT		93 dBμV	≥ 91 dBμV	35dB IMD3 @ EN50083-3
		Outputs 01-16	91 dBμV	≥ 89 dBμV	60dB IMD3 @ EN50083-5
		Outputs 17-24	91 dBμV	≥ 83 dBμV	
Current Consumption			230mA Max.		@ Receiver
			250 mA Max. @ 18VDC		@ H-Line or DC_IN
Power Indicator			LED (Green)		
Switching Control			A (16.5 ~ 19V) / B (11.5 ~ 14.5V)		
Working Temperature			-2° ~ +50°		
Dimension			264.24 x 118.5 x 52mm (W x L x H)		



4 WAY MDS APARTMENT SWITCH

21MM-MDS-A-4SWITCH

Technical Data

Specification	Item	Typical Value	Q.C. Limit	Remark
Frequency Range	Terrestrial (TER)	950 ~ 2150 MHz	950 ~ 2150 MHz	
	Satellite (SAT)	5 ~ 694 MHz	5 ~ 694 MHz	
	Backfeed (BCK)	470 ~ 700 MHz	470 ~ 700 MHz	
Inputs	A(SAT1) / B(SAT2) / TER / DC_IN (+18V)			F-Type Female Connector
Outputs	4/8 TAPs			F-Type Female Connector
Insertion Gain	BCK	3 dB	≥ -1 dB	
	TER	3 dB	≥ -1 dB	
	SAT	0 dB	≥ -2 dB	
Isolation	Input (A/B/C)	25 dB	≥ 23 dB	
	Output @ TER	25 dB	≥ 23 dB	
	Output @ SAT	25 dB	≥ 23 dB	
	Switching	32 dB	≥ 30 dB	
Return Loss	Input (A/B/C)	12 dB	≥ 10 dB	IMA3 60 dB @ EN50083-5
	Output	10 dB	≥ 8 dB	IMA3 35 dB @ EN50083-3
SAT input control		18V(SAT-1) / 13V(SAT-2)		Threshold : 15.25 V ± 1 V
Current Consumption without LNB load	DC18V	250mA Max. @ 18VDC		@DC18V
	One 18V TAP	300mA Max. @ 18VDC		250mA + 50mA @ TAP
	13VDC TAP	50mA Max. @ 13VDC		@ STB
LNB Power Capability	500mA Max.		500mA Max.	
External Power Supply	LED (Green)		LED (Green)	
Dimension	152 x 112 x 42mm (L x W x H)			

MULTISWITCHES



8 WAY MDS APARTMENT SWITCH

21MM-MDS-A-8SWITCH

Technical Data

Specification	Item	Typical Value	Q.C. Limit	Remark
Frequency Range	Terrestrial (TER)	950 ~ 2150 MHz	950 ~ 2150 MHz	
	Satellite (SAT)	5 ~ 694 MHz	5 ~ 694 MHz	
	Backfeed (BCK)	470 ~ 700 MHz	470 ~ 700 MHz	
Inputs	A(SAT1) / B(SAT2) / TER / DC_IN (+18V)			F-Type Female Connector
Outputs	4/8 TAPs			F-Type Female Connector
Insertion Gain	BCK	3 dB	≥ -1 dB	
	TER	3 dB	≥ -1 dB	
	SAT	0 dB	≥ -2 dB	
Isolation	Input (A/B/C)	25 dB	≥ 23 dB	
	Output @ TER	25 dB	≥ 23 dB	
	Output @ SAT	25 dB	≥ 23 dB	
	Switching	32 dB	≥ 30 dB	
Return Loss	Input (A/B/C)	12 dB	≥ 10 dB	IMA3 60 dB @ EN50083-5
	Output	10 dB	≥ 8 dB	IMA3 35 dB @ EN50083-3
SAT input control		18V(SAT-1) / 13V(SAT-2)		Threshold : 15.25 V ± 1 V
Current	DC18V	250mA Max. @ 18VDC		@DC18V
Consumption without LNB load	One 18V TAP	300mA Max. @ 18VDC		250mA + 50mA @ TAP
	13VDC TAP	50mA Max. @ 13VDC		@ STB
LNB Power Capability		500mA Max.	500mA Max.	
External Power Supply		LED (Green)	LED (Green)	
Dimension		263 x 112 x 42mm (L x W x H)		

TERMINATOR WITH DC BLOCKING

21MM-DV25

The DV25 is used to terminate the “end of line” on the MDS™ system, the terminator has a DC block.



ADAPTER 'F' FIXED TO 'F' PUSH-ON

18MM-DV49A

The DV49A is an F-male to F-Male push on and used as a quick connection to join 2-products with F-Female connections.





