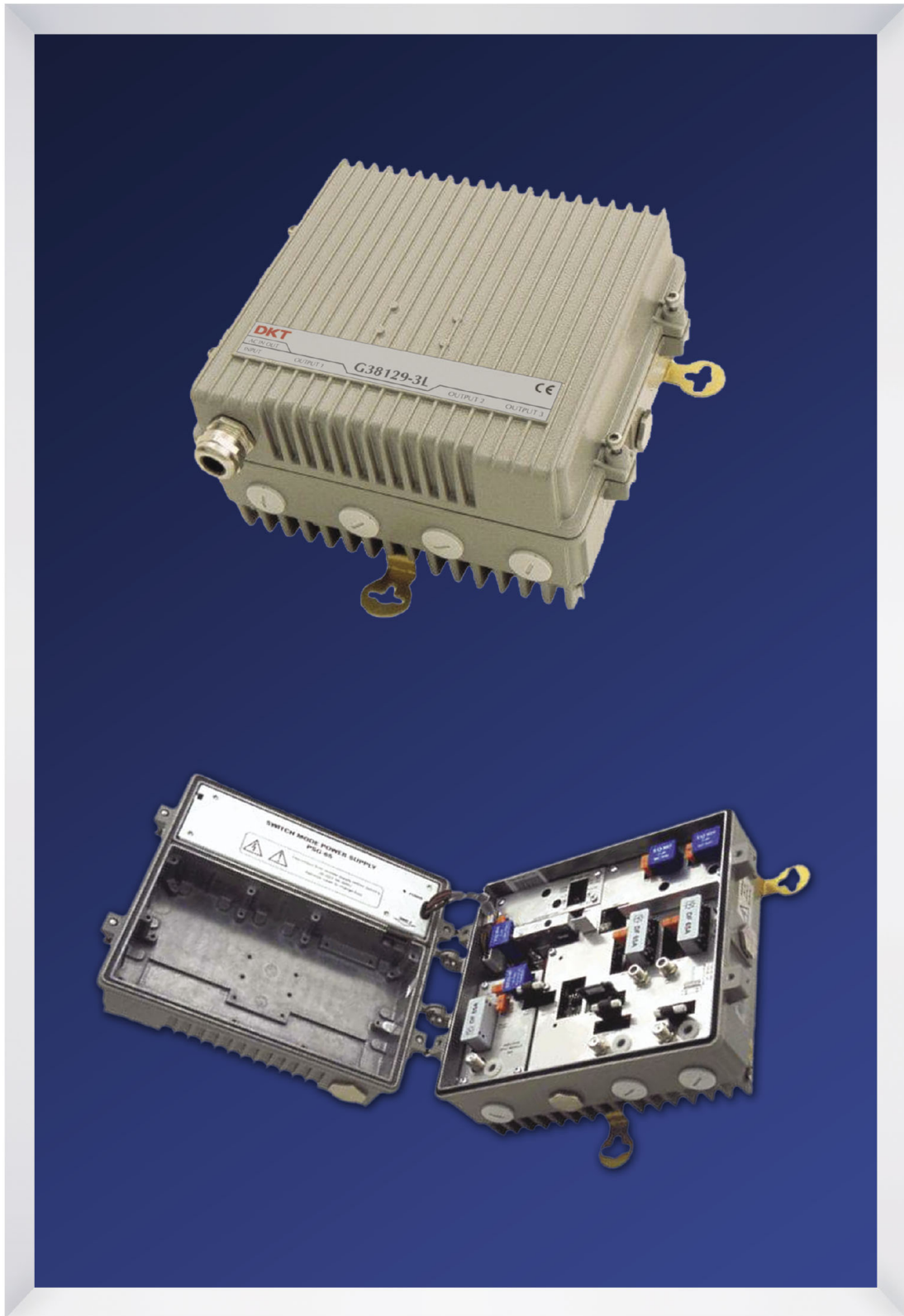


AMPLIFIERS

TRUNK & DISTRIBUTION



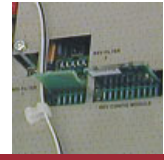
DKT G Series - DKT B Series
DKT L Series

Version 1

DKT

AMPLIFIERS

Introduction



This new DKT series offers a complete range of amplifiers for HFC networks. Ranging from a powerful trunk amplifier to a small distribution amplifier. The product range will fulfil any demand in the modern HFC networks. Additionally, with its compact design and flexible configuration platform, the DKT series is designed to support any needs in interactive quality broadband HFC networks.

Finally, in order to limit the service and maintenance cost on a minimum emphasis has been put on developing and using long lasting plug in modules and components.



DKT G Series.....2

DKT G series is a broadband distribution node designated to be used as a compact multiport distribution node in HFC networks. Modern technology applied in DKT G series supports 1, 2 or 3 high gain RF output levels. The G series is available in six standard versions – remote or local powering. Highly adjustable reverse path in G series can be either passive or active. Ingress switch and ingress filter plug in modules are helpful when eliminating problems with reverse path interference.

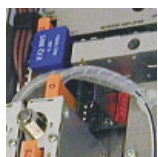
The G series is easily converted into an optical node, hence supporting optical network design in the first mile. See separate leaflet “DKT Optical node” for more information on optical nodes.



DKT B Series6

DKT B series is a broadband amplifier developed to be used for both trunk and distribution networks. The B series is available in four standard versions with different RF output levels and gain levels. B series with its modular design allows flexible configuration and step by step developments of the system.

Reverse path is available as a highly adjustable active or passive plug-in unit. At the same time, ingress switch and ingress filter plug in modules are helpful to eliminate problems with reverse path interference.



DKT L Series.....8

DKT L series is a broadband distribution amplifier dedicated to be used as the last active amplifier in the HFC networks. The L series comes in 6 different versions – remote or local powering. Reverse path in L series is available as a highly adjustable active or passive plug-in unit.



