

PRESENTATION
ON
NEW MCM PROGRAMS
&
QT/QML BASED ONLINE_V2 GUI

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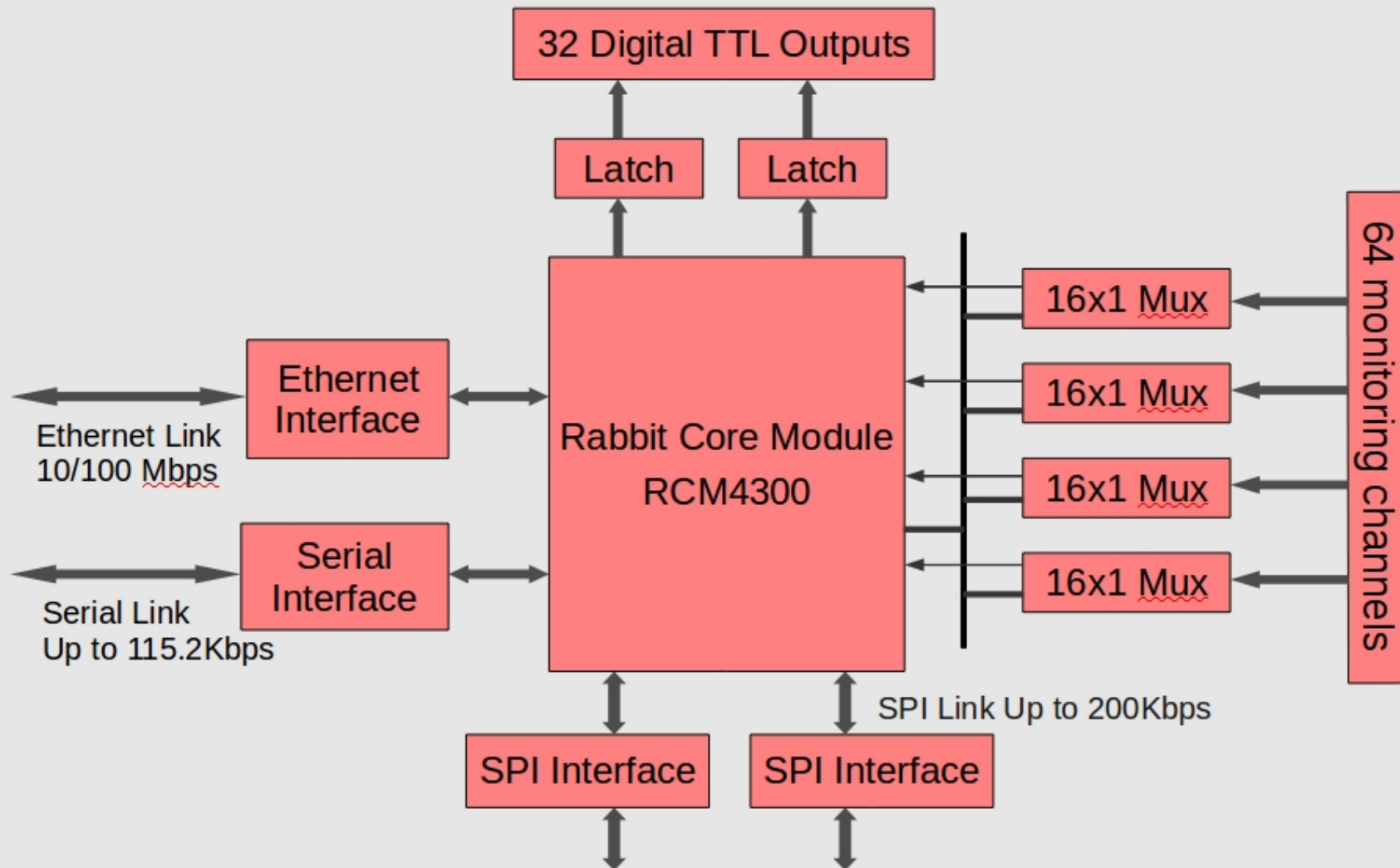
GMRT – TIFR

NEW MCM

(NEW MONITORING & CONTROLLING MODULE)

- New Monitoring and Controlling Module – New MCM is the general purpose card, designed using RCM4300 core module as processing unit.
- Has a motherboard, on which hardware for Multiplexing, Signal conditioning Digital data latching and serial communication is placed. On top of the motherboard, RCM4300 as daughter-board is placed.
- Will be directly interfaced with other systems of GMRT like Front End, Fiber Optics, Analog Back End, Sentinel etc.
- Will monitor and control various parameters of GMRT systems.
- Will also generate the alarm in the erroneous condition and will take immediate precautionary action.

