

# BETA PRO 60G

Optical node, 1x2, 1 GHz / 85 MHz

## OPTICAL PARAMETERS

Wavelength <sup>1</sup>	1100 - 1600 nm
Optical input power range <sup>2</sup>	
High gain version (HG)	-8 - -1 dBm
Low gain version (LG)	-5 - 2 dBm
Equivalent input noise current <sup>3</sup>	< 5 pA / √Hz

## RF PARAMETERS

### Forward Channel

Forward bandwidth	54...130 - 1006 MHz
Gain limited output level <sup>4</sup>	2 x 118 ± 1 dBμV
Flatness <sup>5</sup>	± 0.75 dB
Slope <sup>5</sup>	± 1 dB
Output level <sup>6</sup> :	
CTB ≤ - 60 dBc	114 dBμV
CSO ≤ - 60 dBc	114 dBμV
CNR <sup>7</sup>	51.5 dBc
Interstage gain control (A1, A2)	0 - 15 step 0.5 dB
Interstage slope control (E1) <sup>8</sup>	0 - 15 step 0.5 dB

### Reverse Channel

Bandwidth	5 - 42... 100 MHz
Transmitter OMI <sup>9</sup>	8 %
Flatness	± 1 dB
Reverse gain control (A3, A4)	0 - 24step 1 dB
HUM modulation @ 12 A <sup>10</sup>	< -60 dBc

## OTHERS

Return loss <sup>11</sup>	≥ 18 dB
Test points	- 20 ± 0.75 dB
Voltage range:	
remote powering	30 - 65 V AC
mains powering	230 ± 10% V AC
Max. current for RF / AC IN ports	12 / 15 A
Power consumption <sup>12</sup>	< 33 W
Operation temperature range	- 40 - 60 °C
Optical connectors <sup>13</sup>	SC / APC
Number of RF ports / connectors types	3 / PG11
Protection class	IP 67
Dimensions (W x L x H) <sup>14</sup>	245 x 204 x 127 mm
Weight	4 kg

## AVAILABLE VERSIONS

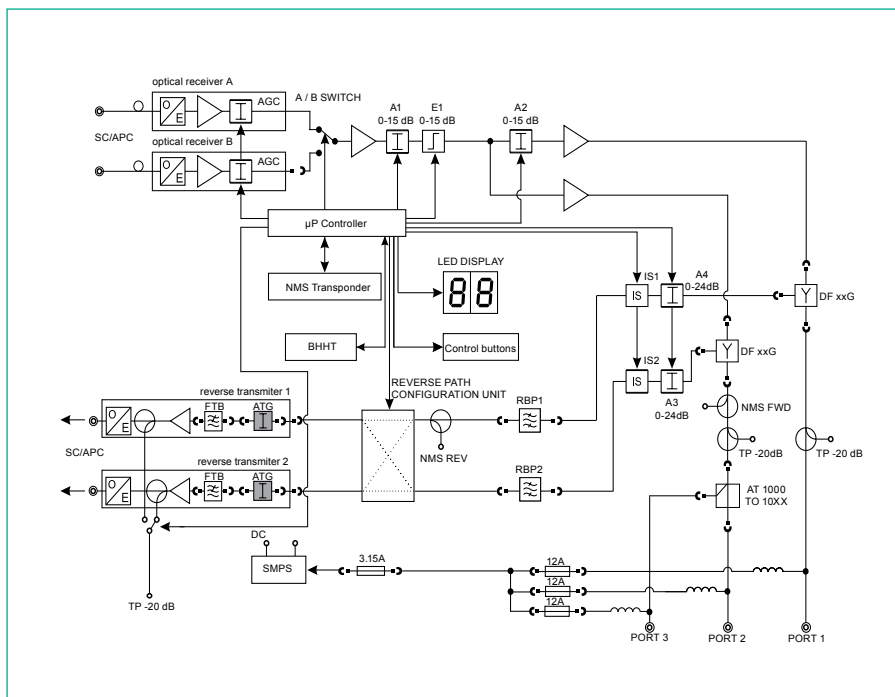
BETA PRO 60G D89Y	remote powering
BETA PRO 60G D89M	mains powering



- 1 GHz in downstream / up to 100 MHz in upstream
- 2 active GaAs outputs, 3 ports
- Fiber optic transmitters with OMI stabilization
- Uninterruptable electronic adjustment
- Optional Network Management Transponder (DOCSIS, EuroDOCSIS, HMS)
- Forward path redundancy
- Return path redundancy or segmentation
- Optical power based AGC
- Build in optical input power level indicator
- Easy set-up using LED display or BHHT terminal
- Compact housing and protection class IP 67

BETA PRO 60G is an optical node designed to meet the requirements of modern HFC networks. Adjustment of the optical node has been simplified due to its microprocessor control unit that enables uninterrupted adjustment (e.g. AGC, slope, gain), what is extremely important especially for modern services e.g. VoIP, VoD. This solution allows to reduce costs of network maintenance, eliminate the necessity of plug-in modules stock and simplify installation and adjustment of the device.

BETA PRO 60G may be equipped with transponder module, which enables remote monitoring and control of particular node parameters. It enables to monitor and manage three-state ingress switch, reverse transmitter redundancy or segmentation, receiver redundancy, configuration of AGC settings, slope and level adjustment. The AGC circuit compensates changes in the optical power providing stable RF output level regardless of input signal fluctuations. Modern forward path receiver of BETA PRO 60G, allows to work with low optical input power is modern FTTC / FTTB architecture. To provide redundancy additional receiver may be mounted in.



1. Gain limited output level defined for 1310 nm, optical input power indicator calibrated for 1310 nm
2. Range of AGC
3. < 5 pA / √Hz typical value
4. 4.0% OMI / channel, single carrier and input optical power: 0 dBm – low gain version, - 3 dBm – high gain version; input wavelength 1310 nm, AGC = OFF
5. Measured 10 MHz above duplex filter roll-off and with AT 1000
6. According to EN 50083-3, 9 dB slope between 85 to 862 MHz, 42 channels CENELEC, value measured & guaranteed per each product
7. Noise bandwidth = 4.75 MHz, input optical power = - 3 dBm, 112 dBμV output level, AGC = OFF, A1 = A2 = E1 = 0
8. Slope defined between 40 MHz and 1 GHz, cable shape equalizer
9. For 70 dBμV at input port (74 dBμV on reverse TP), reverse attenuator = 0 dB, redundancy
10. f > 15 MHz, room temperature, typical value
11. 18 dB for 7 MHz ≤ f ≤ 40 MHz, 18 dB - 1.5 dB / oct for f > 40 MHz, but ≤ 11 dB
12. Sinus 30 V AC, single receiver and one transmitter. With full configuration of 2 transmitters, 2 receivers, and NMS transponder < 41 W
13. Others on request
14. Dimensions with hinges for messenger line but without 3 hinges for the wall mounting, with wall mounting hinges: 260 x 233 x 130 mm

Unless otherwise specified, the whole specifications are tested with 65 / 85 duplex filters installed, at room temperature 25°C

22/03/2016 Specifications are subject to change without notice.