Plug-in modules..... 10

Both DKT G, B and L series with its modular design allows flexible configuration and step by step development of the HFC network. The use of universal plug-in modules applied in the G, B and L series leads to a convenient maintenance and operational costs reduction.



DKT G Series

DKT G series is a broadband distribution node designated to be used as a compact multiport distribution node in HFC networks. Modern technology applied in DKT G series supports 1, 2 or 3 high gain RF output levels.

The G series is available in six standard versions – remote or local powered. Highly adjustable reverse path in G series can be either passive or active. Ingress switch and ingress filter plug in modules are helpful when eliminating problems with reverse path interference.

DKT G series with its modular design allows flexible configuration and step by step development of the system. Additionally, G series is easily converted to an optical node utilizing the optical receiver module. See separate leaflet “DKT Optical node” for more information on optical nodes.

TYPE	SPECIFICATIONS
G38129-1L	38 dB gain, 129 dBμV output level x1 output, line powered
G38129-1M	38 dB gain, 129 dBμV output level x1 output, mains powered
G38129-2L	38 dB gain, 129 dBμV output level x1 output, mains powered
G38129-2M	38 dB gain, 129 dBμV output level x2 output, mains powered
G38126-3L	38 dB gain, 126 dBμV output level x3 output, line powered
G38126-3M	38 dB gain, 126 dBμV output level x3 output, mains powered

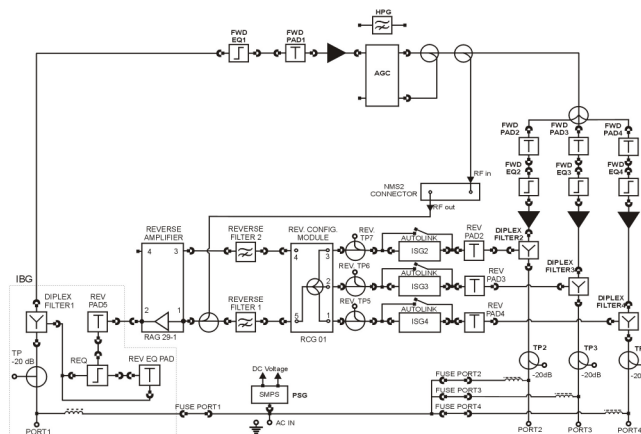
Features

- 1, 2 or 3 high RF output levels with excellent performance
- GaAs Push Pull or GaAs Power Doubler versions
- Simple conversion to optical node
- AGC controlled by pilot tone
- Network Management System ready
- Low power consumption
- Separate RF slope and level control
- Remote or local powering
- IP67 compact housing



Block diagram

G38126-3L





Technical specification

PARAMETER	G38129-1L	G38129-1M	COMMENT
Forward bandwidth [MHz]	47...85 ÷ 862	47...85 ÷ 862	DF diplex filters
Forward gain @ 862MHz [dB]	38 ± 0.75	38 ± 0.75	Port 1 to port 4; DF diplex filters, AT 800 and ATG 800 jumpers
Flatness [dB]	±0.75	±0.75	DF diplex filters, AT 800 and ATG 800 jumpers
Slope [dB]	±1	±1	DF diplex filters, AT 800 and ATG 800 jumpers
Forward noise figure	≤7	≤7	DF diplex filters, AT 800 and ATG 800 jumpers
Output level typ. [dBμV]			
DIN	129	129	According to DIN-45004B
CTB ≤ -60dBc	114	114	According to EN 50083-3; 9dB interstage equalizer, 42 CENELEC carriers
CSO ≤ -60dBc	112	112	
Reverse bandwidth [MHz]	5 ÷ 30...65	5 ÷ 30...65	DF diplex filters
Reverse gain [dB]	25 ± 0.75	25 ± 0.75	Port 4 to port 1; DF diplex filters, ATG 800 jumpers, RCG 04 configuration module, RAG amplifier
Reverse noise figure [dB]	≤7	≤7	DF diplex filters, ATG 800 jumpers, RCG 04 configuration module and RAG amplifier
NPR [dBc]	≤-60	≤-60	RAG amplifier, 27dBμV/Hz signal @ 60MHz
HUM modulation @ 12A [dBc]			
5 ÷ 15MHz	≤-55	≤-70	187 ÷ 253 VAC, 50 ÷ 60 Hz (G38129-1M)
15 ÷ 65MHz	≤-60		
85 ÷ 862MHz	≤-60		@ 791.25MHz (G38129-1L)
RF return loss [dB]	≤-18	≤-18	f ≤ 40MHz; f > 40MHz: +1.5/oct but ≤-10
Test point @ input [dB]	-20 ± 1.5	-20 ± 1.5	Bi - directional
Test points @ outputs [dB]	-20 ± 1	-20 ± 1	Directional coupler
Test points @ reverse inputs [dB]	-20 ± 1	-20 ± 1	Directional coupler
Number of RF ports/connectors type	2 / Pg11	2 / Pg11	Other on request
AC voltage range [V]	35 ÷ 65	187 ÷ 253	AC 50 ÷ 60Hz
Maximum current for AC IN port [A]	15	-	Power insertion port
Maximum current for RF port [A]	12	-	All RF ports
AC current consumption [mA]			RAG amplifier
35VAC	790	180	
48VAC	620	149	
65VAC	480	142	
AC power consumption [W]	23	24	RAG amplifier
Protection class IP	IP 67	IP 67	
Operating ambient temperature range [°C]	-40 ÷ +60	-40 ÷ +60	
MTBF [years]	> 30	> 30	@250C
Dimensions (W x L x H) [mm]	245 x 195 x 125	245 x 195 x 125	
Weight [kg]	4.3	4.3	



