



EXPERIENȚE ÎMPREUNĂ.

Sagemcom F@st 5655v2 AC RF Architecture

High level overview

Hardware Specifications

ONT Details	
CPE manufacturer/model	Sagemcom / F@st 5655v2 AC RF
Chipset	BCM 68380

Product Overview	
WAN	PON port with SC/APC Optical module connector
LAN	4xGb Ethernet
POTS	2xPOTS ports RJ11
RF	1 port CATV
Wireless Wi-Fi	WLAN 802.11 b/g/n/ac
USB	1 port USB 2.0

CPE hardware Major Components	Description
CPU	BCM 68380
Switch Chipset	Integrated in BCM 68380
WiFi Chipset 2.4GHz	BCM43217
WiFi Chipset 5 GHz	BCM43602
SLIC	LE9540
NAND Flash	128MB
DDR2	DDR3 256MB

Table 1. Description of ports and buttons on the rear panel of the 5655v2 AC RF

Port/Button	Function
ON/OFF	Indicates the power button. It is used to power on or power off the device.
POWER	Indicates the power port, used to connect to the power adapter or backup battery unit.
USB	Indicates USB host port, used to connect to USB storage devices.
TEL1–TEL2	Indicates VoIP telephone ports (RJ-11), used to connecting to the ports on telephone sets.
LAN1–LAN4	Indicates auto-sensing 10/100/1000M Base-T Ethernet ports (RJ-45), used to connect to PCs or IP set-top boxes (STBs).
CATV	Indicates an RF port, used to connect to a TV set.
Reset	Indicates the reset button. Press the button for a short time to reset the device; press the button for a long time (longer than 10s) to restore the device to the default settings and reset the device.
WLAN	Indicates the WLAN button, used to enable or disable the WLAN function.
WPS	Indicates the WLAN protected setup.

Table 2. LED Definition LED Status Description

LED	Description	Status	Description
Power	Power supply LED	Off	Power Box is off.
		Flashing Green	Power box booting - 1Hz (50% on 50% off)
		Solid Green	Power Box is ready to use.
		Flashing Amber	Upgrade ongoing - 1Hz (50% on 50% off)
GPON / RF	PON and RF Status	Off	Power Box is off or booting

		Flashing Green	The signal level is in range and the ONT is not authenticated on the OLT
		Solid Green	The signal level is in range and the ONT is authenticated on the OLT
		Solid Red	The signal is out of range (signal level too high or too low)
		Solid Amber	The RF signal is out of range (for RF product)
Internet	Internet LED	Off	There is no Internet connection.
		Solid Green	The RGW received an IP address
		Flashing Green	Traffic between LAN and WAN -2Hz (50% on 50% off)
LAN	LAN port LED	Off	There is no device connected to LAN port
		Solid Green	There is a device connected to LAN port
		Flashing Green	The device connected to LAN port is exchanging data - 2Hz (50% on 50% off)
Phone	Voice telephone port LED	Off	One account: The account is disabled
			Two accounts: both accounts are disabled
		Solid Green	One account: The SIP account is registered, able to make and receive calls.
			Two accounts: Both SIP accounts are registered, able to make and receive calls.
		Flashing Green	One or two account: Call ongoing - 2Hz (50% on 50% off)
		Solid Amber	One account: N/A
			Two accounts: one of the 2 accounts gets a wrong authentication
		Solid Red	One account: Wrong authentication
			Two accounts: both accounts get a wrong authentication
Wifi	WLAN LED	Off	The wireless interface is disabled.
		Solid Green	The Wireless interface is activated.

		Flashing Green	The Wireless interface is receiving or transmitting data. - 2Hz (50% on 50% off)
WPS	WPS LED	Off	Default status - WPS window is closed
		Flashing Green	The WPS pairing is ongoing - 2Hz (50% on 50% off)
		Solid Green	WPS pairing successful (the LED turns off after 10 secs)

TECHNICAL SPECIFICATIONS

Section	Item	Description
GPON Uplink		The GPON system is a single-fiber bidirectional system. It uses wavelengths 1310 nm in TDMA mode in the upstream direction and wavelengths 1490 nm in broadcast mode in the downstream direction.
		The maximum downstream rate at the GPON physical layer is 2.488 Gbit/s.
		The maximum upstream rate at the GPON physical layer is 1.244 Gbit/s.
		Supports a maximum logical distance of 60 km and a physical distance of 20 km between the remotest ONT and nearest ONT, which are defined in ITU-T G.984.1.
		Supports a maximum of eight T-CONTs. Supports T-CONT types Type1 to Type5. One T-CONT supports multiple GEM ports (maximum of 32 GEM ports are supported).
		Supports three authentication modes: by SN, by password, and by SN+password.
		Upstream throughput: the throughput is 1G for 64-byte packets or other types of packets in RC4.0 version.
		Downstream throughput: The throughput of any packets is 1 Gbit/s.
		If the traffic does not exceed 90% of the system throughput, the transmission delay in the upstream direction (from UNI to SNI) is less than 1.5 ms (for Ethernet packets of 64 to 1518 bytes), and that in the downstream direction (from SNI to UNI) is less than 1 ms (for Ethernet packets of any length).
LAN	4xGb Ethernet	Four auto-sensing 10/100/1000 Base-T Ethernet ports (RJ-45): LAN1-LAN4