DIGIHUB® RANGE

DIGIHUB® ENCLOSURE RANGE

30MM-DH483	30.2
30MM-DH610	30.2
30MM-DH1000	30.2

DIGIHUB® ACCESSORY RANGE

30MM-DP808	30.3
30MM-DP24	30.3
30MM-PPB-19	30.3
30MM-TM408S	30.3
30MM-TM408S-RJ45	30.3
30MM-MP01	30.3

DIGIHUB® MULTISWITCHES

30MM-MST316	30.4
30MM-DDA28	30.4
10MM-MR03	30.5
10MM-MT47	30.5
10MM-MT57	30.5
14MM-DM04	30.6
14MM-DM05	30.6



For the Best

DIGIHUB RANGE

DIGIHUB® ENCLOSURE RANGE

You're no longer confined to your one entertainment area or computer desk

Matchmaster HD DigiHUB® sets you free by enabling you to receive high definition TV including free-to-air, cable and satellite. It also accepts and distributes signals from DVD and video players/recorders, audio systems and home security cameras.

With over 70 years experience in bringing you the most advanced TV reception equipment, Matchmaster is ahead of the game as always.

The Matchmaster HD digital media hub is the first in the market to offer you an all-in-one centralised media distribution solution for all your entertainment, security and communication needs.

Key benefits of Matchmaster HD DigiHUB® include:

- Fibre-to-the-home compatible
- Ready for optical fibre node for the National Broadband Network
- Foxtel approved satellite and cable TV accessories
- IPTV compatible
- Security system compatible
- Digital distributed audio systems



Features

Matchmaster HD DigiHUB® enclosures are manufactured from high grade steel with a powder coated white finish and come complete with door and key lock. They feature concealed cable entry and exit points that ensure a discrete, unobtrusive home wiring solution.

DIGIHUB® ENCLOSURE 457MM

30MM-DH483

457 x 362 x 100 mm (H x W x D)

Suitable for

- Small Homes
- Apartments
- Townhouses



DIGIHUB® ENCLOSURE 1067MM

30MM-DH1000

1067 x 362 x 100 mm (H x W x D)

Suitable for

- Large Homes
- Medium Offices
- Floor distribution in Large Offices



DIGIHUB® ENCLOSURE 711MM

30MM-DH610

711 x 362 x 100 mm (H x W x D)

Suitable for

- Small to Medium Homes
- Apartments
- Townhouses
- Small Offices



BUILDING YOUR MATCHMASTER DIGIHUB® ACCESSORIES RANGE

DATA PATCH PANEL 8 OUTLETS

30MM-DP808

Features

- Up to 8 outlets
- Standard punch down style connections
- RJ45 Sockets to patch to switch/router



ADAPTOR FOR DP24 TO DIGIHUB ENCLOSURES (PAIR)

30MM-PPB-19

Patch panel brackets for HWS series enclosures (sold as a pair with cage nuts)



TELEPHONE MODULE FOR DIGIHUB RJ45

30MM-TM408S-RJ45

The Bridged Telecom Module and Telecom Distribution Module provide telephone distribution services throughout the home or office. This module supports the bridged distribution of any combination of up to four telephone lines to eight locations. In addition the slide switch provides line seizure and dial out capability to most security systems.



19" CAT6 CERTIFIED PATCH PANELS, 24 PORT

30MM-DP24

Features

- Category 6 patch panel exceeds TIA/EIA-568-B.2-1 Category 6 & ISO 11801 2nd edition Class E & EN50173-1 standards
- Backward compatible to Category 5e, 5 & 3
- Supports termination wiring (T568A/B)
- Colour Black

Specifications

- Material: 1.6mm steel plate
- Colour: black lacquer
- Installation: 19-inch frame/cabinet
- Jack wiring: 8p 100-micron inch Gold Plated over 100-micron inch nickel
- Plug insertion life: 750 cycle min
- IDC insertion life: 200 cycle min
- Conductor: 22-26AWG



TELEPHONE MODULE

30MM-TM408S

Features

- Fully expandable to more than 8 locations if required
- Capable of 4 incoming lines and 8 room locations
- Compatible with security systems