Technical specification

PARAMETER	G38129-2L	G38129-2M	COMMENT
Forward bandwidth [MHz]	47...85 ÷ 862	47...85 ÷ 862	DF diplex filters
Forward gain @ 862MHz [dB]	2 x 38 ± 0.75	2 x 38 ± 0.75	Port 1 to ports 3, 4; DF diplex filters, AT 800 and ATG 800 jumpers
Flatness [dB]	±0.75	±0.75	DF diplex filters, AT 800 and ATG 800 jumpers
Slope [dB]	±1	±1	DF diplex filters, AT 800 and ATG 800 jumpers
Forward noise figure	≤7	≤7	DF diplex filters, AT 800 and ATG 800 jumpers
Output level typ. [dBμV]			
DIN	129	129	According to DIN-45004B
CTB ≤ -60dBc	114	114	According to EN 50083-3; 9dB interstage equalizer, 42 CENELEC carriers
CSO ≤ -60dBc	112	112	
Reverse bandwidth [MHz]	5 ÷ 30...65	5 ÷ 30...65	DF diplex filters
Reverse gain [dB]	22 ± 0.75	22 ± 0.75	Port 3, 4 to port 1; DF diplex filters, ATG 800 jumpers, RCG 03 configuration module, RAG amplifier
Reverse noise figure [dB]	≤10	≤10	DF diplex filters, ATG 800 jumpers, RCG 03 configuration module and RAG amplifier
NPR [dBc]	≤-60	≤-60	RAG amplifier, 27dBμV/Hz signal @ 60MHz
HUM modulation @ 12A [dBc]			
5 ÷ 15MHz	≤-55	≤-70	187 ÷ 253 VAC, 50 ÷ 60 Hz (G38129-2M)
15 ÷ 65MHz	≤-60		
85 ÷ 862MHz	≤-60		@ 791.25MHz (G38129-2L)
RF return loss [dB]	≤-18	≤-18	f ≤ 40MHz; f > 40MHz: +1.5/oct
Test point @ input [dB]	-20 ± 1.5	-20 ± 1.5	Bi - directional
Test points @ outputs [dB]	-20 ± 1	-20 ± 1	Directional coupler
Test points @ reverse inputs [dB]	-20 ± 1	-20 ± 1	Directional coupler
Number of RF ports/connectors type	3 / Pg11	3 / Pg11	Other on request
AC voltage range [V]	35 ÷ 65	187 ÷ 253	AC 50 ÷ 60Hz
Maximum current for AC IN port [A]	15	-	Power insertion port
Maximum current for RF port [A]	12	-	All RF ports
AC current consumption [mA]			RAG amplifier
35VAC	1400	260	
48VAC	1000	222	
65VAC	790	205	
AC power consumption [W]	38	37	RAG amplifier
Protection class IP	IP 67	IP 67	
Operating ambient temperature range [°C]	-40 ÷ +60	-40 ÷ +60	
MTBF [years]	> 30	> 30	@250C
Dimensions (W x L x H) [mm]	245 x 195 x 125	245 x 195 x 125	
Weight [kg]	4.3	4.3	

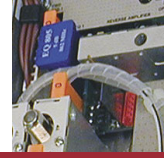


Technical specification

PARAMETER	G38126-3L	G38126-3M	COMMENT
Forward bandwidth [MHz]	47...85 ÷ 862	47...85 ÷ 862	DF diplex filters
Forward gain @ 862MHz [dB]	3 x 38 ± 0.75	3 x 38 ± 0.75	Port 1 to ports 2, 3, 4; DF diplex filters, AT 800 and ATG 800 jumpers
Flatness [dB]	±0.75	±0.75	DF diplex filters, AT 800 and ATG 800 jumpers
Slope [dB]	±1	±1	DF diplex filters, AT 800 and ATG 800 jumpers
Forward noise figure	≤7	≤7	DF diplex filters, AT 800 and ATG 800 jumpers
Output level typ. [dBmV]			
DIN	126	126	According to DIN-45004B
CTB ≤ -60dBc	110	110	According to EN 50083-3; 9dB interstage equalizer, 42 CENELEC carriers
CSO ≤ -60dBc	110	110	
Reverse bandwidth [MHz]	5 ÷ 30...65	5 ÷ 30...65	DF diplex filters
Reverse gain [dB]	20 ± 0.75	20 ± 0.75	Port 2, 3, 4 to port 1; DF diplex filters, ATG 800 jumpers, RCG 01 configuration module, RAG amplifier
Reverse noise figure [dB]	≤12	≤12	DF diplex filters, ATG 800 jumpers, RCG 01 configuration module and RAG amplifier
NPR [dBc]	≤-60	≤-60	RAG amplifier, 27dBmV/Hz signal @ 60MHz
HUM modulation @ 12A [dBc]			187 ÷ 253 VAC, 50 ÷ 60 Hz (G38129-3M)
5 ÷ 15MHz	≤-55	≤-70	
15 ÷ 65MHz	≤-60		
85 ÷ 862MHz	≤-60		@ 791.25MHz (G38129-3L)
RF return loss [dB]	≤-18	≤-18	f ≤ 40MHz; f > 40MHz: +1.5/oct
Test point @ input [dB]	-20 ± 1.5	-20 ± 1.5	Bi - directional
Test points @ outputs [dB]	-20 ± 1	-20 ± 1	Directional coupler
Test points @ reverse inputs [dB]	-20 ± 1	-20 ± 1	Directional coupler
Number of RF ports/connectors type	4 / Pg11	4 / Pg11	Other on request
AC voltage range [V]	35 ÷ 65	187 ÷ 253	AC 50 ÷ 60Hz
Maximum current for AC IN port [A]	15	-	Power insertion port
Maximum current for RF port [A]	12	-	All RF ports
AC current consumption [mA]			RAG amplifier
35VAC	1400	260	
48VAC	1000	222	
65VAC	790	205	
AC power consumption [W]	38	37	RAG amplifier
Protection class IP	IP 67	IP 67	
Operating ambient temperature range [°C]	-40 ÷ +60	-40 ÷ +60	
MTBF [years]	> 30	> 30	@250C
Dimensions (W x L x H) [mm]	245 x 195 x 125	245 x 195 x 125	
Weight [kg]	4.3	4.3	

DKT B Series

Trunk/Distribution



DKT B Series

DKT B series is a broadband amplifier dedicated to be used for both trunk and distribution HFC networks. Reverse path in B series is available as a highly adjustable active or passive plug-in module for fast at flexible reverse path design.

