

# Rack Mountable System Amplifier

Product Name : RCA1020U52, Code Name : U3Y6TA2EN52

Doc. Name : Preliminary Short Spec.

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| <p><b>Preliminary Short Specification</b><br/>for<br/><b>RCA1020U52</b></p> |
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| 2012/3/27                         | 2012/3/27 |                 | A        | <i>RFcore co.,Ltd</i> |
| File : RCA1020U52 Short Spec.docx |           |                 |          |                       |

*The Specifications is subject to change before finalization*

Customer Service: Tel. 82-31-708-7575

Email: [sales@rfcore.com](mailto:sales@rfcore.com)

<http://www.rfcore.com>

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| ELECTRICAL SPECIFICATIONS                      | @ 50 Ω load, Ta = 25°C, 24VDC   |   |
|--|---|---|
| Parameter                                      | Specification   | Remark  |
| Frequency Range                                | 1000 ~ 2000MHz  |   |
| Saturated Output Power                         | 150 Watts min. (CW)   | @ VSWR < 2:1  |
| Gain   | 52 dB min.  | Input level = 0 dBm   |
| Gain Flatness                                  | Peak to peak 4 dB   | At constant input between -20 dBm and 0dBm                    |
| Input Power for Rated Output Power             | 0 dBm max.  |   |
| Gain Adjustment Range                          | 30 dB with 0, 0.5, 1, 2, 3, ..... 30  | Available both manual and remote control                      |
| Harmonics                                      | Less than -15 dBc   | @ 150 Watts   |
| Spurious                                       | Less than -50 dBc   | In band   |
| Input VSWR                                     | 2:1 max.  |   |
| Maximum Load VSWR for amplifier survival       | Infinite  | In case over 3.5 : 1, amplifier back off gain by about 15 dB. |
| Input / Output Impedance                       | 50 ohms nominal   |   |
| Input Power for Rated Output Power             | 0 dBm typ.  |   |
| Maximum Input Power for no damage              | 10 dBm  |   |
| Internal Dummy Load                            | System computer will control the switch to dummy load state. The internal loads will be housed within the PA. Power measurements accuracy reports will comply with -0.5 ~ +1 dB accuracy. |   |
| Switching Speed                                | 50 usec max.  | LVDS commands possible  |
| Switching Rate                                 | 2 kHz max.  |   |
| Receive Pass Loss                              | 2 dB max.   |   |
| Receive Output Isolation in Tx mode            | 50 dB min.  |   |
| Noise Power Output in Tx mode without RF input | -90 dBm/Hz max.   |   |
| Noise Power Output in Rx mode(NQ mode)         | -166 dBm/Hz max.  |   |
| Primary Supply Voltage Range                   | 24 VDC, +11/-6 VDC  |   |
| Power Consumption                              | 1000W typ. @ Tx mode<br>300W typ. @ Rx mode   |   |

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|                                   |           |                 |          |                |
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## ENVIRONMENTAL SPECIFICATIONS

| Parameter                        | Specification                              | Remark   |
|----------------------------------|--|--|
| Operating Ambient Temperature    | -10 ~ 50 °C                                |  |
| Storage Temperature              | -40 ~ 85 °C                                |  |
| Relative Humidity w/o Condensing | MIL – STD – 810F 507.4                     |  |
| Altitude                         | Up to 3000 m above sea level               |  |
| Vibration                        | MIL – STD – 810F 514.5                     |  |
| Shock                            | MIL – STD – 810F 516.5                     |  |
| MTBF                             | 10,000 hours for ground mobile environment |  |
| Electromagnetic compatibility    | MIL-STD-461E                               | CE102, CS101, CS114, CS115, CS116, RE102 and RS103 |

## MECHANICAL SPECIFICATIONS

| Parameter                | Specification  | Remark                       |
|--------------------------|--|------------------------------|
| Physical Dimension       | 19"(W) x 5.25"(H) x 24.8"(D)   |                              |
| Weight                   | Less than 55 lb ( 25 kg )  |                              |
| Handles                  | Two handles  | On rear panel                |
| RF Input Connector       | N – Female   | On rear panel                |
| RF Output Connector      | N – Female   | On rear panel                |
| Receiver Connector       | N – Female   | On rear panel                |
| DC Input Connector       | CA3102E20-23P-B-F80-05(ITT CANNON)   | On rear panel                |
| LVDS Interface           | 6 pin connector(T/R, Enable, N.C)  | On rear panel                |
| Remote Control Connector | Ethernet(Military RJ45)  | On rear panel                |
| Cooling                  | Forced air from front to back<br>Fans to be activated above a defined temp. threshold only(switch fans between full or minimum current when under threshold) | Fans should be in rear panel |
| Main Switch              | Supply voltage on/off  | On rear panel                |
| Standby button           | RF input signal on/off   | On front panel               |

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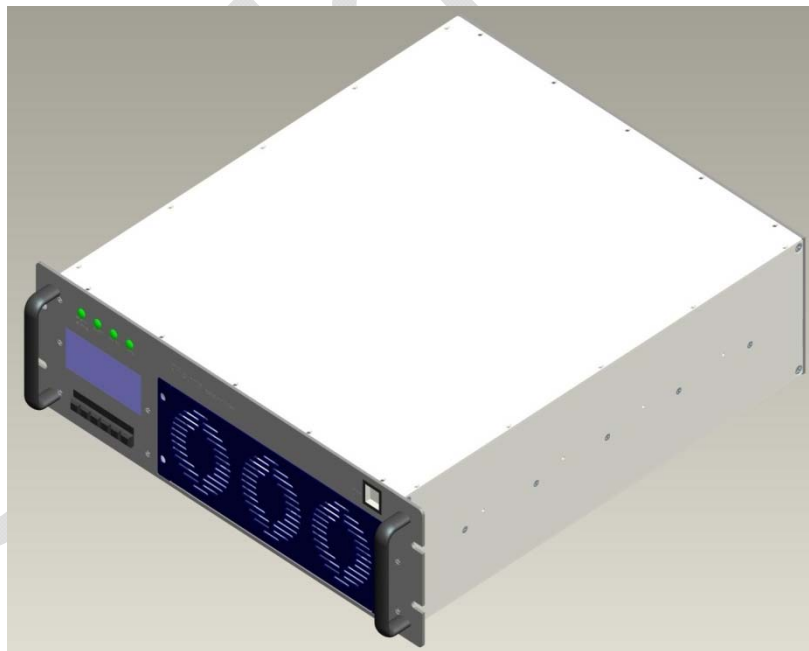
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## SELF PROTECTIONS

| Parameter                       | Specification   | Remark  |
|---------------------------------|---|---|
| Input Overdrive Protection      | Pin_max = H dBm, H = ( Gain adjustment attenuation value) dBm, H cannot exceed 10<br>Ex) 0 dBm @ 0 dB attenuation<br>5 dBm @ 5 dB attenuation<br>10 dBm @ 10 dB attenuation<br>10 dBm @ 15 dB attenuation | In case exceeding this limit amplifier back off gain automatically by about 15dB, Factory Reset |
| Over Power Protection and Alarm | 54 dBm ± 0.5 dB shutdown  | Factory Reset   |
| Over Temp Protection and Alarm  | Shutdown @ 85 °C ± 5 °C<br>Auto Recovery @ 65 °C ± 5 °C   | Factory Reset   |
| Under or over DC voltage inputs | Under Voltage turn-on : 17.5V<br>Over Voltage turn-off : 36V  |   |
| VSWR Alarm                      | Load VSWR over 6 : 1 within 50 usec   | Factory Reset   |

## MECHANICAL DRAWING

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