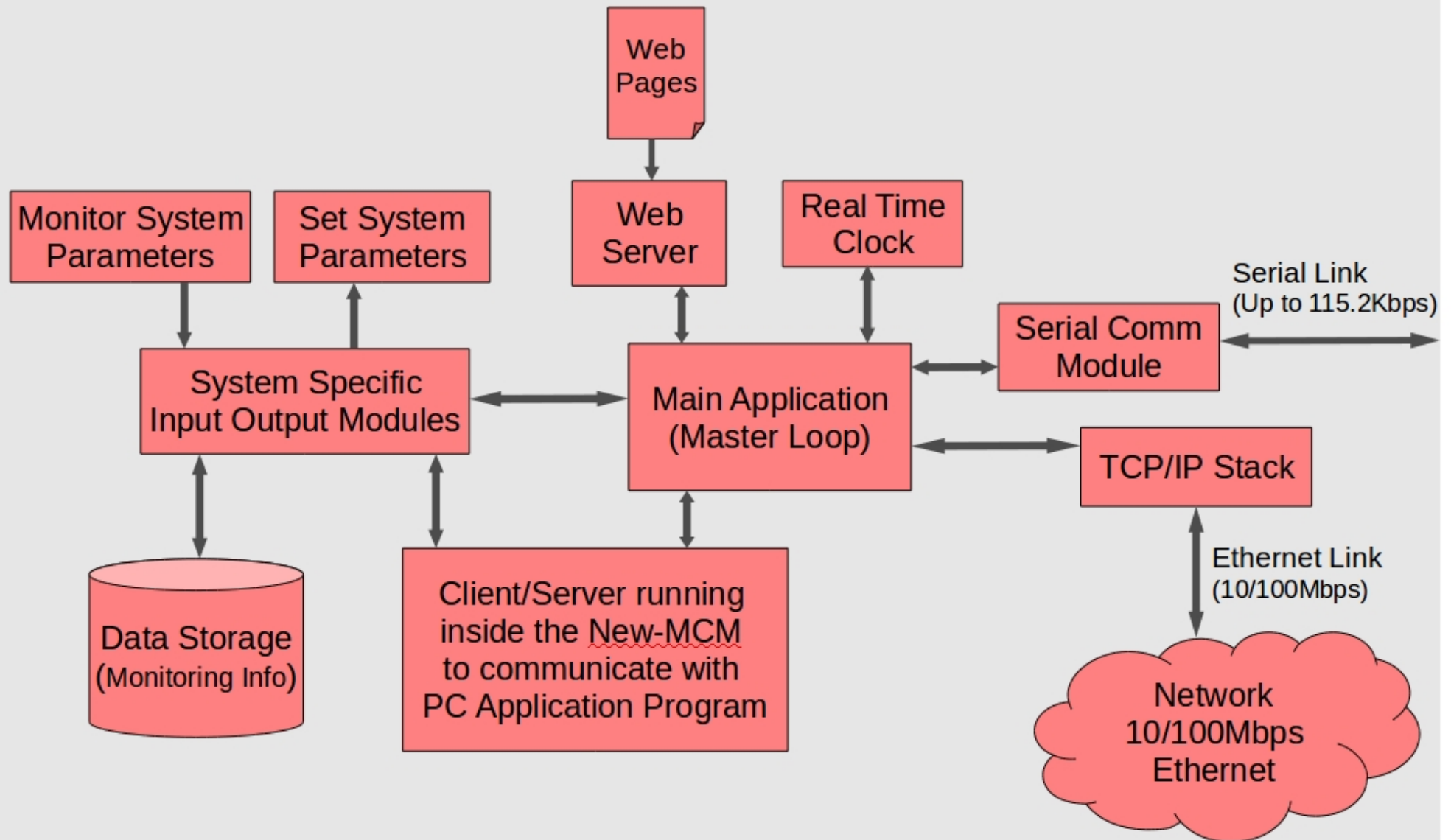
New MCM Hardware Architecture



NEW MCM SOFTWARE

- Developed from the scratch using dynamic C, which supports co-operative multitasking.
- Uses the infinite while loop approach instead of using the OS.
- Designed carefully, so it can include all necessary features and exhibit good performance.
- Supports the Communication over the Ethernet as well as Serial link, 64 channel monitoring, 32 bit controlling, up to 1Gb data storage using FAT-16 file system.
- Web server running inside. Web technologies like HTML, CSS, Javascript, XML, AJAX are used extensively.