B series is prepared to work with different Network Management Systems and has the facility to be remotely controlled and monitored through NMS transponders. The NMS transponder enables operators to:

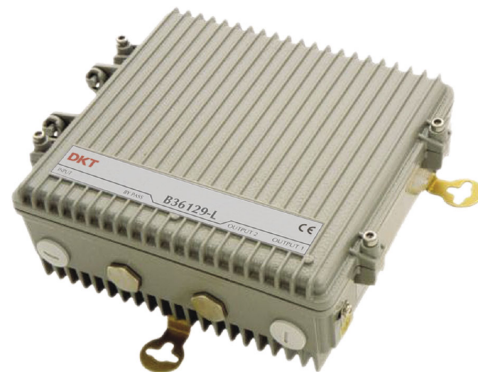
- Control three state ingress switch
- Monitor AC and DC voltages as well as DC current
- Supervise external contacts and temperature inside the amplifier housing

Available in 4 standard versions with outstanding IP67 compact housing broadband amplifier series is the optimum solution for professional HFC solutions.

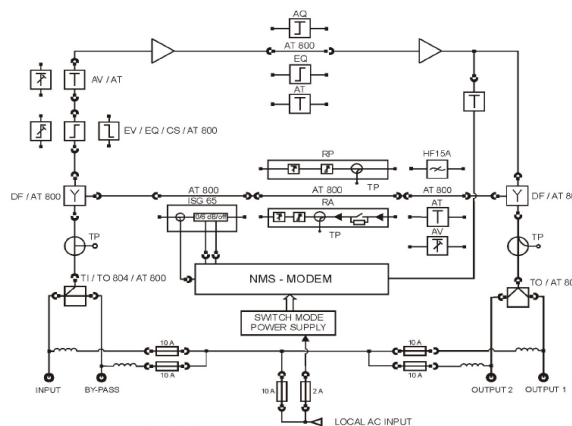
TYPE	SPECIFICATIONS
B36129-L	36 dB gain, 129 dB μ V output level, line powered
B28129-L	28 dB gain, 129 dB μ V output level, line powered
B36126-L	36 dB gain, 126 dB μ V output level, line powered
B28126-L	28 dB gain, 126 dB μ V output level, line powered

Features

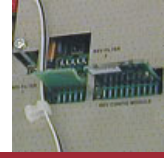
- High RF output level with excellent performance
- 28 db and 36 dB versions
- GaAs Push Pull or GaAs Power Doubler versions
- Input and output plug in splitter module
- Network Management System ready
- Low power consumption
- Separate RF slope and level control
- Remote or local powering



Block diagram



DKT B Series



Technical specification

PARAMETER	B36129-L B28129-L	B36126-L B28126-L	COMMENT
Forward bandwidth [MHz]	47...85 ÷ 862	47...85 ÷ 862	Diplex filters DF
Forward gain @ 862MHz [dB]	36 ± 0.7 28 ± 0.7	36 ± 0.7 28 ± 0.7	Diplex filters DF and jumpers AT 800
Noise figure [dB]	≤ 7	≤ 7	Diplex filters DF and jumpers AT 800
Forward flatness [dB]	±0.75	±0.75	Diplex filters DF and jumpers AT 800
Forward slope [dB]	±1	±1	Diplex filters DF and jumpers AT 800
Output level typ. [dBμV] DIN CTB ≤ -60dBc CSO ≤ -60dBc	129 115 118	126 110 114	According to DIN-45004B According to EN 50083-3; 9dB interstage slope, 42 carriers CENELEC
Reverse bandwidth [MHz]	5 ÷ 30...65	5 ÷ 30...65	Diplex filters DF
Max. reverse gain [dB]	22.5	22.5	Diplex filters DF and reverse amplifier RA
NPR [dBc]	≤-60	≤-60	Reverse amplifier RA, 60MHz load @ 26dBmV/Hz
HUM modulation @ 10A [dBc]	≤-65	≤-65	@ 343.25MHz
Return loss [dB]	≤-18	≤-18	f ≤ 40MHz; f > 40MHz: +1.5/oct but £-10
Test point @ input [dB]	-20 ± 1.5	-20 ± 1.5	Bi-directional
Test point @ output [dB]	-20 ± 1	-20 ± 1	Directional
Number of RF inputs/outputs	2/2	2/2	
Connectors @ inputs/outputs	PG11/PG11	PG11/PG11	Others on request
AC voltage range [V]	24 ÷ 65	24 ÷ 65	AC 50 , 60Hz
Max. current for AC IN port [A]	10	10	Power inserter port
Max. current for RF port [A]	10	10	All RF ports
Power consumption [W]	14/15.5	10/11.5	Without / with reverse amplifier RA
Protection class IP	IP67	IP67	
Temperature range [°C]	-25 ÷ +60	-25 ÷ +60	
Dimensions (W x L x H) [mm]	259 x 195 x 125	259 x 195 x 125	With hinge and screwholders
Weight [kg]	2.4	2.4	
PARAMETER	VALUE		MODULE
Bandwidth [MHz]	47 ÷ 862 5 ÷ 30...65/47...85 ÷ 862		Jumper AT 800 Diplex filters DF
Input adjustment: signal slope [dB]	0 1 ÷ 24 step 1 0 ÷ 18 -3, -6		Jumper AT 800 Fixed equalizer EQ Variable equalizer EV Cable simulator CS
signal level [dB]	0 ÷ 18 step 1 0 ÷ 18		Fixed attenuator AT Variable attenuator AV
Interstage adjustment: signal slope [dB]	0 1 ÷ 12 step 1		Jumper AT 800 Fixed equalizer EQ
signal level [dB]	0 ÷ 12 step 1		Fixed attenuator AT
signal level & slope [dB]	6/6; 6/9; 10/6; 10/9		Fixed attenuator & equalizer AQ
Signal splitting INPUT/BY-PASS [dB]	3.7/3.7; 2.4/8.8; 2/10.6; 0.8/12.7; 0.7/15.2; 0.6/17.5		Input splitter TI
Signal splitting OUT1/OUT2 [dB]	3.7/3.7; 2.4/8.8; 2/10.6; 0.8/12.7; 0.7/15.2; 0.6/17.5		Output splitter TO
Reverse gain [dB]	17.5 or 22.5 0		Reverse amplifier RA Jumper AT 800 or passive reverse RP
Ingress filtering [dB]	≤35		Ingress filter HF 15A
Ingress control [dB]	0, 6, 00		Ingress switch ISG 65