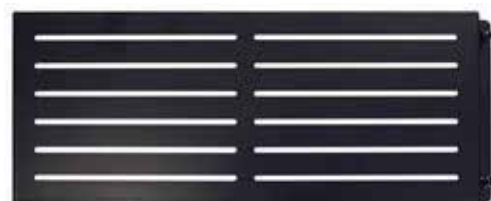


MOUNTING PLATE BLANK

30MM-MP01

Features

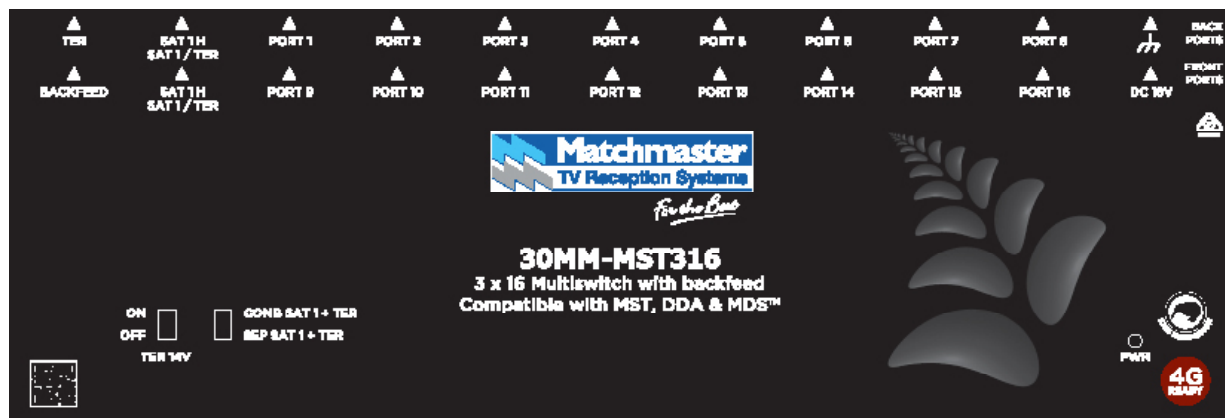
- Blank mounting plate to suit all DigiHUB® enclosures
- Designed to be used with Terra multiswitches



DIGIHUB RANGE

3 X 16 MULTISWITCH WITH BACKFEED

30MM-MST316



DIGITAL DISTRIBUTION AMPLIFIER
WITH 8 OUTPUTS, 1-2-SWITCHABLE
INPUTS AND ACTIVE BACKFEED.

30MM-DDA28

Allows output from SKY / DVD etc to be viewed on all TV's connected to DDA28. Replaces the need for a splitter/amplifier and allows any SKY / FreeView satellite receiver or FreeView HD receiver to plug into any outlet.

Features

- Frequency 47 - 2150 MHz
- 2 Inputs SAT & Terrestrial
- Combined or separate
- LNB voltage
- Comes with power supply or can be remote powered via the outputs by SKY / FreeView Satellite receiver or power injector
- Designed to fit directly into a HUB
- Instruction sheet for input and output options. Suitable for Domestic and Commercial installations (used for reticulation within apartment when used in a commercial system)

Features for ALL TV Modulator Ranges

- Frequency agile double sideband multi standard TV Modulators
- Simple 2 button control
- Non volatile channel memory
- PLL crystal stabilization of carriers frequency
- Built-in Test Pattern Generator (TPG) for Video & Audio
- Die-cast housing inside plastic case
- Built in power supply
- Adjustable audio input level and RF output level
- Protection from unauthorized access
- Low loss loop through RF combining
- Connectors: Video/Audio
- RCA sockets - RF - F female
- Foxtel Approved (F30260)



GET READY FOR DIGITAL
Digital Friendly Device



AV TO RF MODULATOR

10MM-MR03

The 10MM-MR03 AV to RF Modulator allows up to three AV devices to be connected into the modulator and converted to 3 separate TV channels to be integrated into the TV system. This allows the three channels to be viewed by any TV in the house that is connected to the same system.

Includes:

- Modulator
- Video leads
- Stereo Audio Leads
- Power Supply

Ideally used with the following

Digital Friendly Distribution Devices:

- 10MM-DDA24
- 10MM-DDA28
- 10MM-MST08
- 30MM-DDA28
- 30MM-MSTPRO



MONO TV MODULATOR UHF/B3 RANGES

10MM-MT47



STEREO TV MODULATOR UHF/B3 RANGES

10MM-MT57



DIGIHUB RANGE

SD ENCODER AND MODULATOR CVBS
TO DVB-T DIGITAL RF

I4MM-DM04



Encoding Section - Video

Encoding	MPEG-2 MP@ML(4:2:0)
Interface	CVBS *I
Resolution	720x576_50i (PAL); 720x480_60i (NTSC)
Bit rate	1.000~19.500 Mbps

Encoding Section - Audio

Encoding	MPEG1 Layer II
Interface	I*Stereo /mono
Resolution	48KHz
Bit rate	64, 96, 128, 192, 256, 320, 384kbps

Modulator Section

Standard	DVB-T COFDM
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/32, 1/16, 1/8, 1/4
Transmission mode	2K
MER	≥42dB
RF frequency	30~960 MHz, 1KHz step
RF output level	-16~ -36 dBm (73-93dBμV), 0.1db step

System

Management	Local control: LCD + control buttons
Language	English
LCN Insertion	Yes
Upgrade	JTAG or USB

General

Power supply	DC 12V
Dimensions	153*110*50mm
Weight	< 1kg
Operation temperature	0~45°C

HD ENCODER AND MODULATOR
HDMI TO DVB-T DIGITAL RF (MPEG4)