New MCM Software Architecture



NEW MCM PROGRAMS

- For In House CMS MCM
- For GAB MCM
- For 15m NCRA MCM
- MCM Debug Software : MCM Debug

IN HOUSE CMS MCM PROGRAM

- Designed full fledge MCM program to perform various operation like : Monitoring, Controlling, Preparing Summery, etc. as well as Listening over socket to receive various commands from higher level application.
- Implemented support for various systems : Sentinel, Front End, Fiber Optics, Analog Back End, MCM Self Test.
- Implemented Various commands for such systems : Monitoring, Setting, Initialize, Reset.
- Supports both web and socket version.
- Design efficient command structure to communicate with remote server: [Sequence] [Time-stamp] [System] [Operation] [No of Para.] [Parameter] [arg1] [arg2]

ONLINE_V2 MCM COMMUNICATION PROTOCOL

- Sequence : Command Sequence ID from Online_V2 Server
- Time-stamp : Time stamp of core online machine
- System : Front End / Optical Fiber / Sentinel / Servo / FPS / GAB
- Operation : Monitoring, Setting, Initialization, Reset
- No of Para. : Number of parameters to be set in one go
- Parameter : System specific parameter/s
- Argument 1 : Channel 1 Argument of corresponding parameter
- Argument 2 : Channel 2 Argument of corresponding parameter

GAB MCM PROGRAM

- Communicates with GAB server on loconf machine, which ultimately connects MCM with existing online.
- Implemented various commands for GAB system like : set dmask, set lo, set reflo and mon
- Implemented Ping function to detect broken socket
- Implemented continuous background monitoring.
- Supports both web and socket version.
- Following command structure similar to 15m dish MCM even though it's not efficient.

15M DISH MCM PROGRAM

- Similar to GAB MCM but running on Old version of New MCM.
- Communicates with wrapper program on Atithi machine, which ultimately connects MCM with CMS developed by PSPL.
- Supports only socket communication.
- Connected with Sentinel and GAB systems.
- Implemented various commands for Sentinel system like : domon, setcmd, init and reset
- Implemented various commands for GAB system like : domon, set attn, set lo, set reflo, init and reset

MCM DEBUGGING PROGRAM

- Only web based program so troubleshooting can be done by using web browser, no other utility is required to debug MCM.
- Monitoring page displays 64 monitoring channels raw data as well voltage values, MCM parameters like Spectrum spreader, Clock Frequency, Real time clock, Digital Mask etc.
- Monitoring web page can update data as fast as every 500 mS, using AJAX
- Setting web page enables user to set 32 bit digital mask, LO Freq, Reference LO, RFI testing parameters, and Network Parameters.

MONITORING PAGE OF MCM DEBUG

New MCM Monitoring Window

IP : 192.168.8.231

Antenna : C00

System : FRONT END

64 MONITORING CHANNELS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 827 0.78 | 826 0.79 | 827 0.78 | 829 0.77 | 828 0.78 | 820 0.82 | 825 0.79 | 825 0.79 | 824 0.80 | 825 0.79 | 828 0.78 | 827 0.78 | 826 0.79 | 823 0.80 | 820 0.82 | 828 0.78 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| 828 0.78 | 826 0.79 | 826 0.79 | 830 0.77 | 830 0.77 | 820 0.82 | 829 0.77 | 826 0.79 | 828 0.78 | 822 0.81 | 822 0.81 | 826 0.79 | 823 0.80 | 820 0.82 | 827 0.78 | 828 0.78 |
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| 829 0.77 | 819 0.82 | 827 0.78 | 830 0.77 | 823 0.80 | 826 0.79 | 826 0.79 | 824 0.80 | 824 0.80 | 828 0.78 | 823 0.80 | 828 0.78 | 829 0.77 | 824 0.80 | 825 0.79 | 824 0.80 |
| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| 821 0.81 | 827 0.78 | 822 0.81 | 822 0.81 | 826 0.79 | 821 0.81 | 827 0.78 | 825 0.79 | 827 0.78 | 828 0.78 | 827 0.78 | 825 0.79 | 828 0.78 | 827 0.78 | 824 0.80 | 827 0.78 |

MCM STATUS

| | | |
|-------------------|---------------------|----------------------|
| Spectrum Spreader | Normal (0 to 50MHz) | Normal (Above 50MHz) |
| Frequency Doubler | On | |
| Frequency Divider | 1 | |
| MCM Frequency | 60 MHz | |
| Real Time Clock | 12 - 11 - 2014 | 12 : 25 : 46 |
| Digital Mask | 0000 | 0000 |

FRONT END SYSTEM STATUS

| | | |
|-------------------|------|-----|
| Band Selection | 327 | 327 |
| Solar Attenuation | 14 | 44 |
| Channel | SWAP | |
| Sub-Band Selected | 1060 | |
| RF Power | ON | |
| Calibration Noise | LOW | |