DKT L Series

DKT L series is a broadband distribution amplifier dedicated to be used as the last active element in the HFC networks. Modern technology applied in DKT L series supports high gain RF output levels with low intermodulation distortions.

DKT L series is low power consuming and comes in standard remote or mains powered versions. Multistage overvoltage protection of all RF ports increases durability of the amplifier resulting in higher reliability of the network.

Available in standard versions with IP54 compact housing broadband amplifier L series is the optimum solution for the distribution HFC networks.

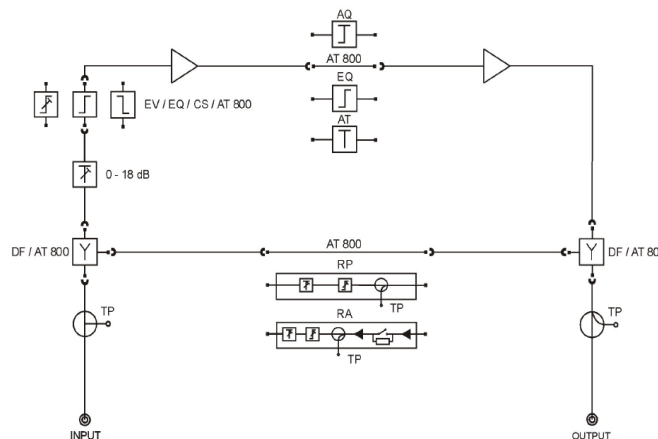
TYPE	SPECIFICATIONS
L36129-L	36 dB gain, 129 dB μ V output level, line powered
L28129-L	28 dB gain, 129 dB μ V output level, line powered
L36126-L	36 dB gain, 126 dB μ V output level, line powered
L36126-M	36 dB gain, 126 dB μ V output level, mains powered
L34120-L	34 dB gain, 120 dB μ V output level, line powered
L34120-M	34 dB gain, 120 dB μ V output level, mains powered

Features

- High RF output level with excellent performance
- 28, 34 dB and 36 dB versions
- GaAs Push Pull or GaAs Power Doubler versions
- Low power consumption
- Remote or mains powering
- IP54 compact housing



Block diagram



DKT L Series

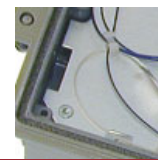


Technical specification

PARAMETER	L36129-L L28129-L	L36126-L L36126-M	L34120-L L34120-M	COMMENT
Forward bandwidth [MHz]	47...85 ÷ 862	47...85 ÷ 862	47...85 ÷ 862	Diplex filters DF
Forward gain @ 862MHz [dB]	36 ± 0.7 28 ± 0.7	36 ± 0.7	34 ± 0.7	Diplex filters DF and jumpers AT 800
Noise figure [dB]	≤ 7 ≤ 8.5	≤ 7	≤ 7	Diplex filters DF and jumpers AT 800
Forward flatness [dB]	± 0.75	± 0.75	± 0.75	Diplex filters DF and jumpers AT 800
Forward slope [dB]	± 1	± 1	± 1	Diplex filters DF and jumpers AT 800
Output level typ. [dBμV] DIN CTB ≤ -60dBc CSO ≤ -60dBc	129 114 118	126 110 114	120 107 110	According to DIN-45004B According to EN 50083-3; 9dB interstage slope, 42 carriers CENELEC
Reverse bandwidth [MHz]	5 ÷ 30...65	5 ÷ 30...65	5 ÷ 30...65	Diplex filters DF
Max. reverse gain [dB]	23.5	23.5	23.5	Diplex filters DF and reverse amplifier RA
NPR [dBc]	≤ -60	≤ -60	≤ -60	Reverse amplifier RA, 60MHz load @ 26dBμV/Hz
HUM modulation @ 10A [dBc]	≤ -65	≤ -65	≤ -65	@ 343.25MHz
Return loss [dB]	≤ -14	≤ -14	≤ -14	f ≤ 40MHz; f > 40MHz: +1.5/oct but £-10
Test point @ input [dB]	-20 ± 1.5	-20 ± 1.5	-20 ± 1.5	Bi-directional
Test point @ output [dB]	-20 ± 1	-20 ± 1	-20 ± 1	Directional
Number of RF inputs/outputs	1/1	1/1	1/1	
Connectors @ inputs/outputs	PG11/F	PG11/F F/F	PG11/F F/F	Others on request
AC voltage range [V]	24 ÷ 65	24 ÷ 65 187 ÷ 253	24 ÷ 65 187 ÷ 253	AC 50 , 60H
Power consumption [W]	12.5/14	9.5/11 11.5/13	10.5/12 12.5/14	Without / with reverse amplifier RA
Protection class IP	IP54	IP54	IP54	
Temperature range [°C]	-25 ÷ +60	-25 ÷ +60	-25 ÷ +60	
Dimensions (W x L x H) [mm]	206 x 133 x 83	206 x 133 x 83	206 x 133 x 83	Main body with screwholders
Weight [kg]	1.8	1.8	1.8	