I4MM-DM05



Encoding Section - Video

Encoding	H.264 MP@L 3.0 3.0/3.1/4.0
Interface	HDMI*I
Resolution	Input: 480i@59.94/60FPS Output: 480p@30FPS Input: 576i@50FPS Output: 576p@25FPS Input: 720p@50/59.94/60FPS Output: 720p@50/59.94/60FPS Input: 1080i@50FPS Output: 1080p@25FPS Input: 1080i@59.94/60FPS Output: 1080p@30FPS Input: 1080p@59.94/60FPS Output: 1080p@30FPS

Aspect rate	16:9, 5:4
-------------	-----------

Bit rate	1.000~18.000 Mbps
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Encoding Section - Audio

Encoding	MPEG-1 Layer 2, MPEG-2 AAC
Sample rate	48KHz
Bit rate	64, 96, 128, 192, 256, 320kbps

DVB-T Modulator Section

Standard	DVB-T COFDM
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard interval	1/32, 1/16, 1/8, 1/4

Transmission mode	2K, 8K
MER	≥31dB
RF frequency	142.5~858 MHz, 1KHz step
RF output level	-14 ~ +6dBm, 0.1db step

System

Management	LCD + control buttons
Language	English
LCN Insertion	Yes
Upgrade	USB

General

Power supply	DC 12V
Dimensions	183x110x50mm
Weight	< 1kg
Operation temperature	0~45°C



TECHNICAL REFERENCE

Antenna Selection Guide	T.2
Steps on how to connect an 'F' Compression Connector	T.3
Masthead Checklist	T.4
Choosing an Amplifier	T.5
Taps & Splitters	T.6
DB Conversion Table	T.7
Coax Cable Losses	T.8
Channel Frequency	T.8
Site Channel Information	T.9



For the Best

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TECHNICAL REFERENCE

ANTENNA SELECTION GUIDE

For lagging ghosts the problem can be minimised by selection of an antenna with higher gain coupled with a narrower frontal lobe and, perhaps a better front to back ratio. Alternatively ghosts can be eliminated by taking advantages of Digital TV.

Condition	Description	Recommendations
Low Signal	Usually deep fringe areas (distant from transmitter) or in low lying spots.	High gain antennas (more elements), suitable height masting, and masthead amplifiers where needed.
Rear Ghosting	A second signal bouncing off mountains or structures from the rear of the installation.	Use antennas with a high front to back ratio.
Forward Ghosting	A second signal bouncing off mountains or structures in the direction of the transmitter.	Use antennas with a high front to side ratio, co-linear designs offering excellent Band 3 VHF & UHF performance.
Scattered Signal	Areas of dense vegetation or undulating terrain between the receiving antenna and transmitter.	Use Phased Array designs.
Corrosive Environments	Areas located on or near the coastline. Corrosion at antenna balun connections, contact points and cable.	Select YAGI or Co-Linear designs with a minimum of contact points. Stainless steel balun screws and heavy duty elements will maximise the life of an installation.

Digital



Analog

Get ready for Digital
Your Vision is our Vision
ANTENNA SELECTION GUIDE

Simply the easiest way to find the **Best Digital TV Antenna** for your area go to www.matchmaster.net.nz to try it out!



Scan me now!

STEPS ON HOW TO CONNECT AN 'F' COMPRESSION CONNECTOR



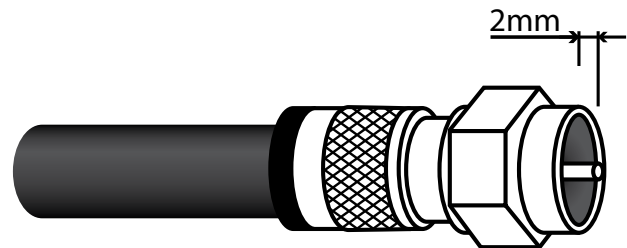
1. Cut braid through dielectric and foil 6.5mm to centre conductor.



2. Cut jacket through to braid 13mm.



3. Fold back outer braids.



7. Slide on Connector; leaving 2mm of centre conductor protruding. Dielectric should also be flush with the bottom of the nut.

For a quick & easy method of 'F' connections check out the specialised tools: 08MM-HT352/ST05 cable stripper and 08MM-CT01 crimp tool. Alternatively get all you need in the 08MM-SKYKIT2. Refer to Section 08MM for the Matchmaster full range of professional tools.

TECHNICAL REFERENCE

MASTHEAD CHECKLIST

If you're having trouble with a Masthead Amp system, take note of the following checklist before you write off the amp as faulty;

1. Check the power supply using your multi-meter

Check voltage out of power supply by placing the positive probe on the centre conductor and the negative probe is on the earth.