CONTROLLING PAGE OF MCM DEBUG

New MCM Control Window

IP : 192.168.30.21 Antenna : ___ System : Analog Back End

SET 32 Digital Output

| | | |
|-----------------------------------|-----------------------------------|---------------------------------------|
| <input type="text" value="0000"/> | <input type="text" value="0000"/> | <input type="button" value="Submit"/> |
|-----------------------------------|-----------------------------------|---------------------------------------|

SET Reference LO

| | | |
|--------------------------------------|--------------------------------------|---------------------------------------|
| <input type="text" value="000"/> MHz | <input type="text" value="000"/> MHz | <input type="button" value="Submit"/> |
|--------------------------------------|--------------------------------------|---------------------------------------|

SET LO Frequency

| | | |
|---|---|---------------------------------------|
| <input type="button" value="Choose LO1"/> ▼ | <input type="button" value="Choose LO2"/> ▼ | <input type="button" value="Submit"/> |
|---|---|---------------------------------------|

RFI Test

| | | |
|-------------------|---|---------------------------------------|
| Spectrum Spreader | <input type="button" value="Choose SS"/> ▼ | <input type="button" value="Submit"/> |
| Frequency Doubler | <input type="button" value="Choose FDB"/> ▼ | |
| Frequency Divider | <input type="button" value="Choose FDV"/> ▼ | |

Network Setting

| | | |
|-----------------|--|---------------------------------------|
| IP Address | <input type="text" value="192.168.30.21"/> | <input type="button" value="Submit"/> |
| Subnet Mask | <input type="text" value="255.255.255.0"/> | |
| Gateway Address | <input type="text" value="192.168.30.1"/> | |

Designed @ Telemetry Lab – GMRT

TESTING OF MCM PROGRAM

- More than 30 MCMs are running continuously in GAB system since 2012.
- 8 MCMs in local lab test set up are running continuously since 2012. MCMs are running without any issue because of robust software architecture.
- Tested Sentinel and Fiber Optics systems of C01, C04, C06 antennas
- Before that we also tested single antenna single MCM at C01, C04, C06, C09, C12 , S02, S04
- Tested Sentinel, Fiber Optics, Front End and GAB systems in Lab
- MCM Debug is extensively being used by lab members for tuning 64 monitoring channels and testing MCM features before its release.
- MCMs are interfaced with Sentinel and GAB system of 15m dish Antenna at NCRA are running very smooth since 2011.

Qt/QML BASED ONLINE_V2 GUI

- Online_V2 GUI is designed using Qt/QML because it supports easy integration of logic and graphics.
- Logic is written in C++ as well as JavaScript
- Graphics is written in QML which is more like CSS
- Data communication between GUI and core application can be done via various methods like : using XML file, over Socket and direct database access.
- As of Now Four interfaces are designed : Monitoring, Controlling, Engineering and User Management.
- Testing : Online_V2GUI has been tested during April 2014 MTAC, October 2014 MTAC, Front End, Fiber Optics, GAB, and Sentinel Lab Testing.

MONITORING GUI

- Monitoring GUI includes various User Interfaces : Graph Window, System Window, Antenna devices Window, Alarm Window.
- Graph Window : To display various zoom-able graph.
- System Window : To display all parameters of all system of the antenna.
- Antenna device Window : To display all network device at antenna and at receiver room.
- Alarm Window : To display all system alarm with priority and level.