PARAMETER	VALUE	MODULE
Bandwidth [MHz]	47 ÷ 862 5 ÷ 30...65/47...85 ÷ 862	Jumper AT 800 Diplex filters DF
Input adjustment: signal slope [dB]	0 1 ÷ 24 step 1 0 ÷ 18 -3, -6	Jumper AT 800 Fixed equalizer EQ Variable equalizer EV Cable simulator CS
signal level [dB]	0 ÷ 18	Variable attenuator on the main board
Interstage adjustment: signal slope [dB]	0 1 ÷ 12 step 1	Jumper AT 800 Fixed equalizer EQ
signal level [dB]	0 ÷ 12 step 1	Fixed attenuator AT
signal level & slope [dB]	6/6; 6/9; 10/6; 10/9	Fixed attenuator & equalizer AQ
Reverse gain [dB]	23.5 or 18.5 0	Reverse amplifier RA Jumper AT 800 or passive reverse RP

PLUG-IN MODULES FOR G, B AND L SERIES



Both DKT G, B and L series with its modular design allows flexible configuration and step by step development of the HFC network. The use of universal plug-in modules applied in the G, B and L series leads to a convenient maintenance and operational costs reduction.

In cases where "x" appears in the type there are more options available with different specifications.

DIPLEX FILTER

TYPE	FREQUENCY RANGE
DF 65A	5 ÷ 65 / 85 ÷ 862 MHz
DF 42A	5 ÷ 42 / 54 ÷ 862 MHz
DF 30A	5 ÷ 30 / 47 ÷ 862 MHz



INPUT VARIABLE EQUALIZER MODULE

TYPE	FREQUENCY RANGE	EQUALIZATION
EV 818	47 ÷ 862 MHz	0 ÷ 18 dB
EV 618	47 ÷ 606 MHz	0 ÷ 18 dB
EV 418	47 ÷ 450 MHz	0 ÷ 18 dB



INPUT VARIABLE ATTENUATOR MODULE

TYPE	FREQUENCY RANGE	ATTENUATION
AV 818	5 ÷ 862 MHz	0 ÷ 18 dB



INTERSTAGE FIXED ATTENUATOR & EQUALIZER MODULE

TYPE	FREQUENCY RANGE	ATTENUATION	EQUALIZATION
AQ 810-06	47 ÷ 862 MHz	10 dB	6 dB
AQ 810-09	47 ÷ 862 MHz	10 dB	9 dB
AQ 806-06	47 ÷ 862 MHz	6 dB	6 dB
AQ 806-09	47 ÷ 862 MHz	6 dB	9 dB



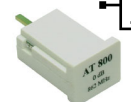
INPUT OR INTERSTAGE FIXED EQUALIZER MODULE

TYPE	FREQUENCY RANGE	EQUALIZATION
EQ 8xx	47 ÷ 862 MHz	1 ÷ 24 dB, step 1dB
EQ 6xx	47 ÷ 606 MHz	6, 9, 12 dB
EQ 4xx	47 ÷ 450 MHz	3, 6, 9, 12, 15 dB



INPUT OR INTERSTAGE FIXED ATTENUATOR MODULE

TYPE	FREQUENCY RANGE	ATTENUATION
AT 8xx	5 ÷ 862 MHz	1 ÷ 21 dB, step 1dB



UNIVERSAL JUMPER MODULE

Type: AT 800



REVERSE PATH INGRESS FILTER MODULE

TYPE	FREQUENCY RANGE	ATTENUATION
HF 15A	≤ 10 MHz	≥ 35 dB
	15 MHz	≤ 1 dB
	> 15 MHz	≤ 0.5 dB



PLUG-IN MODULES FOR G, B AND L SERIES



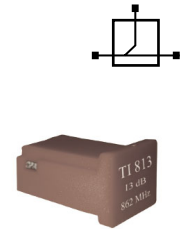
CABLE SIMULATOR MODULE

TYPE	FREQUENCY RANGE	ATTENUATION AT UPPER FREQUENCY
CS 80x	47 ÷ 862 MHz	3 or 6 dB
CS 60x	47 ÷ 606 MHz	3 or 6 dB
CS 40x	47 ÷ 450 MHz	3 or 6 dB



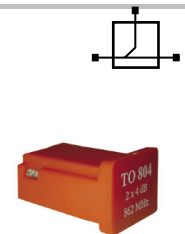
INPUT TAP MODULE

TYPE	ATTENUATION INPUT TO BY-PASS	ATTENUATION INPUT TO AMPLIFIER
TI 808	2.4 dB	8.8 dB
TI 810	2 dB	10.6 dB
TI 813	0.8 dB	12,7 dB
TI 815	0.7 dB	15.2 dB
TI 817	0.6 dB	17.5 dB



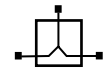
OUTPUT TAP MODULE

TYPE	ATTENUATION TO OUT1	ATTENUATION TO OUT2
TO 808	2.4 dB	8.8 dB
TO 810	2 dB	10.6 dB
TO 813	0.8 dB	12,7 dB
TO 815	0.7 dB	15.2 dB
TO 817	0.6 dB	17.5 dB



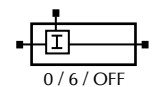
INPUT/OUTPUT SPLITTER MODULE

Type: TO 804 - Symmetrical 1 x 2 splitter with insertion loss of 3.7 dB



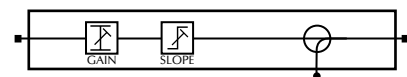
INGRESS SWITCH MODULE

Type: IS 65 - Used with Network Management System



PASSIVE REVERSE MODULE

Type: RP 600

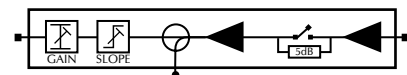


TECHNICAL PARAMETERS			
• Bandwidth [MHz]	5 ÷ 65	• Slope adjustment range [dB]	0 ÷ 10
• Insertion loss [dB]	≤ 3.5	• Test point - directional [dB]	-20
• Level adjustment range [dB]	0 ÷ -18		



REVERSE AMPLIFIER MODULE WITH VARIABLE ATTENUATOR AND EQUALIZER

Type: RA 65 - Gain controlled by 2-state interstage attenuator and indicated by LED.