2. Check the voltage at Masthead

Place positive probe on centre conductor of the output of the amplifier, and the negative probe on the earth saddles. This should then read a voltage similar to output of power supply.

- a). If there is voltage present;
 - i. Check that correct links are cut or intact
 - ii. Check that correct antennas are connected to correct inputs. eg; UHF antenna to UHF input 1 (Johansson amps)
- b). If there is no voltage present and there is voltage out from the power supply, then;
 - i. Using your multi-meter, check continuity of cable, eg; if centre conductor is broken, then by short circuiting cable at one end the multi-meter will still read as open circuit (eg: 1.0MΩ). Replace cable to rectify fault.
 - ii. If using a plug pack power supply, then check that the head of centre screw of male or female plug is not touching the case of the plug, or that the centre screw of the plug is not stripped and making contact with the centre conductor of cable. By using crimp type plugs (P1, P2, P3, P4) this problem is eliminated.
 - iii. If using outlet plates, remove plate and check that there are no capacitors, (mains isolated), blocking voltage to masthead.
 - iv. Disconnect output of Masthead and using your multi-meter, check the voltage present. If voltage is present at cable end, masthead could be loading down the power supply. This also confirms that the cable from the power supply to the masthead is fine and has no breaks. Finally, replace masthead to fix problem.

3. Voltage Measurement

A point well worth remembering with volt meters is that if you set the meter to read AC volts it will also give a reading if DC voltage is present. However the reverse situation does not apply i.e. if the meter is set to read DC and AC is present; the reading will be ZERO.

4. Splitters

If the voltage is present at the power supply, or inserter, but not at the amplifier and you believe the cable to be O.K. then check for the presence of splitters. Splitters used between the power supply and the amplifier must have a power pass capability and, be wired such that power is provided to the correct port. Matchmaster has a range of 2, 3, 4, 6 and 8 way 'F' type splitters with a power pass facility on one leg.

- a) If you experience a dark horizontal band across the TV screen it may well be caused by incompatibility between your power pass splitter, or tap, and the mast head amplifier. For instance, if you have a DC splitter and a 22V AC amplifier the splitter will only allow current to pass on each half cycle and, if the amplifier's power supply was not designed for half wave operation the result will be a 50Hz hum bar. The cure is to ensure you install an AC-DC power pass device.

5. FM Interference

FM Interference usually manifests itself as patterning on band 3 channels 6 through to 11. The problem occurs in weaker signal areas, (30-40dBμV), in the presence of strong FM signals. The following are two typical scenarios:

- a) A provincial city receives capital city channels at an average level of say 38dBμV, a fairly common situation in Wollongong, Newcastle, Geelong or the Gold Coast etc. Let's also suppose this city has powerful FM station operating on 91.2MHz. A strong signal at 91.2MHz, can generate a second harmonic product within the pre-amp stage of a masthead amplifier. The second harmonic, 182.4MHz, happens to coincide with channel 7's vision spectrum and patterning results.
- b) In the second example let's suppose we have two strong local FM stations operating on 96.1MHz and 101.5MHz received at a masthead amplifier in the presence of low level TV Band 3 signals. The two FM signals can then beat, or mix together, in the pre-amp stage generating the sum of 96.1 and 101.5 which is 197.6MHz, this time in channel 9's spectrum.

The best defence against FM interference is to trap out or, reduce the FM signal level before the pre-amplifier stages. The Johansson Masthead Amplifier models J40BF and J40DF have efficient pretuned FM traps fitted as standard and are thus ideally suited to those areas prone to this predicament.

Picture Quality

A common method of specifying quality for MATV systems is The Five Point Scale of Television Impairment, (CCIR Recommendation 500-1 Kyoto 1978 Vol XI), otherwise known as the Kyoto method:

- 5- Imperceptible impairments
- 4- Perceptible (not annoying) impairments
- 3- Slightly annoying impairments
- 2- Annoying impairments
- 1- Very annoying impairments

Although the evaluation is purely subjective; level 5 would equate to a S/N of 46dB and a C/N of 50dB. It is generally accepted that Signal to Noise will be 4dB worse than Carrier to Noise ratios. Most MATV specifications insist that a received signal, at any point in the system, shall be no worse than Grade 4 on the five point scale or, a S/N of approx. 36dB.

Signal to Noise

All devices including amplifiers and resistors will, due to molecular activity, generate some noise which is a function of temperature and bandwidth. Thus even the antenna will generate noise across its 75Ω source impedance which amounts to 2dBμV for a 5.5MHz bandwidth and, can be considered as the Thermal Noise Threshold.

Amplifier manufacturers specify the Noise Figure, (NF expressed in dB), generated by their products as a measure of noise contributed above the thermal threshold. A good quality masthead amplifier will have a NF of 2dB & a distribution amplifier 6-7dB.

CHOOSING AN AMPLIFIER

Amplifier Specifications

There are two common ways of specifying an amplifier's performance relative to distortion.