GRAPH WINDOW



ONLINE V2

Control and Monitoring system - GMRT



Naresh Sisodiya



Monitoring Window



Controlling Window



Engineering Interface



User Log In



How to Use



Graph Window



System Monitoring



Quick View



Antenna Devices



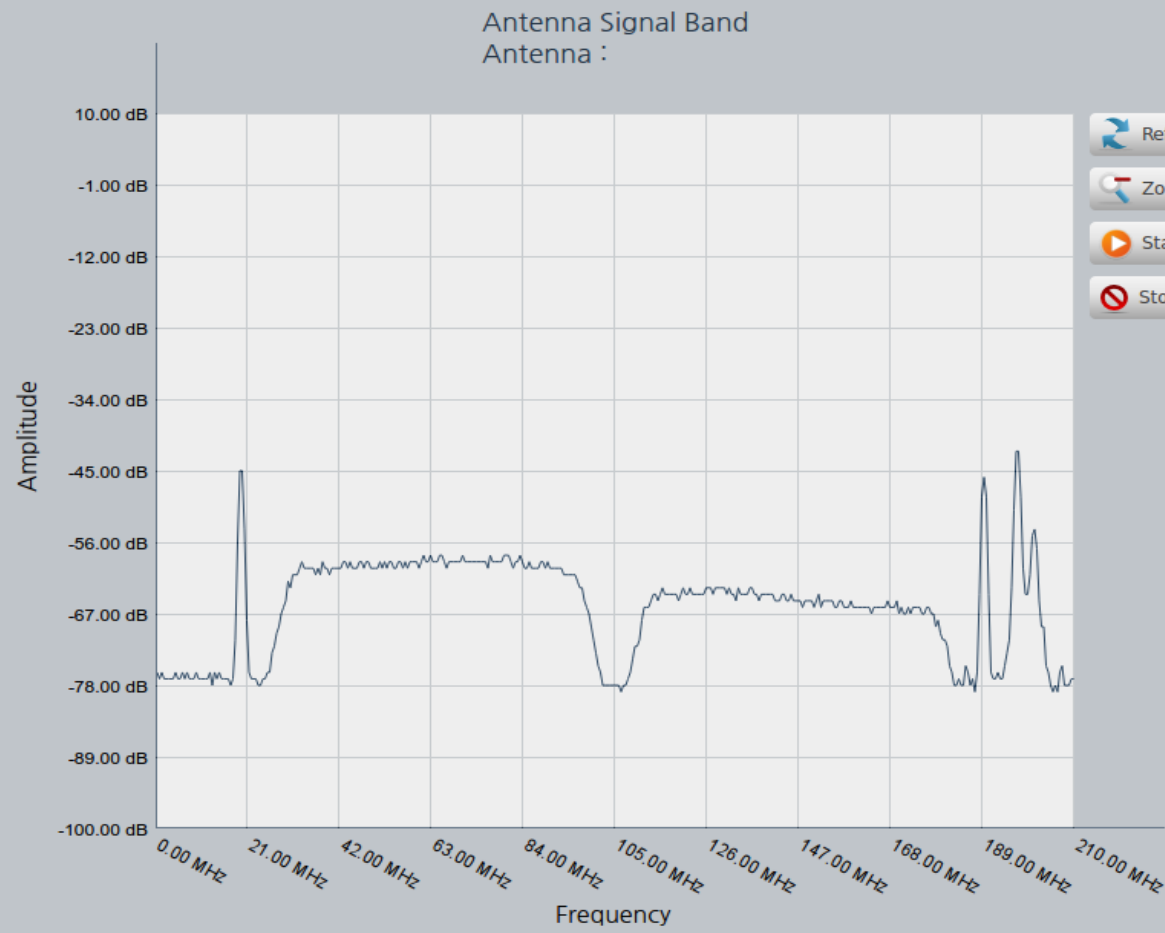
Alarm Window



Antenna SubArray

Live Updates

Graph Span



SYSTEM WINDOW



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Control and Monitoring system - GMRT



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Monitoring Window



Controlling Window



Engineering Interface



User Log In



How to Use



Graph Window



System Monitoring



Quick View



Antenna Devices



Alarm Window



Antenna SubArray

Live Updates

C00

C01

C02

C03

C04

C05

C06

C08

C09

C10

C11

C12

C13

C14

W01

W02

W03

W04

W05

W06

E02

E03

E04

E05

E06

S01

S02

S03

S04

S06

Front End

| | | |
|-------------------|---------|---------|
| Frequency Band | 330 MHz | 330 MHz |
| Solar Attenuation | 10 dB | 14 dB |
| Filter | 1 | 1 |
| L Band Filter | 1060 | 1170 |
| Calibration Noise | Low | Low |
| RF Power | Off | Off |
| Channel | Unswap | |

Fiber Optics

| | | |
|----------------|--------|--------|
| RF Attenuation | 4 dB | 6 dB |
| Bias Voltage | -3.1 V | -1.1 V |
| Supply Voltage | 12.0 V | |
| Temperature | 22.1 C | |

Servo

| | | |
|------------------|-----------|-----------|
| Axis State | STRL | STRL |
| Current Position | -127.34 a | +234.78 e |
| Target Position | +67.72 a | +56.46 e |
| Break | Applied | Released |
| Stow | -- | Released |
| Position Error | 0.04 al | 2.32 el |
| Encoder Offset | NIL | NIL |
| Axis Speed | 20 d/M | 20 d/M |
| LH Motor Current | 1.1 Amp | 1.2 Amp |
| RH Motor Current | 1.2 Amp | 1.0 Amp |
| Wind Velocity | 24 mph | |

FPS

Analog Back End

| | | |
|-----------------|---------|---------|
| LO Frequency | 700 MHz | 700 MHz |
| Attenuation | 10 dB | 14 dB |
| Filter | 1 | 2 |
| Low Pass Filter | 4 | 2 |
| Path | Direct | Direct |
| Source | SigGen | SigGen |
| Signal | Antenna | Antenna |
| Channel | 1 | |