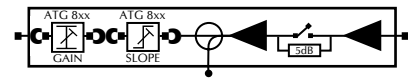
TECHNICAL PARAMETERS			
• Bandwidth [MHz]	5 ÷ 65	• NPR for 60 MHz load @ 26dBμV/Hz [dBc]	≤ -60
• Gain [dB]	25/20	• Intermodulation distortions [dBc]:	
• Noise figure [dB]	≤ 4	• third order beat IMD3 @ 115dBμV	≤ -60
• Level adjustment range [dB]	0 ÷ 20	• second order beat IMD2 @ 103dBμV	≤ -60
• Slope adjustment range [dB]	0 ÷ 10	• Power consumption [W]	1.5
• Test point - directional [dB]	- 20		



PLUG-IN MODULES FOR G, B AND L SERIES



REVERSE AMPLIFIER MODULE WITH FIXED ATTENUATOR AND EQUALIZER

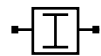


Type: RA 65Z - Gain controlled by 2-state interstage attenuator and indicated by LED.

TECHNICAL PARAMETERS		
• Bandwidth [MHz]	5 ÷ 65	• NPR for 60 MHz load @ 26dBμV/Hz [dBc] ≤ -60
• Gain [dB]	25/20	• Intermodulation distortions [dBc]:
• Noise figure [dB]	≤ 4	• third order beat IMD3 @ 115dBμV ≤ -60
• Level adjustment range [dB]	0 ÷ 20 step 1	• second order beat IMD2 @ 103dBμV ≤ -60
• Slope adjustment range [dB]	0 ÷ 10 step 1	• Power consumption [W] 1.5
• Test point - directional [dB]	- 20	

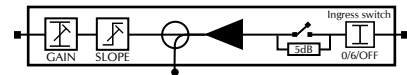


FIXED ATTENUATOR MODULE FOR REVERSE AMPLIFIER MODE RA 65Z



Type: ATG 800 ÷ ATG 820 - Attenuation range: 0 ÷ 20 dB, step 1dB

REVERSE PATH AMPLIFIER MODULE WITH VARIABLE ATTENUATOR AND EQUALIZER AND MANUAL INGRESS SWITCH

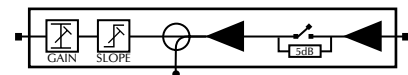


Type: RA 65M - Gain controlled by 2-state interstage attenuator and indicated by LED.

TECHNICAL PARAMETERS		
• Bandwidth [MHz]	5 ÷ 65	• NPR for 60 MHz load @ 26dBμV/Hz [dBc] ≤ -60
• Gain [dB]	25/20	• Intermodulation distortions [dBc]:
• Noise figure [dB]	≤ 4	• third order beat IMD3 @ 115dBμV ≤ -60
• Level adjustment range [dB]	0 ÷ 20	• second order beat IMD2 @ 103dBμV ≤ -60
• Slope adjustment range [dB]	0 ÷ 10	• Ingress control [dB] 0 / 6 / OFF
• Test point - directional [dB]	- 20	• Power consumption [W] 1.5



REVERSE AMPLIFIER MODULE WITH VARIABLE ATTENUATOR AND EQUALIZER

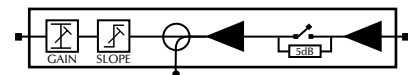


Type: RA 42 - Gain controlled by 2-state interstage attenuator and indicated by LED.

TECHNICAL PARAMETERS		
• Bandwidth [MHz]	5 ÷ 42	• NPR for 37 MHz load @ 28dBμV/Hz [dBc] ≤ -60
• Gain [dB]	25/20	• Intermodulation distortions [dBc]:
• Noise figure [dB]	≤ 4	• third order beat IMD3 @ 115dBμV ≤ -60
• Level adjustment range [dB]	0 ÷ 20	• second order beat IMD2 @ 103dBμV ≤ -60
• Slope adjustment range [dB]	0 ÷ 10	• Power consumption [W] 1.5
• Test point - directional [dB]	- 20	



REVERSE AMPLIFIER MODULE WITH VARIABLE ATTENUATOR AND EQUALIZER



Type: RA30 - Gain controlled by 2-state interstage attenuator and indicated by LED.

TECHNICAL PARAMETERS		
• Bandwidth [MHz]	5 ÷ 30	• NPR for 25 MHz load @ 29dBμV/Hz [dBc] ≤ -60
• Gain [dB]	25/20	• Intermodulation distortions [dBc]:
• Noise figure [dB]	≤ 4	• third order beat IMD3 @ 115dBμV ≤ -60
• Level adjustment range [dB]	0 ÷ 20	• second order beat IMD2 @ 103dBμV ≤ -60
• Slope adjustment range [dB]	0 ÷ 10	• Power consumption [W] 1.5
• Test point - directional [dB]	- 20	