- The usual American method, which advises distortion in terms of CSO (Composite Second Order), CTB (Composite Triple Beat) and XM (Cross Modulation) as a -dB figures relative to the output of the amplifier with a stated number of channels loaded. or
- The European method which states the maximum output in dB which can be expected with 2 channels and an Inter Modulation Distortion Ratio of -60dB IMR. The standard has been codified as (DIN 45004B).

The first method is straight forward and providing the number of channels you intend to use is less than the number in the specification, then the distortion will be within the limits stated. However if you want to load the amplifier with more, or less channels, the maximum output of the amplifier relative to distortion can be difficult to determine.

The European method is much simpler. Firstly it should be understood that as an amplifier is loaded with more and more channels the output must be derated if the -60dB IMR specification is to be maintained.

The formula is $d = 7.5 \times \log(N-1)$,
where d = derating amount in -dB
 N = number of channels

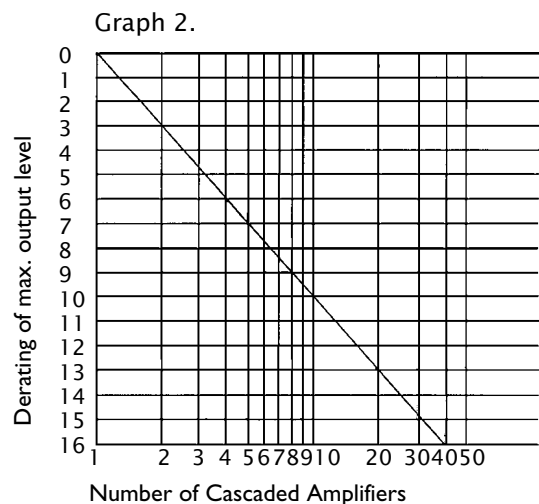
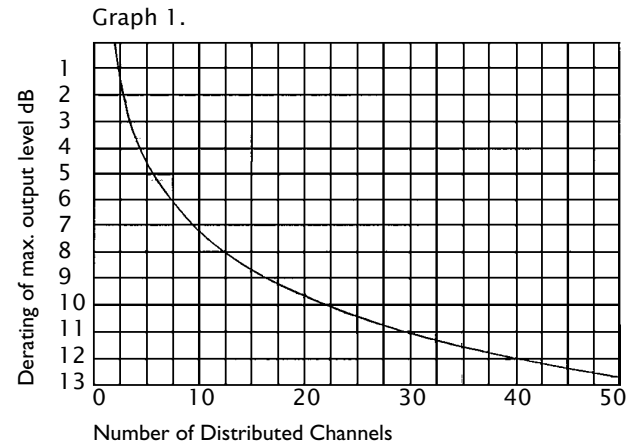
It is worth remembering that you can improve the distortion figure by 2dB for each 1dB of gain reduction. Thus if an amplifier's distortion is quoted at 46dB IMR for a given output; reducing that output by 7dB will improve the IMR to 60dB. It is also enables you to compare apples with apples.

If amplifiers generate finite amounts of distortion it therefore follows that the distortion will add as amplifiers are cascaded.

Thus it is necessary to derate amplifiers in cascade to the formula $d = 10 \log N$
where d = derating amount in -dB
 N = amplifiers in cascade

The derating figure is again approx. -3dB for each time the number in the cascade doubles, thus 2 amps. = -3dB, 4 amps. = -6dB etc. Refer to Graph 2.

The derating figure is approx. -3dB each time the number of channels is doubled, i.e. 2ch = 0, 4 = -3dB, 8 = -6dB etc. However to simplify matters we have included a graph. Refer to Graph 1.



TECHNICAL REFERENCE

TAPS & SPLITTERS

Directional Couplers

Directional Couplers get their name from the fact that they have a much greater loss between tap to output than from tap to input. The WISI DM21, Fig. 1, is a good example with tap to in, (side loss), at 8dB and tap to out, (isolation), being 32dB. The through, or insertion loss is 2dB. Directional Couplers may be used as 1 way taps or signal combiners. However not all 1 way taps make good directional couplers; it depends on the tap to out loss which should be 20dB or greater.

When used as a tap, Fig. 2, the high tap to out isolation ensures that back channel information is directed to the headend rather than to other users outlets. Taps also attenuate unwanted signals injected into a network from VCR's and similar devices between customer outlet points. Attenuation occurs equally upstream or downstream of the injection point and illustrates why taps are preferred over splitters as the last passive device before the user port.

In combiner mode a Directional Coupler has it's inputs and outputs reversed to ensure high isolation between the two signals inputs. The tap or side loss then becomes the coupling loss and the through loss remains the same. Fig.3 gives a practical application.