Digital Back End

| | | |
|----------------|---------|---------|
| Frequency Band | 330 MHz | 330 MHz |
|----------------|---------|---------|

QUICK VIEW WINDOW



ONLINE V2
Control and Monitoring system - GMRT



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Monitoring Window



Controlling Window



Engineering Interface



User Log In



How to Use

Graph Window

System Monitoring

Quick View

Antenna Devices

Alarm Window

Antenna SubArray

Live Updates

| Antenna | Temperature | Electric Power | Wind Speed | Break | Staw | Position Angle | Para 2 | Para 3 |
|---------|-------------|----------------|------------|----------|----------|----------------|--------|--------|
| C00 | 20°C | MSEB | 25 MpH | Released | Released | 7 | 8 | 9 |
| C01 | 20°C | MSEB | 25 MpH | Released | Released | 16 | 17 | 18 |
| C02 | 20°C | MSEB | 25 MpH | Released | Released | 25 | 26 | 27 |
| C03 | 20°C | MSEB | 25 MpH | Released | Released | 34 | 35 | 36 |
| C04 | 20°C | MSEB | 25 MpH | Released | Released | 43 | 44 | 45 |
| C05 | 20°C | MSEB | 25 MpH | Released | Released | 52 | 53 | 54 |
| C06 | 20°C | MSEB | 25 MpH | Released | Released | 61 | 62 | 63 |
| C08 | 20°C | MSEB | 25 MpH | Released | Released | 70 | 71 | 72 |
| C09 | 20°C | MSEB | 25 MpH | Released | Released | 79 | 80 | 81 |
| C10 | 20°C | MSEB | 25 MpH | Released | Released | 88 | 89 | 90 |
| C11 | 20°C | MSEB | 25 MpH | Released | Released | 97 | 98 | 99 |
| C12 | 20°C | MSEB | 25 MpH | Released | Released | 106 | 107 | 108 |
| C13 | 20°C | MSEB | 25 MpH | Released | Released | 115 | 116 | 117 |
| C14 | 20°C | MSEB | 25 MpH | Released | Released | 124 | 125 | 126 |
| E02 | 20°C | MSEB | 25 MpH | Released | Released | 133 | 134 | 135 |
| E03 | 20°C | MSEB | 25 MpH | Released | Released | 142 | 143 | 144 |
| E04 | 20°C | MSEB | 25 MpH | Released | Released | 151 | 152 | 153 |
| E05 | 20°C | MSEB | 25 MpH | Released | Released | 160 | 161 | 162 |
| E06 | 20°C | MSEB | 25 MpH | Released | Released | 169 | 170 | 171 |
| W01 | 20°C | MSEB | 25 MpH | Released | Released | 178 | 179 | 180 |
| W02 | 20°C | MSEB | 25 MpH | Released | Released | 187 | 188 | 189 |
| W03 | 20°C | MSEB | 25 MpH | Released | Released | 196 | 197 | 198 |
| W04 | 20°C | MSEB | 25 MpH | Released | Released | 205 | 206 | 207 |
| W05 | 20°C | MSEB | 25 MpH | Released | Released | 214 | 215 | 216 |
| W06 | 20°C | MSEB | 25 MpH | Released | Released | 223 | 224 | 225 |
| S01 | 20°C | MSEB | 25 MpH | Released | Released | 232 | 233 | 234 |
| S02 | 20°C | MSEB | 25 MpH | Released | Released | 241 | 242 | 243 |
| S03 | 20°C | MSEB | 25 MpH | Released | Released | 250 | 251 | 252 |
| S04 | 20°C | MSEB | 25 MpH | Released | Released | 259 | 260 | 261 |
| S06 | 20°C | MSEB | 25 MpH | Released | Released | 268 | 269 | 270 |

ANTENNA DEVICES WINDOW



ONLINE V2

Control and Monitoring system - GMRT



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Monitoring Window



Controlling Window



Engineering Interface



User Log In



How to Use



Graph Window



System Monitoring



Quick View



Antenna Devices



Alarm Window



Antenna SubArray

Live Updates

| | | | | | | | |
|-----|-----------|--------------|----------|-----|-------|-------|--------|
| C00 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C01 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C02 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C03 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C04 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C05 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C06 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C08 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C09 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C10 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C11 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C12 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C13 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| C14 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| W01 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| W02 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| W03 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| W04 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| W05 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| W06 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| E02 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| E03 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| E04 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| E05 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| E06 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| S01 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| S02 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| S03 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| S04 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |
| S06 | Front End | Fiber Optics | Sentinel | FPS | Servo | Phone | Switch |