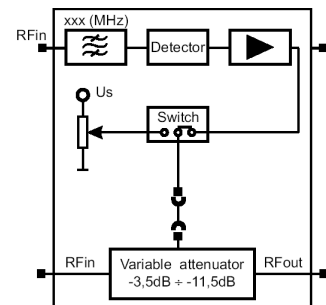
PLUG-IN MODULES FOR G SERIES



AUTOMATIC GAIN CONTROL MODULE CONTROLLED BY PILOT TONE

Type: AGC xxx-x

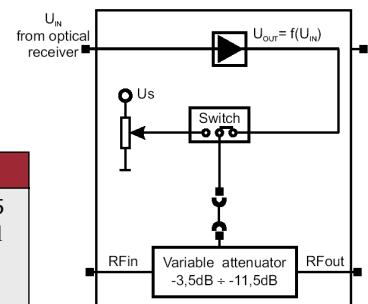
TECHNICAL PARAMETERS				
• Bandwidth [MHz]	• AGC xxx-6	85 ÷ 862	• 20dB bandwidth [MHz]	15
	• AGC xxx-4	54 ÷ 862	• Dynamics [dB]	8
	• AGC xxx-3	47 ÷ 862	• AGC insertion loss [dB]	3.5
• Pilot frequency [MHz]	xxx		• Stability over ± 4dB input change	± 1
• Video carrier to pilot ratio [dB]	0 ÷ -12		over temperature range	
• 3dB bandwidth (minimum) [MHz]	4		-40 ÷ + 60 °C [dB]	



AUTOMATIC GAIN CONTROL MODULE CONTROLLED BY OPTICAL POWER AT THE INPUT OF RECEIVER

Type: AGC 000-x

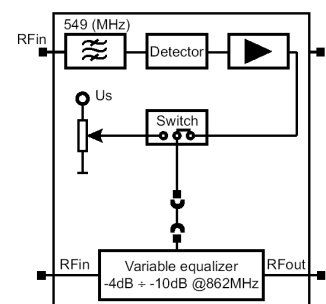
TECHNICAL PARAMETERS				
• Bandwidth [MHz]	• AGC xxx-6	85 ÷ 862	• AGC insertion loss [dB]	3.5
	• AGC xxx-4	54 ÷ 862	• Stability over ± 2dBm input	± 1
	• AGC xxx-3	47 ÷ 862	optical power change [dB]	
• Dynamics [dB]		8		



AUTOMATIC SLOPE AND GAIN CONTROL MODULE CONTROLLED BY PILOT TONE

Type: AGC 549-6

TECHNICAL PARAMETERS			
• Bandwidth [MHz]	85 ÷ 862	• Dynamics [dB]	
• Pilot frequency [MHz]	549	@862 MHz	6
• 0,5 dB bandwidth [MHz]	0,2	@549 MHz	4,5
• 20 dB bandwidth [MHz]	2,8	@85 MHz	3
		• AGC insertion loss [dB]	3.5
		• Stability over ± 40 °C temperaty change [dB]	± 1



TRANSPONDERS SPECIFICATIONS

(HMS)



FlexStat II

- Fully compatible with all AM status monitoring and performance products
- Frequency agile
- Downloadable firmware
- Firmware can be downloaded locally or via RF
- Wide operating temperature Range
- Proven reliability
- Small size and easy mounting
- Multi channel 8-bit A/D converter
- Serial Peripherals for Interface control or external peripherals and I/O expansion circuits

FlexStat III

- Wide operating frequency range
- Fully compatible with all AM status monitoring and performance products
- SCTE HMS-005/004 compliant
- Downloadable firmware
- Firmware can be downloaded locally or via RF
- Wide operating temperature Range
- Proven reliability
- Small size and easy mounting
- Multi channel 8-bit A/D converter
- Serial Peripheral Interface for control or external peripherals and I/O expansion circuits

PARAMETER	VALUE
Receive frequency [MHz]	Agile, 50-53, 73-76, 89-93, 107-110, 456-462
Nominal RF input level [dBuV]	60
Input level range [dBuV]	40-80
Interface rejection [dBc]	0 @ +/-300 kHz 20 @ +/-600 kHz
Receiver spurious outputs [dBuV]	45 max. 50-1000 MHz
Transmit frequency [MHz]	Agile 5.5-8, 8-12, 12-18, 18-27, 23-32, 27-40
Frequency tolerance [%]	0,1
Output RF level [dBuV]	105, +/- 3dB @ maximum
Output level attenuator [dB]	-6, -12, -18 down from max., +/-2
Bandwidth [kHz]	300 @ -40dBc 500 @ -50 dBc
Transmitter spurious outputs [dBc]	-55 @ max., 5-50 MHz
Modulation type	FSK, +/-50 kHz nominal
Modulation tolerance [kHz]	37.5 min. 65 max.
Data format	Asynchronous, NRZ, Burst Packet
Data rate [kb]	38.4
Operating temperature [°C]	-40 - + 100
Humidity [%]	0 – 90 non-condensing
Analog inputs quantity	20 ¹ 5 ²
Digital inputs quantity	20 ¹ 2 ²
Digital outputs quantity	20 ¹ 2 ²

¹With external multiplexing

²Without external multiplexing

PARAMETER	VALUE
Receive frequency [MHz]	Agile, 48-120
Nominal RF input level [dBuV]	60
Input level range [dBuV]	40-80
Interface rejection [dBc]	0 @ +/-300 kHz 20 @ +/-600 kHz
Receiver spurious outputs [dBuV]	45 max. 50-1000 MHz
Transmit frequency [MHz]	Agile 5-42
Frequency tolerance [%]	0,1
Output RF level [dBuV]	105, +/- 3dB @ maximum
Output level attenuator [dB]	0- -30, 2 dB steps
Bandwidth [kHz]	300 @ -40dBc 500 @ -50 dBc
Transmitter spurious outputs [dBc]	-60 @ max., 5-50 MHz
Output match [dB]	12, 5-42 MHz
Modulation type	FSK, +/-50 kHz nominal
Modulation tolerance [kHz]	+/-2
Data format	Asynchronous, NRZ, Burst Packet
Data rate [kb]	38.4
Operating temperature [°C]	-40 - + 85
Humidity [%]	0 – 90 non-condensing
Temperature range [°C]	-40 - + 100
Accuracy/resolution [°C]	+ -5 / 1
Analog inputs quantity	20 ¹ 5 ²
Digital inputs quantity	20 ¹ 2 ²
Digital outputs quantity	20 ¹ 2 ²



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