	Ethernet Features	Auto-negotiation of rate and duplex mode MDI/MDI-X auto-sensing Ethernet frame of up to 2000 bytes Up to 1024 local switch MAC entries MAC forwarding
	Route Features	Static route, NAT, NAPT, and extended ALG DHCP server/client PPPoE client
	CONFIGURATION	The LAN1 and LAN2 ports are mapped to the Internet WAN Connection.
		The LAN3 and LAN4 ports are mapped to the IPTV WAN Connection.
		VLAN #1 mapped to LAN1, LAN2 and WiFi are in Routed for Internet with default IP 192.168.1.1 and DHCP class 192.168.1.0/24
		VLAN #2 mapped to LAN2 and LAN4 are in Bridged for IPTV
Multicast Specification	IGMP version	v1,v2,v3
	IGMP snooping	Yes
	IGMP proxy	no
	Multicast groups	Up to 255 multicast groups at the same time
	Two VoIP telephone ports (RJ-11): TEL1, TEL2	G.711A/u, G.729 and T.38
		Real-time Transport Protocol (RTP)/RTP Control Protocol (RTCP) (RFC 3550)
		Session Initiation Protocol (SIP)
		Dual-tone multi-frequency (DTMF) detection
		Frequency shift keying (FSK) sending
		Two phone users to call at the same time

POTS	Client Parameter example to be supported	<p>The device MUST use a SIP URI structured: <SIP-ID>@<SIP-Proxy FQDN> = +CC_AC_SNB@as1.romtelecom.net</p> <p>Authentication REGISTER example: <Info>REGISTER sip:as1.romtelecom.net SIP/2.0 From: <sip/tel:+40214999730@as1.romtelecom.net>;tag=as0c395baa To: <sip:+40214999730@as1.romtelecom.net> Authorization:Digestusername="+40214999730@as1.romtelecom.net", realm="as1.romtelecom.net",nonce="4b0F+BpSoE4SX827prYWCQ==", uri="sip:as1.romtelecom.net",response="a9a1fe821a3224749fa2a4e745751b7c" (1 TR 114, RFC2616, RFC3261, RFC3325, RFC 3966 support TEL-URI, ETSI TS 183 007)</p>
	CONFIGURATION	The FXS ports is mapped to the VoIP WAN Connection
Wireless LAN	WLAN	IEEE 802.11b/802.11g/802.11n/802.11ac
	WiFi Bands	5GHz (20/40/80 MHz) and 2.4GHz (20/40 MHz)
	Authentication	WiFi protected access (WPA) andWPA2
	SSIDs	Multiple service set identifiers (SSIDs)
	Enable by default	Yes
	SSID 1 Private	SSID: Telekom-XXXXXX (XXXXXX = per device unique value with at least 6 randomly chosen characters)
		Encryption: WPA2 and the CCMP protocol (the key must have a length of 8 characters, consisting of uppercase and lowercase letters, numbers).
Auto-channel selection		
	CONFIGURATION	The SSIDs is mapped to the Internet WAN Connection
RF port	Operating Wavelength	1550 nm .. 1560 nm, typ. 1555nm
	Receiving Optical Power (Avg.)	-8 dBm .. +2 dBm
	RF Output Level	min. 17 dBmV/ch, tested at 450MHz, OMI=4.4% per channel, RF_Setting=0
	RF Output Impedance	typ. 75 Ohm
	Carrier-to-Noise Ratio	min. 45 dB, tested at -8dBm, 78 channels in 54-870Mz, OMI=3.5% per channel
	Carrier to Composite Dual Beat Ratio	min. 55 dB, test at +2dBm, 78channels in 54-870Mz
	Carrier to Composite Triple Beat Ratio	min. 55 dB
Frequency range	54-870MHz	

USB		Complying with the USB 2.0
Physical Dimension	ONT dimension	247mm*171mm*43mm
	Weight	<500g
Power Supply		Power adapter input: 100 V AC to 240 V AC, 50 Hz to 60 Hz
		System power supply: 11 V DC to 13 V DC, 2 A
		Static Power Consumption:7.5W
		Average Power Consumption:10W
		Maximum Power Consumption:18W
Ambient	Operation Temperature	0~45 C degrees
	Storage Temperature	-10~60°C