Diagrammatic Terminology

Through Loss

Insertion Loss between input 'E' and input 'A'. For Splitters between input 'E' and the outputs 'A'

Tap Loss

Side or tap loss between input 'E' and tap 'Ab'

Directional Isolation

Isolation between output 'A' and tap 'Ab'

Also known as tap to out loss

Isolation

Isolation between two taps 'Ab'

For splitters between the output 'A'

Return Loss

Attenuation of a reflected signal in proportion to the forward signal. The performance parameters are only valid when all outputs are terminated. Outputs not used must always be terminated.

FIG. 1

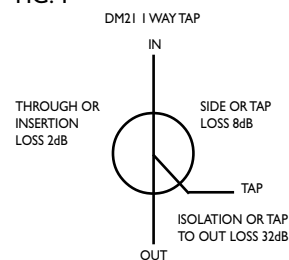


FIG. 2

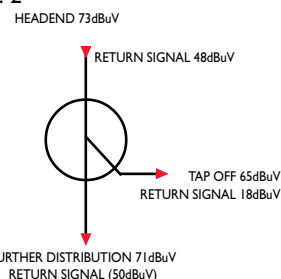
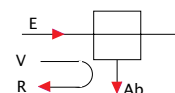
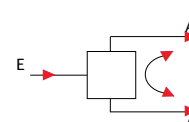
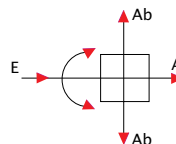
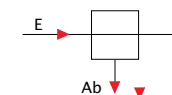
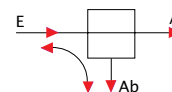
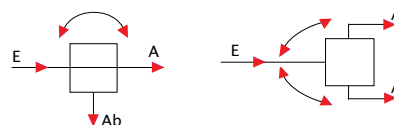
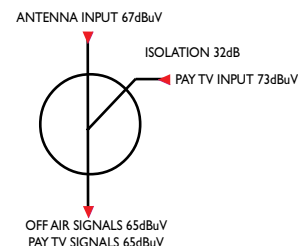


FIG. 3



TECHNICAL REFERENCE

DB CONVERSION TABLE

Microvolts (µV)				Millivolts (mV)				112.2	101	41	-8
Voltage	dBµV	dBmV	dBm	Voltage	dBµV	dBmV	dBm	125.9	102	42	-7
10.00	20	-40	-89	1.0	60	0	-49	141.3	103	43	-6
11.22	21	-39	-88	1.12	61	1	-48	158.5	104	44	-5
12.59	22	-38	-87	1.26	62	2	-47	177.9	105	45	-4
14.13	23	-37	-86	1.41	63	3	-46	199.5	106	46	-3
15.85	24	-36	-85	1.59	64	4	-45	223.9	107	47	-2
17.78	25	-35	-84	1.78	65	5	-44	251.2	108	48	-1
19.95	26	-34	-83	2.00	66	6	-43	281.8	109	49	0
22.39	27	-33	-82	2.24	67	7	-42	316.2	110	50	1
25.12	28	-32	-81	2.51	68	8	-41	354.8	111	51	2
28.18	29	-31	-80	2.82	69	9	-40	398.1	112	52	3
31.62	30	-30	-79	3.16	70	10	-39	446.7	113	53	4
35.48	31	-29	-78	3.55	71	11	-38	501.2	114	54	5
39.81	32	-28	-77	3.98	72	12	-37	562.3	115	55	6
44.67	33	-27	-76	4.47	73	13	-36	631.0	116	56	7
50.12	34	-26	-75	5.01	74	14	-35	707.9	117	57	8
56.23	35	-25	-74	5.62	75	15	-34	794.3	118	58	9
63.10	36	-24	-73	6.31	76	16	-33	891.3	119	59	10
70.79	37	-23	-72	7.08	77	17	-32	Volts (V)			
79.43	38	-22	-71	7.94	78	18	-31				
89.13	39	-21	-70	8.93	79	19	-30	Voltage	dBµV	dBmV	dBm
100.00	40	-20	-69	10.00	80	20	-29	1.00	120	60	11
112.2	41	-19	-68	11.22	81	21	-28	1.12	121	61	12
125.9	42	-18	-67	12.59	82	22	-27	1.26	122	62	13
141.3	43	-17	-66	14.13	83	23	-26	1.41	123	63	14
158.5	44	-16	-65	15.85	84	24	-25	1.59	124	64	15
177.8	45	-15	-64	17.78	85	25	-24	1.78	125	65	16
199.5	46	-14	-63	19.95	86	26	-23	2.00	126	66	17
223.9	47	-13	-62	22.39	87	27	-22	2.24	127	67	18
251.2	48	-12	-61	25.12	88	28	-21	2.51	128	68	19
281.8	49	-11	-60	28.18	89	29	-20	2.82	129	69	20
316.2	50	-10	-59	31.62	90	30	-19	3.16	130	70	21
354.8	51	-9	-58	35.48	91	31	-18	3.55	131	71	22
398.1	52	-8	-57	39.81	92	32	-17	3.98	132	72	23
446.7	53	-7	-56	44.67	93	33	-16	4.47	133	73	24
501.2	54	-6	-55	50.12	94	34	-15	5.01	134	74	25
562.3	55	-5	-54	56.23	95	35	-14	5.62	135	75	26
631.0	56	-4	-53	63.10	96	36	-13	6.31	136	76	27
707.9	57	-3	-52	70.79	97	37	-12	7.08	137	77	28
794.3	58	-2	-51	79.43	98	38	-11	7.94	138	78	29
891.3	59	-1	-50	89.13	99	39	-10	8.91	139	79	30
1000.00	60	0	-49	100.0	100	40	-9	10.0	140	80	31