Antenna : C00

System : Front End

Device : MCM Card

IP Address : 192.168.31.0

Status : Ok

ALARM WINDOW



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Monitoring Window



Controlling Window



Engineering Interface



User Log In



How to Use



Graph Window



System Monitoring



Quick View



Antenna Devices



Alarm Window



Antenna SubArray

Live Updates

| Alarm ID | Priority | Type | Antenna | System | Message |
|----------|-----------|-------------|---------|---------------|--------------------------|
| TEST012 | HIGH | Information | Test | Test | Test Alarm |
| TEST01 | HIGH | Information | Test | Test | Test Alarm |
| SEN247 | HIGH | Information | C0453 | SEN | Temperature Rising.... |
| SEN247 | HIGH | Information | C0453 | SEN | Temperature Rising.... |
| SEN247 | HIGH | Information | Multi | SEN | Temperature Rising.... |
| SEN356 | VERY HIGH | Action | C00 | Sentinel | Smoke Detected |
| GSB421 | HIGH | Action | Multi | GSB | 5 Nodes Down |
| SEN521 | HIGH | Action | C09 | Sentinel | Vcc very critical |
| OF0334 | HIGH | Action | W05 | Optical Fiber | PIU U12 Vcc very low |
| SEN247 | HIGH | Information | C08 | Sentinel | Temperature Rising.... |
| SEN247 | HIGH | Information | C08 | SEN | Temperature Rising.... |
| OF0334 | HIGH | Action | W05 | OF | PIU U12 Vcc very low |
| SEN058 | HIGH | Action | E05 | GAB | Temperature High |
| GAB115 | LOW | Action | S03 | GAB | Attenuation Invalid |
| GAB114 | LOW | Action | S03 | GAB | Attenuation Invalid |
| OF2234 | LOW | Action | C04 | OF | LASER Power Increasing |
| SER221 | HIGH | Action | C04 | SER | Elevation Breaks applied |
| SER456 | HIGH | Action | C04 | SER | PC 104 Down |
| ABC112 | HIGH | Action | C04 | FE | PC 104 Down |
| ABC112 | HIGH | Action | C04 | FE | OF MCM Down |

First Page

Previous Page

Next Page

Last Page

CONTROLLING GUI

- Provides Interface to set various system parameters
- Setting can be provided to single antenna or Multiple Antennas
- Systems included are :
 - Front End
 - Fiber Optics
 - Sentinel
 - Servo
 - FPS
 - GAB
 - GSB



Select Sub Array

Master



Modify SubArray

Create SubArray

Delete SubArray



Select Antenna

FRONT END

| | | |
|--------------------|--------|--------|
| Frequency Band | 50 MHz | 50 MHz |
| Solar Attenuation | 0 dB | 0 dB |
| Channel | Unswap | |
| Sub Band Selection | Sub 1 | |
| RF Power | Off | |
| Calibration Noise | Low | |

Submit FE

SERVO

| | | | | | |
|----------------|---------|---------------------|--------|-----------|-----------|
| Position Angle | Azimuth | Angle1 | Angle2 | Submit PA | |
| Target Angle | Azimuth | Time | Angle1 | Angle2 | Submit TA |
| Hold | Azimuth | Submit Hold | | | |
| Stop | Azimuth | Submit Stop | | | |
| Stow | Azimuth | Submit Stow | | | |
| Stow Release | Azimuth | Submit Stow Release | | | |

Cold Start Close Abort Reset HW

OPTICAL FIBER

| | | | |
|----------------|-------|-------|-----------|
| RF Attenuation | 00 dB | 00 dB | Submit OF |
|----------------|-------|-------|-----------|

ANALOG BACK END

| | | |
|-----------------|-------------|-------------|
| LO Frequency | 600000 KHz | 600000 KHz |
| Reference LO | 10 MHz | 10 MHz |
| Attenuation | 00.0 dB | 00.0 dB |
| Filter | 0 | 0 |
| Low Pass Filter | 200 MHz | 200 MHz |
| Path | Direct | Direct |
| Source | Synthesizer | Synthesizer |
| Signal | Antenna RF | Antenna RF |

Submit GAB

SENTINEL

| | | | |
|--------------|----------|----------|-----------------|
| Digital Mask | 0000 Hex | 0000 Hex | Submit Sentinel |
|--------------|----------|----------|-----------------|

FEED POSITIONING SYSTEM

| | | | |
|------------------|-----|-----------------|-----|
| Turning point | 100 | Low RPM | 100 |
| RAMP Down Count | 100 | RAMP Up Count | 100 |
| Break Difference | 100 | Stop Time Count | 100 |
| Max Angle | 100 | Min Angle | 100 |