TECHNICAL REFERENCE

COAX CABLE LOSSES

Attenuation (RG6)

Freq (MHz)	dB per 100m
5	1.7056
55	4.8216
211	8.7904
250	9.6432
270	9.8400
300	10.4960
330	10.9880
350	11.4144
400	12.2344
450	12.9232
500	13.3496
550	14.3008
600	15.2848
750	16.6952
870	18.4336
1000	19.9096
1300	23.0584
1450	24.4360
1750	26.3384
2150	29.4544
2600	31.5536
2832	33.2264
3000	34.9648

Attenuation (RG11)

Freq (MHz)	dB per 100m
5	1.25
55	2.99
211	5.54
250	6.14
270	6.30
300	6.66
330	7.09
350	7.32
400	7.91
450	8.23
500	8.53
550	9.12
600	9.84
750	10.56
870	11.65
1000	12.53
1300	14.44
1450	15.39
1750	16.44
2150	17.88
2600	19.19
2832	20.01
3000	21.62

CHANNEL FREQUENCY

Digital UHF Channel Frequencies (MHz)

Channel		CF
25	502-510	506
26	510-518	514
27	518-526	522
28	526-534	530
29	534-542	538
30	542-550	546
31	550-558	554
32	558-566	562
33	566-574	570
34	574-582	578
35	582-590	586
36	590-598	594

Channel		CF
37	598-606	602
38	606-614	610
39	614-622	618
40	622-630	626
41	630-638	634
42	638-646	642
43	646-654	650
44	654-662	658
45	662-670	666
46	670-678	674
47	678-686	682
48	686-694	690

TECHNICAL REFERENCE

SITE CHANNEL INFORMATION

North Island

			UHF	CH	No		
Area	Site Name	Polarisation	Channel A	Igloo DVBT-2	Channel B	Channel C	WTV
Whangarei	Parahaki	Vertical	32	30	34	36	28
Auckland	Waiatarua	Horizontal	29	31	33	37	35
	Pinehill	Horizontal	28	30	32	40	34
	Remuera	Vertical	28	30	32	40	34
	Sky Tower	Vertical	28	30	32	40	34
Waikato	Waiheke	Vertical	28	30	32	40	34
	Te Aroha	Horizontal	32	30	34	36	28
	Hamilton	Vertical	33	31	35	37	29
Tauranga	Kopukairua	Vertical	33	31	35	37	29
Rotorua	Pukepoto	Horizontal	33	31	35	37	29
Taupo	Whakaroa	Vertical	33	31	35	37	29
Gisborne	Parikanapa	Horizontal	32	30	34	36	28
	Wheatstone	Horizontal	33	31	35	37	29
Hawkes Bay	Mt Erin	Vertical	33	31	35	37	29
	Napier infill	Vertical	32	30	34	36	28
Taranaki	Mt Egmont	Horizontal	32	30	34	36	28
Wanganui	Mt Jowett	Horizontal	33	31	35	37	29
Manawatu	Wharite	Vertical	32	30	34	36	28
Wairarapa	Popoiti	Horizontal	33	31	35	37	29
Kapiti	Ngarara	Vertical	33	31	35	37	29
Wellington	Kaukau	Horizontal	32	30	34	36	28
	Baxters Knob	Horizontal	33	31	35	37	29
	Fitzherbert	Vertical	33	31	35	37	29
	Haywards	Vertical	33	31	35	37	29

South Island

			UHF	Channel	No		
Area	Site Name	Polarisation	Channel A	Igloo	Channel B	Channel C	WTV
Nelson	Mt Campbell	Vertical	33	31	35	37	29
	Kaka Hill	Horizontal	32	30	34	36	28
Christchurch	Sugarloaf	Horizontal	32	30	34	36	28
Timaru	Cave Hill	Vertical	33	31	35	37	29
Dunedin	Mt Cargill	Horizontal	32	30	34	36	28
Invercargill	Forest Hill	Horizontal	32	30	34	36	28

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