Submit FPS

FPS Init FPS NULL Calibrate Free Run Reboot FPS Stop

DIGITAL BACK END

| | | | |
|-----------------|-------------|-----------------------|----------|
| Mode | Realtime | LTA | 8 |
| Stokes | Full Stokes | Control | Online |
| Final Bandwidth | 0 | Acquisition Bandwidth | 33.33333 |
| Beam 1 | Off 30 | Beam 2 | Off 30 |
| F Stop | On | Gain Equalizer | On |
| BaseBand LO | 32 MHz | Edge Frequency | 0 |
| Max Channel | 256 | Channel Number | 0 to 255 |

Submit GSB

ENGINEERING GUI

- Engineering GUI provides setting of system in more detail.
- Functions which are very system specific will be included here.
- Accessible to only system experts for testing their own system.
- Single Antenna Single System can be selected.

ENGINEERING INTERFACE



ONLINE V2
Control and Monitoring system - GMRT

Naresh Sisodiya

Monitoring Window Controlling Window Engineering Interface User Log In How to Use

Select Antenna

| | | |
|-----|-----|-----|
| C00 | C01 | C02 |
| C03 | C04 | C05 |
| C06 | C08 | C09 |
| C10 | C11 | C12 |
| C13 | C14 | |
| W01 | W02 | W03 |
| W04 | W05 | W06 |
| E02 | E03 | E04 |
| E05 | E06 | |
| S01 | S02 | S03 |
| S04 | S06 | |

Select System

- Front End
- Fiber Optics
- Servo
- FPS
- Sentinel
- Analog Back End
- Digital Back End
- Interferometry

Antenna : C00

System : Servo

Communication : OK

SERVO

Position Angle Azimuth Angle1 Angle2 Submit PA

Target Angle Azimuth Time Angle1 Angle2 Submit TA

Hold Azimuth Submit Hold

Stop Azimuth Submit Stop

Stow Azimuth Submit Stow


Stow Release Azimuth Submit Stow Release

Cold Start Close Abort Reset HW


Monitoring Data

| | | | |
|------------------------|------------------------|------------------------|------------------------|
| Parameter 0 : Ch1 Ch2 | Parameter 1 : Ch1 Ch2 | Parameter 2 : Ch1 Ch2 | Parameter 3 : Ch1 Ch2 |
| Parameter 4 : Ch1 Ch2 | Parameter 5 : Ch1 Ch2 | Parameter 6 : Ch1 Ch2 | Parameter 7 : Ch1 Ch2 |
| Parameter 8 : Ch1 Ch2 | Parameter 9 : Ch1 Ch2 | Parameter 10 : Ch1 Ch2 | Parameter 11 : Ch1 Ch2 |
| Parameter 12 : Ch1 Ch2 | Parameter 13 : Ch1 Ch2 | Parameter 14 : Ch1 Ch2 | Parameter 15 : Ch1 Ch2 |
| Parameter 16 : Ch1 Ch2 | Parameter 17 : Ch1 Ch2 | Parameter 18 : Ch1 Ch2 | Parameter 19 : Ch1 Ch2 |
| Parameter 20 : Ch1 Ch2 | Parameter 21 : Ch1 Ch2 | Parameter 22 : Ch1 Ch2 | Parameter 23 : Ch1 Ch2 |
| Parameter 24 : Ch1 Ch2 | Parameter 25 : Ch1 Ch2 | Parameter 26 : Ch1 Ch2 | Parameter 27 : Ch1 Ch2 |
| Parameter 28 : Ch1 Ch2 | Parameter 29 : Ch1 Ch2 | Parameter 30 : Ch1 Ch2 | Parameter 31 : Ch1 Ch2 |
| Parameter 32 : Ch1 Ch2 | Parameter 33 : Ch1 Ch2 | Parameter 34 : Ch1 Ch2 | Parameter 35 : Ch1 Ch2 |
| Parameter 36 : Ch1 Ch2 | Parameter 37 : Ch1 Ch2 | Parameter 38 : Ch1 Ch2 | Parameter 39 : Ch1 Ch2 |
| Parameter 40 : Ch1 Ch2 | Parameter 41 : Ch1 Ch2 | Parameter 42 : Ch1 Ch2 | Parameter 43 : Ch1 Ch2 |

USER LOG IN



ONLINE V2
Control and Monitoring system - GMRT

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[Monitoring Window](#) [Controlling Window](#) [Engineering Interface](#) [User Log In](#) [How to Use](#)

User Name :

Password :

Submit

[Click Here if you forget the password](#)



Lets have
Questions & Answers....



THANK YOU.....